



Variation Environmental Authority Application – Supporting Information

Sunrise Bauxite Project

Prepared for: ABx3 Pty Ltd

Prepared by: Onterris Australia Pty Ltd

29 July 2026

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1 Introduction

ABx3 Pty Ltd (ABx) (the Applicant) is developing the Sunrise Bauxite Project (the Project) within Mining Lease Application (MLA) 100277 (the Project area), located near the town of Binjour, approximately 115 km southwest of Bundaberg (**Figure 1a**).

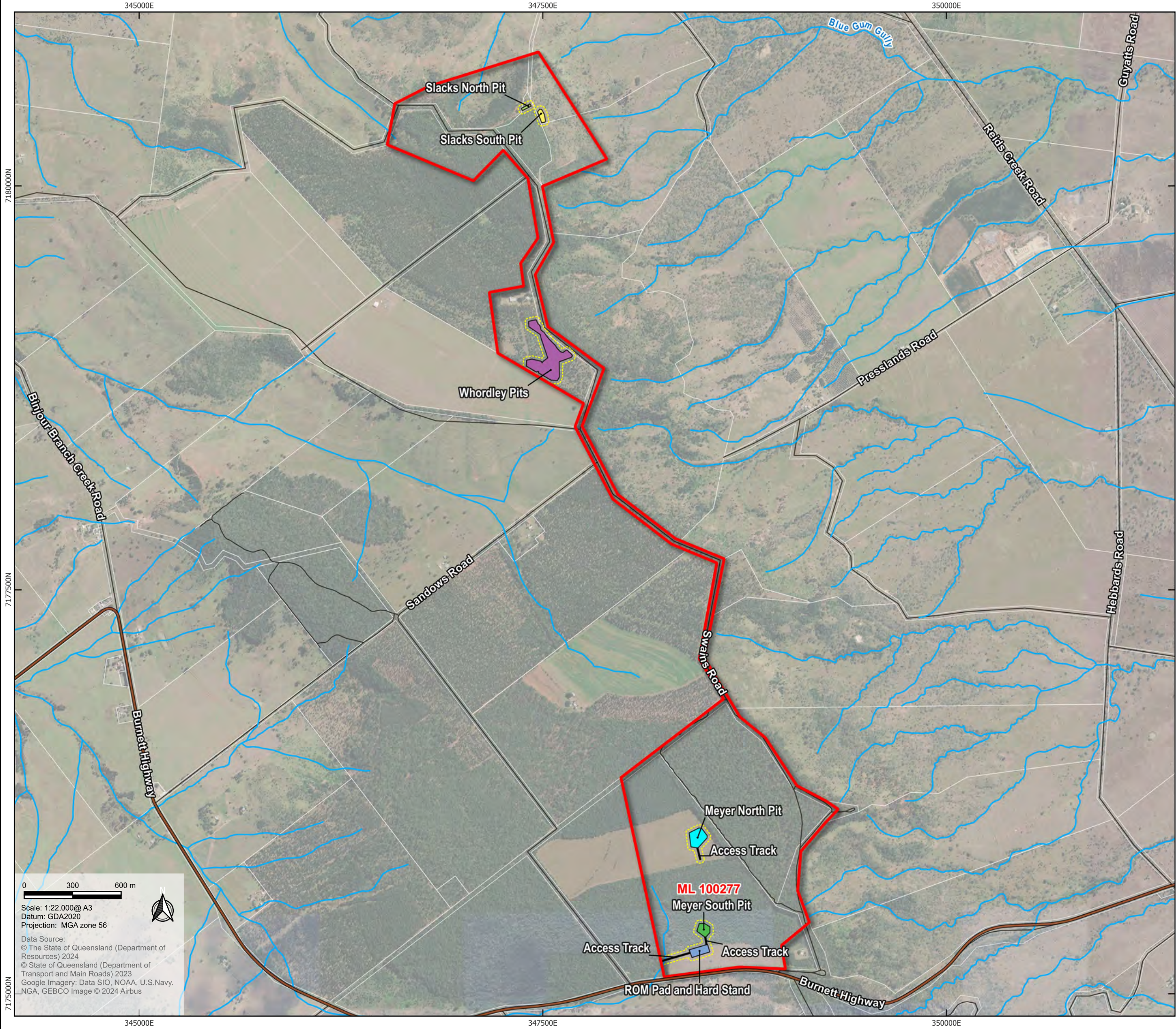
At full scale, the Project is planned to produce between 0.5 and 1.2 million tonnes (Mt) per year of bauxite over 10 to 20 years and will include a port precinct and off-loading facility at the Port of Bundaberg. Bauxite resources at Binjour total approximately 37 Mt. The deposit is characterised by gibbsite-rich trihydrate bauxite, a high-quality ore type well-suited to alumina refining. The ore requires only screening and sorting, with no complex beneficiation or chemical processing required on-site, representing a relatively low-impact and straightforward mining operation compared to many bauxite and mineral projects.

ABx intends to secure the approvals for the mine component of the Project in two stages, i.e. Stage 1 – initial small-scale test pit mining and Stage 2 - full scale mining. Stage 1, which is the subject of this EA application, comprises initial test pit mining activities designed to confirm ore grade, quality and spatial continuity across the deposit prior to progressing to full-scale development. Stage 2 will involve full-scale open-cut mining across the broader Project area and will be subject to a subsequent, more intensive approvals process.

The Project proposes to undertake an Environmentally Relevant Activity (ERA) for a resource activity under sections 18 and 107 of the *Environmental Protection Act 1994* (EP Act) and therefore requires an Environmental Authority (EA) in accordance with section 426 of the EP Act. A Standard EA application (A-EA-NEW-100735355) with full adoption of the *Eligibility criteria and standard conditions for mining lease activities—Version 2, ESR/2016/2241* (DEHP 2016) has been submitted to the Department of the Environment, Tourism, Science and Innovation (DETSI) and has been accepted as properly made. ABx has since determined that a Variation EA is required for Stage 1 of the Project, to allow amendment to Standard Condition A13, which is needed due to the presence of a Category B ESA 1km buffer / protection zone within the majority of the Project area (**Figure 1b**).

On this basis, ABx is now seeking to replace the Standard EA application with a Variation EA application. Once approved, the Variation EA will allow Stage 1 of the Project (initial small-scale mining) to commence, in lieu of the additional technical studies required to secure a Site-Specific EA and Progressive Rehabilitation and Closure Plan (PRCP) Schedule for subsequent full-scale mining (Stage 2).

This Variation EA application has been prepared in accordance with section 125 of the EP Act, using the required application form (*Variation application for a new environmental authority for a resource activity, ESR/2015/1756* (DETSI 2025) and with regard to the DETSI guideline *Applying to conduct an environmentally relevant activity ESR/2023/6510* (DETSI 2026).



Legend

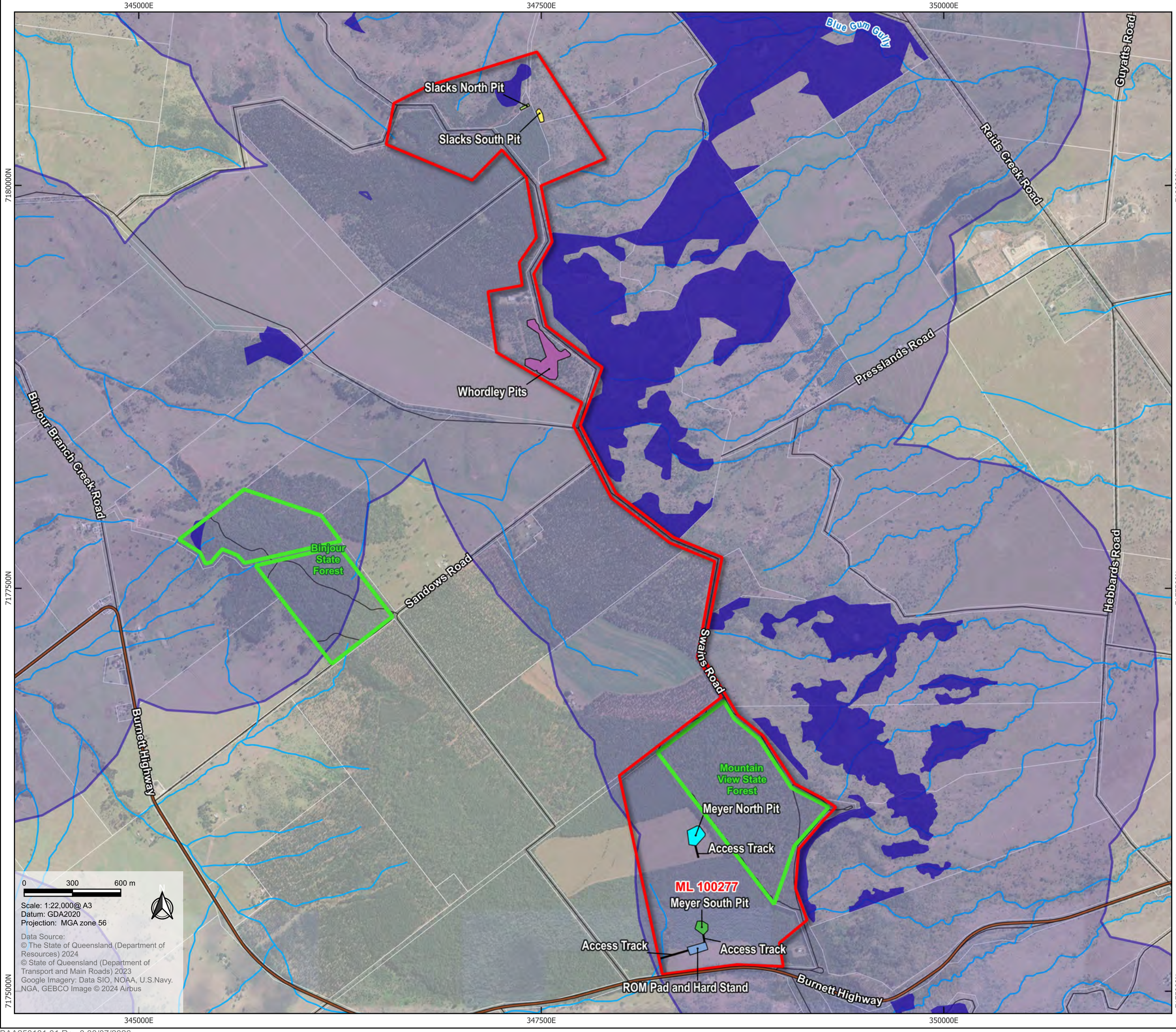
- ML permit application
- Study area
- Cadastre (DCDB)
- Roads and tracks
- State controlled roads

Watercourse

- Minor

Impact areas

- Access Track
- Meyer North Pit
- Meyer South Pit
- ROM Pad and Hard Stand
- Slacks North Pit
- Slacks South Pit
- Whordley Pits



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 - Slacks North Pit
 - Slacks South Pit
 - Whordley Pits
 - Environmentally sensitive areas**
 - State-mapped Category B**
 - Endangered Regional Ecosystems - regrowth and remnant (biodiversity status)
 - State-mapped Category B - 1km buffer
 - State-mapped Category C**
 - State forest

ABx Group
Binjour, QLD
Variation EA Application

Figure 1b
State-mapped ESAs

1.1 Application Particulars

Particulars for the EA amendment application that are the subject of this report have been summarised in **Table 1**.

Table 1. EA Application Particulars

Particular	Details
Applicant	ABx3 Pty Ltd
Australian Business Number (ABN)	99 139 792 073
Registered Suitable Operator Number	637918
Contact	Mark Luca State Manager - Queensland Suite 2, Level 11, 385 Bourke Street, Melbourne VIC 3000 Mobile: +61 477 785 599 Email: mluca@abxgroup.com.au
Tenement	MLA100277
Assessment Manager	DETSI
Application type	Variation EA Application
Site	The Project area as shown in Figure 1a
Activity (subject of this Application)	Mining activities - extraction of gibbsite-rich trihydrate bauxite (refer Section 4)
Project	Stage 1 initial small scale test pit mining activities within MLA 100277, approximately 15 km northwest of Gayndah and 115 km southwest of Bundaberg, involving extraction of bauxite from a series of small mine pits with a total Proposed disturbance footprint of 6.39 ha.
Environmentally Relevant Activities (ERAs)	Refer Section 3.4
Eligibility Criteria	The proponent will comply with all Eligibility Criteria established in <i>Eligibility criteria and standard conditions for mining lease activities—Version 2</i> (DEHP 2016)

2 Legislation

Key applicable Commonwealth and State legislation is presented in **Table 2**.

Table 2. Legislative Framework

Legislation	Framework	Applicability to the Project
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	The EPBC Act provides a legal framework to protect and manage nationally and internationally important aspects of the Australian environment including its biodiversity and heritage places.	Potential impacts to Matters of National Environmental Significance (MNES) are described in Section 5.1.1.1 and Appendix A . The supporting ecology assessment (Appendix A) has determined that significant impacts to MNES are unlikely.
<i>Native Title Act 1993</i> (NT Act)	The objectives of the NT Act include providing for the recognition and protection of native title. The NT Act also provides a mechanism for ensuring that future acts such as the grant of mining leases, or the rights to construct and operate under such authorities, are undertaken in accordance with procedural rights given to relevant native title parties.	Land subject to Native Title is excluded from the permit area.
State		
EP Act	The EP Act provides the key legislative framework for environmental management and protection in Queensland. The objective of the EP Act is to: “Protect Queensland’s environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains ecological processes on which life depends” (Section 3 of the EP Act). Under the EP Act, Abx must obtain an EA to undertake an ERA. The EP Act also requires ABx to comply with the general environmental duty not to undertake an: “Activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm are taken” (Section 319 of the EP Act).	This Variation EA application is submitted in accordance with Section 125 of the EP Act to secure an EA for undertaking an ERA.

Legislation	Framework	Applicability to the Project
<i>Environmental Offsets Act 2014</i> (EO Act) and <i>Environmental Offset Regulation 2014</i> (EO Regulation)	The EO Act is intended to counterbalance significant residual impacts of particular activities on prescribed environmental matters by way of environmental offsets. This is achieved primarily through establishment of a framework for environmental offsets, recognition of protection given to prescribed environmental matters under other legislation, provision for National, State and local matters of environmental significance to be prescribed environmental matters, and coordination of implementation of the framework in conjunction with other legislation. The purpose of the EO Regulation is to compensate for unavoidable impacts on prescribed environmental matters. Prescribed environmental matters include MSES and are defined in Schedule 2 of the EO Regulation.	Potential impacts to Matters of State Environmental Significance (MSES) are described in Section 5.1.1.2 and Appendix A . The supporting ecology assessment (Appendix A) has determined that significant residual impacts to MSES are unlikely.
<i>Fisheries Act 1994</i> (Fisheries Act)	The Fisheries Act provides for the management, use, development and protection of fish habitats and resources. This includes waterways potentially used for 'fish passage' (considered as a MSES as mapped within waterways for waterway barrier works mapping administered by the Department of Agriculture and Fisheries (DAF). Environmental offsets may be required where significant residual impact to waterways for fish passage are identified (including permanent, partial and temporary barriers).	A Waterway for Waterway Barrier works is mapped as intersecting a proposed access track. A bed level crossing will be used to minimise impacts to this waterway, and it is not expected that the construction of this access track will impact fish passage or contribute to degradation of fish habitat. Therefore, a Significant Residual Impact (SRI) to the MSES of waterways providing for fish passage is unlikely, as per Section 5.1.1.2 and Appendix A .
<i>Native Title (Queensland) Act 1993</i> (NT Qld Act)	The NT Qld Act recognises the land rights and interests of Indigenous peoples where they have historically resided and regulates the conduct of 'future acts', including development. The legislation provides for the determination of native title claims, the treatment of 'future acts' that may impact on native title rights and requires consultation and/or notification to relevant claimants. The provisions of the NT Qld Act are administered by the National Native Title Tribunal. The Tribunal is established	Land subject to Native Title is excluded from the permit area

Legislation	Framework	Applicability to the Project
	to work with people to understand Native Title and reach outcomes that recognise everyone's rights and interests in land and waters.	
<i>Aboriginal Cultural Heritage Act 2003 (ACH Act)</i>	The ACH Act binds all persons to provide recognition, protection, and conservation of Aboriginal cultural heritage. The Cultural Heritage Duty of Care (section 23 of the ACH Act) states: 'a person who carries out an activity must take all reasonable and practical measures to ensure the activity does not harm Aboriginal cultural heritage'.	ABx are addressing cultural heritage requirements with the relevant traditional owner group.
<i>Queensland Heritage Act 1992 (Heritage Act)</i>	The Heritage Act provides a framework for the conservation of Queensland's Cultural Heritage, with the objective of benefiting the community and future generations.	A search of the Queensland Heritage Register did not identify any Registered Places within the Project area.
<i>Mineral Resources Act 1989 (MR Act)</i>	The MR Act, administered by the DNRMMRRD, provides for the assessment, development, and utilisation of mineral resources. The MR Act establishes a framework to facilitate mining-related activities, through the leasing of prospecting, exploration, mineral development, and mining tenure. The MR Act also sets royalty payments, rents, landholder compensation and notification requirements which ABx must comply with. Section 4A of the MR Act precludes the application of the Planning Act 2016 to activities undertaken for purposes of the mining tenure, with the exception of provisions in relation to the Heritage Act. The MR Act also makes building work controlled under the Building Act 1975 self-assessable development within the lease.	The Project will operate within MLA 100277 which, upon grant as a ML, will authorise rights for the proposed Stage 1 test pit mining activities. This Variation EA application seeks to vary Standard Condition A13 to permit activities within the 1 km buffer of a Category B ESA.
<i>Mining and Energy Resources (Financial Provisioning) Act 2018 (MERFP Act)</i>	The MERFP Act came into force on 1 April 2019. The MERFP Act replaces the financial assurance arrangements for resource activities under the EP Act with the Financial Provisioning Scheme. The MERFP Act	Once the EA has been granted, an ERC decision application will need to be lodged with DETSI prior to commencement of ground disturbance. ABx will meet all obligations under the MERFP Act and the Financial Provisioning Scheme.

Legislation	Framework	Applicability to the Project
	also amended the EP Act to require mining companies to develop PRC Plans for ineligible mining activities. The main objectives of the MERFP Act are to: - Provide for holders of mining and resource authorities to pay a contribution to the scheme fund, or give a surety for rehabilitation costs - Manage the risk to the State of incurring costs and expenses of holders failing to complete rehabilitation - Provide a source of funds to the State for costs for residual mining impacts and legacy impacts DETSI will require an Estimated Rehabilitation Cost (ERC) decision to be in place to ensure land disturbed by mining activities is rehabilitated to a safe, stable, and non-polluting landform that does not cause environmental harm and is able to sustain an approved post-mining land use. Once the EA has been granted for the Project, an application for an ERC decision can be lodged with DETSI.	
<i>Nature Conservation Act 1992 (NC Act), Nature Conservation (Animals) Regulation 2020 and Nature Conservation (Plants Regulation) 2020</i>	In broad terms, the objective of the NC Act is the conservation of nature (plants and animals) within Queensland. Specifically, the NC Act seeks to gather relevant information, identify critical habitat areas, manage protected areas, protect wildlife and promote ecologically sustainable development. The NC Act has 10 subordinate regulatory instruments in the form of regulations, conservation plans and notices. Of relevance to the Project is the Nature Conservation (Animals) Regulation 2020 and Nature Conservation (Plants Regulation) 2020 which lists the protected flora and fauna species (extinct in the wild, endangered, vulnerable, near threatened) and also international wildlife and prohibited wildlife. Under the NC Act, permits for the movement of protected animals and the clearing of protected plants are required and a Species Management Program must be approved	Impacts to MSES and mapped high risk areas for protected plants are considered as part of the SRI within Section 5.1.1.2.

Legislation	Framework	Applicability to the Project
	when interfering with protected native fauna habitat and breeding places. The Act also provides legislative guidance in offsets in respect to the conservation and protection of flora and fauna deemed to be of State significance.	
<i>Water Act 2000 (Water Act)</i>	The Water Act provides a structured system for the planning, protection, allocation and use of Queensland's surface waters and groundwater. Under the Water Act, a person must not take, supply, or interfere with water unless authorised for the taking of water from overland flow, groundwater, a watercourse, lake, or spring. Resource tenure holders can access underground water taken in the course of, or as a result of, exercising underground water rights. Thus, no authority is required for the use of water from mine dewatering undertaken to the extent necessary to achieve safe operating conditions.	The Project does not propose the take, supply or interference with water as defined under the Water Act. Furthermore there are no mapped Water Act watercourses within the Project area. Therefore a water allocation, water licence or riverine protection permit under the Water Act are not required for the Project.
<i>Regional Planning Interests Act 2014 (RPI Act)</i>	The RPI Act identifies and protects areas that are of regional interest throughout Queensland. The RPI Act is supported by the RPI Regulation and aims to: • Manage the impact of resource and regulated activities on areas of regional interest • Support these activities with other activities, such as highly productive agricultural activities • Assist in resolving land use conflict between activities which contribute to the State's economy	Strategic Cropping Land (SCL) within the Strategic Cropping Area (SCA) (an area of regional interest) is present within the Project area and proposed disturbance locations. Exemption requirements are being pursued by ABx. If exemption to requiring a Regional Interests Development Approval (RIDA) cannot be achieved, a RIDA application under the RPI Act will be lodged for the proposed activities.
<i>Planning Act 2016 (Planning Act)</i>	The Planning Act establishes Queensland's planning framework and is supported by other Acts and regulations. The Planning Act also establishes the framework of planning instruments that support the operation of the three main systems: plan-making, development assessment and dispute resolution. Further, the Planning Act provides the Planning Minister with powers that can be enacted in response to matters that relate to state interests.	The Project is a resource activity to be approved under a resource tenure and therefore the Planning Act does not apply.

Legislation	Framework	Applicability to the Project
	Section 4A of the MR Act precludes the application of the Planning Act to activities undertaken for purposes of mining tenure, with the exception of provisions in relation to the Queensland Heritage Act 1992. The MR Act also makes building work controlled under the Building Act 1975 self-assessable development within the lease.	
<i>Vegetation Management Act 1999</i> (VM Act)	The VM Act regulates the clearing of vegetation in Queensland in a way that conserves remnant vegetation, ensures clearing does not cause land degradation, prevents loss of biodiversity, maintains ecological processes, reduces greenhouse gas emissions and allows for sustainable land use.	The Project is a resource activity to be approved under a resource tenure and therefore the VM Act does not apply, except for the purpose of defining MSES.
<i>Biosecurity Act 2014</i> (Biosecurity Act)	The Biosecurity Act provides a consistent, modern, risk-based, and less prescriptive approach to biosecurity in Queensland. The Biosecurity Act provides comprehensive biosecurity measures in relation to restricted matter, which includes pests (e.g. wild dogs and weeds), diseases (e.g. foot-and-mouth disease) and contaminants (e.g. lead on grazing land). Decisions made under the Biosecurity Act will depend on the likelihood and consequences of risk, allowing for more appropriate management of risks.	ABx will fulfill the obligations under the Biosecurity Act, including maintaining vehicle hygiene to minimise the introduction or spread of restricted matter.

3 Application Eligibility

Pursuant to Section 121 of the EP Act there are three types of applications for an EA as they relate to the Eligibility Criteria and Standard Conditions:

- **Standard application** - if the Environmentally Relevant Activity (ERA) can meet the eligibility criteria and comply with all standard conditions
- **Variation application** - if the ERA can meet the eligibility criteria, however changes to one or more of the standard conditions are required
- **Site-specific application** - if the ERA does not have eligibility criteria or the proposed activities cannot meet the eligibility criteria

The Project is able to meet the eligibility criteria of ESR/2016/2241, however the Proponent is seeking to vary one or more of the standard conditions. Therefore, this application is for a Variation EA application.

3.1 Standard Conditions to Vary

The Project seeks a variation to A13 within the eligibility criteria and standard conditions for mining lease activities, with the proposed changes shown in **Table 3**.

The proposed disturbance footprint and the majority of the MLA occur within the 1 km buffer of a Category B ESA, as identified in the Ecological Assessment Report (EAR, **Appendix A**), which necessitates the proposed variation to Condition A13.

All other standard conditions will be complied with.

Table 3. Proposed Standard Conditions to Vary

Eligibility criteria and standard conditions	Current Standard Condition	Proposed Variation Condition
<i>Eligibility criteria and standard conditions for mining lease activities – Version 2 (ESR/2016/2241)</i>	A13: The holder of the environmental authority must not carry out activities: 1. in, or within 2 km of, a category A environmentally sensitive area; or 2. in, or within 1 km of, a category B environmentally sensitive area. Prior to carrying out activities in a category C environmentally sensitive area, the holder of the environmental authority must consult with the relevant administering authority. If it is determined through consultation that additional conditions are necessary, the holder must comply with those conditions.	A13: The holder of the environmental authority must not carry out activities: 1. in, or within 2 km of, a category A environmentally sensitive area; or 2. in, ~~or within 1 km of~~, a category B environmentally sensitive area. Activities may occur within 1 km of a category B environmentally sensitive area to the extent that significant disturbance to the environmentally sensitive area is avoided. Prior to carrying out activities in a category C environmentally sensitive area, the holder of the environmental authority must consult with the relevant administering authority. If it is determined

Eligibility criteria and standard conditions	Current Standard Condition	Proposed Variation Condition
		through consultation that additional conditions are necessary, the holder must comply with those conditions.

3.2 Purpose and Context

3.3 Properly Made Application

Section 125 of the EP Act establishes the requirements for a properly made EA application. Demonstration of how this application meets these requirements is provided in **Table 4**.

Table 4. Fulfilment of relevant EP Act requirements for this application

Requirement	Applicant Response
EP Act Section 125, requirements for EA applications generally	
(1) An application for an environmental authority must—	
(a) be made to the administering authority; and	The application has been lodged with DETSI
(b) be made in the approved form; and	The application has been made in the approved form – <i>Variation application for a new environmental authority for a resource activity (ESR/2015/1756)</i>
(c) describe all environmentally relevant activities for the application; and	Section 3.4
(d) describe the land on which each activity will be carried out; and	Section 5
(e) be accompanied by the fee prescribed under a regulation; and	Application fees will be paid on receipt of the secure BPoint link from DETSI.
(f) if 2 or more persons (joint applicants) jointly make the application—nominate 1 joint applicant as the principal applicant; and	Not applicable - the application has been solely made by Abx
(g) state whether the application is— (i) a standard application; or (ii) a variation application; or (iii) a site-specific application; and	This is a variation application
(h) state whether the applicant is a registered suitable operator; and	Section 1.1
(i) if a development permit under the Planning Act, or an SDA approval under the State Development Act, is required under either of those Acts for carrying out the environmentally relevant activities for the application—describe the permit or approval; and	Not applicable – the application relates to an ERA for a resource activity
(j) if the application is a standard or variation application—include a declaration that each relevant activity complies with the eligibility criteria; and	Section 3.5 and the relevant section of the application form
(k) if the application is a variation application— (i) for a variation application under section 123(1)—state the standard conditions for the activity or authority the applicant seeks to change; or (ii) for a variation application under section 123(2)—state the standard conditions that are not the same as the Coordinator-General’s conditions; and	Standard conditions to be changed are described in Section 3.1 Section 123(2) and 125(1,k,ii) of the EP Act do not apply to this application.
(l) if the application is a variation or site-specific application—	Sections 5 to 8

Requirement	Applicant Response
(i) include an assessment of the likely impact of each relevant activity on the environmental values, including—	Consistent with Section 125 (2) of the EP Act, these matters have been assessed and described to the extent they relate to the changes proposed to the standard conditions.
(A) a description of the environmental values likely to be affected by each relevant activity; and	
(B) details of any emissions or releases likely to be generated by each relevant activity; and	
(C) a description of the risk and likely magnitude of impacts on the environmental values; and	
(D) details of the management practices proposed to be implemented to prevent or minimise adverse impacts; and	
(E) if paragraph (n) does not apply—details of how the land the subject of the application will be rehabilitated after each relevant activity ceases; and	
(ii) include a description of the proposed measures for minimising and managing waste generated by each relevant activity; and	
(iii) include details of any site management plan that relates to the land the subject of the application; and	
(m) if the application is for a prescribed ERA—state whether the applicant wants any environmental authority granted for the application to take effect on a day nominated by the applicant; and	Not applicable - application is not for a prescribed ERA
(n) if the application is a site-specific application for a mining activity relating to a mining lease—be accompanied by a proposed PRC plan; and	Not applicable - application is not for an ineligible mining activity
(o) include any other document relating to the application prescribed under a regulation.	Not applicable - application is not for an ineligible ERA. Section 28 of the <i>Environmental Protection Regulation 2019</i> (EP Reg) does not apply

3.4 Environmentally Relevant Activities

Pursuant to the EP Act, an EA is required when performing an ERA. Resource ERAs are listed under Schedule 3 of the *Environmental Protection Regulation 2019* (EP Reg).

This application relates to ERAs associated with mining under Schedule 3 of the EP Reg. No prescribed ERAs are being sought as part of this application.

3.5 Compliance with Eligibility Criteria

The Project will be undertaken in accordance with the eligibility criteria defined by the *Eligibility criteria and standard conditions for mining lease activities – Version 2 (ESR/2016/2241)*, as described in **Table 5**.

Table 5. ESR/2016/2241 – Mining Lease Activities Eligibility Criteria conformance

Criteria	Consideration
a) The mining activity does not, or will not, at any one time, cause more than 10 ha of land to be significantly disturbed.	Compliance will be achieved. The Project will not cause more than 10 ha of land to be significantly disturbed at any one time
b) The mining activity is not, or will not be, carried out in a category A environmentally sensitive area or a category B environmentally sensitive area.	Compliance will be achieved. The disturbance footprint is not located directly within a Category A or Category B Environmentally Sensitive Area
c) The mining activity is not, or will not be, carried out under an environmental authority under which either of the following is, or is to be, authorised: (i) an environmentally relevant activity to which a section of schedule 2 of the <i>Environmental Protection Regulation 2008</i> applies and for which there is an aggregate environmental score; or (ii) a resource activity, other than a mining activity, that is an ineligible ERA.	Compliance will be achieved. The Project will not be carried out under an environmental authority authorising these activities
d) The mining activity is not, or will not be, carried out in a strategic environmental area, unless: (i) the mining activity is authorised under an environmental authority for a mining activity relating to a mining claim, an exploration permit or a mineral development licence; or (ii) the mining activity involves alluvial mining and is carried out at a place not in a designated precinct in a strategic environmental area; or (iii) the mining activity involves clay pit, dimension stone, hard rock, opal or shallow pit mining and is carried out at a place not in a designated precinct in a strategic environmental area.	Compliance will be achieved. The Project will not be carried out within a strategic environmental area
e) The mining activity does not, or will not, at any one time, cause more than 5 ha of either of the following to be significantly disturbed: (i) a riverine area; or (ii) mine workings.	Compliance will be achieved. The Project will not cause more than 5 ha of a riverine area or mine workings to be significantly disturbed at any one time
f) The mining activity is not, or will not, be carried out by more than 20 persons at any one time.	Compliance will be achieved. The Project will not be carried out by more than 20 persons at any one time
g) Only the following types of mining are, or will be, authorised under the relevant mining lease: (i) alluvial mining; (ii) clay pit mining; (iii) dimension stone mining; (iv) hard rock mining; (v) opal mining; or (vi) shallow pit mining.	Compliance will be achieved. The Project proposes hard rock mining which is one of the authorised mining types under this eligibility criterion

4 Project Activities

The Activity which is the subject of this Variation EA application is Stage 1 initial small-scale test pit mining within MLA100277. Stage 1 comprises the construction of a series of small mine pits for the extraction of gibbsite-rich trihydrate bauxite, together with associated access tracks, a run-of-mine (RoM) pad and hardstand areas (the proposed disturbance footprint). The purpose of Stage 1 is to confirm ore grade, quality and spatial continuity across the deposit prior to committing to full-scale development under a separate Stage 2 approval (including a Site-Specific EA and PRCP).

Mining is shallow and will be to a maximum depth of 30 m, the ore body depth ranging from at surface in the north to approximately 10 m below surface in the south. Mining will involve traditional truck and shovel operations along panels and at relatively low strip ratios. As the bauxite requires only screening and sorting to produce a marketable product, no beneficiation or chemical processing will be undertaken on-site. Screened and sorted bauxite will be transported via truck to the Port of Bundaberg for export.

Given the low amounts of overburden the need for overburden management will be relatively small. Where overburden is required to be removed, it will be returned to within the pits to assist with backfilling and recontouring to manage drainage and rehabilitation consistent with the Standard Conditions of DEHP (2016). Due to the lack of processing required, there will be no need for tailings or rejects storage at the Project area.

The indicative proposed location for the Activity has been included within **Figure 1a**. The Stage 1 disturbance footprint totals 6.39 ha and comprises the following mine pits:

- Meyer Access Track - 0.25 ha
- Meyer North Pit - 0.95 ha
- Meyer South Pit - 0.49 ha
- Meyer ROM Pad and Hard Stand - 0.59 ha
- Slacks North Pit - 0.10 ha
- Slacks South Pit - 0.24 ha
- Whordley Pits - 3.77 ha

The disturbance footprint is entirely within previously cleared, non-remnant vegetation. One Stream Order 1 watercourse is intersected by the proposed access track to the Meyer pit. The location of the mine pits is largely constrained by the location of the underlying bauxite deposits however, the pits and associated infrastructure have been positioned within previously cleared, non-remnant areas to minimise impacts to areas of environmental significance.

The activities associated with Stage 1 mining will include:

- Non-remnant vegetation removal and slashing of grass
- Stripping of topsoil within the pit footprints, access tracks, RoM pad and hardstand areas
- Extraction of bauxite from a series of small mine pits

- Screening and sorting of run-of-mine material to produce a marketable product
- Progressive rehabilitation of disturbed areas

5 General Description of Environment

5.1 Regional and Local Context

The Project is located within the North Burnett Regional LGA, approximately 115 km southwest of Bundaberg in Queensland (refer **Figure 2**).

5.2 Existing Land Use, Tenure and Zoning

The Project area and its surrounds are located in a region with existing agricultural activities and is mapped as rural under the *North Burnett Regional Council Planning Scheme 2020* (NBRCC Planning Scheme). Major roads within the region include the Burnett Highway and Sandows Road which cuts through the Project. A number of private access tracks provide access to the Project.

An overview of the underlying and adjoining tenure associated with the Project area has been provided in **Table 6** and shown in **Figure 2**.

Table 6. Underlying and Adjoining Tenure

Claims, Tenure and Tenements	Description
Mining Lease Application (MLA)	• MLA100277
Exploration Permit for Minerals (EPM)	• EPM27787
Property Description (Lot/Plan)	The MLA (i.e. the Project area) sits on land described as: • Lot 112 on plan BON1575 • Lot 113 on plan BON253 • Lot 3 on plan RP11639 • Lot 114 on plan BON261 • Lot 2 on plan RP11639 • Lot 1 on plan RP11639 • Lot 119 on plan BON261 • Lot 18 on plan BON252 • Lot 30 on plan SP275031 • Lot 416 on plan FTY734 • Lot 34 on plan BON166 • Lot 35 on plan BON166 • Lot 36 on plan BON166 • Lot 121 on plan BON262
Cultural Heritage Party	Wakka Wakka Native Title Aboriginal Corporation RNTBC ICN 8903 (Wakka Wakka RNTBC)
Native Title	Land subject to Native Title is excluded from the permit area

5.2.1.1 Areas of Regional Interest

Areas of Regional Interest, including Strategic Cropping Area (SCA) and Priority Agricultural Area (PAA) are mapped within the Project area, as per the interactive mapping established under the *Regional Planning Interests Act 2014* (RPI Act) (**Appendix B**).

As SCA and PAA are mapped within the Project area, the proposed mining activities will be subject to the additional assessment and approval requirements of the RPI Act, including the requirement to obtain a Regional Interest Development Approval (RIDA), unless the activities can meet the exemption requirements of the RPI Act. ABx is currently pursuing these exemption requirements, and if they are not able to be met, a RIDA will be obtained.

5.3 Sensitive Receptors

Sensitive receptors within and near the Project area include residential dwellings. There are two dwellings located within the Project area, and approximately 6 dwellings located within a 1 km radius of the Project area. The nearest receptor to the disturbance footprint is approximately 150 m to the north of the Whordley Pits (**Figure 1a**).

5.4 Topography, Geology and Soils

5.4.1 Topography

The Project is situated on the top of a prominent plateau with an elevation ranging from 300 m to 390 m Australian Height Datum (AHD).

5.4.2 Geology and Geochemistry

Surface geology within the Project area is predominantly mapped as Tertiary duricrusted palaeosols (Td-QLD), with minor occurrences of Tertiary basalt (Tb-QLD) recorded (QGlobe, 2026).

The Project area is underlain by duricrusted palaeosols (Td-QLD) formed at the top of deep weathering profiles, comprising ferricrete and silcrete developed under prolonged periods of chemical weathering and landscape stability. These hardened, erosion-resistant materials represent ancient land surfaces that have persisted through successive cycles of weathering and denudation. The duricrusts typically cap gently undulating terrain and are indicative of long-term pedogenic processes under conditions of low topographic relief, with minimal evidence of recent disturbance or reworking. Within the Project area, minor occurrences of Tertiary basalt (Tb-QLD) are recorded, consisting predominantly of olivine basalt flows and plugs with localised occurrences of nephelinite, basanite and related volcanic rock types.

Based on the shallow nature of the deposit and geological setting including highly weathered target mineralisation zone, it is not expected that the Project will represent geochemical risks with respect to acidic or saline drainage (AMD). Furthermore, relatively small quantities of overburden will be generated due to the shallow mining depth. Notwithstanding this, progressive characterisation of overburden will occur during mining and should any unexpected risks be identified with respect to AMD, the material will be kept within pit and otherwise managed as per the Standard Conditions of DEHP (2016).

5.4.3 Soils

The soils within the Project area are predominantly mapped to comprise undulating rises on plateau remnants with very deep dark reddish-brown clay loams to light clays, grading to light to

medium clays at depth. Red earth soils occur occasionally. Vegetation within the Project area is typically shrubby open to closed forest, with areas of closed scrub.

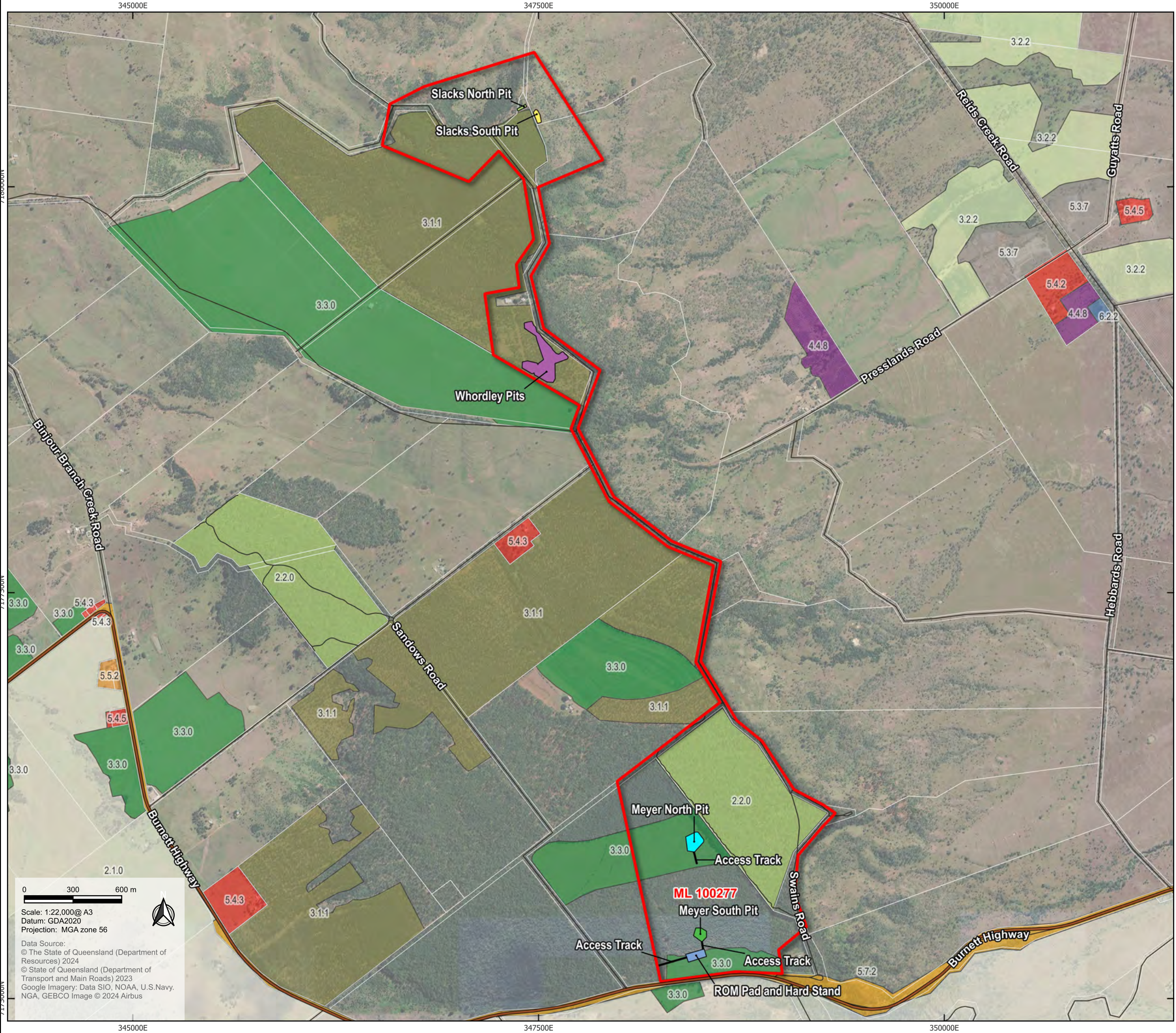
Acid sulfate soils (ASS) typically occur in coastal areas lower than 5 m AHD or buried beneath newer soils at elevations below 20 m AHD and therefore are not expected to be present within the Project. Furthermore, the Australian Soil Resource Information System (ASRIS 2025) mapping shows a low likelihood of occurrence of ASS.

Legend

- ML permit application
- Cadastre (DCDB)
- Impact areas**
- Access Track
- Meyer North Pit
- Meyer South Pit
- ROM Pad and Hard Stand
- Slacks North Pit
- Slacks South Pit
- Whordley Pits
- Roads and tracks
- State controlled roads
- Queensland Land Use June 2019 (Tertiary)**
- 2.1.0 Grazing native vegetation
- 2.2.0 Production native forests
- 3.1.1 Hardwood plantation forestry
- 3.2.2 Woody fodder plants
- 3.3.0 Cropping
- 4.4.8 Irrigated citrus
- 5.3.7 Sawmill
- 5.4.2 Rural residential with agriculture
- 5.4.3 Rural residential without agriculture
- 5.4.5 Farm buildings/infrastructure
- 5.5.2 Public services
- 5.7.2 Roads
- 6.2.2 Water storage - intensive use/farm dams

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Figure 2
Existing land use and tenure



0 300 600 m

Scale: 1:22,000@ A3
Datum: GDA2020
Projection: MGA zone 56

Data Source:
© The State of Queensland (Department of Resources) 2024
© State of Queensland (Department of Transport and Main Roads) 2023
Google Imagery: Data SIO, NOAA, U.S.Navy, NGA, GEBCO Image © 2024 Airbus

5.5 Climate

The Project area is situated within Queensland's Hot Semi-Arid climate zone (BSH Köppen Climate Classification) which is characterised by hot to extremely hot summers and warm to cool winters, with some to minimal precipitation. Gayndah post office is the closest climate monitoring station location approximately 20 km southeast of the Project area.

Climate data for the region has been captured by Gayndah Post Office Weather Station (no. 039039) from 2003 to present (BoM 2026). Based on the climate data collected from this weather station, the region experiences an annual mean maximum temperature of 28.2 degrees Celsius (°C), a mean minimum temperature of 13.6 °C and a mean total annual rainfall of 760.7 millimetres (mm). Rainfall data depicts clear wet and dry seasons, with high rainfall from October to February, and low rainfall from March to September.

The long-term climate statistics for the station has been provided in **Table 7**.

Table 7. Long Term Climate Data

Month	Temperature (°C)		Relative Humidity (%)		Wind speed (km/h)		Rainfall (mm)
	Mean max	Mean min	9am	3pm	9am	3pm	Mean
Jan	32.8	20.1	66	48	7.4	8.7	112.6
Feb	32	19.9	68	51	7.5	8.7	105.7
Mar	30.9	18.1	68	50	7.4	8.8	73.3
Apr	28.6	14.3	68	48	6.7	8.3	37.7
May	25.2	10.3	70	48	6.0	8.5	41.2
Jun	22.4	7.5	72	48	6.4	8.9	40.0
Jul	21.9	5.9	70	45	6.2	9.2	38.4
Aug	23.8	6.8	65	40	6.3	9.0	28.8
Sep	26.9	10.2	61	38	7.3	9.4	34.8
Oct	29.6	14.1	60	40	7.9	9.1	65.7
Nov	31.5	17.0	60	41	7.7	8.6	79.9
Dec	32.8	19.1	62	44	7.1	8.5	103.7
Annual	28.2	13.6	66	45	7.0	8.8	760.7

6 Environmental Values and Potential Impacts

A description of the environmental values and potential impacts these values is provided in the below sections. Where needed to keep the potential impacts in context of the proposed activities, key mitigation measures are touched on below, with further details provided in **Section 7**.

6.1 Terrestrial Ecology and Environmentally Sensitive Areas

Epic Environmental (Epic) (now Onterris) was engaged by ABx to prepare an Ecological Assessment Report (EAR) for the Project (refer **Appendix A**). The EAR included the collation of desktop terrestrial ecological assessment information and terrestrial ecological surveys undertaken by suitably qualified personnel in May and December 2022 and 19 to 22 January 2026.

The scope of the EAR included:

- A summary of the terrestrial ecological values associated with the Project
- Verification of the Regional Ecosystems (RE) underlying ESAs, to inform the ability to proceed with the Project under a variation EA
- Potential triggers for referral under the EPBC Act and/or a Site-specific EA under the NC Act
- A self-assessment of potential impacts to MSES and MNES
- Proposed measures for the avoidance of impacts to terrestrial ecological values, and mitigation measures to minimise residual impacts.

The following sections have summarised key information within the EAR as applicable to the Activity proposed to be undertaken within the Project area. Full details are provided in **Appendix A**.

It is important to note that the disturbance footprint included in this Variation EA has been modified from that included in the EAR to avoid triggering a potential SRI to MSES and MNES. To achieve this the State Forest pit has been removed from the Stage 1 mining program and therefore is not included in the proposed Variation EA activities. The proposed disturbance is now entirely within non-remnant or low value regrowth land and has been determined to not trigger an SRI to MSES or MNES as described in **Appendix A** due to the heavily disturbed condition of this land caused by pre-existing agricultural and forestry activities.

6.1.1 Existing Environment

6.1.1.1 Matters of National Environmental Significance

Field assessments confirmed that no Threatened Ecological Communities (TECs) are present within disturbance footprint or broader Project area. There are 8 species that are either possible, likely or known to occur within the Mountain View State Forest. None of these species are expected to have habitat within the proposed disturbance footprint. The disturbance footprint

comprises non-remnant vegetation with limited habitat value, including cleared land, plantation areas and disturbed regrowth. These areas provide minimal resources for conservation significant fauna species.

- Threatened flora:
 - Pomaderris clivicola (Endangered) - Likely
 - Acacia grandifolia (Vulnerable) - Possible
 - Bertya opposens (Vulnerable) - Possible
 - Mt Berryman Phebalium (Endangered) - Possible
- Threatened fauna:
 - Greater Glider, *Petauroides volans* (Endangered) - Known
 - Yellow-bellied Glider, *Petaurus australis australis* (Vulnerable) - Likely
 - Koala, *Phascolarctos cinereus* (Endangered) - Possible
 - Grey-headed Flying Fox, *Pteropus poliocephalus* (Vulnerable) - Possible

6.1.1.2 Matters of State Environmental Significance

Regulated Vegetation - Category B (Endangered or Of Concern)

No State-mapped Category B (Endangered or Of Concern) regulated vegetation is within the disturbance footprint. A small portion of vegetation categorised under State mapping as Category B (Endangered or Of Concern) regulated vegetation occurs to the east of the disturbance footprint surrounding the Slacks Pit area but does not intersect the footprint.

Regulated Vegetation - Essential Habitat

No areas mapped as essential habitat occur within the disturbance footprint.

Regulated Vegetation - Intersecting a watercourse

Regulated vegetation intersecting a watercourse is mapped within the south-western boundary of the Project area and the access track connecting the RoM pad and hard stand area to an offsite track. Where the proposed access track intersects the watercourse, the vegetation has been field-verified as non-remnant, as such regulated vegetation will not be impacted in this instance, and the area does not constitute an MSES.

Waterway providing for fish passage

A Waterway for Waterway Barrier works is mapped as intersecting the proposed access track associated with Meyer South Pit. A bed level crossing will be used to minimise impacts to this waterway and it is not expected that the construction of this access track will impact fish passage or contribute to degradation of fish habitat.

Wildlife habitat

The Protected Plants Flora Survey Trigger Map identifies areas of high-risk mapping within Mountain View State Forest however this area will not intercept with the proposed disturbance

footprint, therefore a targeted protected plant survey or an NC Act clearing permit will not be required for the proposed activities.

The MSES listed threatened species with potential to occur in the Project area are also MNES (described above) with the exception of a single additional NC Act-listed species, *Pomaderris coomingalensis* (*Endangered*). This species only has the potential to occur in the State Forest portion of the Project area and will therefore not be within the disturbance footprint.

Overall, consistent with MNES, there are no MSES threatened species or their habitat values expected to occur within the disturbance footprint.

6.1.1.3 Environmentally Sensitive Areas

State-mapped Endangered REs (Biodiversity Status), which represent Category B ESAs, occur along the eastern boundary of the Project area and to the south-east of Mountain View State Forest, however, these areas do not intersect the proposed disturbance footprint. While State mapping indicates proximity to Category B ESAs, field verification confirmed that no Category B ESA occurs within the disturbance footprint.

However due to the vast extent of Category B ESA to the immediate east of the Project area, and a small patch ground-truthed to the north of the John Slacks Pit, the majority of the Project area and disturbance footprint fall within the 1 km buffer of a Category B ESA.

No Category A ESAs or their 2 km buffers occur within the Project area or disturbance footprint.

The Mountain View State Forest (a Category C ESA) is within the Project area though is not within the disturbance footprint proposed for this Variation EA.

6.1.1.4 Other matters

Wetlands and GDEs

No wetlands are mapped within the disturbance footprint, and no wetland features were observed during field surveys.

No groundwater dependent ecosystems (GDEs) or wetlands are mapped within the disturbance footprint.

Non-native Flora and Fauna Species

Twelve introduced species were recorded during field surveys, reflecting previous land disturbance.

6.1.2 Potential Impacts

6.1.2.1 Clearing of Vegetation

The proposed Activity will avoid clearing of remnant vegetation or high-value regrowth. The proposed disturbance footprint comprises heavily disturbed, non-remnant land, including cleared

land, plantation forestry and disturbed regrowth, which provides limited ecological value. No clearing of remnant vegetation, high-value regrowth will occur under the Variation EA.

6.1.2.2 Habitat Fragmentation

The Activity is not expected to result in habitat fragmentation. The proposed disturbance footprint is entirely located within areas of existing disturbance and land use modification.

6.1.2.3 Direct Mortality

The risk of direct mortality within the proposed disturbance footprint is expected to be low due to the presence of non-remnant land, which provides limited habitat resources. Notwithstanding this, direct mortality risks can be further mitigated managed through the implementation of standard mitigation measures, including pre-clearing inspections, the use of trained fauna spotter-catchers, and site inductions for personnel to increase awareness of fauna presence.

6.1.2.4 Dust

Earthworks, vegetation disturbance and vehicle movements associated with the Activity have the potential to generate dust, particularly during dry weather conditions. Dust deposition can affect vegetation by coating leaf surfaces, reducing photosynthetic efficiency and transpiration, and potentially impacting plant health.

Given the small scale and short duration of the proposed disturbance, and the location of works primarily within already disturbed areas, the potential for dust to cause significant ecological impacts is low.

6.1.2.5 Weeds and Pest Animals

A number of non-native flora species were recorded within the weeds within the proposed disturbance footprint and surrounding areas during field surveys, reflecting the disturbed nature of the Project area. Disturbance associated with the Activity has the potential to facilitate the spread of existing weed species through soil movement and machinery.

However, given the existing level of disturbance and prevalence of weeds within the disturbance footprint, the Activity is unlikely to significantly increase the overall weed burden if appropriate hygiene measures are implemented.

Introduced fauna species are also present within the broader landscape. The Activity is not expected to exacerbate the presence or distribution of pest fauna beyond current levels.

6.1.2.6 Summary of Impacts

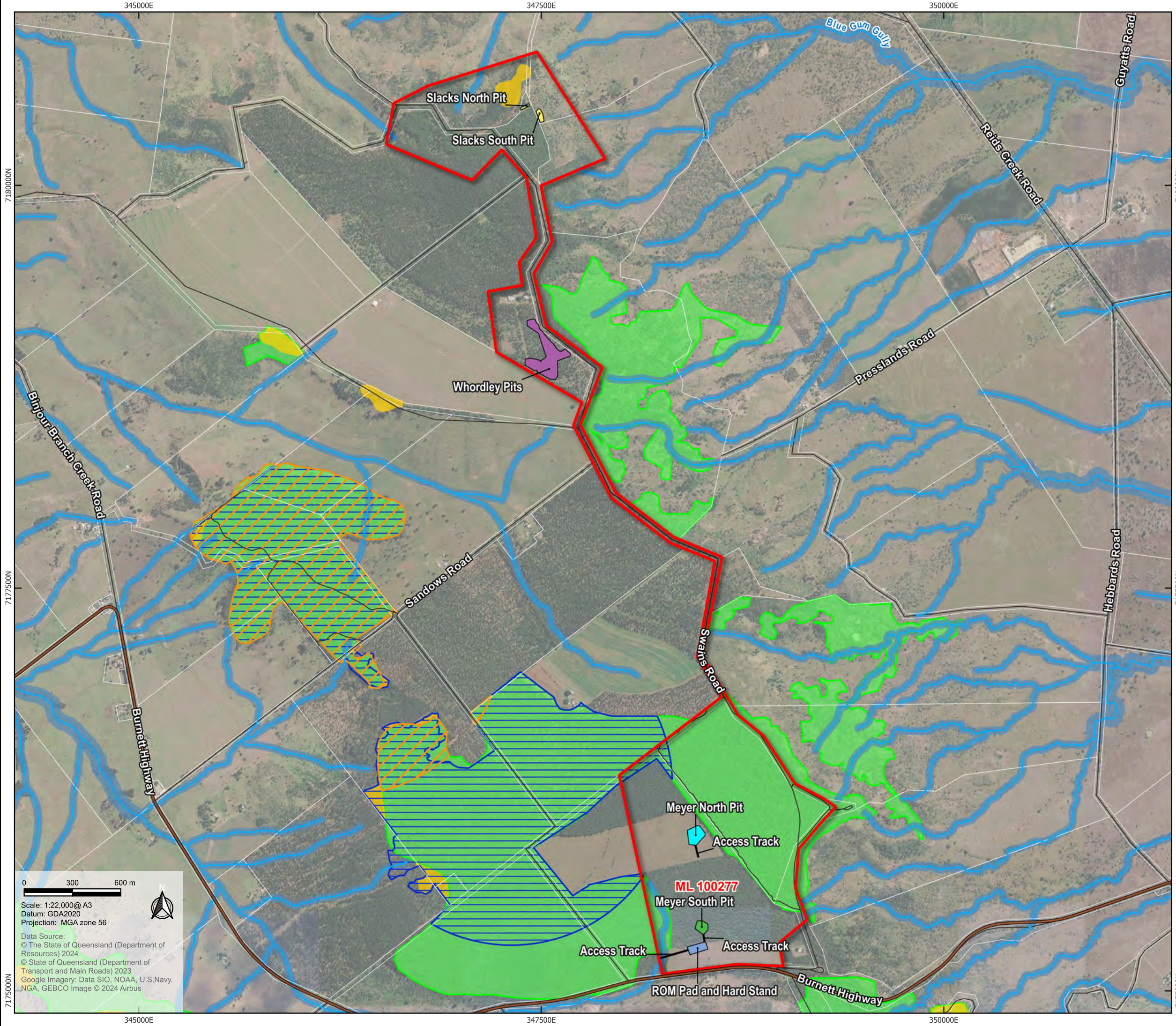
The potential ecological impacts associated with the proposed Activity are expected to be limited due to the minor proposed disturbance footprint and remaining entirely within non-remnant land that has been heavily disturbed.

Direct impacts to ESA will be avoided as per the requirements of the eligibility criteria of DEHP (2016). Activities proposed within the 1 km buffer of Category B ESAs will be undertaken in a

manner that avoids increasing the risk of indirect impacts to the ESAs beyond those already present in association with existing agricultural and forestry activities.

Given the activities have avoided direct impacts to MNES or MSES, the small scale of activities, and location entirely within heavily disturbed land, an SRI to MNES or MSES is unlikely as described in detail in the EAR (**Appendix A**), noting the State Forest pit has been removed from the Stage 1 program. Furthermore, with respect to the mapped Waterway for Waterway Barrier intersecting the proposed access track associated with Meyer South Pit, a bed level crossing will be used to minimise impacts to this waterway and it is not expected that the construction of this access track will impact fish passage or contribute to degradation of fish habitat. Therefore an SRI to waterways providing for fish passage is unlikely. These assessment outcomes are made in accordance with the following guidelines:

- *The Significant Impact Guidelines 1.1 – Matters of National Environmental Significance (MNES Guideline)* (DotE 2013a)
- *Queensland Environmental Offsets Policy Significant Residual Impact Guideline (SRI Guideline)* (DEHP 2014)



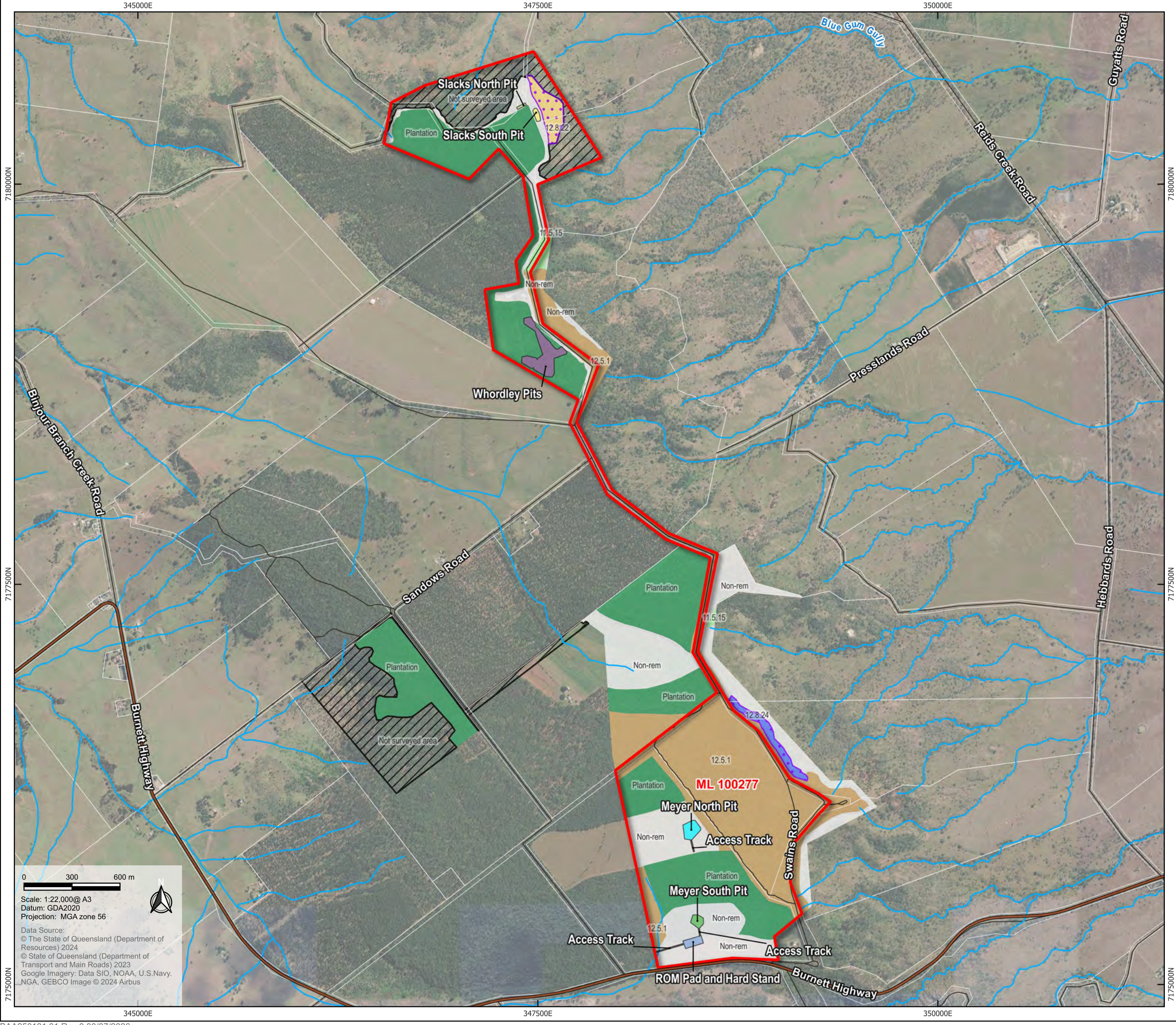
- Legend**
- ML permit application
 - Cadastre (DCDB)
 - Regulated vegetation - category B - endangered of or concern
 - Regulated vegetation - essential habitat
 - Regulated vegetation - watercourse within a defined distance
 - Wildlife habitat - endangered or vulnerable wildlife
 - Flora survey trigger map for clearing protected plants v10.0
 - Roads and tracks
 - State controlled roads
- Watercourse**
- Minor
- Impact areas**
- Access Track
 - Meyer North Pit
 - Meyer South Pit
 - ROM Pad and Hard Stand
 - Slacks North Pit
 - Slacks South Pit
 - Whordley Pits

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Figure 3
State mapped MSES values

Legend

- ML permit application
- Cadastre (DCDB)
- Category B ESA – Field-verified Endangered Regional Ecosystem (Biodiversity Status)
- Roads and tracks
- State controlled roads
- Watercourse
 - Minor
- Field-verified Regional Ecosystems
 - 11.5.15
 - 12.5.1
 - 12.8.22 (HVR)
 - 12.8.24 (HVR)
 - Non-remnant
 - Plantation (Non-remnant)
 - Not surveyed area
- Impact areas
 - Access Track
 - Meyer North Pit
 - Meyer South Pit
 - ROM Pad and Hard Stand
 - Slacks North Pit
 - Slacks South Pit
 - Whordley Pits



6.2 Surface Water

6.2.1 Existing Environment

6.2.1.1 Environmental Values

Surface water environmental values (EVs) are defined under the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* (EPP Water). A review of Schedule 1 indicates that no specific EVs or Water Quality Objectives (WQOs) have been formally scheduled for surface waters within the Project area.

The Project area is located within the plan area of the *Water Plan (Burnett Basin) 2014* (Water Plan), which establishes a framework for the sustainable management and allocation of surface water and groundwater resources in the region. While the Water Plan does not define EVs or WQOs, it recognises the importance of maintaining water resources to support environmental and agricultural uses across the catchment.

In the absence of defined EVs, the receiving environment has been characterised based on the physical attributes of surface water features and the surrounding land use.

The Project area contains minor, ephemeral drainage features, including stream order 1 watercourses, which flow only in response to rainfall events. These drainage lines are typically poorly defined, with limited channel development and minimal capacity to retain water. Drainage features do not intersect the majority of the proposed disturbance area, with the only exception of the access track to the Meyer South Pit. This drainage line will only have a bed level crossing inline with surrounding agricultural activities, to minimise impacts to flow and water quality.

Due to the ephemeral nature of these drainage features, the availability of aquatic habitat is limited, and aquatic ecological values are considered low. The surrounding landscape is characterised by cattle grazing, plantation forestry and previously disturbed areas, which indicates that the receiving environment is subject to ongoing anthropogenic influence and is therefore considered to represent a moderately disturbed system.

Based on the characteristics of the receiving environment and surrounding land use, the following EVs are considered applicable:

- Aquatic ecosystems
- Stock water
- Farm supply/use
- Irrigation
- Secondary recreation
- Visual recreation
- Cultural and spiritual values

A summary of EV applicability is provided in **Table 8**.

Table 8. Applicability of EVs for the Receiving Water Environment

Environmental Value	Applicability to the Activity	Discussion
Aquatic ecosystems	✓	Waterways within the Project area are ephemeral and generally lack persistent aquatic habitat. Aquatic values are considered low, and the system is classified as moderately disturbed due to surrounding land use.
Irrigation	✓	Whilst highly ephemeral and lacking sufficient surface water within the waterways to support irrigation in the immediate receiving environment, it is possible that overland flow harvesting (in dams/ponds) by landholder is occurring for irrigation purposes.
Farm supply/use	✓	As per irrigation.
Stock Water	✓	Grazing land use is present with small portions of the Project area and also in the surrounding land, and livestock may access drainage features during or following rainfall events.
Aquaculture	✗	No aquaculture activities occur within the Project area or its vicinity.
Human consumers of aquatic foods	✗	The ephemeral nature of waterways and absence of aquatic habitat limits the presence of edible aquatic species.
Primary recreation	✗	This is not considered to apply as all the waterways that traverse the Project area are minor stream order 1 drainage features and, in some instances, do not have defined or obvious banks and channels. Because this EV is defined as having full body contact with the water and allowing frequent immersion by the face and trunk of the (human) body, it is considered unlikely that the drainage features of the receiving environment are large enough or flow frequently enough to support recreational activities that would support this.
Secondary recreation	✓	This is conservatively considered to apply as it is possible that persons will come into contact with waters within or downstream of the Project area during flow events.
Visual recreation	✓	Waterways may contribute to local landscape amenity, particularly during or following rainfall events.
Drinking water	✗	Surface water is not likely used for drinking purposes due to its ephemeral nature and low reliability.
Industrial use	✗	No industrial use of surface water occurs within the Project area.
Cultural and spiritual values	✓	Surface water features may hold cultural or spiritual significance to Traditional Owners consistent with the broader region.

6.2.2 Potential Impacts

Given the limited scale of disturbance, the absence of permanent surface water features in the Project area, and lack of waterways within or near the disturbance footprint (with the exception of a single access track), potential impacts to surface water are expected to be minor and consistent with the allowances of the Standard Conditions of DEHP (2016).

Whilst minor, potential impacts may include:

Erosion and Sediment Transport

Vegetation clearing, earthworks, and construction of access tracks and pit areas may expose soils, increasing the potential for erosion. During rainfall events, surface runoff may transport sediments into nearby drainage lines, resulting in temporary increases in turbidity.

Changes to Surface Water Flow

The establishment of pits, access tracks and associated infrastructure may result in minor, localised changes to drainage patterns. These may include alterations to surface runoff pathways, flow velocities, and infiltration rates. Given the minor proposed disturbance footprint, these changes are expected to be limited in extent.

Disturbance to Ephemeral Drainage Features

A mapped stream order 1 watercourse is intersected by a proposed access track. Construction activities in this area may temporarily disturb natural flow paths during rainfall events. However, given the ephemeral nature of the drainage feature and keeping to a bed level crossing only, impacts are expected to be negligible and consistent with surrounding agricultural activities.

Hydrocarbon Contamination

There is potential for minor releases of hydrocarbons (e.g. fuels and oils) from plant and equipment. In the absence of appropriate controls, contaminants may be mobilised during runoff events and enter adjacent drainage features.

Releases to the receiving environment

No releases of mine affected water to surface waters are proposed, as per the requirements of the standard conditions within DEHP (2016).

6.3 Groundwater

6.3.1 Existing Environment

Schedule 1 of the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019* (EPP Water), subordinate legislation to the *EP Act*, identifies the waters to which the policy applies and specifies relevant Environmental Values (EVs) and Water Quality Objectives (WQOs). A review of Schedule 1 indicates that no EVs or WQOs have been formally scheduled for groundwater in the Burnett Basin at the time of reporting.

The Activity falls within the plan area of the Water Plan (Burnett Basin) 2014, which applies to both surface water and groundwater in the region. The Water Plan (Great Artesian Basin and Other Regional Aquifers) 2017 (GABORA) is not considered applicable, as the bores associated with the Activity are attributed to Cenozoic Sediments and Metamorphic/Igneous basement rocks - aquifer types not connected to the Great Artesian Basin and therefore managed under the Burnett Basin water plan rather than GABORA.

In the absence of formally scheduled EVs, a generalised assessment under EPP Water can be conducted based on the character of the receiving environment. The Project area is located within a rural landscape that supports forestry, cropping and beef cattle grazing, and may therefore be characterised as a slightly to moderately disturbed ecosystem. In this context, the applicable EVs are:

- The biological integrity of an aquatic ecosystem with effectively unmodified biological indicators but slightly modified physical, chemical or other indicators
- Additional surface water EVs including stock water, farm supply/use, irrigation, secondary and visual recreation, and cultural and spiritual values.

6.3.1.1 Registered Bores

There are three registered sub-artesian monitoring bores (RN200266, RN200283, and RN200284) are located within the Project area (refer **Table 9**), all drilled in January 2023 for the Project using rotary air or auger methods. Each bore is constructed to a total depth of 30 m as per the proposed maximum depth of mining, with PVC casing from surface to 27 m and slotted/perforated casing from 27-30 m, gravel-packed and sealed with bentonite at approximately 26-26.5 m. The strata logs for all three bores are consistent, comprising topsoil (0-1 m), red clay (1-26 m), and red clay with sandy layers (26-30 m), with the screened interval intersecting the sandy horizon at the base of the profile. All bores did not intersect groundwater during installation.

Table 9. Registered Bores

Bore ID	Location	Status / Use	Depth (m)	Screened Interval (m)	Water Level (mbgl)	Water Quality (pH/EC)	Aquifer (OGIA)
RN200266	Lot 416, Plan FTY734	Existing - Monitoring & Water Supply	30	27-30	Not recorded (dry bore)	Not recorded (dry bore)	Metamorphic/Igneous/Old Basement Rocks
RN200283	Lot 30, Plan SP275031	Existing - Monitoring	30	27-30	Not recorded (dry bore)	Not recorded (dry bore)	Cenozoic Sediments
RN200284	Lot 56, Plan BON338	Existing - Monitoring	30	27-30	Not recorded (dry bore)	Not recorded (dry bore)	Metamorphic/Igneous/Old Basement Rocks

6.3.2 Potential Impacts

The proposed Activity comprises small-scale Stage 1 test pit mining, with a proposed disturbance footprint of approximately 6.39 ha and no requirement for groundwater extraction or sustained dewatering. As such, any potential impacts to groundwater are expected to be minimal and localised, and consistent with the requirements of the standard conditions of DEHP (2016).

Groundwater Levels

Any subsurface water unexpectedly encountered during excavation is expected to occur as minor, localised seepage within shallow strata associated with recent rainfall. Such seepage would be temporarily contained within pits or sumps and is not anticipated to result in any drawdown.

Groundwater Quality

Potential impacts to groundwater quality are limited to the risk of minor contamination from site activities, primarily:

- Hydrocarbons (fuels and oils) associated with plant and equipment
- Mobilisation of sediments from disturbed soils
- Infiltration of contaminated runoff

Given the absence of chemical processing, bulk fuel storage, or significant waste generation, the likelihood of contamination is low. Any impacts, should they occur, are expected to be minor, localised, and short-term.

Preferential Pathways

Excavation and disturbance of subsurface materials may create localised preferential pathways, potentially increasing connectivity between soil layers.

However, given the shallow extent of excavation and the generally consistent clay-rich soils across the Project area, the likelihood of establishing significant or persistent pathways is considered low. Any such effects are expected to be temporary and spatially limited.

Surface Water–Groundwater Interaction

Interaction between surface water and groundwater within the disturbance footprint is minimal due to the absence of permanent surface water features.

Ephemeral drainage lines are not expected to maintain sustained hydraulic connectivity with groundwater. As such, indirect impacts to groundwater via surface water pathways are considered negligible.

Groundwater Users

Given the absence of material drawdown and the limited scale of disturbance, groundwater users are not expected to be impacted, either in terms of water availability or quality, and will remain consistent with that allowed by the Standard Conditions of DEHP (2016).

Releases to the receiving environment

No releases of mine affected water to groundwater are proposed, as per the requirements of the standard conditions within DEHP (2016).

6.4 Air

6.4.1 Existing Environment

The Project is located within a regional landscape characterised by a mixture of freehold agricultural land, state forest, and existing resource extraction activities. Surrounding land uses are predominantly agricultural, including cattle grazing and cropping, alongside forestry operations and mining activities associated with the broader Binjour region.

Air quality environmental values within the Project area are considered typical of a rural region influenced by existing open cut mining activities, agricultural operations, and vehicular traffic along unsealed road networks.

Existing potential sources of particulate emissions within the surrounding environment include grazing and cropping activities on adjacent freehold land and associated haulage operations, sporadic traffic on unsealed rural roads including Swains Road, and smoke generated from bushfires or controlled burning within surrounding state forest and agricultural land.

The EPP Air prescribes air quality objectives to support these air quality EVs and the EP Act objectives in relation to air quality. Key air quality objectives of relevance to the Project activities and prescribed under the EPP Air (i.e., particulate matter and total suspended particles) are provided in **Table 10**.

Table 10. EPP Air - Air Quality Objectives

Indicator	Environmental Value	Air Quality Objectives $\mu\text{g}/\text{m}^3$	Averaging Period
PM ₁₀	Health and wellbeing	50	24 Hours
		25	Annual
PM _{2.5}	Health and wellbeing	25	24 Hours
		8	Annual
Total suspended particles (TSP)	Health and wellbeing	90	Annual

The *National Environment Protection (Ambient Air Quality) Measure* (NEPM Air) also establishes air quality objectives at a Commonwealth level. Relevant criteria for particulate matter are provided in **Table 11**.

Table 11. NEPM Air - Air Quality Objectives

Item	Averaging period	Maximum concentration standard
Particles as PM ₁₀	1 day	50 $\mu\text{g}/\text{m}^3$
	1 year	25 $\mu\text{g}/\text{m}^3$
Particles as PM _{2.5}	1 day	25 $\mu\text{g}/\text{m}^3$
	1 year	8 $\mu\text{g}/\text{m}^3$

6.4.2 Potential Impacts

The proposed Activity has potential to generate air emissions primarily in the form of dust (TSP, PM₁₀ and PM_{2.5}) and minor exhaust emissions from plant and equipment. Given the small scale,

of Stage 1 activities, impacts are expected to be localised and temporary, and will remain consistent with the allowances of the Standard Conditions of DEHP (2016).

Dust Generation

Dust may be generated from vegetation clearing, earthworks, vehicle movements on unsealed surfaces, and exposed soils. Dust generation is likely to increase during dry and windy conditions typical of the region.

Uncontrolled dust has the potential to cause minor, localised reductions in air quality, nuisance impacts, and dust deposition on nearby vegetation. However, due to the limited proposed disturbance footprint, predominance of disturbed land, impacts are expected to be low, consistent with the current conditions in the region and as permitted by the DEHP (2016). This will be ensured by implementing typical management measures including dust suppression during dry or windy conditions, and maximising the retention of vegetation cover or returning it as soon as possible.

Exhaust Emissions

Exhaust emissions from mobile plant and vehicles will include minor quantities of nitrogen oxide (NO_x), carbon dioxide (CO₂), carbon monoxide (CO), sulfur dioxide (SO₂) and particulate matter. These emissions will be intermittent and rapidly dispersed and are expected to be negligible.

6.5 Noise and Vibration

Similar to air quality, environmental values associated with noise are considered typical of a rural region associated with agriculture and transport along unsealed roads.

The environmental values prescribed by the *Environmental Protection (Noise) Policy 2019* (EPP Noise) are:

the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; and

the qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following—

i) sleep;

ii) study or learn;

iii) be involved in recreation, including relaxation and conversation; and

the qualities of the acoustic environment that are conducive to protecting the amenity of the community.

6.5.1 Existing Environment

No blasting is proposed to occur and no noise or vibration impacts to environmental values prescribed by the EPP Noise are proposed beyond those permitted by the Standard Conditions of DEHP (2016). This will be ensured by implementing typical management measures including

keeping hours of operation to between 7am to 6pm from Monday to Saturday, maintaining equipment according to manufacturer specifications, and installing mufflers of machinery where practicable.

6.5.2 Potential Impacts

Project activities with potential to result in minor noise and vibration impacts include:

- Movement of construction traffic
- Operation of drilling equipment and associated machinery
- Temporary vehicle and equipment idling during setup and relocation

Routine management measures to avoid or minimise noise emissions are proposed in **Section 7**.

6.6 Waste

All waste will be temporarily disposed of in designated and appropriate storages prior to offsite disposal/recycling at licenced facilities. The EP Reg specifies three categories of waste:

- Category 1 regulated waste (highest risk) and includes containers with residue of the regulated waste
- Category 2 regulated waste (moderate risk) is any regulated waste that is not category 1 i.e. wholly the regulated waste and not residue- contaminated containers or material
- Not-regulated waste/ general waste (lowest risk).
- The Activity is limited to small-scale test pit mining and associated minor infrastructure (e.g. access tracks, RoM pad and hardstand areas) and is therefore expected to generate relatively minor quantities of waste.

Waste generated during the Activity may include:

- General waste associated with site operations and personnel
- Oily rags, absorbent materials and used spill kits from plant and equipment maintenance
- Minor quantities of hydrocarbons and chemical residues
- Water collected from incidental rainfall or pit dewatering, managed onsite through controlled discharge or infiltration

'Mine waste' associated with the ERA approved by the Variation EA will be limited to overburden, which will be managed as described in **Section 4**.

6.6.1 Potential Impacts

Potential impacts associated with waste management are considered to be low and are primarily related to the inappropriate storage, handling or disposal of waste materials.

Potential impacts may include:

- Contamination of soil and surface water from accidental spills or improper disposal of hydrocarbons or regulated waste
- Attraction of pest species due to improper storage of general waste
- Localised impacts to visual amenity from unmanaged waste

Given the small scale of the Activity, the quantity of waste generated is expected to be minimal. Waste-related impacts are therefore anticipated to be minor and localised.

Appropriate waste management measures will be implemented to minimise potential impacts, including the use of designated waste storage areas and removal of waste from site for disposal at licensed facilities (refer **Section 7**)

6.7 Greenhouse Gas

The proposed Activity comprises small-scale Stage 1 test pit mining and does not introduce new or materially different sources of greenhouse gas emissions compared to existing agricultural activities.

Greenhouse gas emissions associated with the Activity will be limited to minor fuel use from plant and equipment and vehicle movements during construction and operation.

Given the limited scale, short duration and low intensity of the Activity, greenhouse gas emissions are expected to be negligible. Accordingly, a greenhouse gas inventory is not required for this application.

7 Management Measures

The Applicant will commit to a range of measures to minimise impacts to the EVs associated with the Activity and maintain compliance with the Eligibility Criteria and Standard Conditions of DEHP (2016), as identified in **Section 5**. Proposed mitigation measures to reduce impacts to EVs are presented in **Table 12**.

Table 12. Mitigation Measures

Management Measure		Timing
Terrestrial Ecology and ESAs	Restrict vegetation clearing to only non-remnant or highly disturbed regrowth within the proposed disturbance footprint, with boundaries clearly demarcated prior to works	Prior to and during clearing
	Avoid disturbance to remnant vegetation, high value regrowth, or Category B ESAs	Pre-work
	Undertake pre-disturbance inspections by a suitably qualified fauna spotter-catcher and safely relocate any salvaged fauna to appropriate nearby areas	Pre-work
	Implement staged or directional disturbance to allow fauna to disperse	During works
	Progressively rehabilitate disturbed areas	
	Enforce low vehicle speeds within the Project area to reduce fauna strike risk	
	Site induction to include environmental protection responsibilities	
	Implement vehicle and equipment hygiene measures to prevent the spread of weeds	
	Monitor and manage any weed establishment caused by the Activity	
	Indirect impacts to surrounding ecological values outside the disturbance footprint will be minimised or avoided as per DEHP (2016) through the above and below measures	
Surface Water	Spill kits will be kept onsite, and staff trained in their use	
	Store regulated wastes, hazardous chemicals, corrosive substances, toxic substances, gases or dangerous goods in designated impervious and bunded areas away from waterways as per the relevant Australian Standard	
	Any captured water will be drained to a constructed sump within pit. Water contained within the sump will be allowed to infiltrate or evaporate prior to the sump being backfilled	
	Undertake the Activity as a no release operation, with no releases of mine affected water to the receiving surface water environment	
	Install erosion and sediment controls prior to disturbance	
	Maintain natural drainage patterns where practicable	
	Avoid unnecessary disturbance to ephemeral drainage lines	
	Where waterway crossings are needed, only install bed level crossings with stabilising measures where needed to avoid impacts to flow and fish passage, and minimise the generation of sediment laden water	
	Keep mining activities and soil, RoM or overburden stockpiles away from drainage lines as per DEHP (2016)	
Groundwater	Maintain a shallow depth of mining (to only 30m bgl)	
	Any captured water will be drained to a constructed sump. Water contained within the sump will be allowed to infiltrate or evaporate prior to the sump being backfilled	

	Undertake the Activity as a no release operation, with no releases of mine affected water to the receiving surface water environment	
	Where overburden is required to be removed, it will be returned to within the pits to assist with backfilling and recontouring to manage drainage and rehabilitation outcomes	
Air Quality, Noise and Vibration	Maximise the retention of vegetation cover in work areas or return it as soon as possible through progressive rehabilitation	
	Undertake watering of roads and work areas as appropriate to minimise dust emissions during dry or windy conditions	
	Limit vehicle speeds on unsealed private roads, particularly in the vicinity of sensitive receptors	
	Avoid blasting activities	
	Limit the hours of operation to between 7am to 6pm from Monday to Saturday	
	Appropriately qualified and experienced plant operators	
	Plant and equipment maintained as per manufacturer specifications and undertake pre-start inspections prior to use	
	Installing mufflers of machinery where practicable	
Waste	All non-mining waste will be temporarily stored in designated areas away from waterways prior to removal for off-site disposal at a licenced facility	
	Waste tracking records will be kept for all regulated wastes generated in accordance with the relevant EP Act/EP Reg requirements	
Greenhouse Gas	The proposed activities are small-scale and short duration, emissions expected to be negligible and below reporting thresholds	
	Use fuel-efficient, well-maintained equipment, and minimise unnecessary idling	

7.1 Mine rehabilitation

Rehabilitation of disturbance caused by the Activity will be consistent with DEHP (2016) and include the following key components:

- Stripping & Salvage (pre-mining):
 - Slash and mulch vegetation, retain on-site for later spreading
 - Strip and separately stockpile topsoil (including organic litter layer)
 - Strip and stockpile subsoil separately
 - Stockpile heights kept low (<2m for topsoil) to avoid compaction and anaerobic conditions
- Pit Rehabilitation:
 - Backfill excavations with overburden to as close to original profile as possible
 - Segregate and cap with subsoil then topsoil in correct horizon order
 - Rip compacted surfaces to minimum 300mm depth prior to topsoil placement
- Landform Works:
 - Grade final surface to match surrounding topographic contours as far as practicable
 - Re-establish drainage and swales
 - Construct contour banks or cross-drains where slopes require it
 - Remove or tie in any tracks no longer required

- Erosion & Sediment Control:
 - Install sediment barriers at downslope margins until groundcover established
 - Mulch on exposed surfaces pending revegetation
 - Spread coarse woody debris across rehabilitated surface to reduce runoff velocity
- Topsoil & Seed Reinstatement:
 - Direct return of topsoil immediately after landform works where operationally possible
 - Spread retained mulch/slash over returned topsoil
 - Seed with local native seed mix matched to pre-Activity vegetation community
- Revegetation Establishment:
 - Spot plant native shrubs/trees where direct seeding unlikely to achieve structural target and if required to achieve pre-mining activity conditions
 - Weed inspections and controlling measures as required due to impacts caused by the Activity
 - Watering of plantings only where necessary, avoid creating weed-conducive conditions, otherwise rely on seasonal rainfall and timing rehabilitation works accordingly
- Ongoing Monitoring, Maintenance and Reporting:
 - Monitoring, maintenance and reporting to meet the minimum requirements of DEHP (2016) and the EP Act for the proposed scale of mining activities under a Variation EA

8 Environmental Risk Assessment

8.1 Method

A risk assessment was undertaken to determine the potential for the Activity to impact on the environment using a quantitative assessment of the scale and magnitude of risks associated with the Activity. A risk matrix was used to determine the likelihood and consequence of potential impacts.

'Likelihood' is defined as the chance that something might happen, refer **Table 13**

'Consequence' is defined as the outcome of an event which may have the potential to change the existing EVs, refer **Table 14**. A likelihood and consequence score are generated for each hazard, which combine to determine the category of risk (high, medium, or low), refer **Table 15**. The residual risk score should be as low as reasonably practicable (**Table 16**).

Table 13. Categories of Likelihood

Value	Category	Description
5	Almost Certain	May occur several times per year or is expected to occur
4	Likely	May occur about once per year or more likely to occur than not occur.
3	Possible	Could occur more than once during a lifetime or more likely to occur as not to occur.
2	Unlikely	Could occur about once during a lifetime or more likely not to occur than to occur.
1	Rare	Unlikely to occur during a lifetime or very unlikely to occur.

Table 14. Categories of Consequence

Value	Category	Description
5	Catastrophic	Permanent environmental damage: remediation will take more than 5 years to remediate or remediation costs exceed \$500,000.
4	Major	Long term environmental impact. Remediation between 1-5 years or costs between \$50,000 and \$500,000.
3	Moderate	Medium-term environmental damage. Remediation will be between 2 months and 1 year or cost between \$10,000 and \$50,000.
2	Minor	Short-term environmental impact. Remediation will take less than 2 months or cost less between \$5,000 and \$10,000. No lasting environmental damage.
1	Negligible	No environmental impact. Remediation costs less than \$5,000 or requires minor or no remediation.

Table 15. Likelihood and Consequence Matrix

		Consequence				
		1	2	3	4	5
Likelihood	5	High	High	Critical	Critical	Critical
	4	Moderate	High	High	Critical	Critical
	3	Low	Moderate	High	High	Critical
	2	Low	Low	Moderate	High	High
	1	Low	Low	Low	Moderate	Moderate

8.2 Risk Assessment

Potential impacts, management measures and risk assessments for each environmental value relevant to the Activity are detailed in **Table 16**. Following implementation of the proposed management measures, all risks have a residual rating of 'low', indicating the measures can effectively mitigate the risk of potential impacts associated with this application.

Table 16. Risk Assessment

Aspect	Activity	Potential Impact	Inherent Risk			Proposed Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Terrestrial Ecology and ESAs	- Vegetation clearing - Excavation - Site establishment	Loss of fauna habitat and direct impacts to conservation significant species from vegetation clearing and land disturbance	1	3	Low (3)	- Restrict vegetation clearing to only non-remnant or highly disturbed regrowth within the proposed disturbance footprint, with boundaries clearly demarcated prior to works - Avoid disturbance to remnant vegetation, high value regrowth, or Category B ESAs - Undertake pre-disturbance inspections by a suitably qualified fauna spotter-catcher and safely relocate any salvaged fauna to appropriate nearby areas - Implement staged or directional disturbance to allow fauna to disperse - Progressively rehabilitate disturbed areas - Enforce low vehicle speeds within the Project area to reduce fauna strike risk - Site induction to include environmental protection responsibilities - Implement vehicle and equipment hygiene	1	1	Low (1)
		Habitat fragmentation and reduced wildlife connectivity from clearing and land disturbance	1	3	Low (3)		1	1	Low (1)
		Fauna strike or mortality from increased vehicle movements	2	3	Moderate (6)		1	3	Low (3)
		Spread of invasive weeds and pest animals from vehicle movements and ground disturbance	3	3	High (9)		1	3	Low (3)

Aspect	Activity	Potential Impact	Inherent Risk			Proposed Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
						measures to prevent the spread of weeds • Monitor and manage any weed establishment caused by the Activity • Indirect impacts to surrounding ecological values outside the disturbance footprint will be minimised or avoided as per DEHP (2016) through the above and below measures • Undertake progressive and final rehabilitation as per the requirements of DEHP (2016) and the EP Act			
Surface Water	• Excavation • Soil disturbance • Access track construction • Hydrocarbon use	Hydrocarbon or chemical spill from plant/equipment contaminating surface water or drainage lines	3	3	High (9)	• Spill kits will be kept onsite, and staff trained in their use • Store regulated wastes, hazardous chemicals, corrosive substances, toxic substances, gases or dangerous goods in designated impervious and bunded areas away from waterways as per the relevant Australian Standard • Any captured water will be drained to a constructed sump within pit. Water contained within the sump	1	3	Low (3)
		Erosion and off-site sedimentation from exposed soils impacting downstream water quality	2	3	Moderate (6)		1	3	Low (3)
		Disturbance to Stream Order 1 watercourse crossed by Meyer South Pit access track	1	2	Low (2)		1	2	Low (2)
		Release of mine affected water to waterways	2	3	Moderate (6)		1	3	Low (3)

Aspect	Activity	Potential Impact	Inherent Risk			Proposed Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
						will be allowed to infiltrate or evaporate prior to the sump being backfilled - Undertake the Activity as a no release operation, with no releases of mine affected water to the receiving surface water environment - Install erosion and sediment controls prior to disturbance - Maintain natural drainage patterns where practicable - Avoid unnecessary disturbance to ephemeral drainage lines - Where waterway crossings are needed, only install bed level crossings with stabilising measures where needed to avoid impacts to flow and fish passage, and minimise the generation of sediment laden water - Keep mining activities and soil, RoM or overburden stockpiles away from drainage lines as per DEHP (2016)			
Groundwater	Excavation	Hydrocarbon or chemical release contaminating shallow groundwater	3	3	High (9)	Maintain a shallow depth of mining (to only 30m bgl)	1	3	Low (3)

Aspect	Activity	Potential Impact	Inherent Risk			Proposed Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
	Hydrocarbon and chemical use	Groundwater interception during excavation causing localised drawdown	1	3	Low (3)	- Any captured water will be drained to a constructed sump. Water contained within the sump will be allowed to infiltrate or evaporate prior to the sump being backfilled - Undertake the Activity as a no release operation, with no releases of mine affected water to the receiving surface water environment - Where overburden is required to be removed, it will be returned to within the pits to assist with backfilling and recontouring to manage drainage and rehabilitation outcomes	1	2	Low (2)
		Release of mine affected water to groundwater	2	3	Moderate (6)		1	3	Low (3)
Land	- Excavation - Hydrocarbon and chemical use	Degradation or contamination of soil through inadequate erosion control and/or the release of hazardous substances or materials	3	3	High (9)	- Spill kits will be kept onsite, and staff trained in their use - Store regulated wastes, hazardous chemicals, corrosive substances, toxic substances, gases or dangerous goods in designated impervious and bunded areas as per the relevant Australian Standard - Install erosion and sediment controls prior to disturbance	1	3	Low (3)

Aspect	Activity	Potential Impact	Inherent Risk			Proposed Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
						Undertake progressive and final rehabilitation as per the requirements of DEHP (2016) and the EP Act			
Air Quality, Noise and Vibration	All Activities	Dust emissions from clearing, excavation, stockpiling and haulage affecting local air quality	2	1	Low (2)	Maximise the retention of vegetation cover in work areas or return it as soon as possible through progressive rehabilitation	2	1	Low (2)
		Combustion emissions from diesel plant and equipment impacting air quality	2	1	Low (2)	Undertake watering of roads and work areas as appropriate to minimise dust emissions during dry or windy conditions	1	1	Low (1)
		Noise from plant, equipment and vehicles affecting the acoustic environment	2	1	Low (2)		2	1	Low (1)
		Ground vibration from excavation causing nuisance to nearby infrastructure	2	1	Low (2)	- Limit vehicle speeds on unsealed private roads, particularly in the vicinity of sensitive receptors - Avoid blasting activities - Limit the hours of operation to between 7am to 6pm from Monday to Saturday - Appropriately qualified and experienced plant operators - Plant and equipment maintained as per manufacturer specifications and undertake pre-start inspections prior to use - Installing mufflers of machinery where practicable	1	1	Low (1)

Aspect	Activity	Potential Impact	Inherent Risk			Proposed Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Waste	All Activities	Inappropriate waste disposal or storage causing environmental degradation	3	3	High (9)	- All non-mining waste will be temporarily stored in designated areas away from waterways prior to removal for off-site disposal at a licenced facility - Waste tracking records will be kept for all regulated wastes generated in accordance with the relevant EP Act/EP Reg requirements	1	3	Low (3)
Greenhouse Gas	All Activities	GHG emissions (CO ₂ , CH ₄) from diesel combustion in plant, equipment and vehicles	2	1	Low (2)	- The proposed activities are small-scale and short duration, emissions expected to be negligible and below reporting thresholds - Use fuel-efficient, well-maintained equipment, and minimise unnecessary idling	1	1	Low (1)

9 Conclusion

ABx seeks a variation EA to authorise the proposed activities that will support the mining of bauxite, a strategically important mineral for Queensland, national and global economies. The Project will be undertaken in compliance with the Eligibility Criteria and all Standard Conditions of DEHP (2016), with the exception of A13 (which is the subject of this variation EA application). While the proposed disturbance footprint avoids any direct impacts to Category B ESAs, the Project will involve activities within 1 km of a Category B ESA, which therefore requires a variation condition as proposed in this application. Indirect impacts to the Category B ESA are not expected based on the low-risk nature of the activities and mitigation measures proposed inline with the broader Standard Conditions of DEHP (2016).

Potential impacts to all environmental values associated with the Project have been assessed, with suitably proportional detail provided for each value based on the nature of the application (a Variation EA related to Standard Condition A13), in accordance with s125 (2) of the EP Act. On this basis a detailed terrestrial ecology assessment is provided **Appendix A**.

This environmental assessment has found that Project impacts to environmental values will be minor and readily mitigated. This includes impacts to terrestrial ecological values, noting that the entire proposed disturbance footprint has been previously cleared and has been field validated as non-remnant vegetation. There will be no significant residual impacts to MNES or MSES.

The risk assessment has found that following implementation of the proposed management measures, all risks have a residual rating of 'low', indicating the measures can effectively mitigate the risk of potential impacts associated with this application.

Accordingly, and as described in this report, this application meets the definition of a Variation EA application under s123 of the EP Act, and provides justification for the proposed variation condition.

10 References

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Appendix A Ecology Report



A Montrose Environmental Company

ABx3 Pty Ltd

Sunrise Bauxite – Ecological Assessment Report - Variation EA

Binjour

BAA250181.01

24 April 2026

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1 INTRODUCTION

ABx3 Pty Ltd (ABx) is proposing to develop the Sunrise Bauxite Project (the Project) within Mining Lease Application (MLA) 100277 (the site). The Project will be located approximately 15 kilometres (km) northwest of the town of Gayndah, and 115 km southwest of Bundaberg. MLA 100277 is located on freehold and state forest land, including agricultural and forestry land uses, with a mixture of remnant, regrowth and non-remnant vegetation.

Epic Environmental Pty Ltd (Epic) has been engaged by ABx to undertake an assessment of the terrestrial ecology values, including Matters of National Environmental Significance (MNES), Matters of State Environmental Significance (MSES) and Environmentally Sensitive Areas (ESAs), in the vicinity of the proposed pit areas for the initial small scale mining phase of the Project. This assessment is to support a planned Variation Environmental Authority (EA) application.

1.1 Background

At full scale, the Project is planned to produce between 0.5 and 1.2 million tonnes (Mt) per year of gibbsite rich trihydrate bauxite over 10 to 20 years and will include a port precinct and off-loading facility at the Port of Bundaberg. Bauxite resources at Binjour total approximately 37 Mt, requiring only screening and sorting to generate a marketable product. Full production will not exceed a threshold of 1.2 Mt per year run of mine (ROM) and product minerals.

Following constraints analysis and advice provided by Epic Environmental Pty Ltd (Epic), ABx intends to secure the approvals for the mine component of the project in two stages, i.e. Stage 1 – initial test pit mining and Stage 2 - full scale mining. The purpose is to facilitate initial mining at the project under lower levels of regulatory assessment and associated timelines, with the primary environmental approval being a Variation EA under the *Environmental Protection Act 1994* (EP Act) and *Eligibility criteria and standard conditions for mining lease activities—Version 2* (DEHP 2016).

A Standard EA application has been accepted as ‘properly made’ for MLA 100277 by the Department of the Environment, Tourism, Science and Innovation (DETSI), and is now at the public notification stage (along with the MLA). However given the very limiting nature of this EA, the current Standard EA application is planned to be changed to a Variation EA over the coming months. The Variation EA will continue to enforce the eligibility criteria of DEHP (2016) (e.g. maximum of 10 ha disturbance) however will relax some of the standard conditions, particularly those related to activities permitted within 1 km of a Category B ESA (**Appendix C**)¹. This will allow Stage 1 of the project to commence earlier than the timeframes and extensive technical studies required to secure a Site-Specific EA for subsequent full-scale mining (Stage 2).

Stage 1 of the Project will involve the construction of small mine pits in appropriate areas, for the extraction of Bauxite (**Figure 1**), plus associated access tracks, run-of-mine (ROM) pad and hardstand areas (Disturbance footprint). Proposed mine pits comprise of the following:

- Slacks North Pit (Pit_625_631) and Slacks South Pit (Pit_625_631)
- Whordley Pits (Pit_053, Pit_177, Pit_078, Pit_079)
- Meyer North Pit (Pit_396), Meyer South Pit (Pit_484)
- State Forest Pit (Pit_351_6033_508)

The Study area relevant to this assessment encompasses the Disturbance footprint plus a buffer for potential ancillary disturbance. The Study area constitutes a total area of 16.17 ha (the Study area) (**Figure 1**).

1.2 Scope and Purpose of Assessment

Epic conducted a previous field survey across the site in May and December 2022 to ground-truth vegetation and verify fauna habitat values (the 2022 survey). The field survey covered approximately two thirds of the site due to access restrictions preventing assessment of the entire site at the time of surveys.

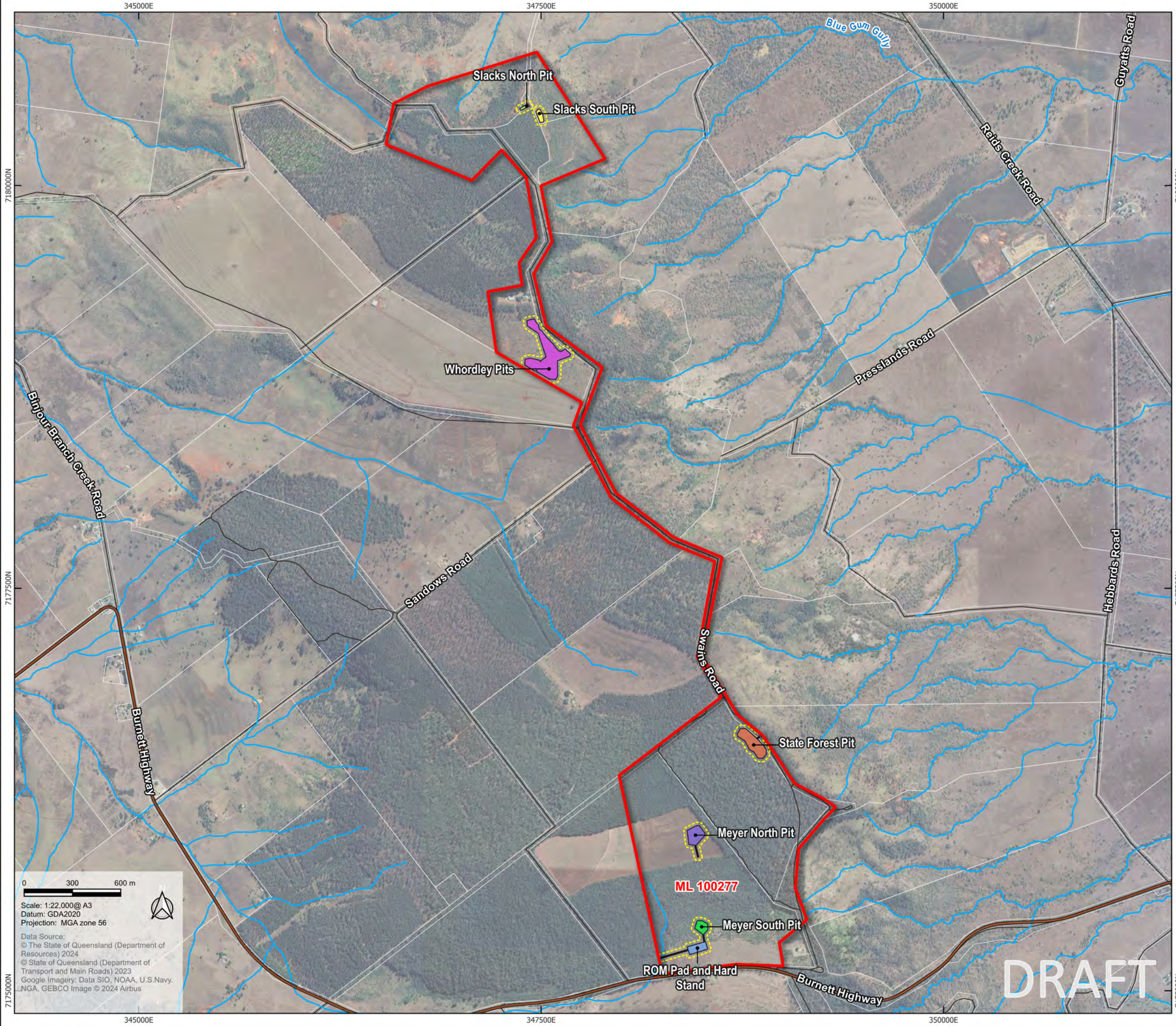
¹ Note the maps in the Appendix show a superseded boundary for the MLA.

An additional field survey was carried out in January 2026 to assess proposed pit locations (the 2026 survey). The following assessment incorporates data from ecological surveys conducted by Epic in both 2022 and 2026, as well as aerial imagery where recent site observations were not possible. To support the assessment of ecological values within the site and conclusions made in the impact assessments, aerial imagery from the following databases was reviewed:

- Queensland Globe (DNRMMRRD 2026)
- QImagery (DNRMMRRD 2025)
- Google Earth Pro (Google Earth v7.3.7.1094).

The purpose of this report is to summarise the findings of the ground-truthing surveys, identify potential environmental constraints relevant to the proposed mine pits, and undertake a self-assessment of potential significant impacts to environmental values. This includes the following:

- An ecological constraints assessment, including desktop and field survey components
- Verification of the mapping of Regional Ecosystems (REs) that support ESAs to inform the ability to proceed with the Project under a Variation EA
- A self-assessment of the likelihood of significant impacts to MNES and significant residual impacts to MSES. This will assist ABx to determine potential triggers for requiring a Site-specific EA for offset significant impacts to MSES under the *Queensland Nature Conservation Act 1992* (NC Act) and/or referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)



- Legend**
- Site boundary
 - Study area
 - Cadastre (DCDB)
 - Roads and tracks
 - State controlled roads
 - Watercourse**
 - Minor
 - Disturbance footprint**
 - Access Track
 - Meyer North Pit
 - Meyer South Pit
 - ROM Pad and Hard Stand
 - Slacks North Pit
 - Slacks South Pit
 - State Forest Pit
 - Whordley Pits

**ABx Group
Binjour, QLD
Ecological Assessment Report**

Figure 1
Project location and Study areas

2 RELEVANT LEGISLATION

2.1 Commonwealth Legislation

2.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The Commonwealth EPBC Act is the key piece of Commonwealth legislation governing environmental protection in Australia. Administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW), the EPBC Act defines and protects nine MNES including:

- World heritage properties
- National heritage places
- Wetlands of international importance (listed under the Ramsar Convention)
- Listed threatened species and ecological communities
- Migratory species protected under international agreements
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear actions (including uranium mines)
- A water resource in relation to coal seam gas development and large coal mining development.

Under Part 3 of the EPBC Act, a person must not undertake an action (e.g. a project, a development, an undertaking, an activity or a series of activities, or an alteration of any of these things) that will have, or is likely to have, a significant impact on a protected matter, without approval from the Minister. If after all reasonable avoidance and mitigation measure have been taken, there is still a residual impact on a protected matter, an offset may be required where the impact is, or is likely to be, significant.

2.1.2 *EPBC Environmental Offsets Policy 2012*

The EPBC Act *Environmental Offsets Policy October 2012* (EOP) provides upfront guidance on the role of offsets in environmental impact assessments, and how DCCEEW considers the suitability of a proposed offset. The EOP aims to improve environmental outcomes through the consistent application of best practice offset principles, provide more certainty and transparency, and encourage advanced planning of offsets.

2.2 Queensland State Legislation

2.2.1 *Environmental Protection Act 1994*

The *Environmental Protection Act 1994* (EP Act) and supporting regulations and policies are the primary legislative requirements applicable to management of petroleum activities undertaken on a PL. The intent of the EP Act is to provide a legislative framework for safeguarding the environment whilst promoting sustainable development within Queensland, by establishing mechanisms for the avoidance or minimisation of environmental harm, as well as the licencing of environmental harm according to conditions of approval.

2.2.1.1 **General Environmental Duty**

A key aspect of the EP Act is the General Environmental Duty (GED) (EP Act Section 319), which applies to all individuals and organisations in Queensland, including ABx and its employees and contractors. The GED requires that:

- *A person must not carry out any activity that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable measures to prevent or minimise the harm.*

2.2.1.2 **Environmental Authority**

Activities undertaken on a ML are regulated by an EA, which includes constraints on the location and type of disturbance, and the authorised Environmentally Relevant Activities (ERAs). With respect to constraints considered in this report, the key matters that will limit the location of the Project include Environmentally Sensitive Areas (ESAs) and their protection zones and impacts to watercourses.

2.2.2 Environmental Offsets Act 2014 and Environmental Offset Regulation 2014

The *Environmental Offsets Act 2014* (EO Act) is intended to counterbalance significant residual impacts of particular activities on prescribed environmental matters by way of environmental offsets. This is achieved primarily through establishment of a framework for environmental offsets, recognition of protection given to prescribed environmental matters under other legislation, provision for National, State and local matters of environmental significance to be prescribed environmental matters, and coordination of implementation of the framework in conjunction with other legislation. The purpose of the *Environmental Offset Regulation 2014* (EO Regulation) is to compensate for unavoidable impacts on prescribed environmental matters. Prescribed environmental matters include MSES and are defined in Schedule 2 of the EO Reg.

The *Queensland Environmental Offsets Policy* (QEOP) provides decision support for the assessment of offset proposals to ensure they satisfy offset conditions and meet the requirements of the EO Reg. Offsets may be delivered as either a financial settlement or as a land-based offset. Financial settlement will be paid to the State's offset account, which is managed by the Department of the Environment, Tourism, Science and Innovation (DETSI), who will coordinate the on-ground delivery. However, local governments will be encouraged to collaborate with the state to identify suitable offset areas.

2.2.3 Nature Conservation Act 1992

The NC Act regulates environmental impacts of development through the requirement for vegetation clearing permits, species management programs and other permits. A clearing permit is required to clear protected plants unless an exemption applies. In general, clearing of Critically Endangered, Endangered, Vulnerable or Near Threatened plants will require a clearing permit. Clearing permit applications are assessed on a case-by-case basis and approvals will be subject to conditions. Where activities involve tampering with animal breeding places, the tampering may need to be authorised by application to the DETSI through an approved species management program.

2.2.4 Vegetation Management Act 1999

The *Vegetation Management Act 1999* (VM Act) regulates the clearing of regulated vegetation in Queensland. The VM Act aims to conserve Queensland's biodiversity through vegetation management. The VM Act provides a framework for identification, description, classification and mapping of remnant and high-value regrowth (HVR) vegetation communities (listed as Regional Ecosystems (REs)), essential habitat (for conservation significant flora and fauna) and wetland areas.

The approval requirements of the VM Act do not apply to activities authorised through a resource tenure (including an ML) under the *Mineral Resources Act 1989*. However, the status and mapping of environmental values such as REs, essential habitat and wetlands under the VM Act is used to determine the presence of MSES as per the EO Regulation, e.g. Endangered and/or Of Concern REs listed as Category B vegetation (remnant) are regulated vegetation (an MSES). Remnant vegetation is defined as a vegetation community that has not been cleared or has significantly regenerated, having a dominant canopy layer with a height over 70% of the relevant benchmark, cover over 50% of the relevant benchmark, and comprised of species characteristic listed in a prescribed RE.

Category C vegetation (HVR) and Category R vegetation (regrowth watercourse vegetation in the Great Barrier Reef catchment) are not classified as MSES. Other specific area categories mapped under the VM Act (such as essential habitat and wetland areas) are also classified as MSES and will be subject to a significant residual impact (SRI) assessment where vegetation clearing is required.

3 ASSESSMENT METHODOLOGY

3.1 Desktop Assessment

Prior to the 2026 field survey, a desktop assessment was completed to identify species and ecological communities of conservation significance (both MNES and MSES) that potentially occur within the Study area. The Study area is defined as the pit areas plus a sufficient buffer area to allow for access tracks and other relevant infrastructure, as described in **Section 1.2**. Flora and fauna values of conservation significance in this report refer to:

- Flora and fauna species listed as Critically Endangered, Endangered or Vulnerable under the EPBC Act
- Flora and fauna species listed as Critically Endangered, Endangered, Vulnerable or Near Threatened under the NC Act
- Threatened Ecological Communities (TEC) listed under the EPBC Act
- REs listed as Endangered or Of Concern under the VM Act (for MSES)
- ESAs under the *Environmental Protection Regulation 2019*, including REs listed as Endangered Biodiversity Status (for Category B ESAs)
- Fauna species listed as Migratory under the EPBC Act due to their inclusion under one or more of the following:
 - Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention)
 - China-Australia Migratory Bird Agreement (CAMBA)
 - Japan-Australia Migratory Bird Agreement (JAMBA)
 - Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Flora and fauna species that are listed under the EPBC Act and/or NC Act as Critically Endangered, Endangered, Vulnerable, Near Threatened or Migratory are referred to as conservation significant species.

3.1.1 Data Sources

Flora and fauna records listed in publicly available databases and other resources were investigated to identify species that are likely to inhabit the Study area and environmental values that may occur. These resources included:

- Wildlife Online database search results administered by the DETSI
- Atlas of Living Australia (ALA), a web-based search tool that is a partnership between CSIRO, Australian museums, herbaria and other biological collections, and the Australian Government (ALA 2026)
- Protected Matters Search Tool (PMST) (DCCEEW 2026a)
- MSES mapping administered by DETSI
- Department of Resources (DoR) Regulated Vegetation Management Map and Vegetation Management Supporting Map Version 13.0, including REs, essential habitat, watercourse and wetland mapping (DoR 2024)
- Regional Ecosystem Description Database (REDD) Version 13.1 (Queensland Herbarium 2024)
- Maps of ESAs administered by DETSI.

Database searches were completed for a specified point, set by central coordinates of -25.5095, 151.4849, with a 10 km buffer.

3.1.2 Data Limitations

Data sources have variable reliability. Wildlife Online data recently collected is subject to a vetting process and is generally considered to be of high quality. Historical records may no longer be relevant if land use and vegetation cover have changed markedly, or species distribution has contracted substantially. Therefore, only records since 1980 are included in the desktop assessment. It is possible to search species profiles for many species and download spatial data to map records. Some threatened species are considered 'sensitive' due to the threat of illegal collection or disturbance and their records are not available. However, less than half the

data held in WildNet are available to the public and there may be substantial discrepancies between the number of records within a selected radius and the number of records for which details are available.

The ALA provide coordinates, often of high precision. Unfortunately, a proportion of ALA records are unreliable, either being misidentifications or even the submission of a captive animal record. In addition to records submitted directly to ALA, it also includes much of the data in WildNet, OZCAM, *eBird* and *Birdlife Australia's* Atlas data.

The Protected Matters Search Tool (DCCEEW 2026a), which generates a Protected Matters Report (PMR), is largely based on species records, however it still relies on predictive modelling of suitable habitats and does not necessarily reflect an actual record of the species in question for a particular location. In some instances, it generates predictions of species for which there are no records, including historical, based on habitat.

3.1.3 Nomenclature and Taxonomy

The common names of many flora and fauna species frequently vary between regions, and many species lack them altogether. Taxonomy of flora presented in this report follows that currently endorsed by the Queensland Herbarium in the Census of Queensland Flora and Fungi 2023 (Queensland Herbarium 2023). The taxonomy of fauna follows the Australian Faunal Directory (ABRS 2026). In this report, flora and fauna species are referred to initially by both their common and scientific names and then for ease of reading, only by their common name (where the species has a common name).

3.2 Ecological Survey

3.2.1 Survey Timing and Conditions

3.2.1.1 2022

Epic conducted a field survey throughout the site in 2022, including both flora and fauna assessments (Epic 2022). These surveys were carried out across two site visits, in May and December and consisted of vegetation mapping and verification of fauna habitat values. Results from these field surveys have been incorporated into the following sections where necessary to support the assessment of ecological values within the site.

3.2.1.2 2026

The 2026 field survey was completed over a four-day period during 19 – 22 January 2026 (the 2026 survey). The Gayndah Airport weather station (039066) provides the closest continuous weather data. Weather conditions were warm and mostly dry with a maximum temperature of 33.7 degrees Celsius (°C) and minimum temperature of 17.8 °C (Bureau of Meteorology (BOM) 2026). No rainfall was recorded during the surveys, however 60.8 millimetres (mm) was recorded in the 24 hours leading up to the survey.

3.2.2 Survey Personnel

The ecological survey was completed by Principal Ecologist, Peter Black with support from Consultant Ecologist, Danielle Cox. Peter is an experienced ecologist with expertise regarding surveying and mapping vegetation communities across Queensland and is suitably qualified to complete fauna and flora surveys in accordance with Queensland legislation.

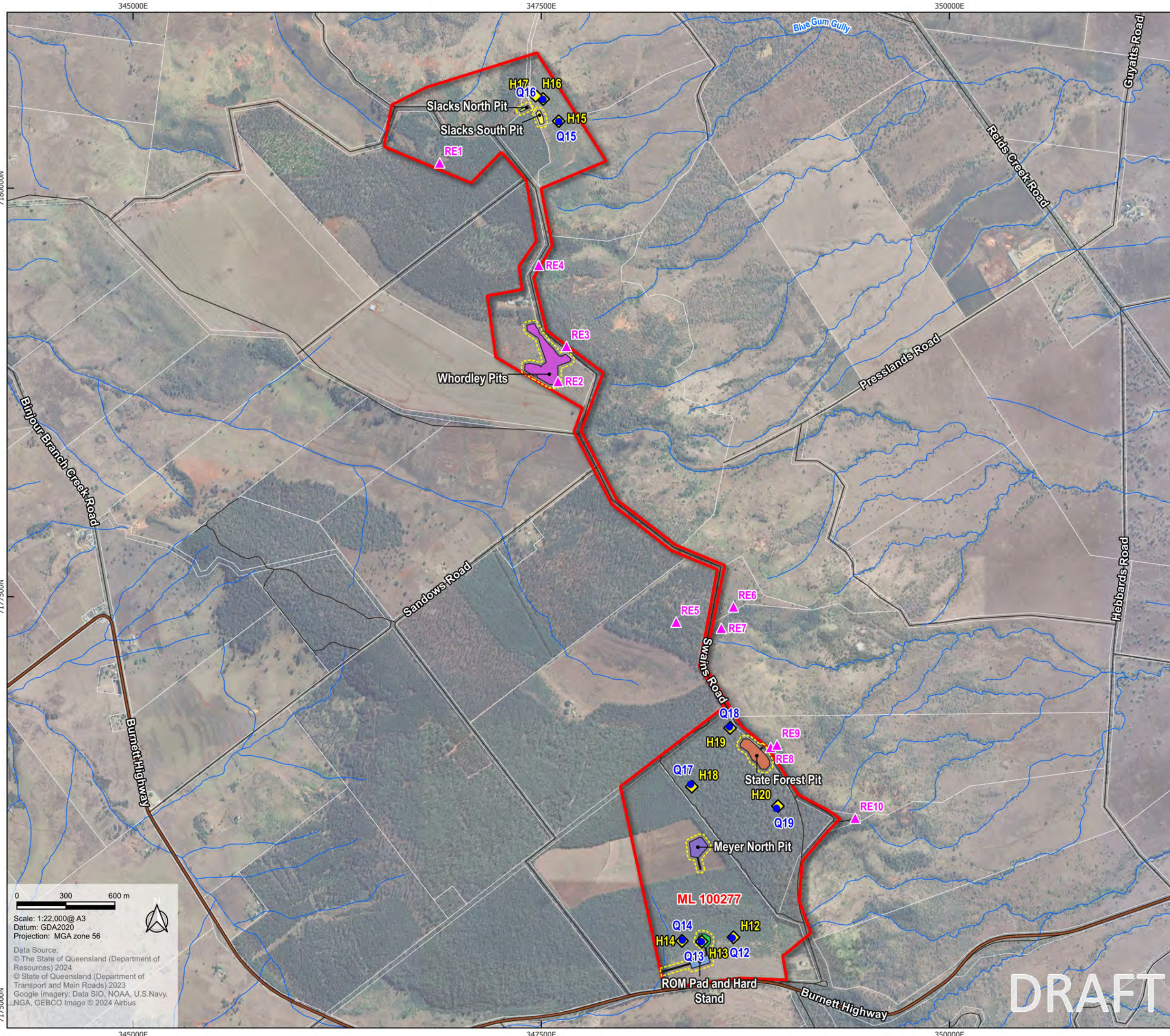
3.2.3 Vegetation and Habitat Survey

Vegetation and habitat surveys were completed across the Study area and within the broader area of the MLA (Figure 2).

Vegetation communities within the Study area were classified by RE type and verified in accordance with *Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland Version 7.0* (Neldner et al. 2023) and later mapped in QGIS Geographic Information System 2014. Quaternary RE assessments were used to verify the on-ground vegetation communities present.

Legend

- Site boundary
- Study area
- Cadastre (DCDB)
- Roads and tracks
- State controlled roads
- ◆ Habitat assessment (Epic, 2026)
- ▲ Quaternary RE (Epic, 2022)
- RE_assessment**
- Quaternary RE (Epic, 2026)
- Vegetation management watercourses and drainage features v7.0**
- Minor
- Disturbance footprint**
- Access Track
- Meyer North Pit
- Meyer South Pit
- ROM Pad and Hard Stand
- Slacks North Pit
- Slacks South Pit
- State Forest Pit
- Whordley Pits



0 300 600 m

Scale: 1:22,000@ A3
Datum: GDA2020
Projection: MGA zone 56

Data Source:
© The State of Queensland (Department of Resources) 2024
© State of Queensland (Department of Transport and Main Roads) 2023
Google Imagery: Data SIO, NOAA, U.S.Navy, NGA, GEBCO Image © 2024 Airbus

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Quaternary assessments were carried out for rapid confirmation of the RE and delineation of RE types. At each quaternary site the following data were recorded:

- RE type
- Condition (i.e. remnant, regrowth, non-remnant)
- Dominant flora species at each strata level
- EDL strata
- EDL cover and median height
- Structural classification (Specht 1970) (i.e. grassland, open-woodland, woodland etc).

Targeted surveys for fauna were not within the scope of this assessment. However, detailed habitat assessments were conducted to confirm the presence and extent of habitat values within the Study area. Habitat assessments included the validation of habitat features to determine whether preferred, potential, breeding, foraging or dispersal habitat was present. Opportunistic species observations were also made within the Study area.

The confirmation of the presence of ESAs was based on the outcomes of the vegetation and habitat assessments. It is noted that ESAs linked to REs are based on the Biodiversity Status (under the EP Act) and REs linked to MSES are based on the VM Act status. Therefore, both have been considered as a part of this assessment.

3.2.4 Permits and Ethics Approvals

The field surveys were completed in accordance with the following Queensland Government permits and approvals:

- Scientific Use Registration Certificate (Department of Agriculture and Fisheries) – (Registration No. SUR001535)
- Research Permit for Binjour and Mountain View State Forest (Department of Environment, Tourism, Science and Innovation) – (Authority No. P-SPP-101013477)
- Animal Ethics Approval (Department of Agriculture and Fisheries) – (Reference No. CA 2023/07/1743).

No trapping or direct interference with fauna was undertaken as part of the ecological field surveys.

3.2.5 Survey Limitations

As the survey was conducted over a four-day period, the results are a snapshot in time of the fauna that are present and vegetation proliferation due to local rain and climatic variations of the time. Habitat type, extent and quality is an indication of what species may use the area, though only a subset of possible species would be present within the Study area at any given time. A precautionary approach was taken, and species were assumed to be present based on available habitat and conditions.

There is a margin of error in the survey locations, with GPS coordinates accurate to +/- 5 m.

3.3 Likelihood of Occurrence Assessment

Following the field surveys, a likelihood of occurrence assessment was carried out to categorise the potential for conservation significant flora and fauna to occur based on the habitat observed within the Study area and surrounds. The assessment provides the following criteria:

- Known to occur
 - Observed within Study area during this survey or preceding surveys
- Likely to occur
 - Observed close to Study area during surveys and suitable habitat occurs within Study area, or
 - Recent database records occurring close to Study area (within 5 km) and suitable habitat occurs within Study area
- Possible to occur
 - Database records occurring in wider area (> 5 km and < 20 km) and suitable habitat occurs within Study area, or
 - Database records occurring close to Study area (within 5 km) and marginally suitable habitat occurs although remains relatively isolated (due to vegetation clearing)
- Unlikely to occur
 - No database records in wider area (< 20 km) and/or
 - Habitat present is generally unsuitable and/or
 - Study area generally outside of known distribution of species.

4 DESKTOP RESULTS

4.1 Existing Environment

4.1.1 Current Land Use

The Study area is mapped predominantly as production and plantation forestry, with smaller areas encompassing cropping land and grazing native vegetation land uses. These land uses extend beyond the Study area into the wider area of MLA 100277. Roads and tracks intersect the MLA throughout, including Sandows Road which runs north to south and smaller unnamed access tracks which occur throughout. The Burnett Highway runs adjacent to the southern boundary of the MLA. Residential and commercial areas occur in the nearby town of Gayndah (QGlobe 2026).

4.1.2 Topography and Surface Geology

The Project is located on the top of a prominent plateau, the edge of which straddles the eastern boundary of the MLA. Slopes are generally gentle across the MLA, with the only steeper slopes being associated with the edges of the plateau. Across the entire MLA, elevation ranges from 385-290 m Australian Height Datum (AHD).

The surface geology of the Study area is comprised predominately of duricrusted palaeosols at the top of deep weathering profiles, including ferricrete and silcrete. Small portions in the northern end also intersect with olivine basalt flows (QGlobe 2026).

4.1.3 Strategic Cropping Land

Substantial areas of within MLA 100277 are mapped as Strategic Cropping Land (SCL), including areas associated with Meyer South Pit, Meyer North Pit, Whordley Pits and Slacks South Pit (QGlobe 2026).

4.1.4 Waterways for Waterway Barrier Works

A single waterway mapped under the Queensland waterways for waterway barrier works mapping occurs within the Study area (QGlobe 2026). This waterway intersects the proposed access track to the Meyer South Pit and is mapped as 'low risk' (**Figure 3**).

4.1.5 Watercourses

Three Stream Order 1 watercourses mapped under the VM Act (using the Strahler (1952) stream order classification system) intersect MLA 100277 (**Figure 4**). Of these, one occurs within the Disturbance footprint, intersecting the proposed access track to the Meyer South Pit (QGlobe 2026).

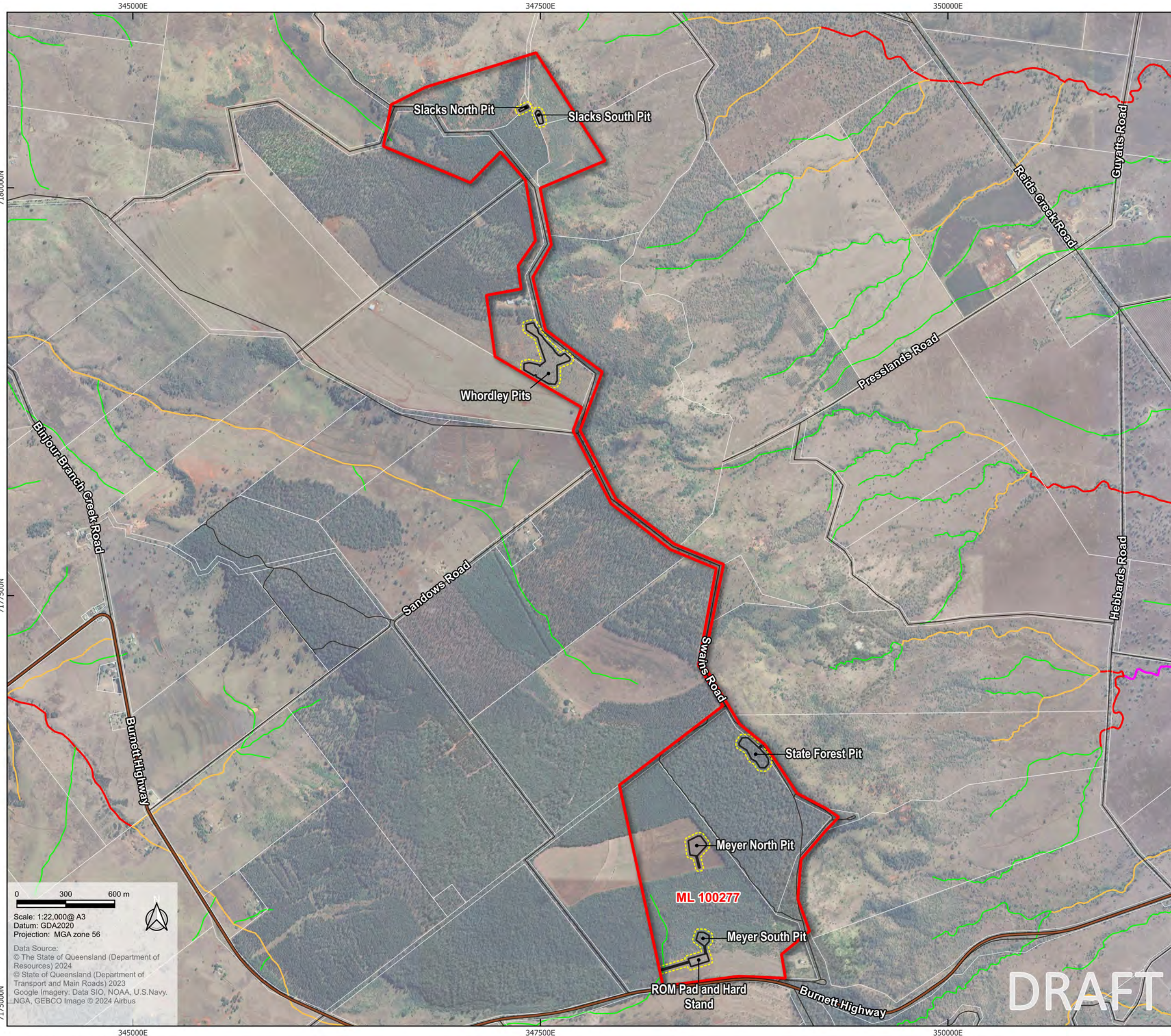
No watercourses as defined under the *Water Act 2000* (Water Act) are within the MLA or Study area. Under the Water Act, all streams at the MLA are 'unmapped'.

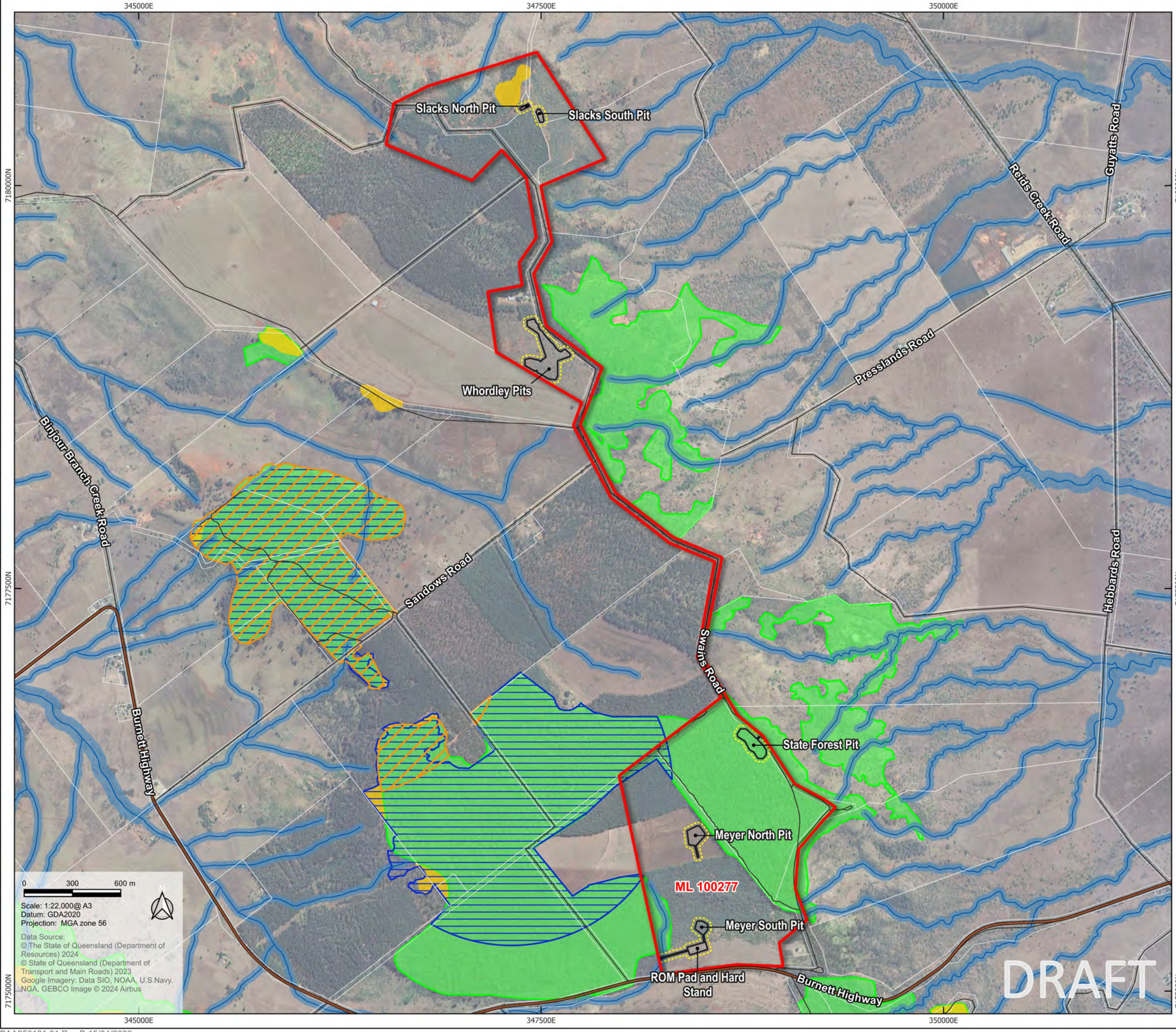
4.1.6 Corridors

The Study area is situated to the east of a terrestrial corridor of regional significance and to the west of a riparian corridor – Reid Creek. The Study area does not intersect with either of these corridors.

Legend

- Site boundary
- Study area
- Cadastre (DCDB)
- Disturbance footprint
- Roads and tracks
- State controlled roads
- QLD waterways for waterway barrier works**
- Low
- Moderate
- High
- Major





Legend

-  Site boundary
-  Study area
-  Cadastre (DCDB)
-  Disturbance footprint
-  Roads and tracks
-  State controlled roads
- Matters of State Environmental Significance**
-  Regulated vegetation - category B - endangered of or concern
-  Regulated vegetation - essential habitat
-  Regulated vegetation - watercourse within a defined distance
-  Wildlife habitat - endangered or vulnerable wildlife
-  Flora survey trigger map for clearing protected plants v10.0
-  MSES - Regulated vegetation (intersecting a watercourse)

4.2 Summary of Mapped Matters of National Environmental Significance

The DCCEEW PMR identifies MNES protected under the EPBC Act considered as potentially occurring within the Study area and surrounds. The PMR was generated using a 10 km buffer around the central coordinates of -25.5095, 151.4849. This report identified three categories of MNES potentially present within the Study area or surrounds (as summarised in **Table 1**). A copy of the PMR is provided in **Appendix A**².

Table 1. EPBC Act PMR summary

MNES	PMR search results within 10 km
World heritage properties	None
National heritage places	None
Wetland of International Importance	None
Great Barrier Reef Marine Park	None
Commonwealth Marine Area	None
Listed Threatened Ecological Communities (TECs)	Eight TECs identified as potentially present (Refer Section 4.5.3)
Listed threatened species	Forty-two threatened species including 14 flora and 28 fauna species (Refer Section 4.5.4 and Section 4.6.1)
Listed migratory species	Ten species listed as Migratory (Refer Section 4.6.1)

4.3 Summary of Mapped Matters of State Environmental Significance

The following sections identify MSES that are currently mapped by the State within the Study area and Disturbance footprint.

4.3.1 Regulated Vegetation – Category B (Endangered or Of Concern)

No State-mapped Category B (Endangered or Of Concern) regulated vegetation is within the Study area. A small portion of vegetation categorised under State mapping as Category B (Endangered or Of Concern) regulated vegetation occurs directly adjacent to the Study area surrounding the Slacks pit area but does not intersect ().

4.3.2 Regulated Vegetation – Essential Habitat

State-mapped essential habitat intersects a small portion of the MLA, extending west (beyond the boundary of the MLA) from the northwest corner of Mountain View State Forest. No areas mapped as essential habitat occur within the Study area ().

4.3.3 Regulated Vegetation – intersecting a watercourse

Regulated vegetation intersecting a watercourse is mapped within the south-western boundary of the MLA and the access track connecting the ROM Pad and hard stand area to an offsite track (). Where the proposed access track intersects the watercourse, the vegetation has been field-verified as non-remnant, as such regulated vegetation will not be impacted in this instance, and the area does not constitute an MSES.

4.4 Environmentally Sensitive Areas

State-mapped Endangered Regional Ecosystems (Biodiversity Status) (a Category B ESA) occur along the eastern boundary of the MLA and to the southeast of Mountain View State Forest, however these do not intersect the MLA. Within the MLA, a patch of vegetation north of the proposed Slacks North Pit is mapped as a Category B ESA. However, no State-mapped Category B ESAs occur within the Study area (**Appendix C**).

The Mountain View State Forest (a Category C ESA) is within the Study area, i.e. underlying the State Forest Pit area (**Appendix C**).

There are no Category A ESAs within the Study area.

² Note the maps in the Appendix show a superseded boundary for the MLA.

4.5 Flora Values

The following sections discuss the REs, flora survey trigger mapping, TECs, and conservation significant flora species that have the potential to be present within the Study area.

4.5.1 Regional Ecosystems

The majority of the Study area is mapped by the State as non-remnant Category X vegetation. A single RE, 12.5.1b, is mapped within the Study area. Mountain View State Forest is mapped entirely as RE 12.5.1b and the western boundary of the Study area (west of the proposed Meyer South Pit) intersects vegetation mapped as this RE. Details for the mapped RE are provided in **Table 2**.

Table 2. Regional Ecosystems within the Study area

RE	Description	VM Act status	Biodiversity status
12.5.1	Open forest complex with <i>Corymbia citriodora</i> subsp. <i>variegata</i> on subcoastal remnant Tertiary surfaces. Usually on deep red soils	Least concern	No concern at present

4.5.2 Flora survey trigger map for clearing protected plants

The entirety of Mountain View State Forest is as 'high-risk' on the Protected Plants Flora Survey Trigger Map. An additional area west of the proposed Meyer South Pit is also mapped within this 'high-risk' area, however this does not intersect the proposed Disturbance footprint (**Figure 4**).

It is noted that no formal protected plant surveys have been completed for the Project and were not within the scope of this ecology assessment due to the high intensity/cost of the field work and noting the work must be done closer to the timing of clearing. However, the relevant surveys and permits under the NC Act will need be obtained prior to undertaking any clearing works.

Prior to any clearing, a formal protected plant survey will need to be completed within areas of the Disturbance footprint that intersect the 'high-risk' areas on the Protected Plants Trigger Map plus an additional 100 m buffer, as required by the Flora Survey Guidelines, and relevant permits or exemption notices will need to be obtained under the NC Act.

4.5.3 Threatened Ecological Communities

The PMR identified eight TECs as potentially occurring within 10 km of the Project's pit areas (DCCEE 2026a):

- Brigalow (*Acacia harpophylla* dominant and co-dominant)
- Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland
- Coolibah – Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions
- Lowland Rainforest of Subtropical Australia
- Poplar Box grassy woodland on alluvial plains
- Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions
- Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions
- Weeping Myall Woodlands.

4.5.4 Conservation Significant Flora

The desktop assessment identified 19 threatened flora species as potentially occurring within 10 km of the Study area (DCCEE 2026a). PMR indicated 14 threatened flora species, while WildNet online report identified an additional five threatened flora species (**Table 3**). Copies of the PMR and WildNet report are provided in **Appendix A**.

A search using the Atlas of Living Australia (ALA) database for all flora species listed in the PMR and WildNet report identified nine species occur within 10 km of the Project's pit areas (**Figure 5**), including:

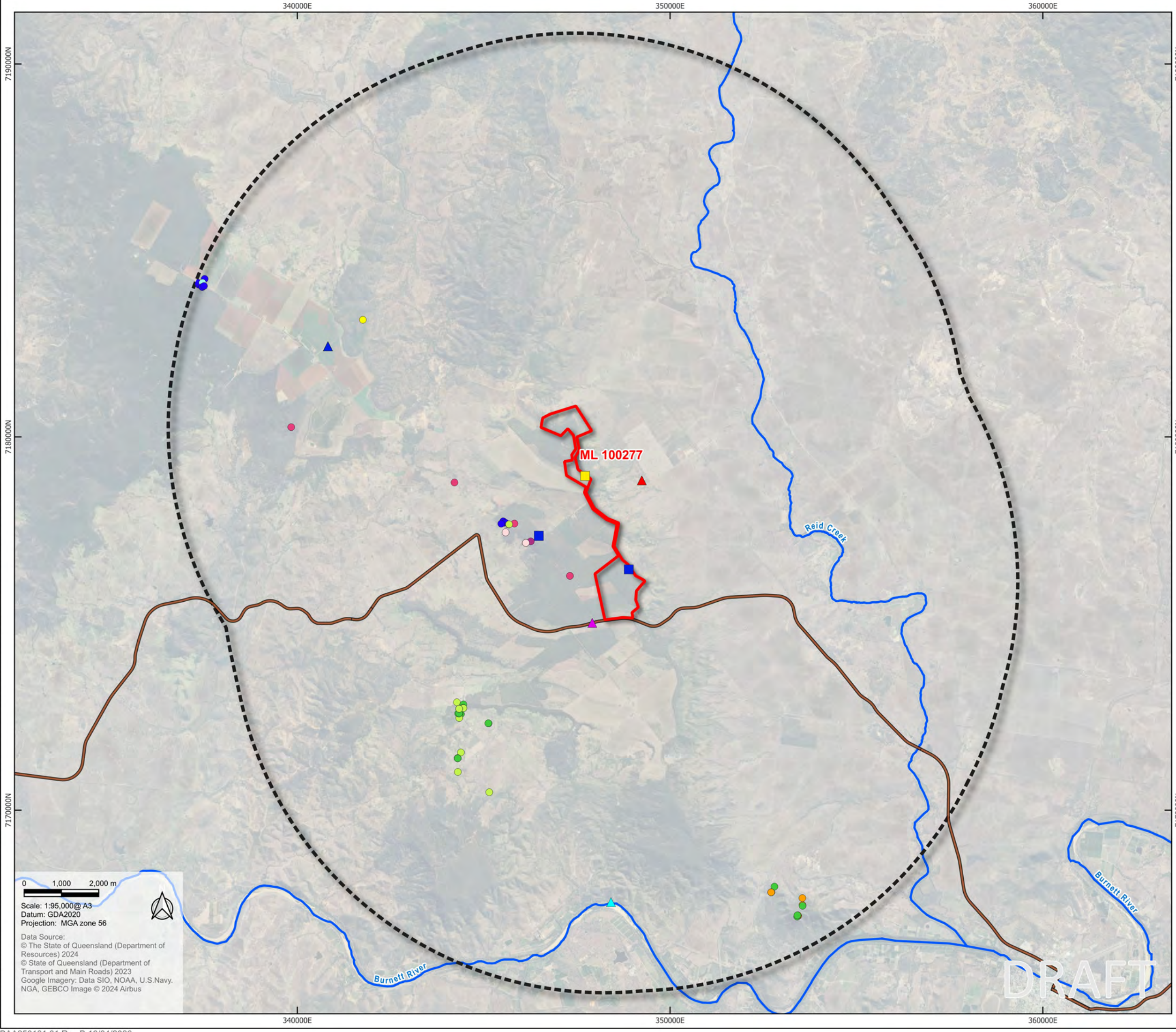
- *Acacia grandifolia*
- *Acacia wardellii*
- *Bertya opposens*
- *Bertya pedicellata*
- *Fontainea fugax*
- Mt Berryman Phebalium (*Phebalium distans*)
- *Macropteranthes leiocaulis*
- *Pomaderris clivicola*
- *Pomaderris coomingalensis*.

Table 3. Conservation significant flora species

Species	Data source	EPBC Act status*	NC Act status*
<i>Acacia grandifolia</i>	PMR	V	NT
<i>Acacia wardellii</i>	WildNet	-	NT
<i>Arthraxon hispidus</i>	PMR	V	-
Austral Cornflower (<i>Leuzea australis</i>)	PMR	V	V
<i>Bertya opposens</i>	PMR	V	LC
<i>Bertya pedicellata</i>	WildNet	-	NT
Bluegrass (<i>Dichanthium setosum</i>)	PMR	V	LC
Cossinia (<i>Cossinia australiana</i>)	PMR	E	E
<i>Cycas megacarpa</i>	PMR	E	E
<i>Fontainea fugax</i>	WildNet	-	E
Macadamia Nut (<i>Macadamia integrifolia</i>)	PMR	V	V
<i>Macropteranthes leiocaulis</i>	WildNet	-	NT
Mt Berryman Phebalium (<i>Phebalium distans</i>)	PMR/WildNet	E	E
Ooline (<i>Cadellia pentastylis</i>)	PMR	V	V
<i>Polianthion minutiflorum</i>	PMR	V	V
<i>Pomaderris clivicola</i>	PMR/WildNet	E	V
<i>Pomaderris coomingalensis</i>	WildNet	-	E
Quassia (<i>Samadera bidwillii</i>)	PMR	V	V
<i>Sophora fraseri</i>	PMR	V	V

*Status: CE/CR = Critically Endangered; E = Endangered; V = Vulnerable; NT = Near Threatened; LC = Least Concern

Filepath: -BE\BE220060.01 ABx Sunrise Bauxite Project Approvals\Workspaces\BAA250181.01 EAR\1. EAR\Rev B\Figure 5 Threatened species records.qgz



0 1,000 2,000 m

Scale: 1:95,000@ A3
Datum: GDA2020
Projection: MGA zone 56

Data Source:
© The State of Queensland (Department of Resources) 2024
© State of Queensland (Department of Transport and Main Roads) 2023
Google Imagery: Data SIO, NOAA, U.S.Navy, NGA, GEBCO Image © 2024 Airbus

- Legend**
- Site boundary
 - 10km buffer of site boundary
 - State controlled roads
- Watercourse**
- Major
- Threatened fauna observations (Epic, 2022)**
- Greater Glider
 - Yellow-bellied Glider(*Petaurus australis*)
- Threatened fauna observations (ALA, 2026)**
- Southern Greater Glider(*Petauroides volans*)
 - Golden-tailed Gecko(*Strophurus taenicauda*)
 - Squatter Pigeon (*Geophaps scripta*)
 - White-throated Needletail(*Hirundapus caudacutus*)
 - Black-breasted Button-quail(*Turnix melanogaster*)
- Threatened flora observations (ALA, 2026)**
- Acacia grandifolia*
 - Acacia wardellii*
 - Bertya pedicellata*
 - Coolabah Bertya (*Bertya opposens*)
 - Mt Berryman Phebalium(*Phebalium distans*)
 - Fontainea fugax*
 - Macropteranthes leiocaulis*
 - Pomaderris clivicola*
 - Pomaderris coomingalensis*

Figure 5
Threatened flora and fauna species records
within 10km of the Study area

4.6 Fauna Values

The following sections discuss conservation significant fauna that have the potential to be present within the Study area and surrounds that are MSES or MNES.

4.6.1 Conservation Significant Fauna

The desktop assessment identified 29 threatened fauna species as potentially occurring within 10 km of the Study area (DCCEEW 2026a). The PMR indicated 29 threatened fauna species, including nine mammal species, 13 bird species, five reptile species and one fish species (**Table 4**). Aquatic species have been excluded from this assessment as the Study area does not contain any habitat for these species. The WildNet Online search results identified a single additional species – Golden-tailed Gecko (*Strophurus taenicauda*). The PMR and WildNet species list is provided in **Appendix A**.

The PMR also identified 10 migratory species, seven of these were migratory marine birds and wetland species which are not considered further in this report due to the absence of marine and wetland habitat within the Study area. There were two additional migratory terrestrial fauna species identified in the PMR that are not listed as threatened under the EPBC Act (**Table 4**).

A search using the ALA database for all fauna species listed in the PMR identified two species with records within a 10 km radius of the Study area (**Figure 5**), including:

- Greater Glider (southern) (*Petauroides volans*) (Endangered – EPBC Act, Vulnerable NC Act) – One records located approximately 6 km northwest of Slacks North Pit (undated)
- Golden-tailed Gecko (*Strophurus taenicauda*) (Near Threatened – NC Act) – one record located approximately 500 m southwest of the Meyer South Pit, recorded in 2014
- White-throated Needletail (*Hirundapus caudacutus*) (Vulnerable/Migratory – EPBC Act, Vulnerable NC Act) – one record located approximately 1.5 km east of the Whordley Pits, recorded in 1978.
- Black-breasted Button Quail (*Turnix melanogaster*) (Vulnerable – EPBC Act and NC Act) – one recorded located approximately 2 km southeast of the Slacks South Pit and 2 km northeast of the State Forest Pit, record date not provided.

Two additional species were recorded within the Study area and surrounds during fauna surveys carried out by Epic in 2022 (Epic 2022) (**Figure 5**), including:

- Greater Glider (southern and central) (*Petauroides volans*) (Endangered – EPBC Act, Vulnerable – NC Act) – five individuals recorded within Mountain View State Forest
- Yellow-bellied Glider (*Petaurus australis australis*) (Vulnerable – EPBC Act and NC Act) – a single individual recorded within eucalypt forest along Sandows Road, approximately 2 km north of Mountain View State Forest and 1.2 km south of proposed Slacks South Pit.

Table 4. Conservation significant fauna species

Species	Data source	EPBC Act status*	NC status*
Mammals			
Corben's Long-eared Bat (<i>Nyctophilus corbeni</i>)	PMR	V	V
Ghost Bat (<i>Macroderma gigas</i>)	PMR	V	E
Greater Glider (southern and central) (<i>Petauroides volans</i>)	PMR	E	E
Grey-headed Flying Fox (<i>Pteropus poliocephalus</i>)	PMR	V	LC
Koala (<i>Phascolarctos cinereus</i>)	PMR	E	E
Large-eared Pied Bat (<i>Chalinolobus dwyeri</i>)	PMR	E	E
Long-nosed Potoroo (<i>Potorous tridactylus tridactylus</i>)	PMR	V	V
Northern Quoll (<i>Dasyurus hallucatus</i>)	PMR	E	LC
Yellow-bellied Glider (<i>Petaurus australis australis</i>)	PMR	V	V
Birds			
Australian Painted Snipe (<i>Rostratula australis</i>)	PMR	E	E
Black-breasted Button Quail (<i>Turnix melanogaster</i>)	PMR/WildNet	V	V
Coxen's Fig Parrot (<i>Cyclopsitta diophthalma coxeni</i>)	PMR	CE	CR
Curlew Sandpiper (<i>Calidris ferruginea</i>)	PMR	CE, M	CR
Diamond Firetail (<i>Stagonopleura guttata</i>)	PMR	V	V

Species	Data source	EPBC Act status*	NC status*
Grey Falcon (<i>Falco hypoleucos</i>)	PMR	V	V
Latham's Snipe (<i>Gallinago hardwickii</i>)	PMR/WildNet	V, M	V
Painted Honeyeater (<i>Grantiella Picta</i>)	PMR	V	V
Red Goshawk (<i>Erythrotriorchis radiatus</i>)	PMR	E	E
Sharp-tailed Sandpiper (<i>Calidris acuminata</i>)	PMR	V, M	V
Squatter Pigeon (<i>Geophaps scripta scripta</i>)	PMR	V	V
Star Finch (<i>Neochmia ruficauda ruficauda</i>)	PMR	E	E
White-throated Needletail (<i>Hirundapus caudacutus</i>)	PMR	V, M	V
Reptiles			
Collared Delma (<i>Delma torquata</i>)	PMR	V	V
Dunmall's Snake (<i>Furina dunmalli</i>)	PMR	V	V
Golden-tailed Gecko (<i>Strophurus taenicauda</i>)	WildNet	-	NT
Grey Snake (<i>Hemiaspis damelii</i>)	PMR	E	E
White-throated Snapping Turtle (<i>Elseya albagula</i>)	PMR	CE	CR
Yakka Skink (<i>Egernia rugosa</i>)	PMR	V	V
Migratory			
Oriental Cuckoo (<i>Cuculus optatus</i>)	PMR	M	SL
Yellow Wagtail (<i>Motacilla flava</i>)	PMR	M	SL

*Status: CE/CR = Critically Endangered; E = Endangered; V = Vulnerable; NT = Near Threatened; M = Migratory; SL = Special Least Concern; LC = Least Concern

5 ECOLOGICAL SURVEY RESULTS

5.1 Flora Survey Results

5.1.1 Flora Species Diversity

A total of 38 flora species were identified during the 2026 survey, including 11 non-native species. No threatened flora species were identified. A completed list of flora species recorded during the field surveys is provided in **Appendix B**.

5.1.2 Field-verified Regional Ecosystems

Eighteen quaternary RE sites (eight in 2026 and 10 in 2022) were completed across the Study area and within the broader area of the MLA. Field-verified RE mapping discussed below builds upon previous survey works conducted by Epic for the Project in 2022 (Epic 2022). Previous RE mapping has been used to support current RE mapping and incorporated into **Figure 6**.

Two distinct vegetation communities were identified within the Study area including remnant and non-remnant areas. A summary and status of each is outlined in **Table 5** and the extent of each illustrated in **Table 6** and **Figure 6**. A detailed description of the distinct vegetation communities is described in the following sections and the RE assessment field data is provided in **Appendix B**.

Table 5. FVREs within the Study area

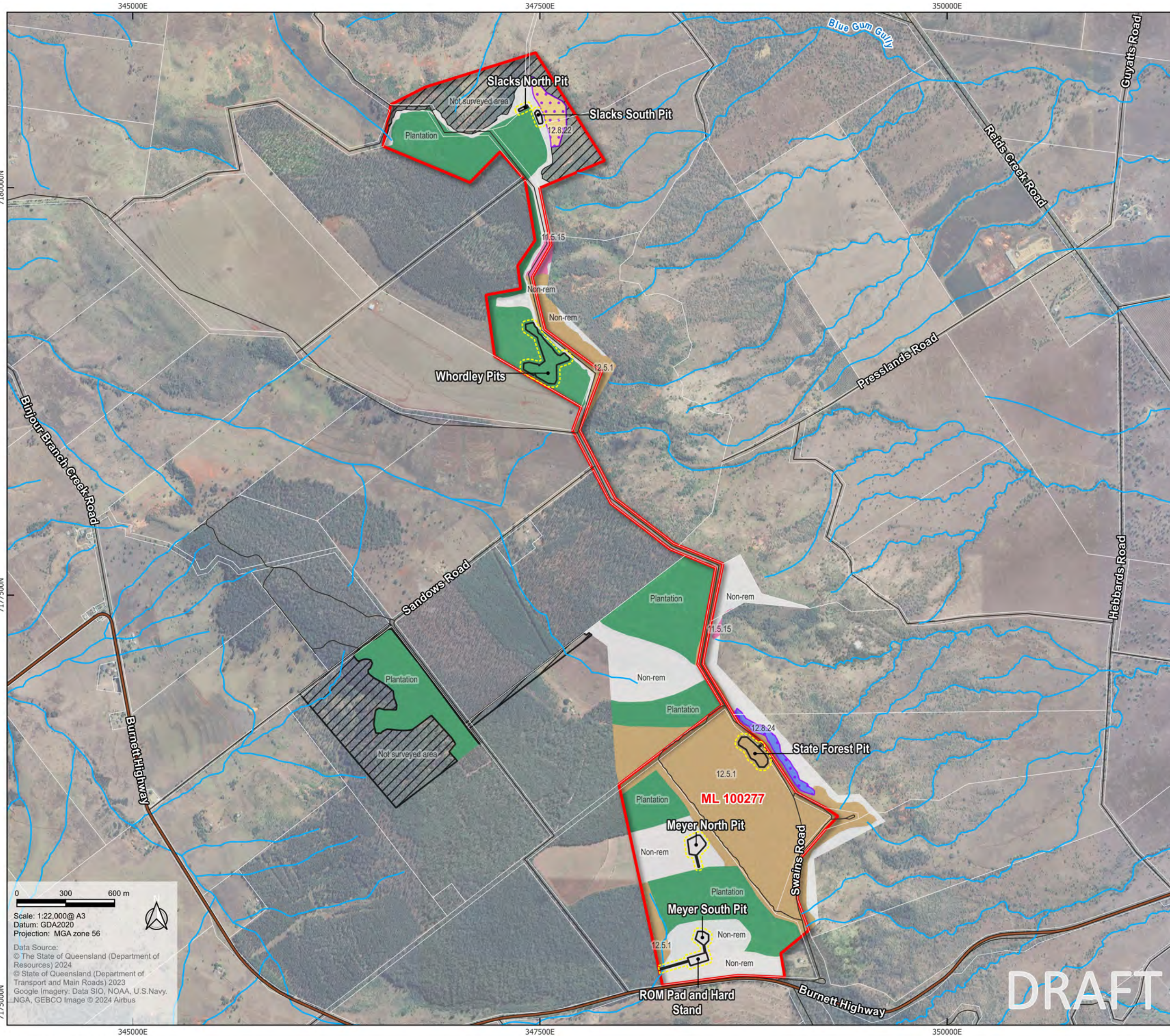
RE	Vegetation community	Condition	TEC	VM Act class	Biodiversity status (EP Act)	Category B ESA	Study area (ha)
12.5.1	Remnant open forest on deep red soils	Remnant	No	Least concern	No concern at present	No	1.54
-	Cleared areas	Non-remnant	No	-	-	No	6.39

Table 6. Extent of FVREs within the proposed pit areas

RE	Vegetation community	FVRE within proposed pit areas (ha)					
		Slacks North	Slacks South	Whordley	Meyer North	Meyer South	State Forest
12.5.1	Remnant open forest on deep red soils	-	-	-	-	-	1.54
-	Cleared areas	0.10	0.24	3.77	0.95	0.49	-

Legend

- Site boundary
- Study area
- Cadastre (DCDB)
- Disturbance footprint
- Category B ESA – Field-verified
Endangered Regional Ecosystem
(Biodiversity Status)
- Roads and tracks
- State controlled roads
- Watercourse**
- Minor
- Field-verified Regional Ecosystems**
- 11.5.15
- 12.5.1
- 12.8.22 (HVR)
- 12.8.24 (HVR)
- Non-remnant
- Plantation (Non-remnant)
- Not surveyed area



ABx Group Binjour, QLD Ecological Assessment Report

Figure 6
Field-verified REs within the Study area

Scale: 1:22,000@ A3
Datum: GDA2020
Projection: MGA zone 56

Data Source:
© The State of Queensland (Department of Resources) 2024
© State of Queensland (Department of Transport and Main Roads) 2023
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5.1.2.1 Remnant Open Forest on Deep Red Soils

This vegetation community occurred within Mountain View State Forest and has been categorised as remnant open-forest analogous to RE 12.5.1 (refer **Plate 1** and **Figure 6**). A sparse canopy was comprised of Lemon-scented Gum (*Corymbia citriodora* subsp. *variegata*), Narrow-leaved Ironbark (*Eucalyptus crebra*), Mountain Grey Gum (*Eucalyptus major*), Pink Bloodwood (*Corymbia intermedia*) and Gympie Messmate (*Eucalyptus cloeziana*), with a median height of 18 m and cover of 28 %. The shrub layer consisted of Black Wattle (*Acacia leiocalyx*), Soap Tree (*Alphitonia excelsa*) and Hickory Wattle (*Acacia glaucocarpa*). Native ground species included Reed Grass (*Arundinella nepalensis*), Blady Grass (*Imperata cylindrica*) and Many-flowered Matrush (*Lomandra multiflora*). Prevalent non-native species included Lantana (*Lantana camara*) and Creeping lantana (*Lantana montevidensis*), with Velvet Tree Pear (*Opuntia tomentosa*) also present in some areas.



Plate 1. Remnant open forest on deep red soils (State Forest)

5.1.2.2 Non-remnant

In total, non-remnant vegetation within the Disturbance footprint includes 6.39 ha of land. The extent of non-remnant vegetation within each proposed pit area is outlined in **Table 6**. Non-remnant vegetation within the Study area comprises previously cleared, heavily disturbed regrowth areas, plantation forestry and cleared areas.

In the southern portion of the MLA, vegetation surrounding Meyer South Pit, had previously been cleared and was heavily disturbed, constituting non-remnant vegetation. This area with dense weed infestations (refer **Plate 2** and **Figure 6**). Dense Lantana thickets were dominant in most areas and Praxelis (*Praxelis clematidea*) was also very common. Some native species were present within the canopy, including Hickory Wattle, Black Wattle and Soap tree. Juvenile Moreton Bay Ash (*Corymbia tessellaris*) and Narrow-leaved Ironbark were very occasionally seen.

Plantation areas, associated with the proposed Whordley Pits constitutes vegetation which has recently been cleared. It is noted that, the plantation area surrounding Whordley Pits was field-verified during the 2022 survey and at this time was not cleared. Since then, aerial imagery indicates that the area has been significantly cleared of vegetation, containing only scattered trees which are considered to have limited ecological value (Google Earth, 2023).

Cleared areas surround Slacks North Pit and Slacks South Pit, and Meyer North Pit and include an existing access track cleared areas immediately adjacent to the track (associated with the Slacks pits) and cropping land, which appears to have been void of vegetation for 20 years or more (associated with the Meyer North Pit).



Plate 2. Regrowth Acacia woodland – non-remnant (Meyer South Pit area)

5.1.3 Threatened Ecological Communities

No TECs were found to be present within the Study area or Disturbance footprint.

5.1.4 Environmentally Sensitive Areas

Field assessments verified vegetation in the north of the MLA, adjacent to the Slacks North Pit and Slacks South Pit, as HVR RE 12.8.22 (**Figure 6**). This RE has a Biodiversity Status of Endangered and constitutes a Category B ESA (field verified) in accordance with the *Environmental Protection Regulation 2019* (EP Reg) and DEHP (2016). In addition, the 2022 field survey verified a Category B ESA (HVR RE 12.8.24) as occurring adjacent to the eastern boundary of the MLA, to the east of Mountain View State Forest. All proposed pit areas have been positioned to avoid intersecting with any field verified or State-mapped Category B ESAs.

The presence of field-verified Category B ESAs (plus additional State-mapped ESAs discussed in **Section 4.4**) verifies that the 1 km buffer required by the standard conditions of DEHP (2016) overlies the Study area and the entire MLA. The 1 km buffer encompasses all proposed pit areas associated with the Project.

Refer to **Section 4.4** for information on Category A and C ESAs (these are not field-verifiable ESAs and relate solely to State mapping described as part of the desktop assessment results).

5.1.5 Weeds

A total of 11 non-native flora species were identified during the field surveys. Three of these are listed as a Weed of National Significance (WoNS), and two of those species are listed as a category 3 restricted matter under the *Biosecurity Act 2014*:

- Balloon Cottonbush (*Gomphocarpus physocarpus*)
- Blue Heliotrope (*Heliotropium amplexicaule*)
- Buffel Grass (*Cenchrus ciliaris*)
- Creeping Lantana (*Lantana montevidensis*) – category 3 restricted matter, WoNS
- Flannel Weed (*Sida cordifolia*)
- Flaxleaf Fleabean (*Erigeron bonariensis*)
- Guinea Grass (*Megathyrsus maximus*)
- Lantana (*Lantana camara*) – category 3 restricted matter, WoNS
- Praxelis (*Praxelis clematidea*)
- Red Natal Grass (*Melinis repens*)
- Velvet Tree Pear (*Opuntia tomentosa*) – WoNS.

5.2 Fauna Results

While targeted surveys for fauna were not within the scope of this assessment, opportunistic observations were recorded across the Study area for the duration of the survey period. A total of 23 fauna species were recorded during the field surveys. No conservation significant fauna species were identified. A single introduced species – Cane Toad (*Rhinella marina*) – was observed.

Habitat values relevant to conservation significant fauna species were validated through habitat assessments which were carried out across the Study area and within the broader area of the MLA (**Figure 6**). Results from the habitat assessments were to inform the likelihood of occurrence assessments (**Section 6**). A complete list of fauna species recorded throughout the survey period is provided in **Appendix B**.

5.2.1 Habitat Values for Terrestrial Fauna

The vegetation communities identified within the Study area provide varying degrees of habitat quality for fauna species. The most substantial faunal habitat within the Study area occurs within remnant eucalypt open forests (RE 12.5.1), which was field-verified throughout the Mountain View State Forest and to the west of the Meyer pit area. This vegetation community potentially provides habitat to a number of threatened fauna species and connects to larger contiguous patches outside the Study area. Fauna habitat within the Study area may also occur within HVR vine-thicket community located in the north. Additional vegetation comprising vine-thicket community was observed outside the Study area, adjacent to the Slacks pit area. No formal assessments were completed here, however it appeared less disturbed and potentially provides greater habitat value than comparable vegetation within the Study area.

Outside the Study area, plantation communities may provide marginal habitat or facilitate movement of threatened species between patches of suitable habitat. No plantation areas occur within the Study area and are therefore not discussed further in this report.

5.2.1.1 Remnant Open Forest on Deep Red Soils

Remnant open forest on deep red soils (RE 12.5.1) occurs within Mountain View State Forest.

This vegetation community included Lemon-scented Gum, Narrow-leaved Ironbark, Mountain Grey Gum, Pink Bloodwood and Gympie Messmate (RE 12.5.1). These species constitute both Locally Important Koala Trees and food trees for glider species (including Greater Glider and Yellow-bellied Glider). Generally, this area was dominated by large trees, many of which contained hollows of varying sizes (constituting breeding habitat for Greater Glider and Yellow-bellied Glider). Large stags with multiple hollows were also present throughout (Plate 3). This area is known to provide habitat for Greater Glider with the species having been observed within Mountain View State Forest during the 2022 surveys. No hollows >50 cm were observed which would support species such as Powerful Owl (*Ninox strenua*). Many trees were observed to be large enough to provide habitat for Koala. Despite this, no Koalas or evidence of Koalas (i.e. scats or scratches) were observed during the field surveys. Lantana was present in patches, however, was not considered to occur at a high enough density that would impede fauna movement.

Native grass cover was generally high, providing a good level of ground-level shelter. Fallen logs and other woody debris were common and would provide both shelter and basking areas for small reptiles (Plate 4). Leaf litter was moderate to sparse and generally very shallow (<1 cm deep). Large, loose surface rocks were not present. No burrows were observed. Suitable habitat for reptiles was present within this area, however it is not likely to provide habitat for any threatened reptile species.



Plate 3. Stag containing multiple hollows



Plate 4. Woody debris within remnant open-forest on deep red soils

6 LIKELIHOOD OF OCCURRENCE ASSESSMENT

6.1 Conservation Significant Flora Species Likelihood of Occurrence Assessment

There were 19 conservation significant flora species identified in a desktop search as potentially occurring within the Study area. The likelihood of occurrence of these species within the Study area was determined based on the desktop assessment and the ecological field surveys. The assessment considered the natural distribution of the species, habitat requirements, previous sightings and habitat suitability within the Study area. Threatened flora species, their habitat preferences and likelihood of occurrence are detailed in **Table 7**.

The results of the likelihood of occurrence assessment determined that three species are considered likely to occur and three species are considered possible to occur within the Study area, including:

- Likely
 - *Acacia wardellii*
 - *Pomaderris coomingalensis*
 - *Pomaderris clivicola*
- Possible
 - *Acacia grandifolia*
 - *Bertya Opponens*
 - Mt Berryman Phebalium

All other conservation significant flora species identified in the desktop search are considered unlikely to occur within the Study area.

Table 7. Likelihood of occurrence of conservation significant flora species

Species	Distribution and habitat	Likelihood of occurrence
<i>Acacia grandifolia</i> EPBC Act: V NC Act: NT	<i>Acacia grandifolia</i> is known only from southeast Queensland, occurring between Mundubbera, Coalstoun Lakes and Proston (Qld CRA/RFA Steering Committee 1998). Habitat for this species includes shallow, well drained sandy loam to clay loam soils derived from sandstone and acid volcanics. It is generally found growing within woodlands or open forests on hillslopes between altitude of 200-370 m, but can also be found on hillcrests, gullies and plains. Associated species include <i>E.crebra</i>, <i>C.citriodora</i>, <i>C.trachyphloia</i>, <i>E.maculata</i> and <i>E.exserta</i> (Qld CRA/RFA Steering Committee 1998).	Possible. Suitable open forests containing associated species (RE 12.5.1) occurs within Mountain View State Forest. There are 10 records within 25 km of the Study area. The most recent of which was recorded in 2024, approximately 14 km southeast, near Gayndah (ALA 2026).
<i>Acacia wardellii</i> EPBC Act: - NC Act: NT	<i>Acacia wardellii</i> is known from four distinct locations in southeast Queensland, including north of Mundubbera, east of Condamine, south of Roma and south of Surat in the Thomby Range (DCCEEW 2026b). This species grows in eucalypt woodlands and has been recorded in areas containing <i>Corymbia trachyphloia</i>, <i>C. intermedia</i>, <i>Eucalyptus major</i>, <i>E. cloeziana</i> with a sparse <i>Allocasuarina torulosa</i> shrub layer (Queensland Herbarium 2011). It is known to occur in disturbed areas such as along roadsides and in clearings. It occurs on varying soil types depending on location. In the east, it is found on plateaus of red/brown lateritic soils. In central locations, it is found on sands over duricrusts or hard mottled clays, and on low laterised scarps or crests or flat-top ridges. In the west, it is found on stony soils (Queensland Herbarium 2009).	Likely. Suitable woodland containing associated eucalypt species occurs within Mountain View State Forest. This species was recorded within Binjour State Forest during vegetation surveys carried out by Epic in 2022 (Epic 2022). Seven database records occur within 25 km of the Study area, with three of these located within 5 km. The most recent of these are two records collected in 2015, approximately 2.5 km and 9 km northwest. The closest record is approximately 1 km west of Mountain View State Forest (no date provided) (ALA 2026).
<i>Arthraxon hispidus</i> EPBC Act: V NC Act: -	This species occurs throughout Queensland north to Port Douglas and in New South Wales south to Kempsey, distribution is scattered and there are disjunct occurrences in Carnarvon National Park (DCCEEW 2008a). A large portion of the occurrence records are from south of Noosa, QLD. The species typical habitat includes adjacent to rainforests, wet eucalypt forests, and woodlands frequently near swamps and creeks. The species is also associated with alluvial areas such as creek beds, shaded gullies and freshwater springs. The species is additionally associated with mound springs, found within bag mosses (DCCEEW 2008a).	Unlikely. This species is associated with vegetation communities absent from the Study area and no records occur within 25 km. The closest record is approximately 55 km northwest, collected in 1999 (ALA 2026).
Austral Cornflower (<i>Leuzea australis</i>) EPBC Act: V NC Act: V	This species was once known to occur in New South Wales, but is now confined to Queensland, occurring from Allora to Callide (QDNR 2000). It is often found on roadsides and cultivation headlands where grass competition has been reduced due to disturbance. It prefers areas of woodlands and grassland with associated species including <i>Eucalyptus crebra</i>, <i>E. orgadophila</i>, <i>E. populnea</i>, <i>E. tereticornis</i>, <i>E. melanophloia</i>, <i>Angophora subvelutina</i>, <i>A. floribunda</i>, <i>Cirsium vulgare</i>, <i>Dichanthium sericeum</i> and <i>Themeda triandra</i> (QDNR 2000). This species can be found at altitudes of up to 480 m.	Unlikely. One record is located within 25 km of the Study area, collected in 2010 in the town of Mundubbera (ALA 2026). However, no suitable habitat occurs within the Study area.
<i>Bertya opposens</i> EPBC Act: V	This species occurs in Queensland and New South Wales. In Queensland, it is widely distributed within an area bounded by Emerald in the north and Charleville in the west, with an outlier near Charters Tower (TSSC 2016a). Suitable habitat for the species includes shrublands, lancewood woodland, mallee	Possible. Vine thickets and woodlands dominated by Spotty Gum and/or Gympie Messmate on sandy and lateritic soils within the

Species	Distribution and habitat	Likelihood of occurrence
NC Act: LC	woodland, eucalypt/ <i>Acacia</i> open forest, eucalypt/ <i>Callitris</i> open woodland, and semi-evergreen vine-thickets on shallow soils predominately derived from sandstone (WildNet). Associated species include Spotted Gum, Rusty Jacket (<i>Corymbia leichhardtii</i>), Brigalow, Lancewood (<i>Acacia shirleyi</i>), <i>Corymbia trachyphloia</i> , Gympie Messmate, and Narrow-leaved Ironbark, Queensland Peppermint (<i>Eucalyptus exserta</i>), and <i>Eucalyptus panda</i> (Halford and Henderson, 2002).	Study area provide suitable habitat for the species. The nearest historical record is located less than 12 km north-west of the Study area (ALA 2026).
<i>Bertya pedicellata</i> EPBC Act: - NC Act: NT	This species is confined to central and south-east Queensland, from near Aramac eastwards to Rockhampton and south to near Biggenden with an isolated record from the Warwick district (DETSI 2026b). It has been recorded on rocky hillsides in eucalypt forest or woodland, <i>Acacia</i> woodland or shrubland and open heathland or vine thicket communities. The soil it grows in include skeletal to shallow sandy, sandy clay or clay loams overlaying rhyolite, trachyte or sandstone substrates. Associated species include <i>Corymbia trachyphloia</i> , <i>Dodonaea filifolia</i> , <i>Acacia catenulata</i> , <i>A. curvinervia</i> , <i>A. shirleyi</i> , <i>A. rhodoxylon</i> , <i>A. sparsiflora</i> , <i>E. crebra</i> , <i>Acacia harpophylla</i> and <i>E. decorticans</i> (DETSI 2026b).	Unlikely. Suitable vegetation including vine-thicket communities on rocky hillsides are not present within the Study area. There are 31 records within 25 km of the Study area. Fifteen of these records occur in a cluster approximately 4.5 km southwest, none of these were collected after the year 2000 (ALA 2026).
Bluegrass (<i>Dichanthium setosum</i>) EPBC Act: V NC Act: LC	In Queensland, this species has been reported from the Leichhardt, Morton, North Kennedy and Port Curtis regions, and in the Mistake Range, in Main Range National Park, and possibly on Glen Rock Regional Park, adjacent to the national park (DEWHA 2008a). This species is associated with heavy basaltic black soils and red-brown loams with clay subsoil. This species is often found in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture. It is often collected from disturbed open grassy woodlands on the northern tablelands, where the habitat has been variously grazed, nutrient-enriched and water-enriched (DEWHA 2008a).	Unlikely. Suitable habitat does not occur within the Study area, the closest records are greater than 170 km southwest (ALA 2026).
<i>Cossinia (Cossinia australiana)</i> EPBC Act: E NC Act: E	This species occurs from Rockhampton to Kingaroy in Queensland in a scattered distribution (DEWHA 2008c). The species grows on red volcanic soil and black loam at altitudes up to 520 m. It is found as individual plants in ecotones commonly on the edge of dry rainforests, habitats include Araucarian microphyll vine forest and semi evergreen vine thicket (DEWHA 2008c). Associated species include <i>Alyxia ruscifolia</i> , <i>Drypetes deplanchei</i> , <i>Flindersia australis</i> , <i>Owenia venosa</i> , and <i>Siphonodon australis</i> .	Unlikely. No suitable habitat is present within the Study area. The closest records are approximately 65 km northeast (ALA 2026).
<i>Cycas megacarpa</i> EPBC Act: E NC Act: E	<i>Cycas megacarpa</i> is endemic to southeast Queensland and known to occur from Woolooga to Bouldercombe (Queensland Herbarium 2007). This species is found in woodland, open woodland and open forests dominated by <i>E. crebra</i> , <i>C. citriodora</i> , <i>C. erythrophloia</i> , <i>E. melanophloia</i> and <i>L. confertus</i> (Queensland Herbarium 2007). It prefers habitat with a grassy understorey and has been recorded to occur at the edges of rainforest habitat (Hill 1998; Jones 2002; Queensland CRA/RFA Steering Committee 1998).	Unlikely. Suitable open woodland containing associated eucalypt species may occur within the Study area, however no records occur within 25 km. The closest record was collected in 2022 approximately 30 km northeast (ALA 2026).
<i>Fontainea fugax</i> EPBC Act: - NC Act: E	<i>Fontainea fugax</i> occurs within the Binjour-Gurgeena Plateau area, between Gayndah and Mundubbera. It is known to occur in Gurgeena State Forest and Gurgeena Conservation Park (Queensland Herbarium 2012). It is found in Semi-evergreen vine thicket communities dominated by <i>Backhousia kingii</i> and grows on red eucrozem soils between 250-400 m elevation (Forster 1997).	Unlikely. While the species has been recorded less than 2 km away to the west within Binjour State Forest, suitable vine-thicket habitat does not occur within the Study area. (ALA 2026).

Species	Distribution and habitat	Likelihood of occurrence
Macadamia Nut (<i>Macadamia integrifolia</i>) EPBC Act: V NC Act: V	This species occurs from Mt Bauple, near Gympie, to Tweed Heads in Queensland and occurs coastally in New South Wales in Lismore, Port Macquarie, Newcastle, and Sydney (ALA 2026). It grows on high nutrient alluvial volcanic soils with rock fragments of basalt and diorite (DCCEEW 2026b). The species habitat includes partially open areas of remnant rainforest, specifically complex notophyll mixed forest, tall closed forest, simple notophyll mixed very tall and mid-high closed forest. Associated species include <i>Araucaria</i> and <i>Argyrodendron</i> (DCCEEW 2026b).	Unlikely. Suitable habitat does not occur within the Study area. The nearest record is approximately 60 km northeast (ALA 2026).
<i>Macropteranthes leiocaulis</i> EPBC Act: - NC Act: NT	This species occurs in dry rainforest and vine-thicket communities in Central Eastern Queensland, and is known from Mingela Bluff south of Townsville to Binjour Plateau west of Maryborough (Zich et al. 2020).	Unlikely. Suitable vine-thicket communities are not present within the Study area. Eight records are located within 25 km of the Study area, the most recent of which was collected approximately 20 km west in 2017 (ALA 2026).
Mt Berryman Phebalium (<i>Phebalium distans</i>) EPBC Act: E NC Act: E	<i>Phebalium distans</i> is known only from five locations within southeast Queensland, including Binjour, Mt Walla, Proston, Kingaroy and Mt Berryman (TSSC 2022). This species is found exclusively within semi-evergreen vine thicket communities, araucarian microphyll vineforest communities or allied communities on red soils derived from basalt or lateric substrates. In some instances, this species has been found growing in the ecotone between semi-evergreen vine thicket and adjacent eucalypt woodlands (TSSC 2022).	Possible. Vine thicket communities were observed adjacent to the Study area and eucalypt woodlands occur within the Study area. The species is known to occur in the ecotone where SEVT transitions to eucalypt woodlands. Suitable habitat may be present within the Study area. There are three records approximately 2.5 km west in Binjour State Forest, all collected in 2015 (ALA 2026).
Ooline (<i>Cadellia pentastylis</i>) EPBC Act: V NC Act: V	This species occurs in a restricted range from west of Rockhampton to the NSW boarder in Queensland, it also occurs in the Northwest Slopes north of Gunnedah (DCCEEW 2026b). It grows on fertile soils on the edges of sandstone and basalt escarpments in habitats associated with upper and mid-slopes in the landscape. Its habitats include semi-evergreen vine thickets and sclerophyll vegetation where the species forms a closed or open canopy with an open understorey (DCCEEW 2026b). Associated canopy species include <i>Eucalyptus albens</i> and <i>Callitris glaucophylla</i> .	Unlikely. Several records occur within 25 km of the Study area, however, suitable semi-evergreen vine thicket communities and sclerophyll vegetation is not present within the Study area (ALA 2026).
<i>Polianthion minutiflorum</i> EPBC Act: V NC Act: V	This species is known from five areas in east Queensland, from Redcliffe Vale, about 110 km west of Mackay, south to Kingaroy, covering a distance of approximately 800 km (DEWHA 2008b). It grows in forest and woodland on sandstone slopes and gullies with skeletal soil, or deeper soils adjacent to deeply weathered laterite (DEWHA 2008b).	Unlikely. Suitable habitat does occur within the Study area, however the closest records are approximately 73 km north in Coomanglah State Forest (ALA 2026).
<i>Pomaderris coomingalensis</i> EPBC Act: - NC Act: E	This species is described as locally common in Kingaroy, Proston and Dalby, and has also been recorded from the Coomanglah State Forest, Braemar State Forest, Devine State Forest and Durikai State Forest (Queensland Herbarium 2012). It has been found to grow in open forest on red soils with <i>E.decortican</i> and <i>C.citriodora</i> subsp. <i>variegata</i> and in woodlands on stony brown clay loam with <i>E.crebra</i> and <i>E.fibrosa</i> subsp. <i>nubila</i> (Queensland Herbarium 2012).	Likely. Two records, both collected in 2015, occur in Binjour State Forest, within 5 km of the Study area (ALA 2026) and Spotty Gum open forest on red soil within the Study area provides suitable habitat for the species.

Species	Distribution and habitat	Likelihood of occurrence
<i>Pomaderris clivicola</i> EPBC Act: E NC Act: V	This species is known from two localities within southeast Queensland – Binjour Plateau near Gayndah and Walla Range near Coalstoun Lakes (DCCEEW 2026b). It is known to occur on steep slopes with rec volcanic soil or grey soils with occasional rocks. Associated vegetation includes <i>Eucalyptus cloeziana</i> and <i>Corymbia citriodora</i> tall open forest with an open understorey of semi-evergreen vine thicket species (DCCEEW 2026b).	Likely. Sixteen records occur within 5 km of the Study area, the nearest collected approximately 3 km west in 2015 in Binjour State Forest (ALA 2026). Furthermore, Spotty Gum open forest and woodland with an understorey of vine-thicket species occurs within the Study area.
<i>Sophora fraseri</i> EPBC Act: V NC Act: V	In Queensland, <i>Sophora fraseri</i> is widespread but not common and is conserved in Lamington National Park and Mount Mistake National Park (DEWHA 2008d). Habitat for this species includes shallow soils in moist environments, often on hilly terrains. It is found in wet eucalypt forests on the margins of rainforest communities (DEWHA 2008d).	Unlikely. Suitable habitat does not occur within the Study area. The closest record is approximately 100 km southeast, collected in 1978 (ALA 2026).
<i>Quassia (Samadera bidwillii)</i> EPBC Act: V NC Act: V	This species occurs in Queensland from north of Gympie to Scawfell Island off the coast of Mackay (ALA 2026). Two significant moderately sized populations exist in Hervey Bay. It grows on lithosols, skeletal soils, loam soils, sands, silts and sands with clay subsoils and is predominantly found near temporary or permanent watercourses (DCCEEW 2026b). It occurs in areas up to 510 m altitude in lowland rainforest or rainforest margins as well as open forest and woodland. Associated species include Spotted Gum (<i>Corymbia citriodora</i>), Grey Gum (<i>Eucalyptus propinqua</i>), White Mahogany (<i>Eucalyptus acmenoides</i>), Forest Red Gum (<i>Eucalyptus tereticornis</i>), Pink Bloodwood (<i>Eucalyptus intermedia</i>), <i>Eucalyptus siderophloia</i> , Gum Topped Box (<i>Eucalyptus moluccana</i>), Gympie Messmate (<i>Eucalyptus cloeziana</i>), and Broad-leaved Ironbark (<i>Eucalyptus fibrosa</i>) (DCCEEW 2026b).	Unlikely. Suitable open forest or woodland with associated species including <i>Corymbia citriodora</i> , <i>Eucalyptus intermedia</i> and <i>Eucalyptus cloeziana</i> may occur within the Study area, however the species is not known to occur here. The closest record was collected in 1990 in Mount Walsh National Park, approximately 55 km east of the Study area (ALA 2026).

6.2 Conservation Significant Fauna species Likelihood of Occurrence Assessment

6.2.1 EPBC Act Conservation Significant Fauna Species

There were 29 fauna species listed as threatened under the EPBC Act and/or NC Act identified in a desktop search as potentially occurring within the Study area. The likelihood of occurrence of these species within the Study area was determined based on the desktop assessment and the fauna habitat field surveys. The assessment considered the natural distribution of the species, habitat requirements, previous sightings and habitat suitability within the Study area. Threatened fauna species, their habitat preferences and likelihood of occurrence are detailed in **Table 8**.

One species – Greater Glider (*Petauroides volans*) – was recorded within the Study area during fauna surveys carried out by Epic in 2022 and is known to occur within the Study area (five individuals observed at Mountain View State Forest). The results of the likelihood of occurrence assessment determined that one other species – Yellow-bellied Glider (*Petaurus australis australis*) – is considered likely to occur within the Study area. This species was also recorded within the MLA during the 2022 Epic fauna surveys, approximately 2 km north of Mountain View State Forest and 1.2 km south of the Slacks South Pit area, in eucalypt forest along Sandows Road. Two species were determined as possible to occur within the Study area, including:

- Grey-headed Flying Fox (*Pteropus poliocephalus*)
- Koala (*Phascolarctos cinereus*)

All other threatened fauna species are considered unlikely to occur.

Table 8. Likelihood of occurrence of conservation significant fauna species

Species	Habitat and distribution	Likelihood of occurrence
Mammals		
Corben's Long-eared Bat (<i>Nyctophilus corbeni</i>) EPBC Act: V NC Act: V	This species occurs mostly in the Murray Darling Basin, which includes parts of Queensland, New South Wales, Victoria, and South Australia primarily inland from the Great Dividing Range (TSSC 2015b). Half of the known distribution occurs in New South Wales and 30% occurs in Queensland across over 30 localities mostly in the Brigalow Belt Bioregion (TSSC 2015b). They inhabit a range of forests and woodlands including box/ironbark/cypress pine/Buloke/Brigalow/Belah/smooth-barked apple/river red gum/ black box/mallee woodlands/forests (TSSC 2015b). They prefer larger areas of woodland with old-growth vegetation, tree canopy, and an understorey layer. Their primary diet is insects, and they can be observed foraging with other bat species (TSSC 2015b).	Unlikely. Suitable habitat does not occur within the Study area. The nearest record is approximately 100 km southwest collected in Jarrah State Forest (no date provided) (ALA 2026).
Ghost Bat (<i>Macroderma gigas</i>) EPBC Act: V NC Act: V	Two disjunct distributions in Queensland – far northwest Queensland, from west of Mt Isa north to the Gulf of Carpentaria; and coastal northeast Queensland from near the tip of Cape York Peninsula to approximately Gladstone (DCCEE 2025b). The species occurs across a range of habitats, from arid Pilbara to tropical savanna woodlands and rainforests (TSSC 2016). During the daytime they roost in caves, rock crevices and old mines (TSSC 2016b). Roost sites used permanently are generally deep natural caves or disused mines with a relatively stable temperature of 23°–28°C and a moderate to high relative humidity of 50–100 percent (TSSC 2016b).	Unlikely. Suitable habitat does not occur within the Study area. The closest record is approximately 200 km northeast, collected in 1985 (ALA 2026).
Greater Glider (southern and central) (<i>Petauroides volans</i>) EPBC Act: E NC Act: V	This species is generally restricted to eucalypt forests and woodlands, typically found in highest abundance in taller, montane, moist eucalypt forests on fertile soils, with relatively old trees and abundant hollows (DCCEE 2022b). During the day the species shelters in tree hollows, with a particular selection for large hollows in large, old trees (DCCEE 2022b).	Known. This species was sighted within Mountain View State Forest during 2022 fauna surveys conducted by Epic. Twelve ALA records are located within 25 km of the Study area, the closest of which occurs approximately 6 km northwest. The most recent of these was collected in 2024 approximately 13 km northwest (ALA 2026).
Grey-headed Flying Fox (<i>Pteropus poliocephalus</i>) EPBC Act: V NC Act: LC	This species occurs from Rockhampton in Queensland to Melbourne in Victoria (Tideman 1998). Throughout most of the range occupancy is irregular due to seasonal differences in feed species, except for in Brisbane, Melbourne, Sydney, and Newcastle which are occupied continuously (Pallin 2000, Hall 2002, van der Ree et al. 2006). Foraging habitat utilised by the species includes rainforests, open and closed forests, <i>Melaleuca</i> swamps, and <i>Banksia</i> woodlands. Roosting habitat is commonly located near water and can include mangroves and riparian vegetation, but colonies also persist in highly urbanised areas (Birt et al. 1998; Tidemann & Vardon 1997; van der Ree et al. 2005). Their diet consists primarily of <i>Eucalyptus</i>, <i>banksia</i>, <i>melaleuca</i>, and <i>Corymbia</i> blossoms but they also feed on fruits and crops (Duncan et al. 1999).	Possible. Eucalypt woodland within Mountain View State Forest may constitute foraging habitat for this species. Fourteen records occur within 25 km of the Study area. Five of these occur in the town of Mundubbera, approximately 20 km southwest (ALA 2026). Nine of these records occur within the town of Gayndah, approximately 15 km southeast. The

Species	Habitat and distribution	Likelihood of occurrence
		most recent record was collected in Gayndah in 2022 (ALA 2026).
Koala (<i>Phascolarctos cinereus</i>) EPBC Act: E NC Act: E	In Queensland, the species contains scattered populations throughout moist forests along the coastline, subhumid woodlands in central and southern regions and within Eucalypt woodlands along watercourses within semi-arid areas further west (DAWE 2022a). Koalas occur in a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by their diet; Eucalyptus species (preference varying regionally) (DAWE 2022a).	Possible. Suitable eucalypt woodlands containing Koala habitat trees are present within Mountain View State Forest. Fifty-one records occur within 25 km of the Study area. The closest record is approximately 10 km south, collected in 2009. The most recent records were collected in 2024, approximately 15 km southeast in the town of Gayndah (ALA 2026).
Large-eared Pied Bat (<i>Chalinolobus dwyeri</i>) EPBC Act: E NC Act: E	This species occurs in a fragmented distribution from Shoalwater Bay, north of Rockhampton, to South of Ulladulla in New South Wales (DCCEEW 2023e). Most of the population is found in New South Wales with large populations in the Sydney sandstone region and the Pilliga region. Queensland populations are primarily in Carnarvon Range and Blackdown Tablelands due to presence of sandstone escarpments (DCCEEW 2023e). Their habitat includes sandstone or rhyolite cliffs, escarpments, and caves for roosting and fertile valleys and tall woodlands near watercourses for foraging (DCCEEW 2023e). Foraging habitats include box gum woodland, sclerophyll forest, subtropical rainforest, and sub-alpine woodlands.	Unlikely. Suitable habitat does not occur within the Study area. The closest records are approximately 160 km west, collected in 1944 (ALA).
Long-nosed Potoroo (<i>Potorous tridactylus tridactylus</i>) EPBC Act: V NC Act: V	The Long-nosed Potoroo occurs from near Gladstone in Queensland to the northern boundaries of the Sydney Basin in New South Wales (Frankham et al. 2012). Its distribution is highly fragmented and in Queensland is known from a few populations in lowland heath and coastal habitats, and further inland in higher altitude forested ranges (DAWE 2022b). Its habitat ranges from coastal scrub and heath woodland to wet sclerophyll forest and rainforest. Optimal habitat will contain a dense understorey layer for sheltering with sufficient open space beneath the sub canopy for foraging (DAWE 2022b).	Unlikely. Suitable habitat is not present, the closest records are 100 km north located in Bulburin National Park. The most recent of these was collected in 1993 (ALA 2026).
Northern Quoll (<i>Dasyurus hallucatus</i>) EPBC Act: E NC Act: LC	In Queensland, the Northern Quoll is known to occur as far south as Gracemere and Mt Morgan, south of Rockhampton, as far north as Weipa in Queensland and extends as far west into central Queensland to the vicinity of Carnarvon Range National Park (McGoldrick 2013; Woinarski et al. 2008). The species diverse range of habitats includes eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert (DCCEEW 2025b). The species is also known to occupy non rocky lowland habitats such as beach scrub communities in central Queensland (DCCEEW 2025b). Rocky areas provide prime habitat for northern quolls (DCCEEW 2025b).	Unlikely. Suitable habitat is not present within the Study area. Two records occur within 25 km of the Study area, approximately 20 km southwest in the town of Mundubbera. One of these records is undated and the other was collected in 1922 (ALA 2026).

Species	Habitat and distribution	Likelihood of occurrence
Yellow-bellied Glider (<i>Petaurus australis australis</i>) EPBC Act: V NC Act: V	This species occurs from south-east Queensland to the Victoria-South Australia border at altitudes up to 1400 metres (m) (DCCEEW 2022b). Typical habitat for the species includes old growth eucalyptus forests/woodlands with high rainfall and they have a preference smooth-barked eucalyptus as they allow for better foraging. Tree hollows are an important habitat feature for dens and shelter. They live and forage in family groups of up to 6 individuals where they are active for most of the night (DCCEEW 2022b). Their diet consists of mainly sap (mostly from eucalypts) and insects, spiders, and nectar.	Likely. This species was sighted on an adjacent property during fauna surveys conducted by Epic in 2022. This observation was made approximately 2 km north of Mountain View State Forest which contains eucalypt woodlands comprising suitable habitat for this species. One other record exists approximately 18 km north of the Study area in Nour Nour National Park (no date provided) (ALA 2026).
Birds		
Australian Painted Snipe (<i>Rostratula australis</i>) EPBC Act: E NC Act: E	This species has been recorded in all states in Australia and is commonly sighted in eastern Australia throughout much of Queensland (DCCEEW 2025b). Breeding only occurs in swamps with temporary water regimes and complex shorelines forming islands, shallow water, exposed wet mud and dense low fringing vegetation (Rogers et al. 2005; Geering et al. 2007). During non-breeding periods they may be found in a wider range of habitats including dams, rice paddocks, waterlogged grasslands, roadside drains and even brackish waterways (Marchant & Higgins 1993).	Unlikely. Suitable wetland habitat is not present within the Study area. The closest records for this species are greater than 100 km east of the Study area (ALA 2026).
Black-breasted Button Quail (<i>Turnix melanogaster</i>) EPBC Act: E, M NC Act: E	This species occurs in south-east Queensland as far north as Byfield and as far south as the Border Ranges, the furthest west they occur is Palmgrove National Park (DCCEEW 2022c). Their range may extend further south as other similar quail species (<i>Cinclosoma punctatum</i>) were not recorded until recently (DCCEEW 2022c). This species inhabits rainforests and forests, more specifically low closed forests such as semi-evergreen vine thicket and microphyll vine forests (DCCEEW 2026b). Associated tree species include <i>Acacia harpophylla</i>, <i>Casuarina cristata</i>, <i>Brachychiton rupestris</i>, <i>Araucaria cunninghamii</i>, <i>Eucalyptus intermedia</i>, and <i>E. tereticornis</i> and they also utilise Lantana as foraging and roosting habitat. They prefer remnant vine thicket connected to forested areas with dense shrubs and leaf-litter (DCCEEW 2026b). They mostly feed on invertebrates on the forest floor and seasonally feed on berries.	Unlikely. Semi-evergreen vine thicket communities which provide habitat for this species occur on lands adjacent to the Study area. Two records occur within 25 km of the Study area, one of which is located within 2 km (no date provided) (ALA 2026). However, targeted surveys for this species and its habitat were conducted throughout the Study area and suitable habitat was not identified within the Study area itself.
Coxen's Fig Parrot (<i>Cyclopsitta diophthalma coxeni</i>) EPBC Act: CE NC Act: CR	Coxen's Fig Parrot is known from a few reliable records within Queensland and New South Wales, with records occurring between Rockhampton in central Queensland to Richmond River in northeastern New South Wales (Coxen's Fig Parrot Recovery Team 2001). This species will primarily feed on the seeds of figs but may also consume the fruit of other native and exotic trees, nectar, lichen and insect larvae. It occurs in many habitat types including, lowland subtropical rainforests, dry rainforest, littoral and developing littoral rainforest, sub-littoral mixed scrub, riparian corridors in woodland, open woodland and across cleared lands, and urbanised and agricultural areas containing fig trees (Higgins 1999; Coxen's Fig Parrot Recovery Team 2001).	Unlikely. Suitable habitat with fruiting trees is not present within the Study area. One record exists within 25 km, collected approximately 20 km southwest in the town of Mundubbera (no date provided) (ALA 2026).

Species	Habitat and distribution	Likelihood of occurrence
Curlew Sandpiper (<i>Calidris ferruginea</i>) EPBC Act: CE, M NC Act: CR	In Queensland, inland records are sparsely scattered, mostly around Mt Isa (Higgins & Davies 1996). Occurrence across the inland is likely to be birds on passage to sites where it spends the Australian summer (Blakers et al. 1984). It mostly occurs on intertidal mudflats in sheltered coastal areas, such as estuaries, bays and lagoons. It also uses swamps, lakes, saltworks and sewage ponds.	Unlikely. Suitable wetland habitat does not occur within the Study area. The closest records are approximately 90 km northeast located in the town of Childers, collected in 2013 (ALA 2026).
Diamond Firetail (<i>Stagonopleura guttata</i>) EPBC Act: V NC Act: V	Diamond firetails occur on the south-east mainland of Australia from south-east Queensland to Eyre Peninsula, South Australia, and about 300 km inland from the sea (Higgins et al. 2007). In Queensland, this species range is now confined to the very south of the state (Hodder et al. 2021). This species can be found in lightly timbered woodlands or open forests with Eucalypt, Acacia or Casuarina species, and in grasslands with scattered trees (Higgins et al. 2007).	Unlikely. This species range is confined to southern parts of Queensland. The Study area is located north of where suitable habitat is considered likely to occur (DCCEEW 2026b). The nearest record was collected in 2000, approximately 65 km southwest (ALA 2026).
Grey Falcon (<i>Falco hypoleucos</i>) EPBC Act: V NC Act: V	Grey Falcon occurs in semi-arid and arid woodlands, shrublands, grasslands and wooded watercourses, typically in areas of <500 mm annual rainfall (Debus 1998; Aumann 2001). The species occurs sparsely in the interior and the north of the Australian mainland (Marchant & Higgins 1993; Debus 1998).	Unlikely. Suitable habitat is not present within the Study area. The closest record is over 100 km east (date not provided) (ALA 2026).
Latham's Snipe (<i>Gallinago hardwickii</i>) EPBC Act: V, M NC Act: V	Latham's Snipe has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (Higgins & Davies 1996). It occurs in a wide variety of permanent and ephemeral wetlands, preferring open freshwater wetlands with fringing vegetation. The species is also recorded from swamps, billabongs, lakes, edges of creeks and rivers, and some artificial waterbodies (Higgins & Davies 1996).	Unlikely. Three records exist within 25 km of the Study area, however suitable wetland habitat does not occur. The closest record is approximately 7 km west, collected in 1968. A more recent 2018 record is located approximately 20 km southwest in the town of Mundubbera (ALA 2026).
Painted Honeyeater (<i>Grantiella picta</i>) EPBC Act: V NC Act: V	This species occurs from the Grampians in Victoria to the Northern Territory with the highest densities being between the Grampians and Roma in Queensland (DCCEEW 2015). The species' movement patterns and breeding season follow the fruiting of mistletoe. They inhabit mistletoe in a range of eucalyptus/acacia/casuarina woodlands including riparian, black box, river red gum, box gum, ironbark, and Callitris with a preference for woodlands with high densities of mature trees (DCCEEW 2015). They also utilise gardens, farmlands, and roadsides where mistletoe is abundant. Their diet is primarily mistletoe fruits and nectar from flowering mistletoe mostly of the genus <i>Amyema</i> and nectar other native plants (eucalyptus/banksias) (DCCEEW 2015). They also eat arthropods in the non-breeding season and they are an important food source for nestlings (DCCEEW 2015).	Unlikely. Suitable eucalypt woodland may be present within Mountain View State Forest, however no mistletoe was observed to be present. The closest record is located approximately 48 km southwest (ALA 2026).

Species	Habitat and distribution	Likelihood of occurrence
Red Goshawk (<i>Erythroriorchis radiatus</i>) EPBC Act: E NC Act: E	Red Goshawk is now thought to be extirpated in south-east Queensland (Seaton 2014; Birdlife International 2016). North-east Queensland (north of 20°S) and eastern Cape York Peninsula are thought to be the strongholds for the species in eastern Australia (DERM 2012). The species occurs in woodlands and forests, particularly tall forests in areas of high rainfall (Woinarski 2007), and ideally with intact forest or woodland, a mosaic of vegetation types and permanent water, particularly riverine forests, and a large and diverse bird population (its prey species).	Unlikely. Suitable habitat does not occur within the Study area. The closest record is located approximately 45 km southeast, collected in Bininbi National Park in 1993 (ALA 2026).
Sharp-tailed Sandpiper (<i>Calidris acuminata</i>) EPBC Act: V, M NC Act: V	In Queensland this species is widespread along most of the coast and sparsely scattered inland, particularly in central and south-western regions (Higgins & Davies 1996). This species has a preference for muddy edges of shallow fresh or brackish wetlands with inundated or emergent sedges. Grass, saltmarsh or other low vegetation. In coastal areas the species can be found in lagoons, swamps, lakes and pools, inland it likely found in dams, waterholes and bore drains or swamps (Higgins & Davies 1996).	Unlikely. Suitable wetland habitat is not present within the Study area. The closest record was collected in 1995, approximately 70 km northeast (ALA 2026).
Squatter Pigeon (<i>Geophaps scripta scripta</i>) EPBC Act: V NC Act: V	Squatter Pigeon is now largely restricted to Queensland, where the southern subspecies occurs north to the Burdekin River (Frith 1982). The species extends west to Longreach and Charleville. There is a subpopulation from Warwick to Texas. A small population may persist in the upper Brisbane valley, where the last Birddata record is from 2014 (Ward et al. 2021). The southern subspecies of the Squatter Pigeon occurs mainly in dry grassy woodlands and open forests (Frith 1982; Crome & Shields 1992). It mostly occurs on sandy sites near permanent water (Blakers et al. 1984), and particularly favours areas of sandy soil dissected by low gravelly ridges close to water (Frith 1982).	Unlikely. Suitable habitat does not occur within the Study area. The nearest record is located approximately 27 km southwest, collected in 2006 (ALA 2026).
Star Finch (<i>Neochmia ruficauda ruficauda</i>) EPBC Act: E NC Act: E	The distribution of this species is very poorly understood, however, based on a small number of records it is believed to occur on in central Queensland. The distribution of the species is considered to extend north to Bowen, west beyond Winton and south near Wowan (DCCEEW 2025b). Targeted throughout central Queensland failed to locate this subspecies and it is thought to be possibly extinct. Habitat includes grasslands and grassy woodlands close to freshwater bodies and can also occur in cleared or suburban areas (DCCEEW 2025b).	Unlikely. Suitable habitat is not present within the Study area. The nearest record is approximately 180 Km west (no date provided) (ALA 2026).
White-throated Needletail (<i>Hirundapus caudacutus</i>) EPBC Act: V, M NC Act: V	This species mainly occurs along the east coast from Cape York Peninsula to Tasmania and as far south as the Great Dividing Range in Victoria, there are also occurrences in southeast South Australia (TSSC 2019). The species occurs as a vagrant in the Northern Territory, Western Australia, and islands such as Norfolk Island. They are mostly aerial in Australia and reach heights of up to 1 km above ground (TSSC 2019). They are observed above most habitat types but particularly open forests and rainforests and coastal cliffs and dunes. Their diet during non-breeding season in Australia consists of beetles, cicadas, bees, flies, termites, and grasshoppers (TSSC 2019).	Unlikely. Three records occur within 25 km of the Study area, one of which is located within 2 km, collected in 1978 (ALA 2026). However, this species is almost entirely ariel and is unlikely to utilise the Study area for habitat.

Species	Habitat and distribution	Likelihood of occurrence
Reptiles		
Collared Delma (<i>Delma torquata</i>) EPBC Act: V NC Act: V	This species occurs in a patchy distribution from the Bunya Mountains in the north to Millmerran in the south (DCCEEW 2026b). They inhabit eucalypt and acacia forests or woodlands using fallen debris and soil cracks for shelter with rocky outcrops present (DEWHA 2008e). Typically, there is a native grass dominated ground cover including Kangaroo Grass (<i>Themeda triandra</i>) and Wiregrass (<i>Aristida sp.</i>). They prefer west-facing habitats (DCCEEW 2026b). Associated canopy species include Poplar Box (<i>Eucalyptus populnea</i>), Red Ash (<i>Alphitonia excelsa</i>), Brisbane Wattle (<i>Acacia fimbriata</i>), and Brush Box (<i>Lophostemon confertus</i>) (DCCEEW 2026b).	Unlikely. Suitable habitat is not present within the Study area. The closest record is located approximately 38 km northeast, collected in 2021 (ALA 2026).
Dunmall's Snake (<i>Furina dunmalli</i>) EPBC Act: V NC Act: V	Dunmall's Snake is confined to the Brigalow Belt bioregion of southeastern Queensland and north-eastern New South Wales. The species has been found in a wide range of habitats, including forests and woodlands dominated by <i>Acacia harpophylla</i> and other acacias (<i>A. burowii</i> , <i>A. deanii</i> , <i>A. leioclyx</i>), <i>Callitris</i> spp. or <i>Allocasuarina luehmannii</i> on black alluvial cracking clay and clay loams (Covacevich et al. 1988; Brigalow Belt Reptiles Workshop 2010; Hobson 2012). However, preferred habitat appears to be brigalow growing on cracking black clay and clay loams (Cogger et al. 1993), with most records from between 200 to 500 m a.s.l. (Hobson 2012).	Unlikely. Suitable habitat in the form of Acacia dominated woodlands on clay soils does not occur within the Study area. Two occur within 25 km, both collected approximately 15 km southeast in the town of Gayndah (ALA 2026).
Golden-tailed Gecko (<i>Strophurus taenicauda</i>) EPBC Act: - NC Act: NT	The Golden-tailed Gecko is known from southeast Queensland, with records mostly occurring from Rockhampton to Toowoomba (ALA 2026). Habitat for this species includes shrublands and forests, particularly areas containing White Cypress (<i>Callitris columellaris</i>).	Unlikely. One record occurs approximately 500 m southwest of the Meyers South Pit area, and four other records occur within 25 km (ALA 2026). However, suitable shrublands and forests are not present.
Grey Snake (<i>Hemiaspis damelii</i>) EPBC Act: E NC Act: E	This species occurs in the Brigalow Belt south bioregion in Queensland as far south as Goondiwindi and Dalby and as far north as Rockhampton (DCCEEW 2022d). New South Wales has a more fragmented distribution around lower reaches of major westerly flowing rivers as far south as Murrumbidgee and as far north as Gwydir (DCCEEW 2022d). Their habitat includes floodplains and ephemeral wetlands as their main prey is frogs, and the cracks created in flood prone soils allow the species to shelter and hunt (DCCEEW 2022d). Associated vegetation communities in Queensland are Brigalow (<i>Acacia harpophylla</i>) and Belah (<i>Casuarina cristata</i>) woodlands and in New South Wales are River Red Gum (<i>Eucalyptus camaldulensis</i>), and Black Box (<i>E. largiflorens</i>) woodlands (DCCEEW 2022d).	Unlikely. Suitable habitat is not present within the Study area. The closest record was collected in 1992, approximately 70 km south in the town of Proston (ALA 2026).
White-throated Snapping Turtle (<i>Eseya albagula</i>) EPBC Act: CE NC Act: CR	Southern Snapping Turtle is found in the major drainage basins of the Fitzroy, Burnett and Mary rivers of south-east Queensland. There are also records from the Raglan, Kolan and Gregory-Burrum drainages (Thomson et al. 2006). The species is most commonly found in flowing water, with log tangles, undercut banks and irregular rocky substrate that act as shelter. It is rarely found in ephemeral waterbodies or in waterbodies away from flowing streams.	Unlikely. Several records occur within the Burnett River within 25 km of the Study area, however suitable flowing water bodies are not present within the Study area (ALA 2026).

Species	Habitat and distribution	Likelihood of occurrence
Yakka Skink (<i>Egernia rugosa</i>) EPBC Act: V NC Act: V	Yakka Skink is endemic to eastern Queensland and is patchily distributed in sub-humid to semi-arid dry open forest, woodland and rocky areas. The species lives in communal burrow systems, often under timber and in deep rock crevices (Ehmann 1992; Wilson 2015).	Unlikely. Suitable habitat is not present within the Study area. The closest record is over 100 km northeast (ALA 2026).

6.2.2 EPBC Act Migratory Fauna Species

Desktop searches identified three terrestrial fauna species listed as Migratory under the EPBC Act with potential to occur within the Study area (**Table 9**). The likelihood of occurrence of these species within the Study area was determined based on the desktop assessment and the field surveys. The assessment considered the natural distribution of the species, habitat requirements, previous sightings and habitat suitability within the Study area. White-throated Needletail (*Hirundapus caudacutus*) is also listed as Vulnerable under the EPBC Act and as such is addressed above (refer **Section 6.2.1**).

The likelihood of occurrence assessment determined that all Migratory species are considered unlikely to occur within the Study area.

Table 9. Likelihood of occurrence of migratory species

Species	Distribution and habitat	Likelihood of occurrence
Oriental Cuckoo (<i>Cuculus optatus</i>) EPBC Act: M NC Act: SL	The species is a regular nonbreeding migrant to coastal northern and eastern Australia (Pizzey & Knight 2012). Oriental Cuckoo inhabits monsoon forest, rainforest edges, leafy trees in paddocks, river flats, roadsides, mangroves, islands (Pizzey & Knight 2012), mostly on the northern and eastern coasts of Australia. The species is sometimes found in mangroves and is often recorded in gardens and plantations (Blakers et al. 1984; Higgins 1999).	Unlikely. Suitable habitat is not present within the Study area. A single record exists approximately 16 km southeast, collected in 1979 (ALA 2026).
Yellow Wagtail (<i>Motacilla flava</i>) EPBC Act: M NC Act: SL	Yellow Wagtail is a regular migrant to coastal Australia but in small numbers. This species occurs in open areas with low vegetation, especially in cultivation and on lawns, sporting fields and airfields, as well as sewage farms and occasionally beaches (Higgins et al. 2006; Menkhorst et al. 2017).	Unlikely. Suitable habitat is no present within the Study area. The closest record is approximately 180 km north, collected in 2016 (ALA 2026).

7 SUMMARY OF KEY ECOLOGICAL CONSTRAINTS

Based on the findings of the baseline ecology assessment described in the preceding sections, a summary of the key ecological constraints within each proposed pit area is presented in **Table 10**. The locations of the constraints are shown on **Figure 3**, **Figure 4** and **Figure 6**.

Table 10. Summary of Key Ecological Constraints

Key Constraint	Pit area				
	Access tracks	Slacks (North and South)	Meyer (North and South)	Whordley	State Forest
ESAs					
Category B ESA	Not present.	Not present.	Not present.	Not present.	Not present.
Category B ESA 1 km buffer	Not present.	Present based on the field-verified Category B ESA (HVR Endangered RE 12.8.22) within the Slacks pit area.	Present based on the field-verified Category B ESA (HVR Endangered RE 12.8.24) to the east of Mountain View State Forest.	Present based on State-mapped ESA to the east of the MLA	Present based on the field-verified Category B ESA (HVR Endangered RE 12.8.24) to the east of Mountain View State Forest.
Category C ESA (State Forest)	Not present.	Not present.	Not present.	Not present.	Present (Mountain View State Forest) based on State mapping/tenure designation.
MSES					
Protected wildlife habitat -fauna	Not present.	Not present.	Not present.	Not present.	The entirety of Mountain View State Forest constitutes protected wildlife habitat (foraging, roosting, nesting or breeding), including 1.54 ha of the Disturbance footprint. Relevant species include Greater Glider, Yellow-bellied Glider and Koala.
Protected wildlife habitat -flora	Not present.	Not present.	Not present.	Not present.	The entirety of Mountain View State Forest is mapped within the 'high-risk' area on the Protected Plants Flora Survey Trigger Mapping, including 1.54 ha of the Disturbance footprint.
Regulated vegetation – intersecting a watercourse	Not present.	Not present.	Not present.	Not present.	Not present.

Key Constraint	Pit area				
	Access tracks	Slacks (North and South)	Meyer (North and South)	Whordley	State Forest
Waterway for Waterway Barrier Works	Not present.	Not present.	Waterway mapped on the QLD Waterways for Waterway Barrier Works mapping intersects the proposed access track to Meyer South Pit.	Not present.	Not present.
MNES					
Threatened species habitat	Not present.	Not present.	Not present.	Not present.	The entirety of Mountain View State Forest is mapped as field-verified threatened species habitat, including 1.54 ha of the Disturbance footprint. Relevant species include Greater Glider, Yellow-bellied Glider, Koala and Grey-headed Flying Fox.

8 POTENTIAL IMPACTS AND MITIGATION RECOMMENDATIONS

The proposed Project will involve the development of several mine pits used for the extraction of Bauxite, and associated infrastructure including access tracks and ROM/hardstand areas. The total disturbance area for the Project is anticipated to be 7.92 ha. The location of the mine pits is largely constrained by the location of underground Bauxite deposits, however detailed planning has been carried out to ensure impacts to areas containing matters of environmental significance are avoided wherever possible. With the exception of the State Forest Pit, all proposed mine pits (and associated infrastructure) have been located within previously cleared areas containing non-remnant vegetation. However it is noted, the proposed State Forest Pit has been positioned on the eastern border of Mountain View State Forest, adjacent to an existing access track, and reduced in size as far as reasonably practicable (1.54 ha) to minimise impacts to habitat.

The below sections have assessed the potential impacts of the Project based on the inclusion of the 1.54 ha State Forest Pit in the Stage 1 mining program. However, if the State Forest Pit is removed from the Stage 1 mining program by ABx, clearing of remnant vegetation and/or habitat and associated impacts to MSES and MNES will be avoided.

8.1 Clearing of Native Vegetation

The total disturbance footprint for the Project is anticipated to include 7.92 ha. The majority of footprint (6.39 ha) will occur within non-remnant areas. A small area of clearing (1.54 ha) would be required within Mountain View State Forest, which has been verified as containing entirely remnant RE 12.5.1, if mining were to proceed in this area.

8.1.1 Non-juvenile Koala Habitat Trees

Clearing of remnant vegetation within Mountain View State Forest would involve the removal of Non-juvenile Koala Habitat Trees (NJKHTs), including Lemon Scented Gum, Narrow Leaved Ironbark, Mountain Grey Gum, Pink Bloodwood, Brown Bloodwood and Gympie Messmate. The total number of NJKHTs within the State Forest Pit is unknown, however will be limited to a small 1.54 ha area.

8.1.2 Threatened Species Habitat

The State Forest Pit would result in the loss of 1.54 ha of habitat for threatened species. Threatened species habitat occurs within Mountain View State Forest, which is known to provide habitat for Greater Glider (southern), listed as Endangered under Commonwealth and State legislation. Remnant Eucalypt woodlands within Mountain View State Forest are also considered to provide potential habitat for Yellow-bellied Glider, Grey-headed Flying Fox and Koala (refer **Section 6.2**).

8.2 Habitat Fragmentation

Disturbance outside of Mountain View State Forest will only occur within previously cleared areas and areas of Category X – non-remnant vegetation. These areas are considered to provide little to no habitat value and clearing within these areas is not expected to contribute to habitat fragmentation.

Clearing associated with the development of Mountain View State Forest Pit would involve the clearing of 1.54 ha of remnant vegetation which is also known to support MNES threatened species (i.e. Greater Glider). The proposed State Forest Pit has been positioned on the eastern border of Mountain View State Forest, adjacent to an existing access track, and reduced in size as far as reasonably practicable to minimise impacts to habitat.

It is noted that the broader landscape within which the Project is situated is already considerably fragmented, with steep terrain, road corridors and cleared agricultural lands impeding connectivity to surrounding habitat. Mountain View State Forest constitutes an area of intact and connected habitat however the State Forest Pit has been positioned on the edge of the area, ensuring the large majority of Mountain View State Forest would remain intact. Further, comparable habitat (RE 12.5.1b) is mapped under State-mapping as directly adjoining

the northwest corner of Mountain View State Forest. The connection between these will not be impacted by the Project.

Considering the positioning of the proposed pit, the extent of clearing and the large areas of analogous vegetation within the surrounding area, it is not considered that the development of the State Forest Pit would create new habitat fragmentation impacts.

8.3 Direct Mortality

Common birds and mammals are likely to move away from disturbance during the construction phase, reducing the likelihood of direct mortality on these species. Fauna species with limited mobility are at risk of injury or death from vehicles and machinery that will be on site during the construction phase of the Project. Fauna spotter-catchers will be present during the construction phase to ensure wildlife are safely cleared from the area where the disturbance area is located adjacent to wooded habitat. This will minimise the potential for injury or death from construction activities.

8.4 Weeds and Pest Animals

Import of weed seeds on project vehicles in conjunction with soil disturbance due to clearing has the potential to promote the proliferation of weeds within the site or introduce new weeds from surrounding areas. The abundance and diversity of weeds at the site is currently low, so mitigation measures should be employed during construction to minimise the spread of weeds.

8.5 Summary of Impacts

The Project's disturbance footprint is 7.92 ha in size, including 1.54 ha of remnant RE 12.5.1 (within the Mountain View State Forest), and 6.39 ha of Category X – non-remnant vegetation (previously disturbed land). Clearing outside Mountain View State Forest is not expected to result in the removal of any habitat for threatened species or to contribute to habitat fragmentation.

Clearing within Mountain View State Forest would involve the removal of 1.54 ha of vegetation containing NJKHTs, with impacts to NJKHTs anticipated to be minor. The development of the State Forest Pit would also result in the removal of 1.54 ha of habitat for MNES threatened species, however this is not considered to result in any additional fragmentation of habitat.

There is a very minor potential for injury or mortality to fauna species to occur during construction activities, however, mitigation measures will be employed during construction to minimise this risk so far as reasonably practical.

8.6 Recommended Mitigation Measures

It is recommended that the proponent implement mitigation measures that minimise impacts to ecological values associated with the Project. The positioning of proposed mine pits has already been refined to reduce impacts to habitat areas as far as practicable, however as previously noted, the positioning of mine pits is constrained by the location of underground Bauxite deposits. Where avoidance is not possible, mitigation measures should be implemented as part of the proposed works as outlined in **Table 11**.

Table 11. Recommended mitigation measures

Impact	Management measure	Project timing
Vegetation clearing	Where possible the overall construction footprint will be refined and minimised further during the final design process	Final design
	Vegetation clearing extents will be clearly demarcated with flagging or bunting prior to clearing to limit the area safely and reasonably required for the works	Prior to clearing
	Targeted pre-clearance surveys will be carried out prior to vegetation clearing and will incorporate searches for protected plants and threatened fauna. Pre-clearance surveys will be carried out by suitably qualified ecologists prior to vegetation clearing.	Prior to clearing

Impact	Management measure	Project timing
	Fauna spotter-catchers (licensed) will be present during clearing and will monitor vegetation clearing extents to ensure clearing does not extend beyond the demarcated area.	During clearing
	Employees will be made aware of environmental obligations and compliance requirements through the site induction program.	Site induction
	Nominated site representative will monitor vegetation clearing extents to ensure clearing does not extend beyond demarcated area.	During clearing
Fauna mortality	Fauna spotter-catchers (licensed) will inspect clearing areas during vegetation clearing and will direct clearing activities in a manner that protects identified fauna.	Prior to and during clearing
	A fauna register will record all fauna encountered during clearing works (as per fauna spotter-catcher license requirements) including fauna incidents (injuries and mortality).	Pre-construction
	Onsite speed limits will be established throughout the construction areas to limit the potential for fauna mortality.	Ongoing
Species of Commonwealth and State significance	Where construction requires vegetation clearing in areas mapped as 'high risk' under the DETSI 'protected plants flora survey trigger map' surveys will be carried out as per the <i>Flora Survey Guidelines - Protected Plants</i> (DETSI 2025) i.e. within 12 months of lodging an application to DETSI prior to clearing.	Pre-construction
	Inductions will outline species of significance that may occur for personnel, contractors and fauna spotter/catchers.	Induction
	Fauna spotter-catchers will inspect sites prior to vegetation clearing (for the potential presence of threatened flora and fauna species) and will be present to rescue fauna during vegetation clearing.	Prior to and during clearing
	Employees will be required to notify the fauna spotter-catchers when a potential species of significance is observed. All encounters with a threatened species will be recorded in a fauna register.	Ongoing
Weeds and Pests	All plant and vehicles coming to the project must have a weed hygiene certificate to avoid the introduction of weed and seeds.	Ongoing
	Disposal and storage of putrescible wastes must be undertaken appropriately to ensure feral animals aren't attracted to the works area.	Ongoing
	Storage of construction/operation materials to be carried out in a manner so as to not encourage the establishment of resident pest fauna.	Ongoing
	Domestic animals, including pets, are not allowed onsite.	Ongoing
	Regular monitoring of weed and pest occurrence in association with works areas.	Ongoing
Waste	General waste will be recycled where possible.	Ongoing
	General waste will be disposed of appropriately. In the case of trackable waste, waste tracking certificates should be kept and maintained as part of this process.	Ongoing

9 MNES SIGNIFICANT IMPACT ASSESSMENT

The below sections have assessed the potential impacts of the Project based on the inclusion of the 1.54 ha State Forest Pit in the Stage 1 mining program. However, if the State Forest Pit is removed from the Stage 1 mining program by ABx, clearing of remnant vegetation and/or habitat and associated impacts to MNES will be avoided, and therefore significant impacts to all identified MNES (as defined in the MNES Guideline) will also be avoided.

Under the EPBC Act an action will require approval from the Minister if the action has, will have, or is likely to have, a significant impact on a MNES. The *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance* (MNES Guideline) (DotE 2013a) is used to undertake a detailed analysis of the nature, extent and significance of the likely direct, indirect and consequential impacts relevant to MNES and/or their known and potential habitat, including likely short-term and long-term impacts.

The likelihood of occurrence assessments for conservation significant flora and fauna species (Table 7, Table 8 and Table 9) identified the several MNES as potentially occurring within the State Forest Pit portion of the Study Area, detailed in Table 12.

Table 12. MNES potentially occurring within the Study area

Protected matter	Species	EPBC Act status	Likelihood of occurrence
Threatened flora	<i>Pomaderris clivicola</i>	E	Likely
	<i>Acacia grandifolia</i>	V	Possible
	<i>Bertya opposens</i>	V	Possible
	Mt Berryman Phebalium	E	Possible
Threatened fauna	Greater Glider	E	Known
	Yellow-bellied Glider	V	Likely
	Koala	E	Possible
	Grey-headed Flying Fox	V	Possible

9.1 MNES Not Subject to Significant Impact Assessment

9.1.1 Mt Berryman Phebalium – Endangered

While Mt Berryman Phebalium is considered a possible occurrence within the Study area, it is unlikely to occur within the Disturbance footprint and the proposed impacts are not considered to be of a scale that warrants an assessment using the MNES guideline significant impact criteria.

This species is known from three locations within southeast Queensland and has an estimated population size of approximately 1,000 individuals. The distribution of this species is severely fragmented and extent of occurrence is highly restricted. The species occurs in semi-evergreen vine thicket on red volcanic soils, or in communities adjacent to this vegetation type. While semi-evergreen vine thicket has been field-verified to occur within MLA 100277 (in the northern portion, to the west of Slacks North and Slack South Pits), the vegetation community type does not occur within the Disturbance footprint. Further, proposed clearing adjacent to areas mapped as semi-evergreen vine thicket will only occur within cleared non-remnant areas. As such, it is considered that the species will not occur with the Disturbance footprint and the Project is not expected to result in a significant impact to this species. An assessment for significant impacts on Mt Berryman Phebalium under the MNES Guideline has not been undertaken.

9.2 Significant Impact Assessment – Criteria Definition

With regard to species listed as vulnerable the significant impact assessments commence with an evaluation of the likely importance of the population of vulnerable fauna species associated with the Disturbance footprint and immediate surrounds. Under four of the nine assessment criteria identified within the MNES guidelines, vulnerable species are considered as subject to significant impacts when an 'important population' is impacted.

An ‘important population’ for vulnerable species as defined within the MNES guidelines is as follows:

- ‘An important population is a population that is necessary for a species’ long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:
 - Key source populations either for breeding or dispersal
 - Populations that are necessary for maintaining genetic diversity and/or
 - Populations that are near the limit of the species range

Given the specificity of the above definition and the often scarce ecological information and occurrence records available for many threatened species and populations in Australia, it is difficult to determine either of:

- Attributes such as breeding and dispersal behaviour and whether the population is a ‘key source’ or
- The genetic diversity of individuals inhabiting a regional population or sub-population.

A single assessment criterion (for vulnerable, endangered and critically endangered species) refers to impacts on ‘habitat critical to the survival of a species or ecological community’ which is defined under the MNES Guidelines as areas that are necessary:

- For activities such as foraging, breeding, roosting, or dispersal
- For long-term maintenance of the species or ecological community
- To maintain genetic diversity and long-term evolutionary development and/or
- For the reintroduction of populations or recovery of the species or ecological community.

Such habitats may be, but are not limited to:

- Habitat identified in a recovery plan for the species or ecological community as habitat critical for that species or ecological community.

Many species do not have approved recovery plans and ‘habitat critical to the survival of a species’ is generally not identified in available literature. For species that have a wide distribution/occurrence, habitat considered as necessary for ‘foraging, breeding, roosting or dispersal’ is a broad definition that is not necessarily analogous with the definition of critical at a species level. Given the relative lack of information that is often available, significance of impacts to threatened species has been based on the professional expertise of the assessment team and the latest available information relating to species habitat and ecological requirements and distribution.

Assessment of the significance of impact in accordance with the criteria contained within the MNES Guidelines has been undertaken for the threatened species that are considered to be known, likely or possibly occurring and potentially subject to impacts from the Project. The significant impact assessments are provided in the following sections covering species information relevant to the assessment and an assessment table using the criteria set out in the MNES Guidelines.

9.3 Significant Impact Assessment

There are three terrestrial flora species and four terrestrial fauna species listed as MNES that are considered to have potential to occur within the State Forest Pit portion of the Disturbance footprint. The potential for the Disturbance footprint to cause a significant impact to these species and their habitat has been assessed against the criteria outlined in the MNES Guidelines. The significant impact assessment and the assessment outcomes are provided in **Table 13**.

Table 13. Significant Impact Assessment for MNES threatened species

MNES	Assessment outcome	Reasoning
Threatened flora		
<i>Pomaderris clivicola</i>	Significant impact unlikely	<i>Pomaderris clivicola</i> has a restricted range within southeast Queensland and is known from only two localities – Binjour Plateau near Gayndah and Walla Range near Coalstoun Lakes (DCCEE 2026b). Within Binjour Plateau, it inhabits tall open forest with Gympie Messmate and Lemon-scented Gum and an open understorey of semi-

MNES	Assessment outcome	Reasoning
		evergreen vine thicket species. This vegetation community type occurs within Mountain View State Forest and within the Disturbance footprint. Sixteen records of the species occur within 5 km of the Disturbance footprint, one of which occurs approximately 3.5 km northwest of the Disturbance footprint associated with Mountain View State Forest (ALA 2026). Despite these records, the species was not recorded during the 2022 or 2026 field surveys. Pre-clearance surveys targeting the species should be carried out prior to commencement of proposed works within the Disturbance footprint. If the species is found to be present, it will be managed and or avoided in accordance with an Impact Management Plan, as per the <i>Flora Survey Guidelines – Protected Plants</i>. The Disturbance footprint would result in the removal of 1.54 ha of habitat which may support <i>Pomaderris clivicola</i>. Abundant similar habitat, which occurs throughout Mountain View State Forest and is mapped to occur within adjoining vegetation, will remain intact. While the distribution of this species is restricted, database records show that suitable habitat is present within the broader landscape. Considering this, and the fact that the extent of clearing is relatively small, it is not anticipated that the Project will impact population size or viability or contribute to fragmentation or degradation of habitat. As a result, it is considered unlikely there will be a significant impact to <i>Pomaderris clivicola</i>, even with the inclusion of the State Forest Pit in the Stage 1 mining program.
<i>Acacia grandifolia</i>	Significant impact unlikely	<i>Acacia grandifolia</i> occurs exclusively in southeast Queensland, with its extent of occurrence confined to a small area within the Burnett District (DCCEEW 2026b). The species is known from around the Gayndah and Mundubbera regions, with several of these records occurring within 25 km of the Disturbance footprint. The closest records to the Disturbance footprint occur approximately 10 km south, near Mount Gayndah (ALA 2026). Suitable habitat includes forests and woodlands with associated species including Narrow-leaved Ironbark, Lemon-scented Gum and <i>Corymbia trachyphloia</i> (DCCEEW 2026b). Habitat which could support the species occurs within the portion of the Disturbance footprint associated with the State Forest Pit, which encompasses 1.54 ha of suitable habitat for the species. The species has not been recorded during either the 2022 or 2026 field surveys. Pre-clearance surveys targeting the species should be carried out prior to commencement of proposed works within the Disturbance footprint. If the species is found to be present, it will be managed and or avoided in accordance with an Impact Management Plan, as per the <i>Flora Survey Guidelines – Protected Plants</i>. The Disturbance footprint would result in the removal of 1.54 ha of habitat which may support <i>Acacia grandifolia</i>. The entirety of Mountain View State Forest contains analogous vegetation which could provide habitat for this species. Similar habitat is also mapped under State-mapping directly adjacent to the northwest corner of Mountain View State Forest. Database records and distribution mapping indicates that suitable habitat is present within the broader landscape. Considering this, and the minimal clearing footprint, the Project is not expected to impact population size or viability or contribute to fragmentation or degradation of habitat. As a result, it is considered unlikely there will be a significant impact to <i>Acacia grandifolia</i>, even with the inclusion of the State Forest Pit in the Stage 1 mining program.
<i>Bertya opposens</i>	Significant impact unlikely	<i>Bertya opposens</i> occurs in Queensland and New South Wales. In Queensland, the species has a wide but fragmented distribution occurring as far as Emerald in the north to Charleville in the west (DCCEEW 2026b). The species inhabits a variety of habitat and woodlands dominated by Spotty Gum and/or Gympie Messmate that occur within Mountain View State Forest may provide habitat for this species. The species has not been recorded during either the 2022 or 2026 field surveys. Pre-clearance surveys targeting the species should be carried out prior to commencement of proposed works within the Disturbance footprint. If the species is

MNES	Assessment outcome	Reasoning
		found to be present, it will be moved or managed in accordance with a Threatened Species Management Plan. The Disturbance footprint would result in the removal of 1.54 ha of habitat which may be suitable for <i>Bertya opposens</i>. It is noted, however that Mountain View State Forest contains analogous habitat throughout and is connected at the northwest corner to comparable habitat (as mapped under State-mapping). The large majority of Mountain View State Forest, plus the adjoining vegetation will remain undisturbed by the Project's activities. There is an abundance of habitat in the immediate and surrounding area which would likely support this species, and the extent of clearing within the Disturbance footprint is relatively small. Considering this, the Project is not expected to impact population size or viability or contribute to fragmentation or degradation of habitat. As a result, it is considered <u>unlikely</u> there will be a significant impact to <i>Bertya opposens</i>, even with the inclusion of the State Forest Pit in the Stage 1 mining program.
Threatened fauna		
Greater Glider (southern and central)	Significant impact possible	Greater Gliders occur in eastern Australia and are typically found in mature eucalypt forests and woodlands with a variety of eucalypt species and a high density of large tree hollows (van der Ree et al. 2004). Large hollows in old trees are preferred as daytime shelter sites (Goldingay 2012). Suitable trees with large hollows used for den sites were found to be largely trees with a diameter of 50 cm or greater (Smith et al. 2007). Its diet is largely composed of eucalypt leaves and occasionally flowers. The Disturbance footprint occurs well within the species distribution, and database records indicate the species records within the broader region. The closest database record occurs approximately 6 km northwest and the most recent was collected in 2024 approximately 13 km northwest (ALA 2026). In addition, the species was sighted multiple times within Mountain View State Forest during Epic's 2022 field survey including within or adjacent to the proposed State Forest Pit. The habitat within Mountain View State Forest constitutes habitat suitable for Greater Glider, containing large mature eucalypts with large hollows. Sightings of the species within Mountain View State Forest confirm the value of this habitat as, at the very least, foraging and dispersal habitat, but also likely denning and breeding habitat. A suitably qualified fauna-spotter catcher would also need to conduct pre-clearance surveys prior to the commencement of any clearing activities and relocate any individuals at risk of being impacted by the Project's activities. Considering the known presence of the species, any clearing within Mountain View State Forest will result in the loss of habitat for Greater Glider. Mountain View State Forest is connected to additional remnant forest to the northwest and to a lesser extent to the east of Swain's Road encompassing an area of approximately 120 ha of remnant woodland. The development of the State Forest Pit would potentially result in impacts to the species. While analogous habitat occurs throughout Mountain View State Forest, and the Disturbance footprint is relatively small (1.54 ha), hollows large enough to support Greater Glider (>10 cm) generally occur in mature trees and take many years to regenerate if lost. Examination of available aerial imagery indicates Mountain View State Forest has not been harvested for timber since at least 1987 where a tall canopy is seen to be present. Loss of this habitat feature may therefore be detrimental to breeding or denning for individuals residing within Mountain View State Forest. Considering the specificity of habitat requirements for this species (large, mature trees containing large hollows), removal of even a small portion of habitat may result in the fragmentation or degradation of habitat for the species. As a result, it is considered <u>likely</u> there will be a significant impact to Greater Glider, if the State Forest Pit is not removed from the Stage 1 mining program.

MNES	Assessment outcome	Reasoning
Yellow-bellied Glider	Significant impact unlikely	Yellow-bellied Glider occurs from southeast Queensland to far southeastern South Australia. Within Queensland, the species is generally found in coastal areas with its range extending from north of Mackay through the New South Wales-Queensland border. Isolated populations occur inland in the Blackdown and Canarvon Ranges (DAWE 2022c). Habitat includes forests and woodlands dominated by eucalypts, with the species preferring large patches of mature, old growth forest that is floristically diverse and contains a high proportion of winter-flowering, smooth-barked eucalypts (DAWE 2022c). Yellow-bellied Glider shelters in hollows during the day with hollow-bearing trees a critical habitat feature for the species. Mountain View State Forest contains suitable old-growth forest which would likely provide habitat for this species. Field surveys recorded a number of tree species (i.e. Narrow-leaved Ironbark, Grey Gum, Lemon-scented Gum, Pink Bloodwood and Brown Bloodwood) within Mountain View State Forest that are considered preferred habitat species for the Yellow-bellied Glider. In addition, many of these trees were hollow bearing with hollows a common habitat feature throughout Mountain View State Forest. Database records within the immediate area are limited, with the closest record located approximately 18 km north (ALA 2026). However, the species was recorded during the 2022 field surveys on a property approximately 2 km north of Mountain View State Forest. Considering the habitat values within Mountain View State Forest, and the confirmed presence of the species within close proximity, it is possible that Yellow-bellied Gliders utilise Mountain View State Forest for breeding, denning, foraging and dispersal habitat. It is noted however that the species leaves distinct v-notch feeding scars on trees which were not observed on any trees during either survey effort. A suitably qualified fauna-spotter catcher should conduct pre-clearance surveys prior to the commencement of any clearing activities and relocate any individuals at risk of being impacted by the Disturbance footprint. Habitat values were consistent across the whole of Mountain View State Forest and State-mapping indicates that similar contiguous habitat may occur northwest of Mountain View State Forest. Further, given that the species was recorded on a nearby property, suitable habitat is present within the broader area. Disturbance relevant to Yellow-bellied Glider would occur in relation to the development of the State Forest Pit. This portion of the Disturbance footprint encompasses a clearing area of 1.54 ha. Habitat values would be retained in the large majority of Mountain View State Forest and surrounding vegetation, as a result, the scale of impacts to Yellow-bellied Glider is expected to be minor. It is not expected that the Project will impact an important population of this species, interfere with size or viability of populations, or contribute to fragmentation or degradation of the species habitat. As a result, it is considered <u>unlikely</u> there will be a significant impact to Yellow-bellied Glider, even with the inclusion of the State Forest Pit in the Stage 1 mining program.
Koala	Significant impact unlikely	Koalas have a distinct association with eucalypt woodland and forest habitats comprising suitable food trees, mainly of the following genus: <i>Eucalyptus</i>, <i>Corymbia</i>, <i>Angophora</i> and <i>Melaleuca</i> (Moore & Foley, 2000; Martin et al. 2008). They are known to have localised and variable preferences throughout their range, favouring some tree species over others, and may use a variety of trees, including many non-eucalypts, for feeding, shelter and breeding purposes (Pahl & Hume 1990). Locally important Koala trees, including Lemon-scented Gum, Narrow-leaved Ironbark, Mountain Grey Gum, Pink Bloodwood and Gympie Messmate were recorded within Mountain View State Forest. No individuals or signs of presence were observed within the Disturbance footprint, but the species is known to occur within the region. The closest record is located approximately 10 km south (ALA 2026).

MNES	Assessment outcome	Reasoning
		All impacts to Koala habitat will be confined to the portion of the Disturbance footprint relevant to the Mountain View State Forest Pit, which constitutes a total area of 1.54 ha. Suitable habitat is known to occur across the entirety of the Mountain View State Forest and may occur (according to State-mapping) within adjoining habitat northwest of Mountain View State Forest. Given the abundance of suitable habitat within the immediate and broader area, the extent of habitat clearing is considered relatively minor. The species has not been observed within the Disturbance footprint, however a suitably qualified fauna-spotter catcher should conduct pre-clearance surveys prior to the commencement of any clearing activities and relocate any individuals at risk of being impacted by the Project's activities. The State Forest Pit portion of the Disturbance footprint would disturb a small area of potential Koala habitat which is situated within a much larger, somewhat fragmented, area of contiguous habitat. Additionally, Koala have not been observed within the Disturbance footprint during the 2022 or 2026 field surveys. For these reasons, it is not expected that the Project will impact size or viability of a Koala population, nor will it cause fragmentation or degradation of habitat areas. As a result, it is considered <u>unlikely</u> there will be a significant impact to Koala, even with the inclusion of the State Forest Pit in the Stage 1 mining program.
Grey-headed Flying Fox	Significant impact unlikely	Grey-headed Flying Fox occurs along coastal eastern Australia from Cape Upstart in Queensland to south-western Victoria. In Queensland, its range contracted southwards to Maryborough (Churchill 2008), but camps of this species have been recently recorded as far north again as the Mackay region, with several records further south between Gladstone and Bundaberg, Queensland (Roberts et al. 2008). The species roosts in camps, which can be in almost any dense vegetation greater than 3 m in height (Churchill 2008), though more typically >8 m tall (Eby & Roberts 2012). This species feeds on native vegetation with eucalypt blossom a major food source, along with other fruits, flowers, pollen and nectar (Churchill 2008). Mountain View State Forest contains suitable flowering eucalypts upon which Grey-headed Flying Fox may feed (e.g. Lemon-scented Gum, Gympie Messmate and Grey Gum) and as such, the Mountain View State Forest may constitute foraging habitat for this species. The species is known to occur in Gayndah and Mundubbera, with the closest records to the Disturbance footprint occurring in Gayndah approximately 15 km southeast. Any impacts to Grey-headed Flying Fox habitat arising from the Project will be confined to the portion of the Disturbance footprint associated with the State Forest Pit. This area constitutes 1.54 ha. Habitat values, in the form of suitable foraging trees, are present across the whole Mountain View State Forest and within vegetation in the surrounding area (i.e. RE 11.5.15 and RE 12.8.24). In addition, the species is highly mobile and able to easily access nearby habitat/food resources. The extent of impacts to this species are considered relatively minor. It is considered unlikely that the Project will result in a substantial loss of foraging habitat and it is not anticipated that it will create new habitat fragmentation. Further, it is not expected that there will be any impacts to populations which may occupy the area. As a result, it is considered <u>unlikely</u> there will be a significant impact to Grey-headed Flying Fox, even with the inclusion of the State Forest Pit in the Stage 1 mining program.

9.3.1 Summary of Significant Impacts

If the State Forest Pit is kept within the Stage 1 mining program, the Project is likely to result in a significant impact to a single MNES threatened species – Greater Glider. Greater Glider habitat is known to occur within Mountain View State Forest and the species was recorded within this area during the 2022 surveys. It is noted that through careful design refinement by ABx, the proposed pit areas have been preferentially situated within

non-remnant areas. Significant impacts as a result of the Project are therefore confined entirely to the State Forest Pit and no significant impacts to MNES are expected to occur as a result of the development of the Slacks, Meyers, or Whordley Pits. Furthermore, if the State Forest Pit is removed from the Stage 1 mining program, there will be no significant impacts to the Greater Glider or any other MNES.

10 MSES SIGNIFICANT RESIDUAL IMPACT ASSESSMENT

The below sections have assessed the potential impacts of the Project based on the inclusion of the 1.54 ha State Forest Pit in the Stage 1 mining program. However, if the State Forest Pit is removed from the Stage 1 mining program by ABx, clearing of remnant vegetation and/or habitat and associated impacts to MSES will be avoided, and therefore significant impacts to all identified MSES (as defined in the QEOP Guideline) will also be avoided.

The Queensland *Environmental Offsets Policy Significant Residual Impact Guideline* (QEOP Guideline) (DEHP 2014) provides the framework for assessing the potential for SRIs to MSES from a resource project's activities. Under the QEOP Guideline, an SRI is described as an adverse impact, whether direct or indirect, of a prescribed activity on all or part of a prescribed environmental matter. Impacts from the Project have been assessed under the relevant guideline criteria.

The following MSES have either been field-verified or are currently mapped within the Disturbance footprint:

- Wildlife habitat:
 - Threatened Species
 - High-risk Protected Plant Flora Survey Trigger mapping
- Waterway providing for fish passage

As noted in previous sections, there is no regulated vegetation or other MSES within the disturbance footprint and therefore these are not assessed below.

10.1 Wildlife habitat

10.1.1 Threatened Species

The following sections identify the species listed as threatened (critically endangered, endangered or vulnerable) under State legislation only. The MNES fauna and flora species identified as potentially present that are all also listed as threatened under State legislation have been assessed as MNES in **Section 9.3**. It is noted that species listed as Near Threatened under the NC Act are only considered as MSES where they occur within an area mapped as essential habitat under the VM Act. Given the essential habitat mapping for the Project did not identify habitat for any Near Threatened species they are not addressed further.

A single species listed as threatened under State legislation has potential to occur within the State Forest Pit portion of the Disturbance footprint – *Pomaderris coomingalensis*. This species is listed as Endangered under the NC Act and considered likely to occur according to the likelihood of occurrence assessment (refer **Section 6.1**). An SRI assessment, in accordance with the QEOP Guideline, is presented in the following section.

10.1.2 Significant Residual Impact Assessment – *Pomaderris coomingalensis*

Pomaderris coomingalensis has potential to occur within the portion of the Disturbance footprint associated with the development of the State Forest Pit. The total impact area within the Disturbance footprint relevant to the species is 1.54 ha.

Suitable habitat for *Pomaderris coomingalensis* includes *Corymbia citriodora* subsp. *variegata* open forest on red soils, which is known to occur within Mountain View State Forest (field-verified as RE 12.5.1). The species has been recorded within Binjour State Forest, less than 5 km from the Study area. Despite this, the species has not been recorded during either the 2022 or 2026 field surveys. However, this is based on RE field assessments and incidental observations, and a formal protected plants survey has not been conducted. Therefore, the species' occurrence within the Disturbance footprint cannot be ruled out.

While 1.54 ha of the Disturbance footprint may constitute habitat for this species, comparable suitable habitat occurs throughout Mountain View State Forest and analogous habitat (RE 12.5.1b) is mapped under State-mapping as directly adjoining the northwest corner of Mountain View State Forest. Project activities will be confined to the proposed Disturbance footprint and Mountain View State Forest, and any connecting habitat, will remain undisturbed. Further, the State Forest Pit has been positioned at the edge of Mountain View State

Forest, adjacent to an existing track, minimising required clearing, avoiding habitat fragmentation and reducing the potential for edge effects. Given the scale of impacts to potential habitat and the abundance of similar habitat in the immediate surrounding area, **it is considered that an SRI to *Pomaderris coomingalensis* is unlikely, even with the inclusion of the State Forest Pit in the Stage 1 mining program.**

10.1.3 High-risk Protected Plant Flora Survey Trigger Mapping

The State Forest Pit portion of the Disturbance footprint (1.54 ha) is mapped as ‘high-risk’ on the Protected Plants Flora Survey Trigger Map. These areas are only considered as a MSES where protected plants (listed as critically endangered, endangered or vulnerable under the NC Act) are found to be present following a survey. No protected plants were observed within the Disturbance footprint during the field surveys, however no formal assessment for Protected Plants in accordance with the methods outlined in the *Flora Survey Guidelines – Protected Plants* has been completed due to the high intensity/cost of the field work and noting the work must be done closer to the timing of clearing. Therefore, it must be conservatively assumed that protected plants are present within the State Forest Pit portion of Disturbance footprint. With respect to a potential SRI to protected plants that are an MSES, all relevant species within the State Forest Pit portion of the disturbance footprint are also MNES and have been assessed in the preceding MNES sections.

Prior to any clearing within the State Forest, a formal protected plant survey will need to be completed within areas of the Disturbance footprint that intersect the ‘high-risk’ areas on the Protected Plants Trigger Map plus an additional 100 m buffer, as required by the Flora Survey Guidelines, and relevant permits or exemption notices will need to be obtained under the NC Act.

10.2 Waterway providing for fish passage

A Waterway for Waterway Barrier works is mapped as intersecting the proposed access track associated with Meyer South Pit. A bed level crossing will be used to minimise impacts to this waterway and it is not expected that the construction of this access track will impact fish passage or contribute to degradation of fish habitat. **Therefore an SRI to waterways providing for fish passage is unlikely.**

11 ESAS

Mountain View State Forest (Category C ESA) constitutes the only ESA occurring within the Disturbance footprint. The development of the State Forest Pit will involve disturbance to 1.54 ha of this Category C ESA.

Within the MLA, field assessments verified a patch of vegetation to the east of Slacks North Pit and Slacks South Pit as HVR RE 12.8.22 (Endangered) which constitutes a Category B ESA in accordance with the *Environmental Protection Regulation 2019* (EP Reg) and DEHP (2016) (**Figure 6**). North of this, State-mapping shows there is another Category B ESA (Endangered RE). Neither of these ESAs mapped in the northern portion of the MLA intersect the proposed Disturbance footprint.

Vegetation to the east of Mountain View State Forest was field-verified during the 2022 surveys as HVR RE 12.8.24 (Endangered) (a Category B ESA) plus there are additional patches of State-mapped Category B ESAs along the eastern boundary of the MLA. However, none of these areas of Category B ESA intersect the Disturbance footprint.

The presence of State-mapped and field-verified Category B ESAs within and adjacent to the MLA verifies that the entire Disturbance footprint falls within the 1 km buffer of a Category B ESA required by Standard Conditions A13 of DEHP (2016), and therefore a variation to this standard condition will be required for the Project. However, the disturbance footprint is outside of the actual Category B ESAs and therefore impacts to these ESAs will not occur, and the Project can remain consistent with the relevant eligibility criteria of DEHP (2016).

12 CONCLUSION

This EAR has been prepared to characterise the ecological values within and surrounding the areas proposed for disturbance as part of Stage 1 of the Project (initial small-scale mining). This assessment has incorporated both desktop and field assessments to identify vegetation communities, habitat values and conservation significant species within the relevant areas.

The Disturbance footprint for the Project and broader MLA primarily comprises of non-remnant vegetation, including plantation and cleared areas. The majority of the MLA is currently used for plantation forestry, with some smaller areas used for cropping and grazing. Mountain View State Forest is located in the southern portion of the MLA and constitutes remnant eucalypt woodland (RE 12.5.1), which is known to provide habitat for the threatened Greater Glider and may provide habitat for other conservation significant fauna and flora species including both MSES and MNES species.

The Disturbance footprint is within a Category C ESA (the Mountain View State Forest), and therefore would require consultation with and approval by DETSI prior to proceeding in this area. The presence of State-mapped and field-verified Category B ESAs within and adjacent to the MLA verifies that the entire Disturbance footprint falls within the 1 km buffer of a Category B ESA required by Standard Conditions A13 of DEHP (2016), and therefore a variation to this standard condition will be required for the Project. However, the disturbance footprint is outside of the actual Category B ESAs and therefore impacts to these ESAs will not occur, and the Project can remain consistent with the relevant eligibility criteria of DEHP (2016).

Potential impacts to MNES associated with the Project are limited to the development of the State Forest Pit. This would involve the clearing of 1.54 ha of remnant RE 12.5.1, which contains known and potential habitat for threatened species, including Greater Glider which was observed within Mountain View State Forest during the 2022 field survey. Threatened species with potential to occur within the Disturbance footprint have been assessed in **Sections 9 and 10** of this report. Overall it is considered likely there will be a significant impact to Greater Glider, if the State Forest Pit is retained for the Stage 1 mining program. Conversely, if the State Forest Pit is removed from the program, there will be no significant impacts to MNES associated with the project.

The project will not result in a likely SRI to MSES (beyond the Greater Glider which is assessed above as part of the MNES assessment).

Careful design refinement has been implemented to minimise impacts where possible. Following the field surveys, the proposed pit layout was refined to account for ecological values which were found to be present within the initial proposed Disturbance footprint. As a result, the proposed pits were relocated and reduced in size to prioritise non-remnant areas and minimise impacts to ecological values within the site. Consequently, a large majority of the Disturbance footprint falls within non-remnant areas, with the exception of the State Forest Pit.

Whilst the State Forest Pit has been heavily reduced in size from its original plans (down to 1.54 ha), clearing and mining within the Mountain View State Forest is still considered likely to result in a significant impact to the Greater Glider (an MNES and MSES) given the species is known to occur and breeding habitat is present (i.e. preferred eucalyptus trees with large hollows > 10 cm). It is noted that, no significant impacts are expected to occur as a result of the development of any pits located outside of Mountain View State Forest. As such, ABx can avoid all significant impacts to MNES or MSES by removing the State Forest Pit from the Stage 1 mining program, and limiting activities to only the proposed Slacks, Meyers and Whordley pits. In doing so, there would be no requirement for ecological offsets or to prepare additional approval documentation such as a referral under the EPBC Act. This will also assist in facilitating a more streamlined approvals process under a Variation EA.

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APPENDIX A DESKTOP SEARCH RESULTS



Australian Government

Department of Climate Change, Energy,
the Environment and Water

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: 08-Jan-2026

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

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	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	42
Listed Migratory Species:	10

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 environment anywhere.

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 <https://www.dcceew.gov.au/parks-heritage/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:	20
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:	2
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

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 buffer area only
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In buffer area only
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 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 buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In buffer area only
Weeping Myall Woodlands	Endangered	Community likely to occur within area	In feature 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			
Calidris acuminata			
Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Critically Endangered	Species or species habitat may occur within area	In feature area
Erythroriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat likely to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to 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
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
FISH			
Neoceratodus forsteri Australian Lungfish, Queensland Lungfish [67620]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may occur within area	In buffer area only
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
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area	In buffer area only
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 may occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) 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
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Acacia grandifolia [3566]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat may occur within area	In feature area
Bertya opposens [13792]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Cadellia pentastylis Ooline [9828]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat likely to occur within area	In feature area
Cycas megacarpa [55794]	Endangered	Species or species habitat may occur within area	In buffer area only
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Leuzea australis listed as Rhaponticum australe Austral Cornflower, Native Thistle [9363]	Vulnerable	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 buffer area only
Phebalium distans Mt Berryman Phebalium [81869]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Polianthion minutiflorum [82772]	Vulnerable	Species or species habitat may occur within area	In feature area
Pomaderris clivicola [55151]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sophora fraseri [8836]	Vulnerable	Species or species habitat may occur within area	In buffer area only

REPTILE			
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat may occur within area	In feature area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat likely to occur within area	In feature area

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			

Scientific Name	Threatened Category	Presence Text	Buffer Status
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 likely to occur within area	In feature area
Motacilla flava Yellow Wagtail [644]		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]	Vulnerable	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]	Vulnerable	Species or species habitat may occur within area	In feature area
Pandion haliaetus Osprey [952]		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			

Scientific Name	Threatened Category	Presence Text	Buffer Status
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
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]	Vulnerable	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]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
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 may 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
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely 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				
Remediation of a landslip at Humphrey Binjour Road, 4.5 kms sth Burnett Hway, Qld	2013/6893	Controlled Action	Post-Approval	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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](#)
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- [-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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WN Taxon ID	Kingdom	Class	Family	Scientific name	Common name	NCA status	EPBC status	Superseded	Conservation significant	Establishment	Sensitive species	Area survey lists	Sighting records	Specimen records	Sighting summary
1857	Animalia	Aves	Scolopacidae	Gallinago hardwickii	Latham's snipe	V	V	No	Yes	QAI	No		1	1	1
1092	Animalia	Aves	Turnicidae	Turnix melanogaster	black-breasted button-quail	V	V	No	Yes	QA	No		1	0	1
368	Animalia	Reptilia	Diplodactylidae	Strophurus taenicauda	golden-tailed gecko	NT		No	Yes	Q	No		1	0	1
16766	Plantae	Equisetopsida	Campanulaceae	Lobelia purpurascens	white root	SL		No	Yes	NTQ	No		3	2	3
15918	Plantae	Equisetopsida	Campanulaceae	Wahlenbergia gracilis	sprawling bluebell	SL		No	Yes	NTQ	No		1	0	1
7667	Plantae	Equisetopsida	Combretaceae	Macropteranthes leiocaulis		NT		No	Yes	NTQ	No		1	1	1
11322	Plantae	Equisetopsida	Euphorbiaceae	Bertya pedicellata		NT		No	Yes	NTQ	No		7	6	7
2296	Plantae	Equisetopsida	Euphorbiaceae	Fontainea fugax		E		No	Yes	NTQ	No		3	3	3
11533	Plantae	Equisetopsida	Leguminosae	Acacia wardellii		NT		No	Yes	NTQ	No		4	3	4
9322	Plantae	Equisetopsida	Orchidaceae	Pterostylis ophioglossa		SL		No	Yes	NTQ	Yes		2	2	2
18110	Plantae	Equisetopsida	Pteridaceae	Acrostichum speciosum	mangrove fern	SL		No	Yes	NTQ	No		1	1	1
9230	Plantae	Equisetopsida	Rhamnaceae	Pomaderris clivicola		E	V	No	Yes	NTQ	No		9	8	9
18233	Plantae	Equisetopsida	Rhamnaceae	Pomaderris coomingalensis		E		No	Yes	NTQ	No		2	2	2
27676	Plantae	Equisetopsida	Rutaceae	Phebalium distans	Mt Berryman phebalium	E	E	No	Yes	NTQ	No		4	4	4
17796	Plantae	Equisetopsida	Sterculiaceae	Brachychiton australis	broad-leaved bottle tree	SL		No	Yes	NTQ	No		2	1	2
17803	Plantae	Equisetopsida	Sterculiaceae	Brachychiton rupestris		SL		No	Yes	NTQ	No		3	1	3
9206	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea glauca		SL		No	Yes	NTQ	No		1	0	1
12305	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea glauca subsp. glauca		SL		No	Yes	NTQ	No		1	1	1
15934	Plantae	Equisetopsida	Xanthorrhoeaceae	Xanthorrhoea johnsonii		SL		No	Yes	NTQ	No		1	1	1



Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

ML: 100277

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 2020). 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 a field survey may be required to validate values on the ground.

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

Disclaimer

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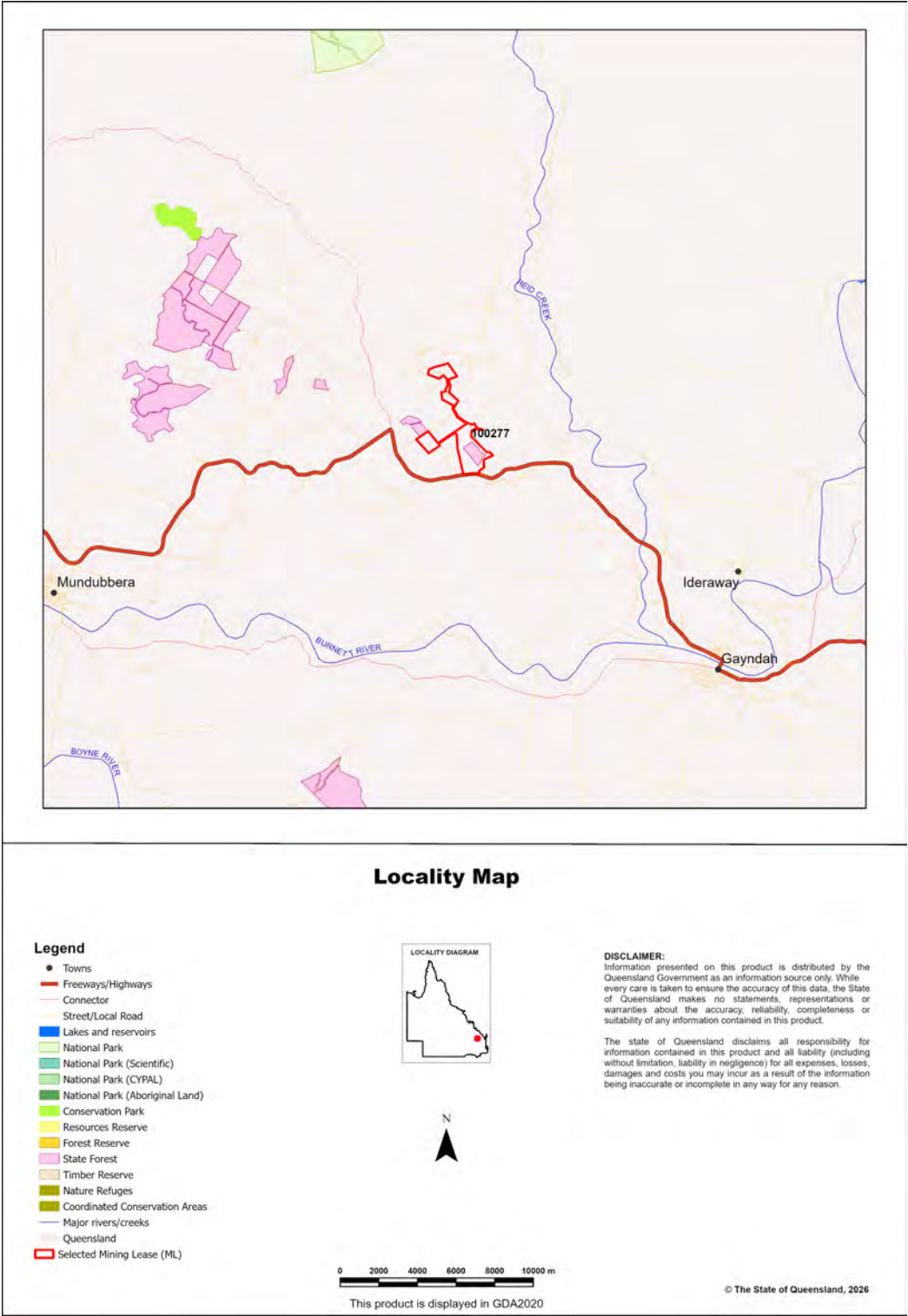
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Assessment Area Details

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: ML: 100277, with area 435.34 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
North Burnett Regional	Burnett	Southeast Queensland	Brisbane - Barambah Volcanics
		Brigalow Belt	Mount Morgan Ranges



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 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.

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 ha	0.0%
1b Protected Areas- nature refuges	0 ha	0.0%
1c Protected Areas- special wildlife reserves	0 ha	0.0%
2 State Marine Parks- highly protected zones	0 ha	0.0%
3 Fish habitat areas (A and B areas)	0 ha	0.0%
4 Strategic Environmental Areas (SEA)	0 ha	0.0%
5 High Ecological Significance wetlands on the Map of Queensland Wetland Environmental Values	0 ha	0.0%
6a High Ecological Value (HEV) wetlands	0 ha	
6b High Ecological Value (HEV) waterways	0 km	Not applicable
7a Threatened (endangered or vulnerable) wildlife	17.01 ha	3.9%
7b Special least concern animals	0 ha	0.0%
7c i Koala habitat area - core (SEQ)	0 ha	0.0%
7c ii Koala habitat area - locally refined (SEQ)	0 ha	0.0%
7d Sea turtle nesting areas	0 km	Not applicable
8a Regulated Vegetation - Endangered/Of concern in Category B (remnant)	4.19 ha	1.0%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	14.08 ha	3.2%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	5.99 ha	1.4%
8d Regulated Vegetation - Essential habitat	29.65 ha	6.8%
8e Regulated Vegetation - intersecting a watercourse	1.9 km	Not applicable
8f Regulated Vegetation - within 100m of a Vegetation Management Wetland	0 ha	0.0%
9a Legally secured offset areas- offset register areas	0 ha	0.0%
9b Legally secured offset areas- vegetation offsets through a Property Map of Assessable Vegetation	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**

Values are present

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>	Keys boronia	V	None
<i>Calyptrorhynchus lathamii</i>	Glossy black cockatoo	V	None
<i>Casuarius casuarius johnsonii</i>	Sthn population cassowary	E	None
<i>Crinia tinnula</i>	Wallum froglet	V	None
<i>Denisonia maculata</i>	Ornamental snake	V	None
<i>Euastacus bindal</i>	Mount Elliot crayfish	CR	None
<i>Euastacus binzayedii</i>		CR	None
<i>Euastacus eungella</i>		E	None
<i>Euastacus hystricosus</i>		E	None
<i>Euastacus jagara</i>	Jagara hairy crayfish	CR	None
<i>Euastacus maidae</i>		CR	None
<i>Euastacus monteithorum</i>		E	None
<i>Euastacus robertsi</i>		E	None
<i>Taudactylus pleione</i>	Kroombit tinkerfrog	E	None
<i>Litoria freycineti</i>	Wallum rocketfrog	V	None
<i>Litoria olongburensis</i>	Wallum sedgefrog	V	None
<i>Macadamia integrifolia</i>		V	None
<i>Melaleuca irbyana</i>	swamp tea-tree	E	None
<i>Macadamia ternifolia</i>		V	None
<i>Macadamia tetraphylla</i>	bopple nut	V	None
<i>Petrogale penicillata</i>	brush-tailed rock-wallaby	V	None
<i>Petrogale coenensis</i>	Cape York rock-wallaby	E	None
<i>Petrogale purpureicollis</i>	purple-necked rock-wallaby	V	None
<i>Petrogale sharmani</i>	Sharmans rock-wallaby	V	None
<i>Petrogale xanthopus celeris</i>	yellow-footed rock-wallaby (Qld subspecies)	V	None
<i>Petaurus gracilis</i>	Mahogany Glider	E	None
<i>Petrogale persephone</i>	Proserpine rock-wallaby	E	None
<i>Phascolarctos cinereus</i>	Koala - outside SEQ*	E	None
<i>Pezoporus wallicus wallicus</i>	Eastern ground parrot	V	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

Scientific name	Common name	NCA status	EPBC status	Migratory status
<i>Pomaderris coomingalensis</i>		E	None	None
<i>Phebalium distans</i>	Mt Berryman phebalium	E	E	None
<i>Fontainea fugax</i>		E	None	None

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** and **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
11.11.4/11.9.5a	E-subdom	rem_end
12.5.1/11.5.17/11.5.15	E-subdom	rem_end
12.5.1b/12.3.3/12.8.22	E-subdom	rem_end

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
11.11.4/11.9.5a	E-subdom	hvr_end
12.5.1b/12.3.3/12.8.22	E-subdom	hvr_end
12.5.7/12.8.22	E-subdom	hvr_end

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

Regulated vegetation map category	Map number
R	9146
R	9147
R	9246

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**

- ▲ 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)
- Selected Mining Lease (ML)



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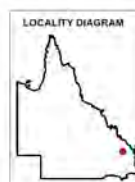
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Map 2 - MSES - Wetlands and Waterways

**MSES - Wetlands and Waterways**

- ▲ 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
- Selected Mining Lease (ML)

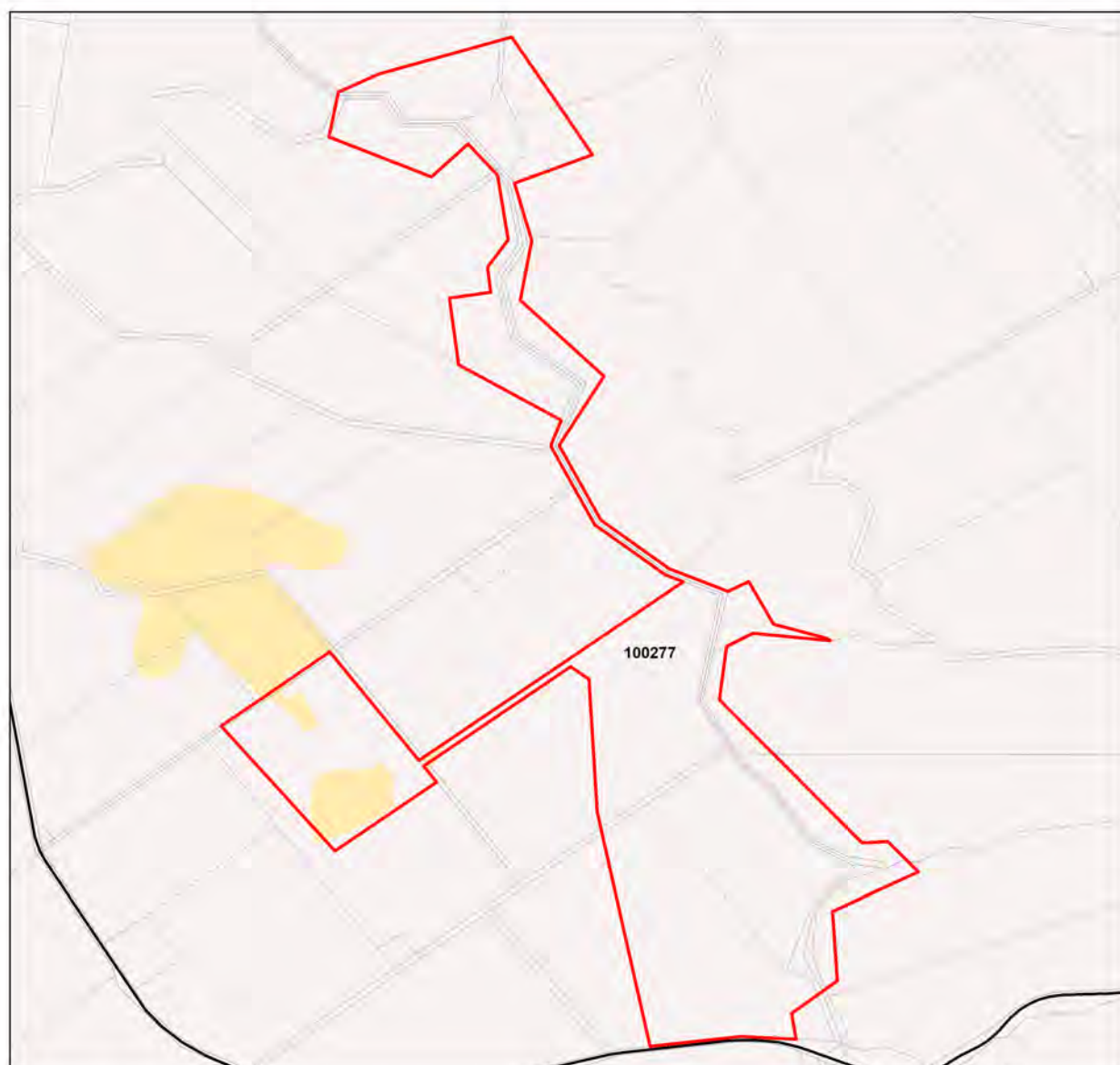


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Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



MSES - Species

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

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (special least concern)
- Wildlife habitat (endangered or vulnerable)
- Selected Mining Lease (ML)



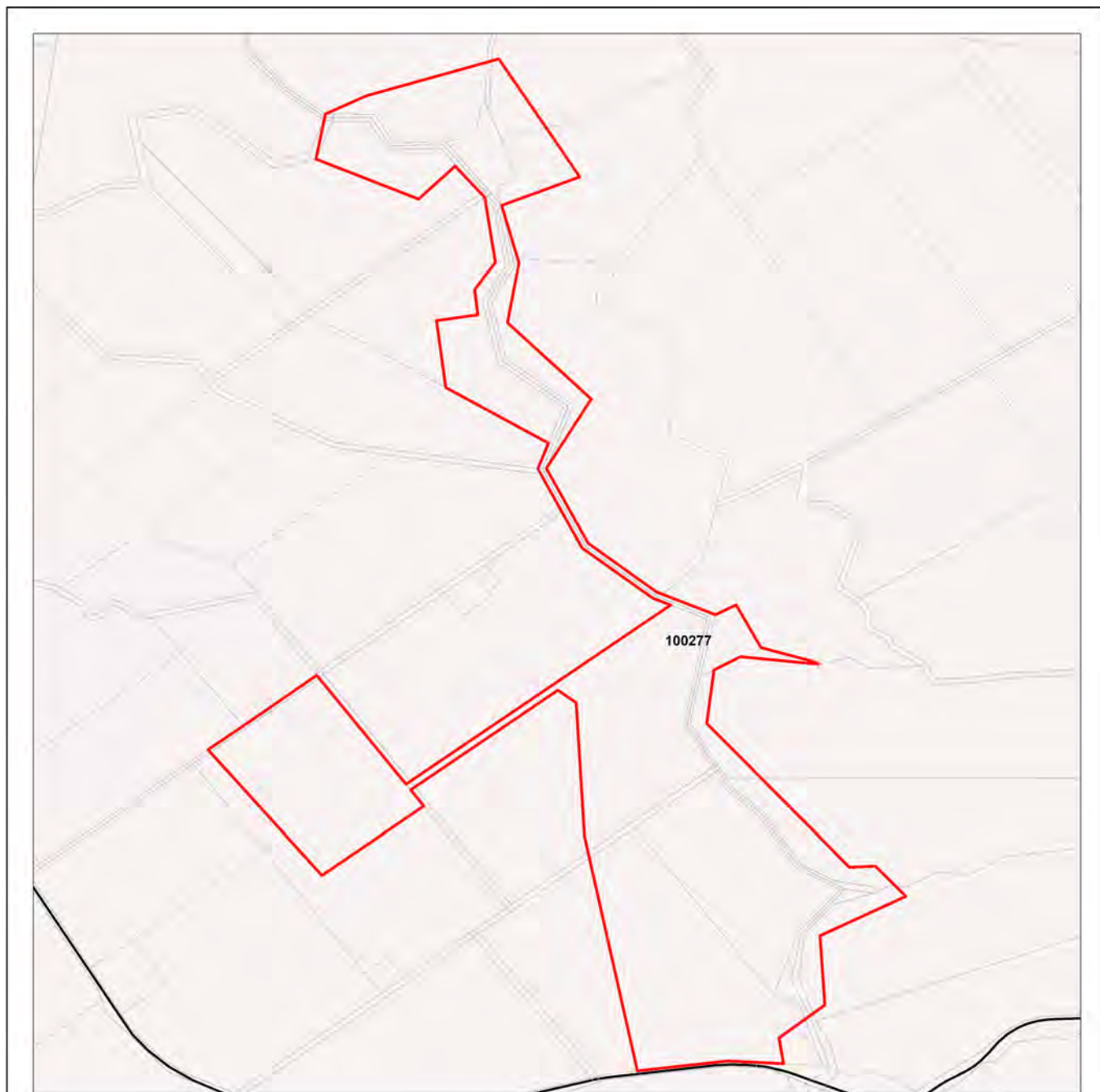
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Map 3b - MSES - Species - Koala habitat area (SEQ)



MSES - Species Koala habitat area (SEQ)

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Koala habitat area (core)
- Koala habitat area (locally refined)
- Selected Mining Lease (ML)



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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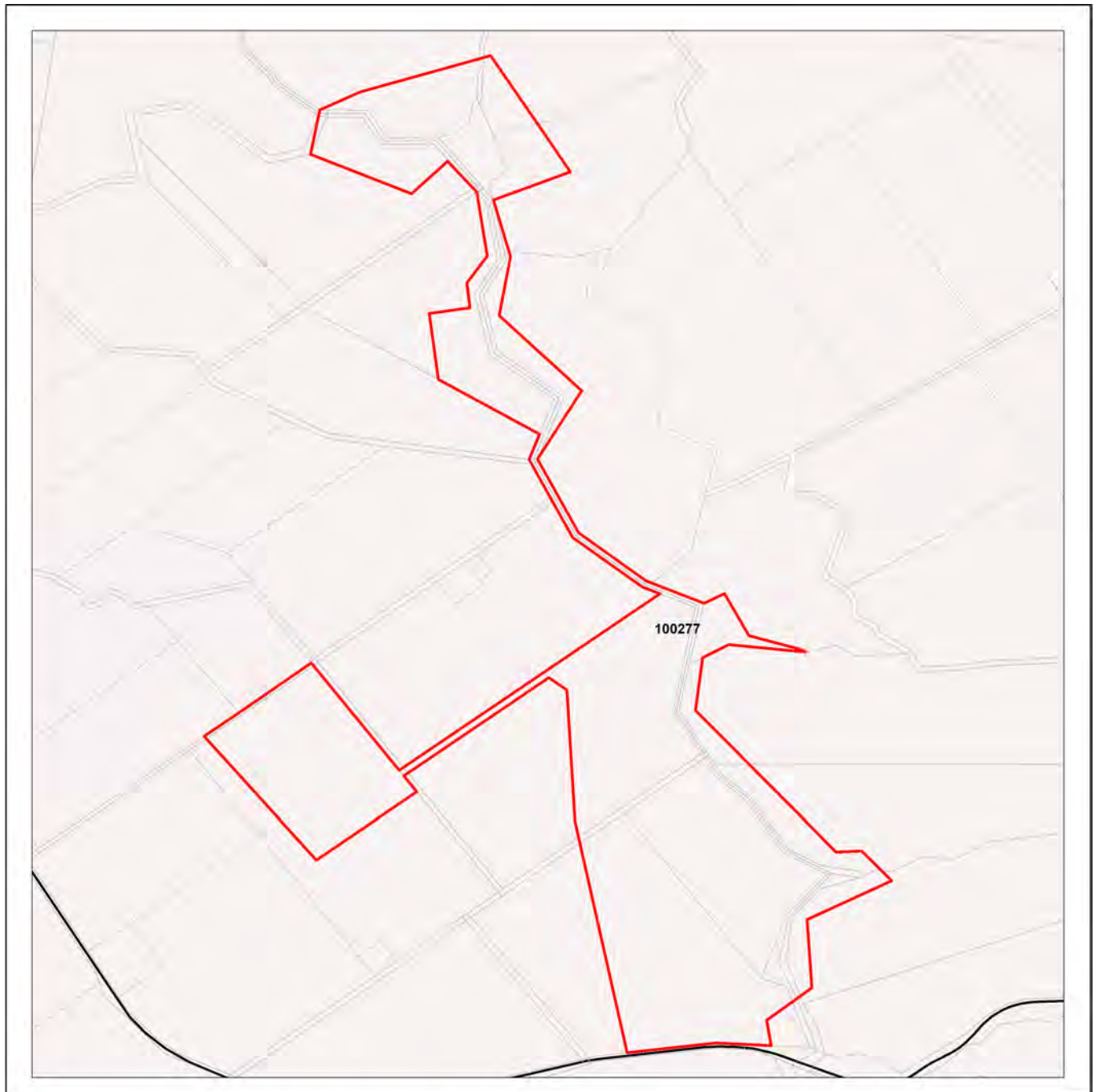
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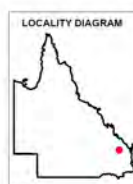
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The represented layers for SEQ 'koala habitat area-core' and 'koala habitat area-locally refined' in MSES are sourced directly from the regulatory mapping under the Nature Conservation (Koala) Conservation Plan 2017. Whilst every effort is made to 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 - Species - Wildlife habitat (sea turtle nesting areas)

**MSES - Wildlife habitat (sea turtle nesting areas)**

- ▲ Towns
- Freeways/Highways
- Secondary roads
- Major rivers/creeks
- Wildlife habitat (sea turtle nesting areas)
- ▭ Selected Mining Lease (ML)

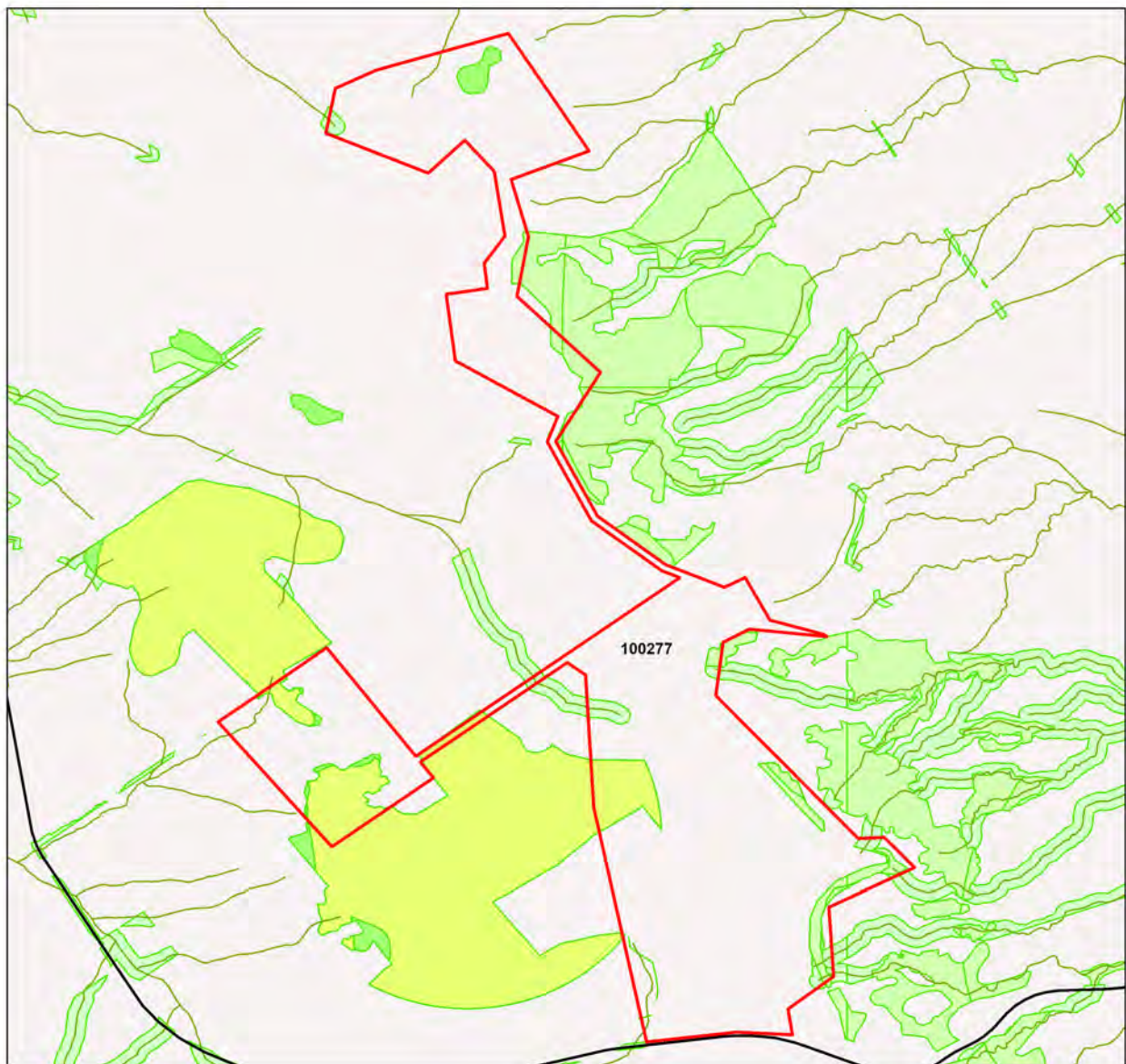


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MSES mapping of sea turtle nesting areas identifies beaches where the recorded number of turtle nests are over 1% of the turtle species or genetic stock. The linework is also deliberately extended along nearby rocky coastlines and headlands to recognise 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

- ▲ 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)
- Selected Mining Lease (ML)



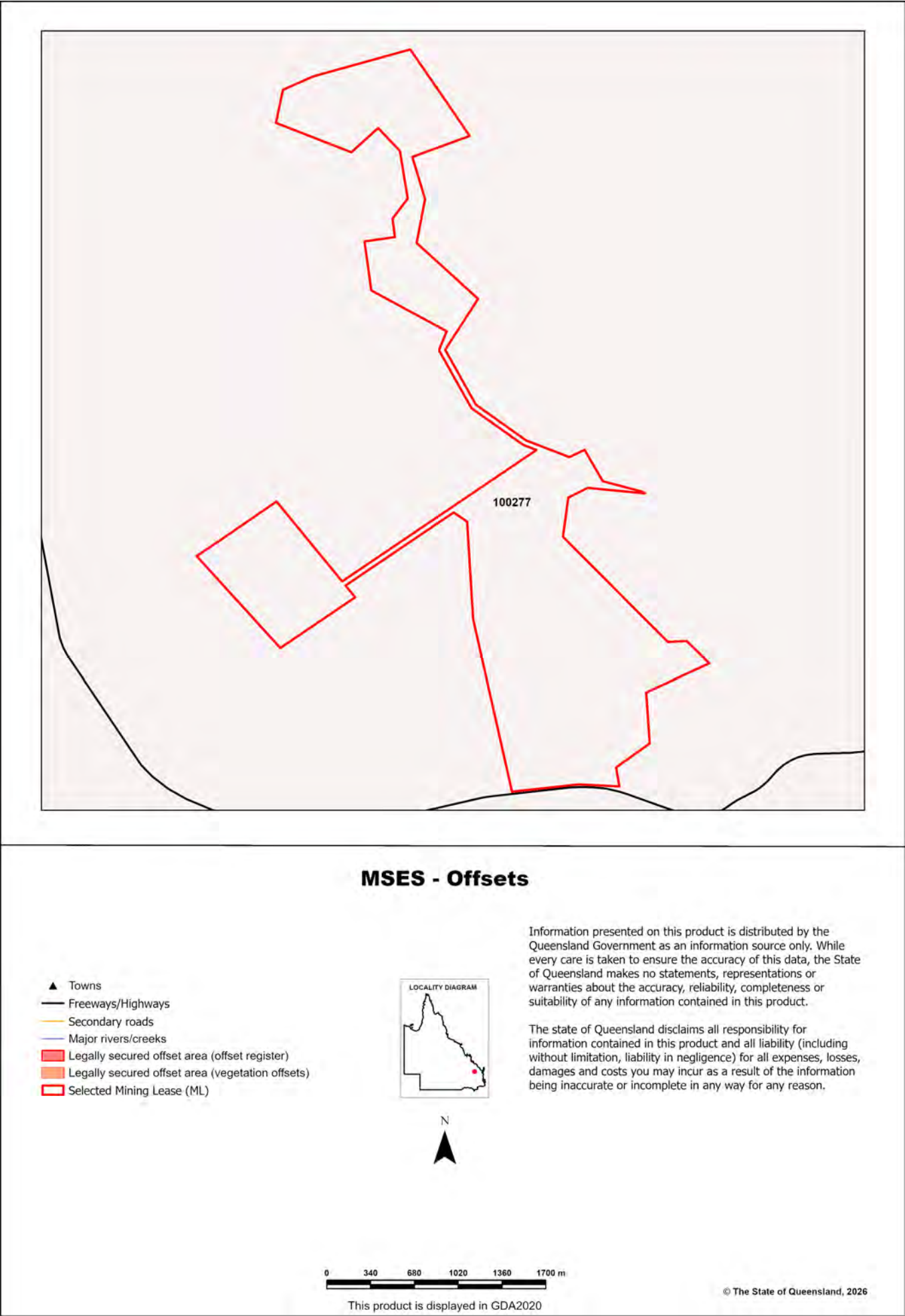
0 340 680 1020 1360 1700 m

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Map 5 - MSES - Offset Areas



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). Its primary purpose is to support implementation of the SPP biodiversity policy.

MSES mapping does not replace the regulatory mapping or environmental values specifically called up under other laws or regulations.

MSES mapping does not determine whether state or local development assessment is required. For state assessment triggers refer to the Development Assessment Mapping System (DAMS). For local assessment triggers, refer to the relevant local planning scheme.

The Queensland Government's "Method for mapping - matters of state environmental significance 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

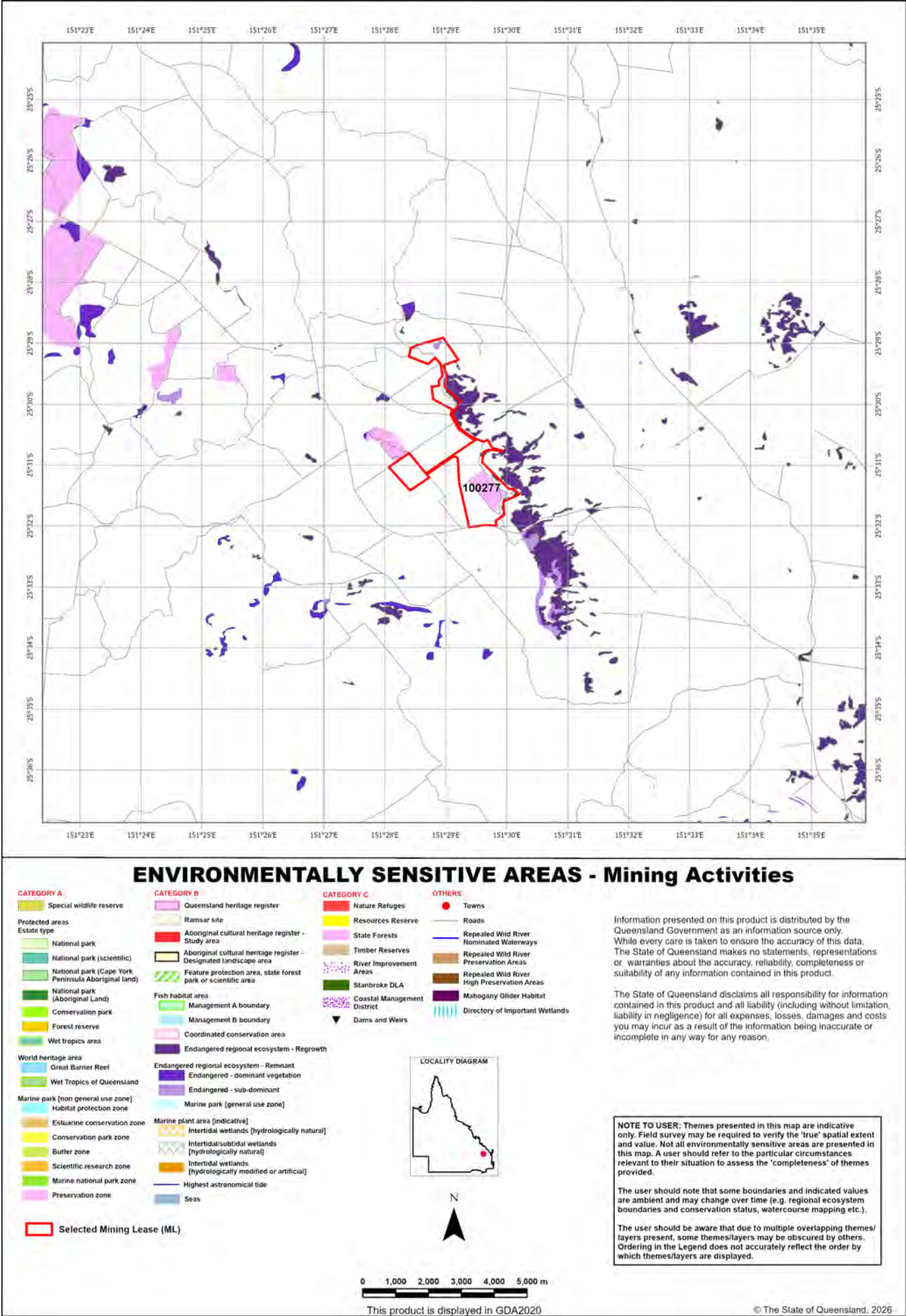
Note: MSES mapping is not based on new or unique data. The primary mapping product draws data from a number of underlying environment databases and geo-referenced information sources. MSES mapping is a versioned product that is updated generally on a twice-yearly basis to incorporate the changes to underlying 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
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 DETSI
Regulated Vegetation Map	Vegetation management - regulated vegetation management map

Appendix 3 - Acronyms and Abbreviations

AOI	- Area of Interest
DETSI	- Department of the Environment, Tourism, Science and Innovation
EP Act	- Environmental Protection Act 1994
EPP	- Environmental Protection Policy
GDA2020	- Geocentric Datum of Australia 2020
GEM	- General Environmental Matters
GIS	- Geographic Information System
MSES	- Matters of State Environmental Significance
NCA	- Nature Conservation Act 1992
RE	- Regional Ecosystem
SPP	- State Planning Policy
VMA	- Vegetation Management Act 1999



Appendices

Appendix 1 - Source Data

Environmentally Sensitive Areas - Category A

[Queensland Spatial Catalogue : Queensland Government](#)

Environmentally Sensitive Areas - Category B

[Queensland Spatial Catalogue : Queensland Government](#)



Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Regional Ecosystems

Biodiversity Status

For the selected area of interest

ML: 100277

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 input coordinates.

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 2020). 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.

Important Note to User

Information presented in this report is based upon the Queensland Herbarium & Biodiversity Science's Regional Ecosystem framework. The Biodiversity Status has been used to depict the extent of "Endangered", "Of Concern" and "No Concern at Present" regional ecosystems in all cases, rather than the classes used for the purposes of the *Vegetation Management Act 1999* (VMA). Mapping and figures presented in this document reflect the Queensland Herbarium & Biodiversity Science's Remnant and Pre-clearing Regional Ecosystem Datasets, and not the certified mapping used for the purpose of the VMA.

For matters relevant to vegetation management under the VMA, please refer to the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website <https://www.nrmrdd.qld.gov.au/>

Please direct queries about these reports to: Queensland.Herbarium@qld.gov.au

Disclaimer

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Summary Information

The following table provides an overview of the AOI with respect to selected topographic and environmental themes. Refer to **Map 1** for locality information.

Table 1: Details for area of interest:
ML: 100277, with area 435.34 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
North Burnett Regional	Burnett	Southeast Queensland	Brisbane - Barambah Volcanics
		Brigalow Belt	Mount Morgan Ranges

The table below summarizes the extent of remnant vegetation classed as "Endangered", "Of concern" and "No concern at present" regional ecosystems classified by Biodiversity Status within the area of interest (AOI).

Table 2: Summary table, biodiversity status of regional ecosystems within the AOI

Biodiversity Status	Area (Ha)	% of AOI
Endangered	1.54	0.35
Of concern	0.00	0.00
No concern at present	109.54	25.16
Total remnant vegetation	111.08	25.52

Refer to **Map 2** for further information.

Regional Ecosystems

1. Introduction

Regional ecosystems are vegetation communities in a bioregion that are consistently associated with particular combinations of geology, landform and soil (Sattler and Williams 1999). Descriptions of Queensland's Regional ecosystems are available online from the Regional Ecosystem Description Database (REDD). Descriptions are compiled from a broad range of information sources including vegetation, land system and geology survey and mapping and detailed vegetation site data. The regional ecosystem classification and descriptions are reviewed as new information becomes available. A number of vegetation communities may form a single regional ecosystem and may be distinguished by differences in structure or sub-dominant species in the ecologically dominant layer. Vegetation communities with different dominant species in the ecologically dominant layer may be amalgamated into a regional ecosystem if they are not mappable and predictable in the landscape at 1:100 000 scale. Vegetation communities may be mappable at a scale larger than 1:100 000. Vegetation communities within a regional ecosystem are denoted by a letter following the regional ecosystem code (e.g. a, b, c). Vegetation communities and regional ecosystems are amalgamated into a higher level classification of broad vegetation groups (BVGs).

A published methodology for survey and mapping of regional ecosystems across Queensland (Neldner et al 2023) provides further details on regional ecosystem concepts and terminology.

This report provides information on the type, status, and extent of vegetation communities, regional ecosystems and broad vegetation groups present within a user specified area of interest. Please note, for the purpose of this report, the Biodiversity Status is used. This report has not been developed for application of the *Vegetation Management Act 1999* (VMA). Additionally, information generated in this report has been derived from the Queensland Herbarium & Biodiversity Science's Regional Ecosystem Mapping, and not the regulated mapping certified for the purposes of the VMA. If your interest/matter relates to regional ecosystems and the VMA, users should refer to the Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development website <https://www.nrm.mrd.qld.gov.au/>.

With respect to the Queensland Biodiversity Status,

"Endangered" regional ecosystems are described as those where:

- remnant vegetation is less than 10 per cent of its pre-clearing extent across the bioregion; or 10-30% of its pre-clearing extent remains and the remnant vegetation is less than 10,000 hectares, or
- less than 10 per cent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss*, or
- 10-30 percent of its pre-clearing extent remains unaffected by severe degradation and/or biodiversity loss and the remnant vegetation is less than 10,000 hectares; or
- it is a rare** regional ecosystem subject to a threatening process.***

"Of concern" regional ecosystems are described as those where:

- the degradation criteria listed above for 'Endangered' regional ecosystems are not met and,
- remnant vegetation is 10-30 per cent of its pre-clearing extent across the bioregion; or more than 20 per cent of its pre-clearing extent remains and the remnant extent is less than 10,000 hectares, or
- 10-30 percent of its pre-clearing extent remains unaffected by moderate degradation and/or biodiversity loss.****

and "No concern at present" regional ecosystems are described as those where:

- remnant vegetation is over 30 percent of its pre-clearing extent across the bioregion, and the remnant area is greater than 10,000 hectares, and
- the degradation criteria listed above for 'Endangered' or 'Of concern' regional ecosystems are not met.

**Severe degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 50 years even with the removal of threatening processes; or soil surface is severely degraded, for example, by loss of A horizon, surface expression of salinity; surface compaction, loss of organic matter or sheet erosion.*

***Rare regional ecosystem: pre-clearing extent (<1000 ha); or patch size (<100 ha and of limited total extent across its range).*

****Threatening processes are those that are reducing or will reduce the biodiversity and ecological integrity of a regional ecosystem. For example, clearing, weed invasion, fragmentation, inappropriate fire regime or grazing pressure, or infrastructure development.*

****Moderate degradation and/or biodiversity loss is defined as: floristic and/or faunal diversity is greatly reduced but unlikely to recover within the next 20 years even with the removal of threatening processes; or soil surface is moderately degraded.

2. Remnant Regional Ecosystems

The following table identifies the remnant regional ecosystems and vegetation communities mapped within the AOI and provides their short descriptions, Biodiversity Status, and remnant extent within the selected AOI. Please note, where heterogeneous vegetated patches (mixed patches of remnant vegetation mapped as containing multiple regional ecosystems) occur within the AOI, they have been split and listed as individual regional ecosystems (or vegetation communities where present) for the purposes of the table below. In such instances, associated area figures have been generated based upon the estimated proportion of each regional ecosystem (or vegetation community) predicted to be present within the larger mixed patch.

Table 3: Remnant regional ecosystems, description and status within the AOI

Regional Ecosystem	Short Description	BD Status	Area (Ha)	% of AOI
11.11.4	Eucalyptus crebra woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges	No concern at present	1.54	0.35
11.7.4	Eucalyptus decorticans and/or Eucalyptus spp., Corymbia spp., Acacia spp., Lysicarpus angustifolius woodland on Cenozoic lateritic duricrust	No concern at present	1.93	0.44
11.9.5a	Acacia harpophylla and/or Casuarina cristata open forest to woodland on fine-grained sedimentary rocks	Endangered	1.54	0.35
12.5.1	Open forest complex with Blakella citriodora on subcoastal remnant Tertiary surfaces. Usually deep red soils	No concern at present	17.79	4.09
12.5.1b	Open forest complex with Blakella citriodora on subcoastal remnant Tertiary surfaces. Usually deep red soils	No concern at present	88.29	20.28
non-remnant	None	None	273.52	62.83
plantation	None	None	50.74	11.66

Refer to **Map 2** for further information. **Map 3** also provides a visual estimate of the distribution of regional ecosystems present before clearing.

Table 4 provides further information in regards to the remnant regional ecosystems present within the AOI. Specifically, the extent of remnant vegetation remaining within the bioregion, the 1:1,000,000 broad vegetation group (BVG) classification, whether the regional ecosystem is identified as a wetland, and extent of representation in Queensland's Protected Area Estate. For a description of the vegetation communities within the AOI and classified according to the 1:1,000,000 BVG, refer to **Table 6**.

Table 4: Remnant regional ecosystems within the AOI, additional information

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.11.4	Pre-clearing 144000 ha; Remnant 2023 68000 ha	13c	Not a Wetland	Low

Regional Ecosystem	Remnant Extent	BVG (1 Million)	Wetland	Representation in protected estate
11.7.4	Pre-clearing 352000 ha; Remnant 2023 227000 ha	12a	Not a Wetland	Low
11.9.5a	Pre-clearing 2249000 ha; Remnant 2023 161000 ha	25a	Not a Wetland	Low
12.5.1	Pre-clearing 54000 ha; Remnant 2023 29000 ha	10b	Not a Wetland	Medium
12.5.1b	Pre-clearing 54000 ha; Remnant 2023 29000 ha	12a	Not a Wetland	Medium
non-remnant	None	None	None	None
plantation	None	None	None	None

Representation in Protected Area Estate: High greater than 10% of pre-clearing extent is represented; Medium 4 - 10% is represented; Low less than 4% is represented, No representation.

The distribution of mapped wetland systems within the area of interest is displayed in **Map 6**.

The following table lists known special values associated with a regional ecosystem type.

Table 5: Remnant regional ecosystems within the AOI, special values

Regional Ecosystem	Special Values
11.11.4	11.11.4: Potential habitat for NCA listed species: <i>Cycas megacarpa</i> , <i>Cycas ophiolitica</i> , <i>Macrozamia serpentina</i> , <i>Marsdenia brevifolia</i> , <i>Parsonsia larcomensis</i> , <i>Rhaponticum australe</i> , <i>Zieria actites</i> , <i>Zieria verrucosa</i> .
11.7.4	11.7.4: Potential habitat for NCA listed species: <i>Acacia calantha</i> , <i>Acacia handonis</i> , <i>Acacia islana</i> , <i>Acacia rubricola</i> , <i>Acacia wardellii</i> , <i>Bertya pedicellata</i> , <i>Calytrix gurlumundensis</i> , <i>Denhamia parvifolia</i> , <i>Eucalyptus beaniana</i> , <i>Eucalyptus curtisii</i> , <i>Eucalyptus pachycalyx</i> subsp. <i>waajensis</i> , <i>Grevillea hockingsii</i> , <i>Macrozamia crassifolia</i> , <i>Macrozamia machinii</i> , <i>Melaleuca formosa</i> , <i>Micromyrtus carinata</i> , <i>Ochrosperma obovatum</i> , <i>Phebalium distans</i> , <i>Philotheca sporadica</i> , <i>Pomaderris coomingalensis</i> , <i>Solanum elaeagnifolium</i> , <i>Solanum lythrocarpum</i> , <i>Zieria inexpectata</i> .
11.9.5a	11.9.5: Habitat for threatened fauna species including <i>Jalmenus eubulus</i> , pale imperial hairstreak butterfly (Eastwood et al. 2008).
12.5.1	12.5.1: Potential habitat for NCA listed species: <i>Bertya pedicellata</i> , <i>Caustis blakei</i> subsp. <i>macrantha</i> , <i>Eucalyptus taurina</i> , <i>Grevillea quadricauda</i> , <i>Lasiopetalum</i> sp. (Proston J.A.Baker 17), <i>Melaleuca formosa</i> , <i>Paspalidium grandispiculatum</i> and <i>Pomaderris clivicola</i> . This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 12.5.1a: Habitat for threatened plant species including <i>Paspalidium grandispiculatum</i> , <i>Grevillea quadricauda</i> , <i>Lasiopetalum</i> sp. (Proston). 12.5.1b: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 12.5.1c: Habitat for threatened plant species including <i>Eucalyptus taurina</i> , <i>Paspalidium grandispiculatum</i> and <i>Grevillea quadricauda</i> . This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 12.5.1g: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).

Regional Ecosystem	Special Values
12.5.1b	12.5.1: Potential habitat for NCA listed species: <i>Bertya pedicellata</i>, <i>Caustis blakei</i> subsp. <i>macrantha</i>, <i>Eucalyptus taurina</i>, <i>Grevillea quadricauda</i>, <i>Lasiopetalum</i> sp. (Proston J.A.Baker 17), <i>Melaleuca formosa</i>, <i>Paspalidium grandispiculatum</i> and <i>Pomaderris clivicola</i>. This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 12.5.1a: Habitat for threatened plant species including <i>Paspalidium grandispiculatum</i>, <i>Grevillea quadricauda</i>, <i>Lasiopetalum</i> sp. (Proston). 12.5.1b: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 12.5.1c: Habitat for threatened plant species including <i>Eucalyptus taurina</i>, <i>Paspalidium grandispiculatum</i> and <i>Grevillea quadricauda</i>. This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>). 12.5.1g: This ecosystem is known to provide suitable habitat for koalas (<i>Phascolarctos cinereus</i>).
non-remnant	None
plantation	None

3. Remnant Regional Ecosystems by Broad Vegetation Group

BVGs are a higher-level grouping of vegetation communities. Queensland encompasses a wide variety of landscapes across temperate, wet and dry tropics and semi-arid climatic zones. BVGs provide an overview of vegetation communities across the state or a bioregion and allow comparison with other states. There are three levels of BVGs which reflect the approximate scale at which they are designed to be used: the 1:5,000,000 (national), 1:2,000,000 (state) and 1:1,000,000 (regional) scales.

A comprehensive description of BVGs is available at: <https://publications.qld.gov.au/dataset/redd/resource/>

The following table provides a description of the 1:1,000,000 BVGs present and their associated extent within the AOI.

Table 6: Broad vegetation groups (1 million) within the AOI

BVG (1 Million)	Description	Area (Ha)	% of AOI
None	None	324.26	74.48
10b	Moist open forests to woodlands dominated by <i>Blakella citriodora</i> (spotted gum).	17.79	4.09
12a	Dry woodlands to open woodlands dominated by ironbarks such as <i>Eucalyptus decorticans</i> (gum-topped ironbark), <i>E. fibrosa</i> subsp. <i>nubilis</i> (blue-leaved ironbark), or <i>E. crebra</i> (narrow-leaved red ironbark) and/or bloodwoods such as <i>Corymbia trachyphloia</i> (yellow bloodwood), <i>Blakella leichhardtii</i> (rustyjacket), <i>C. watsoniana</i> (Watson's yellow bloodwood), <i>C. lamprophylla</i> , <i>Blakella peltata</i> (yellowjacket). Occasionally <i>E. thozetiana</i> (mountain yapunyah), <i>E. cloeziana</i> (Gympie messmate) or <i>E. mediocris</i> are dominant. Mostly on sub-coastal/inland hills with shallow soils.	90.22	20.72
13c	Woodlands of <i>Eucalyptus crebra</i> (sens. lat.) (narrow-leaved red ironbark), <i>E. drepanophylla</i> (grey ironbark), <i>E. fibrosa</i> (dusky-leaved ironbark), <i>E. shirleyi</i> (shirley's silver-leaved ironbark) on granitic and metamorphic ranges.	1.54	0.35

BVG (1 Million)	Description	Area (Ha)	% of AOI
25a	Open forests to woodlands dominated by <i>Acacia harpophylla</i> (brigalow) sometimes with <i>Casuarina cristata</i> (belah) on heavy clay soils. Includes areas co-dominated with <i>A. cambagei</i> (gidgee) and/or emergent eucalypts.	1.54	0.35

Refer to **Map 4** for further information. **Map 5** also provides a representation of the distribution of vegetation communities as per the 1:5,000,000 BVG believed to be present prior to European settlement.

4. Technical and BioCondition Benchmark Descriptions

Technical descriptions provide a detailed description of the full range in structure and floristic composition of regional ecosystems (e.g. 11.3.1) and their component vegetation communities (e.g. 11.3.1a, 11.3.1b). See: <http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

The descriptions are compiled using site survey data from the Queensland Herbarium & Biodiversity Science's QBEIS database. Distribution maps, representative images (if available) and the pre-clearing and remnant extent (hectares) of each vegetation community derived from the regional ecosystem mapping data are included. The technical descriptions should be used in conjunction with the fields from the regional ecosystem description database (REDD) for a full description of the regional ecosystem.

Technical descriptions include data on canopy height, canopy cover and native plant species composition of the predominant layer, which are attributes relevant to assessment of the remnant status of vegetation under the *Vegetation Management Act 1999*. However, as technical descriptions reflect the full range in structure and floristic composition across the climatic, natural disturbance and geographic range of the regional ecosystem, local reference sites should be used for remnant assessment where possible (Neldner et al. 2023 (PDF)* section 3.3 of: https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

The technical descriptions are subject to review and are updated as additional data becomes available.

When conducting a BioCondition assessment, these technical descriptions should be used in conjunction with BioCondition benchmarks for the specific regional ecosystem, or component vegetation community. <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

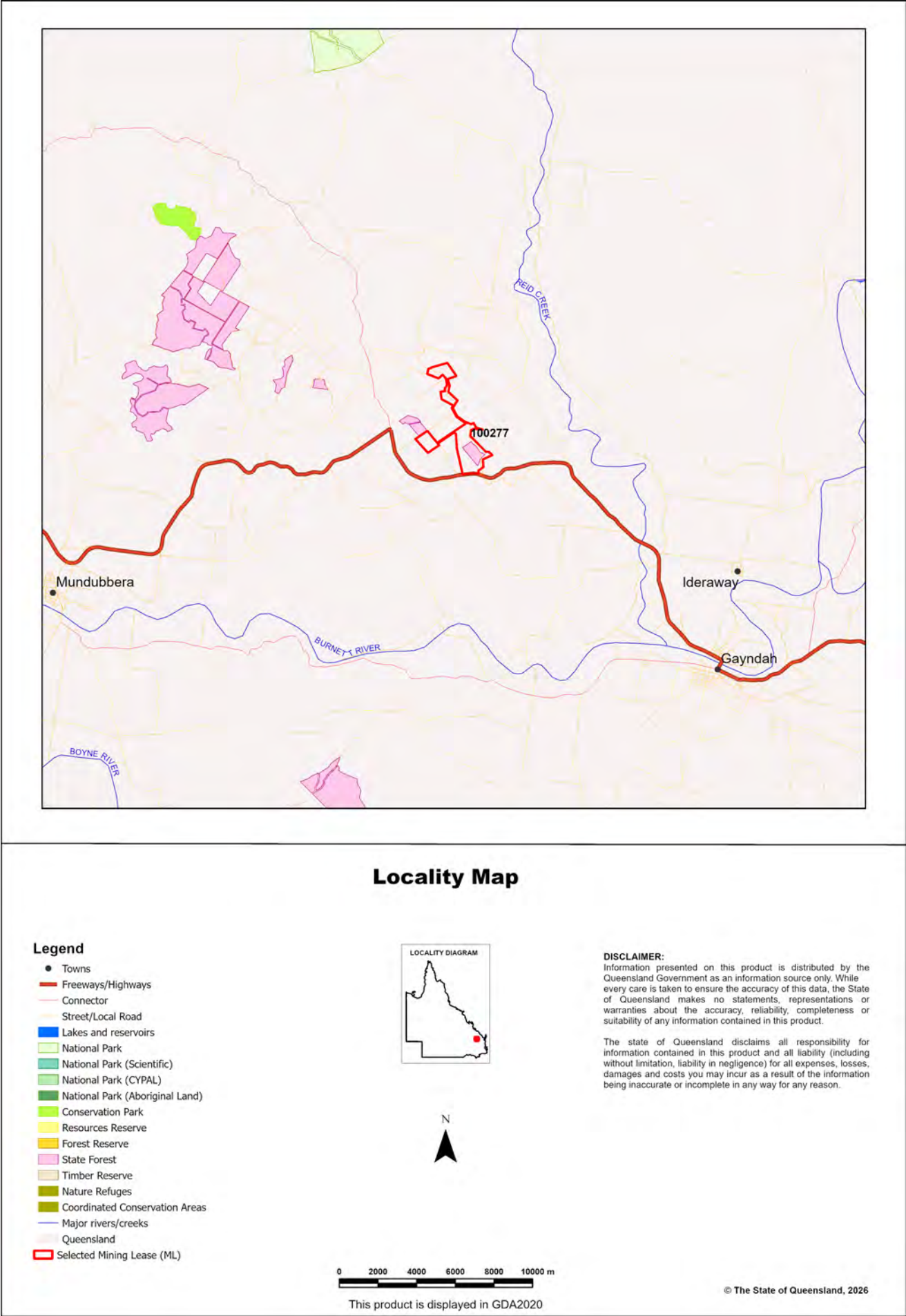
Benchmarks are based on a combination of quantitative and qualitative information and should be used as a guide only. Benchmarks are specific to one regional ecosystem vegetation community, however, the natural variability in structure and floristic composition under a range of climatic and natural disturbance regimes has been considered throughout the geographic extent of the regional ecosystem. Local reference sites should be used for this spatial and temporal (seasonal and annual) variability.

Table 7: List of remnant regional ecosystems within the AOI for which technical and biocondition benchmark descriptions are available

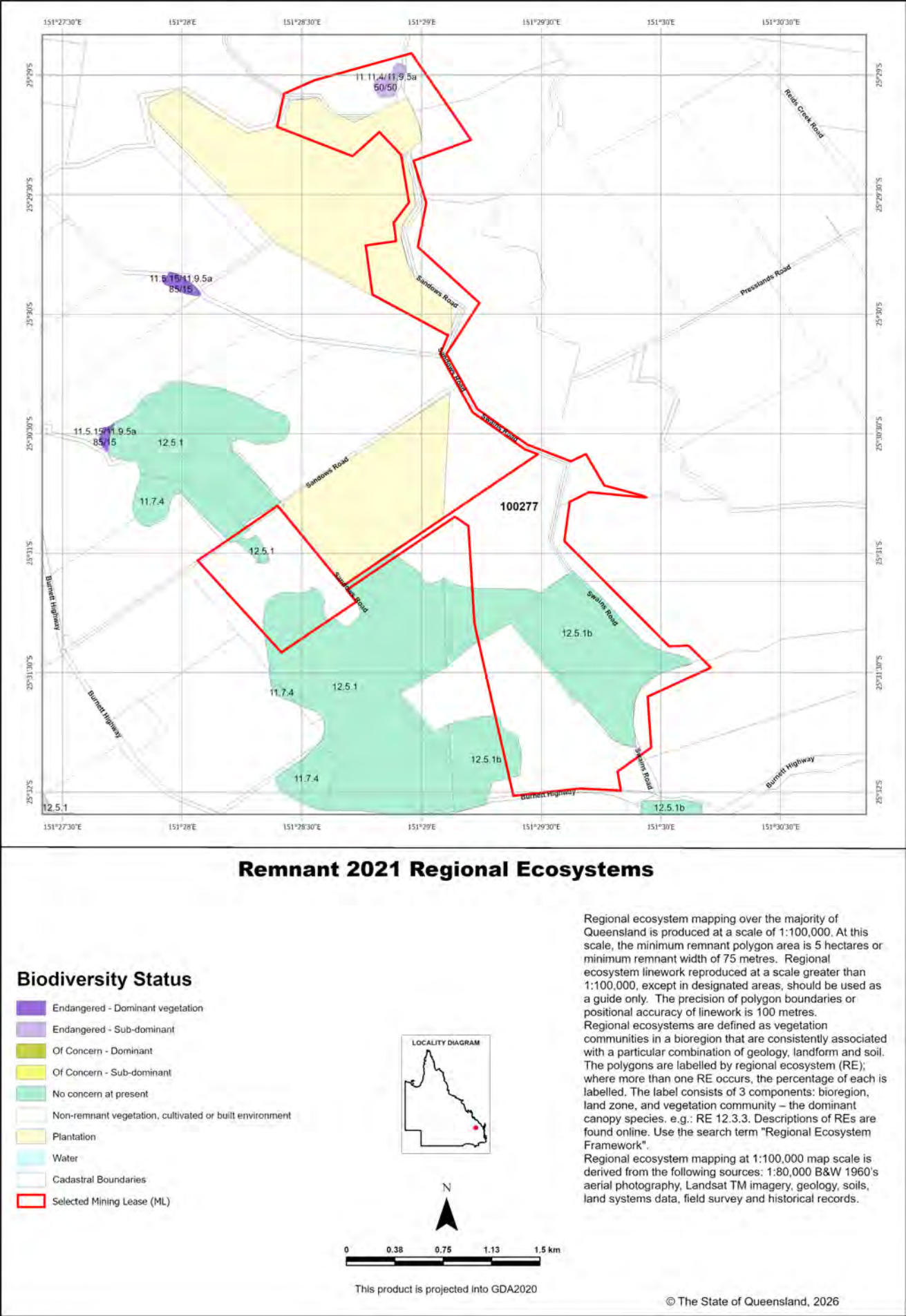
Regional ecosystems mapped as within the AOI	Technical Descriptions	Biocondition Benchmarks
11.11.4	Available	Available
11.7.4	Available	Available
11.9.5a	Available	Available
12.5.1	Not currently available	Available
12.5.1b	Not currently available	Available
non-remnant	Not currently available	Not currently available
plantation	Not currently available	Not currently available

Maps

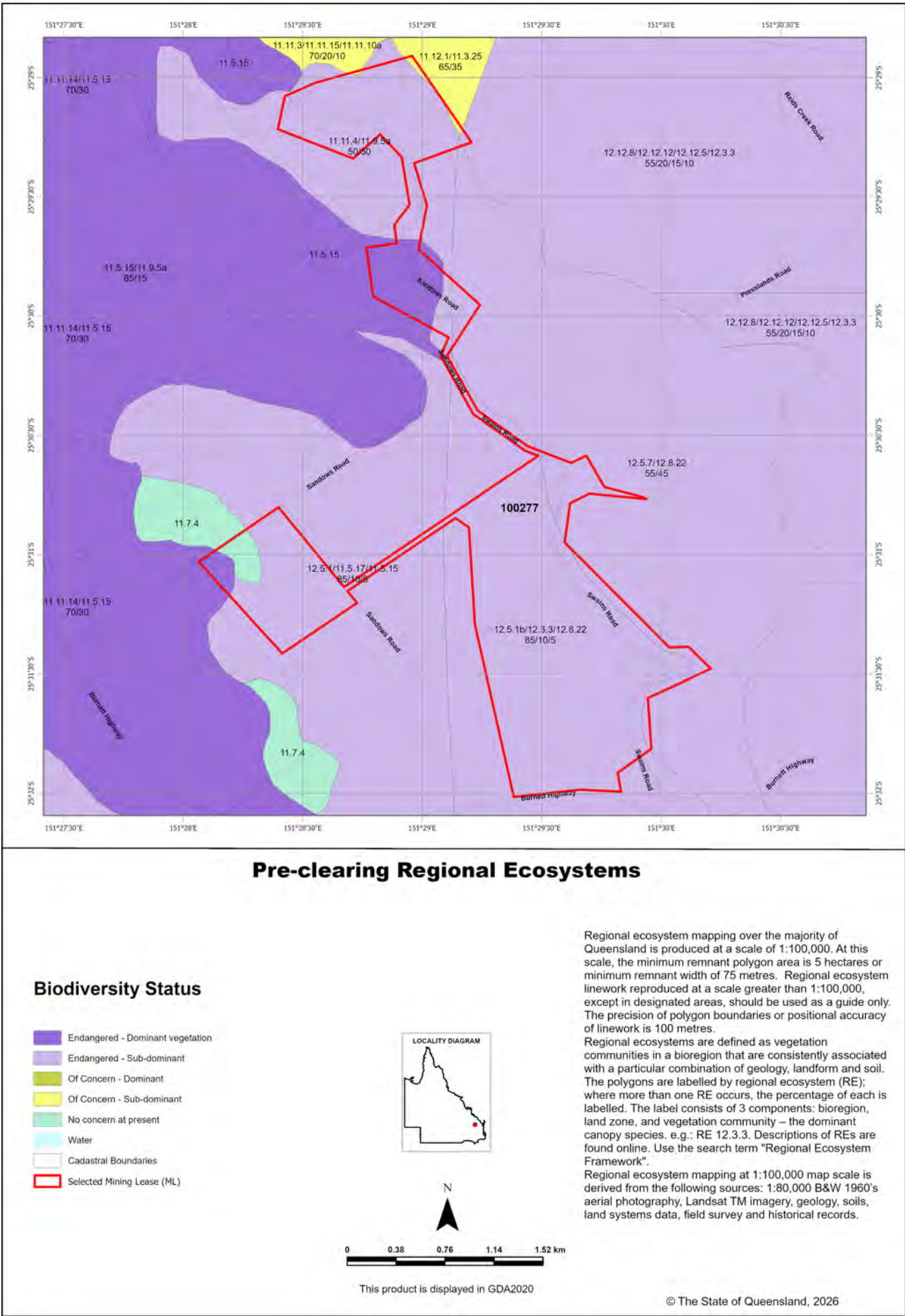
Map 1 - Location



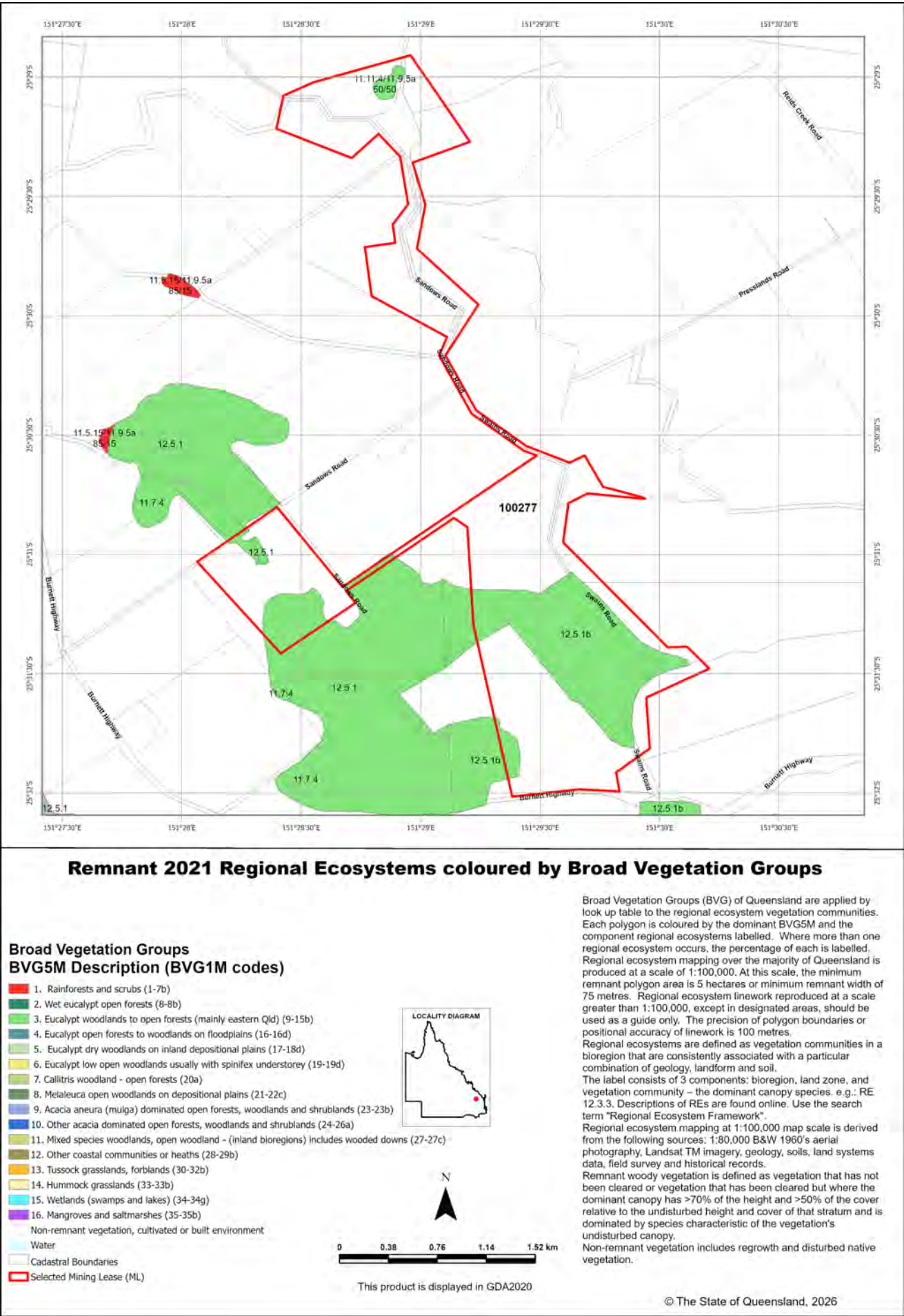
Map 2 - Remnant 2021 regional ecosystems



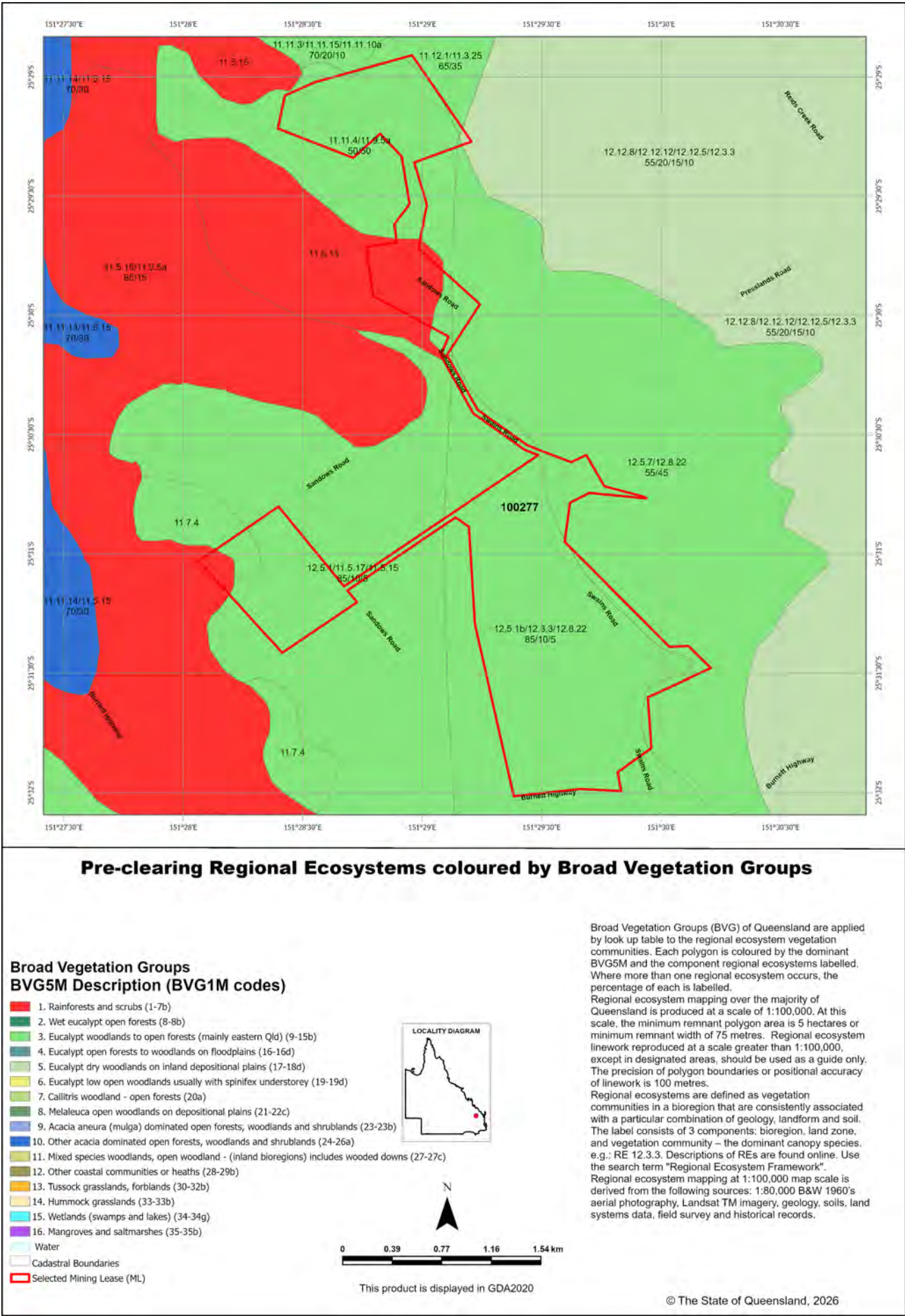
Map 3 - Pre-clearing regional ecosystems



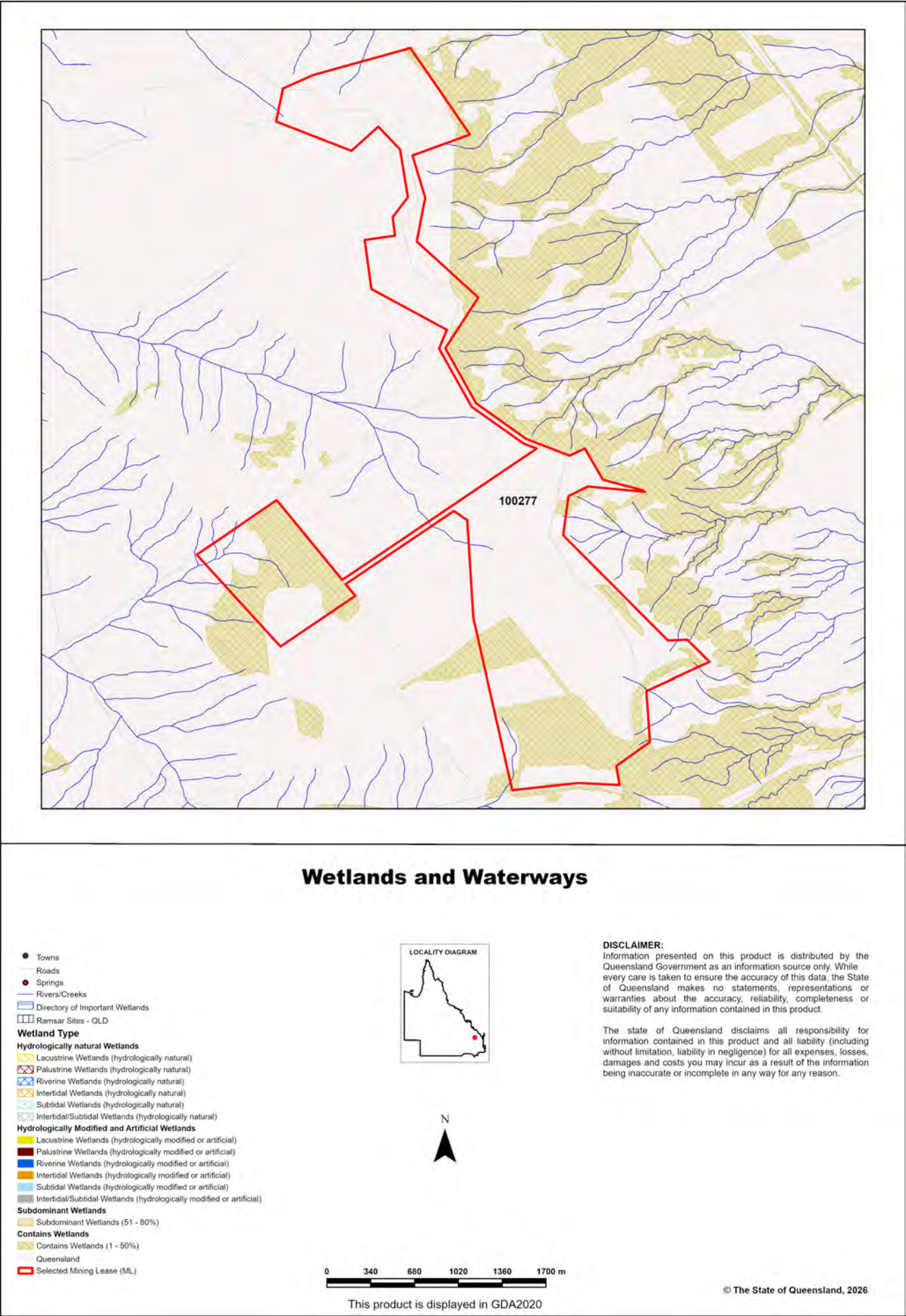
Map 4 - Remnant 2021 regional ecosystems by BVG (5M)



Map 5 - Pre-clearing regional ecosystems by BVG (5M)



Map 6 - Wetlands and waterways



Links and Other Information Sources

The Department of the Environment, Tourism, Science and Innovation's Website -

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/> provides further information on the regional ecosystem framework, including access to links to the Regional Ecosystem Database, Broad Vegetation Group Definitions, Regional Ecosystem and Land zone descriptions.

Descriptions of the broad vegetation groups of Queensland can be downloaded from:

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

The methodology for mapping regional ecosystems can be downloaded from:

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Technical descriptions for regional ecosystems can be obtained from:

<http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/technical-descriptions/>

Benchmarks can be obtained from: <http://www.qld.gov.au/environment/plants-animals/biodiversity/benchmarks/>

For further information associated with the remnant regional ecosystem dataset used by this report, refer to the metadata associated with the Biodiversity status of pre-clearing and Remnant Regional Ecosystems of Queensland dataset (version listed in **Appendix 1**) which is available through the Queensland Spatial Catalogue, [Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/spatial-catalogue)

The Queensland Globe is a mapping and data application. As an interactive online tool, Queensland Globe allows you to view and explore Queensland maps, imagery (including up-to-date satellite images) and other spatial data, including regional ecosystem mapping. To further view and explore regional ecosystems over an area of interest, access the Biota Globe (a component of the Queensland Globe). The Queensland Globe can be accessed via the following link:

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

References

Neldner, V.J., Niehus, R.E., Wilson, B.A., McDonald, W.J.F., Ford, A.J. and Accad, A. (2023). The Vegetation of Queensland. Descriptions of Broad Vegetation Groups. Version 6.0. Queensland Herbarium, Department of Environment and Science.

<https://publications.qld.gov.au/dataset/redd/resource/78209e74-c7f2-4589-90c1-c33188359086>

Neldner, V.J., Wilson, B.A., Dillewaard, H.A., Ryan, T.S., Butler, D.W., McDonald, W.J.F., Richter, D., Addicott, E.P. and Appelman, C.N. (2023) Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland. Version 7.0. Updated December 2023. Queensland Herbarium, Queensland Department of Environment, Science and Innovation, Brisbane.

https://www.qld.gov.au/_data/assets/pdf_file/0033/459186/methodology-mapping-surveying-v7.pdf

Sattler, P.S. and Williams, R.D. (eds) (1999). *The Conservation Status of Queensland's Bioregional Ecosystems*. Environmental Protection Agency, Brisbane.

Appendices

Appendix 1 - Source Data

The dataset listed below is available for download from:

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

- Regional Ecosystem Description Database

The datasets listed below are available for download from:

[Queensland Spatial Catalogue : Queensland Government \(information.qld.gov.au\)](http://www.qld.gov.au/environment/plants-animals/plants/ecosystems/download/)

- Biodiversity status of pre-clearing and 2021 remnant regional ecosystems of Queensland
- Pre-clearing Vegetation Communities and Regional Ecosystems of Queensland
- Queensland Wetland Data Version - Wetland lines
- Queensland Wetland Data Version - Wetland points
- Queensland Wetland Data Version - Wetland areas
- Pre-clearing broad vegetation groups of Queensland
- Remnant 2021 broad vegetation groups of Queensland

Appendix 2 - Acronyms and Abbreviations

AOI	- Area of Interest
GIS	- Geographic Information System
RE	- Regional Ecosystem
REDD	- Regional Ecosystem Description Database
VMA	- <i>Vegetation Management Act 1999</i>

APPENDIX B FIELD SURVEY RESULTS

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q12

GENERAL INFORMATION			
Site ID:	Q12	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	19/1/2026 13:58
Observer:	Peter Black	Lat / Long:	-25.530871 / 151.493912
Landzone	5 - old loamy and sandy plains	Status	Regrowth
Field-verified RE code	Regrowth		
Structure classification	Low closed-forest		
TEC	Not identified		
Disturbance	Cleared, grazed & weed infested		
Site description:	Heavily disturbed regrowth forest on tertiary deep red soils.		
Photos: Taken from centre			
			
Transect			
			
Point of interest: (If taken)		Point of interest: (If taken)	

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q12

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T2	9	8 - 14	15
Stratum	Species		
Emergent	-		
T1	-		
T2	1: <i>Acacia glaucocarpa</i> 2: <i>Alphitonia excelsa</i> 3: <i>Acacia leiocalyx</i>		
T3	-		
S1	1: <i>Lantana camara</i> 2: <i>Acacia glaucocarpa</i>		
S2	-		
G	1: <i>Praxelis clematidea</i> 2: <i>Lantana montevidensis</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	70
Weed species	<i>Lantana camara</i> <i>Lantana montevidensis</i> <i>Praxelis clematis's</i> <i>Erigeron bonariensis</i> <i>Megathursus maximus</i>
Comment	<i>No comments</i>

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q13

GENERAL INFORMATION			
Site ID:	Q13	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	19/1/2026 14:34
Observer:	Peter Black	Lat / Long:	-25.531056 / 151.492033
Landzone	5 - old loamy and sandy plains	Status	Regrowth
Field-verified RE code	Regrowth		
Structure classification	Low open-forest		
TEC	Not identified		
Disturbance	Cleared, grazed and weed infested		
Site description:	Heavily disturbed regrowth forest on tertiary deep red soils.		

Photos: Taken from centre



Transect



Point of interest: (If taken)

Point of interest: (If taken)

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q13

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T2	9	8 - 13	15
Stratum	Species		
Emergent	-		
T1	1: <i>Brachychiton populneus</i>		
T2	1: <i>Acacia glaucocarpa</i> 2: <i>Acacia leiocalyx</i> 3: <i>Alphitonia excelsa</i>		
T3	1: <i>Alphitonia excelsa</i>		
S1	1: <i>Lantana camara</i> 2: <i>Acacia glaucocarpa</i>		
S2	1: <i>Sida hackettiana</i>		
G	1: <i>Praxelis clematidea</i> 2: <i>Lantana montevidensis</i> 3: <i>Heliotropium amplexicaule</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	50
Weed species	<i>Lantana camara</i> <i>Lantana montevidensis</i> <i>Praxelis clematidea</i> <i>Balloon cotton bush</i>
Comment	No comments

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q14

GENERAL INFORMATION			
Site ID:	Q14	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	19/1/2026 14:55
Observer:	Peter Black	Lat / Long:	-25.530954 / 151.490872
Landzone	5 - old loamy and sandy plains	Status	Regrowth
Field-verified RE code	Regrowth		
Structure classification	Low closed-forest		
TEC	Not identified		
Disturbance	Cleared, grazed & weed infested		
Site description:	Heavily disturbed regrowth forest on tertiary deep red soils.		
Photos: Taken from centre			
			
Transect			
			
Point of interest: (If taken)		Point of interest: (If taken)	

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q14

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T2	9	7 - 13	15
Stratum	Species		
Emergent	-		
T1	-		
T2	1: <i>Acacia glaucocarpa</i> 2: <i>Acacia leiocalyx</i> 3: <i>Corymbia tessellaris</i> 4: <i>Eucalyptus crebra</i>		
T3	-		
S1	1: <i>Lantana camara</i>		
S2	-		
G	1: <i>Praxelis clematidea</i> 2: <i>Lantana montevidensis</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	60
Weed species	<i>Lantana camara</i> <i>Lantana montevidensis</i> <i>Balloon cotton bush</i>
Comment	<i>No comments</i>

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q15

GENERAL INFORMATION			
Site ID:	Q15	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	20/1/2026 08:38
Observer:	Peter Black	Lat / Long:	-25.485647 / 151.483913
Landzone	11 - metamorphic rocks	Status	Regrowth
Field-verified RE code	Non-remnant		
Structure classification	Open-woodland		
TEC	Not identified		
Disturbance	Cleared, grazed & weed infested.		
Site description:	Disturbed regrowth open woodland on metamorphic rock slopes.		
Photos: Taken from centre			
			
Transect			
			
Point of interest: (If taken)		Point of interest: (If taken)	

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q15

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T1	9	7 - 12	15
Stratum	Species		
Emergent	-		
T1	1: <i>Acacia flavescens</i> 2: <i>Acacia aulacocarpa</i>		
T2	1: <i>Flindersia collina</i>		
T3	1: <i>Notelaea microcarpa</i> 2: <i>Mallotus laoxyloides</i>		
S1	1: <i>Lantana camara</i> 2: <i>Alchornea ilicifolia</i> 3: <i>Ficus opposita</i>		
S2	-		
G	1: <i>Megathyrus maximus</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	75
Weed species	<i>Megathyrus maximus</i> <i>Melinis repens</i> <i>Lantana camara</i> <i>Lantana montevidensis</i> <i>Sida cordifolia</i>
Comment	<i>No comments</i>

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q16

GENERAL INFORMATION			
Site ID:	Q16	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	20/1/2026 09:25
Observer:	Peter Black	Lat / Long:	-25.484405 / 151.482961
Landzone	11 - metamorphic rocks	Status	Regrowth
Field-verified RE code	Non-remnant		
Structure classification	Open-woodland		
TEC	Not identified		
Disturbance	Cleared, grazed & weed infested.		
Site description:	Disturbed regrowth open woodland on metamorphic rock slopes.		
Photos: Taken from centre			
			
Transect			
			
Point of interest: (If taken)		Point of interest: (If taken)	

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q16

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T1	10	8 - 13	
Stratum	Species		
Emergent	-		
T1	1: <i>Acacia flavescens</i> 2: <i>Acacia aulacocarpa</i>		
T2	1: <i>Melia azedarach</i>		
T3	1: <i>Alphitonia excelsa</i> 2: <i>Flindersia collina</i> 3: <i>Opuntia tomentosa</i> 4: <i>Pittosporum viscidum</i>		
S1	1: <i>Alstonia constricta</i> 2: <i>Lantana camara</i>		
S2	-		
G	1: <i>Megathyrsus maximus</i> 2: <i>Cenchrus ciliaris</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	79
Weed species	<i>Megathyrsus maximus</i> <i>Lantana camara</i> <i>Lantana montevidensis</i> <i>Melinis repens</i>
Comment	<i>No comments</i>

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q17

GENERAL INFORMATION			
Site ID:	Q17	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	22/1/2026 07:20
Observer:	Peter Black	Lat / Long:	-25.522354 / 151.491487
Landzone	5 - old loamy and sandy plains	Status	Remnant
Field-verified RE code	12.5.1		
Structure classification	Open-forest		
TEC	Not identified		
Disturbance	Low-density weed infestations.		
Site description:	Remnant open forest complex on deep red soils.		
Photos: Taken from centre			
			
Transect			
			
Point of interest: (If taken)		Point of interest: (If taken)	

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q17

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T1	20	18 - 30	30
Stratum	Species		
Emergent	-		
T1	1: <i>Corymbia intermedia</i> 2: <i>Eucalyptus cloeziana</i> 3: <i>Eucalyptus crebra</i> 4: <i>Eucalyptus major</i> 5: <i>Corymbia trachyphloia</i>		
T2	1: <i>Corymbia intermedia</i> 2: <i>Eucalyptus cloeziana</i> 3: <i>Eucalyptus crebra</i>		
T3	1: <i>Acacia glaucocarpa</i>		
S1	1: <i>Acacia leiocalyx</i> 2: <i>Alphitonia excelsa</i> 3: <i>Lantana camara</i>		
S2	1: <i>Acacia leiocalyx</i> 2: <i>Alphitonia excelsa</i>		
G	1: <i>Arundinella nepalensis</i> 2: <i>Imperata cylindrica</i> 3: <i>Eustrephus latifolius</i> 4: <i>Lomandra multiflora</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	7
Weed species	<i>Lantana camara</i> <i>Opuntia tomentosa</i>
Comment	No comments

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q18

GENERAL INFORMATION			
Site ID:	Q18	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	22/1/2026 07:44
Observer:	Peter Black	Lat / Long:	-25.519199 / 151.493891
Landzone	5 - old loamy and sandy plains	Status	Remnant
Field-verified RE code	12.5.1		
Structure classification	Open-forest		
TEC	Not identified		
Disturbance	Low-density weed infestations.		
Site description:	Remnant open forest complex on deep red soils.		
Photos: Taken from centre			
			
Transect			
			
Point of interest: (If taken)		Point of interest: (If taken)	

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q18

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T1	20	18 - 30	25
Stratum	Species		
Emergent	-		
T1	1: <i>Corymbia citriodora</i> 2: <i>Eucalyptus cloeziana</i> 3: <i>Eucalyptus crebra</i> 4: <i>Eucalyptus major</i> 5: <i>Corymbia intermedia</i>		
T2	1: <i>Corymbia citriodora</i> 2: <i>Eucalyptus crebra</i> 3: <i>Eucalyptus cloeziana</i>		
T3	-		
S1	1: <i>Acacia glaucocarpa</i>		
S2	1: <i>Lantana camara</i> 2: <i>Alphitonia excelsa</i>		
G	1: <i>Arundinella nepalensis</i> 2: <i>Imperata cylindrica</i> 3: <i>Cyanthillium cinereum</i> 4: <i>Lomandra multiflora</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	5
Weed species	<i>Lantana camara</i> <i>Lantana montevidensis</i>
Comment	No comments

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q19

GENERAL INFORMATION			
Site ID:	Q19	Job name:	BAA250181.01 - ABx
Survey type:	Quaternary RE	Date:	22/1/2026 08:11
Observer:	Peter Black	Lat / Long:	-25.523727 / 151.496704
Landzone	5 - old loamy and sandy plains	Status	Remnant
Field-verified RE code	12.5.1		
Structure classification	Open-forest		
TEC	Not identified		
Disturbance	Low-density weed infestation.		
Site description:	Remnant open forest complex on deep red soils.		
Photos: Taken from centre			
			
Transect			
			
Point of interest: (If taken)		Point of interest: (If taken)	

RE ASSESSMENT SURVEY FIELD SHEET

Site: Q19

Canopy (50m x 20m plot)			
EDL Stratum	Median height (m)	Height range (m)	Cover (%)
T1	21	18 - 30	28
Stratum	Species		
Emergent	-		
T1	1: <i>Eucalyptus cloeziana</i> 2: <i>Corymbia intermedia</i> 3: <i>Eucalyptus major</i> 4: <i>Corymbia trachyphloia</i> 5: <i>Corymbia citriodora</i>		
T2	1: <i>Eucalyptus crebra</i>		
T3	1: <i>Acacia glaucocarpa</i>		
S1	1: <i>Lantana camara</i>		
S2	1: <i>Alphitonia excelsa</i>		
G	1: <i>Arundinella nepalensis</i> 2: <i>Imperata cylindrica</i>		

LINE INTERCEPT (50m Transect)	
Stratum	Intercept (m) end - start

Weeds (50m x 20m plot)	
Weeds present	Yes
Cover (%)	5
Weed species	<i>Lantana camara</i> <i>Lantana montevidensis</i>
Comment	<i>No comments</i>

Habitat Assessment

Site: H20

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H20
Recorded By:	Danielle Cox	Date:	21/1/2026 11:04
Lat / Long:	-25.523609,151.496793		
Site description	Pit2A State Forest		
Habitat description	RE 12.5.1. Similar to H18 and H19. Less citriodora and angophera has dropped out at this point.		
 Vantor Esri Community Maps Contributors, Depart... Powered by Esri			
Photos: Taken from centre, direction as noted			
			
North		South	
			
East		West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

Habitat Assessment

Site: H20

Koala			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	No evidence of koalas but may koala tree species present. Dense grass cover but would not impede movement.		
Foraging food and habitat			
<i>Habitat patch</i>			
Canopy cover LIKT (%)	25	Number of LIKT species present	5
LIKT species list	Lemon-scented gum, Spotted gum Narrow-leaved ironbark, Narrow-leaved red ironbark, Muggago Queensland grey gum, Grey gum Messmate stringybark, Australian oak, Brown-topped stringybark Pink bloodwood, Red bloodwood		
Shelter habitat			
<i>Habitat patch</i>			
Trees (>20 cm DBH)	22		
Photo			
Photo (if taken)			
Glider (Greater Glider/Yellow-bellied Glider)			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	Only two hollows visible within plot, however many hollows within State Forest that would support GG or YBG. Many large trees through plot and wider study area.		
Foraging food and habitat			
<i>Habitat patch</i>			
Foraging Signs	☐ ☒ No		
Trees (>30 cm DBH)	8	Food Tree Canopy Cover (%)	
Food tree species list	lemon-scented spotted gum pink bloodwood narrow-leaved red ironbark		
Shelter habitat			
<i>Habitat patch</i>			
Trees (>50 cm DBH)	3		
Number of Large Hollows (hollows > 20 cm diameter or tree > 50 cm)	3		
Photo			
Photo (if taken)			
Grey-headed Flying Fox			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment			
Foraging food and habitat			
<i>Habitat patch</i>			
Preferred food trees	See RE assessment notes for tree species. No flowering eucs or fruiting trees observed.		
Food Tree Canopy Cover (%)	25		
Photo			
Photo (if taken)			
Powerful Owl			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Foraging food and habitat			
<i>Habitat patch</i>			
Preferred food trees	See RE assessment notes		
Shelter habitat			
<i>Habitat patch</i>			
Nesting trees	No hollows >50cm observed within plot or walking through State Forest.		
Photo			
Photo (if taken)			
Threatened Reptiles			
Presence	☐ Yes (site) ☒ Yes (nearby) ☐ No		
Comment	Skink seen walking to site, potentially Carlia sp. Woody debris present for sheltering and basking.		
Foraging and Shelter habitat			
<i>Habitat patch</i>			
Presence of burrows	☐ Yes ☒ No		
Native grass cover (%)	60		
Coarse woody debris (m) (within 50 m x 20 m plot)	15		
Leaf litter cover (%)	30		
Leaf litter depth (cm)	☐ 0cm ☐ <1cm ☒ 2-3cm ☐ >3cm		
Rock cover (i.e. loose/large surface rocks suitable for shelter)	0		
Photo			

Habitat Assessment

Site: H20

Photo (if taken)			
Black-breasted Button Quail			
Presence	☐ Yes (site)	☐ Yes (nearby)	☒ No
Comment	Probably not BBQ habitat.		
Foraging food and habitat			
<i>Habitat patch</i>			
Foraging signs present	☐ Yes (site)	☒ No	
Presence of leaf litter	☐ Scattered/Discontinuous cover (one leaf here/there)	☐ Continuous but shallow cover (< 1cm depth)	☒ Continuous but deep cover (>1 cm depth)
Shelter habitat			
<i>Habitat patch</i>			
Canopy Cover (%)	25		
Shrub Cover (%)	10		
Photo			
Photo (if taken)			

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H19
Recorded By:	Danielle Cox	Date:	21/1/2026 10:11
Lat / Long:	-25.519262,151.493933		
Site description	Pit2A State Forest		
Habitat description	RE 12.5.1. Open euc woodland. More citriodora here than H18, also some angophera have come in. Otherwise all very similar to H18.		
 Vantor Esri Community Maps Contributors, Depart... Powered by Esri			
Photos: Taken from centre, direction as noted			
			
North		South	
			
East		West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

Habitat Assessment

Site: H19

Koala			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	Potential old koala scratches seen on tree walking to site. No evidence of koala within plot. Dense grass but would not impede movement.		
Foraging food and habitat			
<i>Habitat patch</i>			
Canopy cover LIKT (%)	20	Number of LIKT species present	5
LIKT species list	Lemon-scented gum, Spotted gum Narrow-leaved ironbark, Narrow-leaved red ironbark, Muggago Queensland grey gum, Grey gum Rusty gum, Sydney red gum Pink bloodwood, Red bloodwood		
Shelter habitat			
<i>Habitat patch</i>			
Trees (>20 cm DBH)	25		
Photo			
Photo (if taken)			
Glider (Greater Glider/Yellow-bellied Glider)			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	Many good hollows observed walking through state forest to this site.		
Foraging food and habitat			
<i>Habitat patch</i>			
Foraging Signs	☐ ☒ No		
Trees (>30 cm DBH)	9	Food Tree Canopy Cover (%)	
Food tree species list	smooth-barked apple lemon-scented spotted gum pink bloodwood narrow-leaved red ironbark		
Shelter habitat			
<i>Habitat patch</i>			
Trees (>50 cm DBH)	1		
Number of Large Hollows (hollows > 20 cm diameter or tree > 50 cm)	5		
Photo			
Photo (if taken)			
Grey-headed Flying Fox			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	No flowering eucs or other fruiting trees observed within plot		
Foraging food and habitat			
<i>Habitat patch</i>			
Preferred food trees	See RE assessment notes		
Food Tree Canopy Cover (%)	25		
Photo			
Photo (if taken)			
Powerful Owl			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Foraging food and habitat			
<i>Habitat patch</i>			
Preferred food trees	See RE assessment notes		
Shelter habitat			
<i>Habitat patch</i>			
Nesting trees	No trees with hollows large enough to support a nest (>50cm)		
Photo			
Photo (if taken)			
Threatened Reptiles			
Presence	☐ Yes (site) ☒ Yes (nearby) ☐ No		
Comment	Carlia sp. seen in leaf litter walking to site.		
Foraging and Shelter habitat			
<i>Habitat patch</i>			
Presence of burrows	☐ Yes ☒ No		
Native grass cover (%)	70		
Coarse woody debris (m) (within 50 m x 20 m plot)	5		
Leaf litter cover (%)	25		
Leaf litter depth (cm)	☐ 0cm ☐ <1cm ☒ 2-3cm ☐ >3cm		
Rock cover (i.e. loose/large surface rocks suitable for shelter)	0		
Photo			
Photo (if taken)			
Black-breasted Button Quail			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		

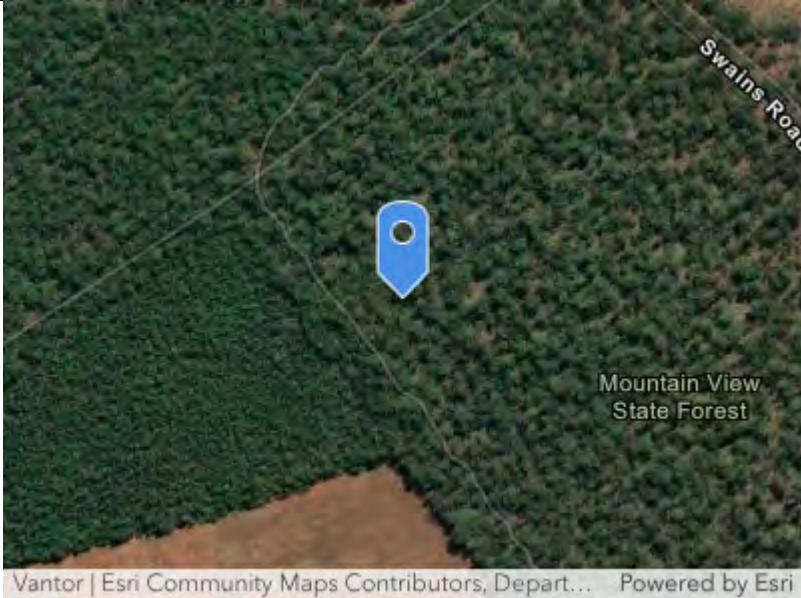
Habitat Assessment

Site: H19

Comment	No necessarily BBBQ habitat.		
Foraging food and habitat			
<i>Habitat patch</i>			
Foraging signs present	☐ Yes (site) ☒ No		
Presence of leaf litter	☐ Scattered/Discontinuous cover (one leaf here/there) ☐ Continuous but shallow cover (< 1cm depth) ☒ Continous but deep cover (>1 cm depth)		
Shelter habitat			
<i>Habitat patch</i>			
Canopy Cover (%)	25		
Shrub Cover (%)	10		
Photo			
Photo (if taken)			

Habitat Assessment

Site: H18

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H18
Recorded By:	Danielle Cox	Date:	21/1/2026 09:08
Lat / Long:	-25.522479,151.491562		
Site description	Pit2A State Forest		
Habitat description	Open eucalypt woodland. RE 12.5.1. Many large trees (>30cm and >50cm), trees supporting large hollows. Mid dense understory and ground layer.		
 Vantor Esri Community Maps Contributors, Depart... Powered by Esri			
Photos: Taken from centre, direction as noted			
 North		 South	
 East		 West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

Habitat Assessment

Site: H18

Koala			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	Many large koala habitat trees. Some grass cover but not so much that it would impede movement. No evidence of Koala (scratches or scats).		
Foraging food and habitat			
<i>Habitat patch</i>			
Canopy cover LIKT (%)	30	Number of LIKT species present	4
LIKT species list	Narrow-leaved ironbark, Narrow-leaved red ironbark, Muggago Queensland grey gum, Grey gum Messmate stringybark, Australian oak, Brown-topped stringybark Pink bloodwood, Red bloodwood		
Shelter habitat			
<i>Habitat patch</i>			
Trees (>20 cm DBH)	25		
Photo			
Photo (if taken)			
Glider (Greater Glider/Yellow-bellied Glider)			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	No flowering trees. Many large trees within plot. Substantial number of hollows seen while walking through the State Forest. Only 3 large hollows within the plot.		
Foraging food and habitat			
<i>Habitat patch</i>			
Foraging Signs	☐ ☒ No		
Trees (>30 cm DBH)	15	Food Tree Canopy Cover (%)	
Food tree species list	pink bloodwood unidentified bloodwood brown bloodwood narrow-leaved red ironbark unidentified grey gum		
Shelter habitat			
<i>Habitat patch</i>			
Trees (>50 cm DBH)	3		
Number of Large Hollows (hollows > 20 cm diameter or tree > 50 cm)	3		
Photo			
Photo (if taken)			
Grey-headed Flying Fox			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment			
Foraging food and habitat			
<i>Habitat patch</i>			
Preferred food trees	No flowering eucs and no other fruiting trees within the plot.		
Food Tree Canopy Cover (%)	35		
Photo			
Photo (if taken)			
Powerful Owl			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Foraging food and habitat			
<i>Habitat patch</i>			
Preferred food trees	See RE tree species list.		
Shelter habitat			
<i>Habitat patch</i>			
Nesting trees	No hollows large enough to support PO nest (>50cm)		
Photo			
Photo (if taken)			
Threatened Reptiles			
Presence	☒ Yes (site) ☐ Yes (nearby) ☐ No		
Comment	Significant leaf litter cover. Many large logs and many smaller branches within plot. No rocks and no evidence of burrows. One skink seen, not ID'd.		
Foraging and Shelter habitat			
<i>Habitat patch</i>			
Presence of burrows	☐ Yes ☒ No		
Native grass cover (%)	30		
Coarse woody debris (m) (within 50 m x 20 m plot)	10		
Leaf litter cover (%)	70		
Leaf litter depth (cm)	☐ 0cm ☐ <1cm ☒ 2-3cm ☐ >3cm		
Rock cover (i.e. loose/large surface rocks suitable for shelter)	0		
Photo			

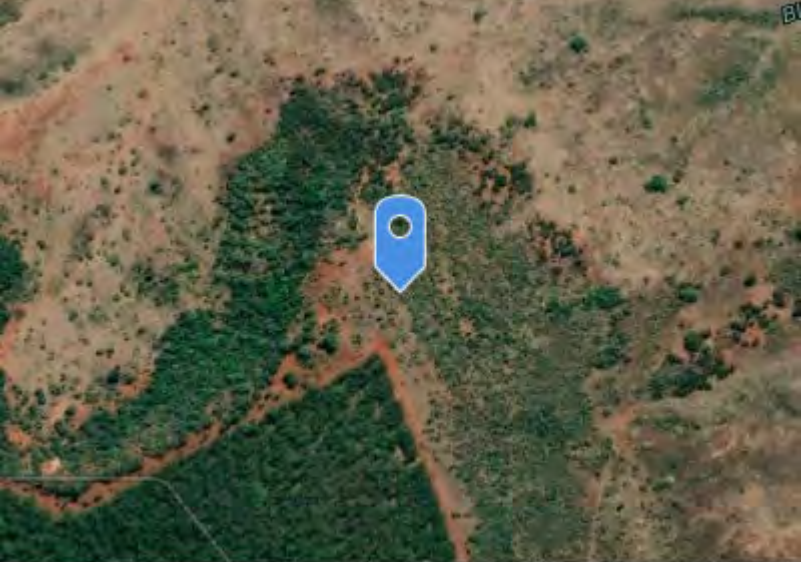
Habitat Assessment

Site: H18

Photo (if taken)			
Black-breasted Button Quail			
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No		
Comment	Not SEVT, but SEVT habitat nearby. Substantial leaf litter and shrubs that may provide nesting/shelter habitat.		
Foraging food and habitat			
<i>Habitat patch</i>			
Foraging signs present	☐ Yes (site) ☒ No		
Presence of leaf litter	☐ Scattered/Discontinuous cover (one leaf here/there) ☐ Continuous but shallow cover (< 1cm depth) ☒ Continuous but deep cover (>1 cm depth)		
Shelter habitat			
<i>Habitat patch</i>			
Canopy Cover (%)	35		
Shrub Cover (%)	20		
Photo			
Photo (if taken)			

Habitat Assessment

Site: H17

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H17
Recorded By:	Danielle Cox	Date:	20/1/2026 09:40
Lat / Long:	-25.484208,151.482523		
Site description	Pit1A Slacks		
Habitat description	Same as H15 and H16 but more open grass area with Aristida sp. tussocks. Could provide habitat for common death adder?		
 Vantor Esri Community Maps Contributors, Depart... Powered by Esri			
Photos: Taken from centre, direction as noted			
			
North		South	
			
East		West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

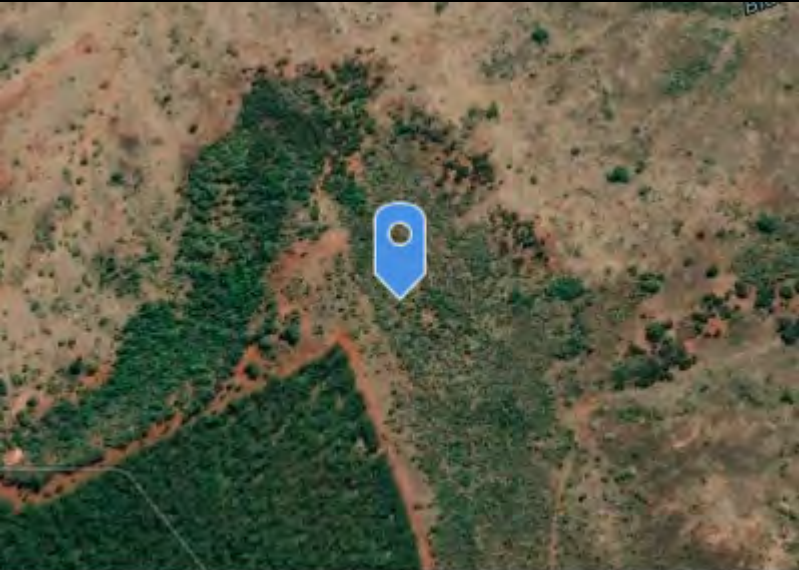
Habitat Assessment

Site: H17

Threatened Reptiles	
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No
Comment	More open grass area with tussock grass present (Aristida sp.). Some large rocks for basking. Less small loose rocks.
Foraging and Shelter habitat	
<i>Habitat patch</i>	
Presence of burrows	☒ Yes ☐ No
Native grass cover (%)	30
Coarse woody debris (m) (within 50 m x 20 m plot)	0
Leaf litter cover (%)	5
Leaf litter depth (cm)	☐ 0cm ☒ <1cm ☐ 2-3cm ☐ >3cm
Rock cover (i.e. loose/large surface rocks suitable for shelter)	10
Photo	
Photo (if taken)	

Habitat Assessment

Site: H16

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H16
Recorded By:	Danielle Cox	Date:	20/1/2026 09:24
Lat / Long:	-25.484391,151.482975		
Site description	Pit1ASlacks		
Habitat description	Same as H15. Lantana getting more dense. Rock/woody debris/grass cover consistent throughout the area.		
 Vantor Esri Community Maps Contributors, Depart... Powered by Esri			
Photos: Taken from centre, direction as noted			
			
North		South	
			
East		West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

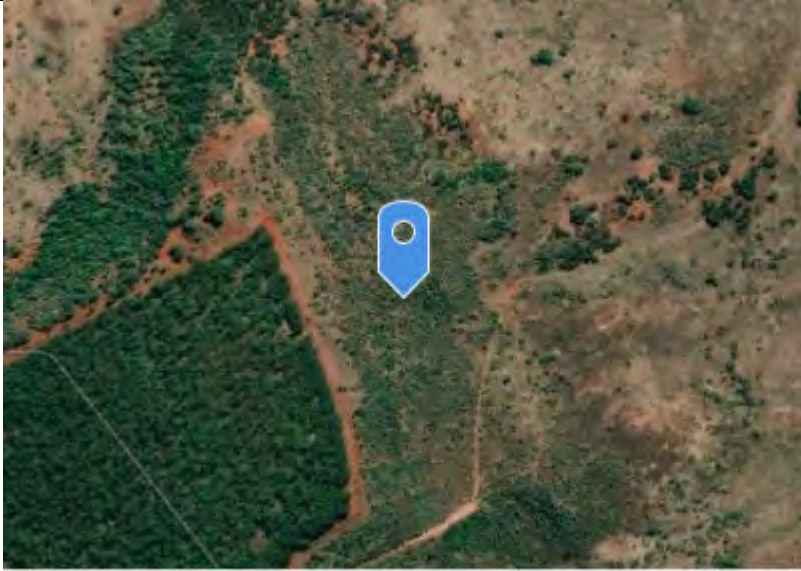
Habitat Assessment

Site: H16

Threatened Reptiles	
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No
Comment	Same as H15. Rocks provide most prominent habitat feature.
Foraging and Shelter habitat	
Habitat patch	
Presence of burrows	☐ Yes ☒ No
Native grass cover (%)	0
Coarse woody debris (m) (within 50 m x 20 m plot)	5
Leaf litter cover (%)	5
Leaf litter depth (cm)	☐ 0cm ☒ <1cm ☐ 2-3cm ☐ >3cm
Rock cover (i.e. loose/large surface rocks suitable for shelter)	30
Photo	
Photo (if taken)	

Habitat Assessment

Site: H15

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H15
Recorded By:	Danielle Cox	Date:	20/1/2026 08:34
Lat / Long:	-25.485628,151.483909		
Site description	Pit 1A Slacks		
Habitat description	Regrowth open woodland on steep slope. No eucalypts. Significant grass cover, mainly Guinea Grass. Some weeds including lantana (not overly dense). Quite a lot of rocks including large rocks for basking. Some woody debris present.		
 Vantor Esri Community Maps Contributors, Depart... Powered by Esri			
Photos: Taken from centre, direction as noted			
 North		 South	
 East		 West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

Habitat Assessment

Site: H15

Threatened Reptiles	
Presence	☒ Yes (site) ☐ Yes (nearby) ☐ No
Comment	Good rock cover including large rocks suitable for basking. Some rocky piles/areas which would provide good sheltering habitat. Small amount of woody debris. Significant grass cover. One skink spotted (potentially Carlia sp.). Refer photos.
Foraging and Shelter habitat	
<i>Habitat patch</i>	
Presence of burrows	☐ Yes ☒ No
Native grass cover (%)	0
Coarse woody debris (m) (within 50 m x 20 m plot)	5
Leaf litter cover (%)	5
Leaf litter depth (cm)	☐ 0cm ☒ <1cm ☐ 2-3cm ☐ >3cm
Rock cover (i.e. loose/large surface rocks suitable for shelter)	30
Photo	
Photo (if taken)	

Habitat Assessment

Site: H14

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H14
Recorded By:	Danielle Cox	Date:	19/1/2026 14:53
Lat / Long:	-25.531003,151.490854		
Site description	Pit2a Meyers		
Habitat description	Same as H12 and H13. Lantana more dense. 2-3 scattered juvenile E.crebra and E.tessellaris. Not large enough to provide habitat for any target species.		
			
Photos: Taken from centre, direction as noted			
 North		 South	
 East		 West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

Habitat Assessment

Site: H14

Threatened Reptiles	
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No
Comment	Some fallen trees creating woody debris. Only real habitat feature present. Trees are largely off the ground.
Foraging and Shelter habitat	
<i>Habitat patch</i>	
Presence of burrows	☐ Yes ☒ No
Native grass cover (%)	0
Coarse woody debris (m) (within 50 m x 20 m plot)	5
Leaf litter cover (%)	5
Leaf litter depth (cm)	☐ 0cm ☒ <1cm ☐ 2-3cm ☐ >3cm
Rock cover (i.e. loose/large surface rocks suitable for shelter)	0
Photo	
Photo (if taken)	

Habitat Assessment

Site: H13

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H13
Recorded By:	Danielle Cox	Date:	19/1/2026 14:33
Lat / Long:	-25.531051,151.492057		
Site description	Pit2a Meyers		
Habitat description	Same as H12. One extra tree species noted - Kurrajong. Some larger fallen trees contributing to woody debris.		
			
Photos: Taken from centre, direction as noted			
			
North		South	
			
East		West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

Habitat Assessment

Site: H13

Threatened Reptiles	
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No
Comment	Some larger fallen trees (see photo) but not significant amount of woody debris. No rocks, no evidence of burrows, sparse leaf litter.
Foraging and Shelter habitat	
<i>Habitat patch</i>	
Presence of burrows	☐ Yes ☒ No
Native grass cover (%)	0
Coarse woody debris (m) (within 50 m x 20 m plot)	5
Leaf litter cover (%)	10
Leaf litter depth (cm)	☐ 0cm ☒ <1cm ☐ 2-3cm ☐ >3cm
Rock cover (i.e. loose/large surface rocks suitable for shelter)	0
Photo	
Photo (if taken)	

Habitat Assessment

Site: H12

GENERAL INFORMATION			
Job No:	BAA250181.01	Site ID:	H12
Recorded By:	Danielle Cox	Date:	19/1/2026 13:57
Lat / Long:	-25.530836,151.493996		
Site description	Pit2a Meyers		
Habitat description	Regrowth acacia open woodland with dense weeds. Lantana very dense in shrub layer. Creeping lantana and praxelis in ground layer. Not very good habitat. No larger trees or trees capable of supporting hollows. No eucalypts present.		
			
Photos: Taken from centre, direction as noted			
			
North		South	
			
East		West	
Photo of interest: (If taken)		Photo of interest: (If taken)	

Habitat Assessment

Site: H12

Threatened Reptiles	
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No
Comment	Some fallen logs (<10cm diameter) but generally laying off the ground. Some leaf litter but ground layer most vegetated by creeping lantana and praxelis. No rocks sighted. No evidence of burrows.
Foraging and Shelter habitat	
<i>Habitat patch</i>	
Presence of burrows	☒ Yes ☐ No
Native grass cover (%)	0
Coarse woody debris (m) (within 50 m x 20 m plot)	0
Leaf litter cover (%)	10
Leaf litter depth (cm)	☐ 0cm ☒ <1cm ☐ 2-3cm ☐ >3cm
Rock cover (i.e. loose/large surface rocks suitable for shelter)	0
Photo	
Photo (if taken)	
Black-breasted Button Quail	
Presence	☐ Yes (site) ☐ Yes (nearby) ☒ No
Comment	Don't think this area constitutes good habitat for BBBQ. Very dense with weeds.
Foraging food and habitat	
<i>Habitat patch</i>	
Foraging signs present	☐ Yes (site) ☒ No
Presence of leaf litter	☐ Scattered/Discontinuous cover (one leaf here/there) ☒ Continuous but shallow cover (< 1cm depth) ☐ Continuous but deep cover (>1 cm depth)
Shelter habitat	
<i>Habitat patch</i>	

Habitat Assessment

Site: H12

Canopy Cover (%)	15
Shrub Cover (%)	70
Photo	
Photo (if taken)	

FLORA SPECIES LIST

Species name	Common name	NC Act	EPBC Act	Non-native	Biosecurity Act Status
<i>Acacia aulacocarpa</i>		LC	-	-	-
<i>Acacia flavescens</i>	Toothed Wattle	LC	-	-	-
<i>Acacia glaucocarpa</i>	Hickory Wattle	LC	-	-	-
<i>Acacia leiocalyx</i>	Black Wattle	LC	-	-	-
<i>Alchornea ilicifolia</i>	Native Holly	LC	-	-	-
<i>Alphitonia excelsa</i>	Soap Tree	LC	-	-	-
<i>Alstonia constricta</i>	Bitter Bark	LC	-	-	-
<i>Arundinella nepalensis</i>	Reed Grass	LC	-	-	-
<i>Brachychiton populneus</i>	Black Kurrajong	LC	-	-	-
<i>Cenchrus ciliaris</i>	Buffel Grass	-	-	yes	-
<i>Corymbia citriodora</i>	Lemon-scented Gum	LC	-	-	-
<i>Corymbia intermedia</i>	Pink Bloodwood	LC	-	-	-
<i>Corymbia tessellaris</i>	Moreton Bay Ash	LC	-	-	-
<i>Corymbia trachyphloia</i>	Brown Bloodwood	LC	-	-	-
<i>Cyanthillium cinereum</i>		LC	-	-	-
<i>Erigeron bonariensis</i>	Flaxleaf Fleabean	-	-	yes	-
<i>Eucalyptus cloeziana</i>	Gympie Messmate	LC	-	-	-
<i>Eucalyptus crebra</i>	Narrow-leaved Ironbark	LC	-	-	-
<i>Eucalyptus major</i>	Mountain Grey Gum	LC	-	-	-
<i>Eustrephus latifolius</i>	Wombat Berry	LC	-	-	-
<i>Ficus opposita</i>	Sandpaper Fig	LC	-	-	-
<i>Flindersia collina</i>	Broad-leaved Leopard Tree	LC	-	-	-
<i>Gomphocarpus physocarpus</i>	Balloon cotton bush	-	-	yes	-
<i>Heliotropium amplexicaule</i>	Blue Heliotrope	-	-	yes	-
<i>Imperata cylindrica</i>	Blady Grass	LC	-	-	-
<i>Lantana camara</i>	Lantana	-	-	yes	Category 3 restricted matter
<i>Lantana montevidensis</i>	Creeping Lantana	-	-	yes	Category 3 restricted matter
<i>Lomandra multiflora</i>	Many-flowered Matrush	LC	-	-	-
<i>Mallotus laevis</i>	Green Kamala	LC	-	-	-
<i>Megathyrsus maximus</i>	Guinea Grass	-	-	yes	-
<i>Melia azedarach</i>	China Berry	LC	-	-	-
<i>Melinis repens</i>	Red Natal Grass	-	-	yes	-
<i>Notelaea microcarpa</i>	Native Olive	LC	-	-	-
<i>Opuntia tomentosa</i>	Velvet Tree Pear	-	-	yes	-
<i>Pittosporum viscidum</i>	Black-fruited Thornbush	LC	-	-	-
<i>Praxelis clematidea</i>	Praxelis	-	-	yes	-
<i>Sida cordifolia</i>	Flannel Weed	-	-	yes	-
<i>Sida hackettiana</i>	Queensland Hemp	LC	-	-	-

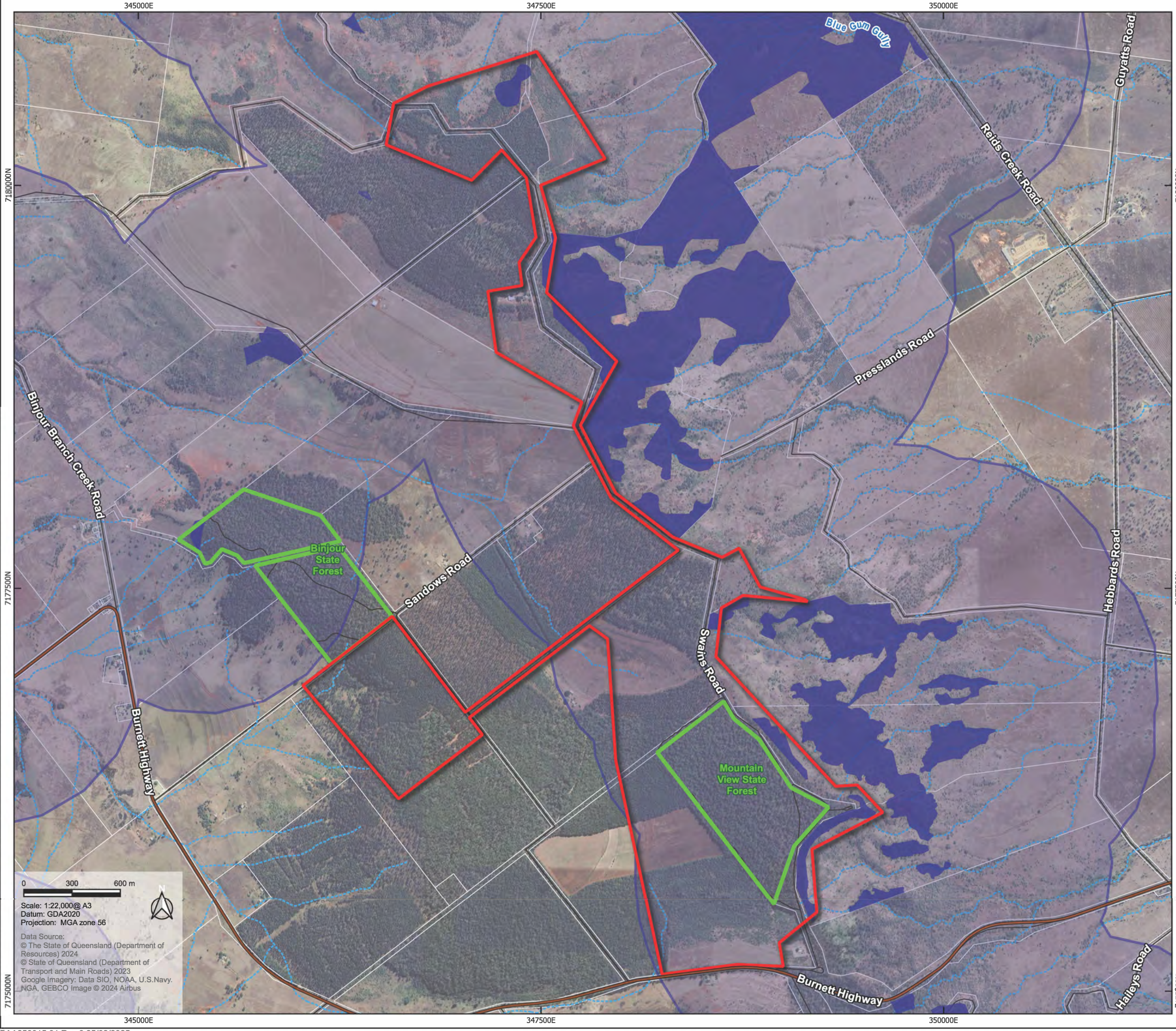
*Status: CR = Critically Endangered; E = Endangered; V = Vulnerable; NT = Near Threatened; SL = Special Least Concern; LC = Least Concern, EPBC Status: CE = Critically Endangered; E = Endangered; V = Vulnerable

FAUNA SPECIES LIST

Species name	Common name	NC Act	EPBC Act	Non-native
<i>Centropus phasianinus</i>	Pheasant Coucal	LC	LC	-
<i>Corvus orru</i>	Torresian Crow	LC	LC	-
<i>Dacelo novaeguineae</i>	Laughing Kookaburra	LC	LC	-
<i>Dicrurus bracteatus</i>	Spangled Drongo	LC	LC	-
<i>Gerygone olivacea</i>	White-throated Gerygone	LC	LC	-
<i>Grallina cyanoleuca</i>	Magpie-lark	LC	LC	-
<i>Gymnorhina tibicen</i>	Australian Magpie	LC	LC	-
<i>Macropus giganteus</i>	Eastern Grey Kangaroo	LC	LC	-
<i>Malurus melanocephalus</i>	Red-Backed Fairy-wren	LC	LC	-
<i>Manorina melanocephala</i>	Noisy Miner	LC	LC	-
<i>Merops ornatus</i>	Rainbow Bee-eater	LC	LC	-
<i>Notamacropus rufogriseus</i>	Red-necked Wallaby	LC	LC	-
<i>Oriolus sagittatus</i>	Olive-backed Oriole	LC	LC	-
<i>Pardalotus punctatus</i>	Spotted Pardalote	LC	LC	-
<i>Philemon corniculatus</i>	Noisy Friarbird	LC	LC	-
<i>Platycercus adscitus</i>	Pale-headed Rosella	LC	LC	-
<i>Rhinella marina</i>	Cane Toad	-	-	yes
<i>Rhipidura leucophrys</i>	Willie Wagtail	LC	LC	-
<i>Scythrops novaehollandiae</i>	Channel-billed Cuckoo	LC	LC	-
<i>Strepera graculina</i>	Pied Currawong	LC	LC	-
<i>Trichoglossus moluccanus</i>	Rainbow Lorikeet	LC	LC	-
<i>Varanus varius</i>	Lace Monitor	LC	LC	-
<i>Wallabia bicolor</i>	Swamp Wallaby	LC	LC	-

*Status: CR = Critically Endangered; E = Endangered; V = Vulnerable; NT = Near Threatened; M = Migratory; SL = Special Least Concern; LC = Least Concern, EPBC Status: CE = Critically Endangered; E = Endangered; V = Vulnerable

APPENDIX C STATE-MAPPED ESAS



Filepath: -BEBE220060-71 ABx Sunrise Bauxite Project Approvals\Workspaces\BAA250015.01 Constraints and Approvals Advice\Rev 0\Figure 1 Environmentally sensitive areas.qgz

0300600 m

N

Scale: 1:22,000@ A3

Datum: GDA2020

Projection: MGA zone 56

Data Source:

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Google Imagery: Data SIO, NOAA, U.S.Navy, NGA, GEBCO Image © 2024 Airbus



- Legend**
- Site boundary

Cadastre (DCDB)

Roads and tracks

State controlled roads

Watercourse

Minor

Environmentally sensitive areas

Category B

Endangered Regional Ecosystems - regrowth and remnant (biodiversity status)

Category B - 1km buffer

Category C

State forest

Sunrise Bauxite Project



A Montrose Environmental Company

CONTACT US

🌐 www.epicenvironmental.com.au

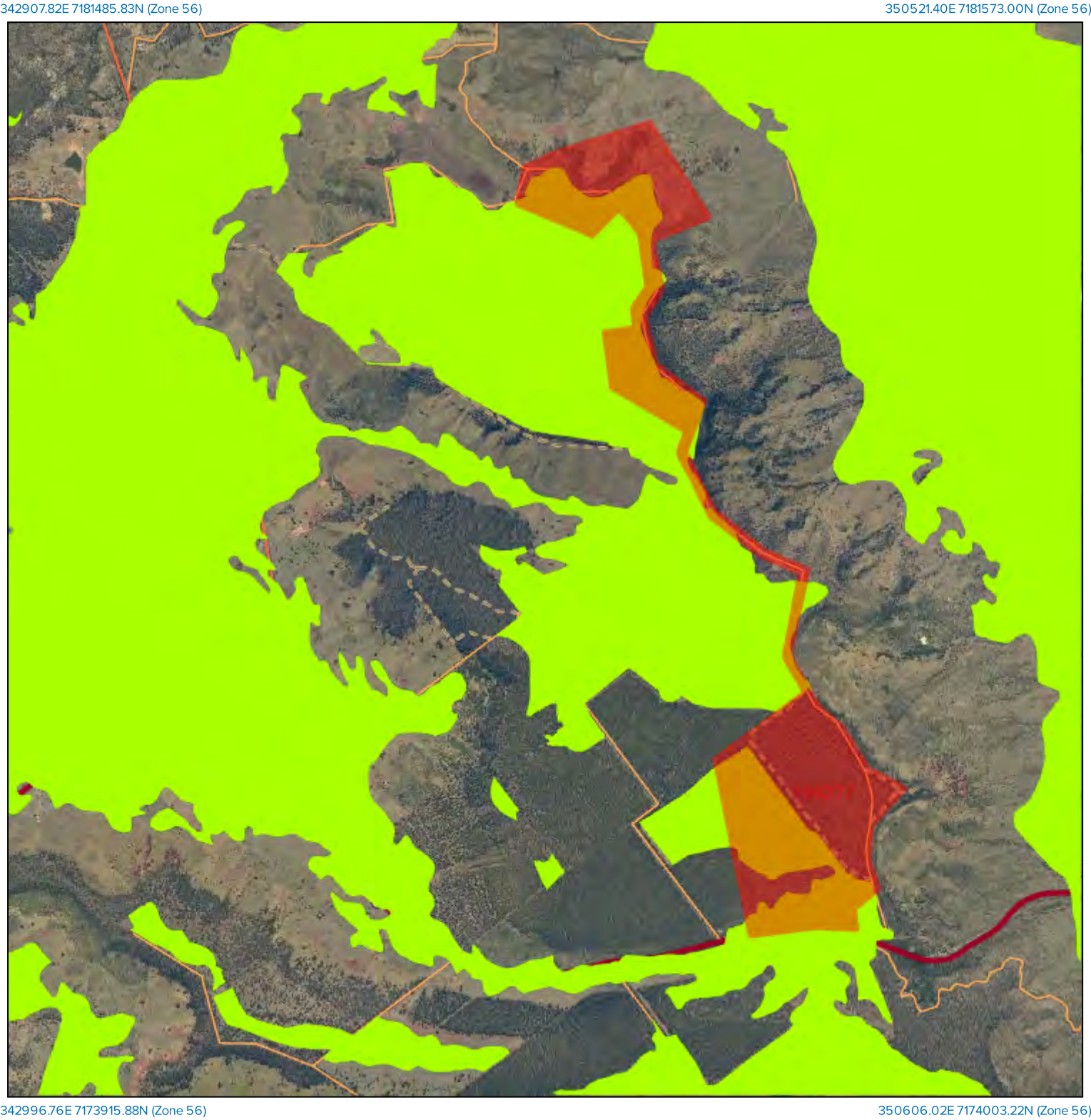
🌐 <https://www.linkedin.com/company/epic-environmental-pty-ltd/>

☎ 1800 779 363

✉ enquiries@epicenvironmental.com.au

Appendix B Areas of Regional Interest

State-Mapped Strategic Cropping Area



State-Mapped Strategic Cropping Area

Legend

POLYGON-3D - ML
permit application -
MLA100277.kml - poly



ML permit application



ML surface area
application



ML access application



ML permit granted



ML surface area granted



ML access granted



SCL trigger map



Green bridges



Bridges



Tunnels



Railway stations



Railways



Roads and tracks



Motorway



Highway



Secondary



Connector



Local



Restricted Access Road



Mall



Busway



Bikeway



Restricted Access
Bikeway



Walkway



Restricted Access
Walkway



Non-vehicular Track



Track



Restricted Access Track



Ferry



Proposed Thoroughfare

Attribution

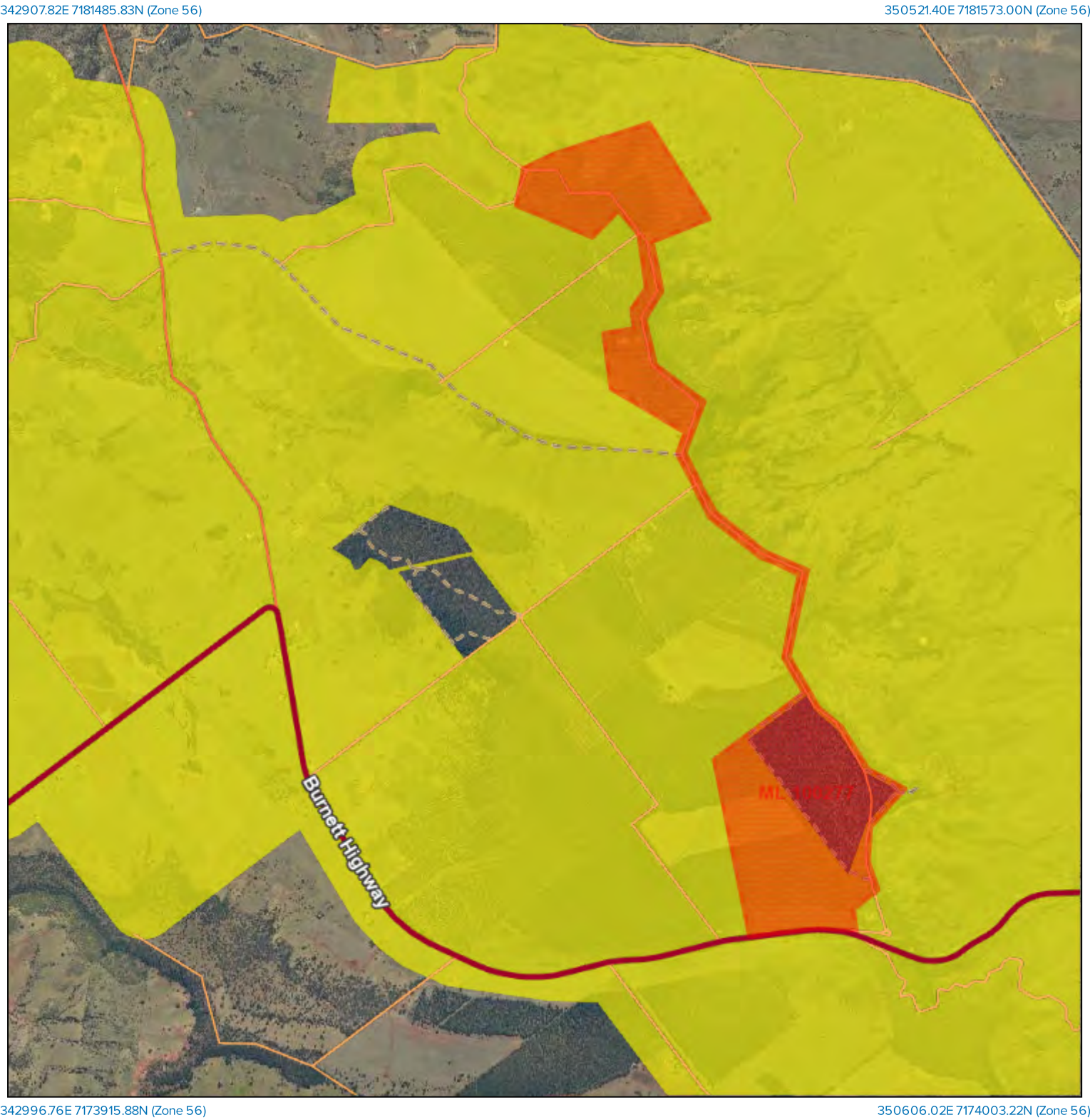
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State-mapped Agricultural Area



State-mapped Agricultural Area

Legend

POLYGON-3D - ML
permit application -
MLA100277.kml - poly



ML permit application



ML surface area
application



ML access application



ML permit granted



ML surface area granted



ML access granted



Priority Agricultural Area



Green bridges



Bridges



Tunnels



Railway stations



Railways



Roads and tracks



Motorway



Highway



Secondary



Connector



Local



Restricted Access Road



Mall



Busway



Bikeway



Restricted Access



Bikeway



Walkway



Restricted Access



Walkway



Non-vehicular Track



Track



Restricted Access Track



Ferry



Proposed Thoroughfare

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