



Ecological Assessment Report
Rutherglen BESS and switchyard
Red Hill Renewable Energy

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Ecological Assessment Report

Rutherglen BESS and switchyard proposal on Lot 132 FD700

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1.0 Executive summary

Four Elements Consulting (4 Elements Consulting) were commissioned by Red Hill Renewable Energy Pty Ltd to conduct an Ecological Assessment Report (EAR) for the proposed construction of a Battery Energy Storage System (BESS) with associated switchyard, transmission, inverter and access infrastructure on Lot 132 FD700 (the property). The project area is located within 7 km of the township of Bororen, Queensland. All mapping is based on the concept design and is provided for indicative purposes. The project area is defined as proposed Lots 1, 2, 4, and an access road, which covers approximately 23.6 ha, with the disturbance footprint within it (comprising all the required BESS works, berms, batters, detention basin, access etc.) approximately 12.5 ha. There is a 0.1 ha avoidance area covering the proposed State Assessment and Referral Agency (SARA)-referred crossing of one (1) low-risk waterway providing for fish passage categorised as low for the waterway barrier works overlay.

The project area's current proposed alignment seeks to only clear vegetation within non-remnant Category X vegetation pursuant to the Queensland *Vegetation Management Act 1999* (VM Act). This updated assessment relies on a previous Environmental Constraints Assessment (ECA) (4 Elements Consulting, 2024) which included the establishment of a solar farm covering a much larger proportion of the wider property area. The previous ECA focused on a property wide ground-verification of vegetation condition and confirmation of existing mapped Regional Ecosystems (REs) as per the latest Queensland Herbarium mapping and information. This new project area is significantly scaled back and is designed to avoid impact to all native vegetation communities recorded in the ECA (4 Elements Consulting, 2024).

Using the existing survey effort, this EAR provides an assessment against the *Planning Guideline - State code 27: Battery storage facility development*, specifically to address Performance Outcome (PO)1, and to address the impact, or potential impact, of the proposed BESS and ancillary infrastructure on Matters of National Environmental Significance (MNES), Matters of State Environmental Significance (MSES) and Matters of Local Environmental Significance (MLES), with a focus on those recorded during the field assessment or considered to be potentially present. A potential occurrence assessment is provided and based on the analysis of vegetation communities and habitat types present within both the proposed project area and in relation to activities required for establishing the proposal. A Significant Impact Assessment (SIA) is produced for all MNES and MSES species considered to have a potential to occur within the project area. Results of the field assessment recorded two (2) protected species pursuant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and Queensland *Nature Conservation Act 1992* (NC Act) as present within or adjacent to the project area. These were the vulnerable-listed white-throated needletail (*Hirundapus caudicatus*) and southern squatter pigeon (*Geophaps scripta* subsp. *scripta*).

The SIA conducted as part of 4 Elements Consulting (2024) originally identified vegetated areas of the previous, much larger project area as having potential for impact on four (4) additional protected species: the vulnerable-listed Latham's snipe (*Gallinago hardwickii*), grey-headed flying-fox (*Pteropus poliocephalus*) and tusked frog (*Adelotus brevis*), as well as the endangered-listed koala (*Phascolarctos cinereus*). These species were considered

to have a moderate potential of occurring in that project area. However, due to the scaled back design of the new project area and the disturbance footprint within it (confined to non-native pastures (Category X vegetation)), it is unlikely that any of the six (6) confirmed or moderate-rated potentially occurring threatened species will be significantly impacted by the proposal. There is a distinct lack of native woody vegetation required to support foraging, roosting and breeding habitat for these species.

The current proposed project area does however intersect a single watercourse which is defined under the *Fisheries Act 1994* as a low-risk waterway for barrier works. Access infrastructure (proposed road) across the low-risk waterway will be required to meet exemption criteria or accepted development outcomes for waterway barrier works and appropriate permits and notification procedures must be adhered to, as defined under State Code 16. To meet environmental duties of care and assist in any development approvals it is important to minimise the development footprint's interaction with all watercourses and associated vegetation. Development and implementation of a Construction Environmental Management Plan (CEMP) and an Erosion and Sediment Control Plan (ESCP) will help mitigate impacts to these waterways. This crossing area is mapped as an avoidance area (0.1 ha).

In summary, the current plan to construct and operate a BESS and switchyard is considered unlikely to significantly impact MNES, MSES or MLES. The project area is located entirely within non-remnant Category X vegetation and avoids the clearance of any native woody vegetation. No threatened species habitats listed under the EPBC Act 1999 or NC Act 1992 are present within the project area. Therefore, any clearing required for the proposal is exempt from the VM Act. The access infrastructure will need to address waterway for barrier works legislation and accepted POs or exemptions.

2.0 Introduction

2.1 Background

Four Elements Consulting (4 Elements Consulting) were commissioned by Red Hill Renewable Energy Pty Ltd to conduct an Ecological Assessment Report (EAR) for the proposed construction of a Battery Energy Storage System (BESS) with associated switchyard, transmission, inverter and access infrastructure on Lot 132 FD700 (the property). The project area is defined as proposed Lots 1, 2, and 4, and an associated access road as part of Lot 2, together covering approximately 23.6 ha (**Figure 1a**) with a disturbance footprint within it (comprising all the required BESS works, berms, batters, detention basin, access etc.) approximately 12.5 ha (**Figure 1b**). An additional avoidance area crossing the Level 1 waterway intersecting the access road, is also included (0.1 ha). The project area is located within 7 km of the township of Bororen, Queensland. All mapping is based on the concept design and is provided for indicative purposes.

This report is prepared in accordance with the *Planning Guideline - State code 27: Battery storage facility development*, specifically to address Performance Outcome (PO)1, and to address the impact, or potential impact, of the proposed BESS and ancillary infrastructure on Matters of National Environmental Significance (MNES), Matters of State Environmental Significance (MSES) and Matters of Local Environmental Significance (MLES). The report utilises data from a previous ecological constraints assessment (4 Elements 2024) which focused on a property wide ground-verification of vegetation condition and confirmation of existing mapped Regional Ecosystems (REs) as per the latest Queensland Herbarium mapping and information. A potential occurrence assessment is provided and based on the analysis of vegetation communities and habitat types present within both the proposed project area and in relation to activities required for establishing the proposal.

For the purpose of this report:

- ▶ Lot 132 FD700 is referred to as "the property".
- ▶ Proposed Lots 1, 2, and 4, along with the access road associated with Lot 2, where the proposed BESS works are to be located, is referred to as the "project area" (**Figure 1a-1b**) and totals approximately 23.6 ha.
- ▶ The proposed construction that forms the impact comprises the BESS works and is referred to as the "disturbance footprint" totalling approximately 12.5 ha.
- ▶ There is a small (0.1 ha) "avoidance area" crossing a Level 1 (low) ranked waterway.
- ▶ The South East Queensland bioregion is referred to as "the region".

2.2 Project description

The disturbance footprint of the project area is proposed on a preliminary basis to encompass a total 23.6 ha of which 12.5 ha will comprise the project area infrastructure, identified in **Figure 1a-1b**. Infrastructure will

connect from both the east and west of the project area to the existing 275 kV state transmission line that traverses the property (north-south). Setbacks to waterways are provided based on inundation modelling. Setbacks to remnant vegetation areas are additionally provided to reduce the potential for residual impacts to these areas. The purpose of this EAR is to identify how constraints have been managed since the original proposed project footprint (4 Elements Consulting, 2024) to avoid all significant impacts on MNES, MSES or MLES.

2.3 Property description

The whole property (Lot 132 on FD700) is within the local government area of the Gladstone Regional Council and encompasses an area of 1,277 ha. There is a registered encumbrance on the property that consists of a Powerlink high voltage electricity line in a single easement which dissects the centre (**Figure 1a-1b**). The 275 kV power lines are part of the 136 km long line that connects the Gin Gin (west of Bundaberg) substation to the Calliope River (near Gladstone) substation. The existing use of the property is cattle grazing. Existing infrastructure on the property which supports the existing cattle grazing operation includes:

- ▶ A homestead in the southwest
- ▶ Twelve (12) livestock watering dams
- ▶ Five (5) strand barbed wire fencing borders a series of cleared paddocks
- ▶ A series of internal vehicle tracks

The disturbance footprint within the project area will be subject to the following works:

- Approx. 90,000 m³ of cut to fill earthworks to a maximum of 2 m and average 0.76 m depth.
- Construction of a 2.7 m high x approx. 800 m long grassed (*Themeda triandra* (kangaroo grass) locally sourced where possible) earth berm running south to north as shown on the proposal plans using up to 30,000 m³ excess cut material from the works above.
- Creation of sedimentation and bio-retention basins the east of the berm as shown on plan to capture, filter and release day-to-day runoff and to capture and hold runoff in the case of an incident on site involving potentially contaminated runoff.
- In accordance with the Queensland Environmental Protection Act 1994 (EP Act, AS 1940:2017 (Storage and Handling of Flammable and Combustible Liquids, AS/NZS 5139:2019 (Electrical Installations – Safety of Battery Systems, and AS 2067:2016 (Substations and High Voltage Installations) - installation of approx. 80,000 m² of crushed rock and concrete pavements, founding slabs, geomembranes and upturn bunding hobs to:

-
- Prevent the intrusion of potentially contaminated water from the BESS and IUSA Substation areas into the ground and groundwater of the broader site.
 - Provide stable support to 336 battery containers and 112 inverter containers (each approx. 6 m high x 2.4 m wide) arranged per the proposal plans.
 - Provide stable support, including individual catchment basis, for each of the 2 x 250 MVA 33/275 kV transformers and associated minor plant.
 - Other minor control and switching equipment within the disturbance footprint.
 - Similar impermeable pavement and foundation work to the 2.4 ha disturbance area of the IUSA Substation / Switchyard to be constructed and owned by Powerlink as part of the project.
 - A single level office and amenities building of approx. 100 m² for staff work areas, toilets, lunchrooms and the like.
 - Provide a 6 m wide a approx. 670 m long access road (bitumen sealed crushed road to engineers' requirements) connecting proposed Lot 2 to existing council owned Red Hill Road. These works will include a single crossing of a mapped watercourse.
- Perimeter fencing to each of Lots 1, 2 and 4 to approved cattle resistant standards for security of access.
 - Installation of Powerlink IUSA Substation equipment across an approx. 2.4 ha area in Lot 2, and overhead connection line works to connect the facility to the existing Powerlink transmission line F814 as shown in the proposal plans.

The property is located within the South East Queensland (SEQ) bioregion and comprises three (3) geological land zones: Land Zone 3 (alluvial watercourses and adjacent floodplains) in the centre of the project area, Land Zone 11 (lowland hills and metamorphic rock located in the northwest portion of the property), and Land Zone 12 (lowland hills and granitic rock in the southern and eastern portion of the property). The project area is predominantly located within a granite Land Zone with minor areas of alluvium on the western boundary.

The entirety of the proposed project area is classified as Category X non-remnant vegetation under the VM Act (**Figure 1a-1b**) within the central portion of the Lot.

There is a single watercourse which is defined under the *Fisheries Act 1994* as a low-risk waterway for barrier works. This watercourse is intersected by the proposed access infrastructure. The watercourse is part of the Baffle Creek catchment system. Killarney Creek flows east along the southern border of the property and the property is bordered along the eastern boundary by the Eurimbula National Park.

2.4 Scope of works

The aims of this assessment are to:

- ▶ Classify vegetation into Regional Ecosystems (REs) as per REDD v13.1
- ▶ Review and identify species of flora and fauna present or considered at least at moderate potential to occur within the project area
- ▶ Assess the likelihood of the proposed project to have a significant impact on any MNES (EPBC Act), MSES (NC Act) or MLES (local planning)
- ▶ Provide recommendations to reduce impacts to environmental values, sensitive environments, and populations of threatened flora and fauna within potential vegetation clearing areas
- ▶ Identify the necessary approvals and any additional works required to meet ecological statutory requirements

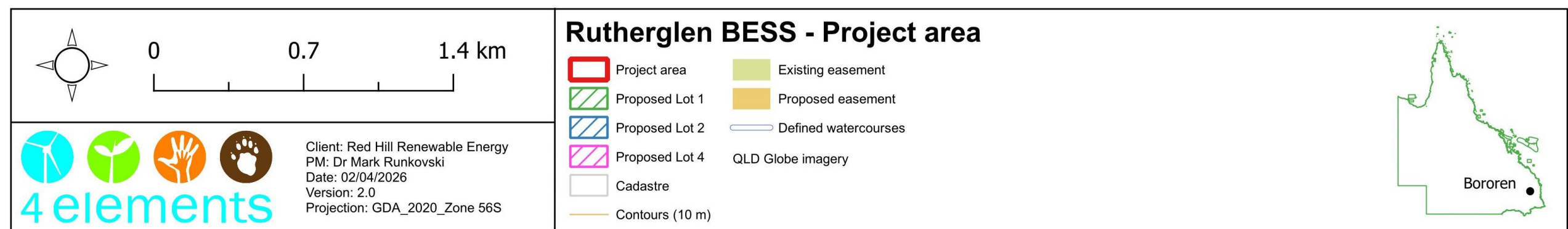
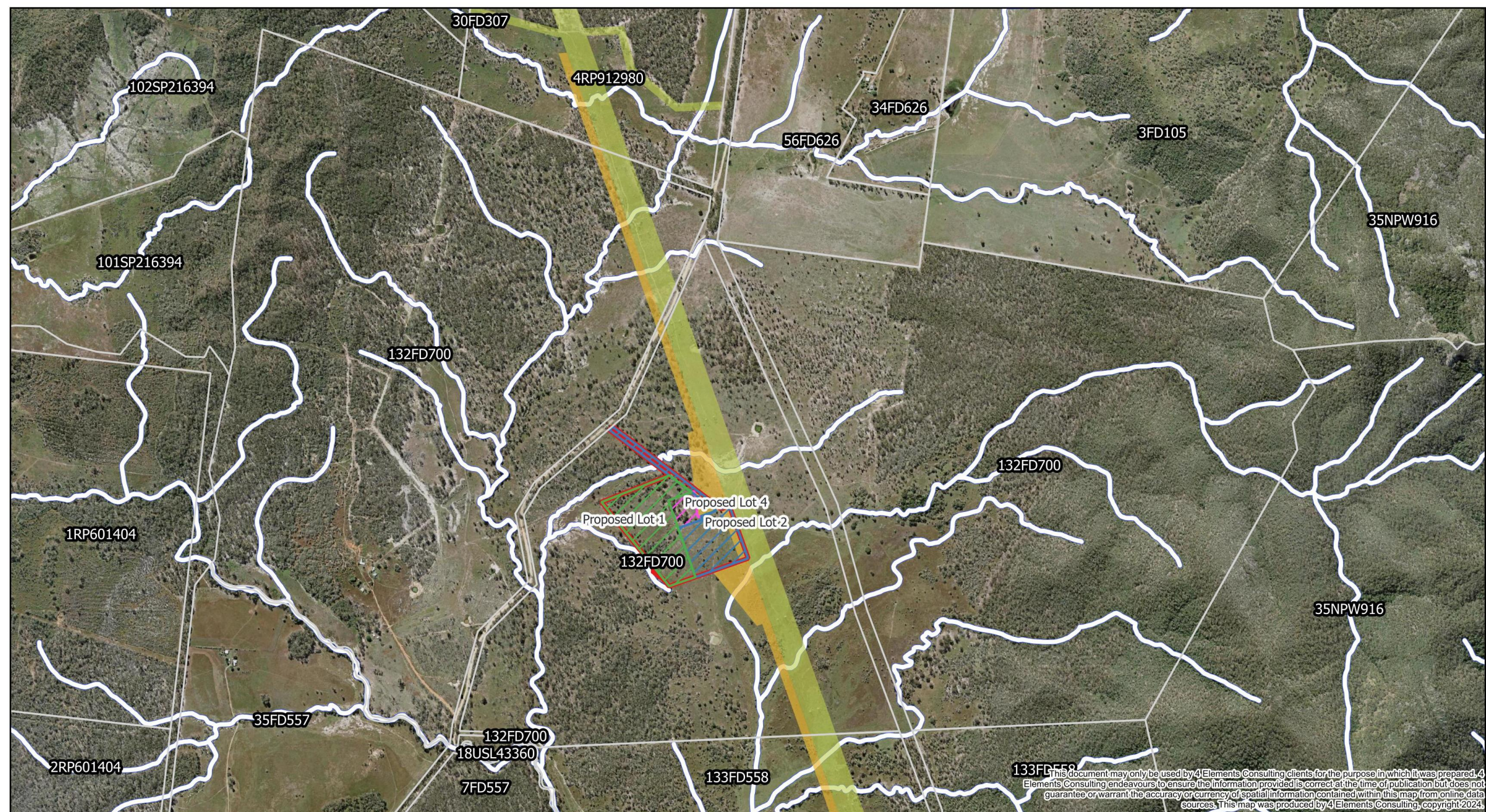


Figure 1a. Proposed project area within wider balance land (Lot 13 on FD700 – the property)

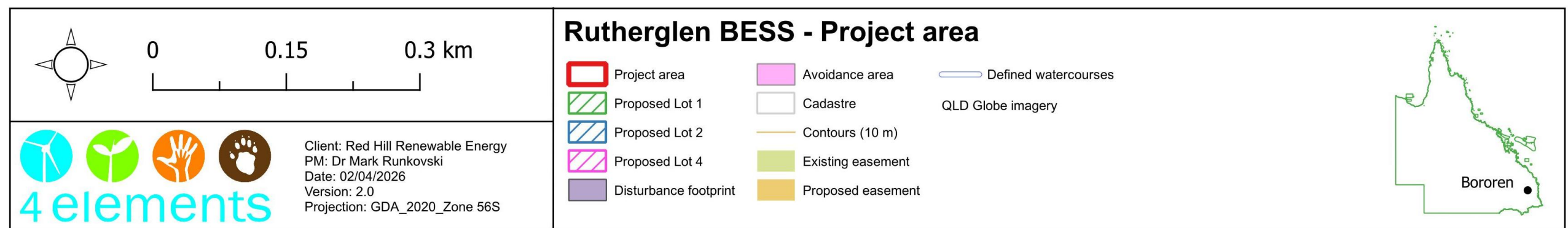
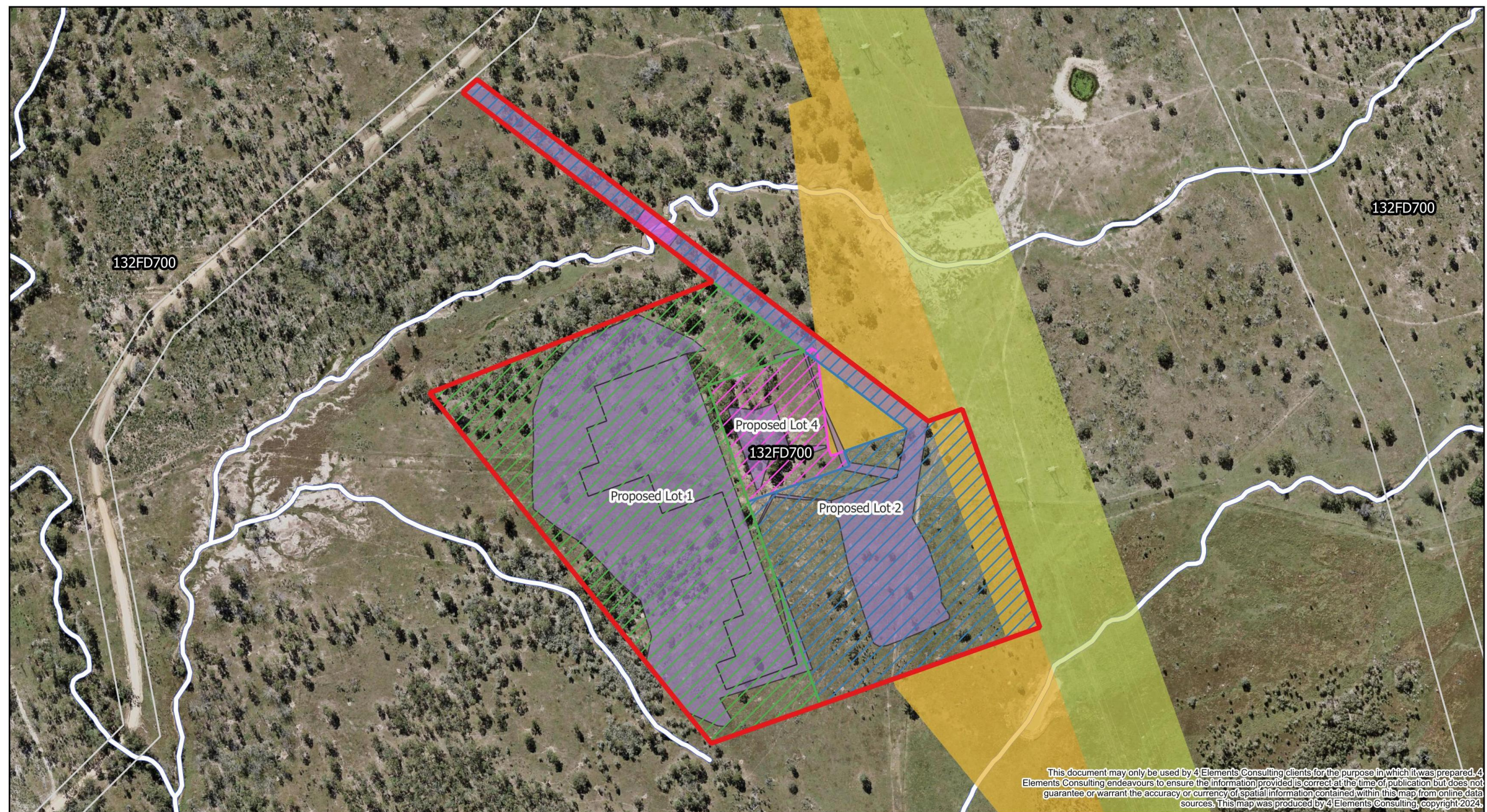


Figure 1b. Project area and disturbance footprint

2.5 Legislative context

The following legislation, provided in **Table 1**, are relevant to identifying ecological values, providing guidance for the assessment of potential project impacts and identifying environmental constraints to project activities. These legislation and guidance documents have been considered in this report and the appendices provided.

Table 1 Statutory legislation relevant to the project area

Legislative Act	Brief description
Commonwealth legislation	
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	The <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act) provides a mechanism for assessing the environmental impact of activities and development where "Matters of National Environmental Significance" (MNES) may be significantly affected. The Act identifies nine (9) matters of NES, which require consideration and analysis, namely: ▶ Ramsar wetland of international importance, ▶ World Heritage properties, ▶ National Heritage places, ▶ Commonwealth Marine areas, ▶ Great Barrier Reef Marine Park, ▶ Nationally listed threatened species and ecological communities, ▶ Nationally listed migratory species, ▶ Nuclear actions (including uranium mining), and ▶ Water resources in relation to coal seam gas and large coal mining development. Where a project or action is believed to potentially cause a significant impact on a matter of NES, it is to be referred to the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW) for assessment as to whether the action is a 'controlled action' requiring Commonwealth approval for the proposed action. The EPBC Act processes also allow voluntary referral of a project to seek confirmation that a Project will not have significant impacts on matters of NES. Where an action requires Commonwealth approval, a formal assessment process is undertaken in accordance with provisions of relevant legislation.
State legislation	
<i>Vegetation Management Act 1999</i>	The <i>Vegetation Management Act 1999</i> (VM Act) is the planning initiative underlying regional management of vegetation in Queensland, including clearing of vegetation types, termed Regional Ecosystems (RE's).

Legislative Act	Brief description
	The RE classification is a hierarchical system formed by a three-part code with the primary subdivision being bioregion, followed by land zone, and then vegetation. The biogeographic region, or bioregion, is the primary level of classification for biodiversity values in Queensland describing where the RE is found on a state-wide basis. Land zones are geological and geomorphic categories that describe the major geologies and landforms of Queensland. The system is based primarily on geology, with geologic age considered an important determinant. The status of RE's is based on their pre-clearing and remnant extent and is gazetted under the VM Act and listed in the RE Description Database (REDD) maintained by the Queensland Department of Resources (DR). The VM Act aims to conserve remnant endangered and of concern RE's, prevent land degradation and further loss of biodiversity, manage the environmental impacts of clearing vegetation, and reduce of greenhouse emissions. The VM Act status of an RE is described in line with the following: ▶ Endangered. An RE that is prescribed under the regulation and has either of the following attributes: ❖ Less than 10% of its pre-clearing extent remaining, or ❖ From 10% to 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000ha. ▶ Of Concern. An RE that is prescribed under the regulation and has either of the following attributes: ❖ From 10% to 30% of its pre-clearing extent remaining, or ❖ More than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is less than 10,000 ha. ▶ Least Concern. An RE that is prescribed under the regulation and has more than 30% of its pre-clearing extent remaining and the remnant vegetation remaining is more than 10,000ha. The biodiversity status of an RE is classified by the Department of Environment, Science and Innovation (DESI) based on the condition of remnant vegetation. An RE will have a vegetation management status and/or a biodiversity status of Endangered, Of concern, or No Concern of Present. Essential Habitat. The VM Act also has provision for the regulation of essential habitat for species of state significance. Essential habitat (mapped by DESI) is vegetation in which a listed species has been known to occur. Clearing or disturbance to areas of essential habitat will require compensatory habitat measures to be developed. For the project development area, core habitat has been used to describe the combination of critical or essential habitat for both national and state listed significant species.

Legislative Act	Brief description
<i>Planning Act 2016</i>	The <i>Planning Act 2016</i> establishes the framework for the Queensland planning system. The purpose of the legislation is to establish an efficient and accountable system of land-use planning and development assessment that will lead to ecological sustainability. The Planning Act defines ecological sustainability as a balance between: ▶ The protection of ecological processes and natural systems at local, regional, state and national levels, ▶ Economic development, and ▶ The cultural, economic, physical, and social wellbeing of Queenslanders. The Planning Regulation (2017) and the State Planning Policy (2017) are to guide local and state government in land use planning and development by defining the Queensland Government policies relating to matters of State interest.
<i>Nature Conservation Act 1992</i>	The <i>Nature Conservation Act 1992</i> (NC Act) aims to conserve nature through strategies such as dedicating and declaring protected areas for those parts of Queensland with outstanding biological diversity, natural features, and wilderness values. The NC ACT 1992 provides for the protection of special least concern, near threatened, vulnerable and endangered animals and plants. Nature Conservation (Animals) Regulation 2020 has replaced the Nature Conservation Wildlife Regulation (2006) and introduces a new wildlife licensing framework but incorporates and streamlines existing provisions from the regulations that it replaces. In general, an animal authority under the Animals Regulation must not be granted where activities are likely to adversely affect conservation or ecological sustainability of native wildlife. The demerit points system for offences against the Act has been retained. There is now one overarching offence provision for breaching the conditions of an authority, with a higher offence for failure to comply with a record-keeping or return of operations condition. Nature Conservation (Plants) Regulation 2020 transfers all existing plant provisions into a single stand-alone regulation that were contained in the previous Nature Conservation Wildlife Regulation (2006). The new Plants Regulation retains and streamlines many of the existing provisions in the Administration, Wildlife and Wildlife Management Regulations. The allowances for taking protected plants, including under a conservation plan, an authority (such as a clearing permit) or an exemption are retained in the Plants Regulation and there are no significant amendments to these provisions.
<i>Queensland Fisheries Act 1994</i>	The <i>Fisheries Act 1994</i> provides for the use, conservation and enhancement of the community's fisheries resources and fish habitat by providing for, amongst other things, the protection of fish habitats.

Legislative Act	Brief description
	The Fisheries Act has been integrated into the <i>Planning Act 2016</i> so development permits under the Planning Act 2016 are required for certain operational works that are assessable development under the SP Act. Operation works that are assessable development under the Planning Act 2016 include waterway barrier works and works in a declared fish habitat.
<i>Biosecurity Act (2014)</i>	The Queensland Government's <i>Biosecurity Act 2014</i> is administered by the Department of Agriculture and Fisheries (DAF). The Biosecurity Act provides management measures to protect agricultural and tourism industries and the environment from pests, diseases, and contaminants. Under the Act, invasive plants and animals are categorised as either a 'Prohibited Matter' or a 'Restricted Matter' and replace the 'Declared' status under the <i>Land Protection (Pest and Stock Route Management) Act 2002</i> which has been superseded.
<i>Environmental Protection Act 1994</i>	The <i>Environmental Protection Act 1994</i> (EP Act) provides the key legislative framework for environmental management and protection in Queensland. The EP Act utilises several mechanisms to achieve its objectives. Relevant to this project is the requirement for the establishment of a general environmental duty, under Section 319 of the EP Act. Section 319 of the EP Act places a general environmental duty on Red Hill Renewable Energy Pty Ltd to ensure it does 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'. By undertaking the preparation of this detailed ecological investigation, Red Hill Renewable Energy Pty Ltd demonstrates that it is cognisant of the responsibilities for environmental protection and management in Queensland.
<i>Water Act 2000</i>	The purpose of the <i>Water Act 2000</i> is to provide for the sustainable management of water and other resources. Under Section 266 of the Water Act, a riverine protection permit is generally required from the DR to: ▶ Destroy vegetation in a watercourse, ▶ Excavate in a watercourse, and/or ▶ Place fill in a watercourse. Additionally, water supply for construction purposes (e.g., access track construction/compaction, dust suppression etc.) may be required. Where this water supply is proposed to be sourced from nearby watercourses, a permit in accordance with Section 237 of the Water Act will be required from DR prior to any water being extracted from the watercourse.

Legislative Act	Brief description
<i>State Development Assessment Provisions – State code 09: Great Barrier Reef wetland protection areas</i>	The purpose of the code is to guarantee that development which involves high impact earthworks within a wetland protection area is located outside of a wetland and ensures that developments: - are designed, constructed and operated to protect and/ or enhance wetland environmental values; or - demonstrate that after all reasonable impact avoidance measures have been or will be undertaken, the development comprises an acceptable impact on wetland environmental values; or - avoid impacts on matters of state environmental significance (MSES). Where avoidance is not reasonable possible, minimise and mitigate impacts and provide an offset for significant residual impacts where appropriate.
<i>Environmental Offsets Regulation 2014</i>	Matters of State Environmental Significance (MSES) are referenced in the biodiversity State interest under the State Planning Policy (SPP) and are mapped by the Queensland Government. The Environmental Offsets Regulation 2014 (EOR) also prescribes MSES for the purposes of the environmental offset legislation in Queensland. Many of the MSES in the EOR coincide with the MSES listed under the SPP, however, there are additional items listed under the EOR that are not listed in the SPP. The MSES mapping includes certain environmental values that are protected under Queensland legislation such as State conservation areas, marine parks, waterways and wetlands, protected habitat, fish habitat, regulated vegetation, connectivity areas, and offset areas. MSES defined under the SPP and EOR include the following: ▶ Protected areas (including all classes of protected area except coordinated conservation areas) under the NC Act. ▶ Marine parks and land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone under the <i>Marine Parks Act 2004</i>. ▶ Marine plants areas within declared fish habitat areas that are management A areas or management B areas under the Fisheries Regulation 2008. ▶ Waterways providing fish passage. ▶ Threatened wildlife under the NC Act and special least concern animal under the Nature Conservation (Animal) Regulation 2020. ▶ Regulated vegetation under the VM Act 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.

Legislative Act	Brief description
	❖ Areas of essential habitat on the essential habitat map for wildlife prescribed as 'Endangered wildlife' or 'Vulnerable wildlife' under the NC Act. ▶ Regional ecosystems that intersect with watercourses identified on the vegetation management watercourse map. ▶ Regional ecosystems that intersect with wetlands identified on the vegetation management wetlands map. ▶ High preservation areas of wild river areas under the <i>Wild Rivers Act 2005</i>. ▶ Connectivity areas containing remnant vegetation Category B as depicted in the Environmental Offset Landscape Connectivity Assessment Tool. ▶ Wetlands in a wetland protection area of wetlands of high ecological significance shown on the Map of Referable Wetlands under the Environmental Protection Regulation 2008. ▶ Wetlands and watercourses in high ecological value waters defined in the Environmental Protection (Water and Wetland Biodiversity) Policy 2019). ▶ Legally secured offset areas.

2.6 Weed management legislation

Invasive plant species can interrupt natural landscape function and may lead to significant economic impacts. Weeds are managed by being declared under one or all three relevant legislation and/or local laws outlined below.

2.6.1 Weeds of National Significance

The Australian state and territory governments have compiled a list of invasive plant species based on an assessment process that prioritised these weeds based on their invasiveness, potential for spread and environmental, social and economic impacts. Consideration was also given to their ability to be successfully managed. A list of 20 Weeds of National Significance (WoNS) was endorsed in 1999 and a further 12 were added in 2012.

2.6.2 Biosecurity Act 2014 (Queensland)

2.6.2.1 Prohibited Invasive Plants

Prohibited matter includes a range of invasive plants and invasive animals and other types of pests and diseases listed in the Act. These plants have the potential to have significant impacts and are currently not present or known to be present in Queensland. It is an offence to deal with prohibited matter or fail to report its presence.

2.6.2.2 *Restricted Invasive Plants*

These species are established in Queensland and seriously threaten Queensland's primary industries, natural environment, livestock, human health and people's livelihoods.

Under the *Biosecurity Act 2014*, there are seven (7) categories of restricted matter (i.e., restricted matter may include matter such as plants, animal diseases, noxious fish, insects, pest animals and weeds).

Restricted invasive plants may fall into one (1), a combination, or all of Categories 1 to 5 (listed below). Under each category the restricted invasive plant has listed restrictions. The specific restriction requirements also apply to a person when dealing with restricted invasive plants unless they have a restricted matter permit.

Restricted invasive plant categories and restrictions:

- ▶ Category 1: not relevant as it does **NOT** relate to plant materials.
- ▶ Category 2: the invasive plant must be reported within 24 hours Biosecurity Queensland on 13 25 23.
- ▶ Category 3: the invasive plant must not be distributed either by sale or gift or released into the environment.
- ▶ Category 4: the invasive plant must not be moved.
- ▶ Category 5: the invasive plant must not be kept.

All landowners have a general biosecurity obligation (GBO) under the *Biosecurity Act 2014* to take reasonable and practical steps to minimise the risks associated with invasive plants and animals under their control *regardless of its category status*. Weeds that are not listed under the *Biosecurity Act 2014* may still be declared at the local government level.

2.6.3 Gladstone Regional Council Biosecurity Plan (2021-2025)

The Gladstone Regional Council Biosecurity Plan (2021-25) for invasive plants and animals has been developed to provide a framework for management of declared and non-declared pest plants and animals in the Gladstone local government area.

The plan also outlines areas of responsibilities for individuals, agencies and organisations involved in pest management. It provides landholders with strategic direction and some simple tools to enable them to set priorities for pest management on their own property.

Under the plan, weed species are allocated a category ranking based on a hierarchical approach to effective management. This score is based on the listing under national and state legislation, the current distributional extent and potential economic, social and environmental impacts as well as the likelihood of a beneficial control outcome. The category rankings are listed below:

Prevention Zone: applied to species not currently found in the Gladstone Region which pose significant biosecurity risk. Monitoring and preventing entry of these species into the region is considered a reasonable and practical outcome.

Eradication Zone: applied to species with a limited distribution and abundance within the Gladstone Region where a significant biosecurity threat is present and effective elimination is considered reasonably practical.

Containment Zone: applied to species which are widely distributed in the Gladstone Region but not everywhere. While broadscale elimination is not feasible, minimisation and containment of the biosecurity risk is reasonable to prevent further spread.

Natural Asset Protection: applied to species which are widely distributed across the Gladstone Region. Natural asset protection aims to reduce the overall economic, environmental and social impacts of the weed or pest animal. This includes through the means of targeted management that aims to prevent impacts to key assets of high economic, environmental and social value.

3.0 Methodology

3.1 Desktop review

A desktop review was conducted by 4 Elements Consulting in late 2025, which examined relevant databases, mapping, legislation, and associated plans to pinpoint potential matters of ecological significance which may occur on or near the project. The matters include listed threatened species and vegetation communities as well as other ecological features. The desktop review includes an assessment of the following:

- ▶ WildNet Online database of flora and fauna - This database holds records of plants and animals that have either been sighted or collected within the property (employing a 10km buffer around the central point of the property). The records held in this database are maintained by DETSI.
- ▶ Protected Matters database of MNES - This database applies a range of bio-models to predict the presence of species of flora and fauna and other MNES within a given radius of the property (a search parameter was prescribed limiting the search area to a 10km radius around the property boundary) as cited under the Commonwealth's EPBC Act.
- ▶ Protected Matters database of MSES - This database applies a range of bio-models to predict the presence of species of vegetation and other MSES within a given radius of the property (utilising a default search parameter with a 1km buffer).
- ▶ Review of relevant legislation and associated plans and policies, including but not limited to the Queensland's NC Act, VM Act, the Federal EPBC Act, and the Water Act.
- ▶ Literature review - A range of scientific papers, recovery and conservation plans and other ecological assessment from the region and literature were reviewed for several related matters (such as targeted threatened species)
- ▶ Digital geological mapping on Queensland Globe to determine vegetation communities within and surrounding the property, and to review the extent of historical clearing and land use, and any other significant environmental features such as watercourses and wetlands.

3.2 Field survey methodology

3.2.1 Flora

As part of the initial assessment undertaken for the ECA (4 Elements Consulting, 2024), field surveys were undertaken by Principal Ecologist Ryan Hughes and Ecologist Jasmine de Valentine over three (3) consecutive days between Tuesday 27th February and Thursday 29th February 2024. This survey was designed to record the ecological character of the property, and to search for conservation significant species of flora. This included the following objectives:

-
- ▶ Establishing the accuracy of RE mapping of 'remnant' vegetation communities, the associated description of these communities, and their landscape context, particularly in relation to the project area and property
 - ▶ The identification of novel and important vegetation communities that could have the potential to be important wildlife refuges such as fire-proof niches, wetlands, and unique vegetation types
 - ▶ The compilation of a floristic checklist of vascular plants found within the project area and property, with specific emphasis placed on the floristic composition of representative vegetation communities affected by the predicted disturbance area
 - ▶ The ground-truthing of vegetation patterns depicted on aerial imagery, to inform the compilation of site-scale vegetation mapping
 - ▶ Record opportunistic observations of weeds while traversing the project area, targeting priority listed weeds under relevant legislation
 - ▶ Prepare vouchered flora specimens for any critically endangered, endangered, vulnerable, or near threatened species for submission to the Queensland Herbarium if present

3.2.1.1 Regional Ecosystem characterisation survey

Technical vegetation categorisation across the project area required the use of secondary level site assessments developed under the CORVEG methodology v7.0 (Neldner et al. 2023). Secondary level site assessment is used for classification and detailed descriptions of regional ecosystems and vegetation communities. This methodology includes collection of site survey location, environmental and overall structural information, flora species present, basal area of woody stems (using the Bitterlich stick method), percentage cover, and stem density measures of abundance in the shrub and canopy layers. A total of four (4) secondary level assessment was undertaken across the property. Secondary plots were only taken where a living woody vegetation layer was present. Therefore, no secondary plots were undertaken in vegetation representative of the project area project area (**Figure 2**). Note that **Figure 2** also shows all the original vegetation assessment survey sites in 4 Elements Consulting (2024). This ensured a minimum of one representative site per vegetation community (only one (1) present) located within the project area.

Prior to field investigation, the location of each survey site was determined based on the RE Description Database (REDD) version 13.1. Survey sites were then positioned in the field to a location that was considered characteristic of the target RE. In cases where the RE was incorrectly mapped as per REDD, this was verified by the secondary level assessment.

3.2.1.2 Regional Ecosystem verification

Delineation of RE distributions across the project area was further corroborated using quaternary and secondary level assessments, or rapid plots, as per the QBEIS methodology version 7.0 (Neldner et al. 2023). These

assessments are designed to capture vegetation community information quickly by targeting soils, landforms and key species within each vegetation structural layer. This information is generally sufficient to determine the identity of a regional ecosystem. This then allows the confirmation or alteration of regional ecosystem polygon boundaries when mapping vegetation communities across the project area. Quaternary level assessments were undertaken in all vegetation condition types across the property and included dead standing vegetation and exotic pastures as represented in the project area. A total of (25) quaternary plots were undertaken across the property (**Figure 2**), with two (2) quaternary plots in the current project area, and one (1) more detailed secondary plot undertaken in line with Neldner et al. 2023.

In producing vegetation mapping for the property and project area, the existing state government REDD map was used along with satellite imagery to map vegetation community patterns across the property and project area. Changes were made to line work, mapping resolution, and/or RE attribution according to site observations. Where changes were made, existing fields in the dataset were updated.

3.2.1.3 Threatened flora searches

Desktop analysis determined the potential occurrences of threatened flora, listed under the EPBC and NC Acts, within the project area. Searches were undertaken in habitats relating to known ecological requirements during all site traverses undertaken in the survey period. Within suitable habitat types, random meander searches were also conducted, focusing on target species preferential habitat. Seasonal detectability was a key consideration during threatened flora searches and influenced the survey period being undertaken in the wet season. Detections of conservation significant species during site traverses were GPS located and detailed habitat descriptions recorded.

3.3 General fauna habitat searches

As part of the initial assessment undertaken for the ECA (4 Elements Consulting, 2024) (**Figure 2**), areas determined to be most likely to support threatened fauna species were targeted. At each targeted location a detailed habitat assessment was undertaken which characterised the availability of habitat features to determine suitability for potentially occurring threatened species. This assessment is from the Queensland Terrestrial Vertebrate Fauna Survey Guidelines (Eyre et al. 2022). General fauna habitat condition recorded as below:

- ▶ Structural and floristic characteristics of the vegetation
- ▶ Locally important Koala food trees recorded (Youngentob 2021)
- ▶ Disturbance history (fire/ flood/clearing/feral digging etc.)
- ▶ Presence/absence of suitable habitat for EVNT species
- ▶ Location of site within known distribution of the species

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- ▶ Connectivity with habitat where species is known to occur
 - ▶ Soil type and structure (visual only)
 - ▶ Presence of water in any form e.g., rivers, dams, creeks, drainage lines, soaks
 - ▶ Size and abundance of hollows and coarse woody debris (CWD)
 - ▶ Presence of decorticated bark
 - ▶ Presence of rock crevices, boulders, grass cover etc.
 - ▶ Presence of sandbanks, shallow wading areas, rock walls, saltmarsh, roost areas, etc.
 - ▶ Presence of mistletoe, nectar, gum, seed, sap sources, browse trees

Results of the field survey are provided in **Section 5.0**.

3.3.1.1 Targeted tusked frog surveys

Within swampy habitats of the larger property, targeted surveys for the tusked frog were originally undertaken using Eyre et al. (2022) – specifically Section 9.1 (4 Elements Consulting, 2024). This included call playback and aural detection surveys at three (3) locations within the property (**Figure 2**). Targeted habitats included ponds and slow-moving stream sections as identified in (Rowland 2013). Call playback followed the standard technique of an initial two-minute listening period before call playback commences, followed by three minutes if call playback, followed by two minutes of listening.

3.3.1.2 Targeted bird surveys

Diurnal bird surveys were undertaken at four fixed locations within the project area (**Figure 2**) as per Eyre et al. (2022) – specifically Section 8.6. Surveys were undertaken in the early morning before 8am and late afternoon after 4 pm. Fix point 20 min searches were utilised with two observers (with 10 x 50 binocular) at each location. All visual and acoustic observations were recorded and attributed to the survey location. Low wind and clear skies were constant throughout the survey effort resulting in ideal conditions for detection. Additional to this effort, opportunistic records were collected across all site activities.

3.3.1.3 Targeted koala surveys

Targeted survey effort for the koala included several survey methods. All potential habitat areas containing living canopy vegetation was surveyed for scratch marks and scat surveys SAT (Callaghan et al. 2011). These SAT assessments were undertaken at four (4) locations within the wider property area (**Figure 2**). Areas with suitable

connectivity and living canopy layer were surveyed through nocturnal spotlighting. Spotlighting relied on meander surveys by two (2) ecologists with high powered spotlights and 10 x 50 binoculars. No koala surveys were undertaken in treated vegetation where only a dead standing canopy layer was present due to the lack of potential usage associated with this vegetation type.

3.3.1.4 *Microbat surveys*

Microbats echolocate to navigate their surroundings for general movements and for feeding. Most microbats in Australia echolocate at a much higher frequency than typical human hearing and are thus inaudible. These echolocation calls can, however, be recorded with ultrasonic bat detectors and then analysed later to identify species. For this survey, two (2) songmeters were fastened to the trunk of a tree and an ultrasonic microphone was attached to the songmeter unit via a two-metre-long cable (**Figure 2**). The ultrasonic microphone was then attached approximately two (2) m up the tree to record a higher number of quality bat calls. Each detector was set to record high frequency sounds emitted by the echolocation of microbats between 6 pm and 6 am (when microbats become active). Songmeters were strategically placed in areas where flyways were present and in areas of different broad vegetation group, to maximize the sampling of species variation and activity across the project area. Echolocation calls were analysed using Anabat Insight software in both zero crossing and full spectrum format. Call identification was conducted using call keys and descriptions published for Queensland (Reinhold, 2001) and the Northern Territory (PWCNT, 2002). Identification was further refined by assessing the geographic distribution and preferred habitat of each species of bat as described in Churchill (2008). Bat call expert Greg Ford at *Balance Environmental* provided a peer review of the bat calls and analysis.

This method was conducted in accordance with generic fauna survey guidelines (Ferguson et al. 2022) which enabled an analysis of microbat species richness.

3.3.1.5 *2026 survey updates*

On 19th February 2026, a second site survey was undertaken specifically to determine the condition of the vegetation since the 2024 fieldwork, and to address surveys for specific threatened species. During this time, the following surveys were undertaken:

- ▶ Targeted bird surveys at 7am as per **Section 3.3.1.2**
- ▶ Three (3) quaternary vegetation survey (as per **Sections 3.2.1.1 and 3.2.1.2**) within differing states of vegetative regrowth in the project area
- ▶ One (1) secondary vegetation survey (as per **Sections 3.2.1.1 and 3.2.1.2**) within Quaternary alluvial regrowth areas particularly looking for suitable grey snake (*Hemiaspis damelii*) habitat

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- ▶ For high-risk flora species that are more likely to occur (see list below), a targeted search was undertaken of the whole project area, with a focus on areas of woody or regrowth vegetation, to determine presence/absence:

- *Bertya oppositifolia*
- *Cycas megacarpa*
- *Dichanthium setosum*
- *Macadamia integrifolia*
- *Polianthion minutiflorum*
- *Sophora fraseri*

The results of this survey effort are included with the general results (**Section 5.0**) and inform the SIA.

3.3.1.6 Targeted southern squatter pigeon surveys

The southern squatter pigeon (*Geophaps scripta* subsp. *scripta*) is listed as vulnerable under the EPBC Act and NC Act. The project area falls within the known distribution of the species. The conservation advice for the species (Australian Government, 2014) identifies core habitat as grassy woodlands and open forests dominated by eucalypts. They often inhabit partially modified environments, with breeding habitat restricted to within 1 km of permanent water (pers. comm. Squatter Pigeon Workshop, 2011). Targeted bird surveys using a stratified meander of the entire project area were undertaken in February 2026, to locate:

- Any individual adults using the site
- Nests or other signs of breeding, regular territory or shelter

3.3.1.7 Targeted grey snake habitat assessment

This species has not been recorded near the property. The species tends to favour dry sclerophyll forests and woodlands on cracking clay soils where water bodies or gullies are present and where the land becomes seasonally inundated leading to high frog abundance/diversity in the Brigalow Belt or far west of South East Queensland bioregions (Wilson and Swan, 2010; Australian Government 2021). It shelters under rocks, logs and other debris, as well as in cracks in soil incl. gilgai depressions. Suitable habitat at the project area was searched for in February 2026, using a stratified meander to locate:

- Any individual adults using the site
- Any persisting native woodland or open native grassy areas
- The presence of cracking clay

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- Suitable seasonally inundated waterways

The aforementioned updated quaternary and secondary surveys of vegetation at the project area also help to determine the condition of vegetation on-site and whether suitable habitat for the grey snake exists.

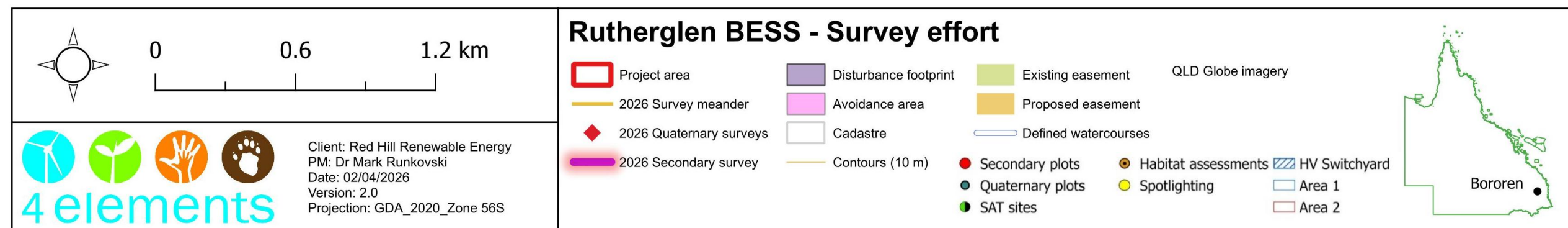
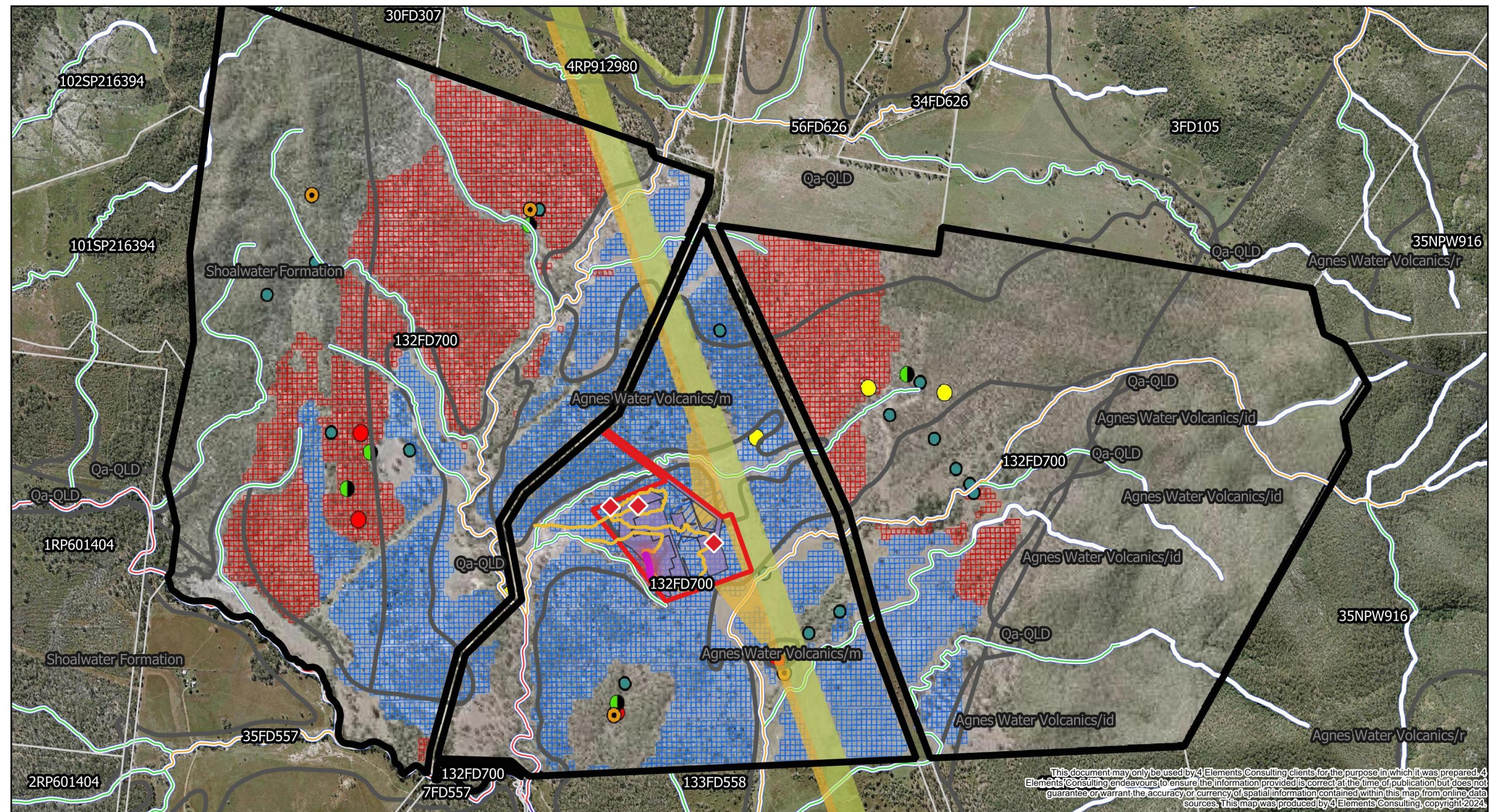


Figure 2. Layout of wider property (Lot 132 on FD700) showing vegetation, habitat and targeted surveys incl. 2026 surveys

4.0 Desktop results

Desktop searches were conducted of the EPBC Act Protected Matters database (**Appendix A**), and the following environmental reports under the NC Act were generated:

- ▶ WildNet Species List (**Appendix B**)
- ▶ Matters of State Environmental Significance (**Appendix C**)
- ▶ Regulated Vegetation Mapping (**Appendix D**)

The summarised results can be found in the sections below.

4.1 Threatened species

4.1.1 EPBC Act (MNES)

A desktop search was conducted using the EPBC Act Protected Matters Search Tool (PMST) to identify potentially occurring species listed as threatened under the Commonwealth EPBC Act. These results include a 10 km buffer surrounding the property (Lot 132 FD700). The PMST revealed a total of 47 threatened species that could potentially exist within the project area. A further EPBC Act 1999 listed flora species *Rhodamnia rubescens* was added to the assessment due to the presence of a single record near the township of Miriam Vale. The comprehensive online search results can be found in **Appendix A**.

4.1.2 NC Act (MSES)

A desktop search was conducted utilising the WildNet Online database employing a 12 km buffer around a central point of the property. The database identifies NC Act listed confirmed records of rare and threatened species listed under the NC Act within the specified search parameter (10 km). This search revealed a total of 22 threatened species listed under the NC Act. Detailed online search results can be found in **Appendix B**.

4.1.3 Combined potential occurrence

The summarised results of above search outputs are presented in **Table 2**, suggesting the potential presence of 56 threatened species, including 20 plant species and 36 animal species listed under the EPBC and NC Acts. **Appendix E** provides a detailed summary assessment for each of these species individually, including their potential occurrence assessment for the project area.

Table 2 Potentially occurring threatened species (EPBC Act and NC Act)

Common name	Scientific name	EPBC Act	NC Act
		Status ¹	Status ²
Threatened fauna			
Birds			
Alaskan bar-tailed godwit	<i>Limosa lapponica</i> subsp. <i>baueri</i>	E	E
Asian dowitcher	<i>Limnodromus semipalmatus</i>	V	V
Australasian bittern	<i>Botaurus poiciloptilus</i>	E	E
Australian painted snipe	<i>Rostratula australis</i>	E, M	E
Black-breasted button-quail	<i>Turnix melanogaster</i>	V	V
Common greenshank	<i>Tringa nebularia</i>	E	E
Coxen's fig parrot	<i>Cyclopsitta diophthalma</i> subsp. <i>coxeni</i>	CE	CR
Curlew sandpiper	<i>Calidris ferruginea</i>	CE, Mi, M	CR
Eastern curlew	<i>Numenius madagascariensis</i>	CE, Mi	E
Eastern star finch	<i>Neochmia ruficauda</i> subsp. <i>ruficauda</i>	E	E
Greater sand-plover	<i>Charadrius leschenaultii</i>	V	V
Grey falcon	<i>Falco hypoleucos</i>	V	V
Latham's snipe	<i>Gallinago hardwickii</i>	V	SLC
Northern glossy black-cockatoo	<i>Calyptorhynchus lathamii</i> subsp. <i>erebus</i>	LC	V
Powerful owl	<i>Ninox strenua</i>	LC	V
Red goshawk	<i>Erythroriorchis radiatus</i>	E	E
Red knot	<i>Calidris canutus</i>	V	V
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	V	SLC
Southern squatter pigeon	<i>Geophaps scripta</i> subsp. <i>scripta</i>	V	V
White-throated needletail	<i>Hirundapus caudacutus</i>	V, Mi	V
Reptiles			
Collared delma	<i>Delma torquata</i>	V	V

Common name	Scientific name	EPBC Act	NC Act
		Status ¹	Status ²
Dunmall's snake	<i>Furina dunmalli</i>	V	V
Grey snake	<i>Hemiaspis damelii</i>	E	E
Yakka skink	<i>Egernia rugosa</i>	V	V
Ringed thin-tail skink	<i>Phyllurus caudiannulatus</i>	E	E
Amphibians			
Tusked frog	<i>Adelotus brevis</i>	LC	V
Mammals			
Ghost bat	<i>Macroderma gigas</i>	V	E
Central greater glider	<i>Petauroides armillatus</i>	E	V
Grey-headed flying-fox	<i>Pteropus poliocephalus</i>	V	LC
Koala	<i>Phascolarctos cinereus</i>	E	E
Northern quoll	<i>Dasyurus hallucatus</i>	E	LC
Spot-tailed quoll	<i>Dasyurus maculatus</i> subsp. <i>maculatus</i>	E	E
Short-beaked echidna	<i>Tachyglossus aculeatus</i>	LC	SLC
Southeastern yellow-bellied glider	<i>Petaurus australis</i> subsp. <i>australis</i>	V	V
Water mouse	<i>Xeromys myoides</i>	V	V
Threatened flora			
-	<i>Arytera dictyoneura</i>	LC	NT
-	<i>Bertya opposens</i>	V	LC
Three-leaved bosistoa	<i>Bosistoa transversa</i>	V	LC
Miniature moss orchid	<i>Bulbophyllum globuliforme</i>	V	NT
-	<i>Cossinia australiana</i>	E	E
Wedge-leaved tuckeroo	<i>Cupaniopsis shirleyana</i>	V	V
-	<i>Cycas megacarpa</i>	E	E
Bluegrass	<i>Dichanthium setosum</i>	V	LC
Discolorous-leaved ironbark	<i>Eucalyptus decolor</i>	LC	NT
Black ironbox	<i>Eucalyptus raveretiana</i>	V	V
Southern blushwood	<i>Fontainea venosa</i>	V	V

Common name	Scientific name	EPBC Act	NC Act
		Status ¹	Status ²
-	<i>Germainia capitata</i>	V	V
Holly-leaved graptophyllum	<i>Graptophyllum ilicifolium</i>	V	V
-	<i>Lobelia membranacea</i>	LC	NT
Macadamia nut	<i>Macadamia integrifolia</i>	V	V
Lesser swamp orchid	<i>Phaius australis</i>	E	E
-	<i>Polianthion minutiflorum</i>	V	V
Scrub turpentine	<i>Rhodamnia rubescens</i>	CE	CE
Malletwood	<i>Rhodamnia spongiosa</i>	LC	CE
Quassia	<i>Samadera bidwillii</i>	V	V
Brush sophora	<i>Sophora fraseri</i>	V	V

¹ **EPBC Act** Conservation Status: CE=Critically Endangered, E=Endangered, V=Vulnerable, M=Marine, Mi=Migratory

² **NC Act** Conservation Status: CR=Critically Endangered, E=Endangered, V=Vulnerable, NT=Near Threatened, LC=Least Concern, SLC=Special Least Concern

4.2 Matters of National Environmental Significance (MNES)

Matters of National Environmental Significance (MNES) are matters defined by the EPBC Act. The outcomes of the MNES investigation are summarised in **Table 3**. This search encompassed a radius of 10km from the boundary of the property.

Adjusted total counts for listed species exclude those entirely dependent on pelagic/marine ecosystems. The count for listed migratory and marine species have been adjusted from fifteen (15) to fourteen (14) and twenty (20) to eighteen (18), respectively. It is important to note that a single species may appear in one, two, or all three categories, resulting in these numbers not representing the count of unique species, but rather the number of species listed within each category. The comprehensive online search results, including complete species lists, can be found in **Appendix A**.

Table 3 Protected Matters Search Tool (PMST) results

Category	Result
Matters of National Environmental Significance	
World Heritage Properties	None
National Heritage Places	None
Wetlands of International Importance	None
Great Barrier Reef Marine Park	None
Commonwealth Marine Area	None
Listed Threatened Ecological Communities	6
Listed Threatened Species	47
Listed Migratory Species	16
Other Matters protected by the EPBC Act	
Commonwealth Land	None
Commonwealth Heritage Places	None
Listed Marine Species	25
Critical Habitats	None
Commonwealth Reserves Terrestrial	None
Commonwealth Reserves Marine	None
Nationally Important Wetlands	None

4.3 Migratory species

4.3.1 Migratory and Marine species

A total of 27 species classified under the EPBC Act as either migratory or marine species, were detected within the search area using the PMST (**Table 4**). A detailed assessment of the likelihood of occurrence within the project area can be found in **Appendix E**. A comprehensive list of all migratory and marine species is included in the PMST output in **Appendix A**.

Table 4 EPBC Act Migratory and Marine species

Common name	Scientific name	EPBC Act ¹	NC Act ²
Alaskan bar-tailed godwit	<i>Limosa lapponica</i> subsp. <i>baueri</i>	E, Mi	E
Asian dowitcher	<i>Limnodromus semipalmatus</i>	V, Mi	V
Australian painted snipe	<i>Rostratula australis</i>	E, M	E
Black-faced monarch	<i>Monarcha melanopsis</i>	M, Mi	SLC
Eastern cattle egret	<i>Ardea coromanda</i>	M	SLC
Common greenshank	<i>Tringa nebularia</i>	E, Mi	E
Common sandpiper	<i>Actitis hypoleucos</i>	M, Mi	SLC
Curlew sandpiper	<i>Calidris ferruginea</i>	CE, M, Mi	CR
Eastern curlew	<i>Numenius madagascariensis</i>	CE, M, Mi	E
Eastern osprey	<i>Pandion haliaetus</i>	Mi	SLC
Fork-tailed swift	<i>Apus pacificus</i>	M, Mi	SLC
Greater sand plover	<i>Charadrius leschenaultii</i>	V, M, Mi	V
Latham's snipe	<i>Gallinago hardwickii</i>	V, M, Mi	SLC
Magpie goose	<i>Anseranas semipalmata</i>	M	SLC
Oriental cuckoo	<i>Cuculus optatus</i>	Mi	SLC
Pectoral sandpiper	<i>Calidris melanotos</i>	M, Mi	SLC
Rainbow bee-eater	<i>Merops ornatus</i>	M	SLC
Red knot	<i>Calidris canutus</i>	V, Mi	V
Rufous fantail	<i>Rhipidura rufifrons</i>	M, Mi	SLC
Saltwater crocodile	<i>Crocodylus porosus</i>	Mi	SLC
Satin flycatcher	<i>Myiagra cyanoleuca</i>	M, Mi	SLC
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	V, M, Mi	SLC
Spectacled monarch	<i>Symposiachrus trivirgatus</i>	M, Mi	SLC
White-bellied sea-eagle	<i>Haliaeetus leucogaster</i>	M	SLC
White-necked petrel	<i>Pterodroma cervicalis</i>	M	SLC
White-throated needletail	<i>Hirundapus caudacutus</i>	V, M, Mi	V
Southern giant-petrel	<i>Macronectes giganteus</i>	E, M, Mi	E

¹ **EPBC Act** Conservation Status: CE=Critically Endangered, E=Endangered, V=Vulnerable

² **NC Act** Conservation Status: CR=Critically Endangered, E=Endangered, V=Vulnerable, NT=Near Threatened, LC=Least Concern, SLC=Special Least Concern

4.4 Matters of State Environmental Significance

4.4.1 Regulated Vegetation

Regional Ecosystems (REs) represent specific vegetation communities within a bioregion, primarily determined by a combination of geological, landform, and edaphic factors. Detailed descriptions of Queensland's REs can be accessed online through the RE Description Database (REDD version 13.1). These descriptions are compiled using various data sources, including vegetation surveys, land system assessments, geological mapping, and comprehensive vegetation property data.

The classifications and descriptions of REs are subject to periodic review and updates based on new information.

Table 5 below provides a list and description of the REs mapped within the property as Category B remnant vegetation, along with special values. A total of ten (10) regulated REs are mapped on the property with one (1), RE 12.3.3, listed as endangered, and three (3), REs 12.11.14, 12.12.12, and 12.12.27, listed as Of Concern as per the VM Act. The project area is mapped entirely as category X non-remnant vegetation under the VM Act 1999.

4.4.2 Property Map of Assessable Vegetation (VM Act)

A Property Map of Assessable Vegetation (PMAV) is applied to much of the wider property with four (4) applications submitted on the property between 2005 and 2008. This has, from the date of submission, locked in the legal status of the vegetation on the property as it was on that day.

Therefore, under the VM Act, all the project area is listed as exempt clearing (Category X) vegetation. Therefore, the legal status reflects that the proposed clearing alignment is located entirely within non-remnant vegetation.

4.4.3 Essential Habitat (VM Act)

There is no mapped Essential Habitat on the project area. All areas of the proposed project alignment are located outside of Essential Habitat.

4.4.4 Wildlife Habitat (NC Act)

Areas within the property are mapped as protected Wildlife Habitat for the koala (*Phascolarctos cinereus*), listed as an endangered species under the NC Act. This includes areas of vegetation that are mapped as Category X under the VM Act. However, no wildlife habitat is mapped within the project area.

4.4.5 Protected Plant Trigger Area (NC Act)

No portion of the project area is mapped within a high-risk protected plant trigger area.

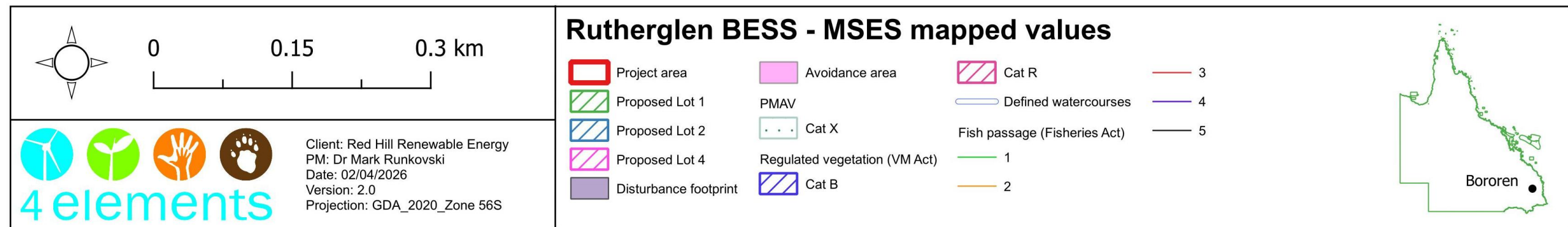
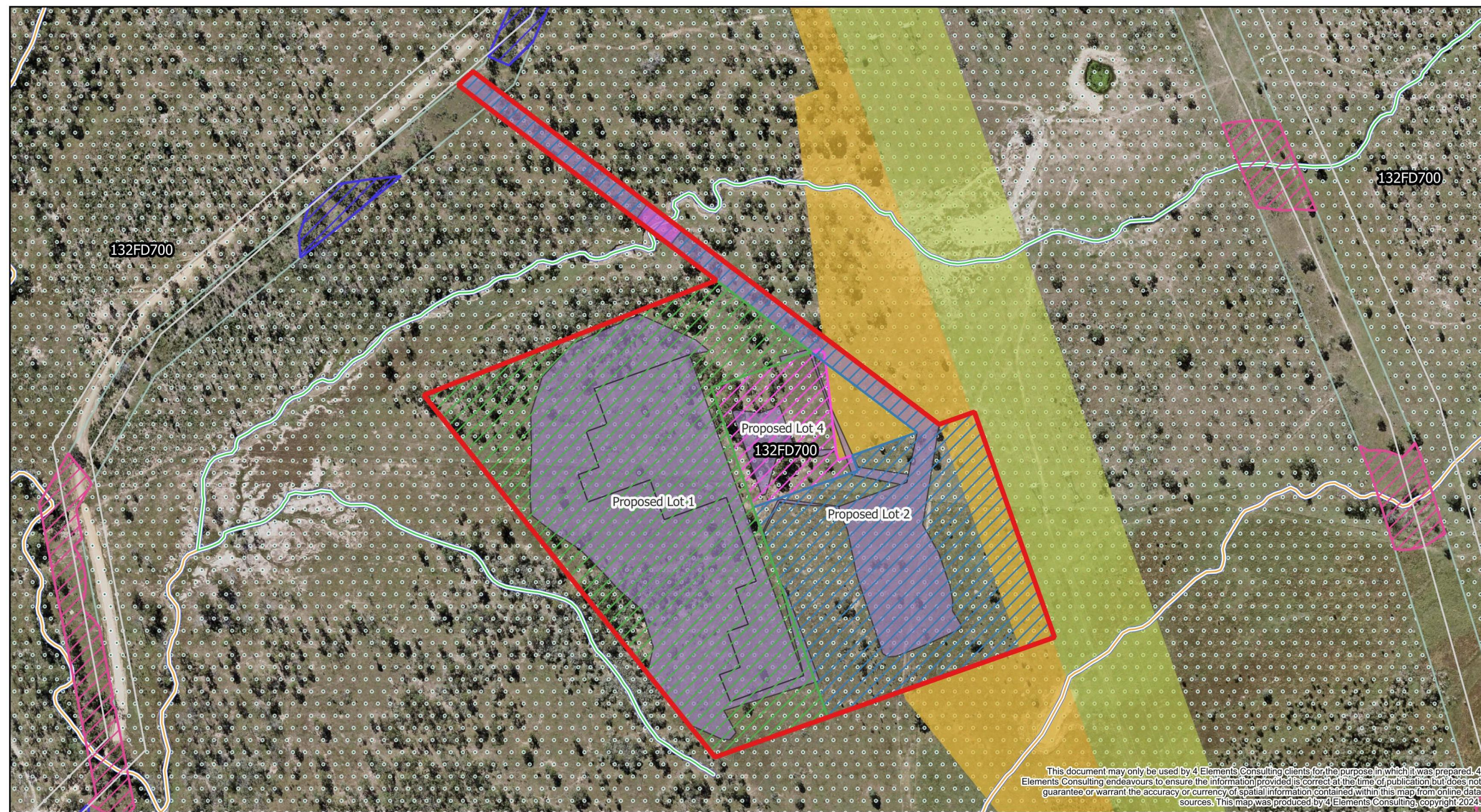


Figure 3. Project area in relation to MSES showing no intersection with mapped values except for Level 1 waterway (avoidance area)

5.0 Field survey results

5.1 Regional Ecosystem mapping

The vegetation assessments focused on ground-truthing RE mapping within the property and project area and correcting mapping where necessary (**Table 5** and **Figure 4**). Although category B remnant vegetation occurs within the property, these areas are entirely absent within the project area.

Two (2) PMAVs have been applied to the project area (reference numbers 2008/004152 and 2005/107297). As a result, all vegetation is exempt clearing under the VM Act. The purpose of ground-truthing the vegetation communities within the project area was to identify potential threatened species habitat listed under the EPBC Act or the NC Act. The vegetation assessments (4 Elements Consulting, 2024) also surveyed for the presence of TECs listed under the EPBC Act which are not overridden by the PMAV.

The project area contains a single polygon mapped as non-remnant Category X vegetation. Ground-truthing of vegetation within the project area determined that the presence of a standing dead canopy layer excludes the potential suitability of threatened species habitat being impacted by the proposal.

Table 5 Property-mapped Regional Ecosystem descriptions

RE, Biodiversity / VM Act status ¹	Area of RE within project area ²	Description (REDD v 13.1) ³	Structural density	Canopy height	Location in project area	General values ⁴	Photo
South East Queensland bioregion – Land Zone 3 – Alluvial deposits							
RE 12.3.3a Endangered/ Endangered	0 ha	<i>Eucalyptus tereticornis</i> woodland. <i>E. crebra</i> and <i>E. moluccana</i> are sometimes present and may be relatively abundant in places, especially on edges of plains and higher-level alluvium. Other species that may be present as scattered individuals or clumps include <i>Angophora subvelutina</i> or <i>A. floribunda</i> , <i>Corymbia clarksoniana</i> , <i>C. intermedia</i> , <i>C. tessellaris</i> , <i>Lophostemon suaveolens</i> and <i>E. melanophloia</i> . Occurs on Quaternary alluvial plains, terraces, and fans where rainfall is usually less than 1000mm/y. Not a Wetland. (BVG1M: 16c).	Woodland	16-20 m	Not present within project area or disturbance footprint	This ecosystem is known to provide habitat for the koala. Potentially conforms to TECs. Habitat for southern squatter pigeon and grey-headed flying fox.	
RE 12.3.3d Endangered/ Endangered	0 ha	<i>Eucalyptus moluccana</i> woodland. Other frequently occurring species include <i>Eucalyptus tereticornis</i> , <i>E. crebra</i> , <i>E. siderophloia</i> , <i>Corymbia citriodora</i> subsp. <i>variegata</i> , <i>Angophora leiocarpa</i> and <i>C. intermedia</i> . Occurs on margins of Quaternary alluvial plains often adjacent sedimentary geologies. May also occur on stranded Pleistocene River terraces. Not a Wetland. (BVG1M: 13d).	Woodland	16- 20m	Not present within project area or disturbance footprint	This ecosystem is known to provide habitat for the koala. Conforms to TECs. Habitat for the southern squatter pigeon and grey-headed flying fox. Large trees have been removed for timber extraction limiting arboreal tree hollow formation.	

RE, Biodiversity / VM Act status ¹	Area of RE within project area ²	Description (REDD v 13.1) ³	Structural density	Canopy height	Location in project area	General values ⁴	Photo
RE 12.3.6 Least Concern/ Of Concern	0 ha	<i>Melaleuca quinquenervia</i> +/- <i>Eucalyptus tereticornis</i> , <i>Lophostemon suaveolens</i> , <i>Corymbia intermedia</i> open forest to woodland with a grassy ground layer dominated by species such as <i>Imperata cylindrica</i> . <i>Eucalyptus tereticornis</i> may be present as an emergent layer. Occurs on Quaternary floodplains and fringing drainage lines in coastal areas. Palustrine. (BVG1M: 22a).	Open forest	10-12 m	Not present within project area or disturbance footprint	Potential habitat for the koala and grey-headed flying fox.	
RE 12.3.7 Least Concern/ Of Concern	0 ha	<i>Eucalyptus tereticornis</i> , <i>Casuarina cunninghamiana</i> subsp. <i>cunninghamiana</i> +/- <i>Melaleuca</i> spp. fringing woodland Riverine. (BVG1M: 16a).	Woodland	12-15 m	Not present within project area or disturbance footprint	Provides large diameter hollow bearing trees for arboreal mammals. Koala browse species and connectivity through the landscape. Habitat for the southern squatter pigeon.	

RE, Biodiversity / VM Act status ¹	Area of RE within project area ²	Description (REDD v 13.1) ³	Structural density	Canopy height	Location in project area	General values ⁴	Photo
Category X pasture	23.6 ha (whole of project area)	On mixed igneous (upper contours) and sedimentary alluvials (lower contours) covering 100% of the proposed project area. The community is dominated by a dead <i>Eucalyptus tereticornis</i> canopy layer, with stags averaging around 40 cm DBH, and 18-20 m in height. There is a recruiting shrub layer of mostly <i>Acacia leiocalyx</i> , <i>Melaleuca nervosa</i> and the invasive <i>Lantana camara</i> . The ground-layer is mixed native and exotic, with native grasses like <i>Heteropogon contortus</i> and <i>Panicum effusum</i> growing with invasive herbs like <i>Praxelis clematidea</i> , <i>Chamaecrista rotundifolia</i> and <i>Scoparia dulcis</i> .	Grassland with limited shrub regrowth	Dead – stags around 18-20 m	Covers 100% of the project area and disturbance footprint	Little to no habitat value for threatened species, but provides general cover and forage of habitat generalists such as eastern grey kangaroo (<i>Macropus giganteus</i>) and birds like superb fairy-wren (<i>Malurus cyaneus</i>).	
South East Queensland bioregion – Land Zone 11 – Metamorphic rocks							
RE 12.11.6 Least Concern/ Least Concern	0 ha	Open forest to woodland of <i>Corymbia citriodora</i> subsp. <i>variegata</i> generally with <i>Eucalyptus crebra</i> . Other species such as <i>E. exserta</i> , <i>E. tereticornis</i> , <i>E. moluccana</i> , <i>E. melanophloia</i> , <i>E. acmenoides</i> , <i>C. tessellaris</i> and <i>Angophora leiocarpa</i> may be present in scattered patches or in low densities. Understorey grassy or shrubby. Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 10b).	Woodland	16-18 m	Not present within project area or disturbance footprint	Provides browse trees and hollow bearing trees for arboreal folivores. Not present within the project area. Habitat for the southern squatter pigeon.	

RE, Biodiversity / VM Act status ¹	Area of RE within project area ²	Description (REDD v 13.1) ³	Structural density	Canopy height	Location in project area	General values ⁴	Photo
RE 12.11.14 Of Concern/ Of Concern	0 ha	<i>Eucalyptus crebra</i> , <i>E. tereticornis</i> , <i>Corymbia intermedia</i> grassy woodland. Other species including <i>E. melanophloia</i> , <i>C. clarksoniana</i> , <i>C. erythrophloia</i> , <i>C. tessellaris</i> , <i>E. siderophloia</i> , <i>Angophora</i> spp. May be present in low densities or in patches. Mid-layer generally sparse but can include low trees such as <i>Vachellia bidwillii</i> , <i>Capparis</i> spp., <i>Dodonaea triquetra</i> , <i>Alphitonia excelsa</i> and <i>Xanthorrhoea</i> spp. Occurs on mid and lower slopes on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Not a Wetland. (BVG1M: 13c).	Woodland	15-17 m	Not present within project area or disturbance footprint	Habitat for the southern squatter pigeon.	
RE 12.11.18	0 ha	<i>Eucalyptus moluccana</i> woodland +/- <i>Corymbia citriodora</i> , <i>E. tereticornis</i> , <i>E. siderophloia</i> or <i>E. crebra</i> , <i>E. longirostrata</i> , <i>C. intermedia</i> , <i>E. carnea</i> . Occurs on Palaeozoic and older moderately to strongly deformed and metamorphosed sediments and interbedded volcanics. Occurs as scattered occurrences in a range of topographic positions from ridgetops to lower slopes. Not a Wetland. (BVG1M: 13d).	Woodland	16-18 m	Not present within project area or disturbance footprint	Habitat for the southern squatter pigeon. Regrowth areas of this regional ecosystem are important Koala habitat.	
South East Queensland bioregion – Land Zone 12 – Intrusive igneous rocks							

RE, Biodiversity / VM Act status ¹	Area of RE within project area ²	Description (REDD v 13.1) ³	Structural density	Canopy height	Location in project area	General values ⁴	Photo
RE 12.12.12 Of Concern/ Of Concern	0 ha	<i>Eucalyptus tereticornis</i> , <i>Corymbia intermedia</i> , <i>E. crebra</i> open forest to woodland. Other species present can include <i>E. melanophloia</i> , <i>C. tessellaris</i> , <i>Angophora subvelutina</i> , <i>A. leiocarpa</i> , <i>C. clarksoniana</i> (central and northern parts) and <i>E. siderophloia</i> with <i>Melaleuca quinquenervia</i> , <i>Lophostemon suaveolens</i> near drainage lines in moister areas. Occurs on Mesozoic to Proterozoic igneous rocks usually on lower slopes, especially granite lowlands and basins. Contains Palustrine. (BVG1M: 9g).	Woodland	16-18 m	Not present within project area or disturbance footprint	Provides koala browse trees and minor arboreal tree hollows. Blossom for the grey-headed flying fox is possible. Habitat for the southern squatter pigeon.	

¹ VMA status/Biodiversity status: E=endangered, OC=of concern, LC=least concern (VMA only), NC=not of concern at present (biodiversity only). REs with a letter postfix are a sub-unit of the main RE e.g. 12.3.3aa is sub-unit ‘a’ of RE 12.3.3 and have the same VMA and Biodiversity status as the parent RE

² Area proposed to be cleared – circ. 9 ha (the project area – see **Figure 1**)

³ Regional Ecosystem Description Database version 13.1 (Department of Environment, Science and Innovation, 2023)

⁴ Pre-clear and 2021 RE extents are from Regional Ecosystem Description Database version 13.1 (Department of Environment, Science and Innovation, 2023)

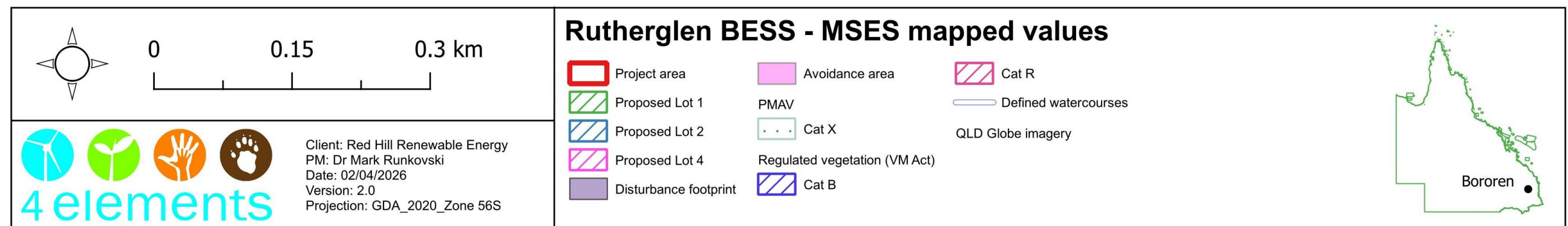


Figure 4. Vegetation community mapping within the property identifying only Category X PMAV vegetation at the project area

5.2 Project area vegetation - existing condition

The below vegetation assessment describes the condition of the vegetation present at the time of survey during February 2026. The floristic composition of the project area was broadly categorised based on vegetation condition which was a mix of highly disturbed non-remnant Category X pastures with dead canopy trees (likely mostly *Eucalyptus tereticornis*) (**Plate 1**). Slightly elevated portions of the east and south of the property comprised granite derived sandy loam soils (55-70 m above sea level (ASL)). High nutrient black loamy alluvial soils dominate the lower catchment of the property (45-60 m ASL) and were poorly drained.

5.2.1 Non-remnant vegetation – Land Zone 3 (alluvial soils)

The project area sits on granitic and alluvial soils and is entirely comprised of non-remnant Category X vegetation. This highly disturbed vegetation community provides no functional threatened species habitat and does not conform to the status of MSES Wildlife Habitat. All vegetation present within the project area consists of standing dead *Eucalyptus tereticornis* to a height of 18-20 m. The herbicide treatment that has occurred within the project area has triggered a dense shrub layer of *Lantana camara*, *Acacia leiocalyx* and *Melaleuca nervosa* to a height of 1 - 2.5 m. Occasional shrubby regrowth of the eucalypt canopy was also noted (see **Plate 1**, **Plate 2**). Where the dead standing canopy was absent within the project area, exotic pastures were present comprising *Urochloa* spp., *Chloris gayana*, *Sporobolus* spp. and *Paspalum notatum* exotic grasses, but was frequently intermixed with natives such as *Panicum effusum* and *Heteropogon contortus*. Exotic herbaceous plants were very common.

Quaternary and secondary surveys conducted in February 2026, confirm that none of the extant vegetation corresponds with regrowth or remnant pre-clearing REs.



Plate 1. Category X non-remnant vegetation adjacent with project area - January 2026 (-24.232094, 151.575648)



Plate 2. Category X non-remnant vegetation adjacent with project area - January 2026 (-24.230745, 151.573889)

5.3 Native flora

The vegetation assessment within the project area recorded a total of 188 flora species represented by 36 families. The dominant plant families were Poaceae (36 species), Fabaceae (27 species), Asteraceae (23 species) and Myrtaceae (16 species).

5.4 Threatened flora

No threatened flora species were detected during the vegetation survey within the project area. As a result of the flora survey, it is considered that there is an unlikely potential for any threatened species to occur within the project area due to the high disturbance regime and lack of living native vegetation. The likelihood of occurrence of all other potential threatened flora species are presented within **Appendix E**.

The February 2026 targeted searches conducted via a meander of all distinct patches of vegetation that may possibly provide habitat for threatened flora (**Figure 2**), yielded no protected plant species. None of the following potentially occurring species were found, despite searching the majority of the project area:

- *Bertya opposens*
- *Cycas megacarpa*
- *Dichanthium setosum*
- *Macadamia integrifolia*
- *Polianthion minutiflorum*
- *Sophora fraseri*

5.5 Weeds

For this report, weeds are defined as all species categorised as invasive under the Queensland *Biosecurity Act 2014* and/or by the Queensland Herbarium (Brown & Bostock 2019). A list of all 54 exotic species recorded within the project area is included in **Table 6** (4 Elements 2024). Two (2) Weeds of National Significance (WoNS), *Lantana* spp. and *Sporobolus* spp., were recorded commonly within the project area (see **Plate 1**, **Plate 2**). No prohibited invasive species (*Biosecurity Act 2014*) were recorded within the project area but two (2) restricted invasive species (*Lantana camara* and *Sporobolus* spp.) were recorded commonly. No Gladstone Regional Council eradication-listed weeds were recorded within the project area. Two (2) Gladstone Regional Council containment-listed weeds were recorded within the project area (*Sporobolus jacquemontii* and *Baccharis halimifolia*). Six (6) Gladstone Regional Council Natural Asset Protection-listed weeds were recorded within the wider property: *Eragrostis curvula*, *Hyparrhenia rufa*, *Lantana camara*, *L. montevidensis*, *Praxelis clematidea* and *Stachytarpheta* sp.

Table 6 Weed species recorded within the project area

Species name	Family	Biosecurity Act	WoNS	Gladstone Biosecurity
<i>Acanthospermum hispidum</i>	Asteraceae	-	-	-
<i>Achyranthes aspera</i>	Amaranthaceae	-	-	-
<i>Ageratum conyzoides</i>	Asteraceae	-	-	-
<i>Ageratum houstonianum</i>	Asteraceae	-	-	-
<i>Alternanthera denticulata</i>	Amaranthaceae	-	-	-
<i>Alternanthera pungens</i>	Amaranthaceae	-	-	-
<i>Asclepias curassavica</i>	Apocynaceae	-	-	-
<i>Axonopus compressus</i>	Poaceae	-	-	-
<i>Baccharis halimifolia</i>	Asteraceae	-	-	Containment
<i>Bidens pilosa</i>	Asteraceae	-	-	-
<i>Chamaecrista rotundifolia</i>	Fabaceae	-	-	-
<i>Chloris gayana</i>	Poaceae	-	-	-
<i>Chloris virgata</i>	Poaceae	-	-	-
<i>Crassocephalum crepidioides</i>	Asteraceae	-	-	-
<i>Crotalaria pallida</i>	Fabaceae	-	-	-
<i>Cynodon dactylon</i>	Poaceae	-	-	-
<i>Dactyloctenium aegyptium</i>	Poaceae	-	-	-
<i>Emilia sonchifolia</i>	Asteraceae	-	-	-
<i>Eragrostis curvula</i>	Poaceae	-	-	Natural Asset Protection
<i>Erigeron bonariensis</i>	Asteraceae	-	-	-
<i>Erigeron canadensis</i>	Asteraceae	-	-	-
<i>Gomphocarpus fruticosus</i>	Apocynaceae	-	-	-
<i>Gomphocarpus physocarpus</i>	Apocynaceae	-	-	-
<i>Gomphrena celosioides</i>	Amaranthaceae	-	-	-
<i>Hyparrhenia rufa</i>	Poaceae	-	-	-
<i>Lantana camara</i>	Verbenaceae	Cat 3 Restricted	WoNS	Natural Asset Protection
<i>Lantana montevidensis</i>	Verbenaceae	Cat 3 Restricted	-	Natural Asset Protection
<i>Macroptilium atropurpureum</i>	Fabaceae	-	-	-
<i>Macroptilium lathyroides</i>	Fabaceae	-	-	-
<i>Malvastrum americanum</i>	Malvaceae	-	-	-
<i>Melinis repens</i>	Poaceae	-	-	-
<i>Oldenlandia corymbosa</i>	Rubiaceae	-	-	-
<i>Paspalum mandiocanum</i>	Poaceae	-	-	-
<i>Passiflora subpeltata</i>	Passifloraceae	-	-	-
<i>Physalis angulata</i>	Solanaceae	-	-	-
<i>Praxelis clematidea</i>	Asteraceae	-	-	Natural Asset Protection

Species name	Family	Biosecurity Act	WoNS	Gladstone Biosecurity
<i>Richardia brasiliensis</i>	Rubiaceae	-	-	-
<i>Scoparia dulcis</i>	Phyllanthaceae	-	-	-
<i>Sida cordifolia</i>	Malvaceae	-	-	-
<i>Sida rhombifolia</i>	Malvaceae	-	-	-
<i>Solanum torvum</i>	Solanaceae	-	-	-
<i>Sporobolus jacquemontii</i>	Poaceae	Cat 3 Restricted	WoNS	Containment
<i>Sporobolus pyramidalis</i>	Poaceae	Cat 3 Restricted	WoNS	-
<i>Stachytarpheta jamaicensis</i>	Verbenaceae	-	-	Natural Asset Protection
<i>Stylosanthes scabra</i>	Fabaceae	-	-	-
<i>Tagetes minuta</i>	Asteraceae	-	-	-
<i>Triumfetta rhomboidea</i>	Malvaceae	-	-	-
<i>Urena lobata</i>	Malvaceae	-	-	-
<i>Urochloa mosambicensis</i>	Poaceae	-	-	-
<i>Xanthium strumarium</i>	Asteraceae	-	-	-
<i>Youngia japonica</i>	Asteraceae	-	-	-

5.6 Fauna survey results

A total of 66 fauna species were recorded during the field survey (4 Elements Consulting 2024). Two (2) threatened species, the southern squatter pigeon and white-throated needletail were recorded adjacent to the project area. These species are both listed as vulnerable under the EPBC and NC Acts. **Table 7** identifies all fauna detected during the survey period within the wider property (whole of Lot 132 on FD700) and their conservation status as per the EPBC and NC Acts.

Table 7 Fauna recorded within the project area during the field survey

Common name	Scientific name	EPBC Act status	NC Act status
Mammals			
Rufus bettong	<i>Aepyprymnus rufescens</i>	-	LC
Eastern grey kangaroo	<i>Macropus giganteus</i>	-	LC
Whiptail wallaby	<i>Notamacropus parryi</i>	-	LC
Common ringtail possum	<i>Pseudocheirus peregrinus</i>	-	LC
Feral pig	<i>Sus scrofa</i>	-	-
Common brushtail possum	<i>Trichosurus vulpeca</i>	-	LC
Swamp wallaby	<i>Wallabia bicolor</i>	-	LC

Common name	Scientific name	EPBC Act status	NC Act status
Birds			
Noisy miner	<i>Manorina melanocephala</i>	-	LC
Black-backed bittern	<i>Ixobrychus dubius</i>	-	LC
Barn owl	<i>Tyto alba</i>	-	LC
Barking owl	<i>Ninox connivens</i>	-	LC
Southern boobook	<i>Ninox boobook</i>	-	LC
Spotted pardalote	<i>Pardalotus punctatus</i>	-	LC
Little lorikeet	<i>Parvipsitta pusilla</i>	-	LC
Pale-headed rosella	<i>Platycercus adscitus adscitus</i>	-	LC
Australian wood duck	<i>Chenonetta jubata</i>	-	LC
Leaden flycatcher	<i>Myiagra rubecula</i>	-	LC
White-throated honeyeater	<i>Melithreptus albogularis</i>	-	LC
Pheasant coucal	<i>Centropus phasianinus</i>	-	LC
Brush cuckoo	<i>Cacomantis variolosus</i>	-	LC
Lewins honeyeater	<i>Meliphaga lewinii</i>	-	LC
Bar-shouldered dove	<i>Geopelia humeralis</i>	-	LC
Spangled drongo	<i>Dicrurus bracteatus bracteatus</i>	-	LC
Common cicadabird	<i>Edolisoma tenuirostre</i>	-	LC
Black-faced cuckooshrike	<i>Coracina novaehollandiae</i>	-	LC
Golden-headed cisticola	<i>Cisticola exilis</i>	-	LC
Grey-crowned babbler	<i>Pomatostomus temporalis temporalis</i>	-	LC
Forest kingfisher	<i>Todiramphus macleayii</i>	-	LC
Laughing kookaburra	<i>Dacelo novaeguineae</i>	-	LC
Willy wagtail	<i>Rhipidura leucophrys</i>	-	LC
Brown falcon	<i>Falco berigora</i>	-	LC
Magpie lark	<i>Grallina cyanoleuca</i>	-	LC
Sacred kingfisher	<i>Todiramphus sanctus</i>	-	LC
Yellow-faced honeyeater	<i>Caligavis chrysops</i>	-	LC
Oriental dollarbird	<i>Eurystomus orientalis</i>	-	LC
Australasian pipit	<i>Anthus novaeseelandiae</i>	-	LC
Grey shrike-thrush	<i>Colluricincla harmonica</i>	-	LC

Common name	Scientific name	EPBC Act status	NC Act status
Black kite	<i>Milvus migrans</i>	-	LC
Blue-faced honeyeater	<i>Entomyzon cyanotis</i>	-	LC
Eastern cattle egret	<i>Ardea coromanda</i>	-	LC
Tawny frogmouth	<i>Podargus strigoides</i>	-	LC
White-throated nightjar	<i>Eurostopodus mystacalis</i>	-	LC
Jacky winter	<i>Microeca fascians</i>	-	LC
Wandering whistling duck	<i>Dendrocygna arcuata</i>	-	LC
White-throated needletail (overhead)	<i>Hirundapus caudacutus</i>	V	V
Masked woodswallow	<i>Artamus personatus</i>	-	LC
White-necked heron	<i>Ardea pacifica</i>	-	LC
Southern squatter pigeon (off-site)	<i>Geophaps scripta</i> subsp. <i>scripta</i>	V	V
Rainbow bee-eater	<i>Merops ornatus</i>	Ma	SLC
Rainbow lorikeet	<i>Trichoglossus moluccanus</i>	-	LC
Wedge-tailed eagle	<i>Aquila audax</i>	-	LC
Australian magpie	<i>Gymnorhina tibicen</i>	-	LC
Crested pigeon	<i>Ocyphaps lophotes</i>	-	LC
Peaceful dove	<i>Geopelia placida</i>	-	LC
Noisy friarbird	<i>Philemon corniculatus</i>	-	LC
Australian raven	<i>Corvus coronoides</i>	-	LC
Pied butcherbird	<i>Cracticus nigrogularis</i>	-	LC
Grey butcherbird	<i>Cracticus torquatus</i>	-	LC
Brown honeyeater	<i>Lichmera indistincta</i>	-	LC
Reptiles			
Fence skink	<i>Cryptoblepharus pulcher</i>	-	LC
Small-eyed snake	<i>Cryptophis nigrescens</i>	-	LC
Common Tree snake	<i>Dendrelaphis punctulata</i>	-	LC
Eastern Brown snake	<i>Pseudonaja textilis</i>	-	LC
Amphibians			
Green-striped frog	<i>Ranoidea alboguttata</i>	-	LC
Striped rocket-frog	<i>Litoria nasuata</i>	-	LC

Common name	Scientific name	EPBC Act status	NC Act status
Brown tree-frog	<i>Litoria rubella</i>	-	LC
Cane toad	<i>Rhinella marina</i>	-	-

Mi: Migratory, Ma: Marine, CE: Critically Endangered, E: Endangered, V: Vulnerable, NT: Near Threatened, SLC: Special Least Concern

5.7 Project area habitat attributes

The below **Table 8** identifies habitat attributes for threatened fauna, and if present, the assessment determines the site-specific value of these features to threatened fauna.

Table 8 Habitat attributes present on the project area

Habitat attribute	Proposed clearing alignment	Potential value for threatened species
Connectivity	The project area is located within a highly fragmented state. There is little to no woody vegetation. The ability for terrestrial species to traverse through the project area is severely limited as a result. Five-strand barbed wire separates grazing paddocks and the property boundaries. A 100 m-wide clearing is present for the powerline easement which further reduces dispersal potential.	Highly dispersive species confirmed on the property – southern squatter pigeon and white-throated needletail would be able to traverse the vegetation gaps of the project area readily.
Vegetative ground cover	Vegetative cover consists of dense exotic grassland pasture.	The exotic grassland habitats may provide suitable habitats for southern squatter pigeons when grazed to a height that provides a suitable open structure to this species. It currently exists as relatively long pasture, but not seeding.
Leaf-litter	Leaf-litter accumulation was relatively low	Within the project area, this feature provides no specific value.

Habitat attribute	Proposed clearing alignment	Potential value for threatened species
Coarse woody debris	Coarse woody debris accumulation was relatively low within the non-remnant vegetation due to the recently treated Eucalypt canopy beginning to shed branches. project area.	Within the project area, this feature provides no specific value. There are fallen limbs from the dead canopy eucalypts but they are very young and have no hollows.
Tree hollows	Tree hollows were absent.	Absent.
Shrub layer containing nectar sources: Melaleuca, Acacia, Banksia, Xanthorrhoea spp.	Absent.	Absent.
Primary nectar sources	Absent.	Absent.
Fleshy fruiting species including Ficus spp.	Absent.	Absent.
Rock outcrops	Absent.	Absent.
Water bodies	Farm dams were located throughout the wider property but absent from the project area. A single low-ranking waterway (Level 1) - minor ephemeral watercourse exists intersecting the proposed access route. Ponding and wetland areas indicated by the presence of sedges were absent from the project area. Poorly drained depressions are not suitable for establishing development due to flooding. Within the project area there is no waterbodies beyond the crossing of the first order stream to the north.	The first order stream to the north of the project area is highly degraded through removal of the eucalypt canopy. It is unlikely to support threatened species.

A total of 47 threatened fauna species and 22 marine/migratory species listed under the EPBC Act or NC Act, were considered individually for the potential to be present within the project area (see **Appendix E**).

Two (2) species were recorded present during the field survey.

- ▶ White-throated needletail (*Hirundapus caudacutus*)
- ▶ Southern squatter pigeon (*Geophaps scripta scripta*)

5.7.1 Confirmed threatened fauna

5.7.1.1 *Southern squatter pigeon*

The southern squatter pigeon is listed as vulnerable under the EPBC Act and the NC Act. It occurs on the inland slopes of the Great Dividing Range from the Burdekin-Lynd Divide in Central Queensland, where it overlaps with the northern subspecies *Geophaps scripta* subsp. *peninsulae*, to the Queensland New South Wales border. Records occur as far inland to Longreach and extend eastward to Port Curtis and Proserpine. The total area of occupancy within the subspecies' distribution is currently estimated to be 10,000 km² (DCCEEW, 2022).

Habitat consists of well-draining, gravelly, sandy, and loamy soils that support the open forest to woodland communities with tussock grass understoreys that the species requires for foraging and breeding. Patchy, grassy understorey interspersed with areas of bare ground and woody debris support dustbathing and nest building behaviours, which occur in shallow depressions on the ground. The bird is strongly associated with habitats occurring within 3 km of a permanent or seasonal waterbody with gently sloping embankments. In areas of sparse remnant vegetation, the subspecies is known to disperse into adjacent areas of highly modified or degraded habitats such as pastures, road reserves and railway easements to forage for seed, drink from stock troughs and artificial dams, and engage in dustbathing on bare ground. In areas where disturbed or cleared land is present next to preferred open woodland habitat, squatter pigeons may be observed moving up to 100 m between patches.

Around 500 m to the west of the project area, this species was recorded along the Red Hill road corridor (approx. -24.23499, 151.56787) near to a second order stream which flows south into Killarney Creek on the southern boundary of the property (**Plate 3**). A single individual bird was recorded on four (4) separate occasions during the field survey within 50 m of this second order watercourse. This watercourse is not within the project area.

This species is frequently within highly modified landscape on grazing properties. The condition of the vegetation where this individual was recorded was highly degraded with much of the canopy a standing dead layer. Some trees within the creek line were not treated with herbicide and these trees were used for perching (see **Plate 3**). With the inclusion of mitigation measures for retention of all remaining watercourse vegetation and maintaining adequate vegetation buffers around watercourses it is expected that this species is likely to persist within the landscape despite the proposed actions taking place at the project area.

The species was not observed during the February 2026 surveys on the property, with no signs of use at the project area. It is very doubtful that the bird will use the project area as habitat for forage, breeding, or roosting, but may traverse through it when moving between areas of more suitable habitat outside of the project area.

A significant impact under the NC Act is considered unlikely for this species and a referral to SARA is not recommended.



Plate 3. Photograph of southern squatter pigeon outside of the project area (taken in 2024)

5.7.1.2 White-throated needletail

The white-throated needletail (*Hirundapus caudatus*), listed as vulnerable under the EPBC Act and NC Act, was recorded across the project area aerial foraging. The species breeds in the northern hemisphere summer period but is widespread in eastern and southeastern Australia during summer months in the (Barrett et al., 2003; Higgins, 1999). In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Dividing Range and occasionally onto the adjacent inland plains (DCCEEW 2018).

The white-throated needletail is almost exclusively aerial, being recorded flying of heights of less than 1 m up to more than 1,000 m above the ground. Although they occur over most types of habitat, they are mostly recorded above forested areas, including open forest and rainforest (Higgins 1999). Recent declines of the white-throated needletail have been recorded likely due to the logging of Taiga forests in the Russian arctic which has led to loss of tree hollows for nesting.

This species is unlikely to be impacted because of the proposal given the poor condition of the site and the lack of roosting and breeding habitat. The species was not observed during the February 2026 surveys on the property, with no signs of use at the project area. It is very doubtful that the bird will use the project area as habitat for forage, breeding, or roosting, but may traverse above it as an aerial flyover.

A significant impact under the NC Act is considered unlikely for this species and a referral to SARA is not recommended.

5.7.2 Potentially occurring threatened fauna

An additional four (4) threatened fauna species including Latham's snipe (vulnerable - EPBC Act), koala (endangered - EPBC and NC Acts), grey-headed flying fox (vulnerable - EPBC Act) and tusked frog (vulnerable - NC Act) are considered to have a moderate potential of occurring on the general property area. However, as the impact of the proposed works on the project area is restricted to category X non-remnant vegetation, it is unlikely that any of these potentially occurring threatened species will be significantly impacted because of the proposal being greatly reduced to the 23.6 ha project area. There is a distinct lack of woody vegetation required to support foraging, roosting and denning habitat for these species.

5.7.3 Grey snake

During the February 2026 site surveys, a special effort was made to determine whether potential habitat for grey snake (*Hemiaspis damelii*) occurs on the project area. Across this area, vegetation was documented as Category X throughout, but on Quaternary alluvial geology, there were some areas of recruiting native vegetation composed primarily of regrowth shrubby *Melaleuca nervosa* and *Acacia leiocalyx* < 2 m in height. This is where a secondary vegetation plot (see **Plate 4**) was established and surveyed, determining the Category X vegetation, and that ground-level vegetation was a mixture of native and exotic and was growing on clay-loam substrate. No cracking clays were observed (see **Plate 5**) and no gilgais were observed. The area is not within the vicinity of a waterway or depression containing ephemeral water. There were no signs of use of the project area by grey snakes. It is very doubtful that the reptile will use the project area as habitat for forage, breeding, or denning.

A significant impact under the NC Act is considered unlikely for this species and a referral to SARA is not recommended.

Refer to **Appendix E** for details on the individual potential occurrence assessments and low risk rankings for these species.



Plate 4. Photograph of secondary vegetation survey made during February 2026 site visit on Quaternary alluvials



Plate 5. Photograph of 1m² quadrat showing lack of cracking clays and densely vegetated exotic and native pasture

5.8 Migratory species or Special Least Concern species (EPBC Act)

A total of 27 migratory and or marine listed fauna were considered individually for the potential to be present within the project area. Two species were recorded present during the field survey.

- ▶ White-throated needletail (*Hirundapus caudacutus*) – migratory
- ▶ Rainbow bee-eater (*Merops ornatus*) – migratory, and also a colonial-breeding species protected under the NC Act
- ▶ Spotted pardalote (*Pardalotus punctatus*) – colonial-breeding species protected under the NC Act

For these species, it considered unlikely that they will utilise the project area. Given the poor quality of the habitat available within the project area, there is no reasonable likelihood that any of the above species would accumulate in sufficient numbers to lead to a significant impact on migratory species. For the spotted pardalote and rainbow bee-eater, which have breeding places protected due to their colonial nature, it is also very unlikely that the project will cause a significant impact. This is due to the absence of defined banks, slopes or cliffs composed of sandy-clay soils that could sufficiently support breeding pairs of these species to excavate nesting burrows. With the inclusion of mitigation measures related to the avoidance of all Category B remnant vegetation and adequate buffering of watercourses throughout the project area **it is unlikely that a referral to SARA under the NC Act will be required for any listed migratory or colonial breeding species.**

5.9 Matters of State Environmental Significance (MSES)

Table 9 below provides the assessment of Matters of State Environmental Significance (MSES). Please see **Appendix C** for the full MSES property reports which include all state government mapping for the below.

Table 9 Matters of State Environmental Significance (MSES)

Matters of State Environmental Significance	Triggers
Regulated Vegetation (VM Act)	
1. Prescribed REs that are endangered comprise a Matter of State Environmental Significance. 2. The prescribed REs that are Of Concern comprise a Matter of State Environmental Significance. 3. A prescribed RE is a matter of State Environmental Significance if it is: a) An RE that intersects with an area shown as a wetland on the vegetation management	1. No REs are mapped as present within the project area. The proposed alignment is located entirely within the Category X non-remnant vegetation area and will not impact Regulated Vegetation (VM Act 1999). 2. No part of the property is located within an area shown as a wetland on the vegetation management wetlands map.

Matters of State Environmental Significance	Triggers
wetlands map (to the extent of the intersection), or b) An area of Essential Habitat on the essential habitat map for an animal that is endangered wildlife or vulnerable wildlife or a plant that is endangered wildlife or vulnerable wildlife. 4. A prescribed regional ecosystem is a Matter of State Environmental Significance to the extent the ecosystem is located within a defined distance from the defining banks of a relevant watercourse.	3. None of the project area is mapped as Essential Habitat. 4. The property contains one (1) VM Act defined watercourse (first order stream). Avoidance and or compliance with the accepted development code will be required to clear within the relevant buffers for this watercourse category.

Connectivity areas

1. A prescribed RE is a Matter of State Environmental Significance: a) to the extent the ecosystem contains remnant vegetation, and b) if the ecosystem contains an area of land that is required for ecosystem functioning (a connectivity area). 2. The prescribed RE is a Matter of State Environmental Significance if the administering agency is satisfied, having had regard to criteria in the environmental offsets policy about connectivity areas, that: a) the connectivity area is of sufficient size or configured in a way that maintains ecosystem functioning and b) the prescribed regional ecosystem will remain despite a threatening process within the meaning of the NC Act.	1. None of the project area comprises Category B remnant vegetation. The proposed alignment is located entirely within the Category X non-remnant vegetation area. (Figure 1 above). The eastern part of the property contains land that is required for ecosystem functioning in terms of a connectivity area or biodiversity corridor. No portion of the proposed clearing alignment is remnant category B vegetation. 2. There is limited connectivity within the property for most threatened species due to the lack of living canopy vegetation inclusive of riparian corridors. Through retention of remnant Category B vegetation, outside of the project area, it is anticipated that connectivity areas can be strategically configured to support the continued healthy functioning of ecosystems. A CEMP relating to vegetation management and erosion and sediment control will provide recommendations so residual impacts are managed, and remnant vegetation proposed to be retained within the greater property boundary will retain connectivity and biodiversity corridors throughout the property.
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Wetlands and watercourses

Matters of State Environmental Significance	Triggers
Each of the following matters is a Matter of State Environmental Significance — a. a wetland: i. in a wetland protection area, or ii. of high ecological significance shown on the Map of referable wetlands. b. a wetland or watercourse in high ecological value waters.	No portion of the property occurs within a wetland protection area. No portion of the property occurs within an area of high ecological significance shown on the map of referable wetlands. No portion of the property occurs within a wetland or watercourse in high ecological value waters.
Designated precinct in a Strategic Environmental Area	
1. A designated precinct in a strategic environmental area is a Matter of State Environmental Significance.	No portion of the property contain a strategic environmental area.
Protected Wildlife Habitat	
1. An area that is shown as a high-risk area on the Flora Survey Trigger map and/or that contains plants that are endangered wildlife or vulnerable wildlife is a Matter of State Environmental Significance. 2. An area that is not shown as a high-risk area on the flora survey trigger map, to the extent the area contains plants that are endangered wildlife or vulnerable wildlife, is a matter of State Environmental Significance. 3. A non-juvenile Koala habitat tree located in an area shown as bushland habitat, high value rehabilitation habitat or medium value rehabilitation habitat on the map called 'Map of Assessable Development Area Koala Habitat Values' that applies under the South East Queensland Koala Conservation State Planning Regulatory Provisions is a matter of State Environmental Significance. 4. A habitat for an animal that is Endangered wildlife or Vulnerable wildlife, or a Special Least Concern animal is a matter of State Environmental Significance.	The proposed clearing alignment does not intersect a Flora Trigger area. No portion of the property is located within an area shown as bushland habitat or habitat suitable for rehabilitation on the 'Map of Assessable Development Area Koala Habitat Values' that applies under the Southeast Queensland Koala Conservation State Planning Regulatory Provisions. The property is wholly within the state mapped koala district B - koala population density generally lower than 0.2 koalas per hectares. No Wildlife Habitat is mapped within the project area for the koala. The field assessment determined that six (6) fauna species and zero (0) flora species listed as either Critically Endangered (CE) Endangered (E), Vulnerable (V) or Near Threatened (NT) occur, or have the potential to occur on the wider property (see Appendix E), however, only two (2) threatened

Matters of State Environmental Significance	Triggers
	fauna species (white-throated needletail and the southern squatter pigeon were confirmed adjacent the project area (see Appendix E).
Protected areas	
A protected area is a Matter of State Environmental Significance.	There are no protected areas under the NC Act present on the property.
Highly Protected Zones of State Marine Parks	
A highly protected area of a relevant Queensland marine park is a Matter of State Environmental Significance.	There are no marine parks or land within a 'marine national park', 'conservation park', 'scientific research', 'preservation' or 'buffer' zone present on the property.
Fish Habitat Areas	
An area declared under the Fisheries Act to be a fish habitat area is a matter of State Environmental Significance.	There are no fish habitat areas under the Fisheries Act present on the property.
Waterway Providing for Fish Passage	
Any part of a waterway providing for passage of fish is a Matter of State Environmental Significance only if the construction, installation, or modification of waterway barrier works carried out under an authority will limit the passage of fish along the waterway.	One low-risk waterway providing for fish passage, categorised as low for the waterway barrier works overlay is present on the property and may necessitate the submission of a development application to the State Assessment and Referral Agency (SARA) contingent upon the type of development proposed to cross it.
Marine Plants	
A marine plant within the meaning of the Fisheries Act is a Matter of State Environmental Significance.	No marine plants are present within the project area. No salinity expression areas.
Legally secured offset areas	
A legally secured offset area is a Matter of State Environmental Significance.	There are no legally secured offset areas intersecting the property.

6.0 Compliance with State Code 27 (PO1)

Desktop and field surveys were undertaken across the property (4 Elements Consulting, 2024) to produce an ecological constraints assessment (ECA). The ECA report informed a revised alignment which sought to avoid the clearing of native vegetation to reduce as far as practical the potential of a significant impact on any MNES, MSES or MLES. The existing project area has been assessed under this EAR of the proposed Rutherglen BESS works in the project area and disturbance footprint. The above EAR has identified the below environmental constraints within the project area that require review by SARA.

6.1 Regulated Vegetation (VM Act)

Under the VM Act, Category X non-remnant vegetation codes are exempt for vegetation clearing works. The current proposed alignment seeks to only clear vegetation within non-remnant category X vegetation. Areas of Essential Habitat are not present nor is any regulated Category A, B, C or R vegetation.

6.2 Waterways (VM Act and Fisheries Act 1994)

The project area does not contain any mapped MSES high ecological significance wetlands listed under the VM Act. The project area contains one (1) VM Act-defined watercourse (ephemeral first order stream). To comply with State Code 16, any vegetation clearing within a watercourse/drainage feature, and/or within the specified distance outlined in reference Table 2 of the Code, must be conducted in a manner that preserves the composition, structure, and function of the RE linked to the watercourse/drainage feature. This waterway is also mapped as a waterway for barrier works under the *Fisheries Act 1994*. It is a green (low risk), waterway. There are clearance thresholds for vegetation adjacent to watercourses that require consideration, as well as legislation about infrastructure crossing waterways mapped as watercourses to barrier works. To meet environmental duties of care and assist in any development approvals it is important to minimise the development footprint's interaction with all watercourses and associated vegetation. For example, where potential road infrastructure is unable to avoid mapped watercourses, they should approach and cross such features perpendicularly. Development of a CEMP and associated erosion and sediment management (potential Erosion and Sediment Control Plan (ESCP)) are recommended to mitigate potential impacts on the waterways. These must be developed by an environmental specialist and be submitted to regulators prior to construction, as evidence of appropriate environmental management.

6.3 Erosion and Sediment Control (Great Barrier Reef)

As the project area is within the Baffle Creek catchment for the Great Barrier Reef, it is important to note key construction phase considerations with relation to reducing erosion, sedimentation, maintaining water quality,

and avoiding significant impacts to the Great Barrier Reef. While the project area is minimal, and reference to the Queensland State Development Assessment Provisions Code 9 (SDAP 9) is not required for this report, we detail below town planning, engineering and construction recommendations to responsibly manage this.

During the construction phase, the key water quality risks to be managed will be related to erosion and sediment control, as well as the storage and handling of hazardous materials. As such, it is recommended that the following be prepared during detailed design:

- A certified Erosion and Sediment Control Plan (ESCP), prepared by Certified Professional in Erosion and Sediment Control (CPESC). This plan should be developed in accordance with the Best Practice Erosion and Sediment Control guideline (IECA, 2008), which specifies sediment and erosion control requirements based on assessed erosion risk and estimated soil loss. Correct application of the ESCP will ensure the erosion risk associated with the construction works remain very low to low.
- A site-specific Environmental Management Plan (EMP) which outlines measures and controls to minimise potential impacts from chemical spills/leaks and from discharge of treated or untreated wastewater from on-site wastewater treatment facilities. Such measures should include safe storage of chemicals away from watercourses to ensure any spillages are contained.
- Use of glyphosate-based products (or similar non-residual and non-persistent herbicides) to manage weeds on-site, to minimise the potential risk of harmful herbicide by-products entering the surface water receiving environment.
- Design, construction and maintenance of stream crossings in accordance with industry best practice.
- Installation and operation of a septic tank to service the operations and maintenance building; this will be designed and operated in accordance with relevant statutory requirements and Australian Standards. Regulated wastes will be removed from site and disposed in a suitable facility by a licensed operator.

The ESCP and EMP shall address the design objectives outlined in *Table 9.3.2.3.2 – Construction phase: stormwater management design objectives* of the Gladstone Regional Council (GRC) Planning Scheme.

6.4 Protected Plant Trigger Area (NC Act)

No portion of the project area is located within a protected plant trigger area. It is not considered potential for any terrestrial flora species, listed under the NC Act, to be present within the project area (**Appendix E**). No threatened plants were recorded during the field survey likely because the project area is in a highly disturbed condition and cattle grazing is the dominant land use.

6.5 Wildlife Habitat (NC Act)

No Wildlife Habitat exists in the project area, including for the koala, southern squatter pigeon, white-throated needletail and grey snake. Management of the project area vegetation for grazing purposes has resulted in the removal of the woody vegetation making utilisation highly unlikely for the koala in particular.

6.6 High-risk Animal Breeding Places (NC Act)

The presence of high-risk species whose breeding places are protected under the NC Act, included the vulnerable southern squatter pigeon, Special Least Concern short-beaked echidna and the Special Least Concern colonial-breeding rainbow bee-eater and spotted pardalote. While breeding places were not recorded in the field assessment, and a significant impact unlikely, a High-risk Species Management Program (SMP) will likely be required to manage the risk of encountering any breeding places for these species during works, with review by Department of Environment, Tourism, Science, and Innovation (DETSI). The SMP must be prepared by a suitably qualified ecologist and outline appropriate protocols for managing the occurrence of breeding places.

6.7 Threatened fauna (EPBC Act)

A total of two (2) threatened fauna species were recorded during the field. A further four (4) threatened fauna species are considered at least a moderate potential to occur within the total property area but are highly unlikely to occur on the project area due to the absence of suitable woody remnant or regrowth vegetation (**Appendix E**). As such, a **significant impact under the NC Act is not considered likely for any of these species**.

6.8 Gladstone Regional Council Biodiversity Overlay Code

All relevant MLES performance outcomes must be assessed to comply with the Gladstone Regional Council Biodiversity Overlay Code under a finalised alignment. This code seeks to maintain or enhance biodiversity outcomes on project areas by retaining or enhancing biodiversity and biodiversity connectivity, and by avoiding impacts to wetlands and watercourses.

Key mitigation measures to comply with the code include the following:

- Performance Outcome 2 – Within non-urban areas, a vegetative buffer is provided of 200 m from Of Concern and Endangered REs and threatened species habitats. Clearance within this 200 m buffer will require justification to Gladstone Regional Council that mitigation measures can be put in place to prevent residual impacts such as changes in microclimate and impacting connectivity.

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- Performance Outcome 18 – Ensuring that a vegetated and development-free buffer is provided and maintained extending from the high bank of the waterway or planned position of a waterway (whichever is the greater) and with a minimum width of:

- stream order 1 or 2: 25m, or
- stream order 3 or 4: 50m, or
- stream order 5 and above: 100m.

Discussion with Gladstone Regional Council will be required to determine a suitable reduction of buffer areas around watercourses.

7.0 References

- Australian Government (2014) Consultation document on listing eligibility and conservation actions for the southern squatter pigeon (*Geophaps scripta* subsp. *scripta*). <https://www.dcceew.gov.au/environment/biodiversity/threatened/nominations/comment/squatter-pigeon-southern>, accessed 17 February 2026.
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Appendix A EPBC Act 1999 Protected Matters Search Tool



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: 04-Dec-2025

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

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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:	6
Listed Threatened Species:	47
Listed Migratory Species:	16

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:	25
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:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	1
EPBC Act Referrals:	2
Key Ecological Features (Marine):	None
Biologically Important Areas:	1
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
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	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 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			
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to 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
Erythrotriorchis 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 likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	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
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known 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
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In buffer area only
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
PLANT			
Bertya opposens [13792]	Vulnerable	Species or species habitat known to occur within area	In feature area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	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 buffer area only
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cycas megacarpa [55794]	Endangered	Species or species habitat known to occur within area	In feature area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Fontainea venosa [24040]	Vulnerable	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Germainia capitata [14069]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Graptophyllum ilicifolium Holly-leaved Graptophyllum, Mt Blackwood Holly [8601]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area	In buffer area only
Polianthion minutiflorum [82772]	Vulnerable	Species or species habitat may 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
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In feature area
Hemiaspis damelii Grey Snake [1179]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phyllurus caudiannulatus Ringed Thin-tail Gecko [1681]	Endangered	Species or species habitat may occur within area	In buffer area only

Listed Migratory Species	[Resource Information]
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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 Marine Species

Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area	In feature area
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Migratory Terrestrial Species

Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Migratory Wetlands Species

Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to 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
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limnodromus semipalmatus Asian Dowitcher [843]	Vulnerable	Species or species habitat may occur within area overfly marine area	In buffer area only
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within 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 known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only
Reptile			
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves		[Resource Information]	
Protected Area Name	Reserve Type	State	Buffer Status
Colosseum Inlet	Fish Habitat Area (A)	QLD	In buffer area only
Eurimbula	National Park	QLD	In buffer area only
Great Barrier Reef Coast	Marine Park	QLD	In buffer area only

Nationally Important Wetlands		[Resource Information]	
Wetland Name		State	Buffer Status
Colosseum Inlet - Rodds Bay		QLD	In buffer area only

EPBC Act Referrals		[Resource Information]		
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Eurimbula Solar Farm	2024/09802		Assessment	In feature area

Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthm two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Biologically Important Areas		[Resource Information]		
Scientific Name		Behaviour	Presence	Buffer Status
Seabirds				
Anous minutus Black Noddy [824]		Foraging	Likely to occur	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](#)
- [Australian National Wildlife Collection](#)
- [Natural history museums of Australia](#)
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
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- [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.

Appendix B NC Act 1992 Wildlife Online Search

Family	Scientific name	Common name	Superseded	NCA	EPBC	Conservation significant	Establishment	Sensitive species	Area survey lists	Sighting records	Specimen records	Total sightings
Limnodynastidae	Adelotus brevis	tusked frog	No	V		Yes	QA			5	0	5
Accipitridae	Erythrorhynchus radiatus	red goshawk	No	E	E	Yes	QA			1	0	1
Apodidae	Apus pacificus	fork-tailed swift	No	SL		Yes	QAI			1	0	1
Apodidae	Hirundapus caudacutus	white-throated needletail	No	V	V	Yes	QAI			5	0	5
Cacatuidae	Calyptorhynchus lathamii erebus	glossy black-cockatoo (northern)	No	V		Yes	Q			1	0	1
Cuculidae	Cuculus optatus	oriental cuckoo	No	SL		Yes	QAI			2	0	2
Procellariidae	Macronectes giganteus	southern giant-petrel	No	E	E	Yes	QAI			1	0	1
Scolopacidae	Gallinago hardwickii	Latham's snipe	No	V	V	Yes	QAI			1	0	1
Strigidae	Ninox strenua	powerful owl	No	V		Yes	QA			1	0	1
Phascolarctidae	Phascogaleus cinereus	koala	No	E	E	Yes	QA			2	0	2
Pseudocheiridae	Petauroides volans volans	southern greater glider	No	E	E	Yes	QA			6	0	6
Tachyglossidae	Tachyglossus aculeatus	short-beaked echidna	No	SL		Yes	QAI			3	0	3
Acanthaceae	Graptophyllum ilicifolium	holly-leaved graptophyllum	No	V	V	Yes	NTQ			1	1	1
Arecaceae	Livistona decora		No	SL		Yes	NTQ			1	0	1
Campanulaceae	Lobelia membranacea		No	NT		Yes	NTQ			2	2	2
Campanulaceae	Lobelia purpurascens	white root	No	SL		Yes	NTQ			2	0	2
Cycadaceae	Cycas megacarpa		No	E	E	Yes	NTQ	Yes		4	2	4
Dryopteridaceae	Lastreopsis tenera		No	SL		Yes	NTQ			1	1	1
Euphorbiaceae	Bertya opposens		No	C	V	Yes	NTQ			2	2	2
Hydrocharitaceae	Hydrilla verticillata	hydrilla	No	SL		Yes	NTQ			1	1	1
Myrtaceae	Eucalyptus decolor		No	NT		Yes	NTQ			5	4	5
Myrtaceae	Rhodamnia rubescens	scrub turpentine	No	CR	CE	Yes	NTQ			1	0	1
Myrtaceae	Rhodamnia spongiosa		No	CR		Yes	NTQ			2	2	2
Orchidaceae	Acianthus fornicatus	pixie caps	No	SL		Yes	NTQ	Yes		1	0	1
Orchidaceae	Dockrillia bowmanii	scrub pencil orchid	No	SL		Yes	NTQ	Yes		1	0	1
Poaceae	Germainia capitata		No	V	V	Yes	NTQ			1	1	1
Polypodiaceae	Dryaria rigidula		No	SL		Yes	NTQ			4	0	4
Polypodiaceae	Microsorium punctatum		No	SL		Yes	NTQ			1	0	1
Polypodiaceae	Platycentrum bifurcatum		No	SL		Yes	NTQ			1	1	1
Polypodiaceae	Platycentrum superbum	staghorn fern	No	SL		Yes	NTQ			1	0	1
Psilotaceae	Psilotum nudum	skeleton fork fern	No	SL		Yes	NTQ			1	1	1
Pteridaceae	Adiantum aethiopicum		No	SL		Yes	NTQ			1	1	1
Pteridaceae	Adiantum hispidulum		No	SL		Yes	NTQ			4	0	4
Sapindaceae	Arytera dictyoneura		No	NT		Yes	NTQ			2	2	2
Sapindaceae	Cupaniopsis shirleyana	wedge-leaf tuckeroo	No	V	V	Yes	NTQ			1	1	1
Sterculiaceae	Brachychiton populneus subsp. trilobus		No	SL		Yes	NTQ			1	0	1
Xanthorrhoeaceae	Xanthorrhoea latifolia subsp. latifolia		No	SL		Yes	NTQ			10	0	10
Zamiaceae	Macrozamia miquelii		No	SL		Yes	NTQ	Yes		4	0	4



Queensland Government

Department of the Environment, Tourism, Science and Innovation

Environmental Reports

Matters of State Environmental Significance

For the selected area of interest

Lot: 132 Plan: FD700

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

Whilst every care is taken to ensure the accuracy of the information provided in this report, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness, or suitability, for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which the user may incur as a consequence of the information being inaccurate or incomplete in any way and for any reason.



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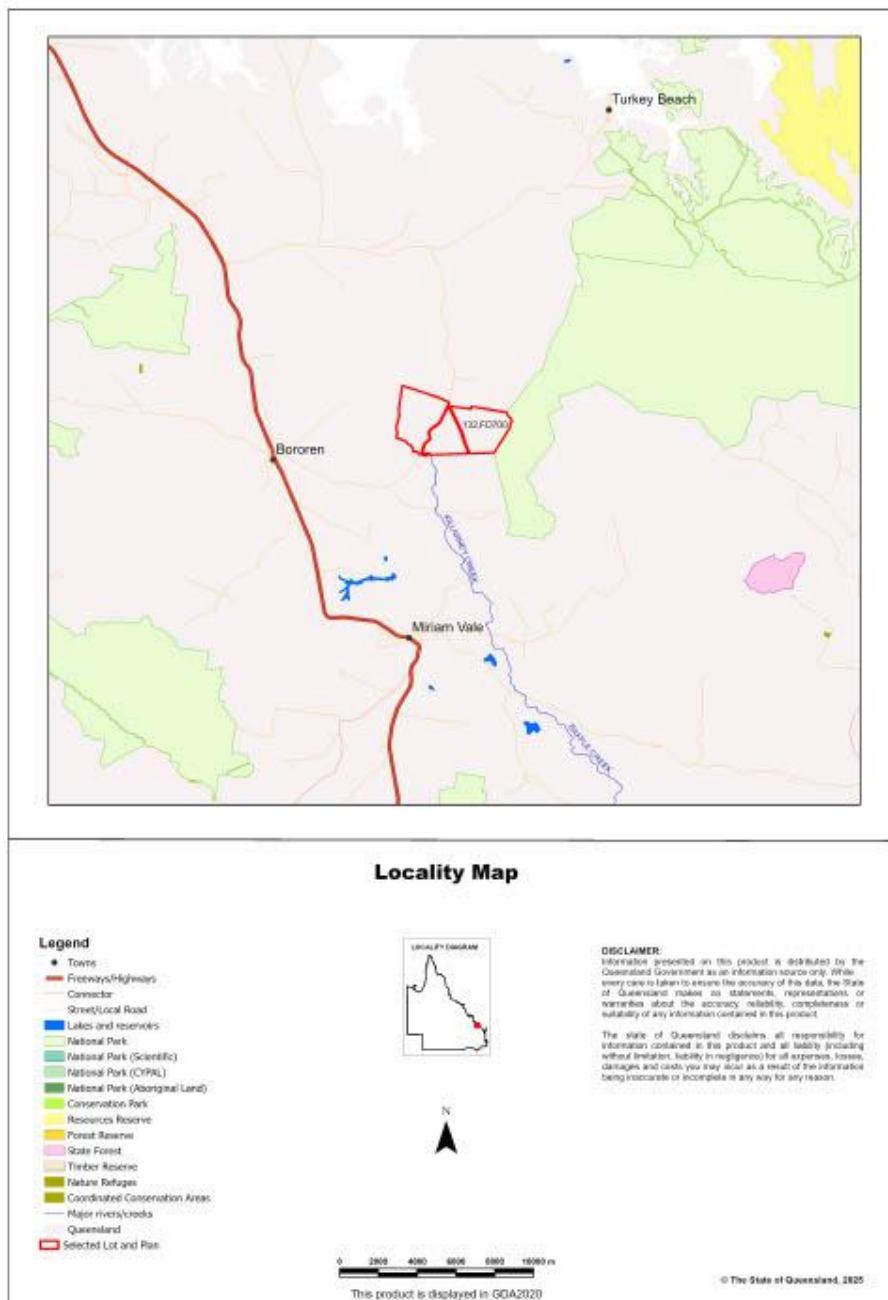
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Assessment Area Details

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: Lot: 132 Plan: FD700, with area 1276.64 ha

Local Government(s)	Catchment(s)	Bioregion(s)	Subregion(s)
Gladstone Regional	Baffle	Southeast Queensland	Burnett - Curtis Hills and 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	358.04 ha	28.0%
7b Special least concern animals	45.68 ha	3.6%
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)	412.95 ha	32.3%
8b Regulated Vegetation - Endangered/Of concern in Category C (regrowth)	11.14 ha	0.9%
8c Regulated Vegetation - Category R (GBR riverine regrowth)	4.14 ha	0.3%
8d Regulated Vegetation - Essential habitat	234.25 ha	18.3%
8e Regulated Vegetation - intersecting a watercourse	26.8 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

Values are present

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>Calyptorhynchus lathami</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 madae</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	Core
<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
(No results)

Special least concern animal species records

Scientific name	Common name	Migratory status
<i>Tachyglossus aculeatus</i>	short-beaked echidna	None

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
12.11.6/12.11.18/12.11.14	O-subdom	rem_oc
12.12.11/12.12.27/12.12.4	O-subdom	rem_oc
12.12.12	O-dom	rem_oc
12.3.3	E-dom	rem_end
12.3.3/12.3.7	E-dom	rem_end

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

Regional ecosystem	Vegetation management polygon	Vegetation management status
12.11.6/12.11.18/12.11.14	O-subdom	hvr_oc
12.12.11/12.12.27/12.12.4	O-subdom	hvr_oc
12.3.3/12.3.7	E-dom	hvr_end

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

Regulated vegetation map category	Map number
R	9249

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**

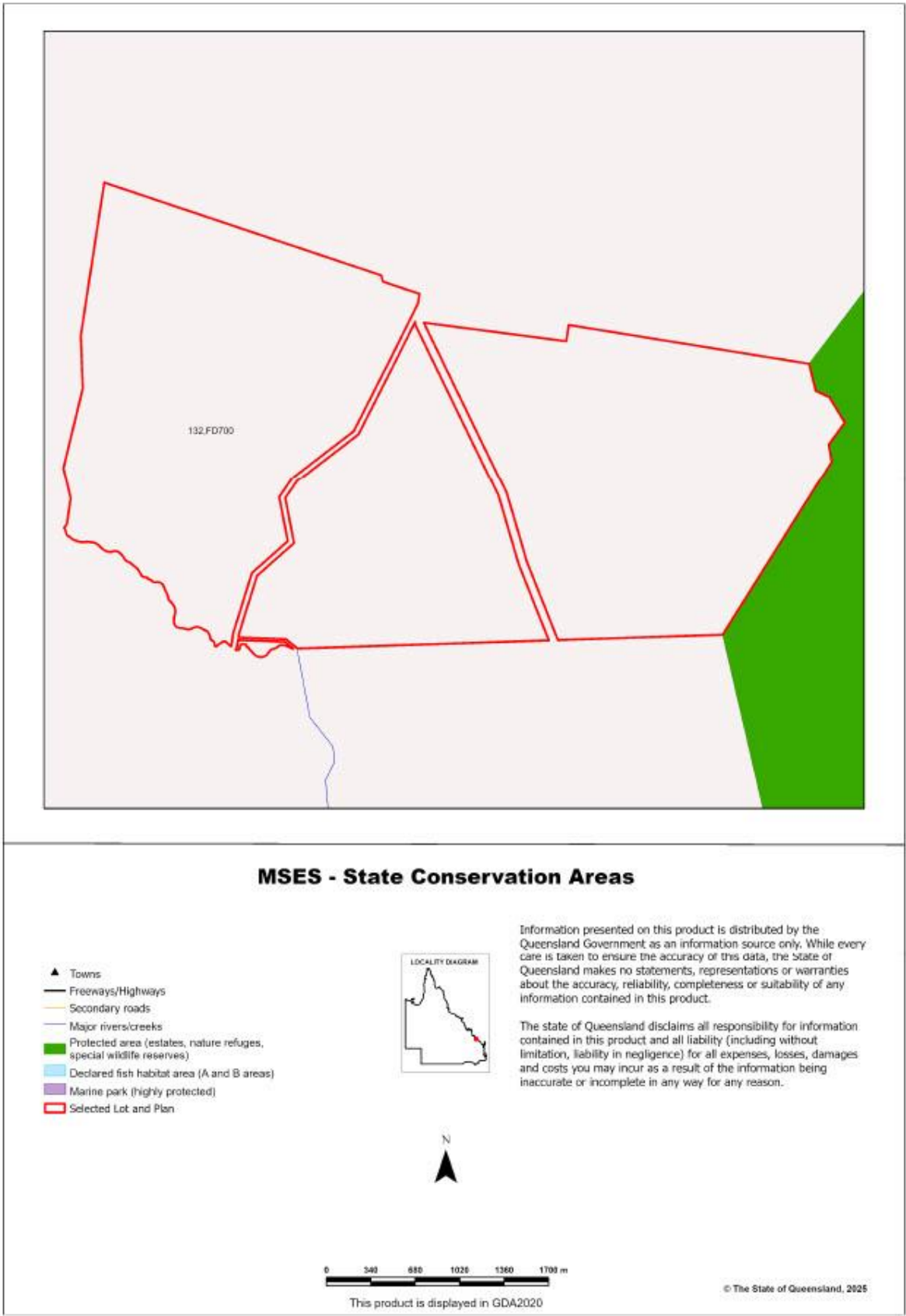
(No results)

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

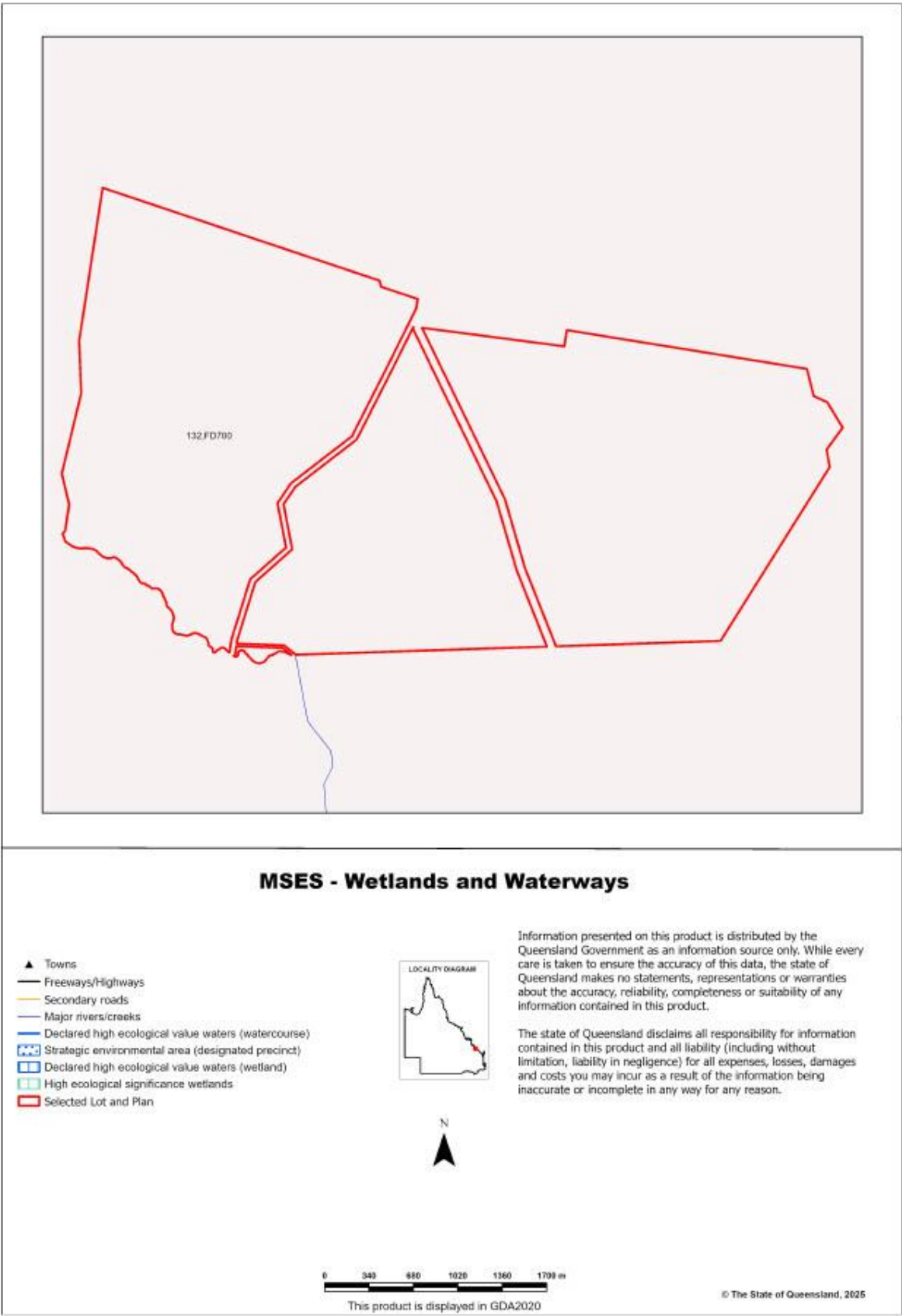
(No results)

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

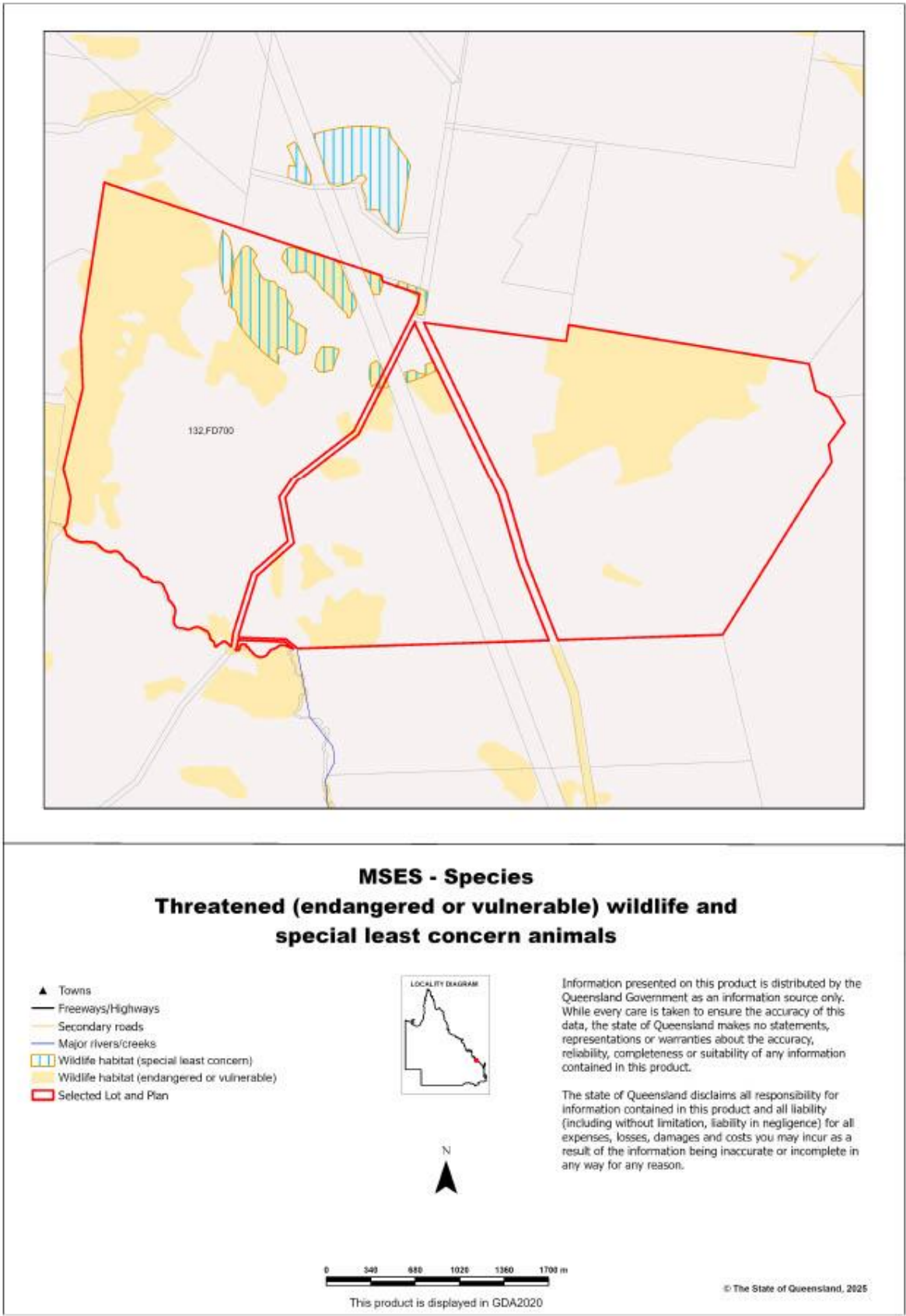
Map 1 - MSES - State Conservation Areas



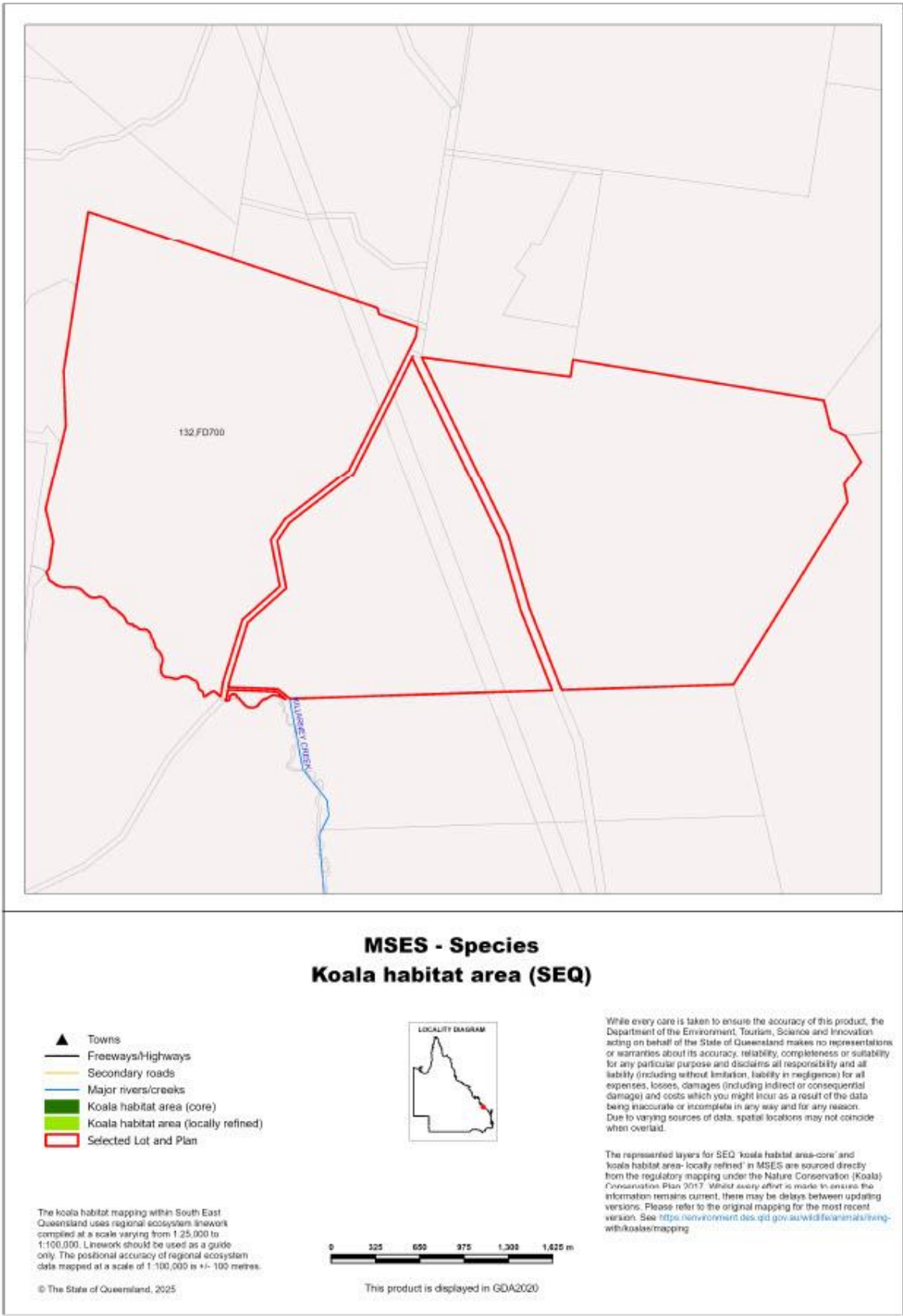
Map 2 - MSES - Wetlands and Waterways



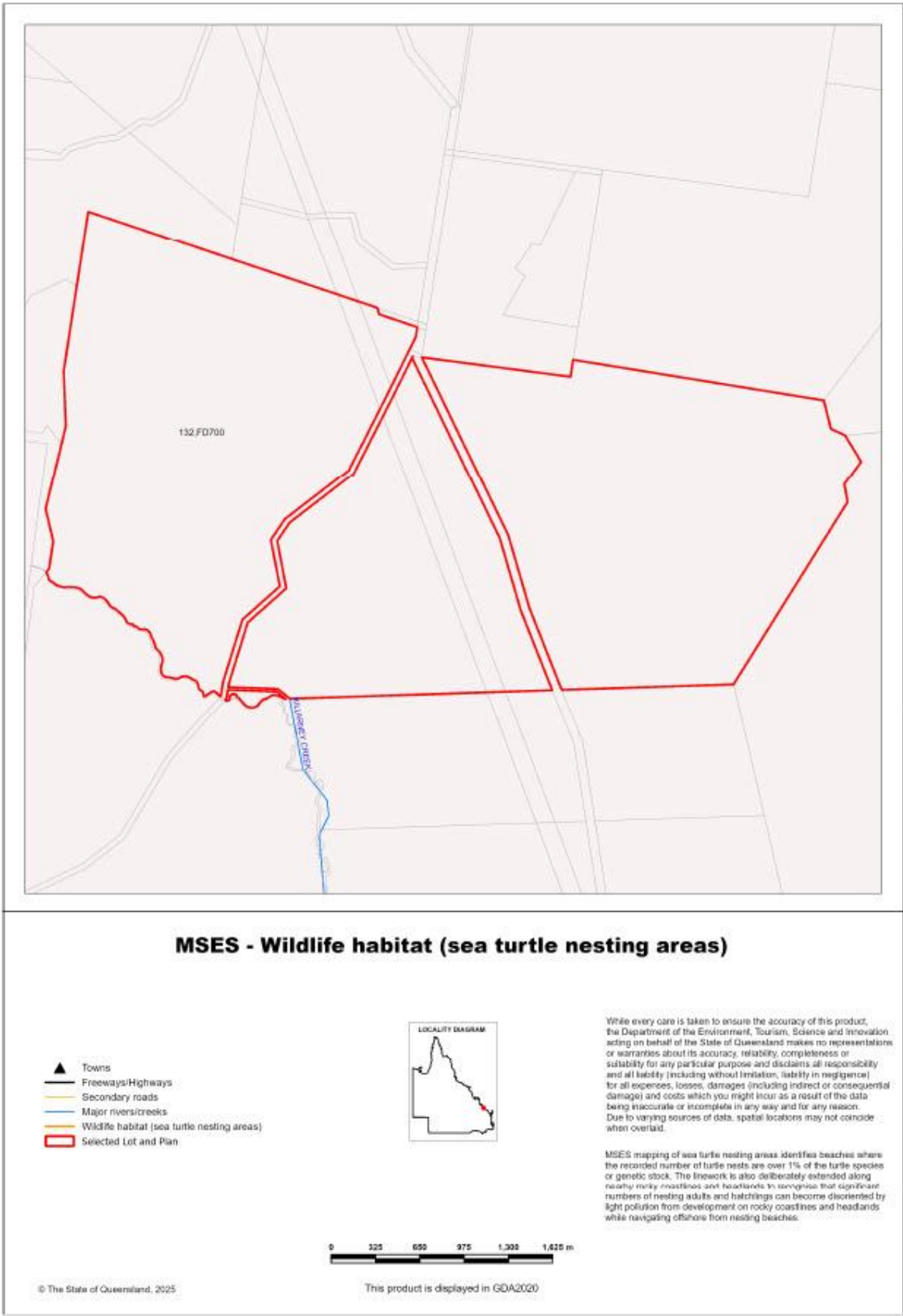
Map 3a - MSES - Species - Threatened (endangered or vulnerable) wildlife and special least concern animals



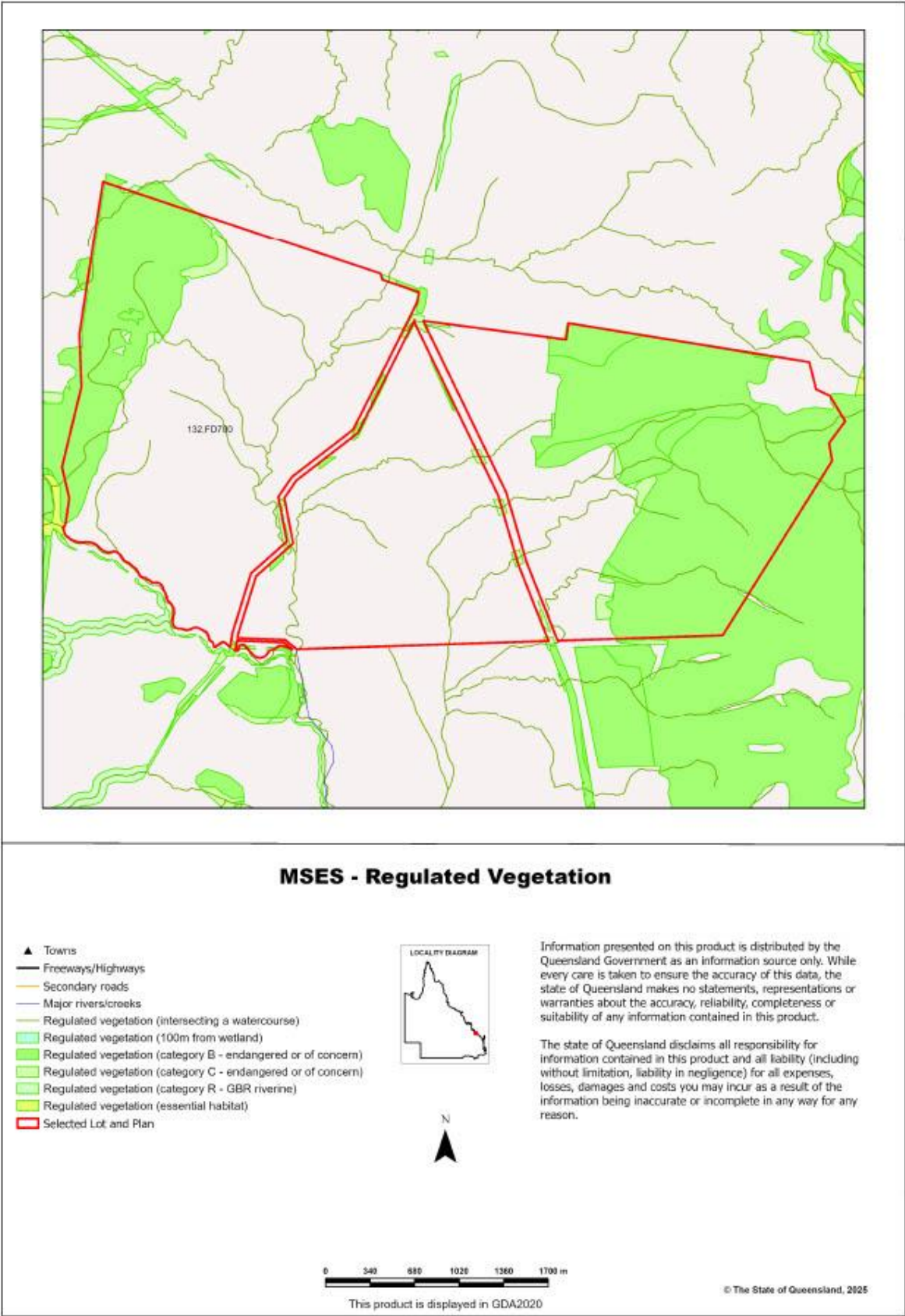
Map 3b - MSES - Species - Koala habitat area (SEQ)



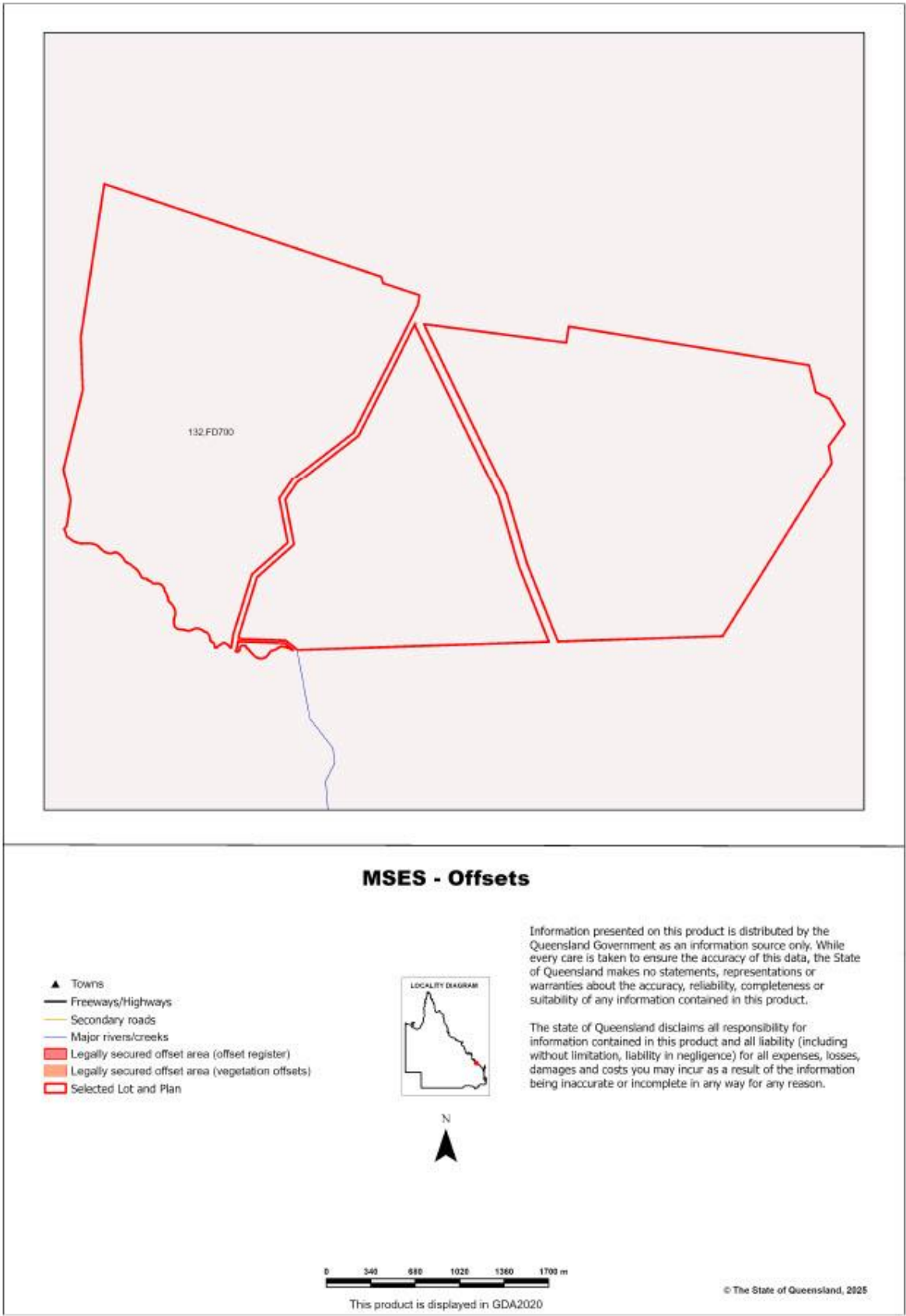
Map 3c - MSES - Species - Wildlife habitat (sea turtle nesting areas)



Map 4 - MSES - Regulated Vegetation



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

Appendix D Regulated Vegetation mapping

Regulated vegetation

Gryphon Energy - Rutherglen BESS



24°14'38\"/>

24°14'38\"/>

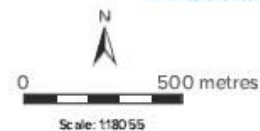
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**Queensland
Government**

Department of Natural Resources and Mines,
Manufacturing, and Regional and Rural Development

Appendix E Potential Occurrence assessment

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Threatened fauna					
Birds					
Alaskan bar-tailed godwit	<i>Limosa lapponica</i> subsp. <i>baueri</i>	E	E	Strongly migratory, being found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Less frequently it occurs in salt lakes and brackish wetlands, sandy ocean beaches and rock platforms.	Unlikely: The project area contains no wetlands or waterways suitable for this species. Rarely recorded in the region.
Asian dowitcher	<i>Limnodromus</i> <i>semipalmatus</i>	V	V	During the non-breeding season (in Australia) it occurs in sheltered coastal environments, primarily estuarine and intertidal mudflats, lagoons, creeks and saltworks.	Unlikely: The project area contains no wetlands or waterways suitable

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					for this species. Rarely recorded in the region.
Australasian bittern	<i>Botaurus poiciloptilus</i>	E	E	The Australasian bittern is found across a broad range in Australia, stretching from QLD to southeast SA, and southwest WA. In Queensland, its distribution extends north to Yeppoon and west to Wyandra, with notable sightings in areas such as the flood plains south of Byfield State Forest, Garnett's Lagoon, and Lake Clarendon. This bird primarily inhabits freshwater wetlands and occasionally estuaries or tidal wetlands, showing a preference for areas with tall, dense vegetation, dominated by sedges, rushes, reeds, cutting grass, and similar plants growing over muddy or peaty substrates. Its nesting	Unlikely: The project area contains no wetlands or waterways suitable for this species. Rarely recorded in the region.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				sites are typically adjacent to deep, densely vegetated freshwater swamps and pools, with nests built under cover over shallow water.	
Australian painted snipe	<i>Rostratula australis</i>	E, Ma	E	The Australian painted snipe is found in wetlands across all states of Australia, with a higher concentration in eastern Australia, including parts of Queensland, NSW, Victoria, and south-eastern South Australia. They typically inhabit shallow terrestrial freshwater wetlands, which can be temporary or permanent lakes, swamps, claypans, or occasionally brackish wetlands. Their preferred sites have rank emergent tussocks of grass, sedges, rushes, or reeds, sometimes with scattered clumps of lignum, cane grass, or tea-tree. The Australian painted snipe's breeding	Unlikely: The project area contains no wetlands or waterways suitable for this species.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				habitat necessitates shallow wetlands with bare mud areas and nearby canopy cover.	
Black-breasted buttonquail	<i>Turnix melanogaster</i>	V	V	The black-breasted buttonquail is an endemic species in eastern Australia, primarily confined to coastal and near-coastal regions of south-eastern Queensland and north-eastern NSW, with the main populations concentrated in south-east Queensland. The Black-breasted buttonquail is confined to rainforests and forests, typically thriving in areas with an annual rainfall of 770-1200 mm. Preferring drier low closed forests, including semi-evergreen vine thicket and Araucarian microphyll vine forest, they may also inhabit low, dense thickets and littoral areas behind sand dunes. Optimal habitats often feature	Unlikely: This species has been recorded in the Gladstone area. The poor condition of the project area vegetation excludes this species. No vine thicket development was recorded in any portion of the updated footprint.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				highly fertile soils promoting rapid plant growth, crucial for maintaining the deep leaf litter layer essential for the species' foraging needs. In some regions, they are found in remnant microphyll vine forests, utilising <i>Lantana montevidensis</i> for diurnal foraging and nocturnal roosting. The mosaic of <i>L. montevidensis</i> and emergent vine forest species provides essential cover. Occasionally recorded in open eucalypt forests, it requires an extensive dense leaf-litter layer, fallen logs, and a heterogeneously distributed shrub layer for shelter and breeding.	
Common greenshank	<i>Tringa nebularia</i>	E, Mi	SL	The Common greenshank has a global distribution. This species breeds throughout the northern hemisphere and spends the	Unlikely:

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				austral summer in southern feeding grounds. In Australia, they travel across the whole continent following the path of water along rivers and throughout deltas and inland wetlands. When near the coast, the Common greenshank occurs on mudflats, sandbanks, saltmarshes and lagoons.	Although the Common Greenshank has been recorded nearby at Lake Awoonga, the project area contains no wetlands or waterways suitable for this species.
Coxen's fig-parrot	<i>Cyclopsitta</i> <i>diophthalma</i> subsp. <i>coxeni</i>	CE	CR	The distribution of Coxen's fig-parrot is centred around south-eastern Queensland to the northeastern part of NSW, reaching the Bunya Mountains, Main Range, and Koreelah Range. Recorded habitats range from sea level to around 900 meters above sea level, encompassing rainforest types such as subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, and vine	Unlikely: The Coxen's fig parrot may occur as an infrequent fly over of this site. There is a lack of suitable habitat on the project area however.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				forest. Once prevalent in lowland subtropical rainforest, habitat loss due to European settlement has concentrated the remaining populations in fragmented remnants of dry and cool subtropical rainforest. The Coxen's fig-parrot particularly favours alluvial areas supporting figs and fleshy fruit trees, with a preference for diverse fig species and staggered fruiting seasons across moisture and altitudinal gradients. Recent sightings often occur in small stands of remnant native vegetation, forest edges, thin tracts of gallery forest along rivers or streams, and other habitat types, including sub-littoral mixed scrub and corridors of riparian vegetation. Nests have been observed in subtropical	

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				rainforest, dry rainforest, and in the transition zone between subtropical rainforest and sclerophyll forest.	
Curlew sandpiper	<i>Calidris ferruginea</i>	CE, Mi, Ma	CR	Curlew sandpipers primarily inhabit intertidal mudflats in sheltered coastal regions like estuaries, bays, inlets, and lagoons. They can also be found around non-tidal swamps, lakes, and coastal ponds, including those in saltworks and sewage farms. While less common, they are occasionally observed inland around ephemeral and permanent lakes, dams, waterholes, and bore drains, typically in areas with exposed mud or sand edges. They are adaptable to both fresh and brackish waters and are sporadically recorded around floodwaters. In Queensland, the Curlew	Unlikely: The project area contains no wetlands or waterways suitable for this species. Rarely recorded in the region.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				sandpiper is widespread along the coast south of Cairns, with only sparsely scattered records inland.	
Eastern curlew	<i>Numenius madagascariensis</i>	CE, Ma, Mi	E	The largest migratory shorebird in the world, Eastern curlews are endemic to the East-Asian Australian Flyway (EAAF). These curlews spend their non - breeding austral summer in Australia and have been recorded along the coast of every state. The Eastern curlew is rarely recorded inland. In Australia, the Eastern curlew forages on intertidal sand and mudflats, near mangroves, reefs, rockpools, saltmarsh and ocean beaches. This species has been recorded in man-made wetlands and sewerage farms etc. when nearby suitable habitat is limited. The most pressing threat to the	Unlikely: Although there are records of this species from nearby Agnes Water and Lake Awoonga, there is no suitable habitat on-site.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				Eastern curlew is the loss of intertidal flats utilised for foraging.	
Eastern star finch	<i>Neochmia ruficauda</i> subsp. <i>ruficauda</i>	E	E	The bird has disappeared from much of its former range. There have been reported sightings recently at Wowan, north to Bowen and west to Winton. These finches have been sighted in damp grasslands, sedgeland, grassy woodlands, box – gum woodland and suburban environments. This species is associated with flora such as bluegrass (<i>Dichanthium</i> spp.) and brigalow (<i>Acacia harpophylla</i>). It is thought that the main cause of the decline of this species is grazing and trampling of habitat by livestock.	Unlikely: The eastern star finch is an extremely rare bird. According to the Queensland Government WildNet records, the last accepted record of this subspecies (<i>Neochmia ruficauda</i> subsp. <i>ruficauda</i>) was made in 1960 near Bargunyah in the Brigalow Belt bioregion. According to eBird, there are no modern records south of Townsville, and the Atlas of

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					Living Australia lists their most recent valid record from 1973 near Taroom. Despite this, targeted surveys were undertaken as for the southern squatter pigeon. The current range of the star finch is largely unknown. The conservation advice for the eastern star finch (Australian Government, 2022) identifies habitat for the species as damp grasslands, sedgeland, and grassy woodlands near permanent watercourses, and riparian woodlands. The eastern star

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					finch population is extremely limited, with the most recent record being from 1994. It is possible that the species is extinct regionally. Therefore, a significant impact to the eastern star finch because of the proposal is highly unlikely.
Greater sand plover	<i>Charadrius leschenaultii</i>	V, Mi, Ma	V	These small/medium shorebirds breed in the northern hemisphere and migrate to Australia during the austral summer utilizing the East-Asian Australian Flyway (EAAF). There have been records of sightings along the coast of every Australian state. Greater sand plovers often occur in flocks, especially with the lesser sand plover (<i>Charadrius mongolus</i>). These	Unlikely: There is no suitable habitat on-site. Greater sand plovers are usually strictly coastal and do not venture inland.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				birds have a highly specialised diet when in Australia, requiring tidal flats, lagoons or estuaries to feed. Greater Sand Plovers roost on sand banks, lagoons, rocky points or saltmarshes. Threats to Greater Sand Plovers include habitat loss, pollution, altered bathymetry and hunting.	
Grey falcon	<i>Falco hypoleucos</i>	V	V	The Grey falcon is primarily found in arid and semi-arid regions of Australia, including the Murray-Darling Basin, Eyre Basin, central Australia, and Western Australia. It prefers regions with annual rainfall below 500 mm, predominantly inhabiting arid and semi-arid zones. Its distribution may marginally expand during wet years followed by drought, but it generally remains restricted to these arid and	Unlikely: The property is too close to the coast to be used by grey falcon. There is a lack of open woodland, or tussock grassland used for hunting.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				semi-arid environments. The species is notably absent from Cape York Peninsula and areas east of the Great Dividing Range in Queensland. It frequents timbered lowland plains, particularly acacia shrublands with tree-lined water courses, and has been observed hunting in treeless areas, tussock grassland, and open woodland, especially in winter. Nesting preferences include the tallest trees along watercourses, with a particular affinity for <i>Eucalyptus camaldulensis</i> and <i>E. coolabah</i>.	
Latham's snipe	<i>Gallinago hardwickii</i>	V, Mi, Ma	SL	In Australia, the Latham's snipe is known to inhabit a wide range of permanent and ephemeral wetlands, typically favouring open freshwater wetlands with nearby shelter, often in the form of low and dense vegetation. Their	Unlikely: There are no wetlands, waterways or dams in the project footprint. This species

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				habitats include flooded meadows, seasonal or semi-permanent swamps, open waters, and various other freshwater settings like bogs, billabongs, lagoons, lakes, creek or river margins, river pools, and floodplains.	has been recorded nearby at Eurimbula National Park but is unlikely to use the project area.
Northern glossy black-cockatoo	<i>Calyptrorhynchus lathamii</i> subsp. <i>erebus</i>	LC	V	Glossy black-cockatoos have a highly specialised diet consuming 89% of their diet from members of the genus <i>Allocasuarina</i> . These cockatoos are also known to consume members of the <i>Casuarina</i> genus although this is not preferred (Chapman 2007). The main driver of habitat for this species is the availability of its feed trees within its range. The (northern) Glossy black cockatoo is restricted to central Queensland and has been recorded from Yandaran north to Bloomsbury.	Unlikely: There are many records of the cockatoo nearby to the property including Miriam Vale. However, field surveys determined a distinct lack of <i>Allocasuarina</i> spp. in the general property area, and no remnant woody vegetation in the project footprint.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				This subspecies has also been recorded on St Bees Island near Mackay and as far inland as the Blackdown Tablelands National Park.	
Powerful owl	<i>Ninox strenua</i>	LC	V	Powerful owls are the largest owl in Australia and is considered a rare species. These owls are mainly found on or east of the Great Dividing Range in tall forests. Powerful owls require tree hollows for nesting and have been found to nest in a wide variety of forest types. There is a record of a pair of Powerful owls nesting 6 kilometres from the Brisbane CBD (Cooke and Wallis 2004). In, Queensland these owls are recorded from the New South Wales border north to Gladstone. There are reports of sightings from as far north as the Atherton Tablelands. Powerful owls are known to	Unlikely: Powerful owls have a large home range and utilize a variety of forest types. There are multiple records of powerful owls near the property but due to the absence of remnant or regrowth vegetation, their use of the project area is unlikely.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				concentrate on hunting in a small area of their range at a time. Powerful Owls predate on arboreal mammals including possums, Sugar Gliders and Greater Gliders (Kavanagh 1998).	
Red goshawk	<i>Erythrorchis radiatus</i>	E	E	The red goshawk occurs in coastal and subcoastal areas in wooded and forested lands of tropical and warm-temperate Australia. It nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within 1 km of permanent water. Habitat must be open enough for fast attack and manoeuvring in flight but provide cover for ambushing of prey. Therefore, forests of intermediate density are favoured, or ecotones between habitats of differing densities, such as between rainforest and eucalypt forest,	Unlikely: The red goshawk has been recorded from Miriam Vale. The habitat on-site is highly degraded and contains no woody vegetation. Use of the footprint is very unlikely.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				between gallery forest and woodland, or on edges of woodland and forest where they meet grassland, cleared land, roads, or watercourses.	
Red knot	<i>Calidris canutus</i>	V, Mi, Ma	E	The red knot is a medium sized migratory shorebird with a global distribution. These birds breed in the Arctic during the austral winter and migrate to the southern hemisphere to their feeding grounds for the austral summer. In Australia, red knots most frequently visit the north-west, especially Roebuck Bay. Red knots are encountered on every coastal Australian state on intertidal mudflats, sandflats, estuaries, and lagoons. They have also been observed feeding near saltworks and sewerage farms. These birds can	Unlikely: Although there are records of red knots from nearby Lake Awoonga, there is no suitable habitat on-site.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				occur in large and mixed flocks with other shorebirds.	
Sharp-tailed sandpiper	<i>Calidris acuminata</i>	V, Mi, Ma	SL	In Australasia, sharp-tailed sandpipers prefer muddy edges of shallow fresh or brackish wetlands with sedges, grass, saltmarsh, and low vegetation. They inhabit lagoons, swamps, coastal lakes, dams, waterholes, and sometimes sewage farms. They use intertidal mudflats along coastal areas and return to terrestrial wetlands during the wet season. They may be attracted to mats of algae and beach cast seaweed.	Unlikely: The sharp-tailed sandpiper has been recorded nearby at large water bodies such as Lake Awoonga. However, there is no suitable watercourse on-site.
Southern squatter pigeon	<i>Geophaps scripta</i> subsp. <i>scripta</i>	V	V	The squatter pigeon inhabits open to sparse woodlands and scrub dominated by <i>Eucalyptus</i> , <i>Corymbia</i> , <i>Acacia</i> , or <i>Callitris</i>	Confirmed: This species was recorded numerous times as a single

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				species, along with a patchy tussock grass understory. This habitat preference is typically found on well-draining sandy, gravelly, or loamy soils, which are conducive to foraging behaviours. Well-draining soils are also essential for breeding, as the species constructs nests in shallow depressions on the ground. Therefore, the Squatter pigeon requires access to a permanent water body within a 3-kilometer range.	individual along the main Red Hill Road corridor (-24.23510, 151.56767). It occurred feeding on grasses adjacent to a second order stream in the south of the property as well. Despite the presence of this species, the proposed project is unlikely to cause a significant impact, due to the extent of similar disturbed habitat throughout the property.
White-throated needletail	<i>Hirundapus caudacutus</i>	V, Mi, Ma	V	The white-throated needletail is widespread in eastern and south-eastern Australia during the summer months. In eastern Australia, it is observed in all coastal regions of Queensland	Confirmed: There are many records of the white-throated needletail

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				and NSW, extending inland to the western slopes of the Great Dividing Range and occasionally onto adjacent inland plains. This species is predominantly aerial, ranging from heights of less than 1m to over 1,000m above the ground, rendering conventional habitat descriptions inapplicable. Nevertheless, certain preferences are exhibited, with a higher occurrence above wooded areas, including open forest, rainforest, and heathland. They may also fly between trees or in clearings below the canopy, though less commonly above woodlands, or treeless areas such as grassland or swamps. Foraging often takes place in areas with updraughts, such as ridges, cliffs, sand dunes, or along the edges of low-	nearby including from the Bororen township. This species was regularly recorded aerial foraging above the project area. Although this species occurs, the nature of the proposal is not expected to result in a significant impact to this species. No breeding or potential roosting habitat occurs within the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				pressure systems. The White-throated needletail has been recorded roosting in trees within forests and woodlands, either among dense foliage in the canopy or in hollows.	
Mammals					
Ghost bat	<i>Macroderma gigas</i>	V	E	The Ghost bat is found in Queensland and the Northern Territory. In Queensland its distributed from Cape York to Rockhampton and exhibits a diverse foraging habitat that includes arid woodlands in the Pilbara as well as tropical woodlands and rainforests. Essential to its ecology is the availability of suitable roosting habitat, which typically consists of deep cave structures and rock crevices, and there are reports of the species utilising	Unlikely: There have not been any records of this species near the property. No cave or rock outcrops are present within the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				abandoned mining excavations. During winter, colonies of Ghost bats may disperse over distances exceeding 150 km, moving from colonial roost sites into smaller groups dispersed across the landscape.	
Central greater glider	<i>Petauroides armillatus</i>	E	V	The greater glider (southern and central) is distributed throughout eastern Australia, ranging from Proserpine in QLD to Wombat State Forest in central VIC, covering an elevational range of 0 to 1200 m asl. This species predominantly inhabits eucalypt forests and woodlands, with a preference for montane, moist eucalypt forests on fertile soils containing old trees and abundant hollows. While it primarily shelters in tree hollows during the day, showing a particular	Unlikely: No regrowth or remnant woody vegetation exists within the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				preference for large hollows in large, old trees, both live and standing dead trees are utilised for denning. In southern Queensland, it is observed that the species requires at least 2–4 live den trees for every 2 ha of suitable forest habitat. The species exhibits a selective feeding behaviour, favouring forests with diverse eucalypt species due to seasonal variations in growth and nutrient content of preferred tree species.	
Grey-headed Flying-fox	<i>Pteropus</i> <i>poliocephalus</i>	V	LC	This is Australia's sole endemic flying-fox, is found in the coastal belt from Rockhampton in central Queensland to Melbourne in Victoria. However, only a fraction of this range is utilised at any given time, as the species selectively forages in areas with available food.	Unlikely: Although there are records of the grey-headed flying-fox at the adjacent Eurimbula National Park, no suitable tree

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				Consequently, patterns of occurrence and relative abundance within its distribution exhibit considerable variation across seasons and years. The flying-fox feeds on various vegetation communities, including flowering <i>Eucalyptus</i> , <i>Corymbia</i> , and <i>Melaleuca</i> . It tends to roost near water bodies such as lakes, rivers, or the coast, often forming large camps.	vegetation exists within the project area.
Koala	<i>Phascolarctos cinereus</i>	E	E	Koalas are distributed across various bioregions in Queensland, ranging from the southeast to as far north as the Einasleigh Uplands and Wet Tropics bioregions, and extending westward to the Mitchell Grass Downs and Mulga Lands. Within Queensland, koalas can be found in diverse habitats, including moist coastal forests, southern and	Unlikely: No regrowth or remnant woody vegetation exists within the project area, and no koala food or habitat trees occur.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				central western subhumid woodlands, and certain eucalypt woodlands near waterbodies in the semi-arid western regions of the state. They tend to be more abundant in areas with higher tree species richness, and their population size is influenced by leaf-moisture content.	
Northern quoll	<i>Dasyurus hallucatus</i>	E	LC	The northern quoll is distributed across five regional populations in QLD, the NT, and WA, including both mainland and offshore islands. In QLD, its range extends from Gracemere and Mt Morgan south of Rockhampton to Weipa in the north and the vicinity of Carnarvon Range National Park in the west. This species occupies diverse habitats such as rocky areas, eucalypt forests and woodlands, rainforests,	Unlikely: There is no suitable habitat on the property for this species. If present, this species may utilise remnant vegetation outside of the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				sandy lowlands and beaches, shrublands, grasslands, and deserts. They are also found in non-rocky lowland habitats like beach scrub communities in central QLD. Generally, Northern quoll habitat includes rocky areas for denning, with surrounding vegetated habitats used for foraging and dispersal. Rocky habitats are often rugged and dissected, including tor fields or caves in low-lying areas. Eucalypt forest or woodland habitats feature high structural diversity with large trees, termite mounds, or hollow logs for denning. Dens are constructed in rock crevices, tree holes, or occasionally termite mounds. The species appears most abundant within 150 km of the coast, with recent surveys suggesting a	

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				preference for high relief areas with shallower soils, greater boulder cover, less fire impact, and proximity to permanent water.	
Spot-tailed quoll	<i>Dasyurus maculatus</i> subsp. <i>maculatus</i>	E	E	The spot-tailed quoll inhabits southeast QLD, ranging along the coast from Bundaberg to the border, inland to Monto and Stanthorpe. This species is found in five main geographic areas, encompassing coastal ranges, the Great Dividing Range, and the eastern Darling Downs-Inglewood Sandstone provinces. It exhibits a preference for mature wet forest habitats, particularly those with an annual rainfall of around 600 mm. Unlogged or less disturbed forests are favoured, providing suitable den sites like hollow logs, tree hollows, rock outcrops, or caves. Adequate	Unlikely: There is no suitable habitat on the property for this species, with a distinct lack of wooded areas, rock scree or boulders, rain or vine-forests.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				food sources, including birds and small mammals, are crucial, and large areas of relatively intact vegetation are required for foraging. Its habitat range includes temperate and subtropical rainforests in mountain areas, wet sclerophyll forests, lowland forests, open and closed eucalypt woodlands, inland riparian and river red gum (<i>Eucalyptus camaldulensis</i>) forests, dry 'rain shadow' woodlands, sub-alpine woodlands, coastal heathlands, and occasional sightings from open country, grazing lands, rocky outcrops, and other treeless areas.	
Short-beaked echidna	<i>Tachyglossus aculeatus</i>	LC	SLC	The short-beaked echidna is common throughout most of temperate Australia and lowland New Guinea. In Australia, it remains	Unlikely:

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				widespread across a wide range of habitats, including urban outskirts, coastal forests and dry inland areas, and is especially widespread in Tasmania and on Kangaroo Island.	Although there are records in the nearby areas, the species is not listed under the EPBC Act, and a significant impact (NC Act) is unlikely due to the very poor nature of the highly-degraded non-remnant vegetation at the project area.
Southeastern yellow-bellied glider	<i>Petaurus australis</i> subsp. <i>australis</i>	V	V	The yellow-bellied glider has a widespread yet patchy distribution, ranging from sea level to 1400 m asl, extending from south-eastern QLD to far south-eastern SA. Most of its QLD distribution is coastal, spanning southward along the eastern seaboard from north of Mackay and continuing through the NSW-QLD border. However, isolated subpopulations exist	Unlikely: No regrowth or remnant vegetation within the project area means the potential to impact this species is low.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				inland in the Blackdown and Carnarvon Ranges of central QLD. This subspecies inhabits eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests. Its abundance is closely tied to habitat suitability, determined by forest age and floristics. The yellow-bellied glider (south-eastern) prefers large patches of mature old-growth forest with suitable trees for foraging and shelter. There is a distinct preference for forests rich in winter-flowering and smooth-barked eucalypts. Smooth-barked eucalypts are crucial as they provide various foraging substrates, including shelter for insect prey. Additionally, the subspecies requires floristic diversity for a year-round food supply and is	

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				unlikely to persist in forests dominated by only one or two tree species.	
Water mouse	<i>Xeromys myoides</i>	V	V	Although the water mouse had been documented in three distinct locations (Northern Territory, central south Queensland, south-east Queensland) they require similar habitat including mangroves and the associated saltmarsh, sedgeland, clay pans, heathlands and freshwater wetlands. The main habitat difference at each location is the littoral, supralittoral and terrestrial vegetation which differs in structure and composition. These differences dictate the species' nesting behaviour.	Unlikely: This species is recorded nearby from coastal habitats. Suitable habitat is not present on-site.

Reptiles

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Collared delma	<i>Delma torquata</i>	V	V	This is the smallest legless lizard which reaches a maximum length of 19 centimetres and an average weight of 1.36 grams. This species is known from the southeastern Queensland management regions of; Burnett - Mary, Condamine and Fitzroy. These lizards are associated with open eucalypt forest on westerly facing slopes containing native grasses, leaf litter and loose rocks. This delma feeds mostly on cockroaches where it has been observed foraging during the day. The fragmented distribution of this species is a significant threat to its continuation along with the spreading of weeds, fires and land clearing (Curtis 2012).	Unlikely: This species is recorded on westerly facing slopes more inland of the property location, with the closest Atlas of Living Australia (ALA) record at Dawes National Park (about 75 km southwest).

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Dunmall's snake	<i>Furina dunmalli</i>	V	V	This small snake species grows to approximately 7.5 centimetres in length and occurs within the Brigalow Belt region of southern Queensland and northern New South Wales. This species is most often found within vegetation communities containing <i>Acacia harpophylla</i> , <i>Callitris glaucophylla</i> , <i>Casuarina cristata</i> and <i>Allocasuarina luehmannii</i> between 200 and 500 metres above sea level. This snake is nocturnal and has been recoded feeding on small skinks. During the day this species takes shelter in dry areas under rocks, logs or cracks in dry soil. Most sightings of this species occur after rain when their shelters become disturbed. This species is threatened by the fragmented nature of its range,	Unlikely: The project area falls within the known distribution of the species. The conservation advice and referral guidelines for this species (Australian Government, 2023) as well as Dunmall's snake researchers, have noted that they can be a habitat generalist; occurring across a wide variety of different habitats but usually always in remnant vegetation within their known distribution (pers. comm. Dr Stewart Macdonald and Justin Wright).

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				agriculture, urban development, natural resource extraction and predation by feral animals (Curtis 2012).	The likelihood of the project area significantly impacting on an important population of this vulnerable-listed species (as per the significant impact guidelines), is very unlikely due to the absence of any nearby remnant vegetation.
Grey snake	<i>Hemiaspis damelii</i>	E	E	The grey snake is small, reaching lengths of up to 70 cm and occurs within the Brigalow Belt region of southern Queensland and northern New South Wales. This species is associated with dry, yet flood prone soils containing vegetation communities of <i>Eucalyptus populnea</i> , <i>Acacia harpophylla</i> and <i>Casuarina cristata</i> . The grey snake is usually found within	Unlikely: This species has not been recorded near the property. The species tends to favour dry sclerophyll forests and woodlands on cracking clay soils where water bodies or

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				proximity to water bodies. This species is most active around dusk, feeding on frogs and lizards. During the day these snakes' shelter under logs, flood debris or in burrows. Human development is a major threat to this species. Habitat destruction, altered hydrology, fire regimes and urban encroachment have already made an impact upon the grey snake (Curtis 2012).	gullies are present and where the land becomes seasonally inundated leading to high frog abundance/diversity in the Brigalow Belt or far west of South East Queensland bioregions (Wilson and Swan, 2010; Australian Government 2021). It shelters under rocks, logs and other debris, as well as in cracks in soil incl. gilgai depressions. No suitable habitat exists on the project area, given the fact that active, and dense Acacia spp. regrowth has occurred since tree removal,

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					and no persisting native woodland occurs. The presence of cracking clay would "shear off" regrowing vegetation due to the continual expansion and contraction of these clays. Site visits yielded no suitable seasonally inundated waterways in the project area, and secondary vegetation surveys showed a lack cracking clays or open woodland canopy.
Ringed thin-tailed Gecko	<i>Phyllurus caudiannulatus</i>	E	E	This species can be found in subtropical vine forest, adjacent wet sclerophyll forest and hoop pine plantation between 180-600 m. The geology where <i>P. caudiannulatus</i> occurs is	Unlikely: Distinct lack of suitable habitat within the project area. The

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				quartz-syenite and granite. Geckos shelter in buttress cavities of trees (especially <i>Ficus spp.</i>), under bark and rock piles.	nearest individuals (recorded via Atlas of Living Australia – ALA) are from Bulburin National Park, about 30 km south of the project area. There are no subtropical vine forests, wet sclerophyll forests or hoop pines on-site, with no suitable habitat features such as buttressed roots and rock piles.
Saltwater crocodile	<i>Crocodylus porosus</i>	Mi, Ma	V	The saltwater crocodile is easily distinguished being the largest extant reptile and one of only two crocodile species in Australia. The general range of this species is from Broome in Western Australia across the north coast to Rockhampton in Queensland. There have been	Unlikely: Although there has been a record of a saltwater crocodile from nearby Gladstone Harbour following a flood event, there is

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				records of saltwater crocodiles south of Rockhampton though these are rare. As the name suggests, these crocodiles can withstand saltwater environments and are encountered in coastal brackish mangroves, billabongs, swamps, estuaries, and both salt and freshwater river systems. Saltwater crocodiles utilise ocean currents to travel vast distances. Mating occurs from November and May with females laying eggs on nests made of vegetation adjacent to water bodies.	a lack of suitable habitat on-site with no waterways of suitable size or connectivity.
Yakka skink	<i>Egernia rugosa</i>	V	V	The yakka skink is one of four skink species listed as a 'Brigalow Belt reptile' under the EPBC Act with suitable habitat listed as open forests to low-woodlands and shrubs. This habitat is often mapped as RE Land Zones 3,	Unlikely: There is no suitable habitat on-site for the yakka skink based on the descriptions in

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				4, 5, 7, 8, 9, 10 and 12 (Australian Government, 2023). The Yakka skink prefers open dry sclerophyll forests or open woodland and is commonly associated with various vegetation types, including Brigalow, Mulga, Bendee, Lancewood, Belah, Poplar box, Ironbark, and White cypress pine. It frequently seeks refuge in large hollow logs and may occasionally dig deep burrow systems, often beneath dense ground vegetation (Cogger 2014).	Australian Government, 2023. The nearest individual records are > 100 km northwest of the project.
Amphibians					
Tusked frog	<i>Adelotus brevis</i>		V	The Tusked frog is readily identified by its two 'Tuskeds' which are used to defend territory. The Tusked frog has a vast distribution stretching from Avoca, New South Wales in	Unlikely: There are multiple records of tusked frogs from nearby Miriam Vale. This species was

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				the south of its range north to Paluma, Queensland. There are records as far inland as Trundle, New South Wales and Carnarvon National Park, Queensland although most records are from the Great Dividing Range and the coast. The Tusked frog can be found in a variety of habitats including wet and dry eucalypt forests, rainforest, woodlands and flooded grasslands usually near dams or creeks. Chytrid fungus is a major threat to these frogs and has already had a negative impact on their population size. Habitat loss and degradation is also another threat (Hines et al. 1999).	targeted during the field assessment over a single night and was not responding to call playback. There is no suitable habitat within the immediate project area with no water bodies, waterways or seepages.

Flora

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
-	<i>Arytera dictyoneura</i>	LC	NT	This is a shrub or small tree growing to 7 metres tall. The branchlets are covered in dense, short pale to brown hairs. This species produces yellow – orange fleshy fruits. This species is endemic to Queensland, existing in two localities. The first locality is from northern Queensland where it has been recorded from Paluma to near Cardwell and grows on granite boulder slopes of rainforest. The second locality is from the Kalpowar State Forest to Agnes Water where it grows on notophyll vine forests on ballast derived soils.	Unlikely: No woody vegetation, vine forest or basalt on-site which is what the species grows on throughout its southern populations.
-	<i>Bertya opponens</i>	V	LC	<i>Bertya opponens</i> is a shrub growing to 4 metres tall. This species can be identified by its stems and branches being covered in	Unlikely: Poor condition of the project area vegetation provides a

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				intertwined hairs. The thick leaves have velvet – like hairs on the underside. This species produces yellow – brown flowers during late summer or between June to November in Queensland. This species has a broad distribution in Queensland, being found from near Miriam Vale, Emerald, Toowoomba and Charleville. There is also a record from Charters Towers. <i>Bertya opposens</i> has been recorded growing in a diverse range of vegetation types such as various woodland communities, shrublands, open forests and vine thickets.	distinct lack of suitable habitat. The project area is highly disturbed and is characterised by regrowth <i>Acacia</i> spp. and exotic pasture grasses with limited exotic and native herbaceous plants on a sedimentary/alluvial topography. There is no mature woody vegetation. A full project area meander looking for any individual plants of this species yielded no presence.
Three-leaved bosistoa	<i>Bosistoa transversa</i>	V	LC	This tree species grows up to 22 m tall. As the name suggests, leaflets are usually presented in groups of 3. The three-leaved bosistoa	Unlikely:

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				produces clusters of white flowers from December to May. This species is distributed from the Richmond River in northern New South Wales to Mount Larcom in Queensland. <i>Bosistoa transversa</i> occurs in wet and dry sclerophyll forests and lowland rainforests below 300 metres above sea level. This species has been associated with the following tree species: <i>Argyrodendron trifoliolatum</i>, <i>Syzygium hodgkinsoniae</i>, <i>Endiandra pubens</i>, <i>Dendrocnide photinophylla</i>, <i>Syzygium ingens</i>, <i>Diploglottis australis</i> and <i>Diospyros</i> spp. The three-leaved bosistoa is under threat from vegetation clearing, fires, invasive weeds and grazing by livestock.	This species has been recorded growing nearby at Castle Tower National Park although requires wet sclerophyll or rainforest ecosystems. No suitable habitat within project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Miniature moss orchid	<i>Bulbophyllum globuliforme</i>	V	NT	The miniature moss orchid is a very small rhizomatous orchid that grows as an epiphyte forming dense matts. The tiny triangular leaves are between 1 and 2 millimetres long. This species produces a single tiny white – yellow flower from September to November. This species is distributed from the McPherson Range of New South Wales to the Calliope Range near Gladstone in Queensland. An outlier was also collected from near Hidden Valley in Queensland. The Miniature Moss-orchid exclusively grows on the upper branches of mature Hoop Pines (<i>Araucaria cunninghamii</i>). The most pressing threat to this species is the logging of its host trees and poaching for private collections.	Unlikely: Poor condition of the project area vegetation and lack of vine forest development provides a distinct lack of suitable habitat.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
-	<i>Cossinia australiana</i>	E	E	<i>Cossinia australiana</i> is found in fragmented relict patches of Araucarian vineforests or vine thickets on fertile soils in central and southern Queensland, spanning from Rockhampton to Kingaroy, east of the Great Dividing Range. The species is observed within the Fitzroy, Burnett Mary, and South East Queensland Natural Resource Management Regions. Its distribution overlaps with two EPBC Act-listed threatened ecological communities: Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions, and Brigalow (<i>Acacia harpophylla</i> dominant and co-dominant).	Unlikely: Poor condition of the project area vegetation and lack of vine forest development provides a distinct lack of suitable habitat.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Wedge-leaved tuckeroo	<i>Cupaniopsis shirleyana</i>	V	V	The Wedge-leaf tuckeroo is a small tree which grows to 10 metres tall and can be identified by its glossy green leaves with hair on the underside. This species produces cream-coloured flowers from April to June and has orange fruit. This species is distributed between Brisbane and Curtis Island near Gladstone. The Wedge-leaf tuckeroo has been recorded growing in dry rainforest, scrub, vine forest, riverbanks and open and closed forest. The main threat to the Wedge-leaf tuckeroo is clearing and invasive weeds.	Unlikely: Poor condition of the project area vegetation and lack of vine forest development provides a distinct lack of suitable habitat.
-	<i>Cycas megacarpa</i>	E	E	<i>Cycas megacarpa</i> is a cycad which is endemic to central Queensland. <i>C. megacarpa</i> can be identified by the distinctive green colouration	Unlikely:

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				of its new growth. This cycad occurs from near Kilkivan in the south of its range to north of Rockhampton in the north of its range. <i>C. megacarpa</i> grows in a range of forest types including woodlands, especially on rocky substrates from 40 – 600 m ASL. This species has been recorded growing in the following Regional Ecosystems (REs): RE 12.11.7, RE 11.11.15, RE 12.11.14, RE 12.12.5, RE 12.12.3, RE 12.11.6, RE 12.12.12, RE 12.11.5, 12.12.7 and RE 11.11.4. <i>C. megacarpa</i> is threatened by habitat destruction and both legal and illegal harvesting for private collection or commercial trade.	Poor condition of the project area vegetation provides a distinct lack of suitable habitat. The project area is highly disturbed and is characterised by regrowth <i>Acacia</i> spp. and exotic pasture grasses with limited exotic and native herbaceous plants on a sedimentary/alluvial topography. There is no mature woody vegetation. A full project area meander looking for any individual plants of this species yielded no presence.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
King bluegrass	<i>Dichanthium setosum</i>	V	LC	<i>Dichanthium setosum</i> is commonly associated with heavy basaltic black soils and red-brown loams featuring clay subsoil. It is often found in the presence of various plant species, including <i>Eucalyptus albens</i>, <i>E. melanophloia</i>, <i>E. melliodora</i>, <i>E. viminalis</i>, <i>Myoporum debile</i>, <i>Aristida ramosa</i>, <i>Themeda triandra</i>, and others. This species is known to occur in moderately disturbed areas, such as cleared woodland, grassy roadside remnants, and highly disturbed pasture. The distribution of this species overlaps with several EPBC Act-listed threatened ecological communities, including Semi-evergreen vine thickets, communities dependent on natural groundwater discharge from the Great Artesian Basin, Bluegrass	Unlikely: Bluegrass has not been recorded near the property and suitable habitat is unlikely to occur on-site. The project area is highly disturbed and is characterised by regrowth <i>Acacia</i> spp. and exotic pasture grasses with limited exotic and native herbaceous plants on a sedimentary/alluvial topography. A full project area meander looking for any

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				dominant grasslands, Brigalow dominant and co-dominant woodlands, White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland, and Upland Wetlands of the New England Tablelands and the Monaro Plateau.	individual plants of this species yielded no presence.
Discolorous-leaved ironbark	<i>Eucalyptus decolor</i>	LC	NT	The discolorous-leaved ironbark is endemic to Queensland where it exists in 6 distinct localities. This tree grows up to 30 metres tall and has leaves that are dark above and paler below as a distinguishing feature. The discolorous-leaved ironbark produces white flowers from December to March. This species has been recorded at the Mount Walsh National Park, on the Gongiberoo Range, on the Grevillea Range, near Nagoorin, near	Unlikely: None of the suitable REs that this tree occurs in locally (RE 12.12.4, RE 12.12.11 and RE 12.12.27) occur in the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				Bororen, and the Many Peaks Range. This species grows in open forest or woodlands from 160 – 500 metres above sea level on granite or sandstone soils. This tree is threatened mainly by habitat clearing and logging.	
Black ironbox	<i>Eucalyptus raveretiana</i>	V	LC	Black ironbox occurs between Ayr and Rockhampton in Queensland. This species grows on riverbanks, creekbanks, and along other watercourses. This species has been recorded growing on loam or clay soils usually in remnant vegetation. It has been recorded in Regional Ecosystem RE 11. 3.25 and 11.3.11.	Unlikely: The distribution of the black ironbox does not extend as far south as the property. The project area is highly disturbed and is characterised by regrowth <i>Acacia</i> spp. and exotic pasture grasses with limited exotic and native

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					herbaceous plants on a sedimentary/alluvial topography. There is no mature woody vegetation, and no eucalypt trees are found on the project area.
Southern blushwood	<i>Fontainea venosa</i>	V	V	<i>Fontainea venosa</i> is a tree growing to 18 m tall with separate male and female plants. The southern blushwood has hairy cream - coloured flowers and globular yellow fleshy fruit. This species is known from 5 populations in southeast Queensland where rainfall is approximately 1000 millimetres in Araucarian microphyll vine forest (RE 12.11.12). Within its range it has been recorded growing along creeks in alluvial soil. The fragmented	Unlikely: Distinct lack of suitable habitat at the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				distribution of the southern blushwood is its main threat although invasive weeds and fires are also threats to this species.	
-	<i>Germainia capitata</i>	V	V	<i>Germainia capitata</i> is a tufted perennial grass that grows in clumps to 90 centimetres tall. This grass occurs in Australia, Papua New Guinea and southeast Asia. In Australia, this species occurs in 2 distinct populations. One of these populations is near Agnes Water and 1770 where it occurs within remnant vegetation. The other Australian population is on several islands of the Torres Strait including Prince of Wales Island, Moa Island and Badu Island. This grass grows in sandy soils which may often be seasonally inundated with water in <i>Eucalyptus</i> and <i>Melaleuca</i> woodland. This	Unlikely: This grass has been recorded from localities near the property including near Miriam Vale. No remnant vegetation on sandy soils suitable for this species is present on-site.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				grass is threatened by land clearing, agriculture, and exotic grasses.	
Holly-leaved graptophyllum	<i>Graptophyllum ilicifolium</i>	V	V	A small shrub or tree to 6 m tall, the plant has, as the name suggests, leaves that somewhat resemble a European holly tree. This species produces tubular red flowers in late spring. The holly-leaved graptophyllum is distributed across 4 distinct populations, 3 are located northwest of Mackay and 1 population is located at Miriam Vale on private property in remnant vegetation. This species grows in a variety of ecosystems including vine forest, rocky gullies, along creek margins and on both granite and sedimentary substrates. This species is under threat due to its restricted distribution and from introduced weeds.	Unlikely: Poor condition of the project area vegetation and lack of vine forest development provides a distinct lack of suitable habitat. The project area is highly disturbed and is characterised by regrowth <i>Acacia</i> spp. and exotic pasture grasses with limited exotic and native herbaceous plants on a sedimentary/alluvial

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					topography. There is no mature woody vegetation.
-	<i>Lobelia membranacea</i>	LC	NT	<i>Lobelia membranacea</i> is a small herb which forms a dense matt and produces flowers typical of its genus from November to May. The Native lobelia prefers to grow in moist soils or wetland areas and has been cultivate for use in gardens. This species has been recorded along the east coast from Gibberagee State Forest, New South Wales in the south of its range, north to Bamaga, Queensland. There is also a record of this species from near Riversleigh Station, north of Mount Isa, Queensland.	Unlikely: There are multiple records from nearby Miriam Vale. There are areas on the property that may contain moister soils favoured by this species. Targeted searches of poorly drained areas did not yield this species. The grazing of poorly drained soils has resulted in high levels of weed invasion which reduce the likelihood of this species occurring.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Macadamia nut	<i>Macadamia integrifolia</i>	V	V	<i>Macadamia integrifolia</i> is found in remnant rainforest areas in northern NSW and southeastern QLD. This species demonstrates a preference for partially open habitats, particularly along the edges of rainforests. Its distribution extends to areas with mild, frost-free conditions and relatively high rainfall. While naturally occurring, cultivated specimens have been recorded to bear fruit as far south as Sydney. <i>M. integrifolia</i> is associated with diverse vegetation communities, including complex notophyll mixed forest, extremely tall, closed forest, simple notophyll mixed very tall closed forest, and simple microphyll-notophyll mixed mid-high closed forest, often featuring	Unlikely: There are records of this species near the property and no suitable habitat onsite for this species. The project area is highly disturbed and is characterised by regrowth <i>Acacia</i> spp. and exotic pasture grasses with limited exotic and native herbaceous plants on a sedimentary/alluvial topography. There is no mature woody vegetation. A full project

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				emergent <i>Araucaria</i> and <i>Argyrodendron</i> species.	area meander looking for any individual plants of this species yielded no presence.
Lesser swamp-orchid	<i>Phaius australis</i>	E	E	This terrestrial orchid is readily identified by producing the largest flowers of any Australian orchid which and are aromatic. This species is known to range from South West Rocks in New South Wales north to the Cairns region of Queensland. The most inland record of this species is from near Carnarvon National Park, Queensland. The Lesser swamp-orchid has been recorded growing in coastal wet heathland, sedgeland, swampy grassland and swampy forest habitats. It is often growing near Broad-leaved paperbark (<i>Melaleuca leucadendra</i>) or Swamp mahogany (<i>Eucalyptus</i>	Unlikely: There have been records of <i>P. australis</i> from the Gladstone area. Suitable areas of poorly drained soils have been largely treated with herbicide to remove the overstorey. Weed invasion is high and cattle grazing is likely to remove this large and palatable herb.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				<i>robusta</i>). This species is mainly threatened by the illegal collection by orchid enthusiasts.	
-	<i>Polianthion minutiflorum</i>	V	V	<i>Polianthion minutiflorum</i> is a shrub growing to 1 m high. The young stems are slender with a dense ferruginous indumentum of stellate hairs. The stipules are persistent, minute, linear, 0.1 to 0.4 mm long, and covered in hairs except for the tip. <i>Polianthion minutiflorum</i> is usually found in forest and woodland on sandstone slopes and gullies with skeletal soil, or sometimes deeper sands adjacent to deeply weathered laterite.	Unlikely: There are no records of this species from near the property (nearest Callide Timber Reserve) and suitable habitat/landforms do not occur onsite. The project area is highly disturbed and is characterised by regrowth <i>Acacia</i> spp. and exotic pasture grasses with limited exotic and native herbaceous plants on a sedimentary/alluvial

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					topography. There is no mature woody vegetation. A full project area meander looking for any individual plants of this species yielded no presence.
Scrub turpentine	<i>Rhodamnia rubescens</i>	CR	CE	Grows as a small tree or shrub, often heavily impacted by the myrtle rust pathogen, in rainforest or wet sclerophyll forest, or on the edges of dry and wet sclerophyll forests.	Unlikely: There is a distinct lack of suitable habitat on-site. Only one Atlas of Living Australia (ALA) record occurs northeast of the project, but it is well outside of the species' usual extent of occurrence. The project area is highly disturbed and is characterised by

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
					regrowth Acacia spp. and exotic pasture grasses with limited exotic and native herbaceous plants on a sedimentary/alluvial topography. There is no mature woody vegetation.
Iron malletwood	<i>Rhodamnia spongiosa</i>	LC	CE	Grows as an understory tree in well-developed rain forest on a variety of sites but more frequently encountered in drier rain forest often associated with Kauri Pine.	Unlikely: There is a distinct lack of suitable onsite.
Quassia	<i>Samadera bidwillii</i>	V	V	The Quassia is a small tree that grows to 6 m tall that produces red flowers from November to March and red fruit. The Quassia can be found between Mackay in the north south to Gympie. This species grows near water courses	Unlikely: There are no records of this species from near the property and suitable habitat does not occur onsite.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				to approximately 500 metres above sea level in a variety of vegetation types including lowland rainforest, rainforest margins and open forest and woodlands. Regional ecosystems this species can be found in include RE 8.2.8 and RE 11.10.1. Quassia is under threat from soil erosion, habitat clearing and fires.	
Brush sophora	<i>Sophora fraseri</i>	V	V	The brush sophora is a member of the Fabaceae (pea) family and grows as a shrub between 1 and 2 m tall. It can be identified by its pinnate leaves, yellow flowers and seed pods that resemble a string of beads. The range of this species occurs between Casino north to Miriam Vale. Records indicate that this species grows on slopes between 60 – 600	Unlikely: There is likely no suitable habitat on-site for this species. The existing canopy vegetation is dead, and the typical woody vegetation structure/REs that this species occurs in, is absent.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				metres above sea level on margins between rainforest and eucalypt forest or under canopy gaps in rainforest. Regional Ecosystems known to contain <i>Sophora fraseri</i> are: RE 12.9-10.15, RE 12.11.3 and RE 12.11.5. Threats to brush sophora include invasive weeds and inappropriate fire regimes.	All papilionaceous plants were identified to species level on-site during the full project area meander. Despite the plant not flowering during the survey period (summer), the foliage is highly distinctive, and this is a good way to locate the species in the wild. The full project area meander looking for any individual plants of this species yielded no presence.
Migratory and Marine species (restricted to those species not already assessed previously in this Appendix)					
Black-faced monarch	<i>Monarcha melanopsis</i>	Mi	SL	The black-faced monarch exhibits a widespread distribution across Australia, with	Unlikely:

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				its presence in QLD extending from the Torres Strait islands and Cape York Peninsula to the border of NSW. Its habitat includes rainforest ecosystems such as semi-deciduous vine thickets, complex notophyll vine-forest, tropical (mesophyll) rainforest, subtropical (notophyll) rainforest, mesophyll (broadleaf) thicket/shrubland, warm temperate rainforest, dry (monsoon) rainforest, and occasionally cool temperate rainforest. Additionally, the species is found in selectively logged areas and 20–30 years old regrowth rainforest. It occasionally ventures into nearby open eucalypt forests, especially wet sclerophyll forests in gullies with a dense, shrubby understorey. The bird is also observed in dry	Distinct lack of suitable habitat present within the project area, with no mature or semi-mature woody vegetation.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				sclerophyll forests and woodlands, often with a patchy understorey.	
Cattle egret	<i>Ardea coromanda</i>	Mi	SL	Cattle egrets are typically found in tropical and temperate grasslands, wooded areas, and terrestrial wetlands. While they have been occasionally spotted in arid regions, this is rare. They are often seen in moist, low-lying pastures with tall grass, avoiding areas with shorter grass. They primarily inhabit shallow, open, and freshwater wetlands like meadows and swamps with low emergent vegetation and abundant aquatic plants, occasionally in swamps with taller vegetation.	Unlikely: The cattle egret is commonly encountered in pastoral grasslands and has been recorded in Bororen. However, the project area is of a size and nature that it will unlikely cause any significant impact to this species, which likely only uses nearby areas for transient foraging.
Common sandpiper	<i>Actitis hypoleucos</i>	Mi, Ma	SL	The Common sandpiper is a migratory species to Australia and inhabits coastal and inland	Unlikely:

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				wetlands with varying salinity levels, typically favouring muddy or rocky shores. It can be found in estuaries, deltas, lakes, pools, billabongs, and occasionally near piers and jetties. This species often associates with mangroves and frequents areas with rocky or snag-filled mud. It primarily forages in shallow water and soft mud along wetland edges, occasionally venturing into nearby grassy areas.	The Common sandpiper has been recorded nearby at Lake Awoonga however, there is a lack of suitable habitat onsite with no waterways or water bodies.
Eastern osprey	<i>Pandion haliaetus</i>	Mi, Ma	SL	Eastern ospreys inhabit littoral and coastal environments as well as terrestrial wetlands in both tropical and temperate regions of Australia, including offshore islands. Their primary presence is along coastal areas, with occasional ventures inland along major rivers,	Unlikely: Distinct lack of suitable habitat present within the project area. The bird may be recorded as a

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				particularly in northern Australia. These birds necessitate expansive areas of open fresh, brackish, or saline water for foraging. Their foraging habitats encompass various wetland environments, such as inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs, and large lakes and waterholes. Although they display a preference for coastal cliffs and elevated islands in certain regions, they may also be found on low sandy, muddy, or rocky shores and over coral cays. Eastern ospreys can occasionally be observed over atypical habitats like heath, woodland, or forest when traveling to and from their foraging sites.	flyover, but there is no habitat to support breeding or hunting.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Fork-tailed swift	<i>Apus pacificus</i>	Mi, Ma	SL	The Fork-tailed swift is a non-breeding visitor to all Australian states and territories, with scattered records in the Gulf Country and Cape York Peninsula, and frequent sightings east of the Great Divide from Cooktown to Townsville. They are commonly found west of the Great Divide, between Chinchilla and Hughenden, extending to locations like Richmond, Winton, Longreach, Gowan Range, Maraila National Park, and Dirranbandi, with occasional sightings further west to Windorah and Thargomindah. They are predominantly aerial and can be found over a variety of habitats, including inland plains, cliffs, beaches, islands, urban areas, dry landscapes, and even above rainforests and pine plantations	Unlikely: The fork-tailed swift has been recorded at nearby Miriam Vale and Eurimbula National Park. However, there is no suitable habitat for this bird in the project footprint, but it may occur as a flyover.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
Magpie goose	<i>Anseranas semipalmata</i>	Mi	SL	The magpie goose is widespread in Australia. It is most common in the northern and eastern parts of the continent although is increasingly frequenting the southern mainland. The Magpie goose predominantly inhabits floodplains and wet grasslands. Occasionally, especially among younger birds, individuals may be spotted at considerable distances inland (Menkhorts et al, 2019).	Unlikely: Magpie geese often feed in wet pastoral grasslands. However, the small project area contains no areas suitable, with just dry, elevated exotic pasture present.
Oriental cuckoo	<i>Cuculus optatus</i>	Mi	SL	The oriental cuckoo is a regular migrant to Australia, where it spends the non-breeding season (Sept-May) in coastal regions across northern and eastern Australia as well as offshore islands. The species uses a range of vegetated habitats such as monsoon	Unlikely: Distinct lack of suitable habitat present within the project area. Poor condition of vegetation excludes this species, with no woody vegetation.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				rainforest, wet sclerophyll forest, open woodlands and appears quite often along edges of forests, or ecotones between forest types (Menkhorts et al. 2021).	
Pectoral sandpiper	<i>Calidris melanotos</i>	Mi, Ma	SL	In Australasia, the pectoral sandpiper typically inhabits shallow wetlands, ranging from fresh to saline. They are commonly found in coastal areas, including lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains, and artificial wetlands. While their preference is coastal or near-coastal habitat, they are occasionally spotted further inland. They favour wetlands with open mudflats and low vegetation, such as grass or samphire, and have been recorded in swampy areas	Unlikely: Pectoral sandpipers have not been recorded near the property. There is a lack of suitable habitat onsite (no waterbodies).

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				overgrown with lignum. Their foraging occurs in shallow water or soft mud at wetland edges.	
Rainbow bee-eater	<i>Merops ornatus</i>	M	SLC	The rainbow bee-eater is a common bird of southeastern and northern Queensland, migrating regionally in flocks. They breed colonially in the banks of sandy-clay river formations, or other ledges.	Unlikely: Although common, this species has little foraging or breeding opportunity in the project area given the lack of wooded vegetation or banks/cliffs for nesting.
Rufous fantail	<i>Rhipidura rufifrons</i>	Mi, Ma	SL	The rufous fantail is found in coastal and near-coastal districts of northern and eastern Australia. Its primary foraging occurs in the low to middle strata of forests, occasionally in or below the canopy or on the ground. In northern Australia, they extend their foraging	Unlikely: Distinct lack of suitable habitat present within the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				into mangroves. The species exhibits a preference for moist, dense habitats, encompassing mangroves, rainforests, riparian forests, thickets, and wet eucalypt forests with a dense understorey. During migration, a broader range of habitats is utilised, including dry eucalypt forests and woodlands, as well as Brigalow shrublands.	
Satin flycatcher	<i>Myiagra cyanoleuca</i>	Mi, Ma	SL	The satin flycatcher is widespread but scattered in eastern Queensland, extending from the Torres Strait islands to Musgrave Station in the south, mostly along the coast and occasionally inland. The species prefer heavily vegetated gullies in eucalypt-dominated forests, including wet sclerophyll and dry sclerophyll forests, often near	Unlikely: Distinct lack of suitable habitat present within the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				wetlands or watercourses. They occur in moister, taller forests, with specific associations with eucalypt species such as Brown barrel, Mountain gum, and Messmate. In higher altitudes, they may be found in black sallee woodlands, sometimes associated with tea-trees and tree-ferns, while on passage, they are occasionally seen in riparian River red gums.	
Spectacled monarch	<i>Symposiachrus trivirgatus</i>	Mi, Ma	SL	The spectacled monarch is distributed along the coastal regions of north-eastern and eastern Australia, ranging from Cape York, QLD, to Port Stephens, NSW. The species prefers dense vegetation, primarily in rainforests, with occurrences in moist forest, wet sclerophyll, and occasionally in other	Unlikely: Distinct lack of suitable habitat present within the project area. The spectacled monarch has been recorded nearby at

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				dense vegetation types like mangroves, drier forests, and woodlands.	Bororen and Eurimbula National Park, however.
White-bellied sea-eagle	<i>Haliaeetus leucogaster</i>	Ma	SL	The White-bellied sea-eagle inhabits coastal habitats, especially those near the seashore, as well as terrestrial wetlands in tropical and temperate regions across mainland Australia and offshore islands. These habitats are characterised by the presence of large open water areas, including larger rivers, swamps, lakes, and the sea. The species can be found in coastal lowlands but has been recorded at elevations of up to 1400 meters above sea level in the Northern Tablelands of NSW and up to 800 meters above sea level in Tasmania and South Australia. Their presence is also noted in a variety of terrestrial habitats,	Unlikely: White-bellied sea-eagles have been recorded at Bororen and Eurimbula National Park. Distinct lack of suitable habitat present within the project area.

Common name	Scientific name	EPBC Act	NC Act	Habitat preference	Likelihood of Occurrence
				encompassing coastal dunes, tidal flats, grasslands, heathlands, woodlands, forests (including rainforests), and even urban areas. Additionally, they have been observed in or around freshwater lakes, reservoirs, billabongs, saltmarshes, sewage ponds, as well as near the sea, including bays, inlets, beaches, reefs, lagoons, estuaries, and mangroves.	
White-necked petrel	<i>Pterodroma cervicalis</i>	M	SLC	A pelagic species that does not range far inland, nor utilise inland areas for breeding.	Unlikely: Distinct lack of suitable habitat.
Southern giant-petrel	<i>Macronectes giganteus</i>	E, M, Mi	E	A pelagic species that does not range far inland, nor utilise inland areas for breeding.	Unlikely: Distinct lack of suitable habitat.

¹ **EPBC Act** Conservation Status: CE=Critically Endangered, E=Endangered, V=Vulnerable, Mi=Migratory, M=Marine.

² **NC Act** Conservation Status: CE=Critically Endangered, E=Endangered, V=Vulnerable, NT=Near Threatened, LC=Least Concern, SLC=Special Least Concern

³ **Habitat Preference** information is gathered from the SPRAT-profile of each species (DE 2024), along with the corresponding Conservation Advice if available, unless explicitly mentioned otherwise.

⁴ All records of occurrences are sourced from the Atlas of Living Australia (ALA 2024) for fauna and the Australian Virtual Herbarium (AVH 2024) for flora, unless explicitly mentioned otherwise