Appendix B

CVs

Peter Moonie
Ecologist/Environmental Scientist

Peter is a flora ecologist with over 22 years' professional experience in the field of ecology and natural resource management. He has extensive technical knowledge and practical skills in vegetation mapping, ecological investigations, impact assessments, environmental approvals and environmental monitoring for a range of projects in Queensland, including several major renewable energy projects. Peter also possesses high level writing skills and has demonstrated an ability to consistently deliver projects on time and on budget. Peter is a suitably qualified person to undertake flora surveys in accordance with Queensland's protected plants framework and endorsed by the Department of the Environment and Energy (now the Department of Agriculture, Water and the Environment) to undertake flora surveys for EPBC Act approved projects in the oil and gas sector.

Skills

- Flora surveys (including threatened flora, weeds and terrestrial and aquatic flora inventories)
- Vegetation community mapping, including regional ecosystem verification, preparation of property maps of assessable vegetation (PMAVs) and Threatened Ecological Community assessments
- Development of environmental mitigation measures and environmental management plans for a range of development types
- Technical ecological assessments for wetlands, marine plants, coastal and riparian areas
- BioCondition assessments and offset planning
- Local, State and Federal environmental legislative reviews, including identification of MNES, MSES and MLES
- Preparation of technical reports
- Extensive experience negotiating with local, state and commonwealth regulatory bodies
- Presentations to regulators and technical industry forums

Qualifications and Accreditations

Bachelor of Science (Ecology), Griffith University, 1989; Bachelor of Applied Science, QUT; Grad Dip (Teach)

Senior First Aid Certificate

General Safety Induction (Construction Industry)

Professional Experience

Red Ash Consulting Pty Ltd – *Director and Principal Environmental Scientist / Ecologist, May 2019 to current*

- 3D Environmental – Pre-clearance flora surveys for proposed pumped hydro project in the North Burnett Region.
- Private clients (solar farms and wind farms) – Baseline ecological assessments and EPBC referrals for various renewable resource projects in Queensland.

- Arrow – Subconsultant for 3D Environmental undertaking BioCondition assessments at numerous sites in the Surat Basin.
- BHP Mitsuibishi Alliance – Sub-consultant for Earthtrade undertaking BioCondition monitoring in the Bowen Basin.
- Townsville Enterprise Limited – Subconsultant for GHD undertaking baseline ecological surveys for a proposed new weir on the Burdekin River, within the Charters Towers Local Government Area, approximately 26 kilometres north of Charters Towers (known as Big Rocks Weir).
- Transport and Main Roads – BioCondition surveys. Supervision and monitoring of the plant translocation program for the Cooroy to Curra by-pass Section D.
- GHD – Subconsultant to GHD undertaking vegetation and flora surveys for a proposed overhead electricity transmission line extending from Mount Isa to a connection point at Woodstock, south of Townsville. Assessments against significant impact assessment criteria were also undertaken.
- Transport and Main Roads – Coordination and implementation of ecological surveys for the Tiaro bypass project. Assessments against significant impact assessment criteria and identification of legislative approvals.
- TEM – Subconsultant for GHD undertaking on-ground audits of projects under the Carbon Farming Initiative (HIR) methodology.
- Bundaberg Regional Council – Development of an environmental approvals checklist to be used by staff. MNES and MSES investigations and approvals advice provided for numerous projects.
- Fraser Coast Regional Council (2019) – vegetation monitoring and BioCondition assessments for a sewage treatment plant; protected plant surveys in accordance with *Nature Conservation Act 1992* requirements.
- Burnett Mary Regional Group – Environmental approvals advice and preparation of rehabilitation plans for various projects in the Burnett Mary region.
- Fraser Island (Happy Valley) weed management survey.

GHD Pty Ltd – *Senior Ecologist / Environmental Scientist, January 2008 to May 2019*

- Arrow and Origin - Pre-clearance threatened ecological communities, threatened flora and weed surveys for the coal seam gas industry in south-west and central Queensland.
- Arrow – Baseline ecology surveys. Decommissioning and rehabilitation planning for closed sites.
- Seqwater – Vegetation and weed surveys for the raising of Eden Bann Weir and construction of a new weir at Rookwood on the Fitzroy River, Central Queensland.
- Solar farm (private client) - Ecological and impact assessments for a major proposed solar farm in the Rockhampton Region of Queensland. Preparation of supporting documentation for Commonwealth and State approvals.
- Department of Defence – Ecological surveys and constraints assessment of proposed training areas in Central Queensland.
- Seqwater – Baseline ecological surveys for proposed Burdekin Falls Dam Raising Project.
- Seqwater – Advanced offset assessments and threatened flora surveys at various land holdings within South-east Queensland. Data was used to identify and register advanced offset opportunities under the Queensland Environmental Offset policy.
- Bundaberg Regional Council – riparian and aquatic flora surveys, water quality monitoring and habitat assessments as part of the Bundaberg Regional Council REMP program.
- Fraser Coast Regional Council – Key projects include:

  - High level assessment of biodiversity values and environmental constraints associated with various options considered for the proposed Burrum River bridge
  - Protected plant surveys for various road development projects
  - Assessment of ecological matters of various development applications
- Ecological assessments for TMR for road upgrade and maintenance projects within the Wide Bay-Burnett Region including flora surveys, fauna habitat assessments, threatened plant translocations, revegetation monitoring, impact management plans, species management programs, significant impact assessments and environmental approvals assessments.

Professional papers

- Dixon, B. & Moonie, P. (2003). Ecological Restoration of a Cliff Face in Kings Park and Botanic Gardens, Perth, Western Australia. Botanic Gardens Conservation News, Vol. 4, No. 1. Botanic Garden Conservation International (BGCI).
- Meney, K., Dixon, B., Moonie, P. (2002). Control of bridal creeper Asparagus asparagoides on Kings Park Scarp and limiting factors on its growth and spread. 13th Australian Weeds Conference: weeds "threats now and forever?", Sheraton Perth Hotel, Perth, Western Australia, 8-13 September 2002: papers and proceedings: 113-116.
- Dixon, B. & Moonie, P. (2003). Erosion Control on Kings Park Scarp. Western Wildlife. Volume 5, number 4.

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Curriculum Vitae — Greg Ford

Professional Profile

Greg is a terrestrial ecologist with more than 30 years' experience gained throughout eastern and northern Australia. He has worked in government, community/NGO and private sectors on a diverse range of projects in the fields of: rangeland management; wetland classification; bioregional fauna survey; bat ecology and management; woodland bird conservation; environmental impact assessment; NRM integrated planning; and threatened species recovery planning.

Greg is a nationally recognised expert on Australian bats, with highly specialised skills in echolocation call analysis for microbat identification. He has an extensive knowledge of bat ecology, bat survey design and analysis, and bat roost management.

Greg's broader skill set includes:

- Vertebrate fauna survey and inventory;
- Flora and vegetation survey;
- Ecological impact assessment;
- Ecological condition benchmarking and monitoring (e.g. BioCondition);
- Vegetation management planning;
- Threatened species impact assessment and planning;
- Ecological constraints assessment;
- Expert review and technical editing; and
- Science communication, rural extension and community engagement.

Professional Affiliations

Life Member, Australasian Bat Society (past President and Vice-president)

Member, Ecological Society of Australia

Member Birdlife Australia

Tertiary Qualifications

Bachelor of Applied Science (Biology); 1987; University of Southern Qld.

Graduate Diploma in Resource Management; 1989; University of Canberra.

Work-place Qualifications

S11 surface mining induction, 2019

CSG Industry Safety Induction, 2016

Operate & Maintain a 4WD Vehicle, 2016

Career profile

Jan 2010-present
Balance! Environmental – Director & Principal Ecologist

Jul 2008-Dec 2009
Conics/RPS (formerly Natural Solutions Pty Ltd) – senior consultant ecologist

Apr 2004-Jun 2008
Qld Murray-Darling Committee, Toowoomba – regional ecologist, NRM planning & extension

Jun 2001-Mar 2004
North East Downs Landcare Group Inc., Oakey – biodiversity survey, extension and planning

1998 & Jul 1999-May2001
independent consultant ecologist and post-graduate research

Apr 1994-Nov 1997; Jan-Jun 1999
Qld Environmental Protection Agency – wetlands survey & inventory; bioregional fauna survey

Aug 1992-Apr 1994
Qld Dept. Primary Industries, Charters Towers – pasture agronomy & grazing land management

Jun 1989-Jul 1992
NT Dept. Primary Industry and Fisheries, Alice Springs & Tennant Creek – rangeland ecology research & monitoring

Selected Project Experience

Bat echolocation call interpretation

Greg is one of Australia's foremost experts on bat call interpretation and analysis, with an extensive knowledge of the nation's microbat species, their ecology and echolocation calls.

He processes bat-call survey data from more than 100 separate projects per year, for a wide variety of clients working across the energy, resources, urban & infrastructure development sectors. He also works closely with clients on acoustic survey design and planning.

Greg's call-analysis expertise encompasses all Australian bat species, with a focus on those of the eastern States and the Northern Territory.

Bat monitoring & management

NSW BAM process registered threatened bat species expert - Eastern Cave Bat *Vespadelus troughtoni* (2021-present)

Southern Downs Regional Flying-fox Management Plan and supervision of roost management actions (Southern Downs Regional Council, 2019-2022)

Threatened bat species monitoring, Gold Coast Airport (Ecosure; 2010-2022)
Bat monitoring for compliance with approvals granted under NSW environmental legislation.

Banana Shire Flying-fox Management Plan (Banana Shire Council, 2016-17)

Survey and exclusion planning for bats in culverts – Bruce Highway Upgrade Project (Dept. Transport & Main Roads, 2016)

Emu Swamp Dam Threatened Bat Habitat Assessment (Jacobs for Southern Downs Regional Council; 2015) – EPBC Act compliance risk assessment Large-eared Pied Bat (*Chalinolobus dwyeri*)

Microbat roost management for residential and commercial buildings (Rio Tinto Alcan, Weipa; 2012)
Roost investigation and development of species management plans for eviction and alternative roost site establishment.

Energy & resources projects

Shell-QGC, Bowen & Surat Basins, targeted threatened species surveys – bat specialist (AECOM, 2020)

Ensham Resources, Bowen Basin, targeted threatened species surveys – bat specialist (AECOM, 2019)

Origin Energy, Surat Basin, targeted threatened species surveys – bat specialist (Eco Logical Australia, 2018)

Origin Energy, pipeline approval compliance monitoring – threatened bat species (E2M Consulting, 2018-2019)

Lakeland Wind Farm, targeted threatened species surveys plus bat management & monitoring plan (Eco Logical Australia; 2018-2019)

Arrow Energy, Surat Basin, baseline fauna surveys – bat specialist (Ecosmart Ecology, 2016-17)

Mt Emerald Wind Farm (RPS; 2011-2013)
Advise and collaborate on threatened bat species survey design & monitoring protocols; analyse & interpret echolocation data.

Coopers Gap Wind Farm (AECOM, 2011)
Expert review of MNES pertaining to bat species for inclusion in EPBC Referral; technical specialist advice on survey requirements and sampling design for bats.

Other bat specialist projects

Cape York Bat Blitz expedition – Team Leader for extensive microbat survey and collection of echolocation reference call data (Australasian Bat Society, 2019)

Bat-call detection and analysis training (collaboration with Titley Scientific, 2019-2020) – designed and presented a series of workshops on bat acoustics, detection technology, analysis software and call-identification in partnership with Australia's premier bat-detector supplier

[Choose an option...]

James Wyatt BSc (HONS)

Aquatic Ecologist

Location

Brisbane, Queensland

Experience

12 years

Qualifications/Accreditations

- BSc (Hons), 2004
- BSc, 2001-2003
- AUSRIVAS Accredited (modules 1-5)

Key technical skills

- Aquatic ecological assessment and field surveying
- Threatened species habitat assessments and targeted surveys
- Waterway barrier works assessment
- Environmental impact and risk assessment
- Receiving environment monitoring programs

Relevant experience summary

James is an aquatic ecologist with 12 years' experience within aquatic ecosystems, including macroinvertebrate monitoring and identification to species level, fish surveys, fish ecology and movement patterns, turtle ecology and movement surveys, riverine bathymetry and hydrology, extensive marine and freshwater water and sediment quality monitoring, as well as targeted threatened species surveys. Prior to joining GHD James worked in the top end of the Northern Territory and appreciates the dynamics, conditions, and requirements of remote aquatic field work in northern Australia. James is highly skilled and experienced in the technical aspects of field work and understands the importance of collecting valuable and accurate data combined with his statistical knowledge and application to provide meaningful outcomes and high-level technical reports for a range of clients. James has worked in the public, research, mining and consulting sectors on a variety of projects including monitoring programs, compliance monitoring, permitting, environmental impact assessments and species management programs.

Project experience –

Yabba Creek No.6 Aquatic Ecology Assessment

Team member |

Department of Transport and Main Roads | Imbil, Queensland | | 2021

The project involved an aquatic fauna survey, including targeting surveys for threatened aquatic species for bridge maintenance activities.

James was a team member who undertook all aquatic surveys, which included targeted threatened species platypus, Mary River cod, Mary River turtle and Australian lungfish. James then wrote the report which included the likelihood of occurrence and assessment of habitat and breeding areas.

Lake Manchester Release – Significant Impact Assessment

Team member |

Seqwater | Lake Manchester, Queensland | | 2021

The project was to deliver a Significant Impact Assessment of water releases from Lake Manchester due to upgrades in infrastructure for Contingency Water Resources Planning.

James undertook a desktop assessment of the area and used details of a field assessment to conduct a Significant Impact Assessment of the implications of Dam upgrades to Cabbage Tree Creek and the threatened species platypus and Australian lungfish.

Mt St John Trade Waste Lagoons PFAS Contamination Assessment and Remediation

Team member |

Townsville City Council | Townsville, Queensland | | 2021

The project was to assist Townsville City Council in quantifying the extent of PFAS contamination from previous trade waste lagoons.

James was involved in the field survey which required surveys for fish and invertebrates, as well as water and sediment quality sampling. James then collected all samples and processed them before sending to the laboratory for analysis.

Aquatic surveys for Lower Fitzroy Water Joint Venture

Team member |

Lower Fitzroy Water Joint Venture | Rockhampton, Queensland | | 2008-2009

The project involved an aquatic fauna survey as part of an initial assessment of flora, fauna and aquatic species in several sections of the Fitzroy River for potential sites for upgrades and raising of several dams including Eden Bann.

James was a senior team member who undertook all aquatic surveys, James then wrote the report of all aquatic fauna surveyed which led into initial referrals to government and the EIS process.

Warringah Shire catchment condition

Team member |

Warringah Shire Council | Warringah, New South Wales | | 2008-2010

The project conducted surveys each autumn and spring for water quality and macroinvertebrate communities throughout many rivers and creeks within the Warringah Council catchment area.

James was a team member who completed all field studies, identified the macroinvertebrate samples, completed all statistical analyses which included AUSRIVAS models, and wrote the technical report for the project.

Melbourne Water North-South (Sugarloaf) Pipeline

Team member |

Melbourne Water | Melbourne, Victoria | | 2008-2010

The project was to deliver a pipeline from the Goulbourn River to Sugarloaf Reservoir ensuring water security for Melbourne's demands.

James was a team member contributing to the baseline surveys of macroinvertebrates and fish communities for all waterway crossings of a pipeline. James also wrote and conducted threatened species management plans for fish species (*Macquaria australasica* and *Maccollochella macquariensis*) and well as other invertebrate species.

Anglesea Borefield Assessment

Team member |

Barwon Water | Anglesea, Victoria | | 2008-2010

Baseline surveys of flora, fauna, aquatic fauna and habitat, hydrogeological modelling of areas potentially effected by groundwater extraction within the Anglesea Borefield Area with information used as part of an environmental impact assessment. James surveyed the catchment for surface water and aquatic habitats, surveyed the macroinvertebrate, crayfish and fish populations and wrote technical reports. James designed ongoing monitoring protocols and reported the implications of groundwater extraction for the environmental impact assessment.

Baseline assessment for Queenscliff Harbour Upgrade

Team member |

Sinclair Brook | Queenscliff, Victoria | | 2009

Baseline assessment of marine sediment and water quality in Queenscliff Harbour as part of the pre-construction phase of works for the harbour upgrade. James collected marine sediment and water quality samples, completed all data entry and analyses and contributed to the technical report.

Lauren Pratt BMarSt (Hons)

Senior Aquatic Ecologist

Location

Brisbane, Queensland

Experience

13 years

Qualifications/Accreditations

– Bachelor of Marine Studies (Marine Biology and Ecology) Honours (2006)
– AusRivAS accredited (2018)

Key technical skills

– Aquatic ecological assessment and field surveying
– Waterway barrier works assessment
– Environmental impact and risk assessment
– Receiving environment monitoring programs

Relevant experience summary

Lauren is an ecologist with 13 years' experience in aquatic ecosystem monitoring, including water and sediment quality, acid sulfate soil, macroinvertebrate, fish, turtle and stygofauna surveys. Lauren typically conducts this monitoring for baseline studies including linear infrastructure, receiving environment monitoring programs and environmental compliance. Lauren is highly experienced in macroinvertebrate identification and data quality assurance. Lauren is adept in research, interpreting data and providing easily understood technical reports for clients. Her project management experience includes working with local and state governments as well as private businesses including waste management, developments and mining companies.

Project experience

Annual Environmental Monitoring Program

Gladstone Area Water Board | Gladstone Region, QLD.
The Gladstone Area Water Board (GAWB) commissioned GHD to conduct the Annual Environmental Monitoring Program (AEMP) for Awoonga Dam. Surveys include habitat assessments, water quality and sediment quality monitoring and fish surveys. This data is then presented in the AEMP report where it is compared with historical data. GHD also supports GAWB in delivering to their annual reporting requirements. Lauren coordinates subconsultants, completes data entry and analysis and reporting for this project.

Urannah Water Scheme EIS

Bowen River Utilities | Mackay Region, QLD.
GHD was engaged by Bowen River Utilities to undertake environmental investigations of the Urannah Dam and pipeline study area. The project footprint, wider study area and desktop survey extent were assessed for ecological values including protected areas, waterways providing for fish passage, aquatic habitat and condition, macrophytes and riparian vegetation, aquatic fauna and conservation significant species. Several baseline reports were written with subsequent EIS chapters currently in development. Lauren undertook the fieldwork, data entry and analysis and reporting for this project.

Bruce Highway Upgrade – Caloundra Road to Sunshine Motorway: Aquatic Ecology and Fish Passage Assessment

Fulton Hogan | Sunshine Coast Region, QLD.
This project involved an assessment of aquatic ecology and fish passage of watercourses crossed by the proposed Bruce Highway Upgrade to support approval processes. The assessment considered aquatic matters of national, state and local environmental significance, and included both desktop and field survey assessment methods. The requirement to providing fish passage at each site was based on specialist assessment of likelihood of fish migration by native fish species under a range of flow conditions. Lauren undertook the fieldwork for this project.

Big Rocks Weir Business Case

Townsville Enterprise Limited | Charters Towers Region, QLD

Townsville Enterprise Limited required an pre-wet and post-wet ecological assessment of the Burdekin River where Big Rocks Weir and associated saddle dams are proposed to be constructed. These surveys included habitat assessment, in-situ water quality and surveys for fish, turtle and platypus. Lauren led the aquatic component of the fieldtrips, completed data entry and analysis and reporting. Reporting involved desktop reviews, interpretation of field results, impact assessment and mitigation measures.

Collaroy Culverts

Isaac Regional Council | Isaac Region, QLD.

Assessment of Whelan and Collaroy Creeks to determine if suitable habitat for platypus and threatened species white-throated snapping turtle and Fitzroy River turtle existed within the footprint of three proposed culverts. This survey included habitat assessment and surveys for fish, turtle and platypus. Lauren was the fieldtrip leader, completed data entry and analysis and undertook reporting for this project.

Pine Creek and Givelda 4WD Evacuation Route

Red Ash Consulting | Wide Bay-Burnett Region, QLD.

Assessment of Cherry Creek to determine if suitable habitat for platypus and threatened species white-throated snapping turtle existed within the footprint of a proposed culvert. This survey included habitat assessment and surveys for fish, turtle and platypus. Lauren was the fieldtrip leader, completed data entry and analysis and undertook reporting for this project.

Coondoo Creek Fauna Salvage

TMR | Wide Bay-Burnett Region, QLD.

This project involved the construction of a new bridge at Coondoo Creek near Tin Can Bay, QLD. Coondoo Creek has high environmental value with threatened species known to occur in the area. To mitigate the risk of harm to fish and turtles during construction, a fauna management plan was written and pre-clearance surveys and fauna salvage during operations carried out. Lauren undertook the fish and turtle salvage, data entry and analysis and reporting for this project.

Environmental Assessment and Approvals

Australian Agricultural Company | Julia Creek, Gulf Country Region, QLD

GHD was commissioned to undertake ecological assessments to inform the environmental approvals to support AACo's proposed Gulf Irrigation Project: the conversion of 1,600 ha of grazing land from grazing to irrigated cropping using an existing water allocation. Field surveys included habitat assessment, water quality, fish and turtle surveys. Lauren led the aquatic component of the fieldtrips, completed data entry and analysis and reporting.

Chinchilla Beneficial Use Agreement: Aquatic Ecology and Water Quality Monitoring

SunWater | Western Downs Region, QLD.

Receiving environment monitoring surveys of aquatic ecology (aquatic habitat, aquatic plants, macroinvertebrates and freshwater fish), and water quality (in situ and analytical water quality), was required for the Chinchilla Weir Beneficial Use Water Supply Scheme. The surveys included assessing baseline patterns of aquatic ecology and biodiversity in the Condamine River, and assessing potential impacts from the discharge of treated coal seam gas water for the Beneficial Use Scheme. Lauren was the project manager, fieldtrip leader, led laboratory analysis of macroinvertebrates, completed data entry and analysis and undertook reporting for this project.

Environmental Impact Statement, Aquatic Ecology Assessment

Walton Coal | Central Highlands Region, QLD.

This project involved an assessment of aquatic ecology for baseline monitoring of a mining lease. Aquatic ecology (aquatic habitat, aquatic plants, macroinvertebrates, stygofauna and freshwater fish), and water quality (in situ and analytical water quality) were surveyed. The assessment considered aquatic matters of national, state and local environmental significance, and included both desktop and field survey assessment methods. Lauren was the fieldtrip leader and completed data analysis for this project.

Glebe Beneficial Use Scheme Monitoring: Water Quality and Aquatic Ecology Monitoring

SunWater | Western Downs Region, QLD.

Monitoring was required for the Glebe Beneficial Use Scheme program. Monitoring was consistent with the Beneficial Use Agreement (BUA) and the Receiving Environment Monitoring Program (REMP) with regular surveys of water quality, sediment quality and aquatic ecology. Succinct technical report were completed, summarising the conditions at each site and results against relevant guidelines. Lauren was the project manager, fieldtrip leader, led laboratory analysis of macroinvertebrates, data summarisation and reporting for this project.

Shannon Blatchford BSc

Senior Ecologist

Location

Brisbane, Qld, Australia

Experience

14 years

Qualifications/Accreditations

– Bachelor of Science in Ecology and Conservation Biology 2014 -2016
– RRTO Mine Induction Standard 11

Relevant experience summary

Shannon is a senior ecologist with 14 years' experience in environmental assessments and monitoring. Areas of special expertise include the survey and monitoring of terrestrial fauna including birds, mammals, reptiles and amphibians. Shannon also has experience in vegetation assessments, including protected plants flora surveys, marine plant surveys and rehabilitation monitoring. Shannon has demonstrated a capacity to undertake fauna surveys in different regions, having successfully undertaken fauna surveys for infrastructure projects in parts of Northern Territory, Queensland and New South Wales. She has experience in impact assessments, mitigation and threatened species management and monitoring. She has project experience having undertaken ecological assessments to support Environmental Impact Assessments and threatened species management plans across a range of industries including defence, local government, mining, oil and gas, wind, solar, water, telecommunications, road and rail.

Collinsville Coal Terrestrial Ecology Monitoring

Lead Fauna Ecologist |
Glencore | Collinsville, Qld, Australia | January 2019

Shannon was the lead fauna ecologist on the Collinsville Coal Terrestrial Ecology Monitoring project. Rapid baseline surveys, habitat assessments and small mammal trapping surveys were undertaken at multiple sites within the Mining Lease. The assessment was undertaken to assess temporal changed in the ecological value of rehabilitation land to determine the success of rehabilitation objectives in providing habitat for flora and fauna, and to ascertain the occurrence of conservation significant species.

Rehabilitation Monitoring and Ecological Assessments

Lead Ecologist |
Arrow Energy | Moranbah & Dalby, Qld, Australia | December 2017 – March 2018

Ecological surveys of rehabilitation analogue sites were undertaken to assist in the development of completion criteria. The assessment included evaluating current rehabilitation state, and floristic composition and structure. Ecological assessments were undertaken to assess temporal changed in the ecological value of rehabilitation land to determine the success of rehabilitation objectives in providing habitat for flora and fauna, and to ascertain the occurrence of conservation significant species.

Collinsville Coal REMP

Ecologist |
Glencore | Collinsville, Qld, Australia | May 2017

Shannon collected water and sediment samples for heavy metals analysis in association at sites within and adjacent to the Collinsville Coal Mine. Water quality sample results were assessed against licence conditions and guideline values and were also used to determine if there was any links to changes in the macroinvertebrate community attributed to mine affected water releases.

Big Rocks Weir Business Case

Lead Fauna Ecologist |
Townsville Enterprise Limited (TEL) | Charters Towers, Qld, Australia | December 2019

Shannon was the lead fauna ecologist on the Big Rocks Weir Business Case for TEL. Rapid baseline ecology surveys and habitat assessments were undertaken within the impact area. Shannon prepared technical ecological assessment reports to support the environmental planning process.

Stuart Rail Yard Ecological Survey

Fauna Ecologist |
Aurizon | Townsville, Qld, Australia | March 2020

Shannon undertook ecological baseline surveys, and habitat assessments and targeted fauna surveys for the southern black-throated finch for the proposed subdivision and industrial development on the Stuart Rail Yard site in Townsville. The anticipated nature, magnitude, duration, and potential impacts on conservation significant species were assessed, and recommendations for potential mitigation measures were provided to avoid or minimise the project impacts during construction and operation phase.

Talisman Sabre NDTA 2019 Environmental Baseline Assessment

Lead Fauna Ecologist |
Department of Defence | Proserpine, Qld, Australia | October 2018

Shannon was the lead fauna ecologist on the Talisman Sabre NDTA 2019 project. Rapid baseline ecology surveys were undertaken on multiple properties within the Whitsundays Region. These surveys involved targeted searches for the northern quoll, Proserpine rock-wallaby, koala, northern greater glider, squatter pigeon, eastern curlew, and beach-stone curlew. Shannon prepared the technical ecological assessment reports to support the environmental planning process.

ASMTI Environmental Baseline Assessment

Lead Fauna Ecologist |
Department of Defence | Shoalwater & Greenvale, Qld, Australia | February 2019 – December 2019

Shannon was the lead fauna ecologist on the ASMTI Project for Defence. Rapid baseline ecology surveys and habitat assessments were undertaken on multiple properties near Shoalwater and Greenvale. These surveys involved targeted searches for terrestrial and coastal conservation significant fauna species. Shannon prepared the technical ecological assessment reports and land management reports.

Wangetti Trail Environmental Assessment

Fauna Ecologist |
Department of Innovation, Tourism Industry Development, and the Commonwealth Games | Wangetti, Qld, Australia | April 2019

Shannon undertook ecological baseline surveys and targeted fauna surveys for conservation significant species, such as the cassowary, Macleay's fig parrot, red goshawk, northern and spotted-tail quoll, Lumholtz tree kangaroo and several stream-dwelling frogs in the Wet Tropics World Heritage Area in far north Queensland.

Burdekin Falls Dam Raising Ecological Studies – Phase 1

Lead Fauna Ecologist | SunWater | Burdekin Dam, Qld, Australia | November 2018

Shannon was the lead fauna ecologist on the Burdekin Falls Dam project. Rapid baseline ecology surveys, habitat assessments and targeted terrestrial fauna surveys for conservation significant species were undertaken during the pre-wet season phase of the project.

South Burnett Coal Mine EIS

Fauna Ecologist |
MRV Tarong Basin Coal | Kingaroy, Qld, Australia | October 2017

Shannon undertook ecological baseline surveys for the EIS for a proposed new coal mine and transport corridor between the South Burnett coal mine at Kingaroy and the existing south coast rail line at Miva. Shannon was also involved in the preparation of the technical ecology reporting to support the EIS.

Granite Mine Ecological Assessment

Fauna Ecologist |
Royal Duke Holdings Pty Ltd | Cherrabah, Qld, Australia | October 2018

Shannon has undertaken ecological baseline surveys and targeted fauna surveys for conservation significant species, including the spotted-tailed quoll, koala, greater glider, hastings river mouse, powerful owl and border thick-tailed gecko. Shannon was involved in the preparation of the EAR.

Aldoga Solar Farm Ecological Impact Assessment

Fauna Ecologist | Acciona Energy | Gladstone, Qld, Australia | April 2018

Shannon undertook ecological baseline surveys and targeted fauna surveys for conservation significant species, including the koala, greater glider, powerful owl, squatter pigeon and tusked frog. Shannon was involved in the preparation of the Ecological Assessment Report and EPBC referral.

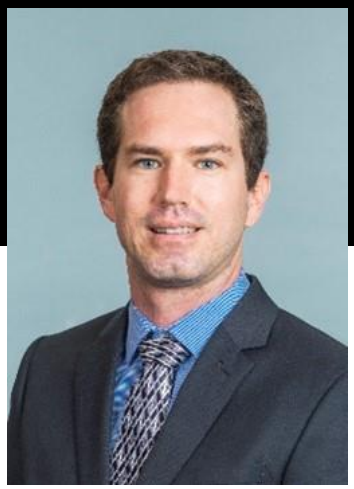
Davenport Downs Bilby Monitoring

Fauna Ecologist | APA Group | Davenport Downs, Qld, Australia | November 2017

Shannon was involved in a long-term monitoring program that included targeted surveys of the greater bilby for a gas compressor station at Davenport Downs, western Queensland.

Tim Moeser

Environmental Scientist



Location

Brisbane, Qld, Australia

Experience

6 years

Qualifications/Accreditations

– Central Queensland University BSc Aquatic Resource Management 2007

Key technical skills

– OHS White Card
– Remote Pilots Licence (Drone)
– Dive Master Certification

Relevant experience summary

Tim is an Environmental Scientist with GHD based in Southeast Queensland. His background includes aquatic ecology, bushland and river restoration, water quality monitoring and on-site environmental management. Tim has worked in several regions including North Queensland, Central Queensland, and Western Australia.

Noah Creek Bridge Project

Environmental Scientist |
Douglas Shire Council | Cape Tribulation, Qld, Australia |
Tim was involved with the Noah Creek Bridge Project, compiling an Environmental Management Plan and assisting with the Ecological Assessment for the proposed project. These were used in a referral to the commonwealth under the Environmental Protection and Biodiversity Conservation Act 1999 to determine if the project would have a significant impact on World Heritage Values.

Proposed hydropower project in the Burdekin River.

Environmental Scientist |
Stanwell Corporation Limited | Burdekin, Qld, Australia |
Tim conducted an aquatic assessment for a proposed hydropower project in the Burdekin River. Tim carried out aquatic habitat quality and condition assessments, verified mapped waterways in the study area and undertook waterway barrier works assessments at representative locations for the project.

Compliance Monitoring

Environmental Scientist |
Tablelands Regional Council | Tablelands |
Tim undertook compliance monitoring at landfill sites and sewage treatment plants in the Tablelands district. Tim carried out field sampling for soil, surface water, groundwater, and leachate at each site to ensure compliance under the Council's environmental authority and Environmental Impact Monitoring Program.

The Point Walter foreshore restoration project

Environmental Technician |
Melville Shire Council | City of Melville, Perth, WA, Australia|
Tim was involved with the Point Walter foreshore restoration project. The main objective of the project was to improve beach erosion whilst improving public use of the area. These objectives were achieved through erosion control gabion cages and geo-fabric, weed removal, revegetation with native salt tolerant species and the installation timber decking for public use.

T 61 7 55571005 | **M** 61 478125038 | **E** tim.moeser@ghd.com

Green Sawfish Data Collection

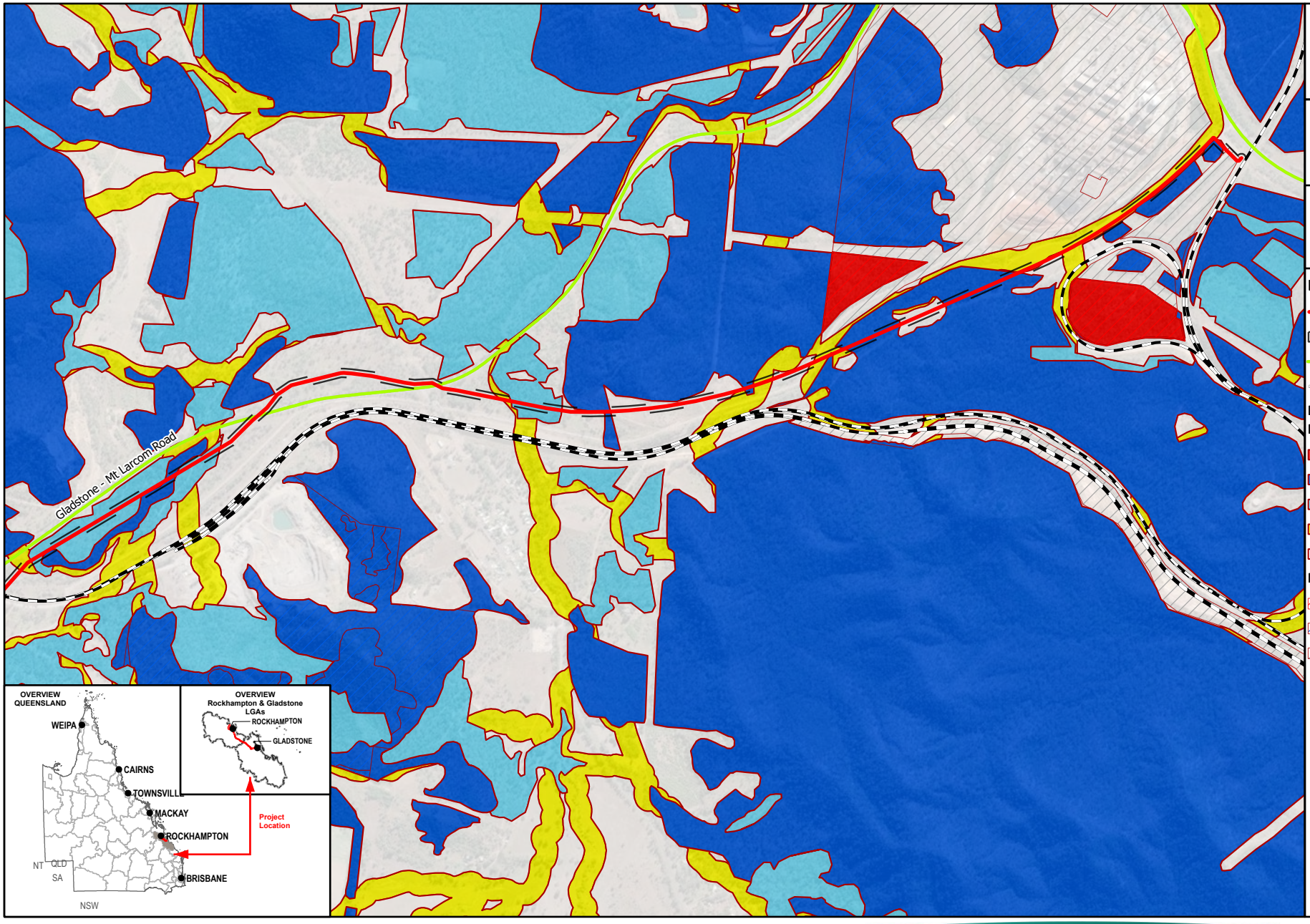
Marine Scientist |
Department of Agriculture and Fisheries | Weipa, Qld, Australia |
Tim was a member of the sawfish research team travelling up to Weipa to capture and collect data on the green sawfish (Pristis zijsron). The data was used in a report to determine population distribution and a national recovery plan for the critically endangered species.

Turtle Research

Marine Scientist |
Cape York Sustainable Futures | Cape York, Qld, Australia |
Tim was part of the turtle research team, monitoring the nesting of Flatback (Natator depressus) and Olive Ridley (Lepidochelys olivacea) turtles. This incorporated working with Traditional Owners and Wik and Kugu Rangers in remote locations south of Aurukun. The data was used in an action plan for the culling of feral pigs in Cape York.

Appendix C

Mapped regulated vegetation and REs intersected by the pipeline alignment



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways

Regulated Vegetation Management Map

- Category A
- Category B
- Category C
- Category R
- Category X

Property Map of Assessable Vegetation

- Category A
- Category B
- Category X

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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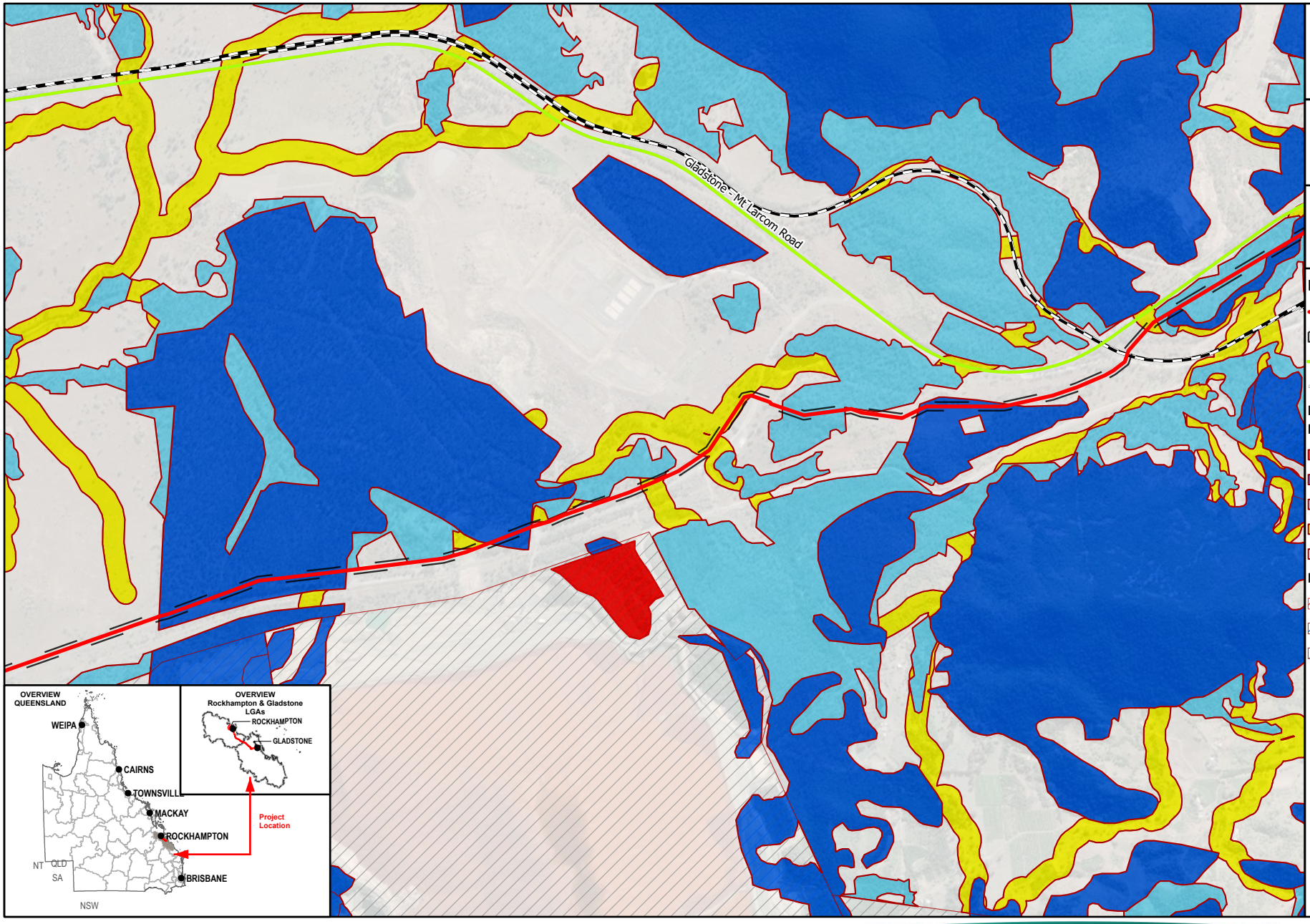
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-1a Mapped Regulated Vegetation and REs Intersected by the GSDA Pipeline Alignment

000-G-MAP-2442 Version:1 Date:8/07/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways

Regulated Vegetation Management Map

- Category A
- Category B
- Category C
- Category R
- Category X

Property Map of Assessable Vegetation

- Category A
- Category B
- Category X

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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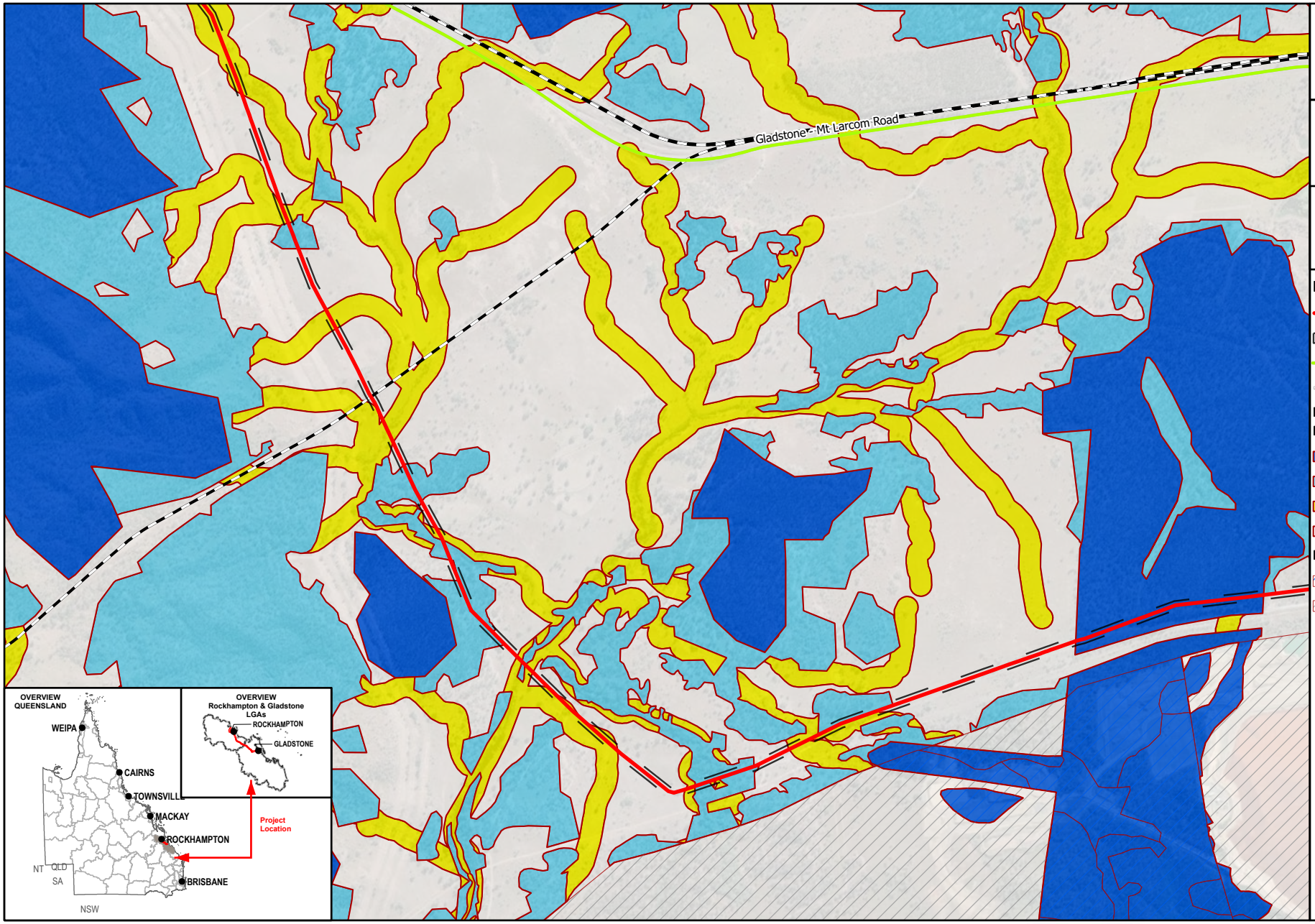
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-1b Mapped Regulated Vegetation and REs Intersected by the GSDA Pipeline Alignment

000-G-MAP-2442 Version:1 Date:8/07/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways

Regulated Vegetation Management Map

- Category B
- Category C
- Category R
- Category X

Property Map of Assessable Vegetation

- Category B
- Category X

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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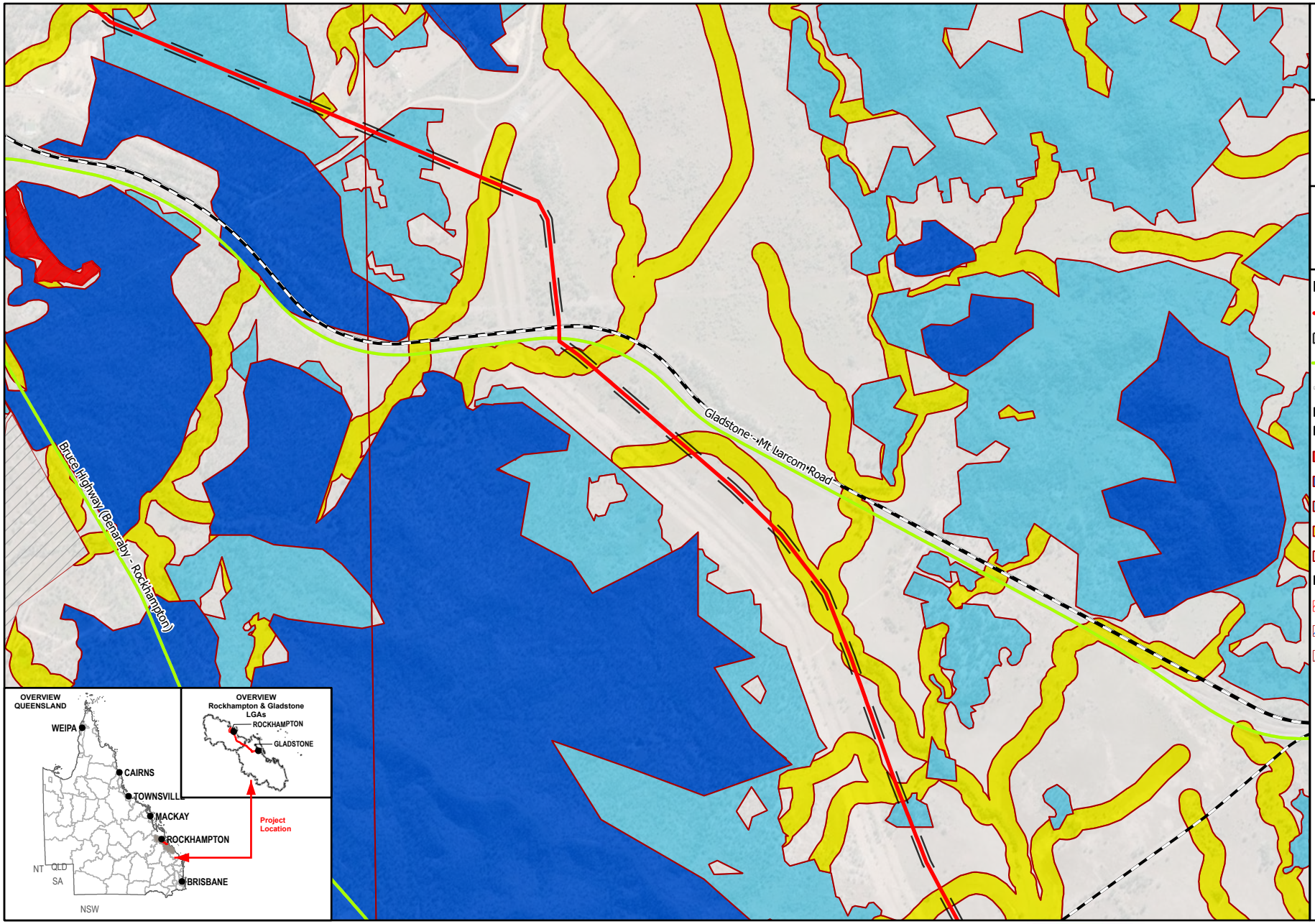
Fitzroy to Gladstone Pipeline Baseline Terrestrial and Aquatic Ecology Technical Report Appendix C-1c Mapped Regulated Vegetation and REs Intersected by the GSDA Pipeline Alignment

000-G-MAP-2442 Version:1 Date:8/07/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways

Regulated Vegetation Management Map

- Category A
- Category B
- Category C
- Category R
- Category X

Property Map of Assessable Vegetation

- Category A
- Category B
- Category X

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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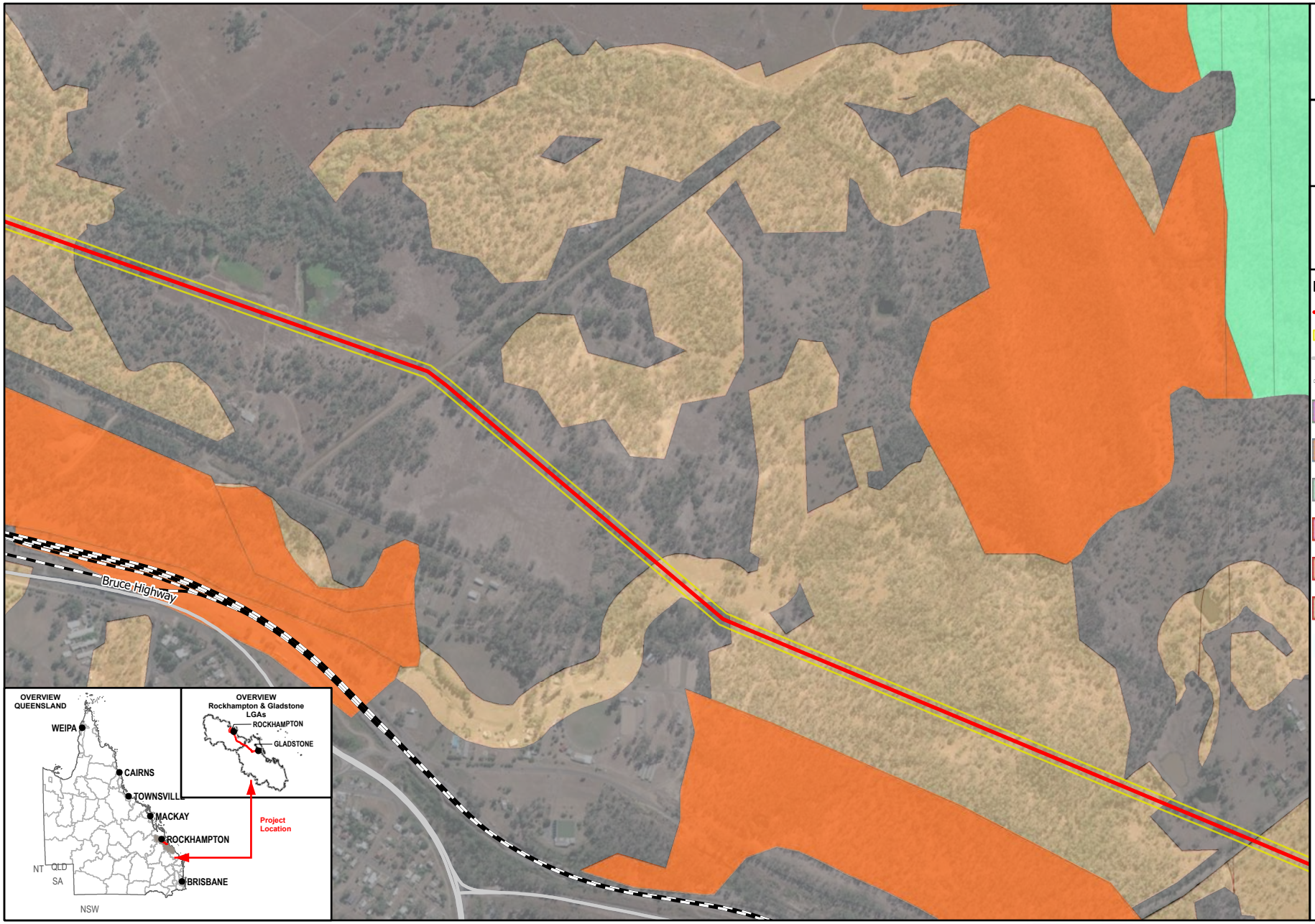
000-G-MAP-2442 Version:1 Date:8/07/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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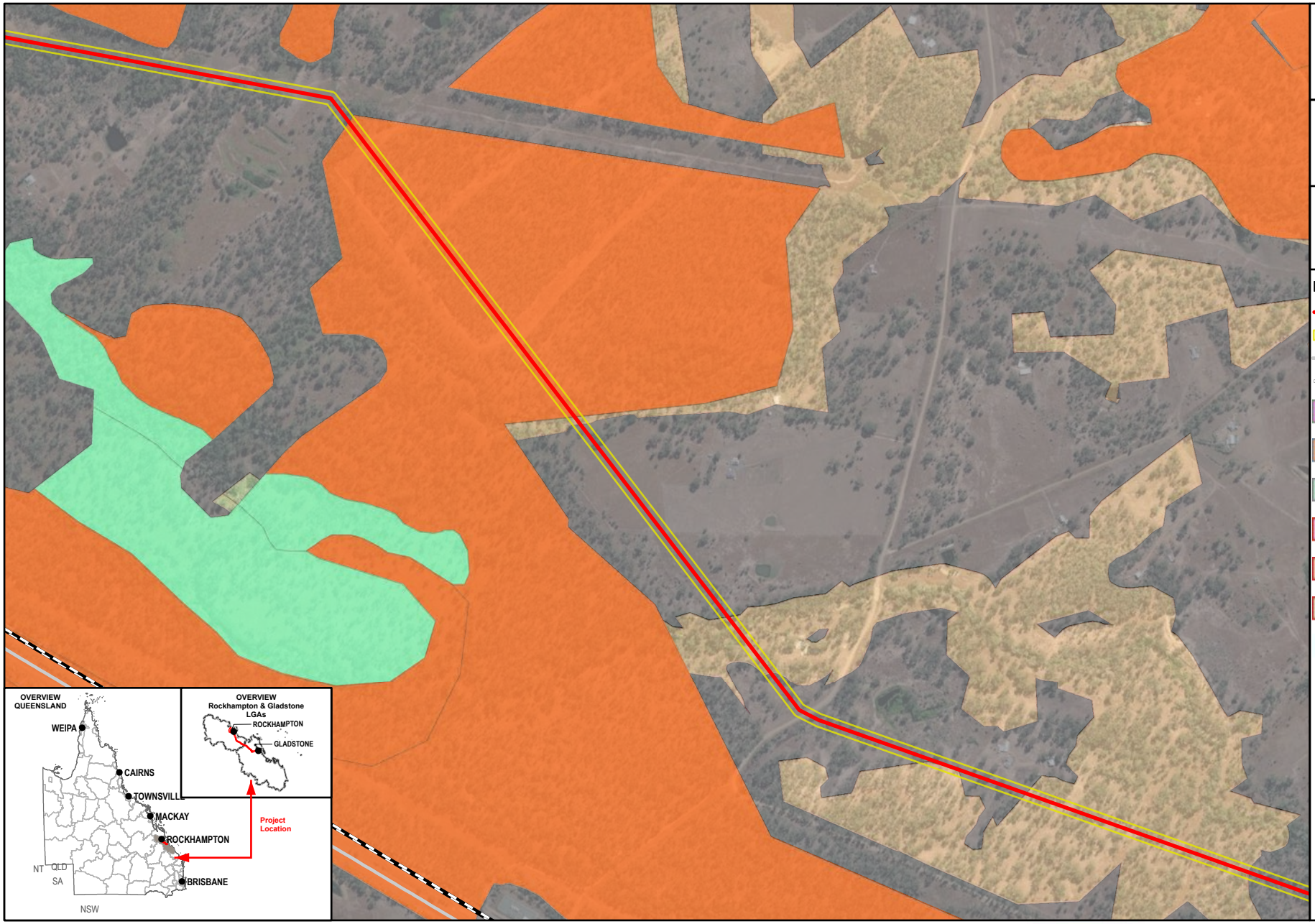
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2a
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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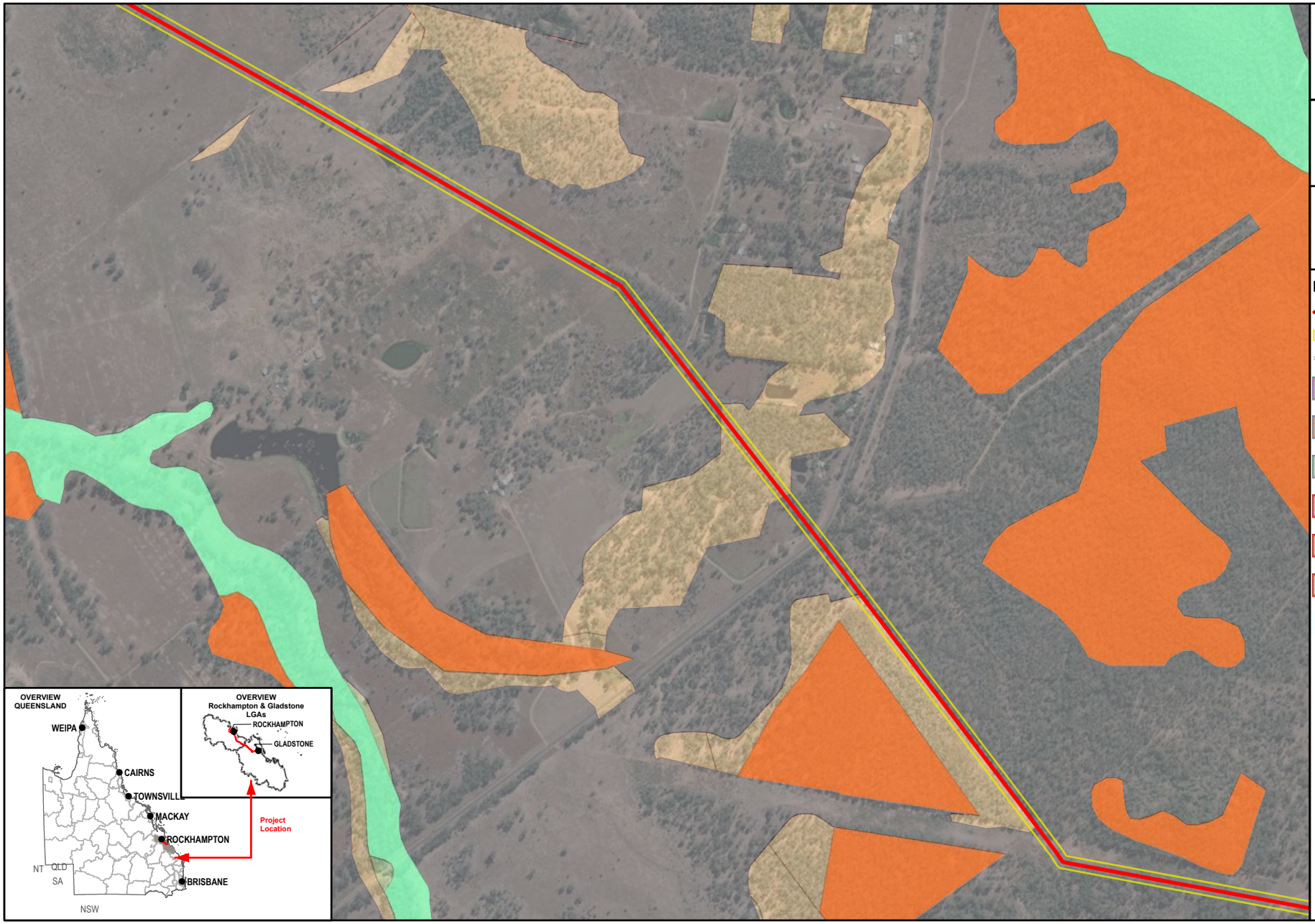
000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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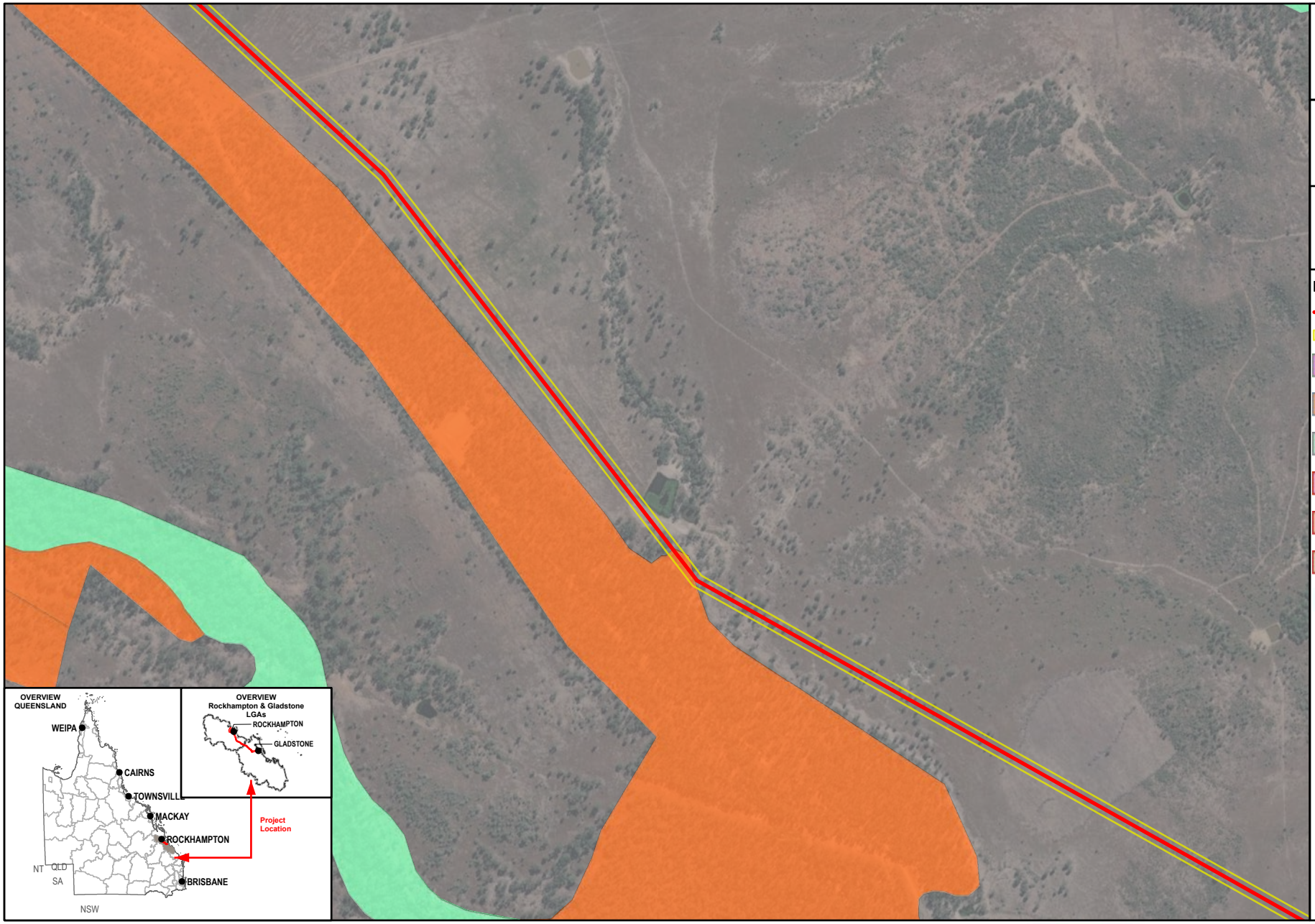
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2c
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
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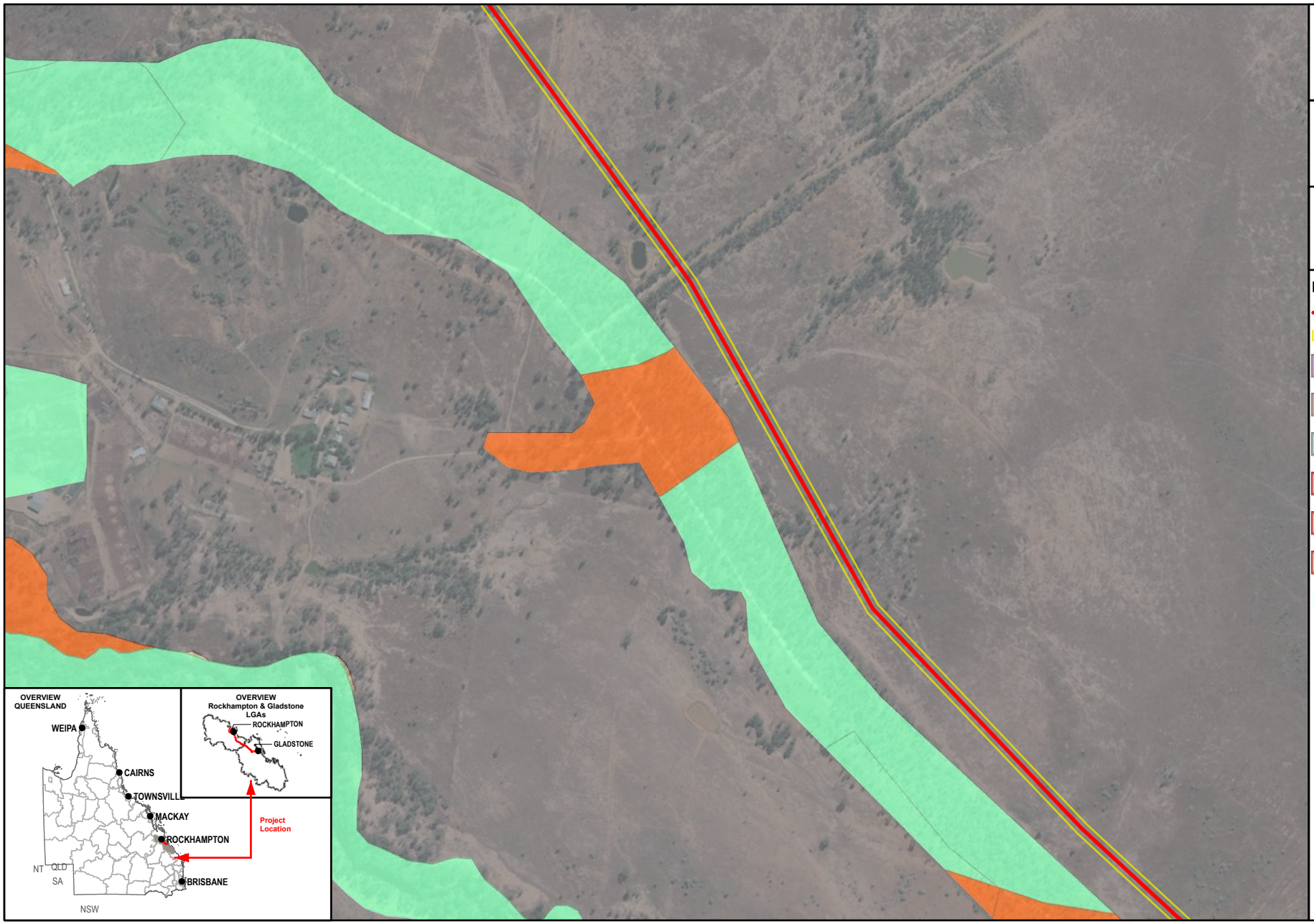
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2d
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
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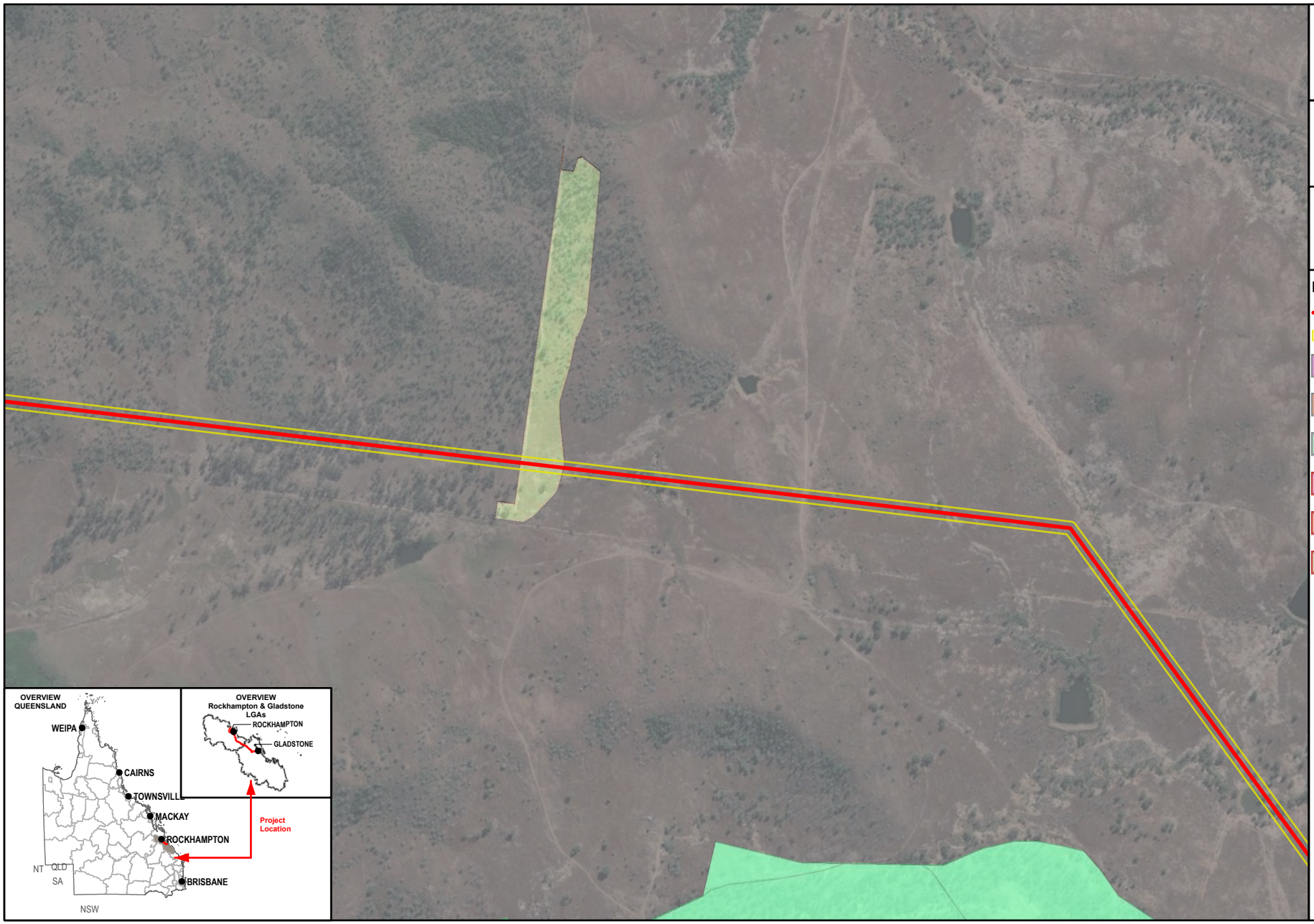
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2e
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
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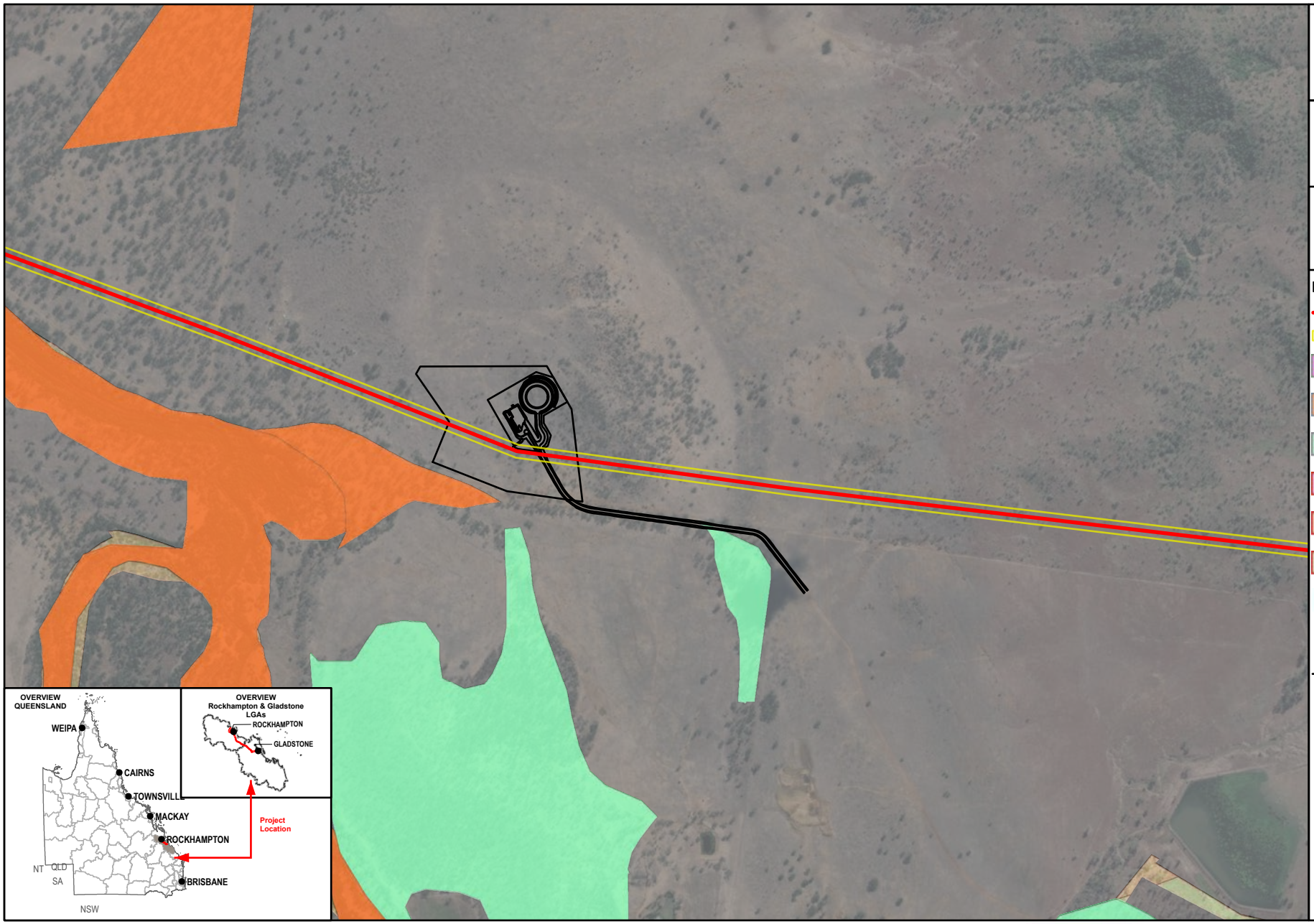
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2f
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant
- Raglan Pump Station and Reservoir Layout

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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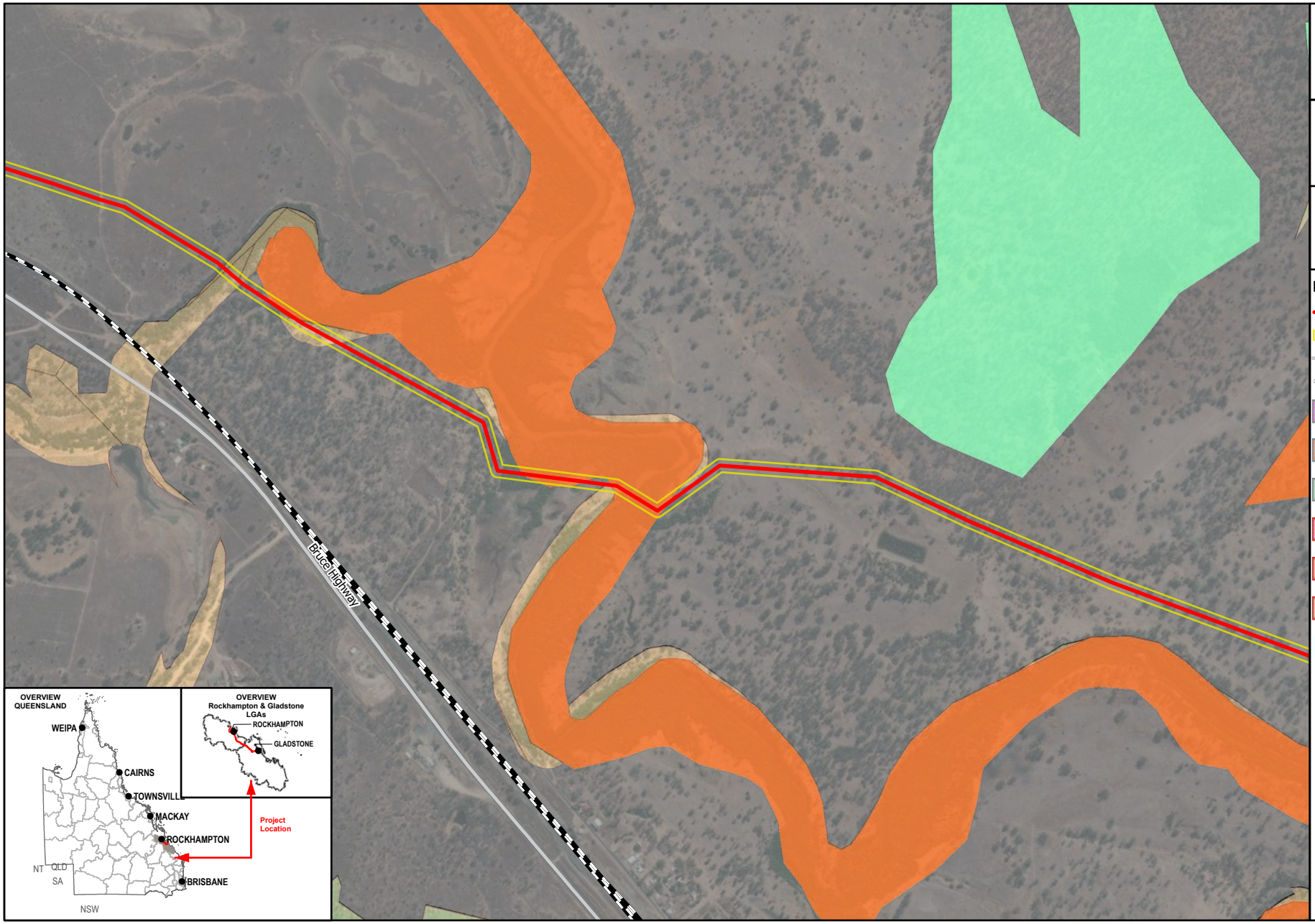
Fitzroy to Gladstone Pipeline Baseline Terrestrial and Aquatic Ecology Technical Report Appendix C-2g Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
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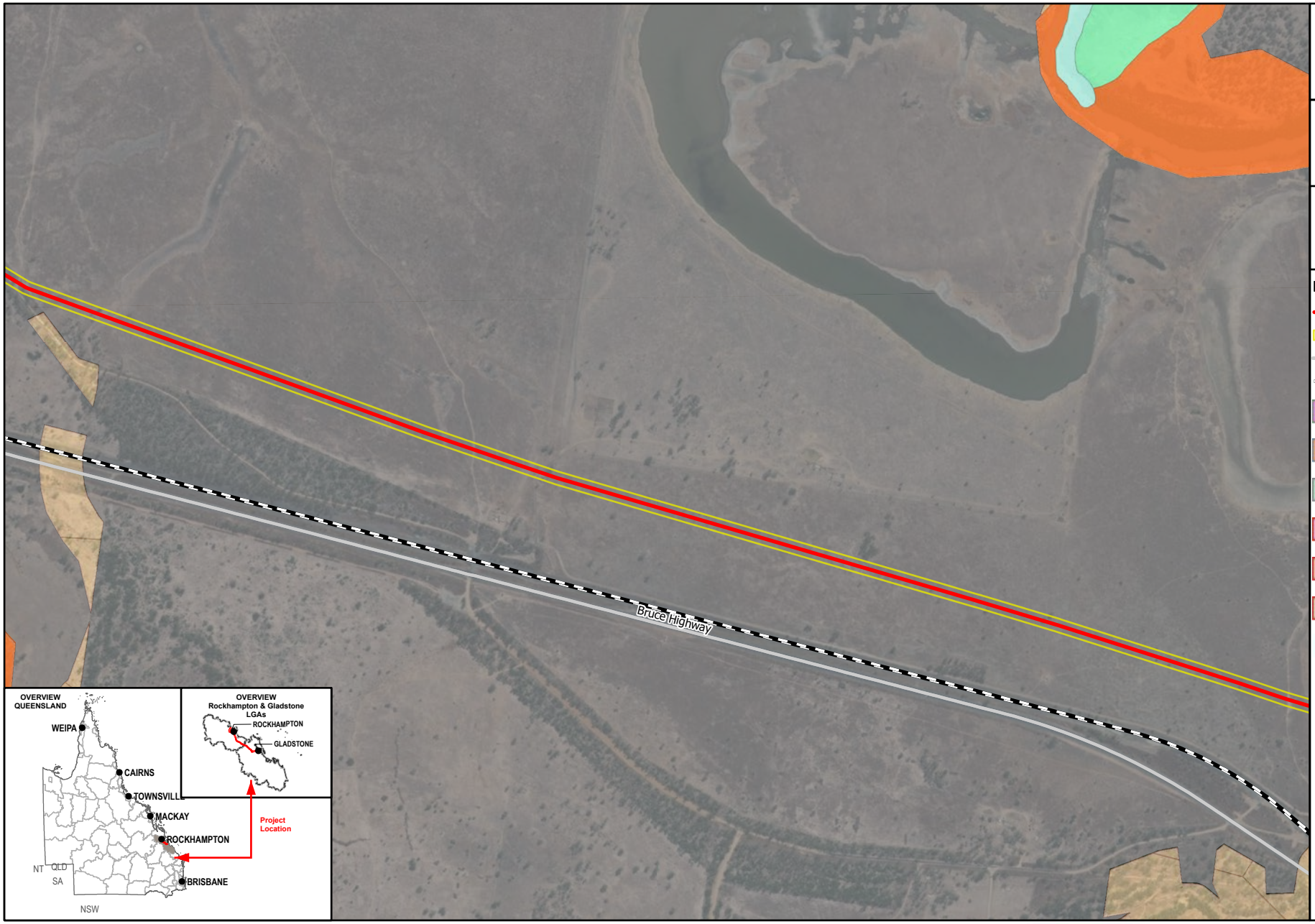
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2h
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
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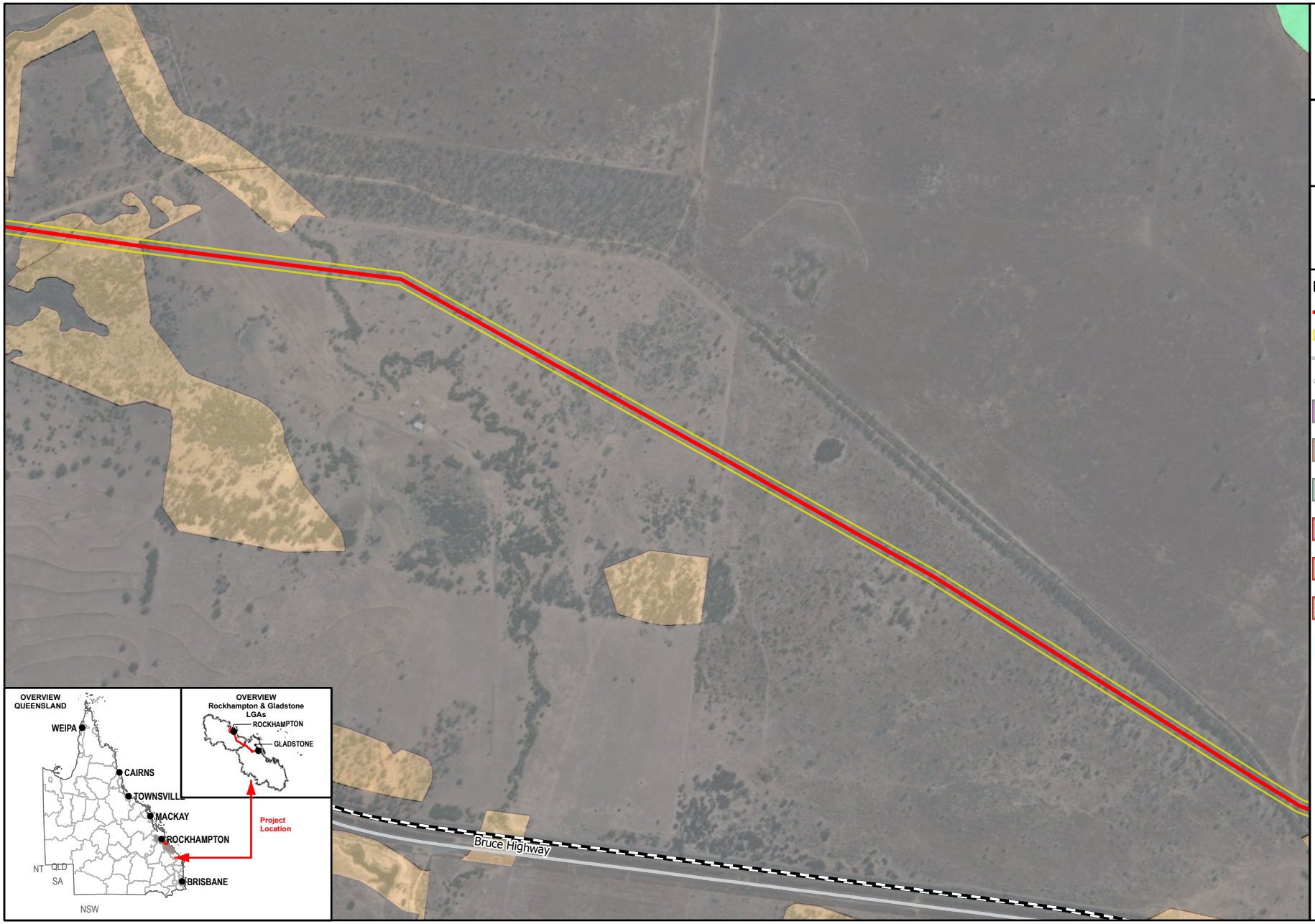
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2i
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Meters

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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
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(Datum GDA2020)

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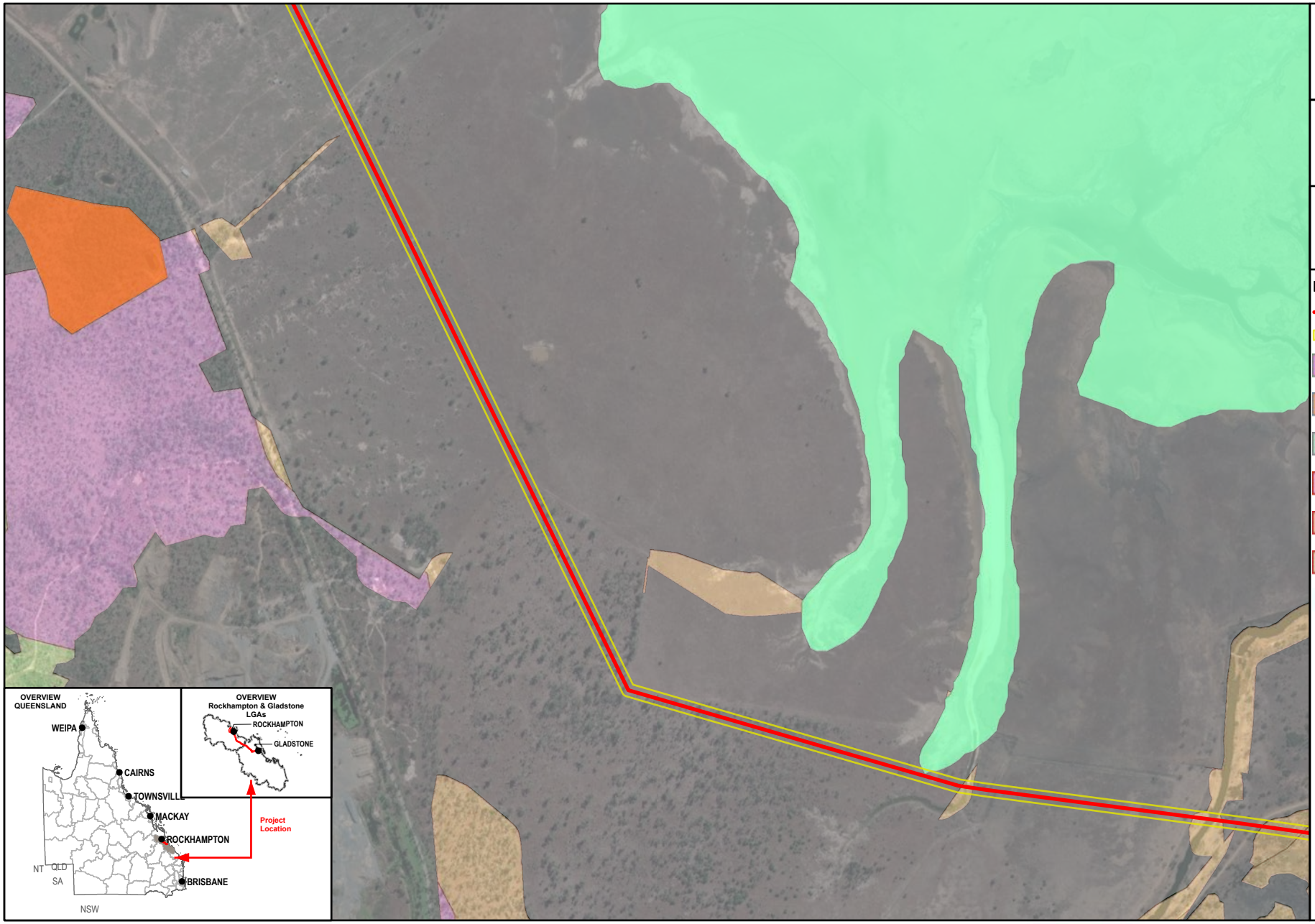
Fitzroy to Gladstone Pipeline Baseline Terrestrial and Aquatic Ecology Technical Report Appendix C-2j Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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PROJECTION UTM Zone 56
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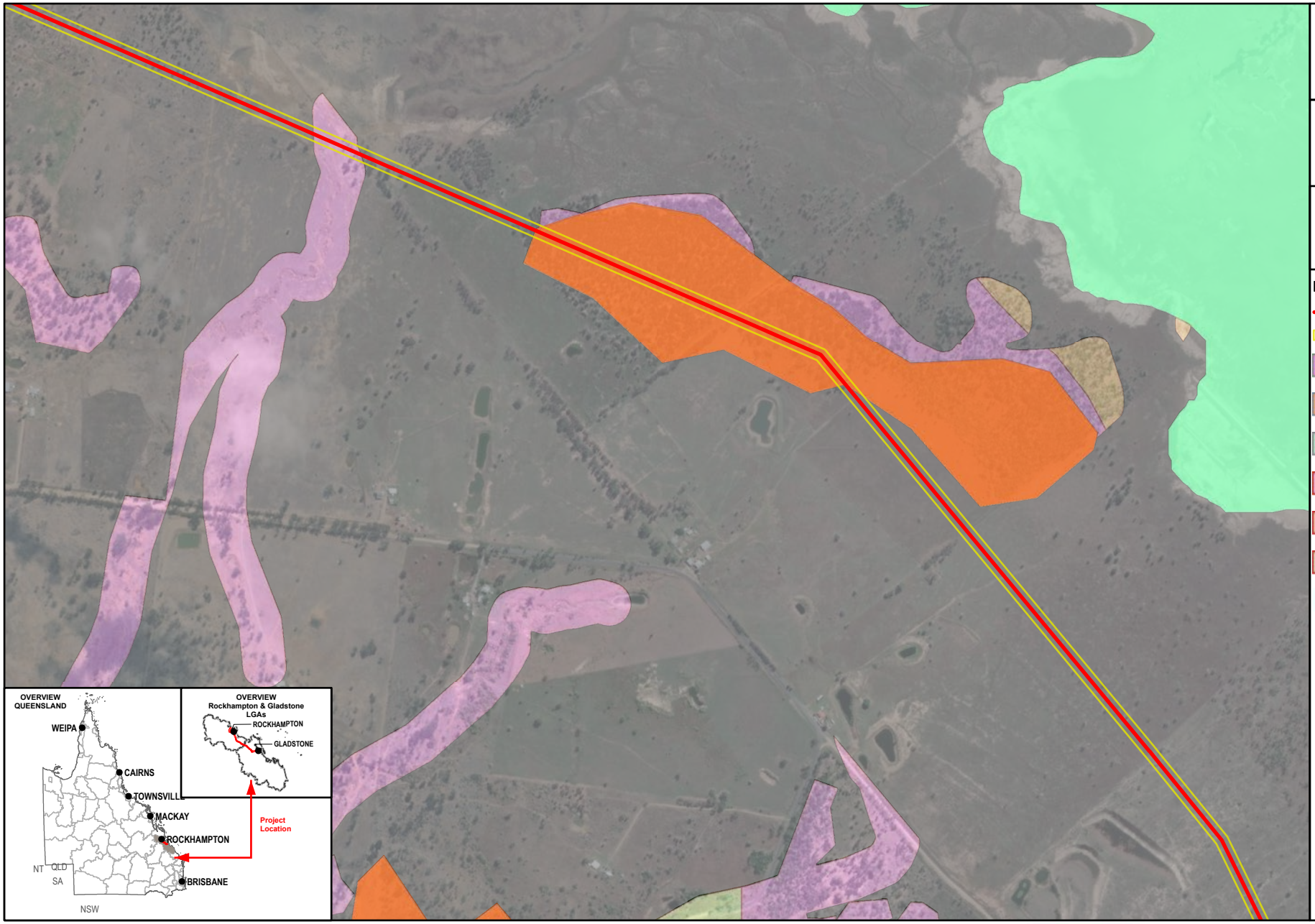
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2k
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
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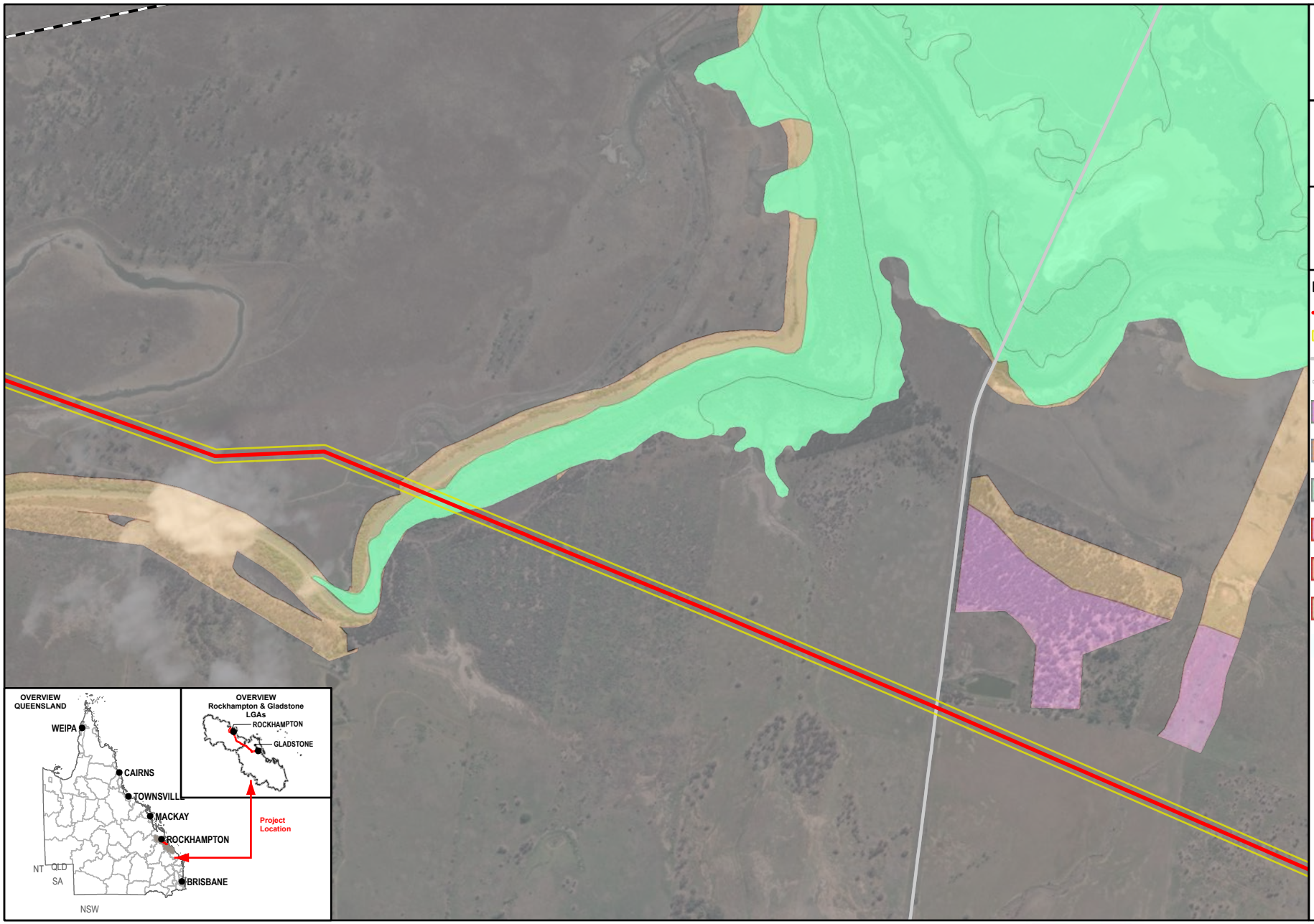
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2l
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
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Data Sources:
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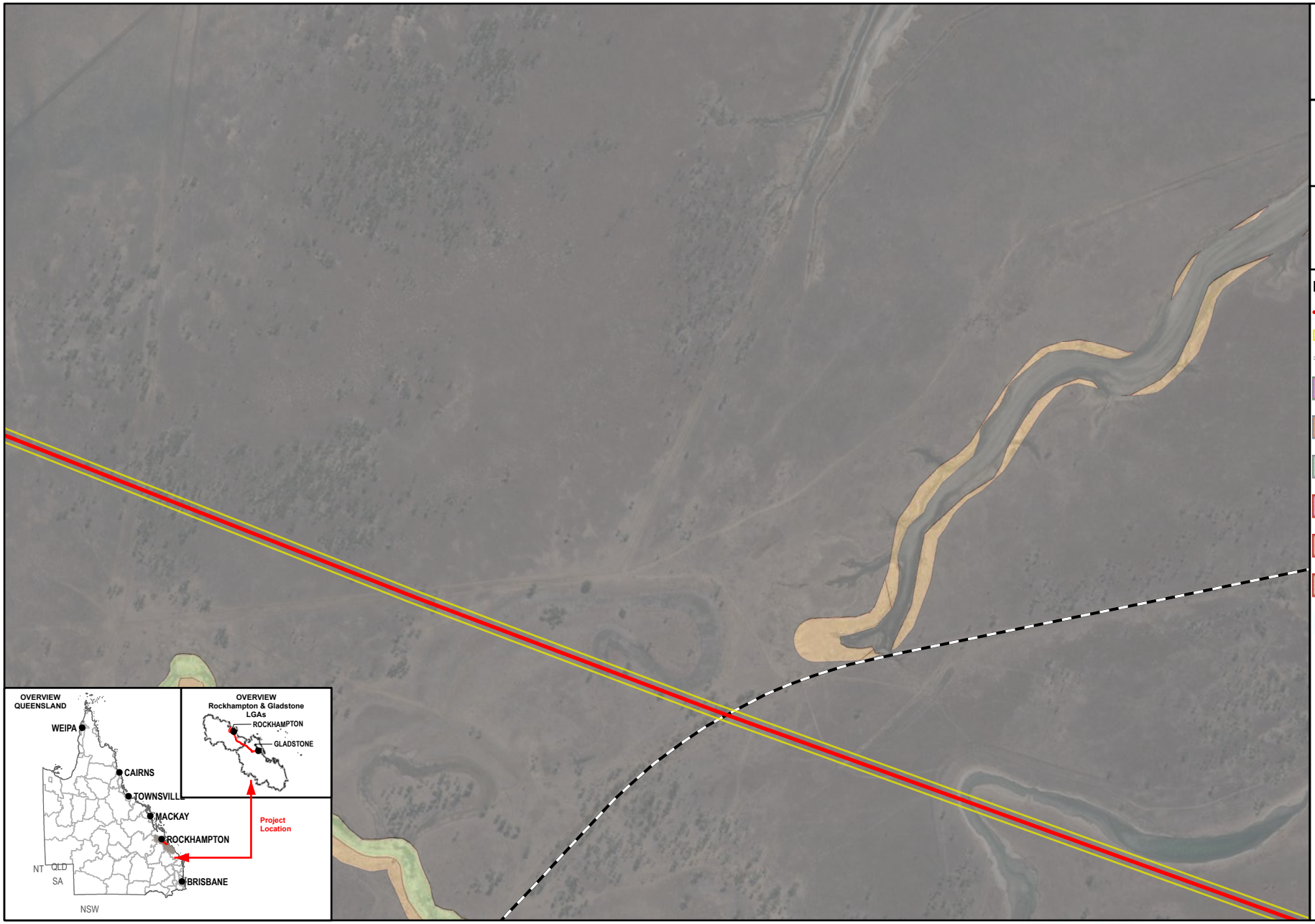
Gladstone to Fitzroy Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2m
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
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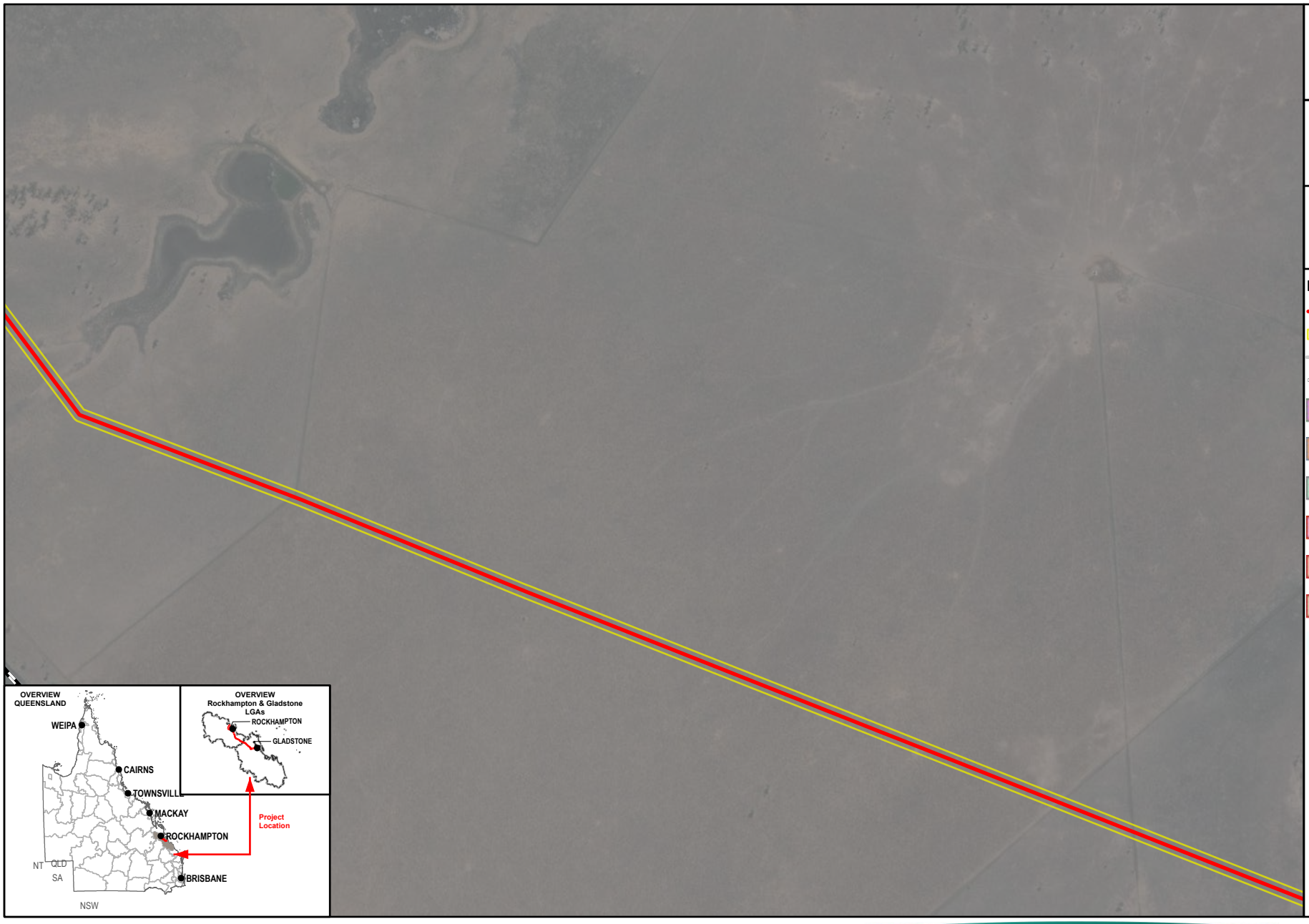
Fitzroy to Gladstone Pipeline Baseline Terrestrial and Aquatic Ecology Technical Report Appendix C-2n Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
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- Category C or R area containing endangered
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Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2o
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment
000-G-MAP-2452 Version:2 Date:25/08/2022

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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
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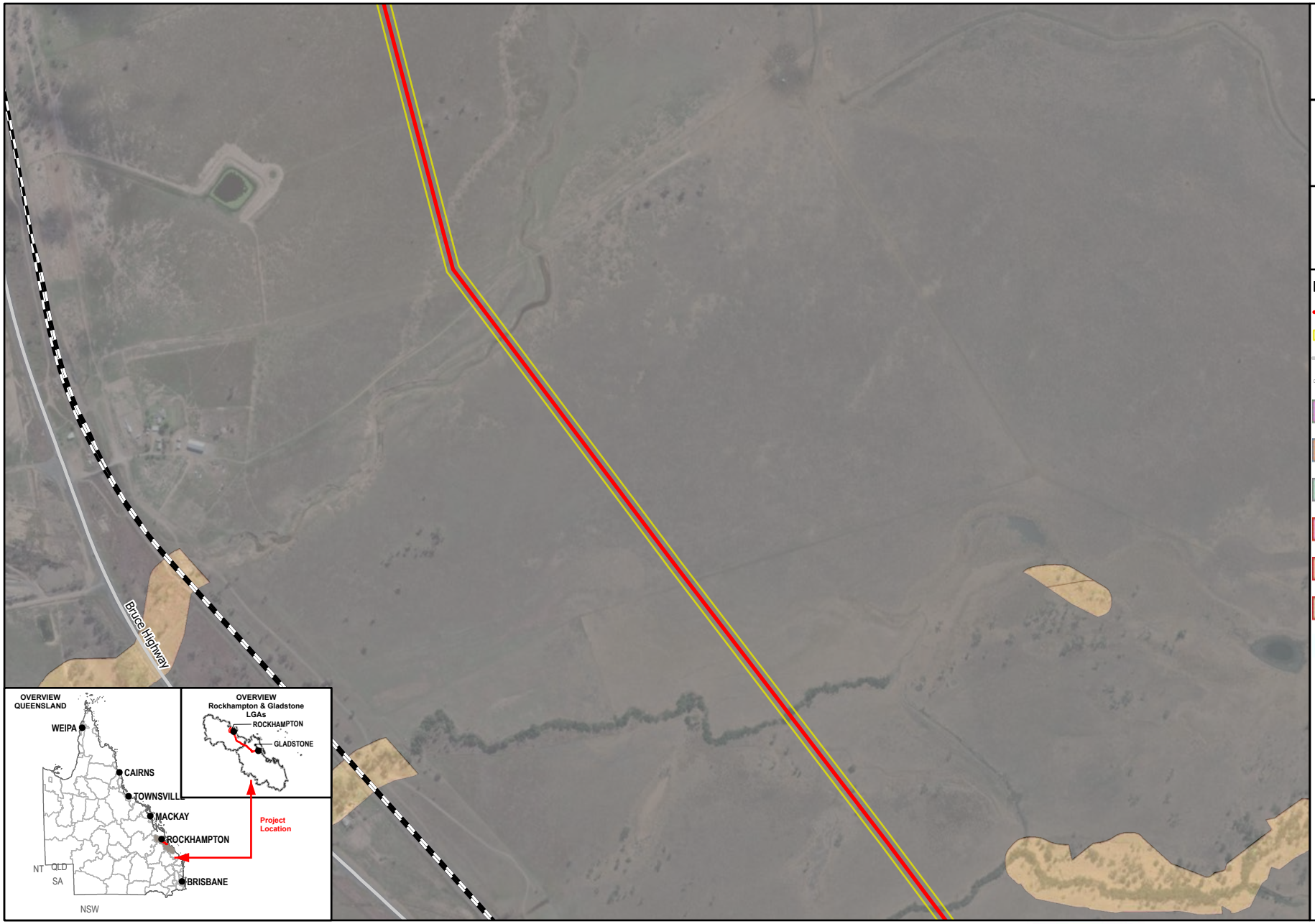
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2p
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
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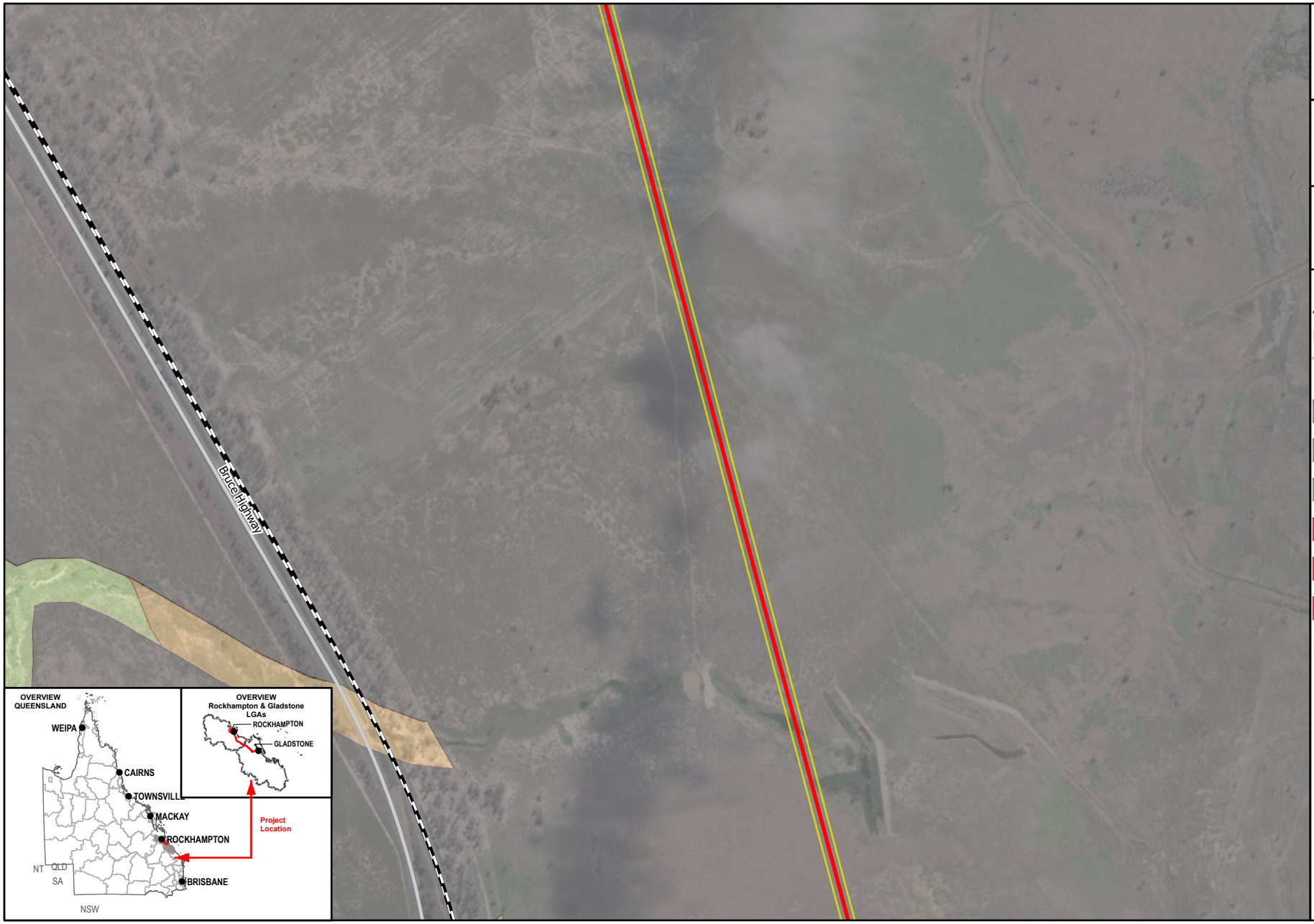
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2q
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
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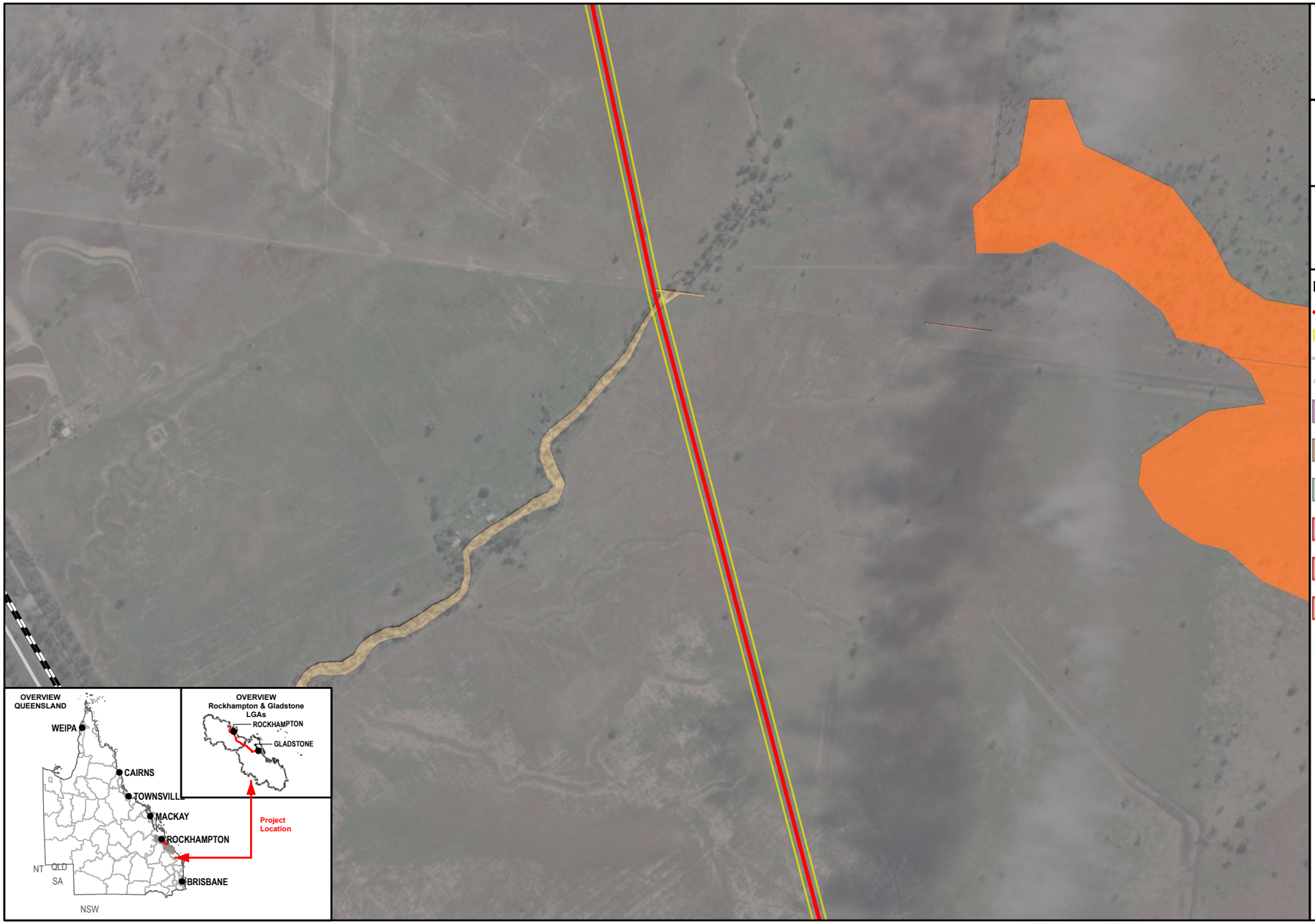
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2r
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
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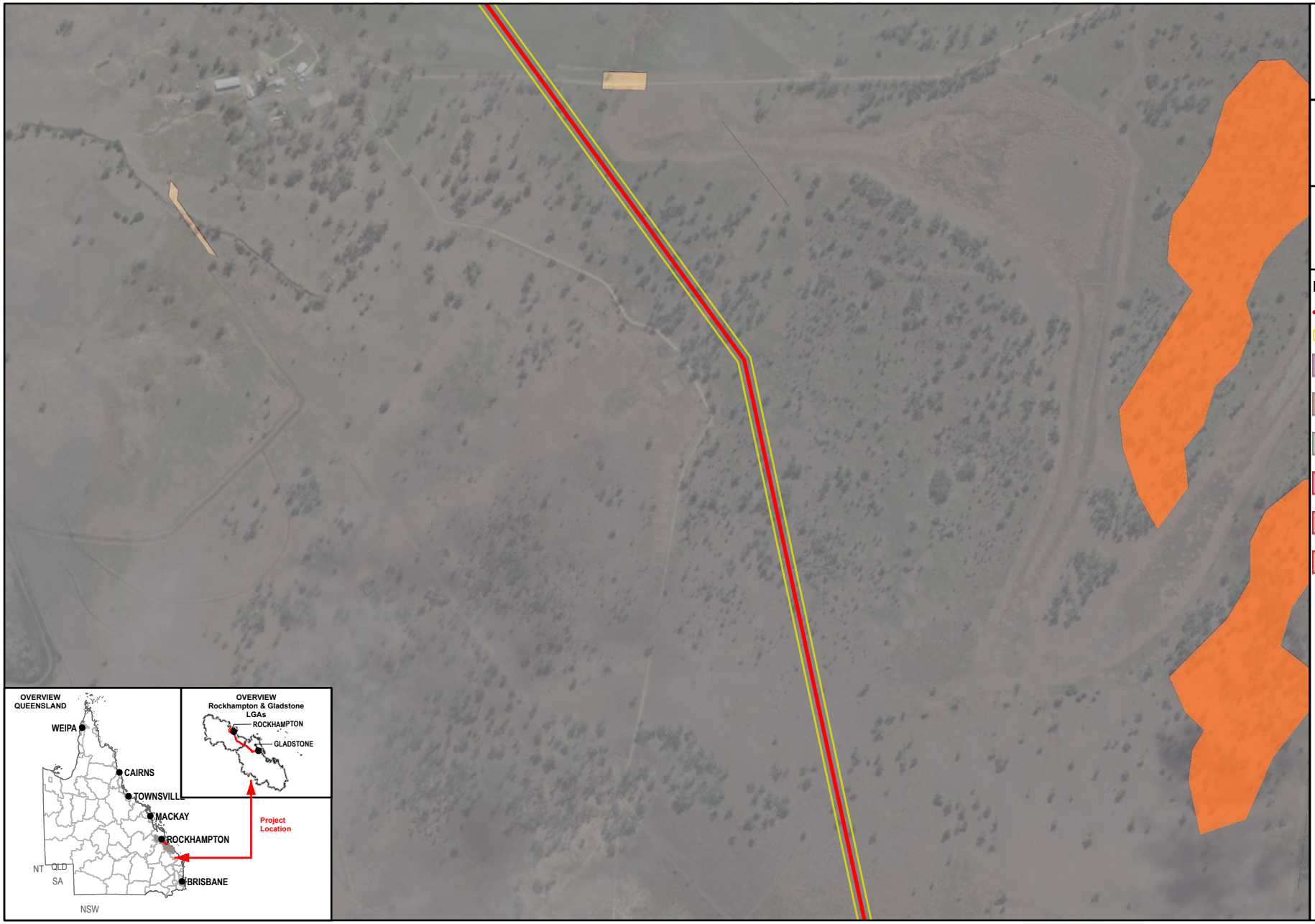
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2s
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
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(Datum GDA2020)

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Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2t
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022

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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
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Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2u
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022

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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
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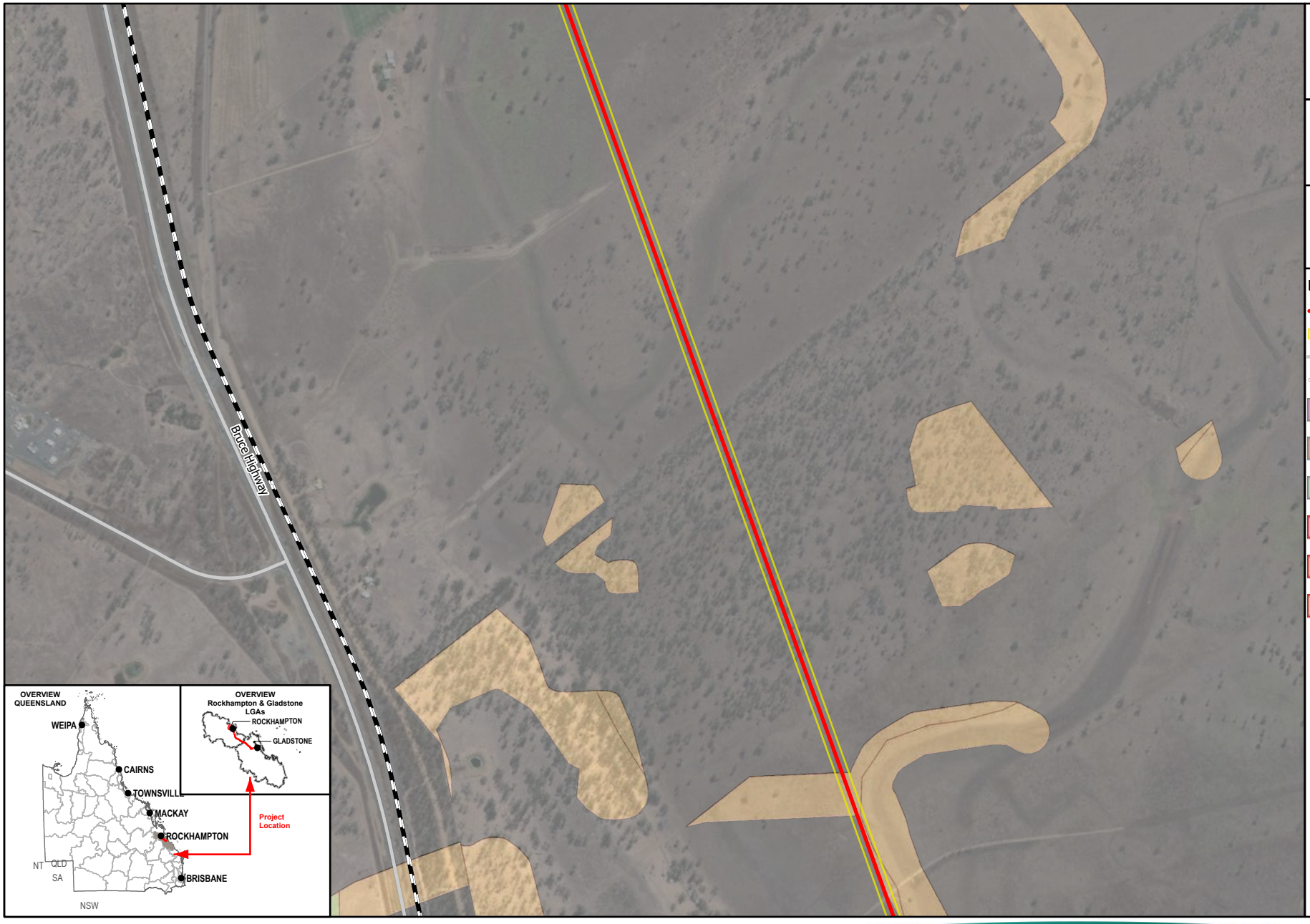
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2v
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment
000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
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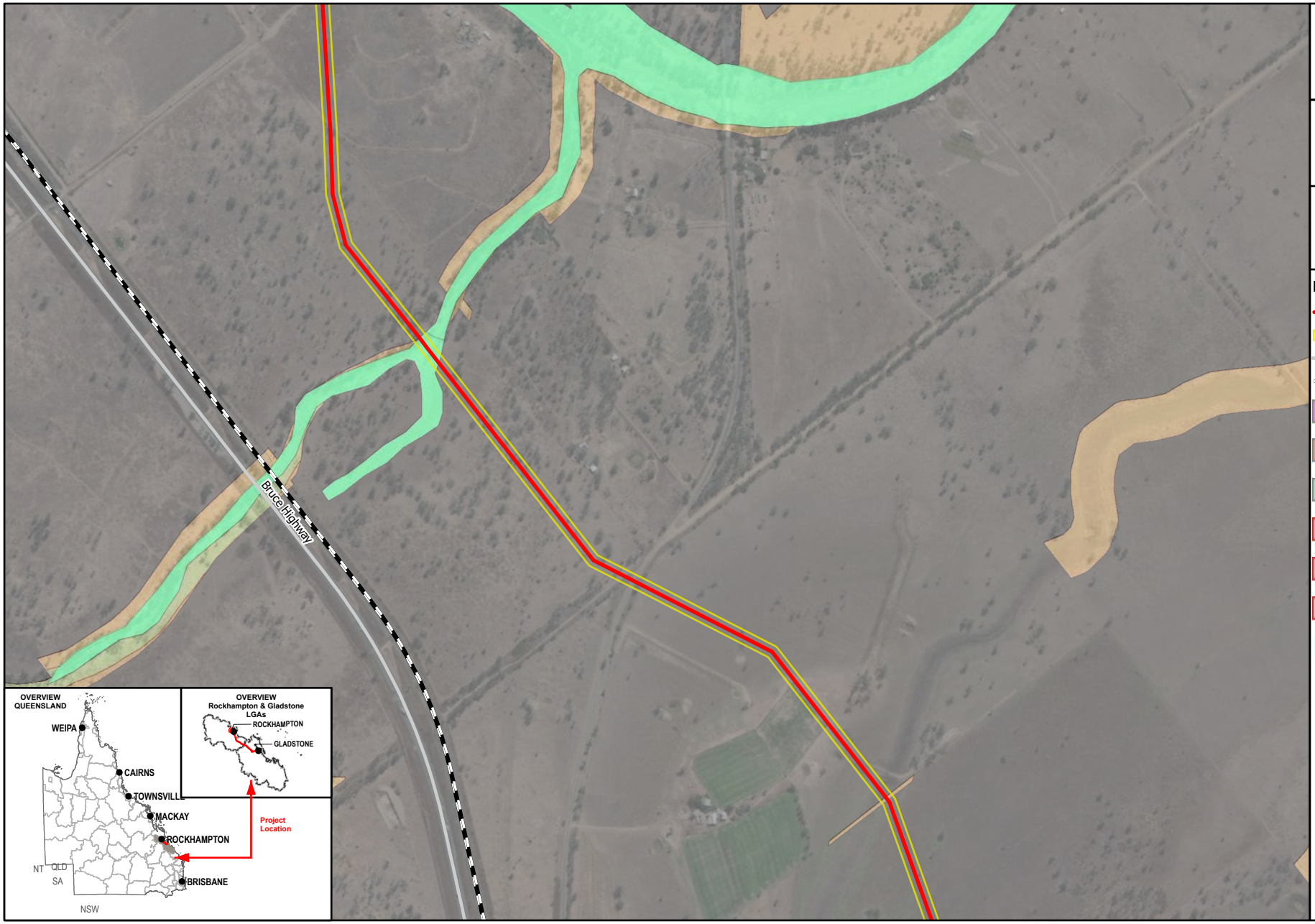
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2w
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
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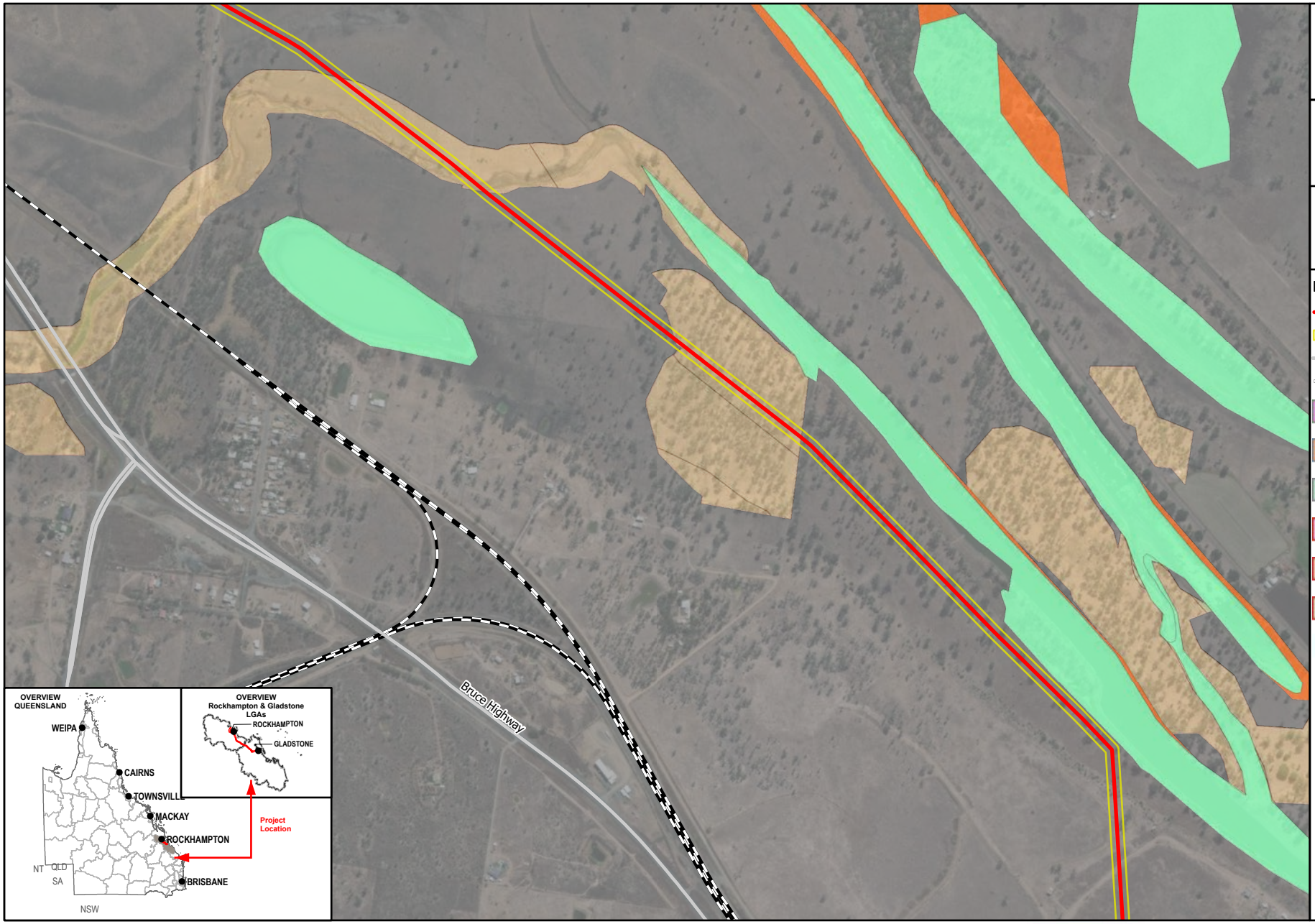
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2x
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
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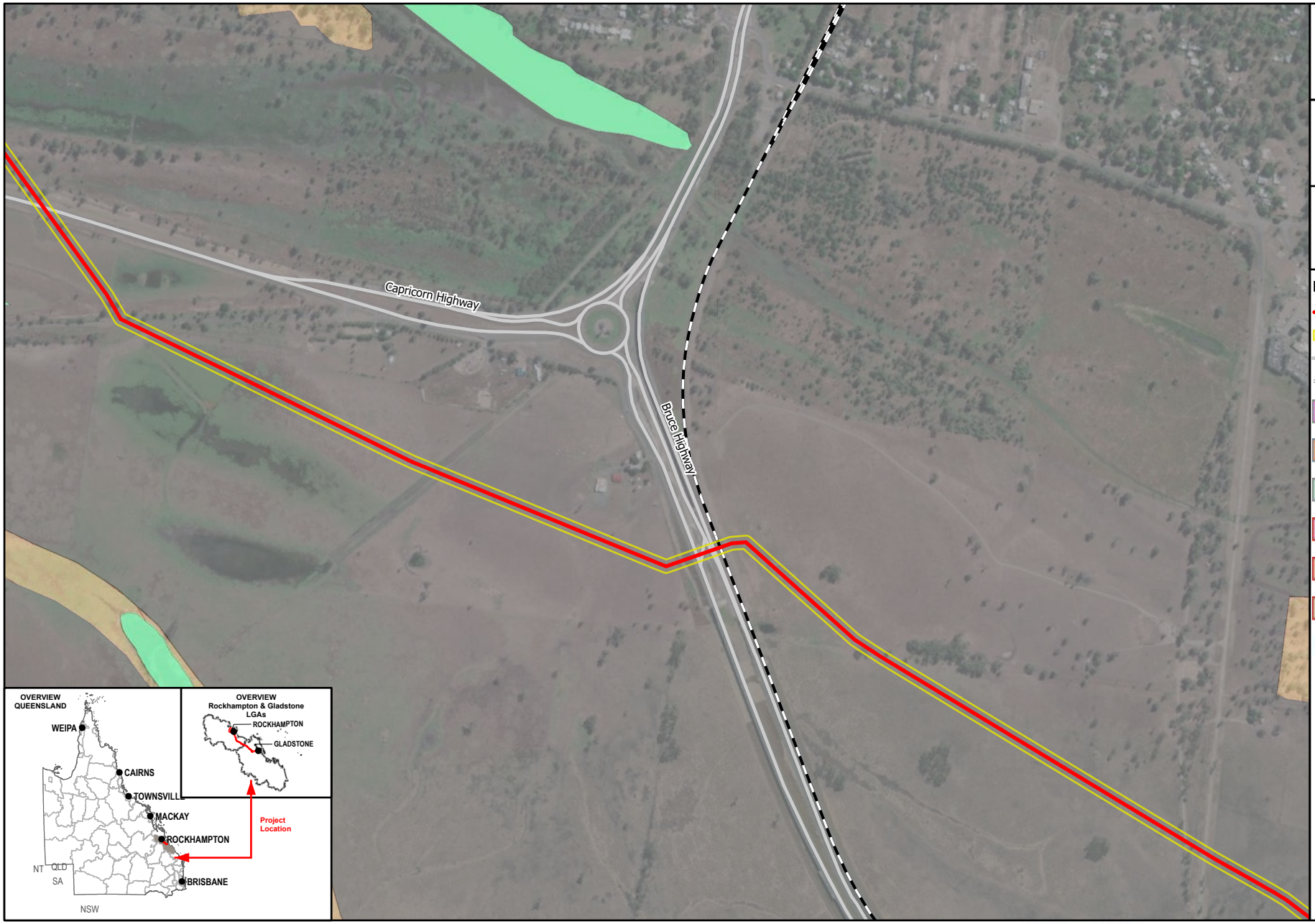
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2y
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Railways
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
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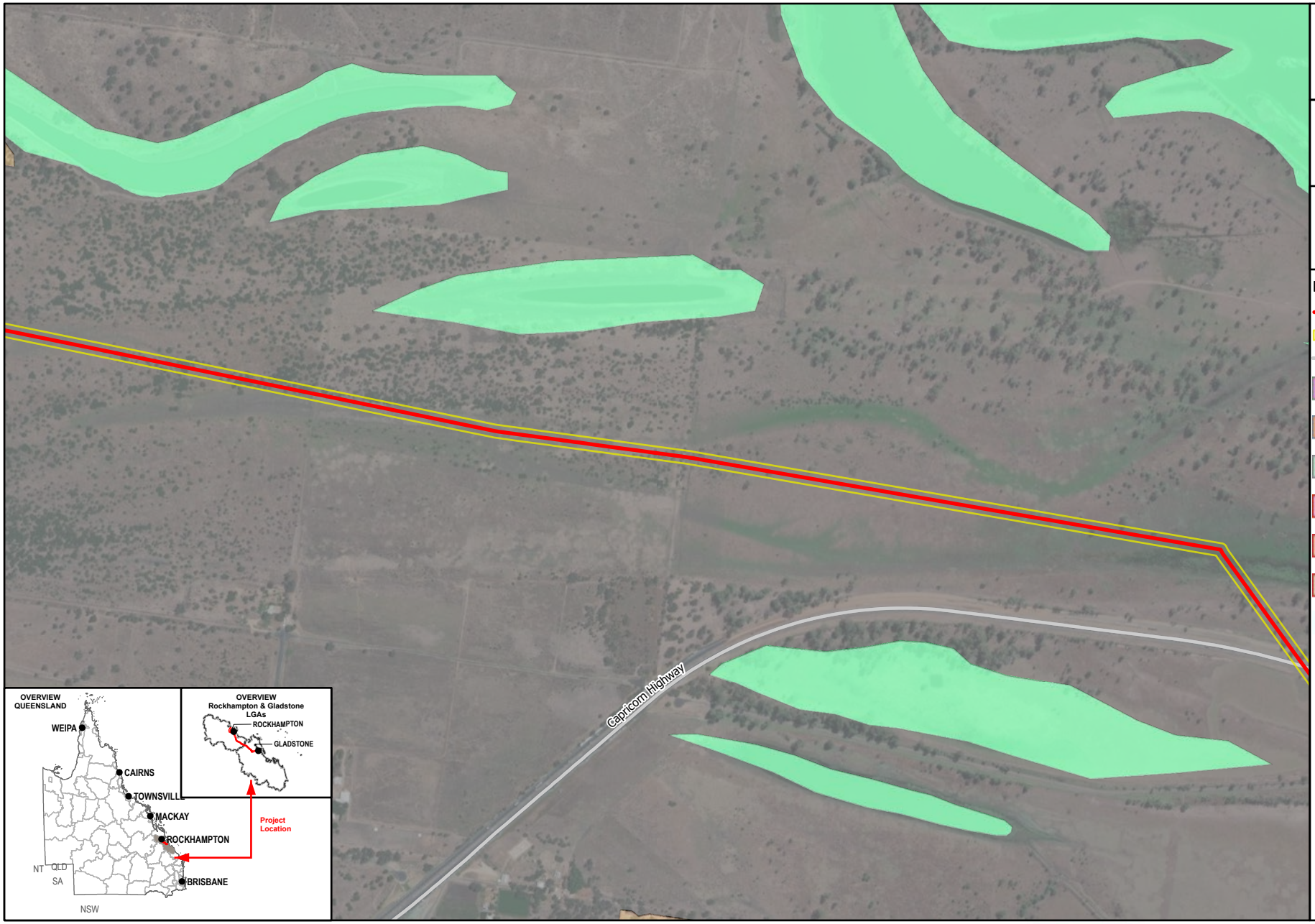
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2z
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Category A or B area containing endangered
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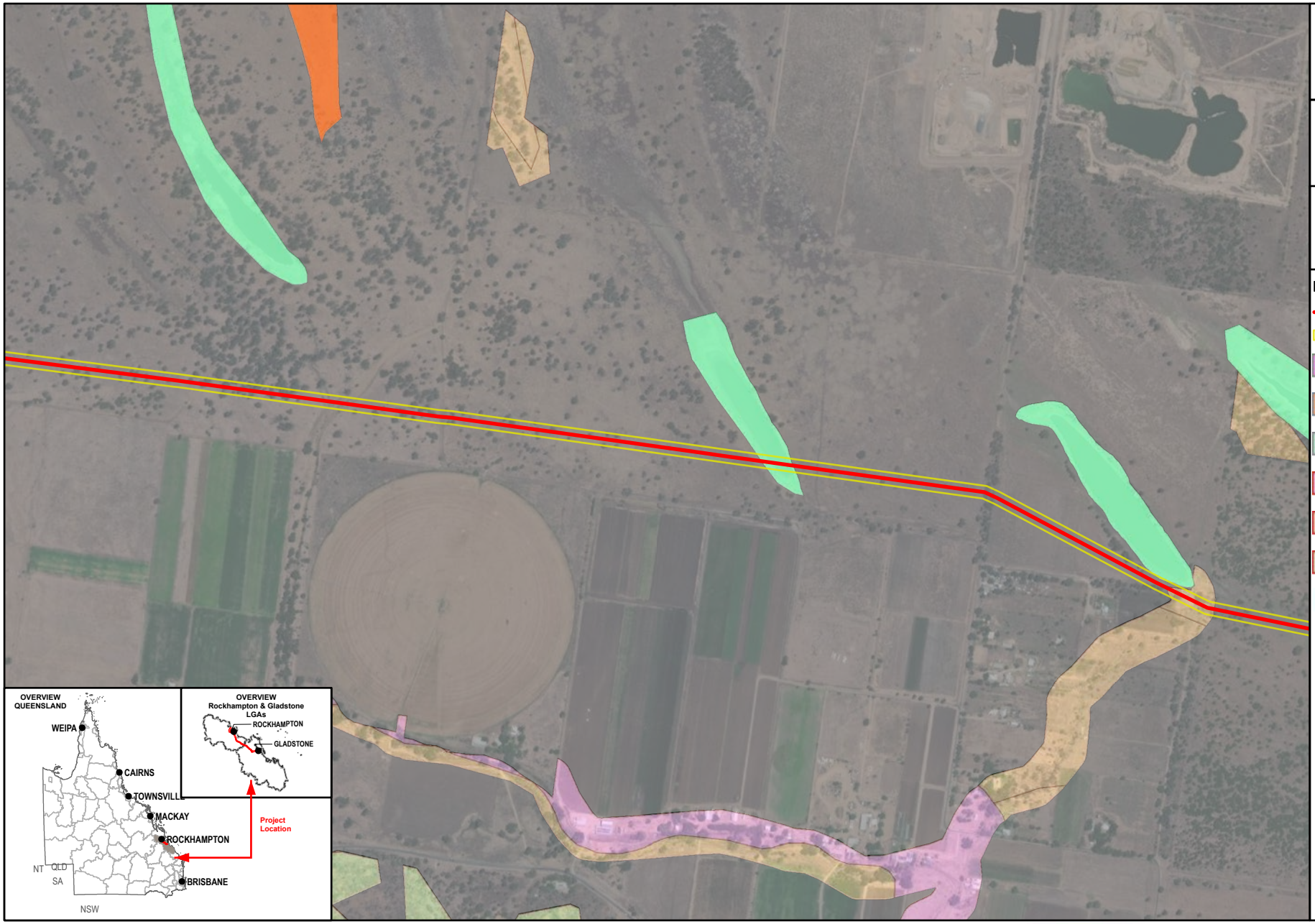
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-2a1
Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
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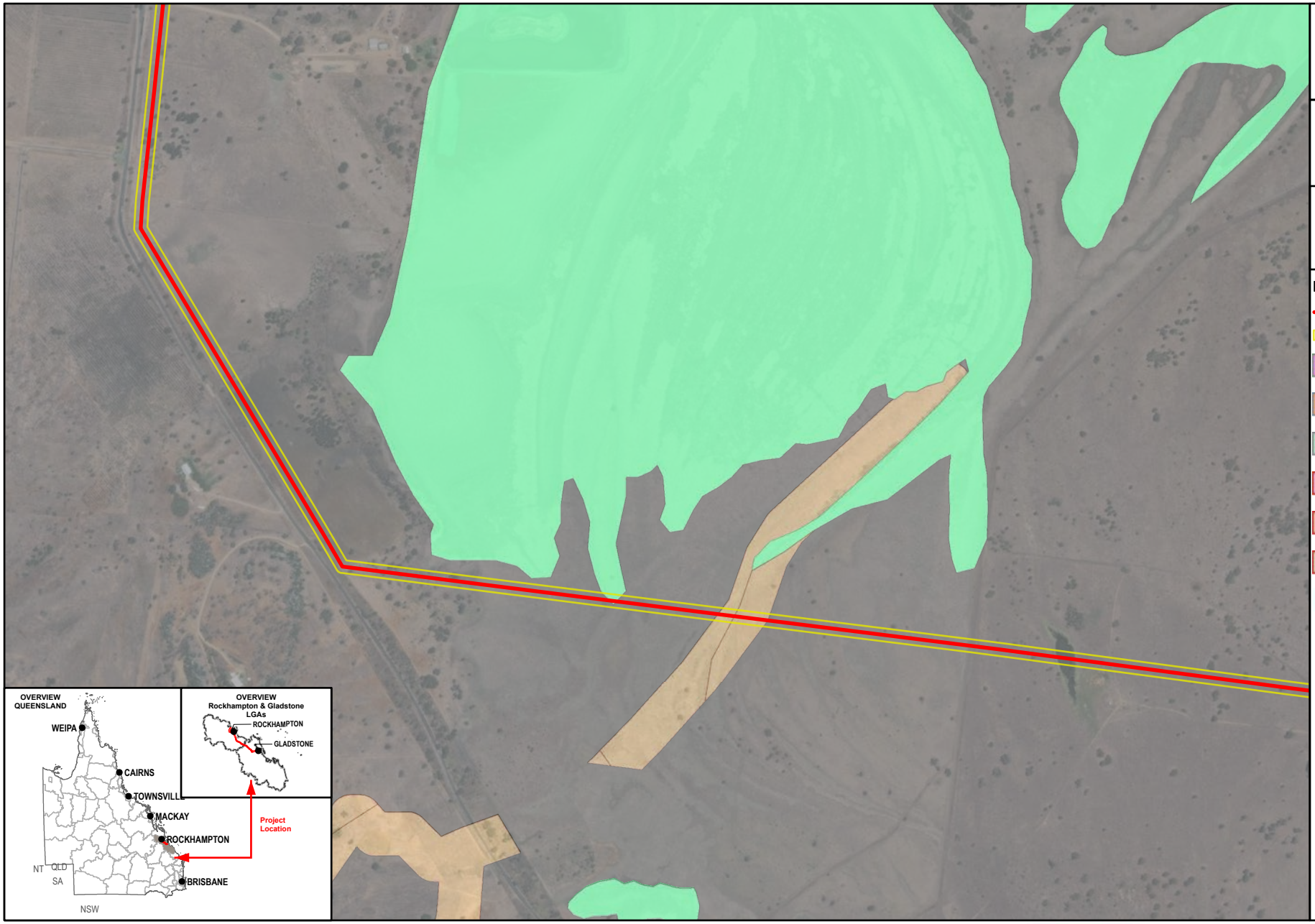
Fitzroy to Gladstone Pipeline Baseline Terrestrial and Aquatic Ecology Technical Report Appendix C-2b1 Mapped Regulated Vegetation and REs Intersected by the SGIC SDA Pipeline Alignment

000-G-MAP-2452 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
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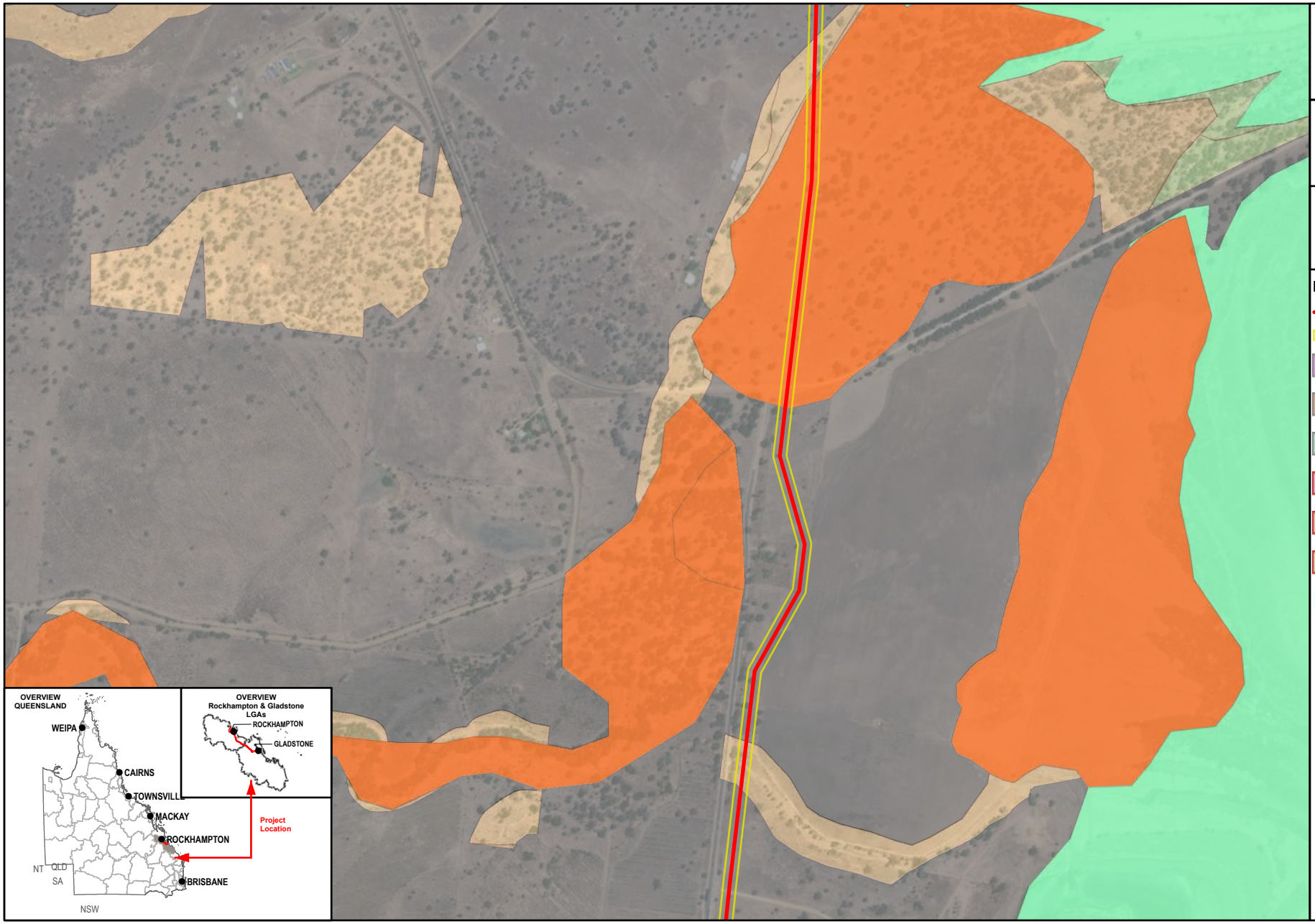
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-3a
Mapped Regulated Vegetation and REs Intersected by the Northern Section Pipeline Alignment
000-G-MAP-2453 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
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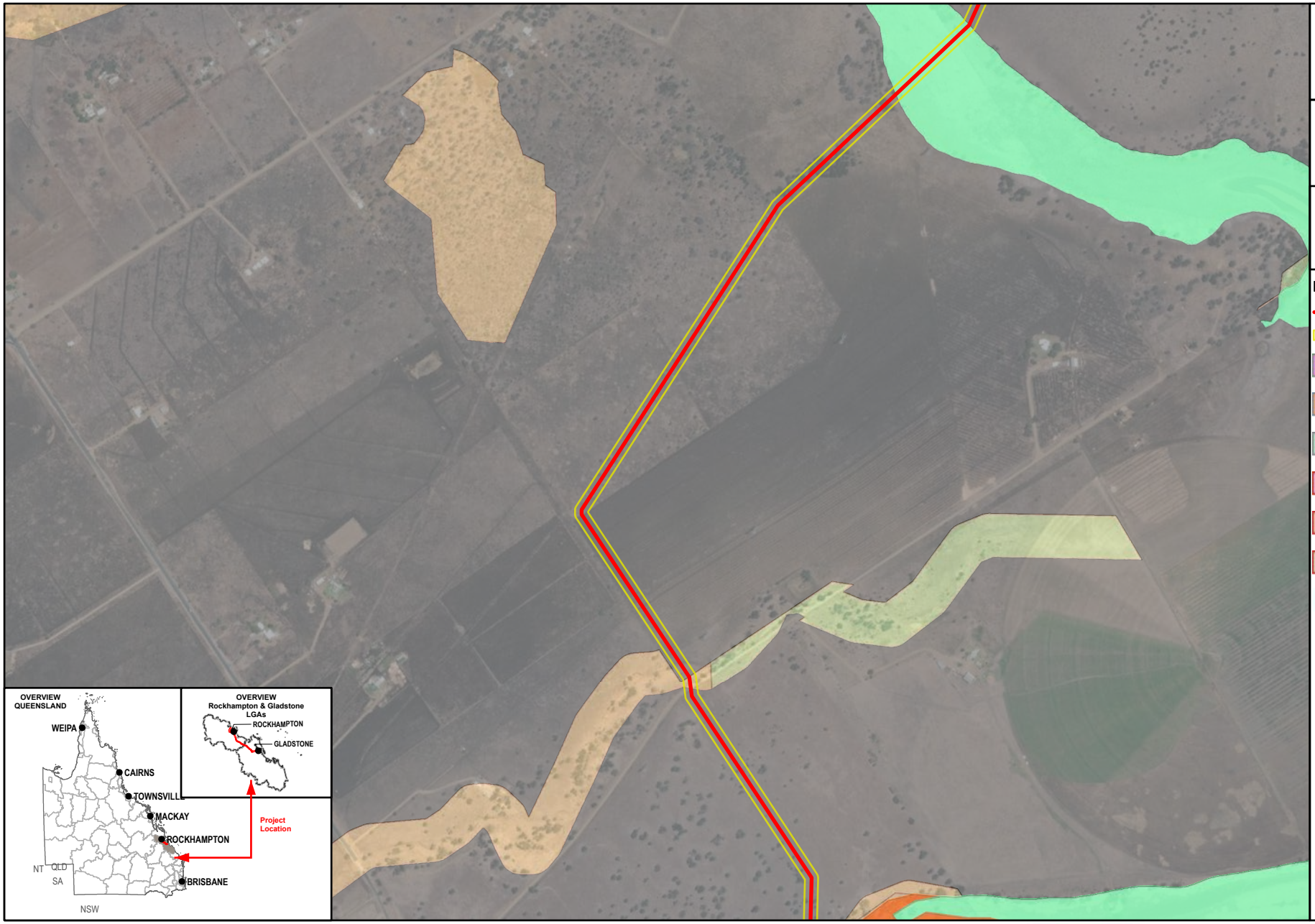
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-3b
Mapped Regulated Vegetation and REs Intersected by the Northern Section Pipeline Alignment

000-G-MAP-2453 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

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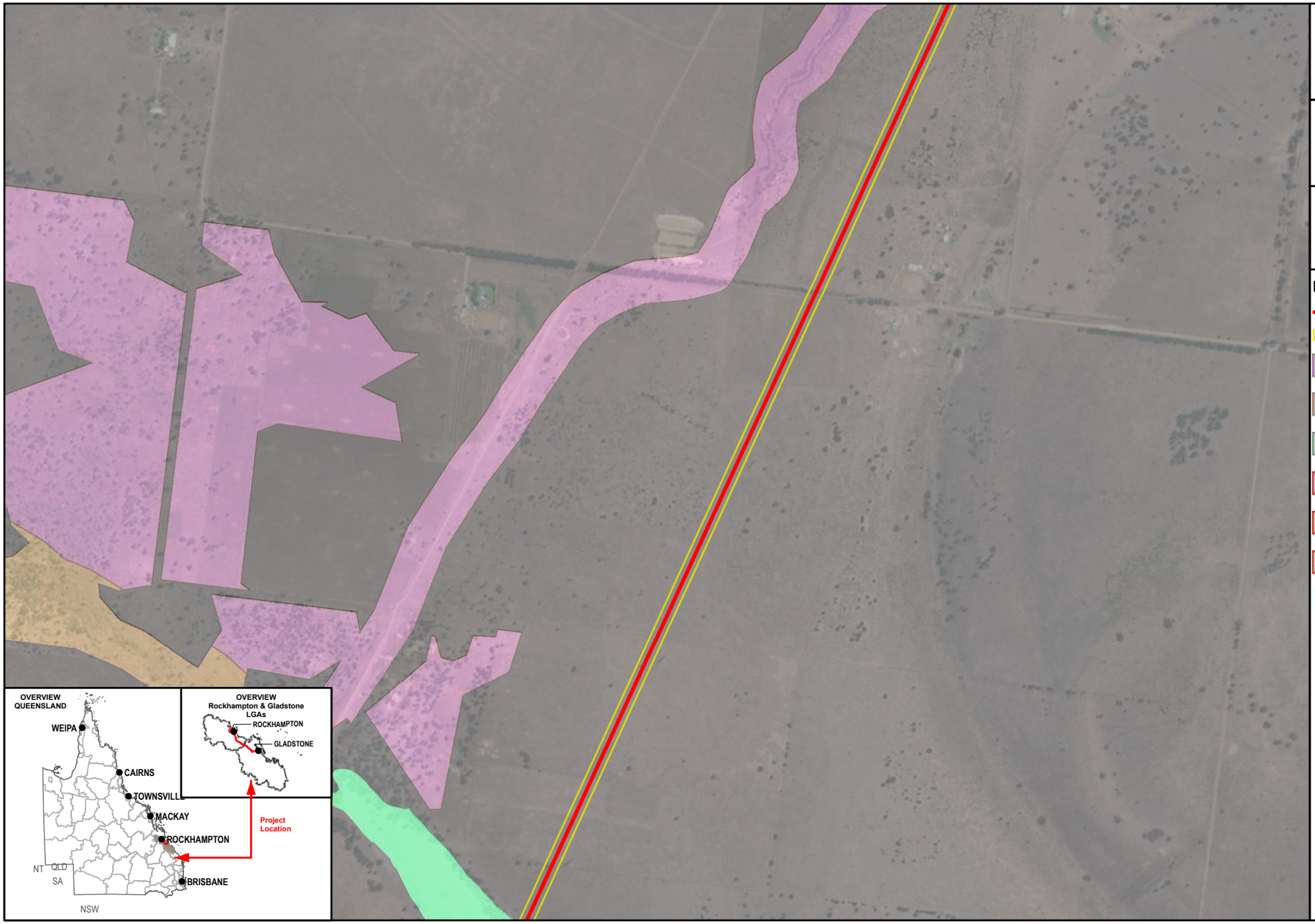
Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-3c
Mapped Regulated Vegetation and REs Intersected by the Northern Section Pipeline Alignment
000-G-MAP-2453 Version:2 Date:25/08/2022



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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant

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Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic
Ecology Technical Report
Appendix C-3d
Mapped Regulated Vegetation and REs
Intersected by the Northern Section Pipeline Alignment

000-G-MAP-2453 Version:2 Date:25/08/2022

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Legend

- Pipeline Alignment
- Study Area
- Main Roads
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant
- Alton Down WTP, Pump Station and Reservoir Layout

Data Sources:
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(Datum GDA2020)

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Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-3e
Mapped Regulated Vegetation and REs Intersected by the Northern Section Pipeline Alignment

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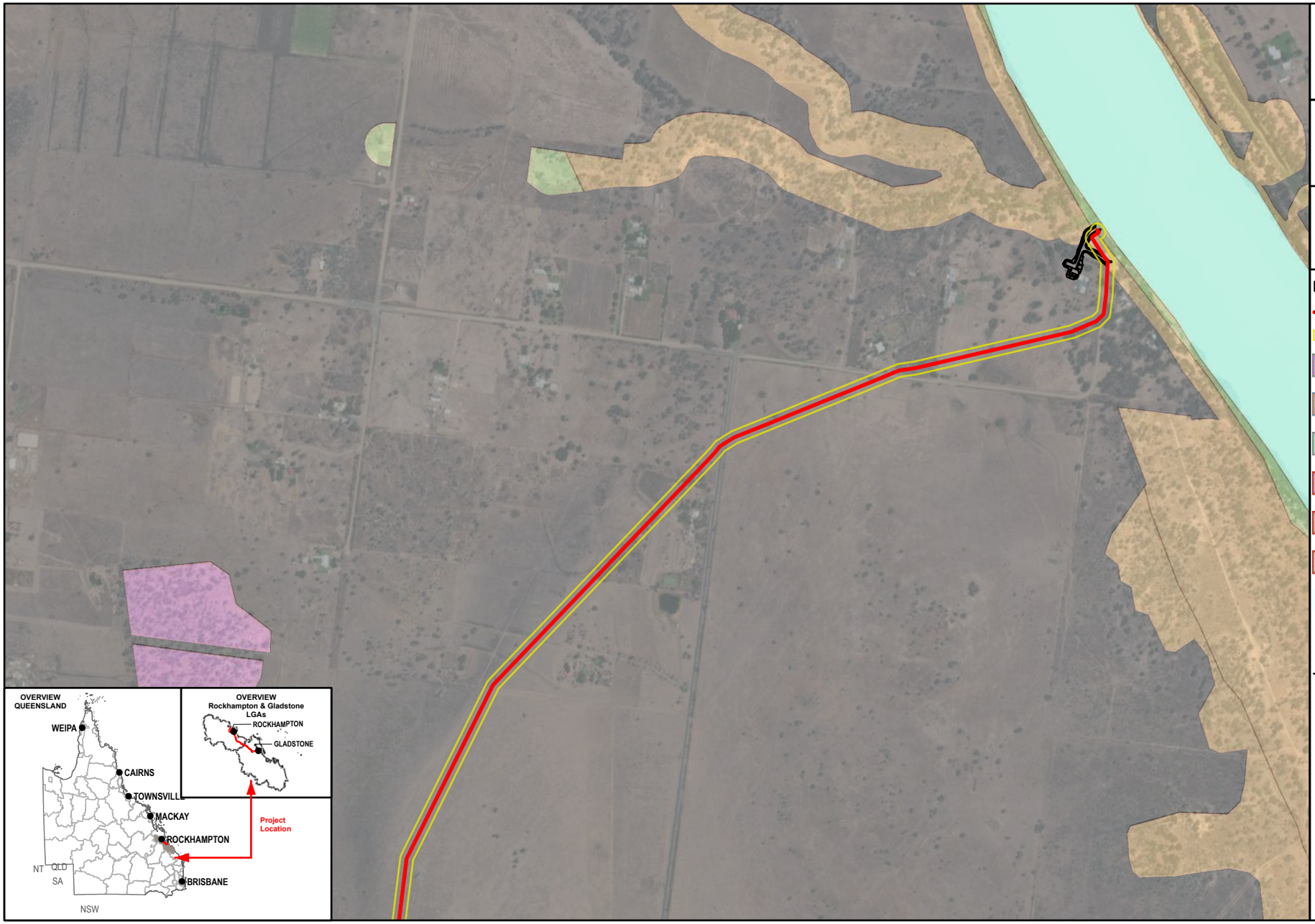

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Legend

- Pipeline Alignment
- Study Area
- Category A or B area containing endangered
- Category A or B area containing of concern
- Category A or B area that is least concern
- Category C or R area containing endangered
- Category C or R area containing of concern
- Category C or R area that is of least concern
- Water
- Non-remnant
- Fitzroy River Intake and Pump Station Layout

Data Sources:
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Fitzroy to Gladstone Pipeline
Baseline Terrestrial and Aquatic Ecology Technical Report
Appendix C-3f
Mapped Regulated Vegetation and REs Intersected by the Northern Section Pipeline Alignment

000-G-MAP-2453 Version:2 Date:25/08/2022

Appendix D

Protected plants flora survey report

Red Ash Consulting

Flora Survey Report
Gladstone to Fitzroy Pipeline
GHD Pty Ltd
July 2022

Certification by a suitably qualified person

I certify that:

(a) I have adhered to all statutory requirements and flora survey guideline requirements; and

(b) In the area surveyed I have found plants (as detailed in this report) that are currently listed as extinct, extinct in the wild, critically endangered, endangered, vulnerable or near threatened in the *Nature Conservation (Plants) Regulation 2020*; and

(c) The flora survey report is an accurate and full account of the flora survey.

Signature: Date: 17 July 2022

Disclaimer

This report has been prepared on behalf of and for the exclusive use of GHD Pty Ltd (GHD) and the Gladstone Area Water Board (GAWB) and is subject to and issued in connection with the provisions of the agreement between Red Ash Consulting Pty Ltd and GHD (the Client). Red Ash Consulting Pty Ltd accepts no liability or responsibility for or in respect of any use of or reliance upon this report by any third party.

The purpose of this report and the associated services performed by Red Ash Consulting Pty Ltd is to provide a Flora Survey Report in accordance with the scope of services set out in the contract between Red Ash Consulting Pty Ltd and the Client. That scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to the site.

Red Ash Consulting Pty Ltd derived the data, opinions, conclusions and/or recommendations in this report primarily from visual inspections, examination of records in the public domain, interviews with individuals and previous works undertaken for the Project. The passage of time, manifestation of latent conditions or impacts of future events may require further exploration at the site and subsequent data analysis, and re-evaluation of the findings, observations and conclusions expressed in this report.

In preparing this report, Red Ash Consulting Pty Ltd has relied upon and presumed accurate certain information (or absence thereof) relative to the site provided by government officials and authorities, the Client and other identified herein. Except as otherwise stated in the report, Red Ash Consulting Pty Ltd has not attempted to verify the accuracy or completeness of any such information. Red Ash Consulting Pty Ltd assumes that all information obtained by Red Ash Consulting Pty Ltd from sources outside Red Ash Consulting Pty Ltd was correct at the time the information was issued. Red Ash Consulting Pty Ltd does not accept liability for errors or omissions in the report which resulted from errors or omissions in that information.

Document Status

Revision Number	Date	Author	GHD Technical review
A	17 June 2022	Peter Moonie	Shelley Chadwick
0	21 July 2022	Peter Moonie	Shelley Chadwick

Contents

1. Introduction

1.1 Background

The Gladstone Area Water Board (GAWB) has been appointed as the Delivery Management Proponent for pre-construction activities associated with the proposed Fitzroy to Gladstone Pipeline (FGP) (the project). The 116 km long pipeline extends from the Fitzroy River at Alton Downs, Rockhampton to GAWB's existing water infrastructure near Yarwun. The proposed construction corridor for the pipeline has a nominal width of 30 m. The project area is divided into the following three sections:

- Northern Section – approximately 15 km of pipeline, the intake facility of the southern bank of the Lower Fitzroy River and the pump station, and the Alton Downs Water Treatment Plant
- SGIC SDA – proposed infrastructure within the Stanwell to Gladstone Infrastructure Corridor State Development Area (SGIC SDA) comprising approximately 80 km of pipeline and the Raglan Pump Station and Reservoir
- GSDA – proposed infrastructure within the Gladstone State Development Area (GSDA) comprising approximately 21 km of pipeline and the Aldoga Reservoirs.

The project intersects several high risk flora trigger areas under the Queensland *Nature Conservation Act 1992* (NC Act). A WildNet record also exists for the near-threatened plant, *Macropteranthes leiocaulis*, within 100 m of the pipeline alignment within the SGIC SDA.

As per Section 141 of the *Nature Conservation (Plants) Regulation 2020* (NC (Plants) Reg), a flora survey in accordance with the *Flora Survey Guidelines – Protected Plants* (2020) was undertaken to determine if any extinct, extinct in the wild, critically endangered, vulnerable or near threatened flora species listed under the NC Act (herein referred to as EVNT plant species) occur within any of the associated clearing impact areas along the pipeline alignment. A targeted search for EVNT plant species was also undertaken within 100 m of the nearby *Macropteranthes leiocaulis* record adjacent to the SGIC SDA pipeline alignment.

As the proposed works do not meet the relevant exemption requirements under the NC(Plants) Reg, GHD Pty Ltd was engaged to complete a flora survey of the clearing impact area and provide advice on permitting and/or notification requirements under the protected plants framework.

1.2 Purpose

This report presents the findings of the flora survey undertaken from 21 - 24 February (Phase 1) and 5 April 2022 (Phase 2). It demonstrates compliance with the principles of the *Flora Survey Guidelines – Protected Plants* (August 2020) (referred to herein as the flora survey guidelines) and provides information necessary to support permitting or notification requirements under the protected plants legislative framework.

1.3 Key definitions

The following definitions are relevant to this report:

- Clearing footprint – the area to be cleared for construction of the pipeline (development footprint).
- Clearing impact area - the area where clearing of native vegetation will occur within the high risk trigger area, together with a surrounding 100 m buffer area to the extent that it occurs within the high risk trigger area.
- EVNT - extinct, extinct in the wild, critically endangered, vulnerable or near threatened flora species listed under the NC Act

1.4 Study area

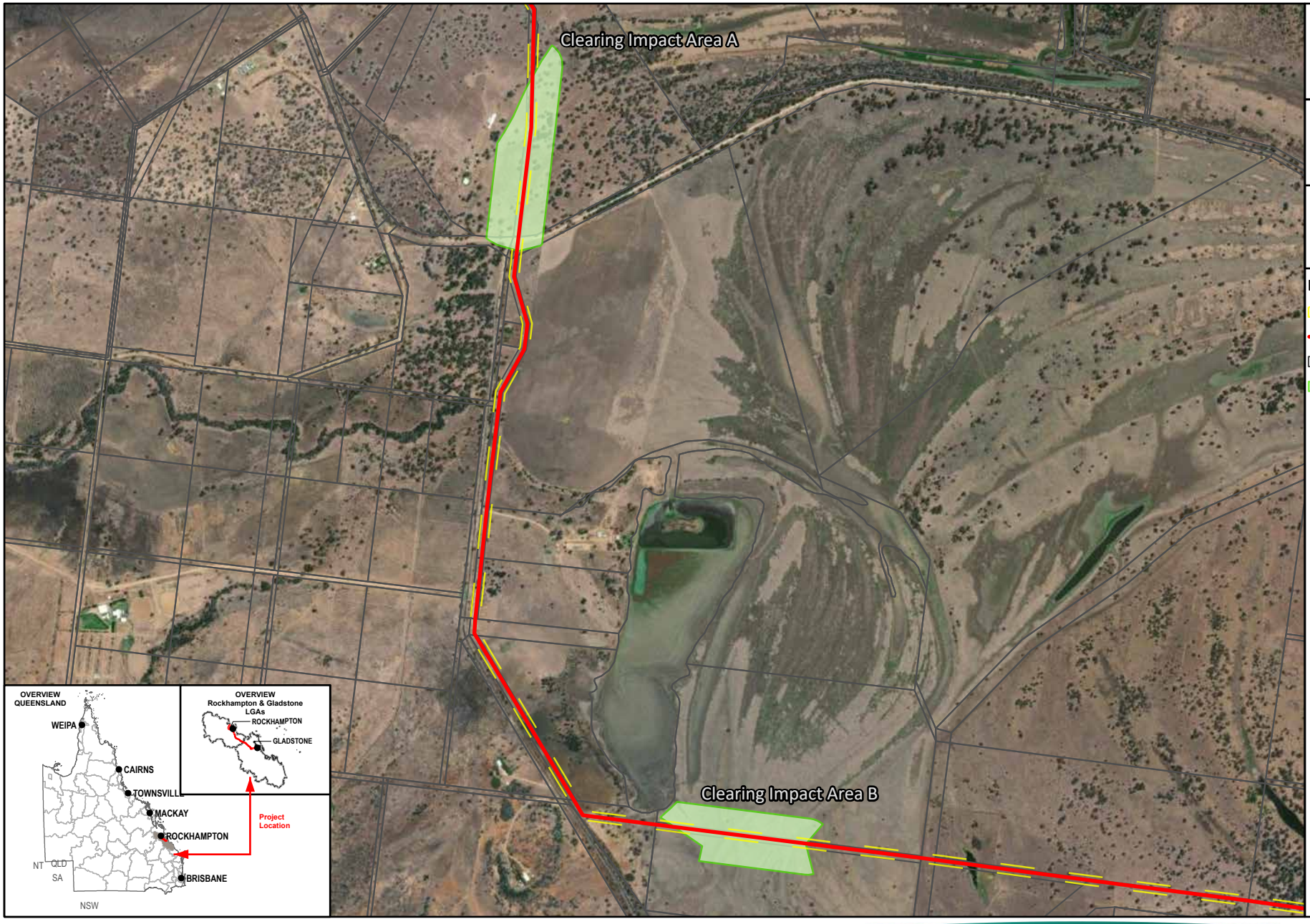
The study area encompassed six disjunct clearing impact areas (Table 1). The clearing impact areas, together with property boundaries and locations of the high risk flora trigger areas are shown in Figure 1-1 to Figure 1-3.

Table 1. Six Clearing Impact Areas within the pipeline alignments

Clearing Impact Area	Pipeline alignment
A and B	Northern Section
C and D	SGIC SDA
E and F	GSDA

1.5 Proposed Clearing

Clearing for the project is anticipated to commence in 2023.



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Legend

- Study Area
- Pipeline Alignment
- Property Boundary
- Clearing Impact Areas

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
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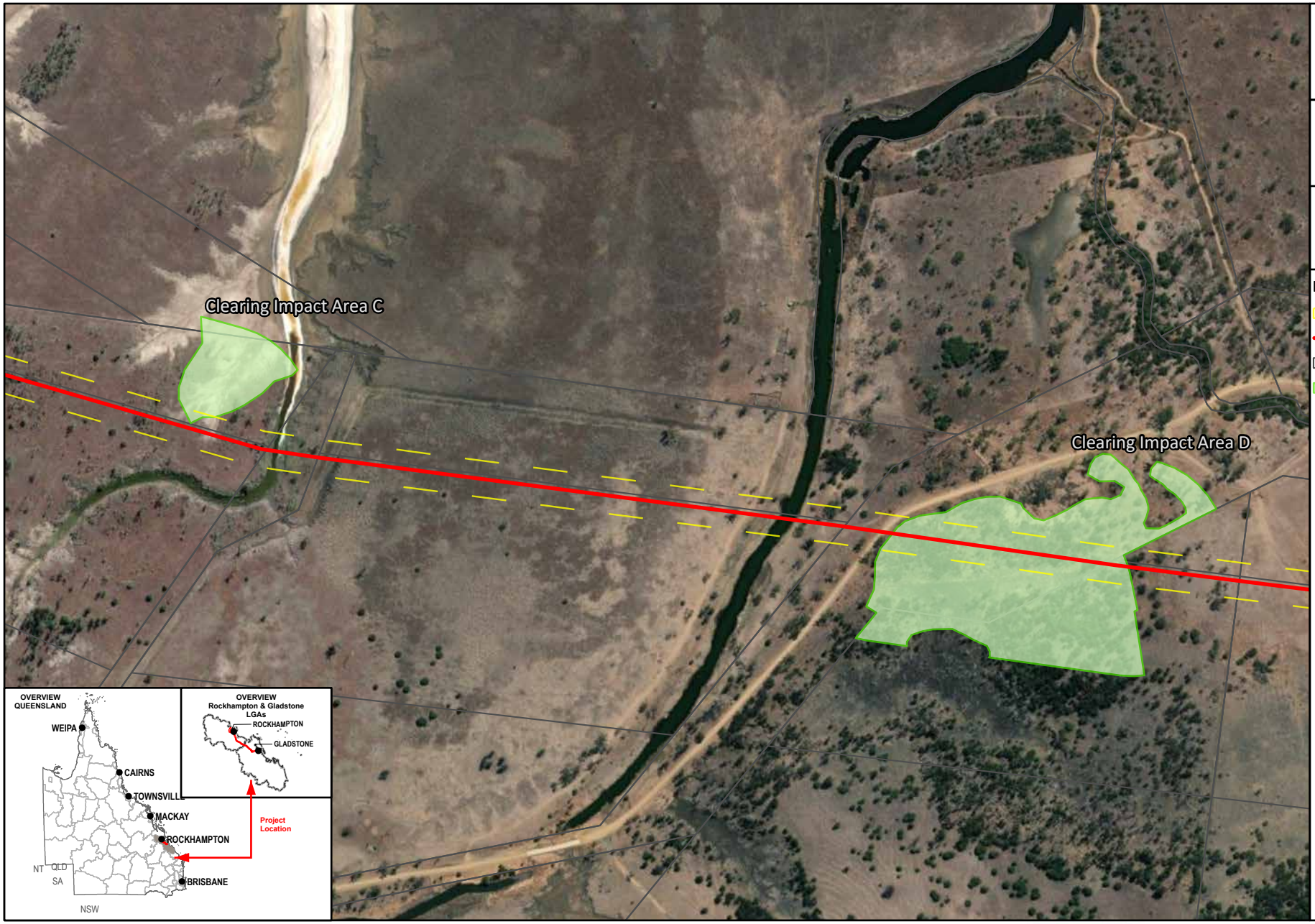
Gladstone to Fitzroy Pipeline
Flora Survey Report
Figure 1-1: Project Location and Clearing Impact Areas Northern Section
000-G-MAP-2445 Version:1 Date:20/07/2022



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Legend

- Study Area
- Pipeline Alignment
- Property Boundary
- Clearing Impact Areas

Data Sources:
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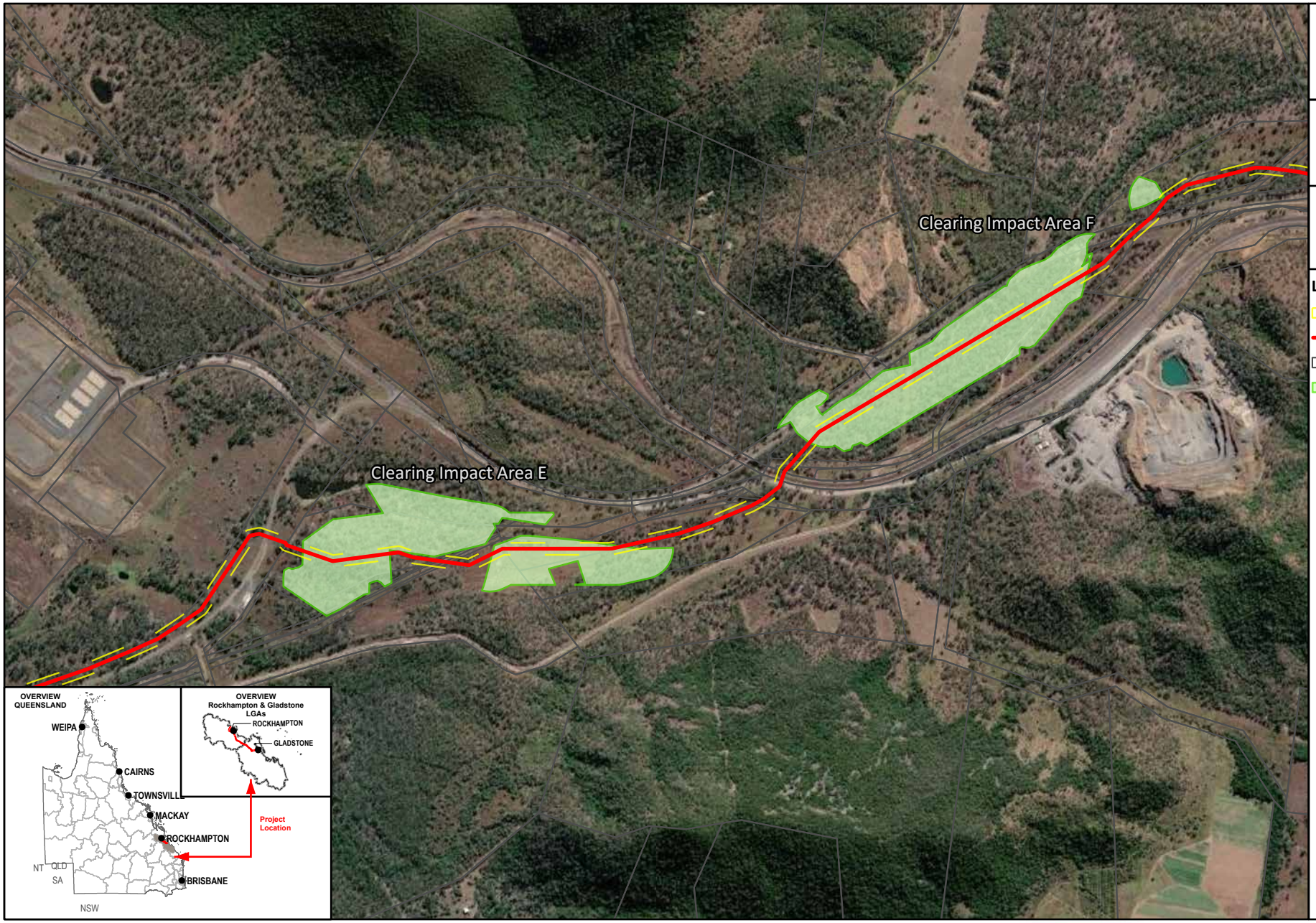
Gladstone to Fitzroy Pipeline
Flora Survey Report
Figure 1-2: Project Location and Clearing Impact Areas
SGIC SDA Section
000-G-MAP-2445 Version:1 Date:20/07/2022



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Legend

- Study Area
- Pipeline Alignment
- Property Boundary
- Clearing Impact Areas

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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PROJECTION UTM Zone 56
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Gladstone to Fitzroy Pipeline
Flora Survey Report
Figure 1-3: Project Location and Clearing Impact Areas
GSDA Section
000-G-MAP-2445 Version:1 Date:20/07/2022

2. Methods

2.1 Desktop Assessment

Table 2 summarises the desktop searches that were undertaken for the survey. Where applicable, copies of these searches are provided in Appendix A. Searches for the Phase 1 and Phase 2 surveys were undertaken on 18 February 2022 and 11 March respectively.

Table 2. Desktop searches undertaken for the study area.

Search Tool	Administrative body	Search details
Protected Plants Flora Survey Trigger Area Map	Queensland Department of Environment and Science (DES)	The flora survey trigger area spatial layer was examined along the length of the pipeline alignment.
Protected Matters Search Tool	Commonwealth Department of Climate Change, Energy, the Environment and Water (DoCCEEW)	A search was undertaken along the length of the pipeline alignment, with a 10 km buffer applied.
Species Profile Search	DES	Search of closest spatial records of EVNT plants identified in desktop assessment.
Wildlife Online and Biomaps	DES	Wildlife Online - Point searches were undertaken at five locations along the pipeline alignment, with a 10 km buffer applied. Biomaps - spatial search of study area.
Vegetation Management Map	Queensland Department of Resources (DoR)	The vegetation management regional ecosystem map (version 12) spatial layer was examined along the length of the pipeline alignments.
Atlas of Living Australia (ALA)	Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Spatial search of study area.

The geographical information system (GIS) program QGIS was used to view and query a range of spatial resources and create the relevant maps within this report. Spatial data layers in GDA2020, were obtained from the Queensland Spatial Catalogue (State of Queensland, 2022).

2.2 Field Survey

A targeted search for EVNT plant species within the clearing impact areas was undertaken from 21 - 24 February and 5 April 2022 by consulting ecologists, Peter Moonie (Red Ash Consulting) and Shannon Blatchford (GHD Pty Ltd). Where an EVNT plant species was detected beyond the clearing impact area, a 100 m buffer around the plant was searched for additional individuals which may be present.

Table 3 provides a summary of how the field survey addresses the requirements of the flora survey guidelines.

Within this report, an asterisk (*) has been used to identify a species as introduced.

Table 3. Comparison of flora survey with requirements of the flora survey guidelines

Key requirements of the *Flora Survey Guidelines – Protected Plants*	Limitations of this assessment	Justification
Suitably qualified person Flora surveys to be co-ordinated and led by a suitably qualified person.	No limitations or deviations were identified.	The flora survey was co-ordinated and led by a suitably qualified person who has appropriate qualifications and training, together with a minimum of 25 years of experience in undertaking EVNT flora surveys. Refer to Appendix B for further details.
Survey timing The survey must be conducted at the most appropriate time of year to maximise the chance of detecting the EVNT species.	No limitations were identified.	The seasonality of the flora survey was considered suitable for the detection of all EVNT plant species considered to have a moderate or high potential to occur in the clearing impact area. All such species can be identified from vegetative material throughout the year. Further comments regarding the potential for species to occur within the area surveyed are included in Appendix C.
Study area extent The flora survey needs to assess the extent of the clearing impact area within the mapped high-risk area.	No limitations were identified.	The survey encompassed the entire clearing footprint, clearing impact area and a 100 m buffer around known records. A spatial representation of survey effort expended during the on-ground survey (as recorded by the tracking function of a Garmin GPS) is provided in Figure 2-1 to Figure 2-3.
Survey method The flora survey should adopt one of the prescribed survey methods unless an alternative is approved.	No alternative survey methods were adopted.	Both the timed meander and systematic transect search methods (described in the flora survey guidelines) were utilised during the survey. Both methods were considered suitable for the detection of the EVNT plant species identified during the desktop assessment. The timed meander method was performed in farm paddocks where plant diversity was low and access, particularly through tall dense exotic grasses, was problematic. Dense tall grasses present may have concealed low growing EVNT plants; however, these areas tend to be substantially disturbed and are far less likely to contain EVNT species.
Population survey If an EVNT plant species is recorded during the survey, a more comprehensive survey is required in order to collect data concerning the EVNT population and its habitat.	Not applicable	Population surveys were not undertaken as no EVNT species were recorded during the survey.
Plant identification Where a possible EVNT plant remains unidentified, the specimen must be lodged with the Queensland Herbarium for formal identification.	No limitations were identified.	Most plant species encountered were identified in the field. Where this was not possible, specimen material was collected and later identified with the assistance of diagnostic keys and references. A specimen of a suspected *Macropteranthes fitzalanii* individual was also sent to the QLD herbarium for confirmation (ref: PT 263/22).

Key requirements of the *Flora Survey Guidelines – Protected Plants*	Limitations of this assessment	Justification
WildNet reporting If any EVNT plants are identified, a WildNet data entry form must be completed in accordance with the WildNet Data Entry Form Guidelines.	Not applicable	A WildNet data form was not completed for this project as specimens lodged with the Herbarium are incorporated into the WildNet database.

3. Desktop Assessment Results

3.1 EVNT plant species

The Wildlife Online search indicates that 11 EVNT plant species have been previously recorded within 10 km of the study area. Details of the closest record of each species (post 1980), and their respective status under the NC (Plants) Reg is provided in Table 4.

A likelihood of occurrence assessment for EVNT plants previously recorded or having the potential to occur within the clearing impact areas is provided in Appendix C. Of the species assessed, *Cycas megacarpa* and *Samadera bidwillii* were considered to have a high potential to occur in clearing impact areas D and E. *Cycas ophiolitica* was considered to have a moderate potential to occur in clearing impact areas A and B. All other species were considered to have low potential to occur due to a lack of suitable habitat within any of the clearing impact areas and a lack of historical records within the desktop search extent.

Table 4. EVNT plant species closest occurrence records

Scientific name	NC (Plants) Reg Status	Details of closest record (ALA (2022))
Atalaya collina	Endangered	Year collected - 1983 Catalogue number: BRI AQ0398489 Location: West of Spring Valley and Boyle's Roads, South-west of Mt Sugarloaf (2.7 km south of Clearing Impact Area E, Figure 1-3) Habitat: No detail provided
Capparis humistrata	Endangered	Year collected - 1984 Catalogue number: BRI AQ0394782 Location: Between Oombah and Goolara (7.8 km west of pump station) Habitat: No detail provided
Cupaniopsis shirleyana	Vulnerable	Year collected - 1981 Catalogue number: MEL 0687604A Location: Turkey Beach, east of Miriam Vale (127 km south-east of Clearing Impact Area E) Habitat: On sand near beach. Disturbed area. Note: A Wildnet record exists 1.68 km north of Clearing Impact Area B; however, this record is most likely *C.* sp. Watalgan rather than *C. shirleyana*.

Scientific name	NC (Plants) Reg Status	Details of closest record (ALA (2022))
Cycas megacarpa	Endangered	Year collected – 2015 Catalogue number: 39566505 Location: Location generalised but closest spatial record is shown 5.5 km west of pipeline alignment at Midgee. Habitat: No detail provided
Dansiea elliptica	Near threatened	Year collected - 1992 Catalogue number: BRI AQ0547608 Location: Boyles Road, 5km south south-west of Yarwun (3.4 km south of Clearing Impact Area D) Habitat: Remnant scrub
Graptophyllum excelsum	Near threatened	Year collected - 1997 Catalogue number: BRI AQ0572823 Location: State Forest 150, 13.5km SSW of Gladstone (13.93 km south-east of clearing Impact Area E) Habitat: Hilly terrain, valley with gravelly brown loam, chert. Tall open woodland (complex notophyll rainforest) of *Argyrodondron trifoliolatum.*
Hernandia bivalvis	Near threatened	Year collected - 1988 Catalogue number: BRI AQ0437245 Location: Mount Larcom Range (5.63 km north west of Clearing Impact Area E) Habitat: Rocky watercourse in dry rainforest
Macropteranthes leiocaulis	Near threatened	Year collected - 2015 Catalogue number: BRI AQ0950368 Location: 100 m south of the project corridor at Marble Creek (335 m west of Clearing Impact Area C) Habitat: Gallery rainforest
Parsonsia larcomensis	Vulnerable	Year collected - 1995 Catalogue number: BRI AQ0675500 Location: Mt Larcom south peak, 17.5km west north-west of Gladstone (4.09 km north of Clearing Impact Area D) Habitat: Very steep mountains, lithosols, skeletal soils, growing in rock, rocky soil
Samadera bidwillii	Vulnerable	Year collected - 1997 Catalogue number: BRI AQ0572784 Location: Mt Larcom (4.49 km north of Clearing Impact Area D) Habitat: Ridge top
Zieria actites	Critically Endangered	Year collected - 2011 Catalogue number: BRI AQ0818047 Location: Mt Larcom summit area; 2.5 km west south-west of Targinie (4.85 km north of Clearing Impact Area D) Habitat: Low shrubland of *Allocasuarina littoralis, Lophostemon confertus,* exposed trachyte rockfaces, western slopes

3.2 Essential habitat

According to the DoR Vegetation Management Report, the two polygons of regulated vegetation within the vicinity of Twelve Mile Road contain essential habitat for the EVNT flora species *Macropteranthes leiocaulis* (refer Appendix A).

3.3 Mapped Vegetation Communities

Regional Ecosystem (RE) mapping was used to guide determination of habitat areas. The mapped RE polygons (as depicted in the Vegetation Management Supporting Map) within each of the six clearing impact areas are listed in Table 5, together with the regulated vegetation category of each polygon and a description of each component RE. A copy of the mapping is included in Appendix A for reference.

Table 5. Mapped vegetation within clearing impact areas

RE polygon	Category	Description
Clearing Impact Area A		
11.3.3/ 11.3.4	B, R	11.3.3 – *Eucalyptus coolabah* woodland on alluvial plains. 11.3.4 – *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains.
Clearing Impact Area B		
11.3.27	B	11.3.27 – Freshwater wetlands.
11.3.3/ 11.3.27	R	11.3.3 – *Eucalyptus coolabah* woodland on alluvial plains. 11.3.27 – Freshwater wetlands.
11.3.4/ 11.3.2/ 11.3.25/ 11.3.27x1b	R	11.3.4 – *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains. 11.3.2 – *Eucalyptus populnea* woodland on alluvial plains. 11.3.25 – *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines. 11.3.27x1b – Sedgelands to grasslands on Quaternary deposits.
Clearing Impact Area C		
11.1.2a	B	11.1.2a – Bare mud flats on Quaternary estuarine deposits, with very isolated individual stunted mangroves such as *Avicennia marina* and/or *Ceriops australis*.
Clearing Impact Area D		
11.3.26/ 11.11.16	C	11.3.26 – *Eucalyptus moluccana* or *E. microcarpa* woodland to open forest on margins of alluvial plains.
11.3.2/ 11.3.4	C, R	11.3.2 – *Eucalyptus populnea* woodland on alluvial plains. 11.3.4 – *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains.
Clearing Impact Area E		
11.3.25	B	11.3.25 – *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines.
11.11.4/ 11.11.15/ 11.11.4c/ 11.11.5/ 11.11.18	B	11.11.4 – *Eucalyptus crebra* woodland on old sedimentary rocks with varying degrees of metamorphism and folding. 11.11.15 – *Eucalyptus crebra* woodland to open woodland on deformed and metamorphosed sediments and interbedded volcanics. 11.11.4c – *Eucalyptus moluccana* dominated woodland on old sedimentary rocks. 11.11.5 – Microphyll vine forest +/- *Araucaria cunninghamii* on old sedimentary rocks with varying degrees of metamorphism and folding. 11.11.18 – Semi-evergreen vine thicket on old sedimentary rocks with varying degrees of metamorphism and folding.
11.3.26/ 11.3.4/ 11.11.4c	C, R	11.3.26 – *Eucalyptus moluccana* or *E. microcarpa* woodland to open forest on margins of alluvial plains. 11.3.4 – *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains. 11.11.4c – *Eucalyptus moluccana* dominated woodland on old sedimentary rocks.

RE polygon	Category	Description
Clearing Impact Area F		
11.3.4/ 11.3.26/ 11.3.25	C	11.3.4 – *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains. 11.3.26 – *Eucalyptus moluccana* or *E. microcarpa* woodland to open forest on margins of alluvial plains. 11.3.25 – *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines.
11.3.25	B	11.3.25 – *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines.

Regulated vegetation category Codes: B – remnant vegetation, C – high-value regrowth vegetation, R – regrowth vegetation within 50 metres of a watercourse in the Burdekin, Mackay, Whitsunday and Wet Tropics Great Barrier Reef catchments.

4. Field Survey Results

The field survey encompassed the entire clearing footprint, clearing impact area and a 100 m buffer around known records. A spatial representation of survey effort expended during the on-ground survey is provided in Figure 2-1 to Figure 2-3. Survey results are presented in the following sub-sections.

4.1 Habitat Types within Clearing Impact Areas

Habitat types present in the clearing impact areas in the study area are described in Table 6. Their extents are represented spatially in Figure 2-1 to Figure 2-3.

Table 6. Habitat types present in clearing impact areas

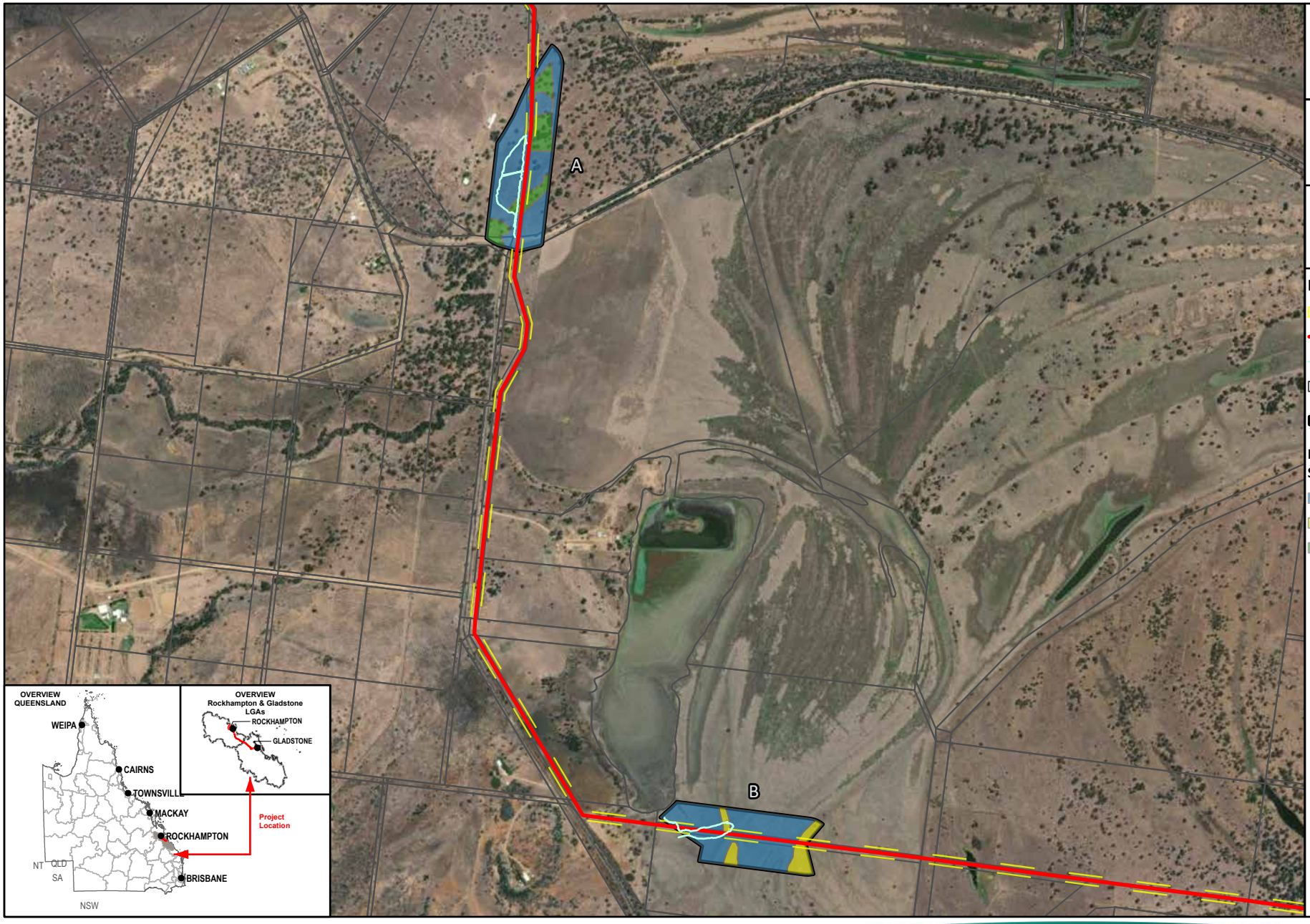
Habitat type	Description	Representative photograph
Clearing Impact Area A		
Highly disturbed (selectively cleared paddock with occasional mature trees)	Dense grassland dominated by *Megathyrsus maximus**, *Urochloa mutica**, *Dichanthium aristatum**, *Eriochloa pseudoacrotricha, Echinochloa colona**. Common herbs present included *Parthenium hysterophorus**, *Aeschynomene indica**, *Sesbania cannabina, Macroptilium lathyroides**, *Sida* spp. Occasional mature *Eucalyptus tereticornis, Lysiphyllum hookeri, E. coolabah, Corymbia tessellaris*.	

Habitat type	Description	Representative photograph
Woodland on alluvial plain (11.3.3/11.3.4)	T1 - *Eucalyptus tereticornis, E. coolabah* (12 – 18 m tall, 20 % cover). T2 - *Eucalyptus tereticornis, Lysiphyllum hookeri, E. coolabah, Corymbia tessellaris* (6-10 m tall, 10 % cover). G - *Eriochloa pseudoacrotricha, Megathyrsus maximus**, *Urochloa mutica**, *Parthenium hysterophorus**, *Aeschynomene indica**, *Sesbania cannabina, Macroptilium lathyroides**, *Sida* spp. (0.3-1 m tall, 85% cover)	
Clearing Impact Area B		
Highly disturbed (paddock)	Dense grassland dominated by *Urochloa mutica** with occasional herbs such as *Sesbania cannabina, Macroptilium lathyroides**, *Abutilon incanum**, *Parthenium hysterophorus**, *Verbena rigida**, *Cirsium vulgare**.	
Native grassland (11.3.27)	Dense grassland dominated by *Eriochloa pseudoacrotricha.*	
Clearing Impact Area C		
Samphire shrubland (11.1.2b)	Samphire shrubland dominated by *Sporobolus virginicus, Tecticornia pergranulata* subsp. *queenslandica*, *Tecticornia indica, Sclerolaena muricata* *Eriochloa* sp. *Chloris* sp. and *Atriplex muelleri*.	

Habitat type	Description	Representative photograph
Grassland	Grassland dominated by *Aristida latifolia*, *Sporobolus* sp., *Eriochloa* sp., *Harissa martinii** with emergent *Acacia salicina* and *Eremophila maculata*.	
Clearing Impact Area D		
Open forest on alluvial plain (11.3.1)	T1 – *Casuarina cristata, Melaleuca bracteata, Eucalyptus populnea* (10-16 m tall, 70% cover). T2 – *C. cristata, M. bracteata, Diospyros geminata, Alectryon diversifolius, Denhamia oleaster* (2-5 m tall, 8% cover). S1 – *A. diversifolia, Breynia oblongifolia, C. cristata, M. bracteata* (0.5-2 m tall, 5% cover). G – *Eriochloa pseudoacrotricha, Chloris gayana**, *Cyperus spp., Malvastrum americanum, Fimbristylis sp*. (0.5 m tall, 65% cover).	
Open woodland on alluvial plain) 11.3.4/11.3.2	T1 – *Eucalyptus tereticornis* (16-20 m tall, 7% cover). T2 – *Casuarina cristata, E. tereticornis, Eucalyptus populnea* (6-10 m tall, 70% cover). T3 – *C. cristata, Cryptostegia grandiflora** (2-4 m tall, 8% cover). S1 – *C. cristata* (1 m tall, 2% cover) G – *Hyparrhenia rufa**, *Eriochloa pseudoacrotricha, Marsilea drummondii, Diplachne fusca* (0.5 m tall, 20% cover).	

Habitat type	Description	Representative photograph
Clearing Impact Area E		
Woodland on metamorphic hills and rises – unit 1 (11.11.15/ 11.11.4)	T1 – *Eucalyptus crebra*, *Corymbia erythrophloia, C. tessellaris, E. tereticornis* (14-18 m tall, 40 % cover). T2 – T1 juveniles, *Acacia fasciculifera, Lophostemon suaveolens, A. disparrima* subsp. *disparrima* (2-8 m tall, 5 % cover). S1 - *A. disparrima* subsp. *disparrima, Vachellia bidwillii, A. fasciculifera* (1.3 m tall, 3 % cover). G – *Themeda triandra*, *Hyparrhenia rufa**, *Megathyrsus maximus**, *Bothriochloa pertusa** (0.1 – 1 m tall, 85 % cover).	
Woodland on metamorphic hills and rises – unit 2 (11.11.4/ 11.11.15)	T1 – *Eucalyptus crebra, Corymbia citriodora, E. moluccana, E. exserta* (12-18 m tall, 25% cover). T2 – *E. crebra*, *C. erythrophloia,* (6-10 m, 8% cover). T3 - *E. crebra*, *C. erythrophloia, Petalostigma pubescens, Alphitonia excelsa* (2-4 m, 5 % cover). S1 – *A. excelsa, E. crebra*, *Denhamia cunninghamii* (1.6 m tall, 5 % cover). G – Mid-dense *Themeda triandra, Sida hackettiana, Bothriochloa pertusa*, Stylosanthes scabra**.	
Woodland on lower slopes and plains (11.3.4/ 11.11.4)	T1 – *Eucalyptus tereticornis, E. crebra, C. tessellaris,* E. *moluccana* (16 m tall, 25 % cover). T2 – T1 juveniles, *A. disparrima* subsp. *disparrima, Petalostigma pubescens, Corymbia intermedia* (2-8 m tall, 10 % cover). S1 – *Lantana camara**, T1 juveniles (1 m tall, 3 % cover). G –*Cymbopogon refractus*, Melinis repens*, *Aristida* sp. *Cyanthillium cinereum Hyparrhenia rufa**, *Megathyrsus maximus** (0.1 – 0.7 m tall, 60%).	
Highly disturbed (sparse regrowth)	Very sparse regrowth of *Eucalyptus tereticornis, E. crebra,* and *Acacia* spp. over dense *Hyparrhenia rufa**, *Megathyrsus maximus**, *Bothriochloa pertusa**.	

Habitat type	Description	Representative photograph
Clearing Impact Area F		
Woodland fringing watercourse (11.3.25)	T1 – *Eucalyptus tereticornis, Corymbia tessellaris, C. intermedia* (20-26 m tall, 40 % cover). T2 – *Melaleuca quinquenervia, M. fluviatilis, Acacia disparrima* subsp. *disparrima, Lophostemon suaveolens, Euroschinus falcatus* (10-15 m tall, 20 % cover). T3 – *Cupaniopsis anacardioides*, *Timonius timon*, *Mallotus philippensis, Syzygium australe* (2-5 m tall, 10 % cover). S1 – *Ficus opposita, Senna pendula var. glabrata**, *A. disparrima* subsp. *disparrima*, *M. quinquenervia, Clerodendrum floribundum, Acacia fasciculifera* (1.5 m tall, 2% cover). G – *Megathyrsus maximus**, *Cyperus involucratus*, Lomandra hystrix* (0.3 – 1.5 m tall, 70%).	
Woodland on alluvial plains and open depressions (11.3.4/ 11.3.25)	T1 – *Eucalyptus tereticornis, Corymbia tessellaris*, *E. crebra* (25 m tall, 25 % cover). T2 – *E. tereticornis, C. tessellaris*, *E. crebra, Lophostemon suaveolens* (12 m tall, 20 % cover). T3 – *Planchonia careya, Acacia fasciculifera, A. disparrima* subsp. *disparrima, Ficus opposita* (4 m tall, 15 % cover). G – *Hyparrhenia rufa**, *Megathyrsus maximus** (0.1 – 1 m tall, 60%).	



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Legend

- Study Area
- Pipeline Alignment
- Flora survey tracks
- Property Boundary
- Clearing Impact Area - Northern Section

Flora survey habitat types - Northern Section

- Highly disturbed
- Native grassland
- Woodland on alluvial plain

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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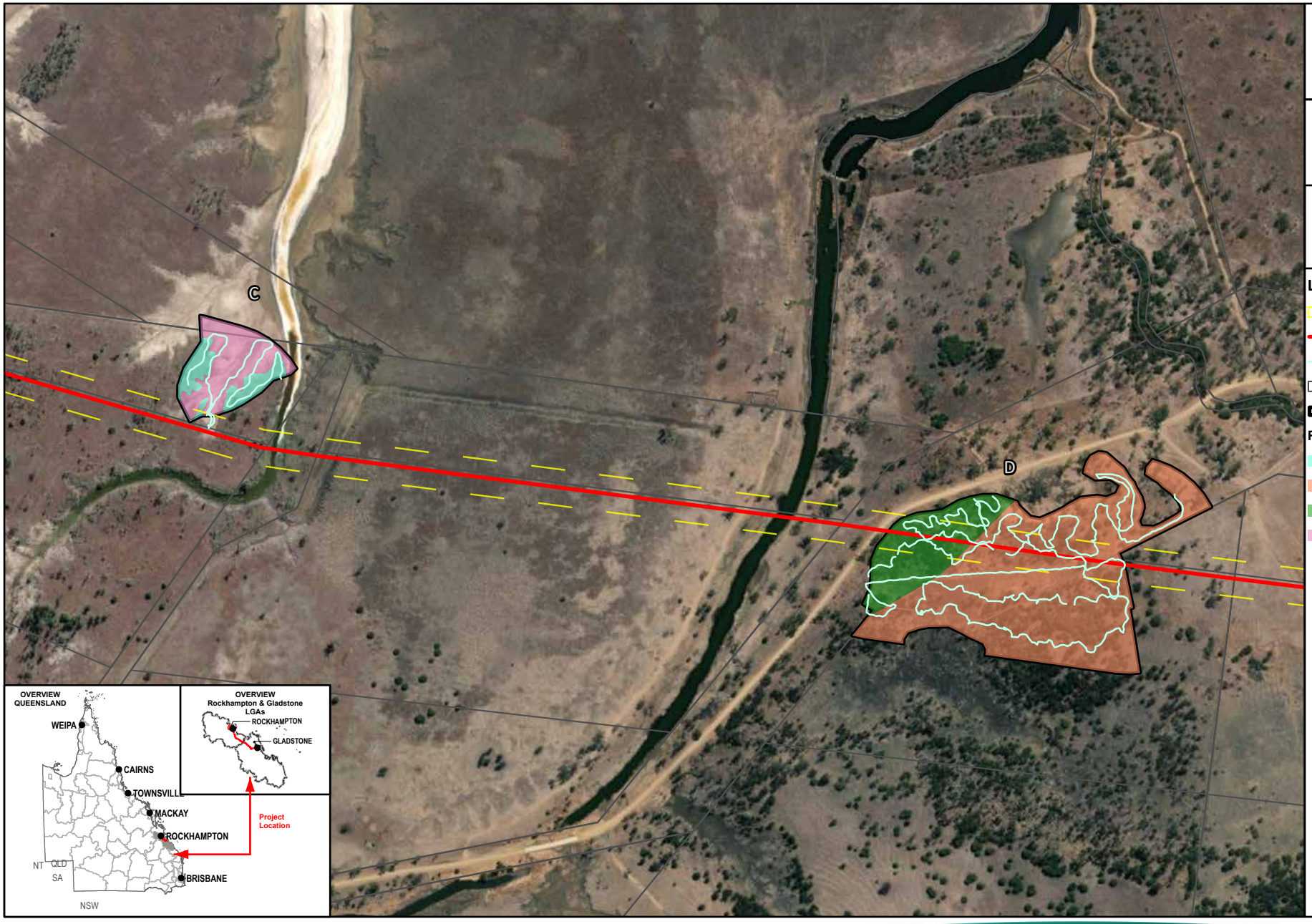
Gladstone to Fitzroy Pipeline
Flora Survey Report
Figure 2-1: Habitat Types and Track Log of Survey Effort Northern Section
000-G-MAP-2446 Version:1 Date:20/07/2022



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Legend

- Study Area
- Pipeline Alignment
- Flora survey tracks
- Property Boundary
- Clearing Impact Area - SGIC SDA

Flora survey habitat types - SGIC

- Grassland
- Open forest on alluvial plain
- Open woodland on alluvial plain
- Samphire shrubland

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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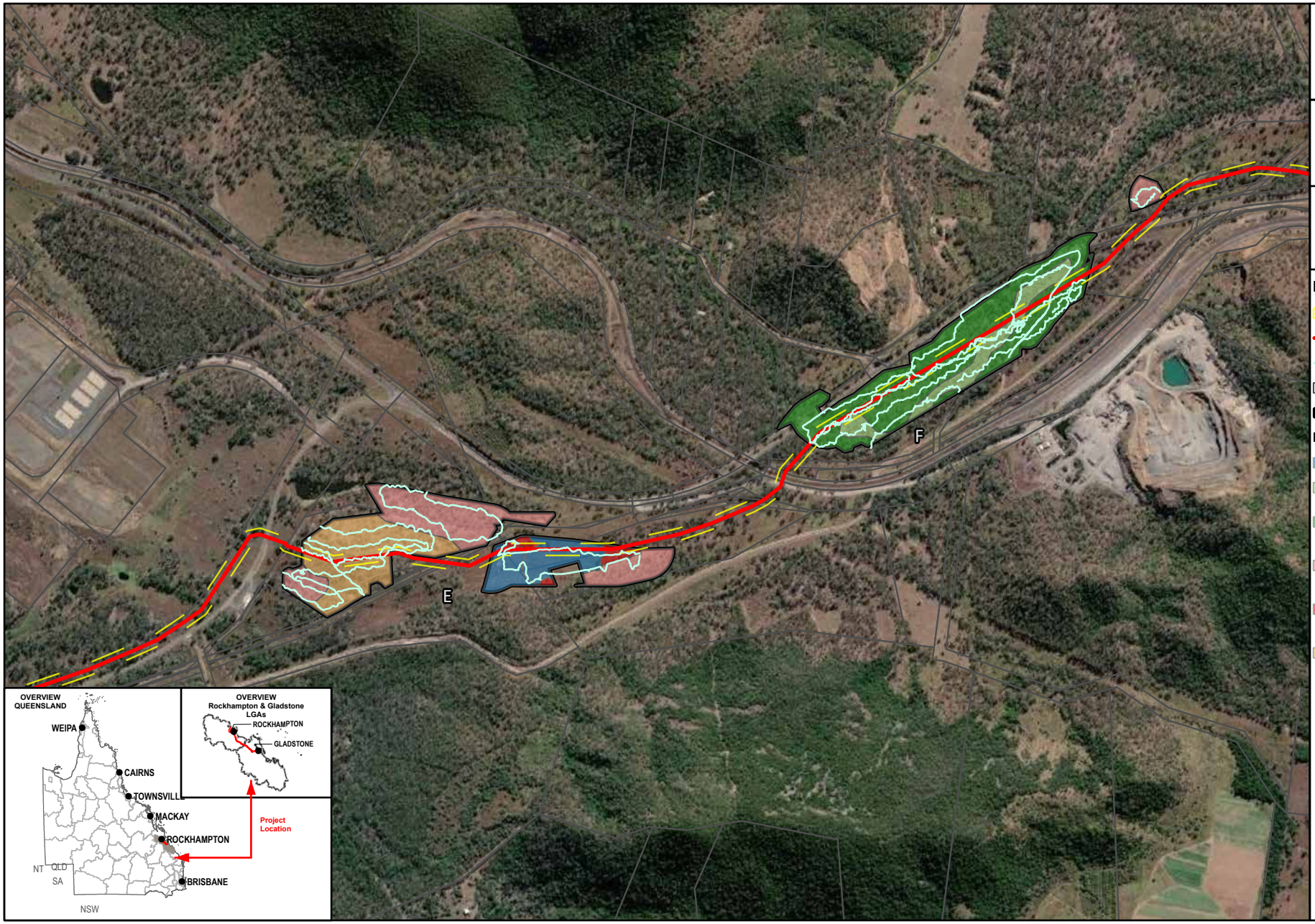
Gladstone to Fitzroy Pipeline
Flora Survey Report
Figure 2-2: Habitat Types and Track Log of Survey Effort SGIC SDA Section
000-G-MAP-2446 Version:1 Date:20/07/2022



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- Study Area
- Pipeline Alignment
- Flora survey tracks
- Property Boundary
- Clearing Impact Area - GSDA

Flora survey habitat types - GSDA

- Highly disturbed
- Woodland fringing watercourse
- Woodland on alluvial plains and open depressions
- Woodland on lower slopes and plains
- Woodland on metamorphic hills and rises Unit 1
- Woodland on metamorphic hills and rises Unit 2

Data Sources:
1. Base Layers (Roads, waterway, locality, LGA etc) @ QSpatial, 2021
2.Imagery @ Esri, Maxar, GeoEye, Earthstar Geographics, CNES-Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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(Datum GDA2020)

Compiled by:YS16239

Gladstone to Fitzroy Pipeline
Flora Survey Report
Figure 2-3: Habitat Types and Track Log of Survey Effort GSDA Section
000-G-MAP-2446 Version:1 Date:20/07/2022

4.2 EVNT Flora Species Recorded

No EVNT flora species were recorded within the study area during the field assessment. A voucher specimen of the plant identified by the Queensland Herbarium in 2015 as *Macropteranthes leiocaulis* at Marble Creek (- 23.6833, 150.7581) (BRI AQ0950368) was lodged with the herbarium on 11 May 2022 as its morphological features and supporting habitat appeared more closely aligned to *Macropteranthes fitzalanii*. The herbarium confirmed the specimen's identity as *Macropteranthes fitzalanii* on 30 May 2022 (Herbarium reference: ME:PT 263/22). A high level of confidence is assigned to this identification as a fruiting specimen was supplied for identification purposes. It appears that the name *Macropteranthes leiocaulis* was misapplied to this plant in 2015. Of note, the conservation status of *M. fitzalanii* under the NC Act was reclassified from near threatened to least concern in 2014.

5. Permitting/Notification Requirements

As no EVNT flora species were recorded during the survey, this report is to be submitted to DES to notify the department that the proposed clearing is exempt under the NC(Plants) Reg. The following timeframes are applicable to this project:

- The report must be provided at least one (1) week before commencement of clearing, and no later than 12 months after the flora survey was undertaken (as per the DES Code of Practice for the take and use of protected plants under an exemption).
- Clearing is to occur within 3 years after the day the flora survey was complete (NC(Plants)Reg Section 48).

6. References

Department of Environment and Heritage Protection (2020). Flora Survey Guidelines – Protected Plants. State of Queensland. Brisbane.

Department of Environment and Science (2022). Species Profile Search. Available at: https://apps.des.qld.gov.au/species-search. Accessed on 18 February and 11 March 2022.

Queensland Department of Natural Resources (DNR) (2000). Species Management Manual. Forest and Fauna Conservation and Ecology Section, Queensland Department of Natural Resources.

The State of Queensland (2021). Queensland Spatial Catalogue. Department of Natural Resources and Mines. Available from www.data.qld.gov.au. Accessed on 18 February and 11 March 2022.

Appendix A – Desktop Searches

Australian Government

Department of Agriculture, Water and the Environment

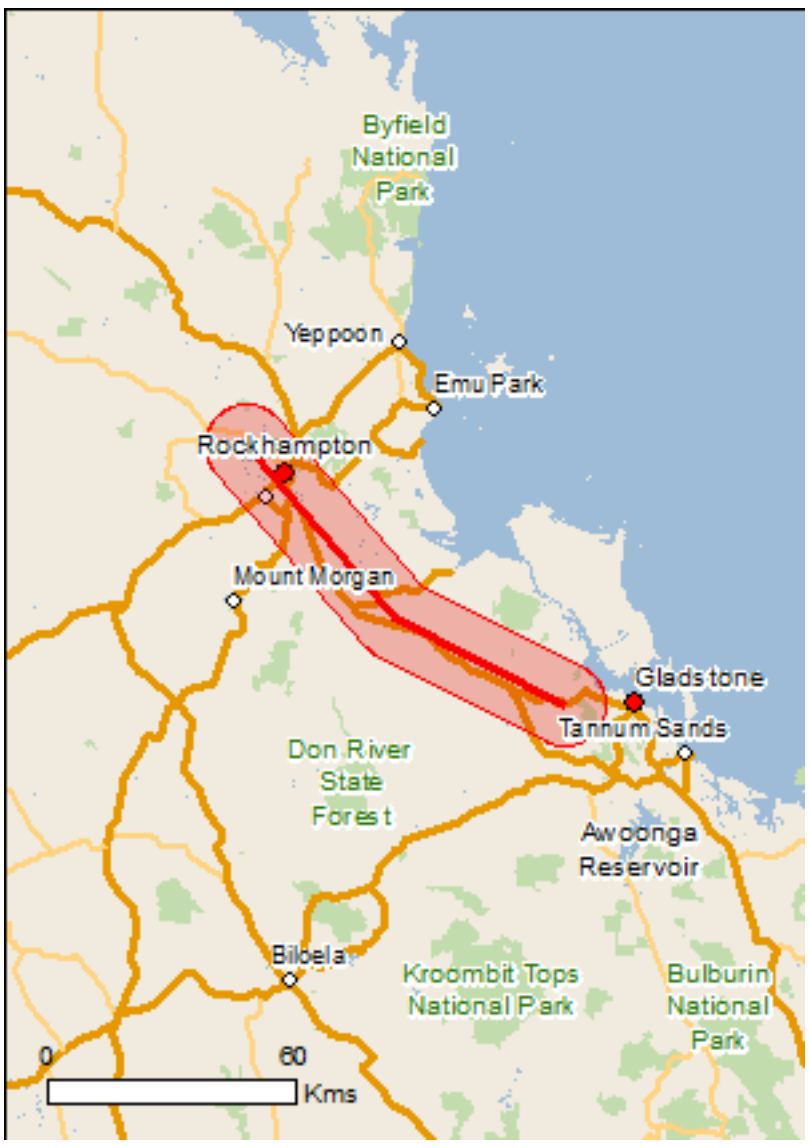
EPBC Act Protected Matters Report

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.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

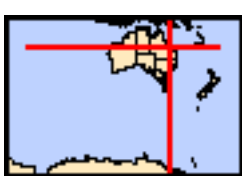
Report created: 08/02/22 18:37:06



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2015

Coordinates

Buffer: 10.0Km



Summary

Matters of National Environmental 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:	1
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	9
Listed Threatened Species:	62
Listed Migratory Species:	59

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 http://www.environment.gov.au/heritage

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

Commonwealth Land:	3
Commonwealth Heritage Places:	1
Listed Marine Species:	101
Whales and Other Cetaceans:	12
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	6
Regional Forest Agreements:	None
Invasive Species:	42
Nationally Important Wetlands:	3
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

World Heritage Properties [Resource Information]

Name	State	Status
Great Barrier Reef	QLD	Declared property

National Heritage Properties [Resource Information]

Name	State	Status
Natural		
Great Barrier Reef	QLD	Listed place

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.

Name	Status	Type of Presence
Brigalow (Acacia harpophylla dominant and co-dominant)	Endangered	Community known to occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area
Coolibah - Black Box Woodlands of the Darling Riverine Plains and the Brigalow Belt South Bioregions	Endangered	Community may occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community likely to occur within area
Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions	Endangered	Community likely to occur within area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area
Weeping Myall Woodlands	Endangered	Community likely to occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area

Name	Status	Type of Presence
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area
Epthianura crocea macgregori Capricorn Yellow Chat, Yellow Chat (Dawson) [67090]	Critically Endangered	Species or species habitat known to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Neochmia ruficauda ruficauda Star Finch (eastern), Star Finch (southern) [26027]	Endangered	Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Poephila cincta cincta Southern Black-throated Finch [64447]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat known to occur within area
Mammals		

Name	Status	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Nyctophilus corbeni Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within 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]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Xeromys myoides Water Mouse, False Water Rat, Yirrkoo [66]	Vulnerable	Species or species habitat known to occur within area
Plants		
Atalaya collina Yarwun Whitewood [55417]	Endangered	Species or species habitat known to occur within area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area
Bulbophyllum globuliforme Miniature Moss-orchid, Hoop Pine Orchid [6649]	Vulnerable	Species or species habitat likely to occur within area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat likely to occur within area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat known to occur within area
Cycas megacarpa [55794]	Endangered	Species or species habitat known to occur within area
Cycas ophiolitica [55797]	Endangered	Species or species habitat known to occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Eucalyptus raveretiana Black Ironbox [16344]	Vulnerable	Species or species habitat known to occur within area
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
Marsdenia brevifolia [64585]	Vulnerable	Species or species habitat likely to occur within area
Parsonsia larcomensis Mt Larcom Silk Pod [64587]	Vulnerable	Species or species habitat known to occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat known to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area
Denisonia maculata Ornamental Snake [1193]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat known to occur within area
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Furina dunmalli Dunmall's Snake [59254]	Vulnerable	Species or species habitat known to occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Rheodytes leukops Fitzroy River Turtle, Fitzroy Tortoise, Fitzroy Turtle, White-eyed River Diver [1761]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Sharks		
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Pristis zijsron Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Anous stolidus Common Noddy [825]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Migratory Marine Species		
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or

Name	Threatened	Type of Presence
		related behaviour known to occur within area
[Crocodylus porosus](#) Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
[Dugong dugon](#) Dugong [28]		Species or species habitat known to occur within area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
[Lamna nasus](#) Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
[Lepidochelys olivacea](#) Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
[Manta alfredi](#) Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
[Manta birostris](#) Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
[Megaptera novaeangliae](#) Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
[Orcaella heinsohni](#) Australian Snubfin Dolphin [81322]		Species or species habitat likely to occur within area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat may occur within area
[Pristis zijsron](#) Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Breeding likely to occur within area
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
[Sousa chinensis](#) Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Migratory Terrestrial Species		
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area

Name	Threatened	Type of Presence
Pandion haliaetus		
Osprey [952]		Breeding known to occur within area
Pluvialis fulva		
Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola		
Grey Plover [865]		Roosting known to occur within area
Tringa brevipes		
Grey-tailed Tattler [851]		Roosting known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis		
Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus		
Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Defence - LOGISTIC SUPPORT DEPOT - ROCKHAMPTON
Defence - ROCKHAMPTON AIRFIELD
Defence - ROCKHAMPTON TRAINING DEPOT

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
ABC Radio Studios	QLD	Listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat known to occur within area
Anous stolidus		
Common Noddy [825]		Species or species habitat known to occur within area
Anseranas semipalmata		
Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis		
Cattle Egret [59542]		Breeding likely to occur within area
Arenaria interpres		
Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Roosting known to occur within area

Name	Threatened	Type of Presence
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat likely to occur within area
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Himantopus himantopus Pied Stilt, Black-winged Stilt [870]		Roosting known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Limnodromus semipalmatus Asian Dowitcher [843]		Species or species habitat may occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Roosting known to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat known to occur within area
Sterna albifrons Little Tern [813]		Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area
Fish		

Name	Threatened	Type of Presence
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Campichthys tryoni Tryon's Pipefish [66193]		Species or species habitat may occur within area
Choeroichthys brachysoma Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
Corythoichthys amplexus Fijian Banded Pipefish, Brown-banded Pipefish [66199]		Species or species habitat may occur within area
Corythoichthys flavofasciatus Reticulate Pipefish, Yellow-banded Pipefish, Network Pipefish [66200]		Species or species habitat may occur within area
Corythoichthys haematopterus Reef-top Pipefish [66201]		Species or species habitat may occur within area
Corythoichthys intestinalis Australian Messmate Pipefish, Banded Pipefish [66202]		Species or species habitat may occur within area
Corythoichthys ocellatus Orange-spotted Pipefish, Ocellated Pipefish [66203]		Species or species habitat may occur within area
Corythoichthys paxtoni Paxton's Pipefish [66204]		Species or species habitat may occur within area
Corythoichthys schultzi Schultz's Pipefish [66205]		Species or species habitat may occur within area
Doryrhamphus excisus Bluestripe Pipefish, Indian Blue-stripe Pipefish, Pacific Blue-stripe Pipefish [66211]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Halicampus dunckeri Red-hair Pipefish, Duncker's Pipefish [66220]		Species or species habitat may occur within area
Halicampus grayi Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
Halicampus nitidus Glittering Pipefish [66224]		Species or species habitat may occur within area
Halicampus spinirostris Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
Hippichthys cyanospilos Blue-speckled Pipefish, Blue-spotted Pipefish [66228]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
Hippichthys heptagonus Madura Pipefish, Reticulated Freshwater Pipefish [66229]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus bargibanti Pygmy Seahorse [66721]		Species or species habitat may occur within area
Hippocampus kuda Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
Hippocampus planifrons Flat-face Seahorse [66238]		Species or species habitat may occur within area
Hippocampus zebra Zebra Seahorse [66241]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Micrognathus andersonii Anderson's Pipefish, Shortnose Pipefish [66253]		Species or species habitat may occur within area
Micrognathus brevirostris thorntail Pipefish, Thorn-tailed Pipefish [66254]		Species or species habitat may occur within area
Nannocampus pictus Painted Pipefish, Reef Pipefish [66263]		Species or species habitat may occur within area
Solegnathus hardwickii Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
Mammals		
Dugong dugon Dugong [28]		Species or species habitat known to occur within area
Reptiles		
Acalyptophis peronii Horned Seasnake [1114]		Species or species habitat may occur within area
Aipysurus duboisii Dubois' Seasnake [1116]		Species or species habitat may occur within

Name	Threatened	Type of Presence
		area
Aipysurus eydouxii Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
Aipysurus laevis Olive Seasnake [1120]		Species or species habitat may occur within area
Astrotia stokesii Stokes' Seasnake [1122]		Species or species habitat may occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Foraging, feeding or related behaviour known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Disteira kingii Spectacled Seasnake [1123]		Species or species habitat may occur within area
Disteira major Olive-headed Seasnake [1124]		Species or species habitat may occur within area
Emydocephalus annulatus Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Hydrophis elegans Elegant Seasnake [1104]		Species or species habitat may occur within area
Lapemis hardwickii Spine-bellied Seasnake [1113]		Species or species habitat may occur within area
Laticauda colubrina a sea krait [1092]		Species or species habitat may occur within area
Laticauda laticaudata a sea krait [1093]		Species or species habitat may occur within area
Lepidochelys olivacea Olive Ridley Turtle, Pacific Ridley Turtle [1767]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcaella brevirostris Irrawaddy Dolphin [45]		Species or species habitat likely to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Breeding known to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves	[Resource Information]
Name	State
Calliope	QLD
Long Island Bend	QLD
Mount Archer	QLD
Pindari	QLD
Rockhampton Pistol Club	QLD
Rundle Range	QLD

Invasive Species

[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur

Name	Status	Type of Presence within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Acacia nilotica subsp. indica Prickly Acacia [6196]		Species or species habitat may occur within area
Andropogon gayanus Gamba Grass [66895]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus africanus Climbing Asparagus, Climbing Asparagus Fern [66907]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Cryptostegia grandiflora Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda [18913]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species habitat likely to occur within area
Hymenachne amplexicaulis Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass [31754]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Parthenium hysterophorus Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed [19566]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Vachellia nilotica Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul [84351]		Species or species habitat likely to occur within area
Reptiles		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat may occur within area

Nationally Important Wetlands

[Resource Information]

Name	State
Fitzroy River Delta	QLD
Fitzroy River Floodplain	QLD
Port Curtis	QLD

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

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.

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

Where very little information is available for 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 reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

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

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

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

Coordinates

-23.8486 151.1024,-23.6784 150.7369,-23.333 150.4122

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact Us page.

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Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: Plants (including other non-animals such as fungi and protists)
Type: All
Queensland status: Rare and threatened species
Records: All
Date: All
Latitude: -23.3315
Longitude: 150.4129
Distance: 10
Email: peter@redashconsulting.com.au
Date submitted: Friday 11 Feb 2022 11:21:31
Date extracted: Friday 11 Feb 2022 11:30:02

The number of records retrieved = 1

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Capparaceae	*Capparis humistrata*			E		1/1

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

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

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

Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: Plants (including other non-animals such as fungi and protists)
Type: All
Queensland status: Rare and threatened species
Records: All
Date: All
Latitude: -23.8504
Longitude: 151.0873
Distance: 10
Email: peter@redashconsulting.com.au
Date submitted: Friday 11 Feb 2022 11:23:56
Date extracted: Friday 11 Feb 2022 11:30:10

The number of records retrieved = 10

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
plants	land plants	Acanthaceae	*Graptophyllum excelsum*			NT		3
plants	land plants	Apocynaceae	*Parsonsia larcomensis*			V	V	7/7
plants	land plants	Combretaceae	*Dansiea elliptica*			NT		6/4
plants	land plants	Combretaceae	*Macropteranthes leiocaulis*			NT		4/2
plants	land plants	Cycadaceae	*Cycas megacarpa*			E	E	6/4
plants	land plants	Hernandiaceae	*Hernandia bivalvis*	cudgerie		NT		6/3
plants	land plants	Rutaceae	*Zieria actites*	Mt Larcom stink bush		CR		6/6
plants	land plants	Sapindaceae	*Atalaya collina*			E	E	12/11
plants	land plants	Sapindaceae	*Cupaniopsis shirleyana*	wedge-leaf tuckeroo		V	V	3/1
plants	land plants	Simaroubaceae	*Samadera bidwillii*			V	V	4/4

CODES

I - Y indicates that the taxon is introduced to Queensland and has naturalised.

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

A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999.*
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Records - The first number indicates the total number of records of the taxon (wildlife records and species listings for selected areas).
This number is output as 99999 if it equals or exceeds this value. A second number located after a / indicates the number of specimen records for the taxon.
This number is output as 999 if it equals or exceeds this value.

resources.QLD.GOV.AU

Vegetation management report

For Lot: 84 Plan: DS185

10/03/2022

Queensland Government

Recent changes

Updated mapping

Updated vegetation mapping was released on 8 September 2021 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, wetland, high-value regrowth and essential habitat mapping.

The Department of Environment and Science have also updated their protected plant and koala protection mapping to align with the Queensland Herbarium scientific updates.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

Table of Contents

1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 84 Plan: DS185, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
84	DS185	Freehold	1,054,710
A	SP226062	Easement	262,100

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 84 Plan: DS185, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Rockhampton Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Marlborough Plains

Catchment(s)
Fitzroy

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2012, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the Vegetation Management Regulation 2012; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://apps.dnrm.qld.gov.au/vegetation/

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:
Phone 135VEG (135 834)
Email vegetation@resources.qld.gov.au
Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 84 Plan: DS185

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 105.53ha

Vegetation category	Area (ha)
Category B	0.9
Category C	12.2
Category R	< 0.1
Category X	92.4

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2012/004185

2009/004329

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
11.1.2	Least concern	B	0.90	Samphire forbland on marine clay plains	Very sparse
11.11.16	Of concern	C	2.33	Eucalyptus cambageana, Acacia harpophylla open forest to woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Lowlands	Mid-dense
11.11.16	Of concern	R	less than 0.01	Eucalyptus cambageana, Acacia harpophylla open forest to woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Lowlands	Mid-dense
11.3.1	Endangered	C	0.15	Acacia harpophylla and/or Casuarina cristata open forest on alluvial plains	Mid-dense
11.3.1	Endangered	R	less than 0.01	Acacia harpophylla and/or Casuarina cristata open forest on alluvial plains	Mid-dense
11.3.2	Of concern	C	5.57	Eucalyptus populnea woodland on alluvial plains	Sparse
11.3.2	Of concern	R	0.02	Eucalyptus populnea woodland on alluvial plains	Sparse
11.3.25	Least concern	C	0.15	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Sparse
11.3.25	Least concern	R	less than 0.01	Eucalyptus tereticornis or E. camaldulensis woodland fringing drainage lines	Sparse
11.3.26	Least concern	C	0.29	Eucalyptus moluccana or E. microcarpa woodland to open forest on margins of alluvial plains	Sparse
11.3.26	Least concern	R	less than 0.01	Eucalyptus moluccana or E. microcarpa woodland to open forest on margins of alluvial plains	Sparse
11.3.4	Of concern	C	3.72	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Sparse
11.3.4	Of concern	R	0.01	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Sparse
non-rem	None	X	92.39	None	None

Please note:

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

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
1785	Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	Dry eucalypt woodland (including poplar box, spotted gum, yellow box, acacia and callitris), with sparse short grass, often on sandy areas near to permanent water; grassy eucalypt woodlands. Nest on ground near or under grass tussock, log or low bush.	None	None	Gravelly ridges, traprock and river flats.
1878	Calidris ferruginea	curlew sandpiper	CE	Foraging on intertidal mudflat in sheltered estuaries, bays, inlets and lagoons; non-tidal swamps and inland ephemeral and permanent lakes, dams or waterholes. Roost on shingle/sand/shell beaches, saltmarsh, mangrove and close to wetlands.	Sea level to 100m.	Sand and mud substrates.	Associated with coastlines and coastal and inland wetlands.
7667	Macropteranthes leiocaulis	None	NT	deciduous vine thicket; semi-evergreen vine thicket; brigalow-semi-evergreen vine thicket; softwood scrub; Araucarian microphyll or simple microphyll vine forest; brigalow/belah scrub	0 to 400 m	duplex soil with sandy clay loam surface or loam to clay loam or heavy clay soil	gentle to steep hill slope, steep ridge line, plain, alluvial flat, watercourse

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
22459	Epthianura crocea macgregori	yellow chat (Dawson)	E	Swampy grassland (salt couch Sporobolus virginicus, water couch, reeds Schoenoplectus lttoralis) and saline herbland (samphire Halosarcia) on marine plain with a network of braided drainage lines.	Sea level to 100m.	None	Marine plains.

Label	Regional Ecosystem (mandatory unless otherwise specified)
1785	8.2.1, 8.2.7, 8.2.8, 8.2.12, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.13, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.9.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.12.6, 8.12.7, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.9, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.18, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.23, 9.4.1, 9.4.2, 9.4.3, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.16, 9.7.1, 9.7.2, 9.7.3, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.4, 9.8.5, 9.8.6, 9.8.9, 9.8.10, 9.8.11, 9.10.1, 9.10.3, 9.10.6, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.11, 9.11.12, 9.11.13, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.23, 9.11.26, 9.11.28, 9.11.29, 9.11.31, 9.11.32, 9.12.1, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.26, 9.12.28, 9.12.30, 9.12.31, 9.12.33, 9.12.35, 9.12.37, 9.12.39, 10.3.1, 10.3.2, 10.3.3, 10.3.4, 10.3.5, 10.3.6, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.19, 10.3.20, 10.3.27, 10.3.28, 10.3.30, 10.3.31, 10.4.3, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.7.2, 10.7.3, 10.7.5, 10.7.11, 10.7.12, 10.9.1, 10.9.2, 10.9.3, 10.9.5, 10.10.1, 10.10.3, 10.10.4, 10.10.5, 10.10.7, 11.2.1, 11.2.5, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.6, 11.3.7, 11.3.8, 11.3.9, 11.3.10, 11.3.12, 11.3.13, 11.3.14, 11.3.15, 11.3.16, 11.3.17, 11.3.18, 11.3.19, 11.3.23, 11.3.25, 11.3.27, 11.3.28, 11.3.29, 11.3.30, 11.3.35, 11.3.36, 11.3.37, 11.3.38, 11.3.39, 11.4.2, 11.4.3, 11.4.5, 11.4.8, 11.4.10, 11.4.12, 11.4.13, 11.5.1, 11.5.2, 11.5.3, 11.5.4, 11.5.5, 11.5.8, 11.5.9, 11.5.12, 11.5.13, 11.5.14, 11.5.17, 11.5.20, 11.5.21, 11.7.1, 11.7.2, 11.7.4, 11.7.6, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.8.9, 11.8.11, 11.8.12, 11.8.14, 11.8.15, 11.9.2, 11.9.3, 11.9.7, 11.9.9, 11.9.14, 11.10.1, 11.10.4, 11.10.6, 11.10.7, 11.10.11, 11.10.12, 11.10.13, 11.11.1, 11.11.3, 11.11.4, 11.11.6, 11.11.7, 11.11.8, 11.11.9, 11.11.10, 11.11.11, 11.11.15, 11.11.16, 11.11.19, 11.11.20, 11.12.1, 11.12.2, 11.12.3, 11.12.5, 11.12.6, 11.12.7, 11.12.8, 11.12.9, 11.12.10, 11.12.11, 11.12.12, 11.12.13, 11.12.14, 11.12.17, 11.12.20, 12.2.5, 12.2.6, 12.2.7, 12.2.10, 12.2.11, 12.3.3, 12.3.6, 12.3.10, 12.3.12, 12.3.14, 12.3.18, 12.3.19, 12.5.1, 12.5.2, 12.5.4, 12.5.5, 12.5.7, 12.5.8, 12.5.11, 12.5.12, 12.7.1, 12.7.2, 12.8.14, 12.8.16, 12.8.17, 12.8.19, 12.9-10.5, 12.9-10.7, 12.9-10.8, 12.9-10.12, 12.9-10.13, 12.9-10.25, 12.9-10.26, 12.9-10.28, 12.11.5, 12.11.7, 12.11.8, 12.11.14, 12.11.15, 12.11.20, 12.11.21, 12.11.22, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.11.28, 12.12.7, 12.12.8, 12.12.9, 12.12.12, 12.12.14, 12.12.21, 12.12.22, 12.12.23, 12.12.24, 12.12.25, 12.12.27, 13.3.1, 13.3.4, 13.3.7, 13.11.1, 13.11.3, 13.11.4, 13.11.8, 13.12.2, 13.12.3, 13.12.5, 13.12.8, 13.12.9, 13.12.10
1878	2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 7.1.1, 7.1.2, 7.1.3, 8.1.1, 8.1.2, 8.1.3, 8.1.4, 11.1.1, 11.1.2, 11.1.3, 11.1.4, 12.1.2, 12.1.3.
7667	11.3.1, 11.3.11, 11.4.1, 11.5.15, 11.11.5, 11.11.14, 11.11.18, 11.12.4, 12.11.4, 12.11.12, 12.12.13
22459	8.1.2, 8.1.3, 8.1.4, 8.3.4, 11.1.1, 11.1.2, 11.1.3, 11.3.24, 11.3.27, 12.1.2

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 84 Plan: DS185.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

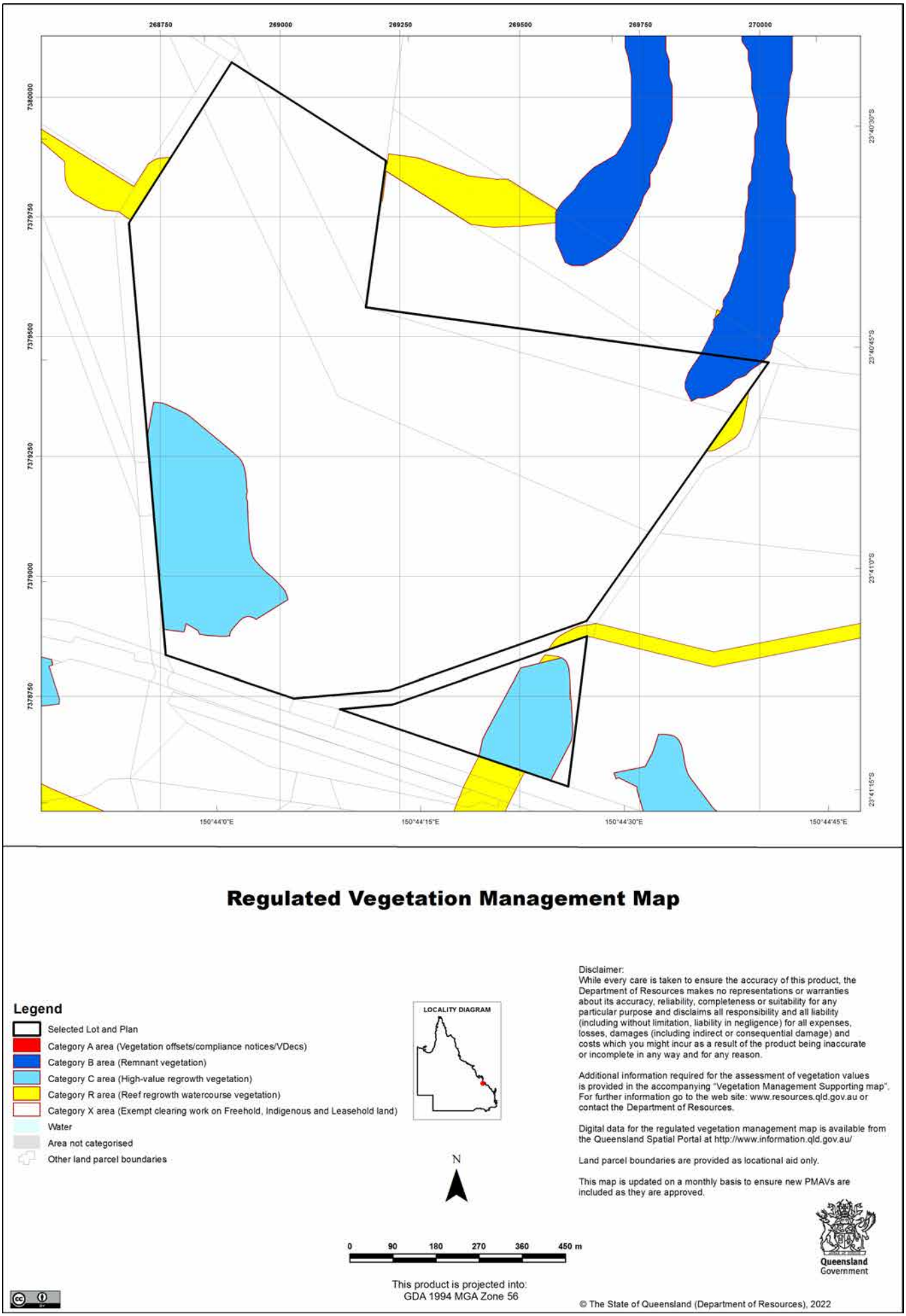
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

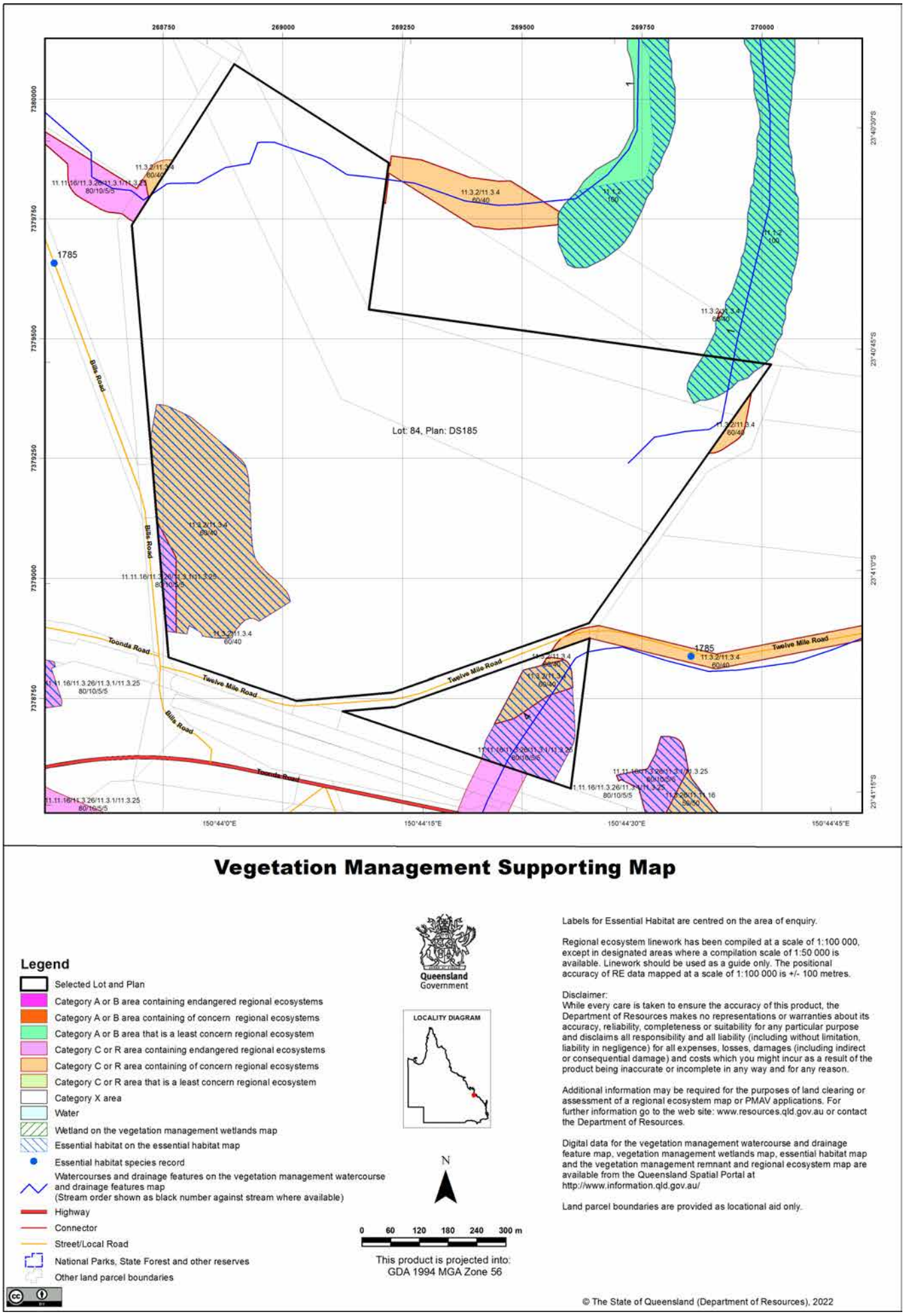
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

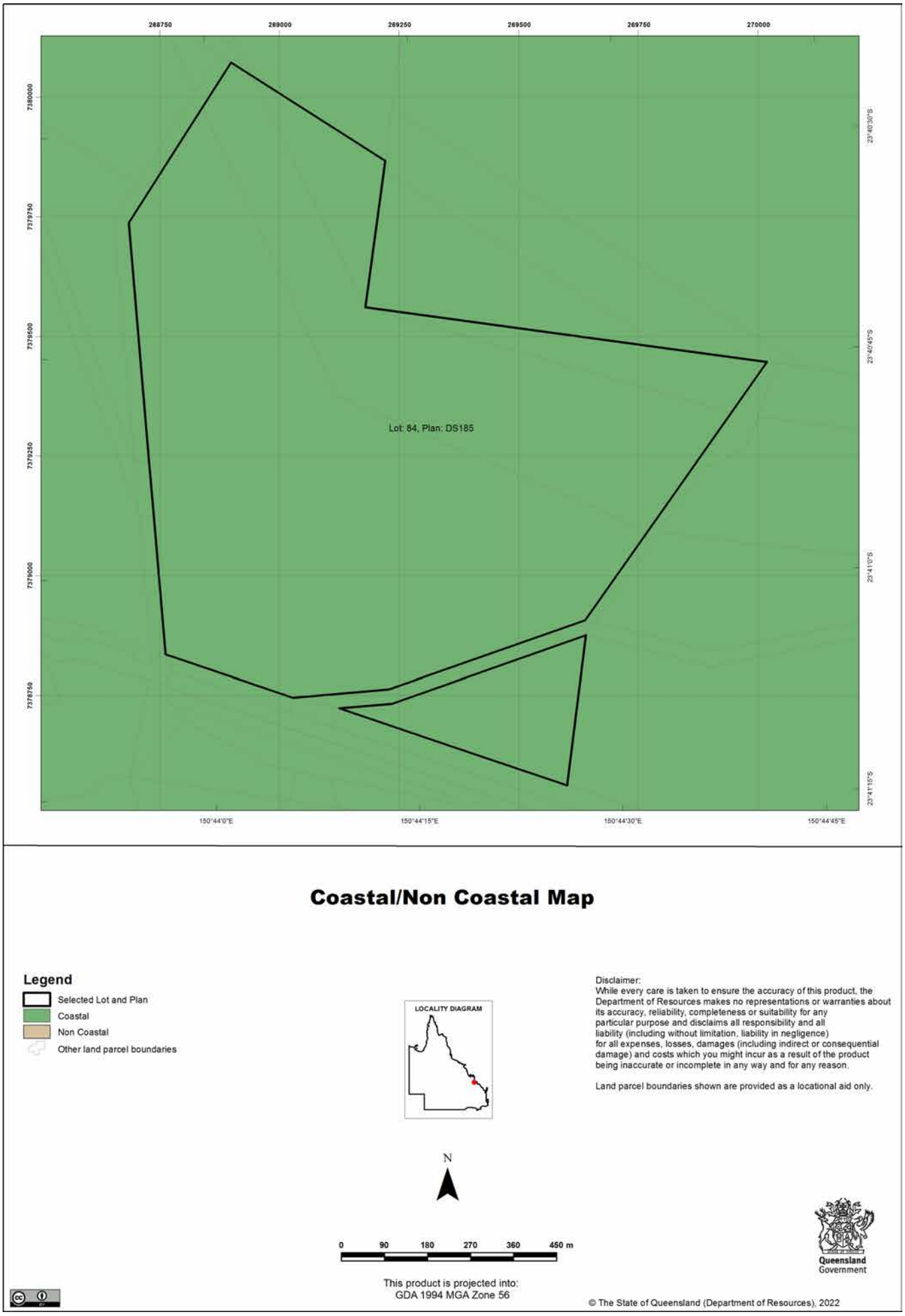
4.1 Regulated vegetation management map



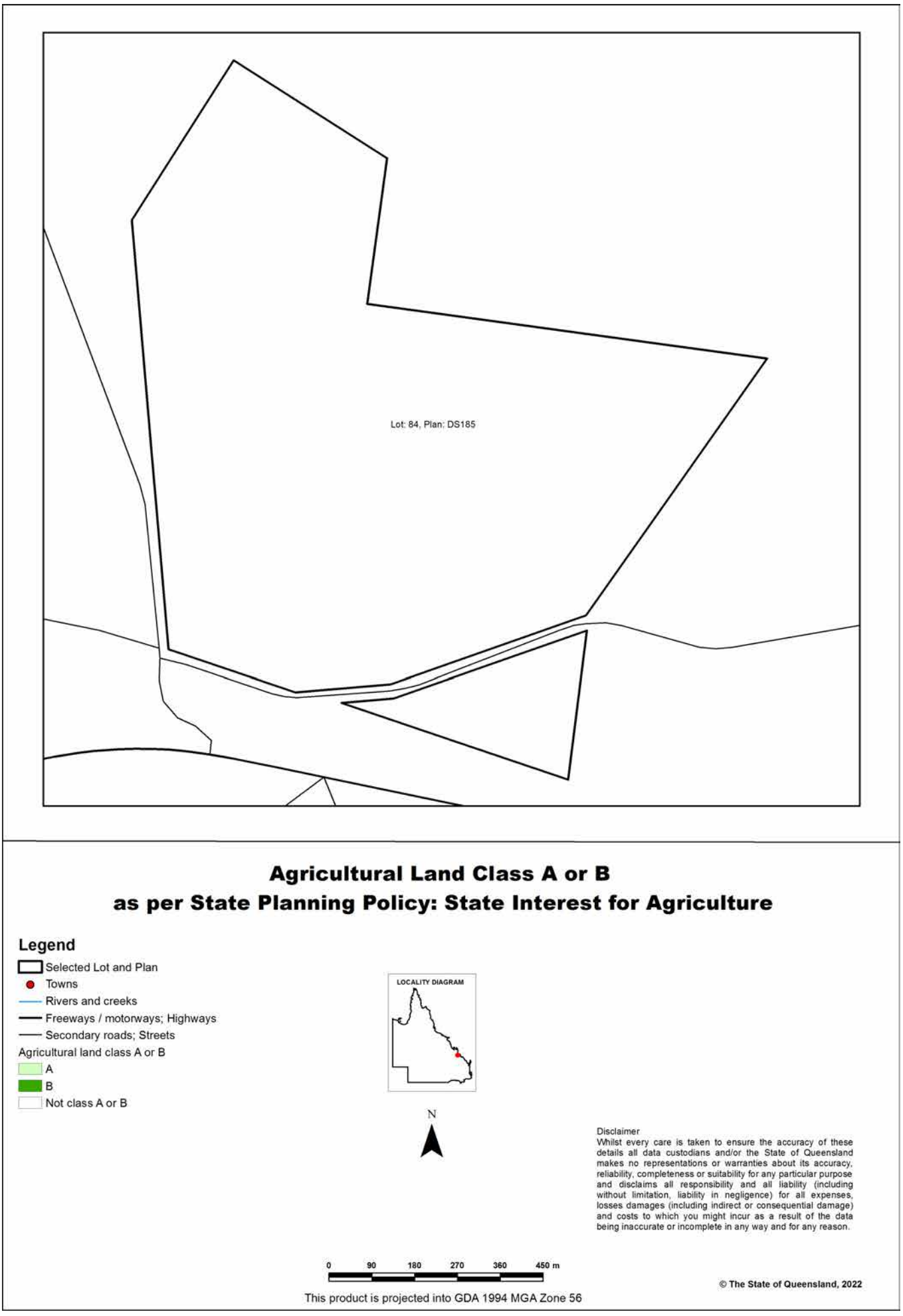
4.2 Vegetation management supporting map



4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for endangered, vulnerable or near threatened (EVNT) plants. These are areas where EVNT plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any EVNT plants that may be present in the clearing impact area.

If the flora survey identifies that EVNT plants are not present within the clearing impact area or clearing within 100m of EVNT plants can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that EVNT plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

N

0 60 120 180 240 300 m

This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as vulnerable by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.

Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

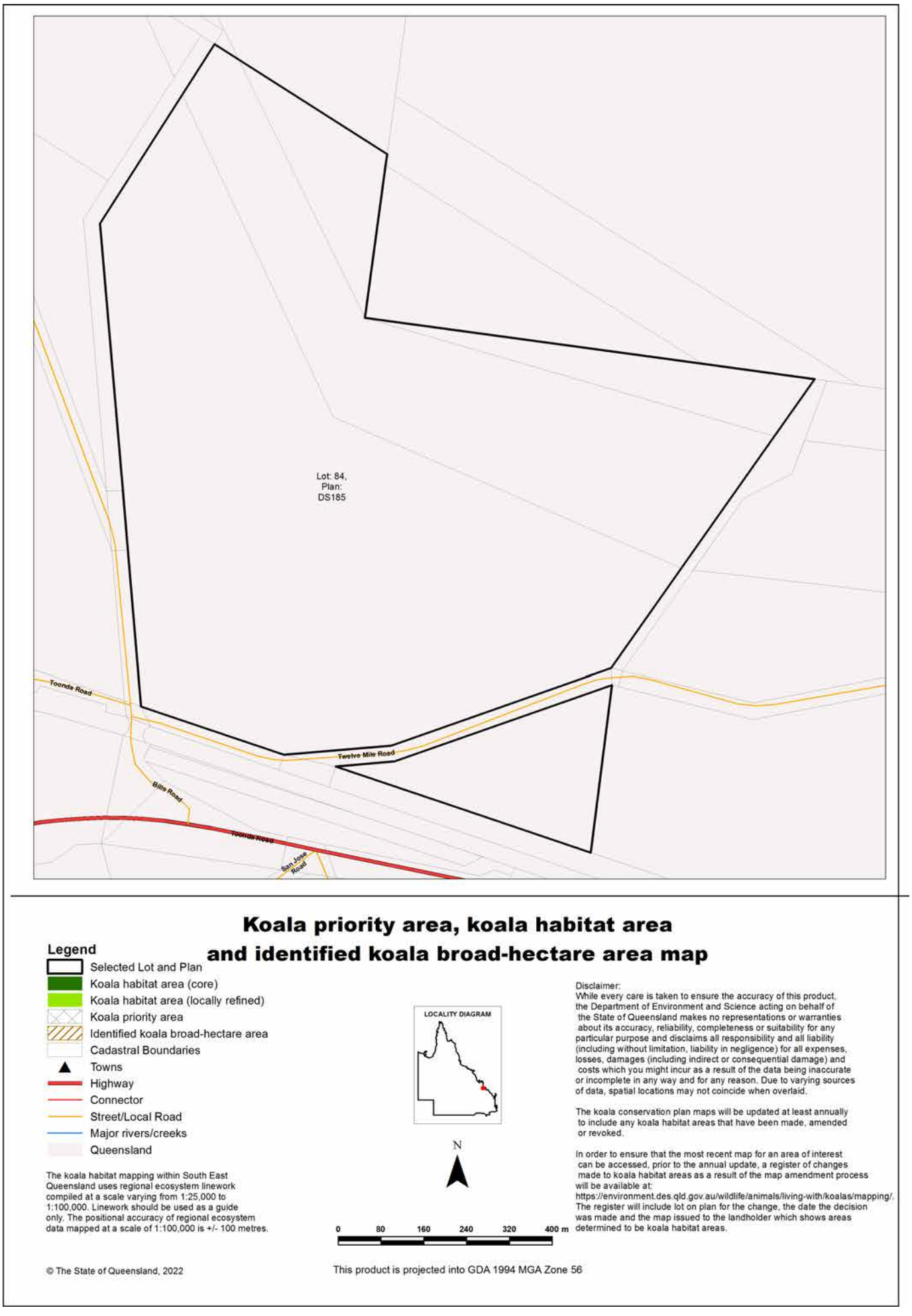
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@des.qld.gov.au
Visit https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 84 Plan: DS185

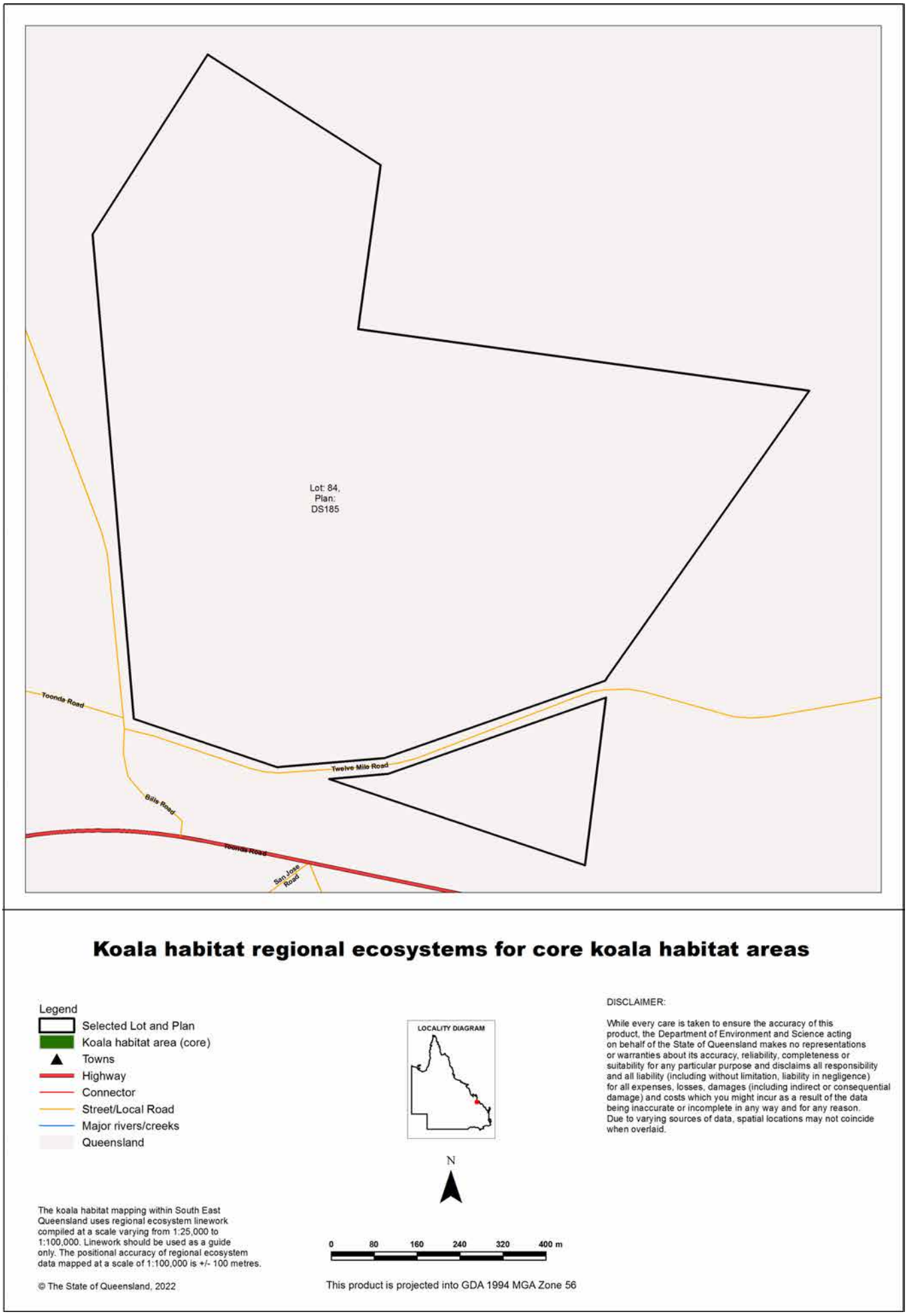
7.1 Koala districts

Koala District C

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



7.3 Koala habitat regional ecosystems for core koala habitat areas



8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
• Interference with overland flow • Earthworks, significant disturbance	*Water Act 2000* *Soil Conservation Act 1986*	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
• Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
• Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
• Protected plants and protected areas	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
• Koala mapping and regulations	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
• Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures	*Fisheries Act 1994* *Forestry Act 1959*	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
• Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
• Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
• Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
• Harvesting timber in the Wet Tropics of Qld World Heritage area	*Wet Tropics World Heritage Protection and Management Act 1993*	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

resources.QLD.GOV.AU

Vegetation management report

For Lot: 29 Plan: DS37

10/03/2022

Queensland Government

Recent changes

Updated mapping

Updated vegetation mapping was released on 8 September 2021 and includes the most recent Queensland Herbarium scientific updates to the Regulated Vegetation Management Map, regional ecosystems, wetland, high-value regrowth and essential habitat mapping.

The Department of Environment and Science have also updated their protected plant and koala protection mapping to align with the Queensland Herbarium scientific updates.

Overview

Based on the lot on plan details you have supplied, this report provides the following detailed information:

Property details - information about the specified Lot on Plan, lot size, local government area, bioregion(s), subregion(s) and catchment(s);

Vegetation management framework - an explanation of the application of the framework and contact details for the Department of Resources who administer the framework;

Vegetation management framework details for the specified Lot on Plan including:

- the vegetation management categories on the property;
- the vegetation management regional ecosystems on the property;
- vegetation management watercourses or drainage features on the property;
- vegetation management wetlands on the property;
- vegetation management essential habitat on the property;
- whether any area management plans are associated with the property;
- whether the property is coastal or non-coastal; and
- whether the property is mapped as Agricultural Land Class A or B;

Protected plant framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework, including:

- high risk areas on the protected plant flora survey trigger map for the property;

Koala protection framework - an explanation of the application of the framework and contact details for the Department of Environment and Science who administer the framework; and

Koala protection framework details for the specified Lot on Plan including:

- the koala district the property is located in;
- koala priority areas on the property;
- core and locally refined koala habitat areas on the property;
- whether the lot is located in an identified koala broad-hectare area; and
- koala habitat regional ecosystems on the property for core koala habitat areas.

This information will assist you to determine your options for managing vegetation under:

- the vegetation management framework, which may include:

- exempt clearing work;
- accepted development vegetation clearing code;
- an area management plan;
- a development approval;

- the protected plant framework, which may include:

- the need to undertake a flora survey;
- exempt clearing;
- a protected plant clearing permit;

- the koala protection framework, which may include:

- exempted development;
- a development approval;
- the need to undertake clearing sequentially and in the presence of a koala spotter.

Other laws

The clearing of native vegetation is regulated by both Queensland and Australian legislation, and some local governments also regulate native vegetation clearing. You may need to obtain an approval or permit under another Act, such as the Commonwealth Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Section 8 of this guide provides contact details of other agencies you should confirm requirements with, before commencing vegetation clearing.

Table of Contents

1. Property details

1.1 Tenure and title area

All of the lot, plan, tenure and title area information associated with property Lot: 29 Plan: DS37, are listed in Table 1.

Table 1: Lot, plan, tenure and title area information for the property

Lot	Plan	Tenure	Property title area (sq metres)
29	DS37	Freehold	573,520
C	SP226062	Easement	89,940

The tenure of the land may affect whether clearing is considered exempt clearing work or may be carried out under an accepted development vegetation clearing code.

1.2 Property location

Table 2 provides a summary of the locations for property Lot: 29 Plan: DS37, in relation to natural and administrative boundaries.

Table 2: Property location details

Local Government(s)
Rockhampton Regional

Bioregion(s)	Subregion(s)
Brigalow Belt	Marlborough Plains

Catchment(s)
Fitzroy

2. Vegetation management framework (administered by the Department of Resources)

The *Vegetation Management Act 1999* (VMA), the Vegetation Management Regulation 2012, the *Planning Act 2016* and the Planning Regulation 2017, in conjunction with associated policies and codes, form the Vegetation Management Framework.

The VMA does not apply to all land tenures or vegetation types. State forests, national parks, forest reserves and some tenures under the *Forestry Act 1959* and *Nature Conservation Act 1992* are not regulated by the VMA. Managing or clearing vegetation on these tenures may require approvals under these laws.

The following native vegetation is not regulated under the VMA but may require permit(s) under other laws:

- grass or non-woody herbage;
- a plant within a grassland regional ecosystem prescribed under Schedule 5 of the Vegetation Management Regulation 2012; and
- a mangrove.

2.1 Exempt clearing work

Exempt clearing work is an activity for which you do not need to notify the Department of Resources or obtain an approval under the vegetation management framework. Exempt clearing work was previously known as exemptions.

In areas that are mapped as Category X (white in colour) on the regulated vegetation management map (see section 4.1), and where the land tenure is freehold, indigenous land and leasehold land for agriculture and grazing purposes, the clearing of vegetation is considered exempt clearing work and does not require notification or development approval under the vegetation management framework. For all other land tenures, contact the Department of Resources before commencing clearing to ensure that the proposed activity is exempt clearing work.

A range of routine property management activities are considered exempt clearing work. A list of exempt clearing work is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/exemptions.

Exempt clearing work may be affected if the proposed clearing area is subject to development approval conditions, a covenant, an environmental offset, an exchange area, a restoration notice, or an area mapped as Category A. Exempt clearing work may require approval under other Commonwealth, State or Local Government laws, or local government planning schemes. Contact the Department of Resources prior to clearing in any of these areas.

2.2 Accepted development vegetation clearing codes

Some clearing activities can be undertaken under an accepted development vegetation clearing code. The codes can be downloaded at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/codes

If you intend to clear vegetation under an accepted development vegetation clearing code, you must notify the Department of Resources before commencing. The information in this report will assist you to complete the online notification form.

You can complete the online form at
https://apps.dnrm.qld.gov.au/vegetation/

2.3 Area management plans

Area Management Plans (AMP) provide an alternative approval system for vegetation clearing under the vegetation management framework. They list the purposes and clearing conditions that have been approved for the areas covered by the plan. It is not necessary to use an AMP, even when an AMP applies to your property.

On 8 March 2020, AMPs ended for fodder harvesting, managing thickened vegetation and managing encroachment. New notifications cannot be made for these AMPs. You will need to consider options for fodder harvesting, managing thickened vegetation or encroachment under a relevant accepted development vegetation clearing code or apply for a development approval.

New notifications can be made for all other AMPs. These will continue to apply until their nominated end date.

If an Area Management Plan applies to your property for which you can make a new notification, it will be listed in Section 3.6 of this report. Before clearing under one of these AMPs, you must first notify the Department of Resources and then follow the conditions and requirements listed in the AMP.
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/area-management-plans

2.4 Development approvals

If under the vegetation management framework your proposed clearing is not exempt clearing work, or is not permitted under an accepted development vegetation clearing code, or an AMP, you may be able to apply for a development approval. Information on how to apply for a development approval is available at
https://www.qld.gov.au/environment/land/management/vegetation/clearing-approvals/development

2.5. Contact information for the Department of Resources

For further information on the vegetation management framework:
Phone 135VEG (135 834)
Email vegetation@resources.qld.gov.au
Visit https://www.resources.qld.gov.au/?contact=vegetation to submit an online enquiry.

3. Vegetation management framework for Lot: 29 Plan: DS37

3.1 Vegetation categories

The vegetation categories on your property are shown on the regulated vegetation management map in section 4.1 of this report. A summary of vegetation categories on the subject lot are listed in Table 3. Descriptions for these categories are shown in Table 4.

Table 3: Vegetation categories for subject property. Total area: 57.31ha

Vegetation category	Area (ha)
Category C	9.6
Category X	47.7

Table 4: Description of vegetation categories

Category	Colour on Map	Description	Requirements / options under the vegetation management framework
A	red	Compliance areas, environmental offset areas and voluntary declaration areas	Special conditions apply to Category A areas. Before clearing, contact the Department of Resources to confirm any requirements in a Category A area.
B	dark blue	Remnant vegetation areas	Exempt clearing work, or notification and compliance with accepted development vegetation clearing codes, area management plans or development approval.
C	light blue	High-value regrowth areas	Exempt clearing work, or notification and compliance with managing Category C regrowth vegetation accepted development vegetation clearing code.
R	yellow	Regrowth within 50m of a watercourse or drainage feature in the Great Barrier Reef catchment areas	Exempt clearing work, or notification and compliance with managing Category R regrowth accepted development vegetation clearing code or area management plans.
X	white	Clearing on freehold land, indigenous land and leasehold land for agriculture and grazing purposes is considered exempt clearing work under the vegetation management framework. Contact the Department of Resources to clarify whether a development approval is required for other State land tenures.	No permit or notification required on freehold land, indigenous land and leasehold land for agriculture and grazing. A development approval may be required for some State land tenures.

Property Map of Assessable Vegetation (PMAV)

The following Property Map of Assessable Vegetation (PMAVs) may be present on this property:

Reference number

2012/004185

3.2 Regional ecosystems

The endangered, of concern and least concern regional ecosystems on your property are shown on the vegetation management supporting map in section 4.2 and are listed in Table 5.

A description of regional ecosystems can be accessed online at https://www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions/

Table 5: Regional ecosystems present on subject property

Regional Ecosystem	VMA Status	Category	Area (Ha)	Short Description	Structure Category
11.11.16	Of concern	C	4.81	Eucalyptus cambageana, Acacia harpophylla open forest to woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Lowlands	Mid-dense
11.3.2	Of concern	C	less than 0.01	Eucalyptus populnea woodland on alluvial plains	Sparse
11.3.26	Least concern	C	4.81	Eucalyptus moluccana or E. microcarpa woodland to open forest on margins of alluvial plains	Sparse
11.3.4	Of concern	C	less than 0.01	Eucalyptus tereticornis and/or Eucalyptus spp. woodland on alluvial plains	Sparse
non-rem	None	X	47.69	None	None

Please note:

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

2. If Table 5 contains a Category 'plant', please be aware that this refers to 'plantations' such as forestry, and these areas are considered non-remnant under the VMA.

The VMA status of the regional ecosystem (whether it is endangered, of concern or least concern) also determines if any of the following are applicable:

- exempt clearing work;
- accepted development vegetation clearing codes;
- performance outcomes in State Code 16 of the State Development Assessment Provisions (SDAP).

3.3 Watercourses

Vegetation management watercourses and drainage features for this property are shown on the vegetation management supporting map in section 4.2.

3.4 Wetlands

There are no vegetation management wetlands present on this property.

3.5 Essential habitat

Under the VMA, essential habitat for protected wildlife is native wildlife prescribed under the *Nature Conservation Act 1992* (NCA) as critically endangered, endangered, vulnerable or near-threatened wildlife.

Essential habitat for protected wildlife includes suitable habitat on the lot, or where a species has been known to occur up to 1.1 kilometres from a lot on which there is assessable vegetation. These important habitat areas are protected under the VMA.

Any essential habitat on this property will be shown as blue hatching on the vegetation supporting map in section 4.2.

If essential habitat is identified on the lot, information about the protected wildlife species is provided in Table 6 below. The numeric labels on the vegetation management supporting map can be cross referenced with Table 6 to outline the essential habitat factors for that particular species. There may be essential habitat for more than one species on each lot, and areas of Category A, Category B and Category C can be mapped as Essential Habitat.

Essential habitat is compiled from a combination of species habitat models and buffered species records. Regional ecosystem is a mandatory essential habitat factor, unless otherwise stated. Essential habitat, for protected wildlife, means an area of vegetation shown on the Regulated Vegetation Management Map -

1) that has at least 3 essential habitat factors for the protected wildlife that must include any essential habitat factors that are stated as mandatory for the protected wildlife in the essential habitat database. Essential habitat factors are comprised of - regional ecosystem (mandatory for most species), vegetation community, altitude, soils, position in landscape; or

2) in which the protected wildlife, at any stage of its life cycle, is located.

If there is no essential habitat mapping shown on the vegetation management supporting map for this lot, and there is no table in the sections below, it confirms that there is no essential habitat on the lot.

Category A and/or Category B and/or Category C

Table 6: Essential habitat in Category A and/or Category B and/or Category C

Label	Scientific Name	Common Name	NCA Status	Vegetation Community	Altitude	Soils	Position in Landscape
1785	Geophaps scripta scripta	squatter pigeon (southern subspecies)	V	Dry eucalypt woodland (including poplar box, spotted gum, yellow box, acacia and callitris), with sparse short grass, often on sandy areas near to permanent water; grassy eucalypt woodlands. Nest on ground near or under grass tussock, log or low bush.	None	None	Gravelly ridges, traprock and river flats.
1878	Calidris ferruginea	curlew sandpiper	CE	Foraging on intertidal mudflat in sheltered estuaries, bays, inlets and lagoons; non-tidal swamps and inland ephemeral and permanent lakes, dams or waterholes. Roost on shingle/sand/shell beaches, saltmarsh, mangrove and close to wetlands.	Sea level to 100m.	Sand and mud substrates.	Associated with coastlines and coastal and inland wetlands.
7667	Macropteranthes leiocaulis	None	NT	deciduous vine thicket; semi-evergreen vine thicket; brigalow-semi-evergreen vine thicket; softwood scrub; Araucarian microphyll or simple microphyll vine forest; brigalow/belah scrub	0 to 400 m	duplex soil with sandy clay loam surface or loam to clay loam or heavy clay soil	gentle to steep hill slope, steep ridge line, plain, alluvial flat, watercourse
22459	Epthianura crocea macgregori	yellow chat (Dawson)	E	Swampy grassland (salt couch Sporobolus virginicus, water couch, reeds Schoenoplectus lttoralis) and saline herbland (samphire Halosarcia) on marine plain with a network of braided drainage lines.	Sea level to 100m.	None	Marine plains.

Label	Regional Ecosystem (mandatory unless otherwise specified)
1785	8.2.1, 8.2.7, 8.2.8, 8.2.12, 8.3.2, 8.3.3, 8.3.5, 8.3.6, 8.3.13, 8.5.2, 8.5.3, 8.5.5, 8.5.6, 8.9.1, 8.11.1, 8.11.3, 8.11.4, 8.11.5, 8.11.6, 8.11.8, 8.12.6, 8.12.7, 8.12.9, 8.12.12, 8.12.14, 8.12.20, 8.12.22, 8.12.23, 8.12.25, 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5, 9.3.6, 9.3.7, 9.3.8, 9.3.9, 9.3.11, 9.3.13, 9.3.14, 9.3.15, 9.3.16, 9.3.17, 9.3.18, 9.3.19, 9.3.20, 9.3.21, 9.3.22, 9.3.23, 9.4.1, 9.4.2, 9.4.3, 9.5.3, 9.5.4, 9.5.5, 9.5.6, 9.5.7, 9.5.8, 9.5.9, 9.5.10, 9.5.11, 9.5.12, 9.5.16, 9.7.1, 9.7.2, 9.7.3, 9.7.5, 9.7.6, 9.8.1, 9.8.2, 9.8.4, 9.8.5, 9.8.6, 9.8.9, 9.8.10, 9.8.11, 9.10.1, 9.10.3, 9.10.6, 9.10.7, 9.10.8, 9.11.1, 9.11.2, 9.11.3, 9.11.4, 9.11.5, 9.11.7, 9.11.10, 9.11.11, 9.11.12, 9.11.13, 9.11.15, 9.11.16, 9.11.17, 9.11.18, 9.11.19, 9.11.23, 9.11.26, 9.11.28, 9.11.29, 9.11.31, 9.11.32, 9.12.1, 9.12.3, 9.12.4, 9.12.5, 9.12.6, 9.12.7, 9.12.10, 9.12.11, 9.12.12, 9.12.13, 9.12.16, 9.12.17, 9.12.18, 9.12.19, 9.12.20, 9.12.21, 9.12.22, 9.12.23, 9.12.24, 9.12.26, 9.12.28, 9.12.30, 9.12.31, 9.12.33, 9.12.35, 9.12.37, 9.12.39, 10.3.1, 10.3.2, 10.3.3, 10.3.4, 10.3.5, 10.3.6, 10.3.9, 10.3.10, 10.3.11, 10.3.12, 10.3.13, 10.3.14, 10.3.15, 10.3.19, 10.3.20, 10.3.27, 10.3.28, 10.3.30, 10.3.31, 10.4.3, 10.5.1, 10.5.2, 10.5.4, 10.5.5, 10.5.7, 10.5.9, 10.5.10, 10.5.11, 10.5.12, 10.7.2, 10.7.3, 10.7.5, 10.7.11, 10.7.12, 10.9.1, 10.9.2, 10.9.3, 10.9.5, 10.10.1, 10.10.3, 10.10.4, 10.10.5, 10.10.7, 11.2.1, 11.2.5, 11.3.1, 11.3.2, 11.3.3, 11.3.4, 11.3.6, 11.3.7, 11.3.8, 11.3.9, 11.3.10, 11.3.12, 11.3.13, 11.3.14, 11.3.15, 11.3.16, 11.3.17, 11.3.18, 11.3.19, 11.3.23, 11.3.25, 11.3.27, 11.3.28, 11.3.29, 11.3.30, 11.3.35, 11.3.36, 11.3.37, 11.3.38, 11.3.39, 11.4.2, 11.4.3, 11.4.5, 11.4.8, 11.4.10, 11.4.12, 11.4.13, 11.5.1, 11.5.2, 11.5.3, 11.5.4, 11.5.5, 11.5.8, 11.5.9, 11.5.12, 11.5.13, 11.5.14, 11.5.17, 11.5.20, 11.5.21, 11.7.1, 11.7.2, 11.7.4, 11.7.6, 11.8.2, 11.8.4, 11.8.5, 11.8.8, 11.8.9, 11.8.11, 11.8.12, 11.8.14, 11.8.15, 11.9.2, 11.9.3, 11.9.7, 11.9.9, 11.9.14, 11.10.1, 11.10.4, 11.10.6, 11.10.7, 11.10.11, 11.10.12, 11.10.13, 11.11.1, 11.11.3, 11.11.4, 11.11.6, 11.11.7, 11.11.8, 11.11.9, 11.11.10, 11.11.11, 11.11.15, 11.11.16, 11.11.19, 11.11.20, 11.12.1, 11.12.2, 11.12.3, 11.12.5, 11.12.6, 11.12.7, 11.12.8, 11.12.9, 11.12.10, 11.12.11, 11.12.12, 11.12.13, 11.12.14, 11.12.17, 11.12.20, 12.2.5, 12.2.6, 12.2.7, 12.2.10, 12.2.11, 12.3.3, 12.3.6, 12.3.10, 12.3.12, 12.3.14, 12.3.18, 12.3.19, 12.5.1, 12.5.2, 12.5.4, 12.5.5, 12.5.7, 12.5.8, 12.5.11, 12.5.12, 12.7.1, 12.7.2, 12.8.14, 12.8.16, 12.8.17, 12.8.19, 12.9-10.5, 12.9-10.7, 12.9-10.8, 12.9-10.12, 12.9-10.13, 12.9-10.25, 12.9-10.26, 12.9-10.28, 12.11.5, 12.11.7, 12.11.8, 12.11.14, 12.11.15, 12.11.20, 12.11.21, 12.11.22, 12.11.24, 12.11.25, 12.11.26, 12.11.27, 12.11.28, 12.12.7, 12.12.8, 12.12.9, 12.12.12, 12.12.14, 12.12.21, 12.12.22, 12.12.23, 12.12.24, 12.12.25, 12.12.27, 13.3.1, 13.3.4, 13.3.7, 13.11.1, 13.11.3, 13.11.4, 13.11.8, 13.12.2, 13.12.3, 13.12.5, 13.12.8, 13.12.9, 13.12.10
1878	2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6, 7.1.1, 7.1.2, 7.1.3, 8.1.1, 8.1.2, 8.1.3, 8.1.4, 11.1.1, 11.1.2, 11.1.3, 11.1.4, 12.1.2, 12.1.3.
7667	11.3.1, 11.3.11, 11.4.1, 11.5.15, 11.11.5, 11.11.14, 11.11.18, 11.12.4, 12.11.4, 12.11.12, 12.12.13
22459	8.1.2, 8.1.3, 8.1.4, 8.3.4, 11.1.1, 11.1.2, 11.1.3, 11.3.24, 11.3.27, 12.1.2

3.6 Area Management Plan(s)

Nil

3.7 Coastal or non-coastal

For the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP), this property is regarded as*

Coastal

*See also Map 4.3

3.8 Agricultural Land Class A or B

The following can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code:

Does this lot contain land that is mapped as Agricultural Land Class A or B in the State Planning Interactive Mapping System?

No Class A

No Class B

Note - This confirms Agricultural Land Classes as per the State Planning Interactive Mapping System only. This response does not include Agricultural Land Classes identified under local government planning schemes. For further information, check the Planning Scheme for your local government area.

See Map 4.4 to identify the location and extent of Class A and/or Class B Agricultural land on Lot: 29 Plan: DS37.

4. Vegetation management framework maps

Vegetation management maps included in this report may also be requested individually at:
https://www.resources.qld.gov.au/qld/environment/land/vegetation/vegetation-map-request-form

Regulated vegetation management map

The regulated vegetation management map shows vegetation categories needed to determine clearing requirements. These maps are updated monthly to show new property maps of assessable vegetation (PMAV).

Vegetation management supporting map

The vegetation management supporting map provides information on regional ecosystems, wetlands, watercourses and essential habitat.

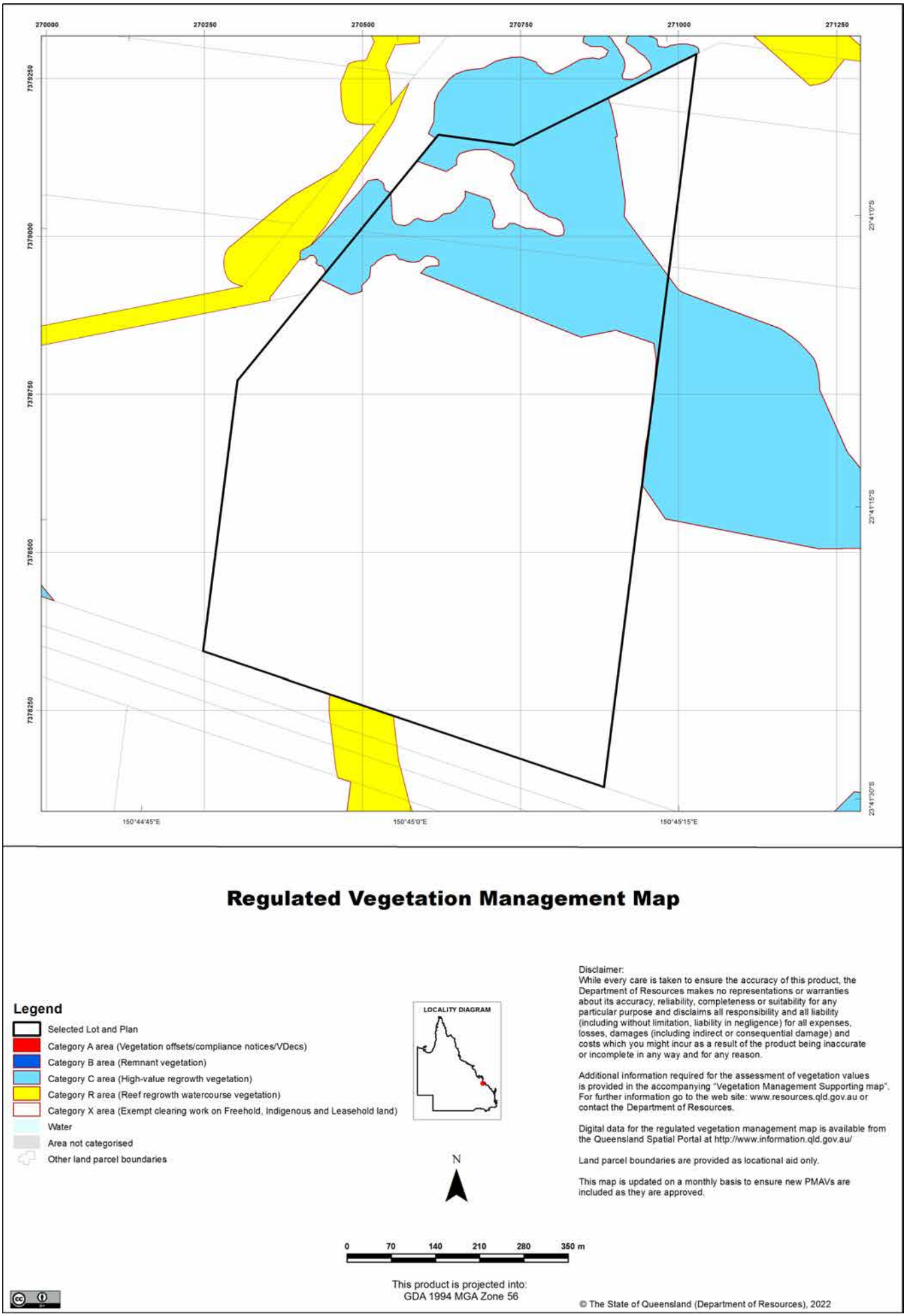
Coastal/non-coastal map

The coastal/non-coastal map confirms whether the lot, or which parts of the lot, are considered coastal or non-coastal for the purposes of the accepted development vegetation clearing codes and State Code 16 of the State Development Assessment Provisions (SDAP).

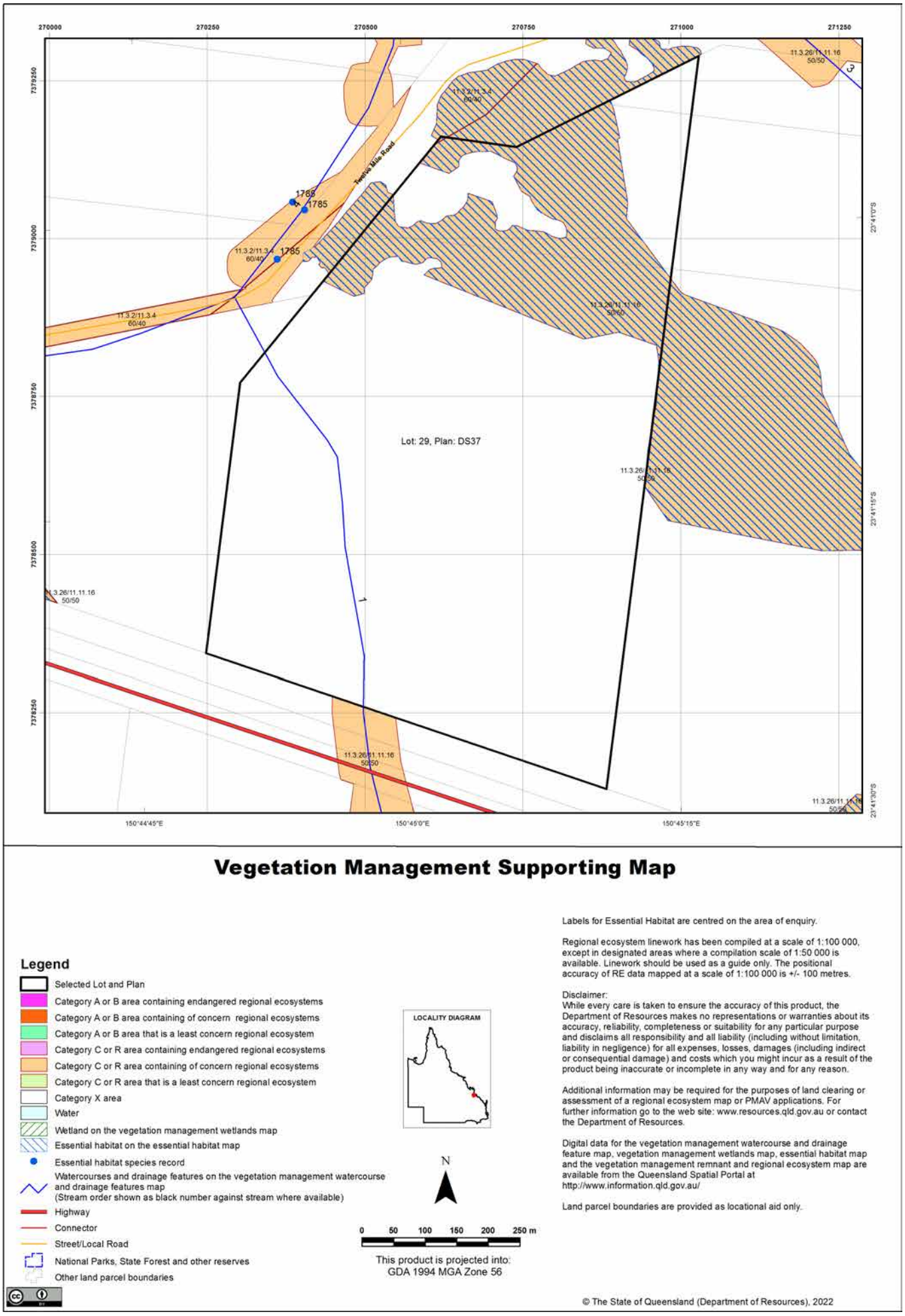
Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture

The Agricultural Land Class map confirms the location and extent of land mapped as Agricultural Land Classes A or B as identified on the State Planning Interactive Mapping System. Please note that this map does not include areas identified as Agricultural Land Class A or B in local government planning schemes. This map can be used to identify Agricultural Land Class A or B areas under the "Managing regulated regrowth vegetation" accepted development vegetation clearing code.

4.1 Regulated vegetation management map



4.2 Vegetation management supporting map



Vegetation Management Supporting Map

Legend

- Selected Lot and Plan
- Category A or B area containing endangered regional ecosystems
- Category A or B area containing of concern regional ecosystems
- Category A or B area that is a least concern regional ecosystem
- Category C or R area containing endangered regional ecosystems
- Category C or R area containing of concern regional ecosystems
- Category C or R area that is a least concern regional ecosystem
- Category X area
- Water
- Wetland on the vegetation management wetlands map
- Essential habitat on the essential habitat map
- Essential habitat species record
- Watercourses and drainage features on the vegetation management watercourse and drainage features map (Stream order shown as black number against stream where available)
- Highway
- Connector
- Street/Local Road
- National Parks, State Forest and other reserves
- Other land parcel boundaries

LOCALITY DIAGRAM

N

0 50 100 150 200 250 m

This product is projected into: GDA 1994 MGA Zone 56

Labels for Essential Habitat are centred on the area of enquiry.

Regional ecosystem linework has been compiled at a scale of 1:100 000, except in designated areas where a compilation scale of 1:50 000 is available. Linework should be used as a guide only. The positional accuracy of RE data mapped at a scale of 1:100 000 is +/- 100 metres.

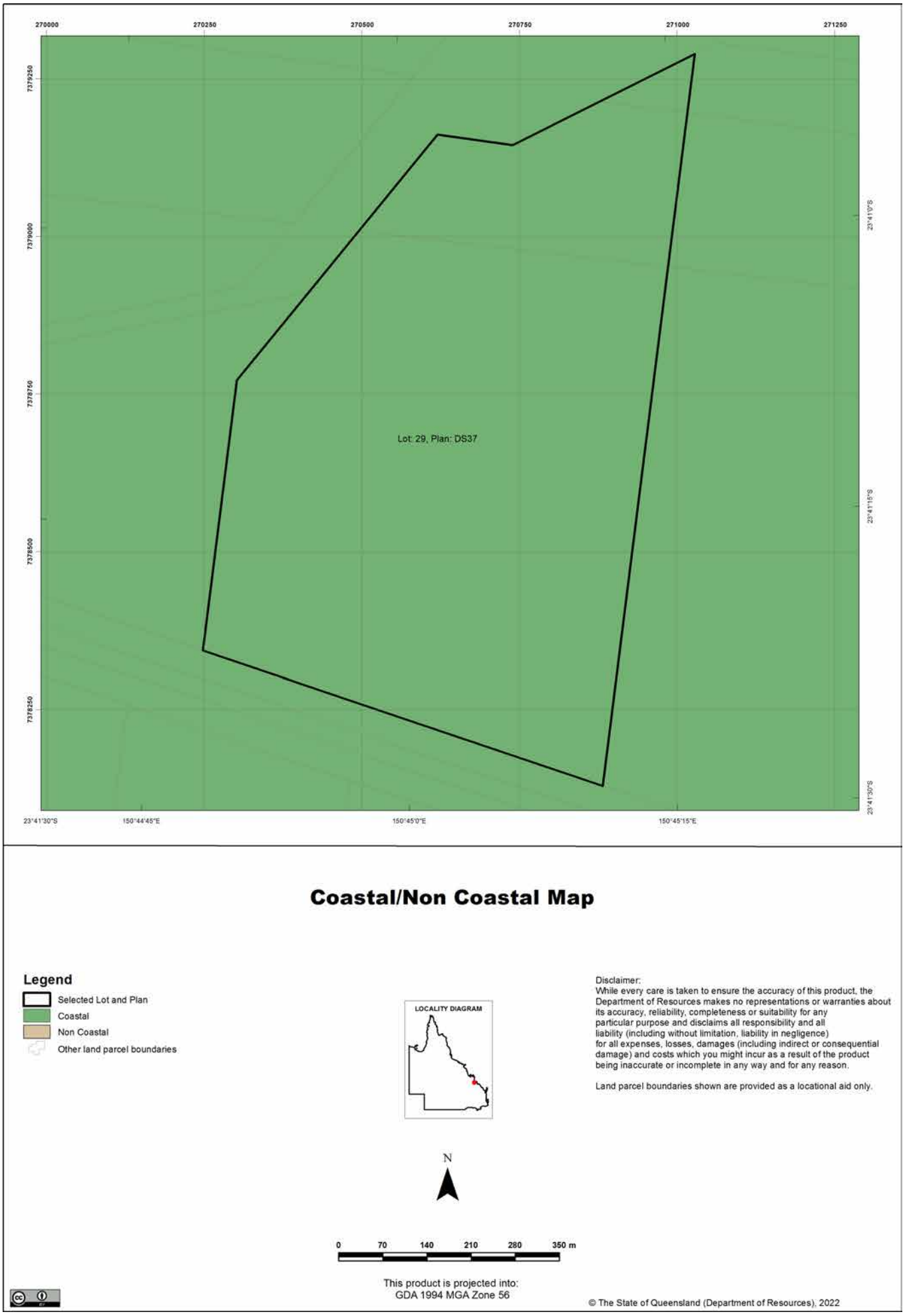
Disclaimer:
While every care is taken to ensure the accuracy of this product, the Department of Resources makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damage) and costs which you might incur as a result of the product being inaccurate or incomplete in any way and for any reason.

Additional information may be required for the purposes of land clearing or assessment of a regional ecosystem map or PMAV applications. For further information go to the web site: www.resources.qld.gov.au or contact the Department of Resources.

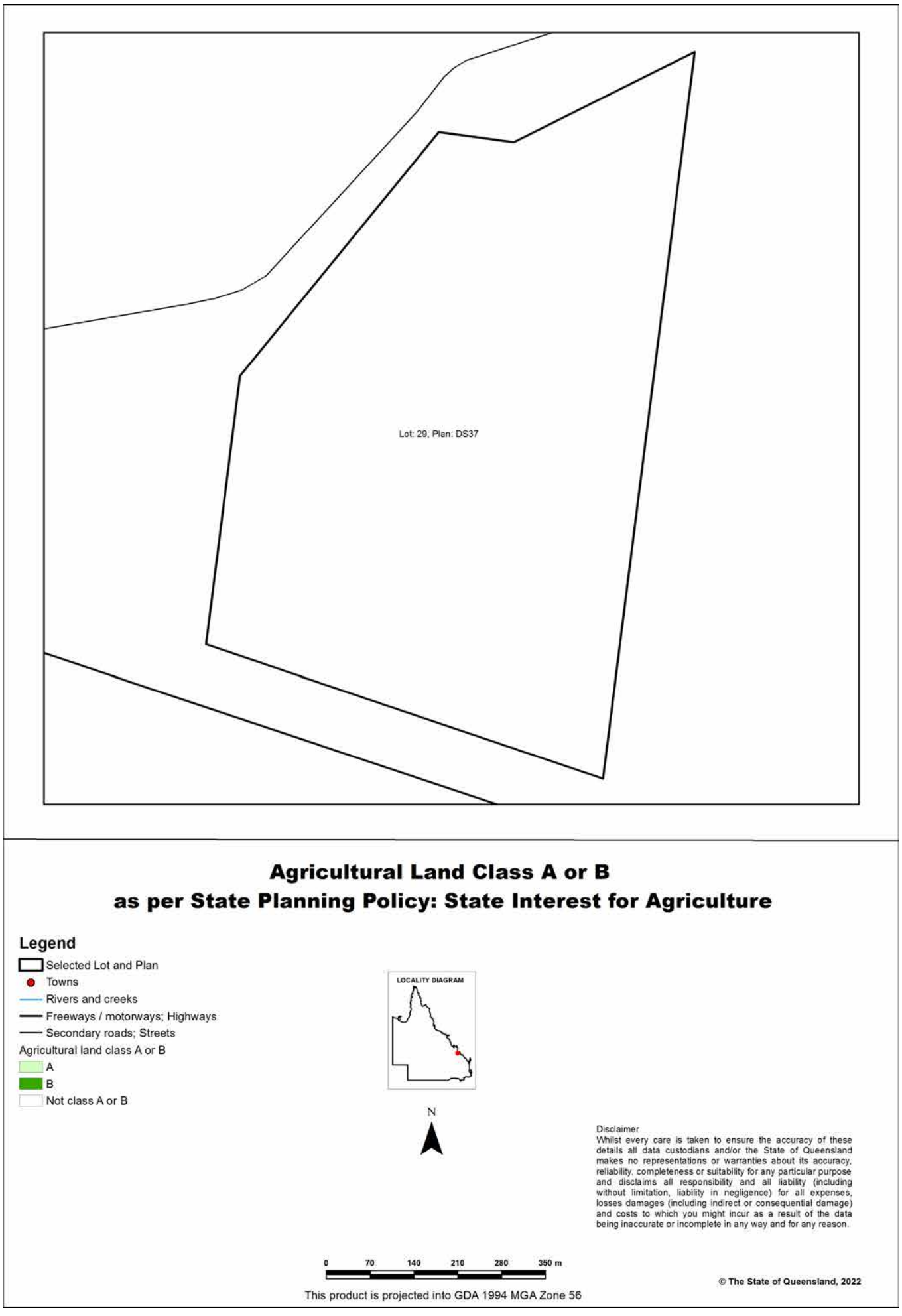
Digital data for the vegetation management watercourse and drainage feature map, vegetation management wetlands map, essential habitat map and the vegetation management remnant and regional ecosystem map are available from the Queensland Spatial Portal at http://www.information.qld.gov.au/

Land parcel boundaries are provided as locational aid only.

4.3 Coastal/non-coastal map



4.4 Agricultural Land Class A or B as per State Planning Policy: State Interest for Agriculture



5. Protected plants framework (administered by the Department of Environment and Science (DES))

In Queensland, all plants that are native to Australia are protected plants under the *Nature Conservation Act 1992* (NCA). The NCA regulates the clearing of protected plants 'in the wild' (see Operational policy: When a protected plant in Queensland is considered to be 'in the wild') that are listed as critically endangered, endangered, vulnerable or near threatened under the Act.

Please note that the protected plant clearing framework applies irrespective of the classification of the vegetation under the *Vegetation Management Act 1999* and any approval or exemptions given under another Act, for example, the *Vegetation Management Act 1999* or *Planning Regulation 2017*.

5.1 Clearing in high risk areas on the flora survey trigger map

The flora survey trigger map identifies high-risk areas for endangered, vulnerable or near threatened (EVNT) plants. These are areas where EVNT plants are known to exist or are likely to exist based on the habitat present. The flora survey trigger map for this property is provided in section 5.5.

If you are proposing to clear an area shown as high risk on the flora survey trigger map, a flora survey of the clearing impact area must be undertaken by a suitably qualified person in accordance with the Flora survey guidelines. The main objective of a flora survey is to locate any EVNT plants that may be present in the clearing impact area.

If the flora survey identifies that EVNT plants are not present within the clearing impact area or clearing within 100m of EVNT plants can be avoided, the clearing activity is exempt from a permit. An exempt clearing notification form must be submitted to the Department of Environment and Science, with a copy of the flora survey report, at least one week prior to clearing.

If the flora survey identifies that EVNT plants are present in, or within 100m of, the area to be cleared, a clearing permit is required before any clearing is undertaken. The flora survey report, as well as an impact management report, must be submitted with the clearing permit application form.

5.2 Clearing outside high risk areas on the flora survey trigger map

In an area other than a high risk area, a clearing permit is only required where a person is, or becomes aware that EVNT plants are present in, or within 100m of, the area to be cleared. You must keep a copy of the flora survey trigger map for the area subject to clearing for five years from the day the clearing starts. If you do not clear within the 12 month period that the flora survey trigger map was printed, you need to print and check a new flora survey trigger map.

5.3 Exemptions

Many activities are 'exempt' under the protected plant clearing framework, which means that clearing of native plants that are in the wild can be undertaken for these activities with no need for a flora survey or a protected plant clearing permit. The Information sheet - General exemptions for the take of protected plants provides some of these exemptions.

Some exemptions under the NCA are the same as exempt clearing work (formerly known as exemptions) under the *Vegetation Management Act 1999* (i.e. listed in Schedule 21 of the Planning Regulations 2017) while some are different.

5.4 Contact information for DES

For further information on the protected plants framework:
Phone 1300 130 372 (and select option four)
Email palm@des.qld.gov.au
Visit https://www.qld.gov.au/environment/plants-animals/plants/protected-plants

5.5 Protected plants flora survey trigger map

This map included may also be requested individually at: https://apps.des.qld.gov.au/map-request/flora-survey-trigger/.

Updates to the data informing the flora survey trigger map

The flora survey trigger map will be reviewed, and updated if necessary, at least every 12 months to ensure the map reflects the most up-to-date and accurate data available.

Species information

Please note that flora survey trigger maps do not identify species associated with 'high risk areas'. While some species information may be publicly available, for example via the Queensland Spatial Catalogue, the Department of Environment and Science does not provide species information on request. Regardless of whether species information is available for a particular high risk area, clearing plants in a high risk area may require a flora survey and/or clearing permit. Please see the Department of Environment and Science webpage on the clearing of protected plants for more information.

Protected Plants Flora Survey Trigger Map

Legend

- Selected Lot and Plan
- High risk area
- Other land parcel boundaries
- Freeways / motorways / highways
- Secondary roads / streets

LOCALITY DIAGRAM

N

0 40 80 120 160 200 m

This product is projected into:
GDA 1994 MGA Zone 56

This map shows areas where particular provisions of the Nature Conservation Act 1992 apply to the clearing of protected plants.

Land parcel boundaries are provided as locational aid only.

This map is produced at a scale relevant to the size of the area selected and should be printed as A4 size in portrait orientation.

For further information or assistance with interpretation of this product, please contact the Department of Environment and Science at palm@des.qld.gov.au

Disclaimer:
While every care is taken to ensure the accuracy of the data used to generate this product, the Queensland Government makes no representations or warranties about its accuracy, reliability, completeness or suitability for any particular purpose and disclaim all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damages (including indirect or consequential damages) and costs which might be incurred as a consequence of reliance on the data, or as a result of the data being inaccurate or incomplete in any way and for any reason.

6. Koala protection framework (administered by the Department of Environment and Science (DES))

The koala (*Phascolarctos cinereus*) is listed in Queensland as vulnerable by the Queensland Government under *Nature Conservation Act 1992* and by the Australian Government under the *Environment Protection and Biodiversity Conservation Act 1999*.

The Queensland Government's koala protection framework is comprised of the *Nature Conservation Act 1992*, the Nature Conservation (Animals) Regulation 2020, the Nature Conservation (Koala) Conservation Plan 2017, the *Planning Act 2016* and the Planning Regulation 2017.

6.1 Koala mapping

6.1.1 Koala districts

The parts of Queensland where koalas are known to occur has been divided into three koala districts - koala district A, koala district B and koala district C. Each koala district is made up of areas with comparable koala populations (e.g. density, extent and significance of threatening processes affecting the population) which require similar management regimes.
Section 7.1 identifies which koala district your property is located in.

6.1.2 Koala habitat areas

Koala habitat areas are areas of vegetation that have been determined to contain koala habitat that is essential for the conservation of a viable koala population in the wild based on the combination of habitat suitability and biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water). In order to protect this important koala habitat, clearing controls have been introduced into the Planning Regulation 2017 for development in koala habitat areas.

Please note that koala habitat areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley, Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

There are two different categories of koala habitat area (core koala habitat area and locally refined koala habitat), which have been determined using two different methodologies. These methodologies are described in the document Spatial modelling in South East Queensland.

Section 7.2 shows any koala habitat area that exists on your property.

Under the Nature Conservation (Koala) Conservation Plan 2017, an owner of land (or a person acting on the owner's behalf with written consent) can request to make, amend or revoke a koala habitat area determination if they believe, on reasonable grounds, that the existing determination for all or part of their property is incorrect.

More information on requests to make, amend or revoke a koala habitat area determination can be found in the document Guideline - Requests to make, amend or revoke a koala habitat area determination.

The koala habitat area map will be updated at least annually to include any koala habitat areas that have been made, amended or revoked.

Changes to the koala habitat area map which occur between annual updates because of a request to make, amend or revoke a koala habitat area determination can be viewed on the register of approved requests to make, amend or revoke a koala habitat area available at: https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/koalamaps. The register includes the lot on plan for the change, the date the decision was made and the map issued to the landholder that shows areas determined to be koala habitat areas.

6.1.3 Koala priority areas

Koala priority areas are large, connected areas that have been determined to have the highest likelihood of achieving conservation outcomes for koalas based on the combination of habitat suitability, biophysical variables with known relationships to koala habitat (e.g. landcover, soil, terrain, climate and ground water) and a koala conservation cost benefit analysis.

Conservation efforts will be prioritised in these areas to ensure the conservation of viable koala populations in the wild including a focus on management (e.g. habitat protection, habitat restoration and threat mitigation) and monitoring. This includes a prohibition on clearing in koala habitat areas that are in koala priority areas under the Planning Regulation 2017 (subject to some exemptions).

Please note that koala priority areas only exist in koala district A which is the South East Queensland "Shaping SEQ" Regional Plan area. These areas include the local government areas of Brisbane, Gold Coast, Logan, Lockyer Valley,

Ipswich, Moreton Bay, Noosa, Redland, Scenic Rim, Somerset, Sunshine Coast and Toowoomba (urban extent).

Section 7.2 identifies if your property is in a koala priority area.

6.1.4 Identified koala broad-hectare areas

There are seven identified koala broad-hectare areas in SEQ. These are areas of koala habitat that are located in areas committed to meet development targets in the SEQ Regional Plan to accommodate SEQ's growing population including bring-forward Greenfield sites under the Queensland Housing Affordability Strategy and declared master planned areas under the repealed *Sustainable Planning Act 2009* and the repealed *Integrated Planning Act 1997*.

Specific assessment benchmarks apply to development applications for development proposed in identified koala broad-hectare areas to ensure koala conservation measures are incorporated into the proposed development.

Section 7.2 identifies if your property is in an identified koala broad-hectare area.

6.2 Koala habitat planning controls

On 7 February 2020, the Queensland Government introduced new planning controls to the Planning Regulation 2017 to strengthen the protection of koala habitat in South East Queensland (i.e. koala district A).

More information on these planning controls can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

As a high-level summary, the koala habitat planning controls make:

- development that involves interfering with koala habitat (defined below) in an area that is both a koala priority area and a koala habitat area, prohibited development (i.e. development for which a development application cannot be made);
- development that involves interfering with koala habitat (defined below) in an area that is a koala habitat area but is not a koala priority area, assessable development (i.e. development for which development approval is required); and
- development that is for extractive industries where the development involves interfering with koala habitat (defined below) in an area that is both a koala habitat area and a key resource area, assessable development (i.e. development for which development approval is required).

Interfering with koala habitat means:

1) Removing, cutting down, ringbarking, pushing over, poisoning or destroying in anyway, including by burning, flooding or draining native vegetation in a koala habitat area; but
2) Does not include destroying standing vegetation by stock or lopping a tree.

However, these planning controls do not apply if the development is exempted development as defined in Schedule 24 of the Planning Regulation 2017. More information on exempted development can be found here:
https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping/legislation-policy.

There are also assessment benchmarks that apply to development applications for:

- building works, operational works, material change of use or reconfiguration of a lot where:
  - the local government planning scheme makes the development assessable;
  - the premises includes an area that is both a koala priority area and a koala habitat area; and
  - the development does not involve interfering with koala habitat (defined above); and

- development in identified koala broad-hectare areas.

The Guideline - Assessment Benchmarks in relation to Koala Habitat in South East Queensland assessment benchmarks outlines these assessment benchmarks, the intent of these assessment benchmarks and advice on how proposed development may meet these assessment benchmarks.

6.3 Koala Conservation Plan clearing requirements

Section 10 and 11 of the Nature Conservation (Koala) Conservation Plan 2017 prescribes requirements that must be met when clearing koala habitat in koala district A and koala district B.

These clearing requirements are independent to the koala habitat planning controls introduced into the Planning Regulation 2017, which means they must be complied with irrespective of any approvals or exemptions offered under other legislation.

Unlike the clearing controls prescribed in the Planning Regulation 2017 that are to protect koala habitat, the clearing requirements prescribed in the Nature Conservation (Koala) Conservation Plan 2017 are in place to prevent the injury or death of koalas when koala habitat is being cleared.

6.4 Contact information for DES

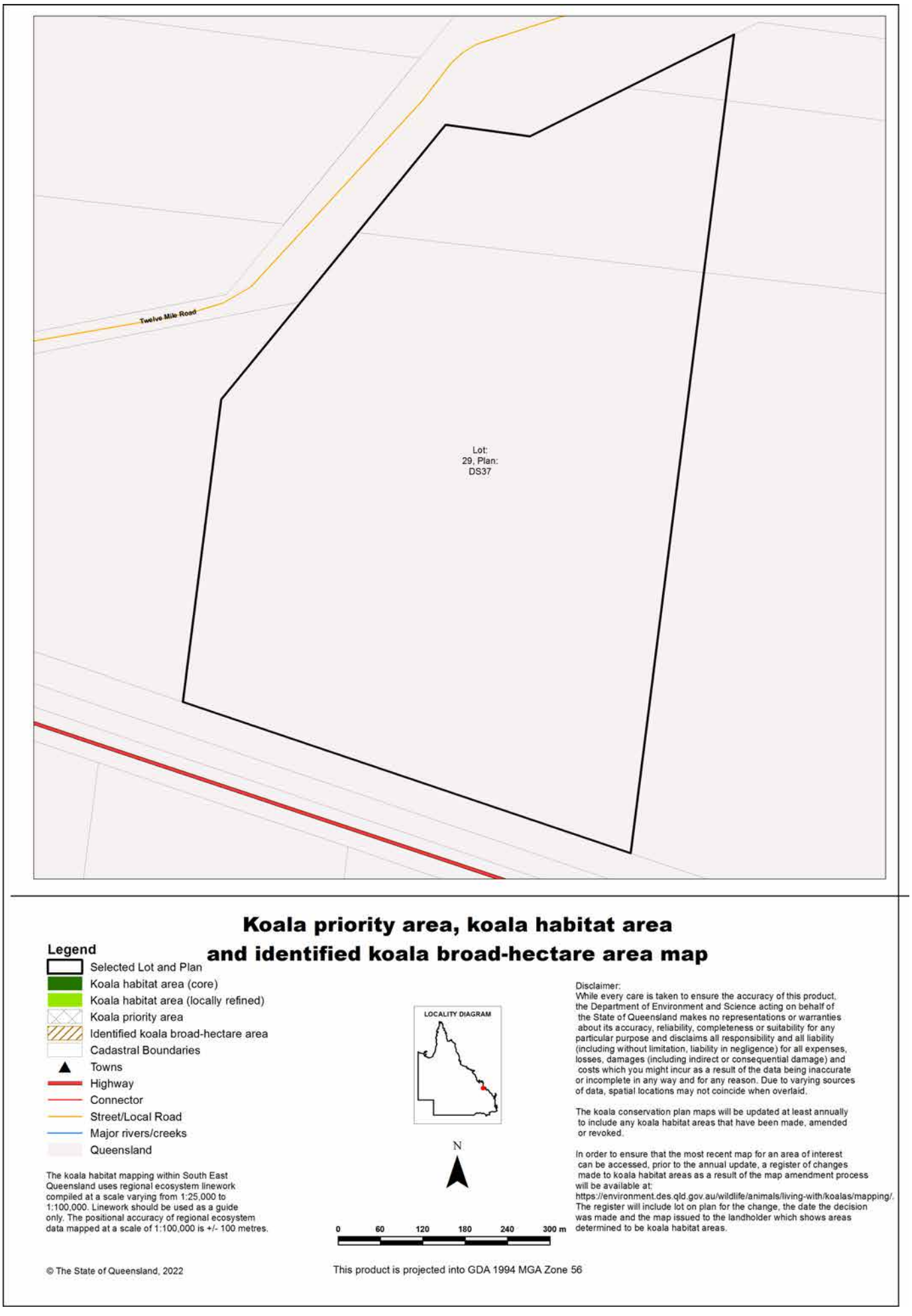
For further information on the koala protection framework:
Phone 13 QGOV (13 74 68)
Email koala.assessment@des.qld.gov.au
Visit https://environment.des.qld.gov.au/wildlife/animals/living-with/koalas/mapping

7. Koala protection framework details for Lot: 29 Plan: DS37

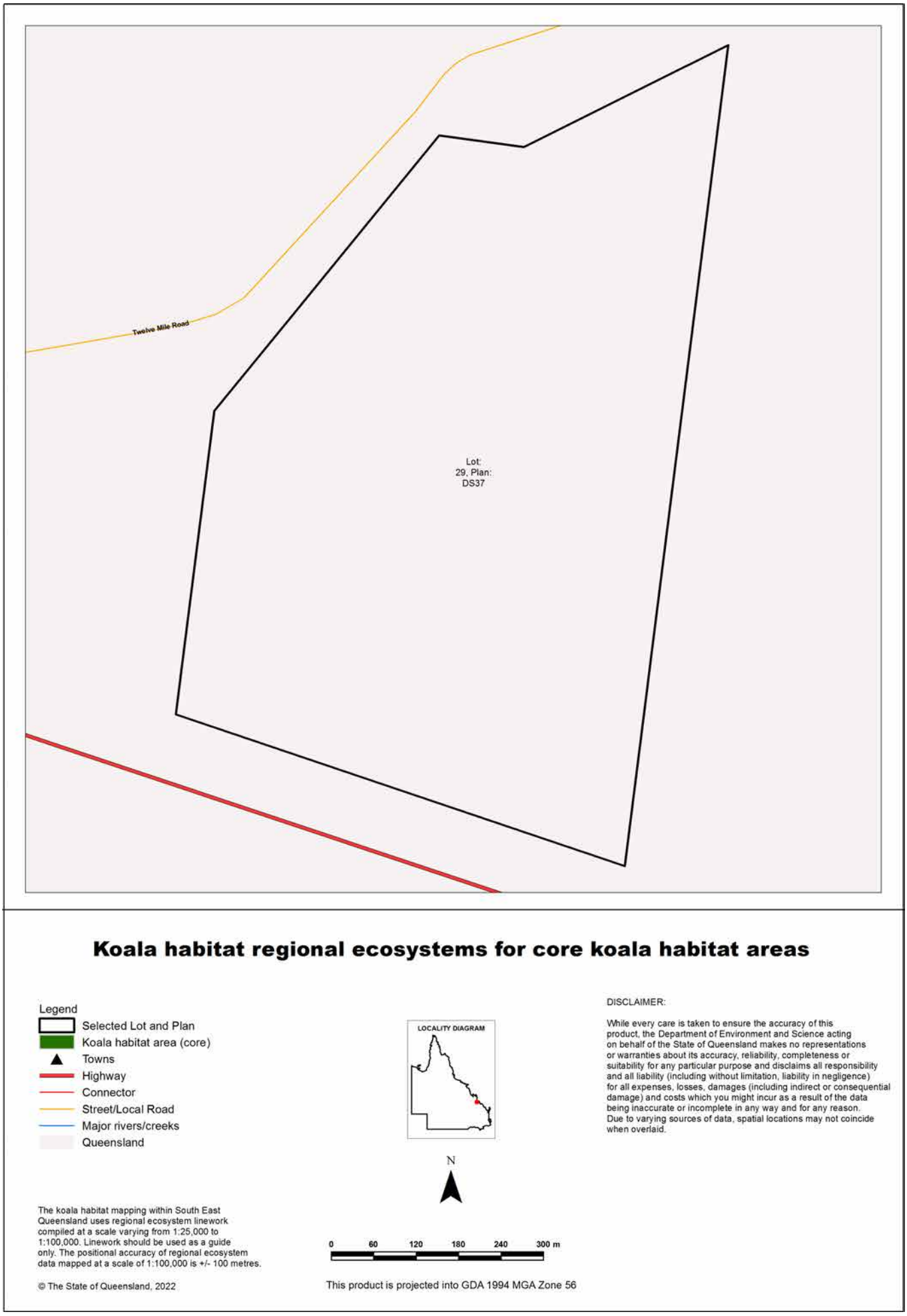
7.1 Koala districts

Koala District C

7.2 Koala priority area, koala habitat area and identified koala broad-hectare area map



7.3 Koala habitat regional ecosystems for core koala habitat areas



8. Other relevant legislation contacts list

Activity	Legislation	Agency	Contact details
• Interference with overland flow • Earthworks, significant disturbance	*Water Act 2000* *Soil Conservation Act 1986*	Department of Regional Development, Manufacturing and Water (Queensland Government) Department of Resources (Queensland Government)	Ph: 13 QGOV (13 74 68) www.rdmw.qld.gov.au www.resources.qld.gov.au
• Indigenous Cultural Heritage	*Aboriginal Cultural Heritage Act 2003* *Torres Strait Islander Cultural Heritage Act 2003*	Department of Seniors, Disability Services and Aboriginal and Torres Strait Islander Partnerships	Ph: 13 QGOV (13 74 68) www.datsip.qld.gov.au
• Mining and environmentally relevant activities • Infrastructure development (coastal) • Heritage issues	*Environmental Protection Act 1994* *Coastal Protection and Management Act 1995* *Queensland Heritage Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) www.des.qld.gov.au
• Protected plants and protected areas	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 1300 130 372 (option 4) palm@des.qld.gov.au www.des.qld.gov.au
• Koala mapping and regulations	*Nature Conservation Act 1992*	Department of Environment and Science (Queensland Government)	Ph: 13 QGOV (13 74 68) Koala.assessment@des.qld.gov.au
• Interference with fish passage in a watercourse, mangroves • Forestry activities on State land tenures	*Fisheries Act 1994* *Forestry Act 1959*	Department of Agriculture and Fisheries (Queensland Government)	Ph: 13 QGOV (13 74 68) www.daf.qld.gov.au
• Matters of National Environmental Significance including listed threatened species and ecological communities	*Environment Protection and Biodiversity Conservation Act 1999*	Department of Agriculture, Water and the Environment (Australian Government)	Ph: 1800 803 772 www.environment.gov.au
• Development and planning processes	*Planning Act 2016* *State Development and Public Works Organisation Act 1971*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) www.dsdmip.qld.gov.au
• Local government requirements	*Local Government Act 2009* *Planning Act 2016*	Department of State Development, Infrastructure, Local Government and Planning (Queensland Government)	Ph: 13 QGOV (13 74 68) Your relevant local government office
• Harvesting timber in the Wet Tropics of Qld World Heritage area	*Wet Tropics World Heritage Protection and Management Act 1993*	Wet Tropics Management Authority	Ph: (07) 4241 0500 www.wettropics.gov.au

Appendix B – Certification of Suitably Qualified Person

An assessment against the grading system outlined within Section 4.2.1 of the *Flora Survey Guidelines – Protected Plants* is provided herein. The assessment confirms that Peter Moonie is a suitably qualified person, as more than 100 points have been allocated across both components of the grading system. A curriculum vitae has been previously provided to DES for numerous permit applications.

Component	Points allocated by Guideline	Points achieved by Peter Moonie
Component 1: Qualification knowledge and ability		
A relevant qualification from a recognised institution (e.g. University, TAFE) that results in a thorough knowledge of plant identification and flora surveys.	30 - General training; OR 40 - Australian focussed training; OR 50 - Queensland focussed training	50 – Peter has a completed a BSc majoring in ecology at Griffith University
Regional ecosystem training by a recognised and qualified institution, such as the Queensland Herbarium.	5	5 - Peter has completed regional ecosystem and bio-condition assessment training at the Queensland Herbarium
Member of a recognised group / certificate program relevant to ecology/botany, where skills/knowledge are demonstrated to be granted membership. E.g. Certified Environmental Practitioner (CEnvP) Program	5	-
Lead author of articles/papers published in peer reviewed journals in relation to Qld flora surveys, Qld plant identification, or Qld EVNT plants.	10	-
Pre-existing Commonwealth Government accreditation for flora surveys under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)	30	30 – Peter's EPBC Act accreditation reference number is 2012/00558
Component 2: Field experience		
Experience within the last 2 years and a total of at least 5 years at leading flora surveys in a field-based environment at a rate of no less than 5 comprehensive botanical surveys that focus on locating and identifying EVNT plants, per year.	40 - General flora surveys; OR 50 – Australian flora surveys; OR 60 - Queensland flora surveys	60 – Peter has been leading comprehensive botanical surveys that focus on locating and identifying EVNT plants in Queensland for the past 6 years and in Australia for the past 18 years.
Number of plant specimens you have collected that have been retained/incorporated into the Queensland Herbarium collection.	5 points per 5 specimens	5 – Unsure of exact total number, but at least 5 specimens have been incorporated into the collection
Total points (100 points required by Guideline)		150

Appendix C – Likelihood of Occurrence and Impacts Assessment

* Unless otherwise referenced, the species information used within this assessment is based on the Species Profile Search information (DES, 2022)

Status is listed as EPBC Act / NC Act as follows:

- CE – critically endangered
- CR – critically endangered
- E – endangered
- V – vulnerable
- NT – near threatened

Occurrence categories:

- High – previously recorded within 10 km of study area and suitable habitat is present
- Moderate – suitable habitat present, within known distribution but not recorded within 10 km of study area
- Low – no suitable habitat present, and not previously recorded within 10 km of study area.

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
Atalaya collina	E/E	Recorded in the Mt. Sugarloaf area near Gladstone and near Nagoorin in central-eastern Queensland.	Flowers in November. Mature fruits observed in December (DoCCEEW, 2022).	Found in disturbed semi-evergreen vine thicket or dry rainforest on brownish-black clay loams overlying clay subsoils.	GSDA – Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Bosistoa transversa	V/V	Found from the Nightcap Range north of Lismore in north-east NSW to Mount Larcom (near Gladstone).	Flowers from January to May.	Occurs in lowland subtropical rainforest up to 300 m above sea level.	GSDA – Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study areastudy area. Not recorded during survey. Low potential to occur.

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
					SGIC - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Bulbophyllum globuliforme	V/NT	Occurs from near Paluma, north-east Queensland and south to the McPherson Range on the Queensland/New South Wales border (DOCCEEW, 2022).	Flowers May to November.	Host-specific species, only growing on the hoop pine (*Araucaria cunninghamii*), where it colonises the upper branches of mature trees (DOCCEEW, 2022).	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Capparis humistrata	E/E	Occurs between Marlborough and Bouldercombe. Also found near Dingo in central Queensland.	Flowers recorded in March, May and December. Fruiting recorded in November and December.	Found in eucalypt woodland with a shrubby understorey, on stony hard ridges and serpentinite soil. Also grows on the margins of brigalow forest on sandy soil.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC – Not recorded within 10 km of study area (Wildlife Online). No suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Recorded within 10 km of study area (Wildlife Online) and no suitable

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
					habitat within study area. Not recorded during survey. Low potential to occur.
Cossinia australiana		Rockhampton to Kingaroy	Flowers October to January. Fruiting recorded in February.	Araucarian microphyll vine forest and relict semi-evergreen vine thicket on a variety of soils, including red volcanic soil and black loam.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Cupaniopsis shirleyana	V/V	Restricted to southeast Queensland, from Brisbane, north to Bundaberg.	Flowers from April to June.	Occurs in dry rainforest vegetation types, including vine thicket communities on hillsides, stream beds and along riverbanks at altitudes up to 550 m above sea level.	GSDA – Records within 10 km of study area but records appear to be reassigned as *C. watalgan*. Not recorded during survey. Low potential to occur. SGIC – Not recorded within within 10 km of study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online). Not recorded during survey. Low potential to occur.
Cycas megacarpa	E/E	Bouldercombe in the north, to near Woolooga in the south.	Fruiting cones are produced between the months of May. and February. Seeds become ripe from March onwards.	Found in woodland, open woodland and open forests, often in conjunction with a grassy understory. Also found in or on the edge of rainforest habitats.	GSDA – Recorded within 10 km of study area (Wildlife Online) and suitable habitat present within study area. Not recorded during survey. **High potential to occur.**

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
					SGIC - Recorded within 10 km of study area (Wildlife Online) but no suitable habitat present within study area. Not recorded during survey. Low potential to occur. Northern section – Not recorded within 10 km of study area (Wildlife Online). Not recorded during survey. Low potential to occur.
Cycas ophiolitica	E/E	Endemic to Queensland, occurring from Marlborough to Rockhampton in central-eastern Queensland.	Seed becomes ripe from March onwards, when it drops from the plant.	Grows on hills and slopes in sparse, grassy open forest at altitude ranges from 80–400 m above sea level. Has been found on red clay soils; shallow, stony, infertile soils developed on sandstone and serpentinite; on mudstone and on alluvial loams.	GSDA – Not recorded within 10 km. Not within recorded distribution. Not recorded during survey. Low potential to occur. SGIC - Not within 10 km of study area (Wildlife Online) and not within the species distribution. Not recorded during survey. Low potential to occur. Northern section – Not recorded within 10 km of study area (Wildlife Online) but within its distribution and marginal habitat present. Not recorded during survey. **Moderate potential to occur.**
Dansiea elliptica	-/NT	Two disjunct centres of distribution, namely the wet tropics and central Queensland.	Flowering recorded in January and May.	Grows in lowland dry rainforest and vine thicket (notophyll vine forests, semi evergreen vine thickets).	GSDA – Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section – Not recorded within 10 km of study area (Wildlife Online) and no suitable

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
					habitat within study area. Not recorded during survey. Low potential to occur.
Dichanthium setosum	V / -	Inland NSW and Queensland.	Flowers in Summer and becomes dormant in late Autumn.	Found on heavy basaltic black soils and red-brown loams with clay subsoil. Associated species include *Eucalyptus albens, E. melanophloia, E. melliodora, E. viminalis*. often in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Not recorded within 10 km of study area (Wildlife Online) and only marginal habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and only marginal habitat within study area. Not recorded during survey. Low potential to occur.
Eucalyptus raveretiana		South of Charters Towers to south of Rockhampton and areas 100 km west of the city.	Flowers from December to March.	Found along watercourses and occasionally on river flats. It occurs in open forest or woodland communities. Preference for moderately fertile soil and adequate sub-soil moisture.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Graptophyllum excelsum	-/NT	Coastal regions from northern to southern Queensland.	Flowers most of the year. Fruits recorded January, July and November.	Mainly occurs in semi-evergreen vine thickets. Associated species include *Macropteranthes sp., Gyrocarpus americanus, Lysiphyllum hookeri, Acacia fasciculifera, Brachychiton australis,*	GSDA – Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area. Not recorded during survey.

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
				Polyscias elegans, Archidendropsis thozetiana, Gossia bidwillii, Alstonia constricta, Alyxia ruscifolia and *Alchornea ilicifolia*	Low potential to occur. SGIC – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Hernandia bivalvis	-/NT	Recorded from Dryander Creek (near Proserpine) south to Mt Tamborine (north east of Beaudesert).	Flowers October to December. Fruits January to April.	Mostly occurs in rainforest on rock pavements and outcrops with shallow soils. Most records are from either vine thicket or microphyll vine forest in altitudes up to 620 m.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Livistona drudei	-/V	Coastal areas, Proserpine to El Arish	Flowers August to March. Fruiting occurs December to June.	Found in melaleuca swamp-forest and fringes of gallery- or tropical-rainforest bordering on eucalypt forest. It grows in areas with boulders, on stream banks on flat coastal plains.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
					Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Macadamia integrifolia	V/V	Northern NSW to SE Queensland.	Flowers January to November. Fruits November to April.	Remnant rainforest, preferring partially open areas such as rainforest edges.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Macropteranthes leiocaulis	-/NT	Binjour Plateau (NW of Gayndah) to Mingela Bluff (SW of Townsville) (Harden et. al., 2016)	Flowers December to January. Fruits January to February (DNR, 2000).	Mainly occurs in deciduous vine thickets, semi-evergreen vine thickets and araucarian microphyll vine forests on red euchozems or sandstone talus. Also from forest/woodland habitats (DNR, 2000).	GSDA – Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area. Not recorded during survey. Misidentification of the species at Marble Creek (-23.6833, 150.7581) Low potential to occur. Northern section – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
Marsdenia brevifolia		North and central Queensland, near Townsville, Springsure and north of Rockhampton	Flowering November to February with fruits January to June.	Occurs in woodlands, dominated by *Corymbia erythrophloia* and *Eucalyptus crebra* with dense *Themeda triandra* understorey on basalt. The species can occur on rock outcrops, black soils, granite soils or dark massive acid agglomerate soils.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Parsonsia larcomensis	V/V	Restricted to the Rockhampton - Mount Perry area.	Flowers January to June. Fruiting August to September.	Found from 350 to 750 m elevation. It grows in open heathland and shrubland at or near the summits of mountain peaks on cliffs or outcrops of acid volcanic rocks and serpentinites. Also found in complex notophyll vine forest and riverine rainforest on granite.	GSDA – Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area. Not recorded during survey. Low potential to occur. SGIC – Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Phaius australis		Occurs north of the Evans Head area in northern New South Wales to the Barron River in northeast Queensland.	Flowers September to November.	Found in coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest, swamp-forest margins, swamp sclerophyll forest, swampy rainforest or fringing open forest.	GSDA – Not recorded within 10 km of study area (Wildlife Online) and minimal suitable habitat within study area. Not recorded during survey. Low potential to occur.

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
					SGIC - Not recorded within 10 km of study area (Wildlife Online) and minimal suitable habitat within study area. Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and minimal suitable habitat within study area. Not recorded during survey. Low potential to occur.
Samadera bidwillii	V/V	Known to occur in several localities between Scawfell Island, near Mackay, and Goomboorian, north of Gympie.	Flowers from November to March.	Occurs in lowland rainforest or on rainforest margins. Also found in open forests and woodlands. Associated with permanent and temporary watercourses. Occurs on lithosols, skeletal soils, loam soils, sands, silts and sands with clay subsoils.	GSDA – Recorded within 10 km of study area (Wildlife Online) and suitable habitat present within study area. Not recorded during survey. **High potential to occur.** SGIC – Not recorded within 10 km of study area (Wildlife Online) Not recorded during survey. Low potential to occur. Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area. Not recorded during survey. Low potential to occur.
Zieria actites	-/CR	Endemic to Mt Larcom.	Flowers, fruit and seed collected from September to May.	Occurs in open woodland/shrubland in crevices and clefts on exposed outcrops and cliff lines on quartz alunite at approximately 630m asl.	GSDA – Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area (endemic to Mt Larcom). Not recorded during survey. Low potential to occur. SGIC - Recorded within 10 km of study area (Wildlife Online) but no suitable habitat within study area (endemic to Mt Larcom). Not recorded during survey. Low potential to occur.

Species	Status#	Distribution*	Season	Habitat requirements*	Likelihood of occurrence in clearing impact areas
					Northern section - Not recorded within 10 km of study area (Wildlife Online) and no suitable habitat within study area (endemic to Mt Larcom). Not recorded during survey. Low potential to occur.

Queensland Department of Natural Resources (DNR) (2000). Species Management Manual. Forest and Fauna Conservation and Ecology Section, Queensland Department of Natural Resources.

Appendix E

Likelihood of occurrence

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Threatened flora species						
Atalaya collina	E	E	Recorded in the Mt. Sugarloaf area near Gladstone and near Nagoorin in central-eastern Queensland. Flowers in November. Mature fruits observed in December (DCCEEW 2022). Found in disturbed semi-evergreen vine thicket or dry rainforest on brownish-black clay loams overlying clay subsoils.	Unlikely to occur	May occur	Unlikely to occur
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within study area. Not recorded during field survey.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent. Minimal suitable habitat within study area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat within survey area. Not recorded during the field survey.		
Bosistoa transversa	V	V	Found from the Nightcap Range north of Lismore in north-east NSW to Mount Larcom (near Gladstone). Flowers from January to May. Occurs in lowland subtropical rainforest up to 300 m above sea level (DES 2022c).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat within survey area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Bulbophyllum globuliforme	NT	V	Occurs from near Paluma, north-east Queensland and south to the McPherson Range on the Queensland/New South Wales border (DAWE, 2022). Flowers May to November. Host-specific species, only growing on the hoop pine (*Araucaria cunninghamii*), where it colonises the upper branches of mature trees (DAWE, 2022).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
	E	E		Unlikely to occur	Unlikely to occur	May occur

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Capparis humistrata			Occurs between Marlborough and Bouldercombe. Also found near Dingo in central Queensland. Flowers recorded in March, May and December. Fruiting recorded in November and December. Found in eucalypt woodland with a shrubby understorey, on stony hard ridges and serpentinite soil. Also grows on the margins of brigalow forest on sandy soil (DES 2022c).	GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section: The species has been historically recorded within the desktop search extent. Marginal habitat within the study area. Not recorded during the field survey.		
Cossinia australiana	E	E	Rockhampton to Kingaroy Flowers October to January. Fruiting recorded in February. Araucarian microphyll vine forest and relict semi-evergreen vine thicket on a variety of soils, including red volcanic soil and black loam (DES 2022c).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Cupaniopsis shirleyana	V	V	Restricted to southeast Queensland, from Brisbane, north to Bundaberg. Flowers from April to June. Occurs in dry rainforest vegetation types, including vine thicket communities on hillsides, stream beds and along riverbanks at altitudes up to 550 m above sea level (DES 2022c).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has been historically recorded within the desktop search extent; however, species records appear to be reassigned as *Cupaniopsis* sp. (Watalgan A.R. Bean 8611). Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, species records appear to be reassigned as *Cupaniopsis* sp. (Watalgan A.R. Bean 8611). Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Cycas megacarpa	E	E	Bouldercombe in the north, to near Woolooga in the south.	Likely to occur	May occur	May occur

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			Fruiting cones are produced between the months of May. And February. Seeds become ripe from March onwards. Found in woodland, open woodland and open forests, often in conjunction with a grassy understory. Also found in or on the edge of rainforest habitats (DES 2022c).	GSDA: The species has been historically recorded within the desktop search extent and suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, marginal habitat within the study area. Not recorded during the field survey.		
				Northern Section: The species has been historically recorded within the desktop search extent and suitable habitat was recorded within the study area. Not recorded during the field survey.		
Cycas ophiolitica	E	E	Endemic to Queensland, occurring from Marlborough to Rockhampton in central-eastern Queensland. Seed becomes ripe from March onwards, when it drops from the plant. Grows on hills and slopes in sparse, grassy open forest at altitude ranges from 80–400 m above sea level. Has been found on red clay soils; shallow, stony, infertile soils developed on sandstone and serpentinite; on mudstone and on alluvial loams.	Unlikely to occur	May occur	May occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent and suitable habitat occurs within the study area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent; however, suitable habitat was recorded within the study area. Not recorded during the field survey.		
Dansiea elliptica	NT	NL	Two disjunct centres of distribution, namely the wet tropics and central Queensland. Flowering recorded in January and May. Grows in lowland dry rainforest and vine thicket (notophyll vine forests, semi evergreen vine thickets).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Decaspermum struckoilicum	CE	E	Endemic to Bouldercombe Gorge area, east of Mount Morgan. Flowering recorded October and November. Fruits from November to February. Grows in semi-evergreen vine thickets at elevations up to 300 m (DES 2022c).	N/A	Unlikely to occur	N/A
				SGIC SDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area. Not recorded during the field survey.		
Dichanthium setosum	LC	V	Inland NSW and Queensland. Flowers in summer and becomes dormant in late autumn. Found on heavy basaltic black soils and red-brown loams with clay subsoil. Associated species include *Eucalyptus albens, E. melanophloia, E. melliodora, E. viminalis*. Often in moderately disturbed areas such as cleared woodland, grassy roadside remnants and highly disturbed pasture (DES 2022c).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent; however, only marginal habitat was recorded within the study area. Not recorded during the field survey.		
Eucalyptus raveretiana	V	LC	South of Charters Towers to south of Rockhampton and areas 100 km west of the city. Flowers from December to March. Found along watercourses and occasionally on river flats. It occurs in open forest or woodland communities. Preference for moderately fertile soil and adequate sub-soil moisture (DES 2022c).	Unlikely to occur	May occur	May occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent and potentially suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable habitat was recorded within the study area. Not recorded during the field survey.		
Graptophyllum excelsum	NT	NL	Coastal regions from northern to southern Queensland. Flowers most of the year. Fruits recorded January, July and November. Mainly occurs in semi-evergreen vine thickets. Associated species include *Macropteranthes* sp.*, Gyrocarpus*	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			americanus, Lysiphyllum hookeri, Acacia fasciculifera, Brachychiton australis, Polyscias elegans, Archidendropsis thozetiana, Gossia bidwillii, Alstonia constricta, Alyxia ruscifolia and *Alchornea ilicifolia* (DES 2022c).	SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Hernandia bivalvis	NT	NL	Recorded from Dryander Creek (near Proserpine) south to Mt Tamborine (northeast of Beaudesert). Flowers October to December. Fruits January to April. Mostly occurs in rainforest on rock pavements and outcrops with shallow soils. Most records are from either vine thicket or microphyll vine forest in altitudes up to 620 m (DES 2022c).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Macadamia integrifolia	V	V	Northern NSW to southeast Queensland. Flowers January to November. Fruits November to April. Remnant rainforest, preferring partially open areas such as rainforest edges (DES 2022c).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Macropteranthes leiocaulis	NT	NL	Binjour Plateau (NW of Gayndah) to Mingela Bluff (SW of Townsville) (Harden *et. Al*. 2016) Flowers December to January. Fruits January to February (DNR 2000). Mainly occurs in deciduous vine thickets, semi-evergreen vine thickets and araucarian microphyll vine forests on red euchozems or sandstone talus. Also from forest/woodland habitats (DNR 2000).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey. Misidentification of the species at Marble Creek (- 23.6833, 150.7581).		
Marsdenia brevifolia	V	V	North and central Queensland, near Townsville, Springsure and north of Rockhampton. Flowering November to February with fruits January to June.	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			Occurs in woodlands, dominated by *Corymbia erythrophloia* and *Eucalyptus crebra* with dense *Themeda triandra* understorey on basalt. The species can occur on rock outcrops, black soils, granite soils or dark massive acid agglomerate soils (DES 2022c).	SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Parsonsia larcomensis	V	V	Restricted to the Rockhampton–- Mount Perry area. Flowers January to June. Fruiting August to September. Found from 350 to 750 m elevation. It grows in open heathland and shrubland at or near the summits of mountain peaks on cliffs or outcrops of acid volcanic rocks and serpentinites. Also found in complex notophyll vine forest and riverine rainforest on granite (DES 2022c).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Phaius australis	E	E	Occurs north of the Evans Head area in northern New South Wales to the Barron River in northeast Queensland. Flowers September to November. Found in coastal wet heath/sedgeland wetlands, swampy grassland or swampy forest, swamp-forest margins, swamp sclerophyll forest, swampy rainforest or fringing open forest.	Unlikely to occur	N/A	Unlikely to occur
				GSDA: The species has not been recorded within the desktop search extent; however, minimal suitable habitat was recorded within study area. Not recorded during the field survey.		
				Northern Section: The species has not been recorded within the desktop search extent; however, minimal suitable habitat was recorded within study area. Not recorded during the field survey.		
Samadera bidwillii	V	V	Known to occur in several localities between Scawfell Island, near Mackay, and Goomboorian, north of Gympie. Flowers from November to March. Occurs in lowland rainforest or on rainforest margins. Also found in open forests and woodlands. Associated with permanent and temporary watercourses. Occurs on lithosols, skeletal soils, loam soils, sands, silts and sands with clay subsoils (DES 2022c).	Likely to occur	Likely to occur	Unlikely to occur
				GSDA: The species has been historically recorded within the desktop search extent and suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent and suitable habitat was recorded within the study area. Not recorded during the field survey.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area. Not recorded during the field survey.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Zieria actites	CE	NL	Endemic to Mt Larcom. Flowers, fruit and seed collected from September to May. Occurs in open woodland/shrubland in crevices and clefts on exposed outcrops and cliff lines on quartz alunite at approximately 630m asl (DES 2022c).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area. Not recorded during the field survey.		
Threatened bird species						
Botaurus poiciloptilus Australasian bittern	E	E	Distribution: In Queensland, the species occurs as far north as Yeppoon and west to Wyandra. Habitat: The species occurs mainly in freshwater wetlands and, rarely, in estuaries or tidal wetlands. It favours wetlands with tall dense vegetation with shallow water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds (TSSC 2019).	N/A	May occur	Unlikely to occur
				SGIC SDA: The species has not been historically recorded within the desktop search extent. Suitable habitat, including seasonal wetlands and permanent waterbodies (i.e. billabongs and dams), occur within the study area; however, these habitats are largely dominated by introduced pastural species.		
				Northern Section: The species has not been historically recorded within the desktop search extent. The Lower Gracemere Lagoon is identified as potentially suitable habitat for the species; however, the species are less often to inhabit inland waterbodies.		
Calidris canutus Red knot	E	E, Mig	Distribution: Occurs along the coastlines of Australia (DCCEEW 2022). Does not breed in Australia (DCCEEW 2022). Migrates from breeding grounds in north-east Siberia to Australia, arriving in August (DCCEEW 2022). Habitat: During the non-breeding season, the red knot mainly inhabits intertidal mudflats, sandflats, and sandy beaches of sheltered coasts. It sometimes on sandy ocean beaches or shallow pools on exposed rock platforms (DCCEEW 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat occurs within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent. Although tidal habitats were recorded within the study area, the SGIC SDA pipeline alignment is proposed to intersect the most upper reaches of tidal creeks, which are not considered as optimal habitat for the species.		
Calidris ferruginea Curlew sandpiper	CE	CE, Mig	Distribution: Mainly occurs along the coastlines of Australia (DCCEEW 2022). They occur in smaller numbers across inland waters in Queensland (DCCEEW 2022). Breeds only in Siberia. Leaves breeding grounds in July and August.	May occur	Likely to occur	May occur
				GSDA: The species has 34 records within the desktop search extent. The GSDA alignment is located immediately adjacent to a modified floodplain, which may provide suitable foraging		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			Arrives in Australia in late August and early September. Flocks stopover in northern Australia before moving on to southeastern Australia. Majority of birds arrive in September. Return migration commences in March (DCCEEW 2022). Habitat: Known to inhabit sheltered intertidal mudflats, and ephemeral and permanent lakes and dams (DCCEEW 2022). Roosts on dry beaches, spits and islets (DCCEEW 2022).	habitat when the area is inundated with water. However, the species are less often to inhabit inland waterbodies.		
				SGIC SDA: The species has 13 records within the desktop search extent, one recorded approximately 2 km west of the SGIC SDA pipeline alignment near Marmor. Suitable habitat including tidal areas, ephemeral and permanent waterways and waterbodies, were recorded within the study area.		
				Northern Section: The species has seven records within the desktop search extent. The Lower Gracemere Lagoon is identified as potentially suitable habitat for the species; however, the species are less often to inhabit inland waterbodies.		
Calidris tenuirostris Great knot	CE	CE, Mig	Distribution: Sheltered coastal habitats around Australia (DCCEEW 2022). Breeds in north-eastern Siberia and Russia. Moves south after breeding to Australia, with migration starting in June. Large flocks arrive in late August through to early September. The majority of the population stays in northern Australia, although some birds move further south. Departure to the breeding grounds commences in March (DCCEEW 2022). Habitat: Known to inhabit large intertidal mudflats, sandy beaches and occasionally on exposed reefs and rock platforms (DCCEEW 2022). Roosts in large congregations in open areas (DCCEEW 2022).	Unlikely to occur	N/A	N/A
				GSDA: The species has nine records within the desktop search extent, all of which are located along the coastline. No suitable coastal habitats occur within the study area.		
Calyptorhynchus lathami Glossy black-cockatoo	V	E	Habitat: The species occurs in coastal woodlands, open inland woodlands or timbered watercourses where casuarinas occur. Also occur in open sclerophyll forest with a stratum of *Allocasuarina* beneath *Eucalyptus*, *Corymbia* or *Angophora* (Glossy Black Conservancy 2010).	Confirmed present	N/A	N/A
				GSDA: One individual was confirmed present within the study area during the Arup (2008) field surveys.		
Charadrius leschenaultii Greater sand plover	V	V, Mig	Distribution: Occurs in coastal regions throughout Australia but is most concentrated in the north (DCCEEW 2022). Breeds in central Asia. Migrates from breeding grounds in July. Passes through south-east Asia into northern Australia, arriving late July (DCCEEW 2022). Follows coastline flyways when moving within Australia. Movement back to breeding grounds commences in late February (DCCEEW 2022). Habitat: Forages on open intertidal flats of sheltered embayments, lagoons or estuaries DCCEEW 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has four records within the desktop search extent, all of which are located along the coastline. No coastal habitats occur within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent. Although tidal habitats were recorded within the study area, the SGIC SDA pipeline alignment is proposed to intersect the most upper reaches of tidal creeks, which are not considered as optimal habitat for the species.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Charadrius mongolus Lesser sand plover	E	E, Mig	Distribution: Occurs in coastal regions of all states, but mainly through north and east Australia (DCCEEW 2022). The species migrates from breeding grounds, north-east and central Asia, to northern Australia in August and disperses along the coastlines to southern areas. Commences the return journey to breeding grounds in April (DCCEEW 2022). Habitat: Forages along shorelines and intertidal flats and occasionally on coral reefs and river margins (DCCEEW 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has 40 records within the desktop search extent, all of which are located along the coastline. No coastal habitats occur within the study area.		
				SGIC SDA: The species has one record within the desktop search extent. Although tidal habitats were recorded within the study area, the SGIC SDA pipeline alignment is proposed to intersect the most upper reaches of tidal creeks, which are not considered as optimal habitat for the species.		
Cyclopsitta diophthalma coxeni Coxen's fig-parrot	E	E	Distribution: Distribution is poorly known (DCCEEW 2022). Based on species records, the distribution extends from south-eastern Queensland to north-eastern New South Wales (DCCEEW 2022). Habitat: Occurs in rainforest habitats including subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, and vine forest (DCCEEW 2022). Species habitat has been largely cleared following the arrival of Europeans. The remaining population is now thought to be concentrated into fragmented remnants of drier and more hilly habitats (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. The nearest record is approximately 90 km south of the study area. No potentially suitable habitat was recorded within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no potentially suitable habitat was recorded within the study area.		
				Northern Portion: The species has not been historically recorded within the desktop search extent and no suitable habitat occurs within the study area.		
Epthianura crocea macgregori Yellow chat (Dawson)	E	CE	Distribution: Restricted to coastal areas of central Queensland (DCCEEW 2022). Habitat: Inhabits freshwater and saline wetlands on marine plains and occurs in habitats that contain rush and grass vegetation between 0.4 m to 2 m tall along drainage lines and in open habitats for foraging (DCCEEW 2022). The species nests and raises their young in saltwater couch grasslands and samphire shrublands (DCCEEW 2022)	Unlikely to occur	Confirmed present	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
				SGIC SDA: Four individuals were confirmed present during the Arup (2008) field surveys. Species were recorded from two locations along Twelve Mile Creek.		
				Northern Section: The species has one record within the desktop search extent, recorded in 2010. No potentially suitable wetland habitats occur within the study area. The Lower Gracemere Lagoon occurs within the study area; however, it is not located on marine plains.		
Erythrotriorchis radiatus Red goshawk	E	V	Distribution: Patchy, widespread distribution across coastal and sub-coastal regions of northern and eastern Australia (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent, the closest record occurs 18.5 km south-east of the study area and was recorded in 2016. Potentially		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			Habitat: Occurs in a range of habitats, often at ecotones, including coastal and sub-coastal tall open forests, tropical savannahs crossed by wooded or forested watercourses, woodlands, edges of rainforests and gallery forests along watercourses, and wetlands that include *Melaleuca* and *Casuarina* species (DCCEEW 2022). The species typically nests in tall trees within 1 km of permanent water and occurs in habitats that support a high abundance of bird species (DCCEEW 2022).	suitable habitat is present within the study area. Based on the suitability of habitat, the species has potential to occur. However, it has experienced a recent, rapid northward contraction, and is now rarely encountered south of southern Cape York in Queensland (Garnett and Baker 2020). On this basis, the species is unlikely to occur within the GSDA pipeline alignment.		
				SGIC SDA: The species has two records within the desktop search extent, both recorded in 1955. Potentially suitable habitat is present within the study area. Based on the suitability of habitat, the species has potential to occur. However, it has experienced a recent, rapid northward contraction, and is now rarely encountered south of southern Cape York in Queensland (Garnett and Baker, 2020). On this basis, the species is unlikely to occur within the SGIC SDA pipeline alignment.		
				Northern Section: The species has two records within the desktop search extent, both recorded in 1955. Potentially suitable habitat is present within the study area. Based on the suitability of habitat, the species has potential to occur. However, it has experienced a recent, rapid northward contraction, and is now rarely encountered south of southern Cape York in Queensland (Garnett and Baker, 2020). On this basis, the species is unlikely to occur within the Northern Section pipeline alignment.		
Esacus magnirostris Beach stone-curlew	V	NL	Distribution: North coast of Australian and associated islands from Western Australia to New South Wales (Birdlife Australia 2022) Habitat: The beach stone-curlew forages on large intertidal mudflats, sandflats, sandbanks and sandpits exposed by low tide for crabs and other marine invertebrates. The species is also known to frequent river mouths, offshore sandbars associated with coral atolls, reefs and rock platforms, and coastal lagoons (Birdlife Australia 2022).	Unlikely to occur	N/A	N/A
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area, the species is associated with marine environments.		
Falco hypoleucos Grey falcon	V	V	Distribution: The species is noted as being absent from east of the Great Dividing Range and is mainly found is regions where the annual rainfall is less than 500 mm and is essentially confined to arid and semi-arid regions (TSSC 2020). Habitat: An elusive species that occurs in arid to semi-arid environments in timbered lowland plains, shrublands, grasslands and open woodlands but have been observed	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. The species' distribution does not encompass the GSDA pipeline alignment as the project is located east of the Great Dividing Range where the species is noted to be absent. Additionally, BoM Monthly Rainfall statistics for the Gladstone Radar (Station ID: 039123) report that the average annual rainfall for the Gladstone region is above 500		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			hunting in open areas. They preference habitat with tree-lined watercourses for nesting (TSSC 2020).	mm rainfall per year (mean 882.8 mm) based on data collected during the last 63 years (1958 – 2021) (BoM 2022).		
				SGIC SDA: The species has one record within the desktop search extent, recorded in 1975. The species' distribution does not encompass the SGIC SDA pipeline alignment as the project is located east of the Great Dividing Range where the species is noted to be absent. Additionally, BoM Monthly Rainfall statistics for the Gladstone Radar (Station ID: 039123) and Gracemere – Lucas St (Station ID: 039049) report that the average annual rainfall for the Gladstone and Rockhampton region is above 500 mm rainfall per year (mean 882.8 mm) (BoM 2022; BoM 2022a).		
				Northern Section: The species has not been historically recorded within the desktop search extent. The species' distribution does not encompass the Northern Section pipeline alignment as the project is located east of the Great Dividing Range where the species is noted to be absent. Additionally, BoM Monthly Rainfall statistics for the Gracemere – Lucas St (Station ID: 039049) report that the average annual rainfall for the Rockhampton region is above 500 mm rainfall per year (mean 820.3 mm) based on data collected during the last 131 years (1890 – 2021) (BoM 2022a).		
Fregetta grallaria grallaria White-bellied storm-petrel	V	LC	Distribution: Occurs in the tropical and subtropical waters of the Pacific, Indian and Atlantic Oceans, and is known to occur off the coast of eastern Australia (DCCEEW 2022). Habitat: Breeds in colonies on small islets and rocks in the Lord Howe Island (north-east of Sydney) and Kermadec Island complexes (north-east of New Zealand) (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
Geophaps scripta scripta Squatter pigeon (southern)	V	V	Distribution: Extends south from Cape York Peninsula to the Border Rivers region in northern New South Wales, and from the east coast to Hughenden, Longreach and Charleville, Queensland (DCCEEW 2022). Habitat: Occurs in open-forests to sparse, open-woodlands and scrub that are dominated by *Eucalyptus*, *Corymbia* and *Acacia* or *Callitris* species, remnant and regrowth within 3 km of water (DCCEEW 2022).	Confirmed present	Confirmed present	Likely to occur
				GSDA: Two individuals were confirmed present within the study area during the field surveys.		
				SGIC SDA: 14 individuals were confirmed present within the study area during the field surveys.		
				Northern Section: The species has 194 records within the desktop search extent, the most recent recorded in 2019. The species was confirmed present during the 2007 field surveys		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
				undertaken by Arup (Arup, 2008). Suitable habitat was recorded within the study area.		
Grantiella picta Painted honeyeater	V	V	Distribution: Sparsely distributed from south-eastern Australia to north-western Queensland and eastern Northern Territory (DoE 2015b). Habitat: Diet mainly consists of mistletoe fruits, as well as nectar from flowering mistletoes and eucalypts (DoE 2015b). Inhabits mistletoes in eucalypt forests/woodlands, riparian woodlands, acacia-dominated woodlands, *Melaleuca* sp., *Casuarina* sp., *Casuarina* sp., *Callitris* sp. and trees on farmlands or gardens (DoE 2015b)	N/A	N/A	Unlikely to occur
				Northern Section: The species has not been historically recorded within the desktop search extent. The nearest record is approximately 150 km west of the study area. The Northern Section is not mapped within the species distribution (DCCEEW 2022). No suitable habitat was recorded within the study area.		
Hirundapus caudacutus White-throated needletail	V	V, Mig	Distribution: Widespread throughout eastern and south-eastern Australia. It has been recorded along all coastal regions of QLD and NSW (DCCEEW 2022). Habitat: Almost exclusively aerial, it does prefer wooded, inland areas and heathland. In coastal areas they have been seen flying over mudflats and beaches (DCCEEW 2022).	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has four records within the desktop search extent, the most recent recorded in 1999. The species has potential to forage aerially across the study area.		
				SGIC SDA: The species has two records within the desktop search extent, the most recent recorded in 1997. The species has potential to forage aerially across the study area.		
				Northern Section: The species has three records within the desktop search extent, the most recent recorded in 2018. The species has potential to forage aerially across the study area.		
Limosa lapponica baueri Western Alaskan bar-tailed godwit	V	V	Distribution: Recorded in all coastal areas of all Australian states. Species is widespread along the east and south-east coasts of Queensland, New South Wales and Victoria (DCCEEW 2022). Habitat: A large wading bird, inhabiting coastal habitats and brackish wetlands, but is rarely observed inland. Forages in sheltered intertidal areas and roosts on sandy beaches, sandbars and spits (DCCEEW 2022).	Unlikely to occur	May occur	May occur
				GSDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat for the species occurs within the study area.		
				SGIC SDA: The species has six records within the desktop search extent. The closest record occurs approximately 2 km west of the SGIC SDA pipeline alignment. Suitable habitat, including tidal areas and seasonal wetlands, were recorded within the study area; however, the species is		
				Northern Section: The species has four records within the desktop search extent, the most recent recorded in 1995 approximately 900 m east of the Northern Section pipeline alignment. Although the species is rarely observed in inland habitats, the species has been recorded within the large wetland immediately adjacent to the Northern Section alignment. The pipeline alignment does not traverse this wetland habitat.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Lophochroa leadbeateri Major Mitchell's cockatoo	V	NL	Distribution: Located across the arid and semi-arid inland of south-western Queensland (OEH 2022a). Habitat: Inhabits a wide range of vegetated and open inland habitats, in close proximity to water (OEH 2022b).	N/A	Unlikely to occur	Unlikely to occur
				SGIC SDA: The species has one recorded within the desktop search extent. The species is known to inhabit inland habitats.		
				Northern Section: The species has one record within the desktop search extent. The species is known to inhabit inland habitats.		
Macronectes giganteus Southern giant petrel	E	E, Mig	Distribution: Widespread throughout the Southern Ocean (DCCEEW 2022). Habitat: Species is widespread but generally found in low densities across landmasses in Antarctic waters in summer and is thought to move to areas north of 50°S in winter. Breeding occurs on several islands in the Southern Ocean and Australian Antarctic Territory (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
Neochmia ruficauda ruficauda Star finch (eastern, southern)	E	E	Distribution: The species occurs in low numbers in central Queensland (DCCEEW 2022). Habitat: Mainly inhabits grasslands and grassy woodlands in close proximity to permanent freshwater (DCCEEW 2022). Species are closely associated to habitats that consist certain tree species, including *Eucalyptus coolabah*, *E. tereticornis*, *E. tessellaris*, *Melaleuca leucadendra*, *E. camaldulensis* and *Casuarina cunninghamii* (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The subspecies has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
				SGIC SDA: The subspecies has one record within the desktop search extent, recorded in 1958. Although potentially suitable habitat for the subspecies was recorded within the study area, the total population of the subspecies is estimated to consist of 50 or less breeding birds, which is considered to be of low reliability (DCCEEW 2022).		
				Northern Section: The subspecies has five records within the desktop search extent, the most recent recorded in 1991 approximately 1.6 km east of the Northern Section alignment. Although potentially suitable habitat for the subspecies was recorded within the study area, the total population of the subspecies is estimated to consist of 50 or less breeding birds, which is considered to be of low reliability (DCCEEW 2022).		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Ninox strenua Powerful owl	V	NL	Distribution: Mainly occurs on the coastal side of the Great Dividing Range from Mackey to south-western Victoria (OEH 2022b). Habitat: The species occurs in a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. Prefers large tracts of forest or woodland but can occur in fragmented landscapes (Kavanagh and Stanton 2002).	Likely to occur	Likely to occur	N/A
				GSDA The species has 15 records within the desktop search extent, the most recent recorded in 2011. The nearest record occurs approximately 100 m from the GSDA alignment. Mature woodland retaining potentially suitable nesting habitat was recorded within the study area.		
				SGIC SDA: The species has seven records within the desktop search extent. The closest record is approximately 7 km east of the study area. Potentially suitable foraging habitat as recorded within mature open woodland habitats. No suitable nesting habitat was recorded within the study area.		
Numenius madagascariensis Eastern curlew	E	CE	Distribution: Distributed along the coast in all states of Australia. The species is rarely recorded inland. Habitat: Associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass (DCCEEW 2022). This species forages on soft, sheltered, intertidal sand- or mudflats, often near mangroves, on saltflats, saltmarshes, rockpools, coastal reefs and ocean beaches near the tideline (DCCEEW 2022).	Unlikely to occur	May occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
				SGIC SDA: The species has nine records within the desktop search extent. Although tidal habitats were recorded within the study area, the SGIC SDA pipeline alignment is proposed to intersect the most upper reaches of tidal creeks, which are not considered as optimal habitat for the species.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
Pachyptila turtur subantarctica Fairy prion (southern)	LC	V	Distribution: Breeding occurs on New Zealand offshore islands (DCCEEW 2022). Little information is available on migration pathways; however, this subspecies could travel north to subtropical waters during winter understood (DCCEEW 2022). Habitat: It forages over continental shelves and the continental slope and may feed in deep coastal waters (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
Poephila cincta cincta	E	E	Distribution: The southern subspecies is known to occur in the Townsville-Charters Towers region and in scattered sites in central Queensland (DCCEEW 2022). The	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The subspecies has not been historically recorded within the desktop search extent. The GSDA largely occurs outside of		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Black-throated finch (southern)			subspecies remains locally common at only a few sites near Townsville and Charters Towers (DCCEEW 2022). Habitat: Occurs mainly in grassy, open woodlands and forests, typically dominated by *Eucalyptus*, *Corymbia* and *Melaleuca*, and occasionally in tussock grasslands or other habitats, often along or near watercourses, or in the vicinity of water (DCCEEW 2022).	the subspecies' mapped distribution (DCCEEW 2022). Limited foraging habitat was recorded within the study area.		
				SGIC SDA: The subspecies has four records within the desktop search extent, the most recent recorded in 1984. Potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The subspecies has not been historically recorded within the desktop search extent. Potentially suitable foraging habitat was recorded within the study area, adjacent to water.		
Pterodroma neglecta neglecta Kermadec petrel (western)	V	LC	Distribution: Breeds on islands, islets and atolls in the southern Pacific Ocean. Within Australia, the species nests at Ball's Pyramid (off the coast of Port Macquarie) and Phillip Island, Victoria. This species occasionally reaches the eastern coast of the Australian mainland (DCCEEW 2022). Habitat: Pelagic petrel of the Pacific Ocean (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
Rostratula australis Australian painted snipe	E	E	Distribution: Recorded at wetlands from all states of Australia; however, the species is more common in eastern Australia (DCCEEW 2022). Habitat: Typically inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps, claypans and waterlogged grasslands (DCCEEW 2022).	May occur	Likely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. The GSDA alignment is located immediately adjacent to a modified floodplain, which may provide suitable foraging habitat when inundated with water.		
				SGIC SDA: The species has six records within the desktop search extent, the most recent recorded in 2013. Potentially suitable wetland habitats were recorded within the study area.		
				Northern Section: The species has four records within the desktop search extent, the most recent recorded in 2013. Potentially suitable wetland habitats were recorded within the study area.		
Thalassarche impavida Campbell albatross	SL	V, Mig	Distribution: Known to forage over the continental shelf off New South Wales, Victoria and Tasmania (DCCEEW 2022). Habitat: The species forages pelagic waters to shelf-break waters, specialising in the latter (DCCEEW 2022). The only known breeding area for this species is Campbell Island off	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			the southern coast of New Zealand. Post-breeding, the birds may move north to enter Australia's temperate shelf water (DCCEEW 2022).	SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area, the species is associated with marine environments.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
Turnix melanogaster Black-breasted button-quail	V	V	Distribution: Distributed across south-eastern Queensland, from Byfield in the north to the Border Ranges rainforests in the south, typically east of the Great Dividing Range (TSSC 2015). Habitat: This species is typically found in the leaf litter and vine thickets of drier rainforests; scrubby eucalypt, she-oak and *Acacia* woodlands; and thickets of lantana on rainforest fringes (TSSC 2015).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
Threatened mammal species						
Chalinolobus dwyeri Large-eared pied bat	V	V	Distribution: Distribution is poorly known. Known to occur from Shoalwater Bay, north of Rockhampton, through to the vicinity of Ulladulla, New South Wales (DCCEEW 2022). Habitat: Species requires a combination of sandstone cliffs/escarpments to provide roosting habitat that is adjacent to higher fertility sites, particularly box gum woodlands or river/rainforest corridors which are used for foraging (DCCEEW 2022). No maternity roost sites are known in Queensland (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
Dasyurus hallucatus Northern quoll	LC	E	Distribution: Known to occur from Rockhampton to Weipa in Queensland and extends west to central Queensland near Carnarvon National Park (DCCEEW 2022). Habitat: Occurs in a range of habitats, including open dry sclerophyll forest and woodland, riparian woodland, low dry vine thicket, the margins of notophyll vine-forest, mangroves, sugarcane farms and in urban areas. They are	May occur	May occur	May occur
				GSDA: The species has not been historically recorded within the desktop search extent; however, suitable habitat and ground-level microhabitats (e.g. hollow ground logs) were recorded within the study area.		
				SGIC SDA: The species has seven records within the desktop search extent, the most recent recorded in 2021. Suitable habitat		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			most abundant in hilly or rocky areas close to permanent water (DCCEEW 2022). Quolls are likely to disappear in areas where less than 50-70% woodland remains within a 4 km radius. (DCCEEW 2022).	was recorded within the study area; however, ground-level microhabitats (e.g. hollow ground logs) were limited.		
				Northern Section: The species has one historical record from 2021, approximately 10 km south-east of the southern end of the Northern Section. Suitable habitat was recorded within the study area; however, ground-level microhabitats (e.g. hollow ground logs) were limited.		
Dugong dugon Dugong	Mig	V	Distribution: Known to occur throughout northern Australia, and within Queensland as far south as Moreton Bay (DCCEEW 2022h). Habitat: The species is known to congregate and inhabit accessible sea grass meadows within wide shallow bays, wide mangrove channels, and in the lee of large inshore islands (DCCEEW 2022h).	N/A	Unlikely to occur	N/A
				SGIC SDA: Previous occurrence records for the species have occurred at the mouth of the Fitzroy River (ALA 2022), however habitat conditions within the waterways of the SGIC SDA, including turbid waters, no evidence of seagrass meadows and location of the alignment in particular sites 2 and 4 within the upper tidal reaches, are not suitable for the species.		
Macroderma gigas Ghost bat	E	V	Distribution: Species range is discontinuous, with colonies occurring in the Pilbara, Kimberley, northern Northern Territory, the Gulf of Carpentaria, coastal and near coastal eastern Queensland from Cape York to near Rockhampton. Habitat: This species is known to occur in rainforest areas, vine shrub, open woodlands and arid zone (TSSC 2016), and roosts in caves, rock crevices and old mine shafts (TSSC 2016; Bat Call WA 2021).	May occur	May occur	May occur
				GSDA: The species has one historical record from 1985, approximately 10 km north of the study area. Preferred roosting habitat for this species was not recorded within the study area. Although suitable foraging habitat is present within the study area, the species is known to forage on average 1.9 km and typically less than 5 km from diurnal roosts (TSSC 2016; Bat Call WA 2021).		
				SGIC SDA: One individual has been historically recorded within the desktop search extent in 2006. Preferred roosting habitat for this species was not recorded within the study area. Although suitable foraging habitat is present within the study area, the species is known to forage on average 1.9 km and typically less than 5 km from diurnal roosts (TSSC 2016; Bat Call WA 2021).		
				Northern Section: The species has been historically recorded within the desktop search extent, with one historical record from 2006. Preferred roosting habitat for this species was not recorded within the study area. Although suitable foraging habitat is present within the study area, the species is known to forage on average 1.9 km and typically less than 5 km from diurnal roosts (TSSC 2016; Bat Call WA 2021).		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Nyctophilus corbeni Corben's long-eared bat	V	V	Distribution: Found in southern central Queensland, central western New South Wales, northwestern Victoria and eastern South Australia. Most records occur inland of the Great Dividing Range (TSSC 2015). Habitat: Inhabits a variety of inland woodland vegetation types, including box/ironbark/cypress pine woodlands, buloke woodlands, brigalow woodlands, belah woodlands, smooth-barked apple woodlands, river red gum woodlands and black box woodlands (TSSC 2015). The species roosts solitarily in dead trees or dead limbs of live trees (TSSC 2015).	May occur	May occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent; however, potentially suitable roosting and foraging habitat was recorded within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent; however, potentially suitable roosting and foraging habitat was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent and no suitable habitat was recorded within the study area.		
Orcaella heinsohni Australian snubfin dolphin	NL	V	Distribution: Known to occur throughout northern Australia, and within Queensland as far south on the east coast as Brisbane River (DCCEEW 2022d). Habitat: The species inhabits inshore coastal environments and estuarine creeks, and not likely to venture far up waterways (DCCEEW 2022d).	N/A	May occur	N/A
				SDIC SDA: The species are known to occur within the coastal region of the SGIC SDA and may occur within the estuarine creeks including Raglan Creek at site 2 and Inkerman Creek at site 4.		
Ornithorhynchus anatinus Platypus	SL	-	Distribution: Platypus are found in eastern Australia from far north Queensland to Tasmania. In Queensland, the species inhabits rivers east of the Great Dividing Range, and some western-flowing streams (DES 2021a). Habitat: Platypus habitat includes freshwater creeks, slow-moving rivers, lakes joined by rivers, and built water storages such as farm dams. The species does not occur in estuarine or marine waters. Preferred habitat for the species is defined as areas that have steep, well vegetated banks (Grant and Temple-Smith 1998). Platypi occupy a wide range of aquatic habitats, are somewhat tolerant of degraded systems, and show notable adaptability (Grant and Temple-Smith 1998). Burrows are built in riverbanks, just above water level and often among a tangle of tree roots (DES 2021a).	May occur	Likely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent; however, the distribution of the platypus encompasses the GSDA and potentially suitable habitat occurs within Larcom Creek.		
				SGIC SDA: The species has not previously been recorded within the waterways within the area. However, Twelve Mile Creek at site 3, Bob's Creek at site 5, and Gavial Creek at site 6 contain sub-optimal habitat.		
				Northern Section: The species has been historically recorded within the desktop search extent. The platypus is known to occur throughout upper, mid, and lower reaches of the Fitzroy River and throughout the basin. Site 23 provides suitable habitat and burrowing opportunities for platypi and is therefore likely to occur at this site. At sites 22, 25, 31, and 32, the species is unlikely to occur due to a lack of available surface water.		
Petauroides volans Greater glider (southern and central)	V	E	Distribution: Restricted to eastern Australia, occurring from the Windsor Tableland in north Queensland through to central Victoria (DCCEEW 2022).	Likely to occur	Likely to occur	Unlikely to occur
				GSDA: The species has been historically recorded within the desktop search extent. The nearest record occurs approximately 100 m from the GSDA alignment. Tall, mature woodland		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			Habitat: Largely restricted to eucalypt forests and woodlands, and typically favours habitats containing relatively old trees with an abundance of large tree hollows (diameter > 10 cm) (DCCEEW 2022a). Species requires a diversity of suitable foraging trees. Species forages on eucalypt leaves and occasionally flowers (DCCEEW 2022a). The species has been most frequently recorded feeding on trees including *Corymbia citriodora*, *C. intermedia*, *Eucalyptus fibrosa*, *E. moluccana* and *E. portuensis*, with *C. citriodora* and *E. tereticornis* being important species in greater glider habitat (Eyre *et al.* 2022). Species has a relatively small home range, typically 1-4 ha (DCCEEW 2022a). Studies revealed that the occupation of a small (< 3 ha) home range is consistent throughout the species Australian geographic range (Eyre *et al*. 2022).	retaining suitable foraging and denning habitat was recorded within the study area.		
				SGIC SDA: The species has 14 records within the desktop search extent, the most recent recorded in 2011. Mature open woodland retaining suitable foraging and denning habitat was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent. Suitable foraging habitat was recorded within the study area; however, denning sites are limited and large gaps between vegetated areas persist within the area.		
Petaurus australis australis Yellow-bellied glider (south-eastern)	V	V	Distribution: Patchy, widespread distribution from south-east Queensland to far south-east South Australia (DCCEEW 2022). Habitat: Occurs in eucalypt-dominated forests and woodlands, with a preference for mature old-growth forests that provide suitable hollow habitat for foraging and shelter. The species occurs in both wet and dry sclerophyll forests. Smooth barked eucalypts are important due to the foraging substrates they provide (DCCEEW 2022).	Likely to occur	Likely to occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent. The nearest record occurs approximately 100 m from the GSDA alignment. Tall, mature woodland retaining suitable denning habitat was recorded within the study area.		
				SGIC SDA: The species has 10 records within the desktop search extent, the most recent recorded in 2014. Mature open woodland retaining suitable foraging and denning habitat was recorded within the study area.		
Phascolarctos cinereus Koala	E	E	Distribution: In the region, the species occurs throughout the Brigalow Belt North bioregion (DCCEEW 2022). Habitat: Koalas occur in sub-humid *Eucalyptus* dominated forests and woodlands in riparian and non-riparian environments, and some *Acacia* dominated forests and woodlands in non-riparian environments (DCCEEW 2022).	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent. Suitable foraging habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent. Suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent. Suitable foraging habitat was recorded within the study area.		
	LC	V		Likely to occur	Likely to occur	May occur

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Pteropus poliocephalus Grey-headed flying-fox			Distribution: Occurs along coastal areas from Ingham in Queensland, to Adelaide in South Australia (DAWE 2021). Habitat: Species occurs in rainforests, open forests, closed and open woodlands, *Melaleuca* swamps and *Banksia* woodlands (DCCEEW 2022). Species forage on the blossoms from eucalypt trees and related genera (DCCEEW 2022; DAWE 2021). Roost sites range from rainforest patches, stand of *Melaleuca*, mangroves and riparian vegetation, in both continuous forest and small vegetation patches (DCCEEW 2022).	GSDA: The species has been historically recorded within the desktop search extent. Suitable foraging habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent. Suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent; however, only three records were identified within the desktop search extent (10 km) and the most recent record was recorded in 1995. Limited suitable foraging habitat was recorded within the study area.		
Sousa sahulensis Australian Humpback Dolphin	Mig	V	Distribution: Known to occur throughout northern Australia, and within Queensland as far south as the New South Wales border (DCCEEW 2022e). Habitat: The species inhabits inlets, estuaries, major tidal rivers, shallow bays, inshore reefs and archipelagos (DCCEEW 2022e).	N/A	May occur	N/A
				SDIC SDA: The species are known to occur within the coastal region of the SGIC SDA and may occur within the estuarine creeks including Raglan Creek at site 2 and Inkerman Creek at site 4.		
Taphozous australis Coastal sheathtail bat	NT	NL	Distribution: Along the north-east Queensland coast from Shoalwater Bay to Cape York, extending no more than a few kilometres inland (Queensland Government 2021). Habitat: The species inhabits sand dune scrub, mangroves, melaleuca swamps, coastal heathlands, open eucalypt forest and grasslands. The species forages within one kilometre of the ocean (Queensland Government 2021).	May occur	N/A	N/A
				GSDA: The species has been historically recorded within the desktop search extent. The most southern end of the GSDA is approximately 1 km from the coast. Potentially suitable foraging habitat is located within these areas that are situated a few kilometres from the coastline. However, no potentially suitable roosting habitat occurs within the study area.		
Xeromys myoides Water mouse	V	V	Distribution: Occurs across an extensive range in coastal and near coastal south-east and south-central Queensland (DCCEEW 2022). Habitat: The species occurs in semi-aquatic and estuarine environments including mangroves and associated saltmarshes, sedgelands, clay pans, heathlands and freshwater wetlands (DCCEEW 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent however the distribution of the species includes the SGIC SDA. Suitable habitat was recorded within estuarine environments. No evidence of presence such as nests, rodent tracks or prey middens were observed within suitable habitat within the study area.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Threatened reptile species						
Acanthophis antarcticus Common death adder	V	NL	Distribution: From central Queensland through New South Wales to the southern parts of South Australia and Western Australia (DoE 2022). Habitat: Occurs in a wide range of well-drained habitats, including rainforests and wet sclerophyll forests, woodlands, shrublands, grasslands and coastal heathlands (DoE 2022). Species prefers sites retaining dense leaf litter (DoE 2022).	N/A	May occur	Unlikely to occur
				SGIC SDA: One individual has been historically recorded within the desktop search extent in 1995. Limited suitable habitat within the study area.		
				Northern Section: One individual has been historically recorded within the desktop search extent in 1995. Limited suitable habitat within the study area. No dense leaf litter was recorded within the study area.		
Caretta caretta Loggerhead Turtle	E, Mig	E	Distribution: The species can be found in waters in sub-tropical and temperate regions throughout the world and are capable of migration large distances of over thousands of kilometres between foraging and breeding grounds. Habitat: The species can inhabit a range habitat types, including open ocean habitat, pelagic feeding grounds, nearshore waters, and shallow coastal habitats and known to feed in a wide range of tidal and subtidal habitats (Limpus *et al.* 2013a)	N/A	May occur	N/A
				SDIC SDA: The species are known to occur within the coastal and marine waters, however no known occurrences of the species occurs within the estuarine waters of the SGIC SDA. The species are known to feed within tidal and subtidal areas and may occur within any waterways within the SGIC SDA.		
Chelonia mydas Green Turtle	V, Mig	V	Distribution: The species can be found in waters in sub-tropical and temperate regions throughout the world and are capable of migration large distances of over thousands of kilometres between foraging and breeding grounds. Habitat: The species can inhabit a range habitat types, including open ocean habitat, pelagic feeding grounds, nearshore waters, shallow coastal habitats and into estuarine waters. Nesting occurs on offshore barrier reef islands.	N/A	Confirmed present	N/A
				SGIC SDA: The species is previously known to occur within the estuarine waters between Rockhampton and Gladstone. A confirmed sighting of the species occurred during the survey at site 4 on Inkerman Creek. Similar habitat occurs on Raglan Creek at site 2 and is likely to occur at this site.		
Crocodylus porosus Estuarine crocodile	V	Mig, Mar	Distribution: Within Queensland, the distribution of the estuarine crocodiles generally extends from Gladstone in the south through to the Cape York Peninsula in the north and across to the border with the Northern Territory in the west. Habitat: The species is found in a wide range of habitats including rivers, estuaries, creeks, swamps, lagoons and billabongs. The species usually inhabits the lower estuarine sections of rivers and creeks, within Queensland the	Unlikely to occur	Likely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. Sub-optimal habitat was recorded within the study area, and several barriers for migration downstream of this location. The species is therefore unlikely to occur within Larcom Creek.		
				SGIC SDA: The species has been historically recorded within the desktop search extent. The species is known to occur throughout mid and lower reaches of the Fitzroy River and the Fitzroy River Delta. Optimal habitat occurs within sites 2 and 4		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			species is usually restricted to coastal waterways and floodplain wetlands (DCCEEW 2022). Preferred nesting habitat for the species includes elevated, isolated freshwater swamps that are not subject to tidal waters, whilst floating rafts of vegetation also provides suitable habitat for nesting (DCCEEW 2022). Nesting usually occurs within 10 m of permanent water above the water mark to prevent inundation of the nest by floodwaters (DES 2022b).	and is likely to occur at these sites. Sub-optimal habitat occurs at site 3, 6, and 30 and the species may occur at these sites.		
				Northern Section: The species has been historically recorded within the desktop search extent. The species is known to occur throughout mid and lower reaches of the Fitzroy River. Optimal habitat occurs within Site 23 on the Fitzroy River and therefore the species is likely to occur at this location. The absence of surface water in close proximity to the locations at sites 22, 25, 31, and 32 provides habitat that is unsuitable to support the presence of estuarine crocodiles or provide nesting habitat. The species is unlikely to occur at these locations.		
Delma torquata Collared delma	V	V	Distribution: Species occurs within the southeast Queensland, Condamine, Burnett Mary and Fitzroy (Queensland) Natural Resource Management regions (DEWHA 2008). Habitat: Inhabits eucalypt dominated woodlands and open forests, in RE 11.3.2, 11.9.10, 11.10.1 and 11.10.4. The species occurs in habitats retaining rocks, logs, bark and other coarse woody debris, and mats of leaf litter (DCCEEW 2022).	May occur	May occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. Limited suitable habitat for the species was recorded within the study area.		
				SGIC SDA: One individual has been historically recorded within the desktop search extent in 1974. Limited suitable habitat for the species was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
Denisonia maculata Ornamental snake	V	V	Distribution: From the Brigalow Belt North and parts of the Brigalow Belt South biogeographical regions within the drainage system of the Fitzroy and Dawson River (DCCEEW 2022). Habitat: The preferred habitat is within or adjacent to habitat that is favoured by frogs. The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai mounds and depressions in RE Land Zone 4, but also lake margins and wetlands (DCCEEW 2022).	Unlikely to occur	Confirmed present	May occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: Two individuals were confirmed present within the study area during the Arup (2008) field surveys.		
				Northern Section: The species has been historically recorded within the study area. Limited suitable habitat was recorded within the study area. One seasonal waterbody retaining suitable microhabitat features including logs, woody debris and soil cracks were recorded within the study area. Spotlighting and nocturnal searches were undertaken at this waterbody. No individuals were recorded; however, frogs were abundant.		
Dermochelys coriacea Leatherback turtle	E, Mig	E	Distribution: The species can be found in waters in sub-tropical and temperate regions throughout the world and are capable of migration large distances of over thousands of	N/A	Unlikely to occur	N/A
				SDIC SDA: The species are known to occur within the coastal and marine waters. Open water pelagic species unlikely to occur		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			kilometres between foraging and breeding grounds. Very rarely encountered within the vicinity of Port Curtis and Port Alma (Limpus *et al.* 2013b). Habitat: The species can inhabit a range habitat types, including open ocean habitat, pelagic feeding grounds, nearshore waters, and shallow coastal habitats. Species are an open ocean pelagic species (Limpus *et al.* 2013b).	in the upper tidal creeks within the alignment and are unlikely to occur within any waterways within the SGIC SDA.		
Egernia rugosa Yakka skink	V	V	Distribution: Discontinuous, patchy distribution from the Queensland/New South Wales border to Cape York Peninsula, covering portions of the Brigalow Belt, Mulga Lands, South-east Queensland, Einasleigh Uplands, Wet Tropics and Cape York Peninsula Biogeographic Regions (Commonwealth of Australia 2011b; DCCEEW 2022). Habitat: The species typically occurs in open dry sclerophyll forest, woodland and scrub, especially within the Mulga Land and Brigalow Belt South Bioregion. Species is typically found under partly buried rocks, logs, tree stumps, root cavities and abandoned burrows (DCCEEW 2022).	Unlikely to occur	May occur	May occur
				GSDA: The species has not been historically recorded within the desktop search extent. Limited suitable habitat was recorded within the study area.		
				SGIC SDA: The species has five records within the desktop search extent, the most recent recorded in 2003. Preferred woodland habitats recorded within the study area included poplar box and brigalow. Where these woodland types occurred, the landscape was heavily grazed by cattle and retained limited suitable ground-level microhabitats.		
				Northern Section: Three individuals have been historically recorded within the desktop search extent. The most recent record was recorded in 1989. Patches of poplar box (*Eucalyptus populnea*) was recorded within the study area. Where popular box occurred, the landscape was heavily grazed by cattle and retained limited suitable ground-level microhabitats.		
Elseya albagula White-throated snapping turtle	CE	CE	Distribution: The white-throated snapping turtle is endemic to the Fitzroy, Burnett and Mary River catchments. The species is not thought to occur within farm dams, ephemeral swamplands or brackish waters but does occur in impounded pools at lower densities (Limpus *et al.* 2011; Hamann *et al*. 2007). The white-throated snapping turtle is also known to inhabit impounded pools with individuals recorded within the Fitzroy Barrage, Eden Bann Weir, Theodore Weir, Glebe Weir and Callide Dam. (Limpus *et al*. 2011b). Habitat: This species primarily inhabits permanent flowing reaches of streams with a sand/gravel substrate and an abundance of refugia (i.e. rock crevices, submerged logs, macrophytes beds) (Hamann *et al.* 2007). During the day, the white-throated snapping turtle is generally found in deep pools (>6 m) either up- or downstream from a riffle zone,	Unlikely to occur	Unlikely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and outside of the known distribution.		
				SGIC SDA: The species has been historically recorded within the desktop search extent. The white-throated snapping turtle has been previously recorded in Raglan Creek however the species does not persist in estuarine waters and therefore s is unlikely to occur within the SGIC SDA pipeline alignment.		
				Northern Section: The species has been historically recorded within the desktop search extent. The white-throated snapping turtle is known to occur throughout upper, mid, and lower reaches of the Fitzroy River and throughout the basin, including in the reach at site 23. Site 23 is unlikely to support nesting. At sites 22, 25, 31, and 32, the species is unlikely to occur due to a lack of available surface water.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			whereas at night the turtle moves into the shallow riffle zones (Gordos *et al*. 2007; Hamann *et al*. 2007).			
Eretmochelys imbricata Hawksbill turtle	V, Mig	E	Distribution: The species can be found in waters in sub-tropical and temperate regions throughout the world and are capable of migration large distances of over thousands of kilometres between foraging and breeding grounds. Habitat: The species can inhabit a range habitat types, including open ocean habitat, pelagic feeding grounds, nearshore waters, and shallow coastal habitats. Hawskbill diet consists of sea grasses, algae, soft corals and shellfish.	N/A	Unlikely to occur	N/A
				SDIC SDA: The species are known to occur within the coastal and marine waters. The upper tidal reaches of Raglan and Inkerman Creeks do not provide suitable foraging habitat for the species and are unlikely to occur within any waterways in the SGIC SDA.		
Furina dunmalli Dunmall's snake	V	V	Distribution: Found on the low to mid elevation from Yeppoon in the north to Oakey, Glenmorgan and Inglewood in the south in Queensland (Cogger *et al*. 1993). Habitat: The species inhabits brigalow (*Acacia harpophylla*), cypress (*Cypress* sp.) and bulloak (*Casuarina crista*) forest and woodland on cracking black clay and clay loam soils. The species is also known to occur in habitats retaining spotted gum and (*Corymbia citriodora*) and ironbark (*Eucalyptus crebra*) on sandstone (Commonwealth of Australia 2011b)	Unlikely to occur	May occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No woodland habitats retaining brigalow, cypress or bulloak were recorded within the study area. Tree species including *C. citriodora* and *E. crebra* were observed within the study area; however, these species were recorded on metamorphic rocks or alluvial flats, retaining limited ground-level microhabitats such as fallen timber, leaf litter and cracking soils.		
				SGIC SDA: One individual has been historically recorded within the desktop search extent in 1971. Woodland habitats retaining brigalow were recorded within the study area; however, ground-level microhabitats were absent. Vegetated areas within the study area retained very little ground-level features such as fallen timber, leaf litter and cracking soils.		
				Northern Section: The species has not been historically recorded in the desktop search extent. A small area retaining brigalow regrowth was recorded within the study area; however, ground-level microhabitats were absent. Vegetated areas within the study area retained very little ground-level features such as fallen timber, leaf litter and cracking soils.		
Hemiaspis damelii Grey snake	E	NL	Distribution: From central inland New South Wales, north to coastal areas near Rockhampton in Queensland (Rowland 2012). Habitat: The species inhabits brigalow (*Acacia harpophylla*) and belah (*Casuarina crista*) woodlands on heavier, cracking clay soils, in association with waterbodies or in areas retaining gilgais (Rowland 2012). The species almost	N/A	Likely to occur	May occur
				SGIC SDA: The species has 22 records within the desktop search extent, the most recent recorded in 2015. Woodland habitats retaining brigalow were recorded within the study area; however, ground-level microhabitats were sparse. Vegetated areas within the study area retained very little ground-level features such as fallen timber, leaf litter and cracking soils.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			exclusively feeds on frogs and shelters under rocks, logs and debris, and in soil cracks or abandoned burrows in moist/seasonally inundated habitats (Rowland 2012).	Northern Section: The species has been historically recorded within the desktop search extent. Limited suitable habitat was recorded within the study area. One seasonal waterbody retaining suitable microhabitat features including logs, woody debris and soil cracks were recorded within the study area. Spotlighting and nocturnal searches were undertaken at this waterbody. No individuals were recorded; however, frogs were abundant.		
Lepidochelys olivacea Olive Ridley turtle	E, Mig	E	Distribution: The species can be found in waters in sub-tropical and temperate regions throughout the world and are capable of migration large distances of over thousands of kilometres between foraging and breeding grounds. Habitat: The species can inhabit a range habitat types, including open ocean habitat, pelagic feeding grounds, nearshore waters, and shallow coastal habitats.	N/A	Unlikely to occur	N/A
				SDIC SDA: The species are known to occur within the coastal and marine waters. The upper tidal reaches of Raglan and Inkerman Creeks do not provide suitable foraging habitat for the species and are unlikely to occur within any waterways in the SGIC SDA.		
Natator depressus Flatback Turtle	V, Mig	V	Distribution: The species can be found in waters in sub-tropical and temperate regions throughout the world and are capable of migration large distances of over thousands of kilometres between foraging and breeding grounds. Habitat: The species can inhabit a range habitat types, including open ocean habitat, pelagic feeding grounds, nearshore waters, and shallow coastal habitats. Species known to feed upon sea pens, soft corals and sea cucumbers (Limpus *et al.* 2013c)	N/A	Unlikely to occur	N/A
				SDIC SDA: The species are known to occur within the coastal and marine waters. Preferred foraging species unlikely to occur in the upper tidal creeks within the alignment and are unlikely to occur within any waterways within the SGIC SDA.		
Rheodytes leukops Fitzroy River turtle	V	V	Distribution: Endemic to south-eastern Queensland and restricted to the Fitzroy River and its tributaries (ALA 2022). Habitat: This species inhabits clear flowing rivers with shallow riffles, deep pools and gravel, sand, or rocky substrate. They are benthic feeders with a diet consisting off aquatic plants, insects, and macro-invertebrates, with a habitat preference to ribbon weed beds (ALA 2022).	Unlikely to occur	Unlikely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent and outside of the known distribution.		
				SGIC SDA: The species is only known to occur throughout the Fitzroy River. All waterways within the SGIC SDA have no previous occurrence records for the species and are outside of the known range, therefore is unlikely to occur.		
				Northern Section: The species has been historically Fitzroy River turtle is known to occur throughout upper, mid, and lower reaches of the Fitzroy River and throughout the basin including the reach at Site 23. Site 23 is unlikely to support aggregated nesting, however isolated nesting may occur. At sites 22, 25, 31, and 32, the species is unlikely to occur due to a lack of available surface water.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Threatened shark species						
Anoxypristis cuspidata Narrow sawfish	V, Mig	NL	Distribution: Known to occur throughout northern Australia, and within Queensland as far south as MacKay (Florida Museum 2022). No previous occurrence records for the species occur within the study area (ALA 2022) Habitat: The species inhabits shallow coastal environments and estuarine waters but does not occur into freshwaters.	N/A	Unlikely to occur	N/A
				SGIC SDA: The SGIC SDA is outside of known current distribution of the species.		
Pristis zijsron Green sawfish	V, Mig	NL	Distribution: Known to occur throughout northern Australia, and within its most current distribution in Queensland is as far south as the Whitsundays (COA 2015). Habitat: The species inhabits inshore coastal environments and estuarine creeks but does not occur into freshwaters (COA 2015).	N/A	Unlikely to occur	N/A
				SGIC SDA: The SGIC SDA is outside of known current distribution of the species.		
Threatened insect species						
Jalmenus eubulus Pale imperial hairstreak	V	NL	Distribution: In Queensland, the species is restricted to the seasonally sub-humid central and southern areas of the state (Eastwood *et al*. 2008). Habitat: Prefers mature habitat dominated by brigalow (*Acacia harpophylla)* and bulloak (*Casuarina cristata)* on clay soils on flat to gently undulating plains, usually with scattered emergent eucalypts (Eastwood *et al*. 2008).	Unlikely to occur	May occur	N/A
				GSDA: One individual was historically recorded within the desktop search extent in 1981. No woodland habitats retaining brigalow or bulloak were recorded within the study area.		
				SGIC SDA: The species has two records within the desktop search extent, the most recent recorded in 1995. Suitable habitat was recorded within remnant brigalow woodland within the study area; however, given the species was recorded in 1995 and the species is restricted to the seasonally sub-humid central and southern areas of Queensland, the species likelihood of occurring within the study area is considered low.		
Migratory species						
Actitis hypoleucos Common sandpiper	SL	Mig	Found along all coastlines of Australia and in many areas inland, the common sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia (DCCEEW 2022).	Unlikely to occur	May occur	May occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent. However, potentially suitable foraging habitat was recorded within tidal and non-tidal habitats within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent. However, potentially suitable		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
				foraging habitat was recorded along Fitzroy River and at Lower Gracemere Lagoon.		
Apus pacificus Fork-tailed swift	SL	Mig	In Australia, the species mostly occur over inland plains but sometimes above foothills or in coastal areas, cliffs and beaches and also over islands and sometimes well out to sea. The species can also occur over settled areas, including towns, urban areas and cities. The species has been recorded mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines (DCCEEW 2022).	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent. The species has potential to forage aerially across the study area.		
				SGIC SDA: The species has two records within the desktop search extent. The species has potential to forage aerially across the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent. The species has potential to forage aerially across the study area.		
Arenaria interpres Ruddy turnstone	SL	Mig	This species is widespread within Australia during its non-breeding period of the year It is found in most coastal regions, with occasional records of inland populations. It strongly prefers rocky shores or beaches where there are large deposits of rotting seaweed (DCCEEW 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area. However, the species preferred habitats (i.e. rocky shores and beaches) were not recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent.		
Calidris acuminata Sharp-tailed sandpiper	SL	Mig	Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Queensland, they are recorded in most regions, being widespread along much of the coast and are very sparsely scattered inland (DCCEEW 2022).	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded within the study area (i.e. modified floodplains when inundated with water).		
				SGIC SDA: The species has 43 records within the desktop search extent and potentially suitable foraging habitat, such as freshwater and saline habitats were recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Calidris alba Sanderling	SL	Mig	The species occurs in coastal areas around Australia mostly on open sandy beaches exposed to open sea-swell. Scattered records occur in mid-east and south-east Queensland from Townsville and Alva Beach, south to Fraser Island, and around Moreton Bay and Point Danger, including on offshore islands. Rarely, they are recorded in near-coastal wetlands, such as lagoons, hypersaline lakes, saltponds and samphire flats. There are rare inland records from sandy shores of ephemeral brackish lakes and brackish river-pools (DCCEEW 2022).	Unlikely to occur	N/A	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
Calidris falcinellus Broad-billed sandpiper	SL	Mig	The species is most common in north coast of Australia. In Queensland the species has been recorded at Mackay and surrounding regions. The species is a non-breeding visitor to Australia where it occurs in sheltered coasts including estuarine mudflats, saltmarshes, freshwater lagoons. The species has been recorded in creeks, swamps and lakes near the coast with rare inland records (DCCEEW 2022).	Unlikely to occur	Likely to occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has 13 records within the desktop search extent and potentially suitable foraging habitat, including estuarine mudflats, saltmarshes, and freshwater lagoons, were recorded within the study area.		
Calidris melanotos Pectoral sandpiper	SL	Mig	Prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation (DCCEEW 2022).	May occur	May occur	May occur
				GSDA: The species has not been historically recorded within the desktop search extent; however, potentially suitable foraging habitat for the species was recorded within the study area (i.e. modified floodplains when inundated with water).		
				SGIC SDA: The species has not been historically recorded within the desktop search extent; however, potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent; however, potentially suitable foraging habitat for the species was recorded at Lower Gracemere Lagoon.		
Calidris ruficollis Red-necked stint	SL	Mig	The species is distributed along most of the Australian coastline where they occur in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps,	May occur	Likely to occur	May occur
				GSDA: The species has been historically recorded within the desktop search extent. Potentially suitable foraging habitat was recorded within the study area (i.e. modified floodplains when inundated with water); however, the species are known to occasionally occur within inundated grasslands.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			riverbanks, waterholes, bore drains, dams, soaks and pools in salt flats. They sometimes use flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation (DCCEEW 2022).	SGIC SDA: The species has six records within the desktop search extent and potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent; however, potentially suitable habitat was recorded within the study area.		
Calonectris leucomelas Streaked shearwater	SL	Mig	Streaked shearwaters breed on islands off the southern Russian, east China, Korea and Taiwan. In the non-breeding season, they migrate to waters off New Guinea and around northern Australia.	N/A	N/A	Unlikely to occur
				Northern Section: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
Charadrius dubius Little ringed plover	SL	Mig	A low number of records of this species occur in across coastal Australia, preferencing habitat with mudflats to forage in (ALA 2022).	N/A	May occur	Unlikely to occur
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, limited potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
Chlidonias leucopterus White-winged black tern	SL	Mig	In Australia, this species is widespread along the northern, central-eastern and south-western coasts of Australia, btu has scattered records of populations along southern Australia (DCCEEW 2022). They inhabit coastal, saline, brackish and freshwater wetlands, but rarely occur in inland wetlands (DCCEEW 2022).	Unlikely	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent; however, no potentially suitable foraging habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Cuculus optatus Oriental cuckoo	SL	Mig	The species inhabits coastal regions across northern and eastern Australia, as well as offshore islands. Species utilises a range of vegetated habitats, including monsoon	Likely to occur	Likely to occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent and suitable habitat occurs within the study area.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			rainforests, wet sclerophyll forests, open woodlands and along the edges of forests (Australian Wildlife 2022).	SGIC SDA: The species has been historically recorded within the desktop search extent and potentially suitable vegetated habitats were recorded within the study area.		
Gallinago hardwickii Latham's snipe	SL	Mig	The species inhabits permanent and ephemeral freshwater wetlands with low, dense vegetation (DAWE 2020). Species sometimes occurs in habitats that have saline or brackish water, such as saltmarshes, mangrove creeks, around bays and beaches (DCCEEW 2022).	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat for the species was recorded within the study area (i.e. modified floodplains when inundated with water).		
				SGIC SDA: The species has 45 records within the desktop search extent and suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Gallinago megala Swinhoe's snipe	SL	Mig	The species is a non-breeding visitor to Australia. Few definite records exist for Swinho''s Snipe in Australia. In Queensland specimens have been taken at Normanton. The species has also been sighted at Mount Isa. The specie's preferred habitat specific to Australia includes the dense clumps of grass and rushes round the edges of fresh and brackish wetlands. This includes swamps, billabongs, river pools, small streams and sewage ponds. They are also found in drying claypans and inundated plains pitted with crab holes (DCCEEW 2022).	May occur	N/A	N/A
				GSDA: The species has not been historically recorded within the desktop search extent; however, potentially suitable foraging habitat for the species was recorded within the study area (i.e. modified floodplains when inundated with water).		
Gallinago stenura Pin-tailed snipe	SL	Mig	The species is a non-breeding visitor to Australia. Within Australia, the distribution of the species is not well understood. In Queensland there are confirmed records from the Top End. During the non-breeding period the species occurs most often in or at the edges of shallow freshwater swamps, ponds and lakes with emergent, sparse to dense cover of grass/sedge or other vegetation. The species is also found in drier, more open wetlands such as claypans in more arid parts of specie'' range. It is also commonly seen at sewage ponds; not normally in saline or inter-tidal wetlands (DCCEEW 2022).	May occur	N/A	N/A
				GSDA: The species has not been historically recorded within the desktop search extent; however, potentially suitable foraging habitat for the species was recorded within the study area (i.e. modified floodplains when inundated with water).		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Gelochelidon nilotica Gull-billed tern	SL	Mig	In Australia, this species is widely distributed across coastal and inland mainland Australia, with records in each state, inhabiting coastal shores as well as inland freshwater wetlands, lakes and marshes (ALA 2022)	May occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent; however, suitable habitat for the species is limited.		
				SGIC SDA: The species has 19 records within the desktop search extent and potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded along Fitzroy River.		
Hydroprogne caspia Caspian tern	SL	Mig	The Caspian tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. Large numbers may shelter along the coast, behind coastal sand-dunes or coastal lakes during rough weather and have been recorded inland after storms (DCCEEW 2022).	N/A	Likely to occur	Likely to occur
				SGIC SDA: The species has 41 records within the desktop search extent and potentially suitable foraging habitat (i.e. fresh and saline wetlands) was record within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded along Fitzroy River.		
Limnodromus semipalmatus Asian dowitcher	SL	Mig	In Australia, a low number of records of this species have been recorded across northern and eastern Australian coastlines, favouring coastal waters and mudflats for foraging (ALA 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent; however, limited suitable habitat was recorded within the study area.		
Limosa lapponica Bar-tailed godwit	SL	Mig	The species has been recorded in coastal areas of all Australian states. The species is a non-breeding visitor to Australia where it occurs in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries and bays. The species is rarely found on inland wetlands (DCCEEW 2022).	Unlikely to occur	May occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has not been historically recorded within the desktop search extent; however, limited suitable habitat was recorded within the study area.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
				Northern Section: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
Limosa limosa Black-tailed godwit	SL	Mig	In Australia, this species has been recorded in coastal areas of all Australian states, as well as in inland freshwater environments with habitat ranging from coastal bays, estuaries and sandflats to inland wetlands, lagoons and grasslands (ALA 2022).	Unlikely to occur	Likely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has 23 records within the desktop search extent and potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Monarcha melanopsis Black-faced monarch	SL	Mig	Species inhabits rainforest ecosystems that include semi-deciduous vine thickets, complex notophyll vine-forests, tropical rainforests, subtropical rainforests, mesophyll thicket/shrubland, warm and cool temperate rainforest, and dry rainforest (DCCEEW 2022).	Unlikely to occur	Unlikely to occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent; however, no suitable habitat was recorded within the study area.		
Monarcha trivirgatus Spectacled monarch	SL	Mig	The species prefers thick understory habitats in rainforests, wet sclerophyll forests and mangroves (Birdlife Australia 2022).	Unlikely to occur	Likely to occur	Unlikely to occur
				GSDA: The species has been historically recorded within the study area; No rainforest habitats occur within the study area; however, no suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent. Potentially suitable habitat (i.e. mangroves) was recorded within the study area.		
				Northern Section: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Myiagra cyanoleuca Satin flycatcher	SL	Mig	The species occurs in heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, typically near wetlands and watercourses (DCCEEW 2022).	Likely to occur	Likely to occur	May occur
				GSDA: The species has been historically recorded within the desktop search extent and suitable foraging habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent and potentially suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent; however, marginally suitable habitat was recorded within the Northern Section study area		
Numenius minutus Little curlew	SL	Mig	The species is a non-breeding visitor to Australia where the species generally spends the season in northern Australia from Port Hedland, Western Australia to the Queensland coast. There are records of the species from inland Australia, and widespread but scattered records on the east coast. The species occurs in dry grassland and sedgeland including dry floodplains and black soil plains with scattered shallow freshwater pools or seasonally inundated areas, open woodlands with a grassy or burnt understory, dry saltmarshes, mudflats or sandflats etc (DCCEEW 2022).	Unlikely to occur	Likely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Numenius phaeopus Whimbrel	SL	Mig	The whimbrel is often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats. It is occasionally found on sandy or rocky beaches, on coral or rocky islets, or on intertidal reefs and platforms. It has been infrequently recorded using saline or brackish lakes near coastal areas. It also used saltflats with saltmarsh, or saline grasslands with standing water left after high springtides, and in similar habitats in sewage farms and salt fields (DoE 2015).	Unlikely to occur	May occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, limited suitable foraging habitat was recorded within the study area.		
Pandion haliaetus Osprey	SL	Mig	The species occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers. They require	Unlikely to occur	Likely to occur	Likely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			extensive areas of open fresh, brackish or saline water for foraging (DCCEEW 2022).	SGIC SDA: The species has been historically recorded within the desktop search extent and potentially suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded along Fitzroy River.		
Plegadis falcinellus Glossy ibis	SL	Mig	The Glossy Ibi'' preferred habitat for foraging and breeding are freshwater marshes at the edges of lakes and rivers, lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and cultivated areas under irrigation. The species is occasionally found in coastal locations such as estuaries, deltas, saltmarshes and coastal lagoons. Within Australia, the largest contiguous areas of prime habitat is inland and northern floodplains (DCCEEW 2022)	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat for the species was recorded within the study area (i.e. modified floodplains when inundated with water).		
				SGIC SDA: The species has 69 records within the desktop search extent and potentially suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Pluvialis fulva Pacific golden plover	SL	Mig	The species is widespread in coastal regions, with some inland records in all states across Australia. During non-breeding ground in Australia, the species occurs in coastal habitats including beaches, mudflats, sandflats, estuaries and lagoons. The species occasionally occurs in inland wetlands such as lakes, billabongs, pools, swamps, especially those with muddy margins and submerged or emergent vegetation, grassed paddocks, crops or recently burnt areas (DCCEEW 2022).	May occur	Likely to occur	May occur
				GSDA: The species has been historically recorded within the desktop search extent. Potentially suitable foraging habitat was recorded within the study area (i.e. modified floodplains when inundated with water); however, the species is less often recorded in terrestrial habitats.		
				SGIC SDA: The species has been historically recorded within the desktop search extent and potentially suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent. Potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon; however, the species is less often recorded in terrestrial habitats.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Pluvialis squatarola Grey plover	SL	Mig	The species has been recorded in all Australian states where it is most prevalent on the western and southern coastlines. The species is a non-breeding visitor to Australia where it occurs almost entirely in coastal areas including sheltered embayments, estuaries and lagoons, mudflats, sandflats. The species has been recorded in terrestrial wetlands including near-coastal lakes, swamps (DCCEEW 2022).	May occur	N/A	N/A
				GSDA: The species has been historically recorded within the desktop search extent. Potentially suitable foraging habitat was recorded within the study area (i.e. modified floodplains when inundated with water); however, the species is less often recorded in terrestrial habitats.		
Rhipidura rufifrons Rufous fantail	SL	Mig	Species inhabits wet sclerophyll forests, often in gullies dominated by eucalypts and usually within a dense shrubby understorey that often includes ferns (DCCEEW 2022).	May occur	May occur	May occur
				GSDA: The species has been historically recorded within the desktop search extent; however, limited suitable habitat was recorded within the study area. Potentially suitable habitat occurs within dense fringing riparian vegetation.		
				SGIC SDA: The species has 16 records within the desktop search extent; however, limited suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent; however, limited suitable habitat was recorded within the study area. Potentially suitable habitat occurs within dense fringing riparian vegetation.		
Sterna hirundo Common tern	SL	Mig	This species is a non-breeding visitor to Australia and is found across the majority of coastal Australia, occupying sandy shores, coastal islands and inlets (ALA 2022).	Unlikely to occur	N/A	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
Sternula albifrons Little tern	SL	Mig	The species is widespread across coastal Australia. The species inhabits sheltered coastal environments including lagoons, estuaries, river mouths, deltas, lakes, bays etc especially those with exposed sandbanks, sand-spits and exposed ocean beaches (DCCEEW 2022).	Unlikely to occur	May occur	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, limited suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
Sula leucogaster Brown booby	SL	Mig	In Australia, this species is found across the northern and eastern coastline, occupying coastal habitat, near shore waters and inshore islands from northern Western Australia to southern New South Wales (ALA 2022).	Unlikely to occur	N/A	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
Thalasseus bergii Crested tern	SL	Mig	This species is widespread across the coastal regions of Australia, occurring in all coastal states and territories, inhabiting coastal bays, lakes, large rivers and inlets (ALA, 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, limited suitable foraging habitat was recorded within the study area.		
Tringa brevipes Grey-tailed tattler	SL	Mig	In Queensland, the species is found along the entire coast. Inland records include Burdekin Weir, Charters Towers and Mount Isa; however, these are rare with the species preferring coastal habitats (DCCEEW 2022). The species inhabits sheltered coasts with reefs, rock platforms, intertidal mudflats, embayments, estuaries, coastal lagoons especially fringed with mangroves. In near coastal areas they can be found around lakes, ponds, riverbanks and rock pools (DCCEEW 2022).	Unlikely to occur	N/A	Unlikely to occur
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Tringa incana Wandering tattler	SL	Mig	In Australia, this species occupies the eastern coastline from Northern Queensland to Victoria, preferencing coastal habitat with rocky shores or inshore reefs to forage on aquatic vertebrates (ALA 2022).	Unlikely to occur	May occur	N/A
				GSDA: The species has not been historically recorded within the desktop search extent. No suitable habitat was recorded within the study area.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, no suitable foraging habitat was recorded within the study area.		
Tringa nebularia Common greenshank	SL	Mig	The species is a non-breeding visitor to Australia where it has been recorded in most coastal regions in Queensland. The species is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. These include sheltered coastal habitats with mudflats, saltmarsh, mangroves or seagrass. The species also occurs in terrestrial wetlands including lakes, swamps, dams, rivers, creeks, billabongs, the edges of the wetlands are generally	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent. Suitable foraging habitat was recorded along Larcom Creek.		
				SGIC SDA: The species has 20 records within the desktop search extent and potentially suitable foraging habitat was recorded within the study area.		

Scientific name	Status		Habitat requirements	Likelihood of occurrence		
	NC Act	EPBC Act		GSDA	SGIC SDA	NS
			of mud, clay or sand and may be bare or with vegetation (DCCEEW 2022).	Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Tringa stagnatilis Marsh sandpiper	SL	Mig	The species inhabits permanent and ephemeral wetlands, including swamps and billabongs (DAWE 2020). Species generally forages in shallow water and on bare soft mud edges of wetlands (DCCEEW 2022).	Likely to occur	Likely to occur	Likely to occur
				GSDA: The species has been historically recorded within the desktop search extent. Suitable foraging habitat was recorded within the study area (i.e. Larcom Creek and modified floodplains when inundated within water).		
				SGIC SDA: The species has 60 records within the desktop search extent and potentially suitable foraging habitat was recorded within the study area.		
				Northern Section: The species has been historically recorded within the desktop search extent and potentially suitable foraging habitat was recorded at Lower Gracemere Lagoon.		
Xenus cinereus Terek sandpiper	SL	Mig	The species is widespread across coastal northern and eastern Australia. The Terek sandpiper is a non-breeding visitor to Australia where it inhabits intertidal mudflats, estuaries, embayments, harbours or lagoons and occasionally on sandy beaches and rocky areas (DCCEEW 2022).	May occur	May occur	N/A
				GSDA: The species has been historically recorded within the desktop search extent. Potentially suitable foraging habitat was recorded within the study area (i.e. modified floodplains when inundated with water); however, the species very occasionally use inundated grasslands.		
				SGIC SDA: The species has been historically recorded within the desktop search extent; however, limited suitable foraging habitat was recorded within the study area.		
Key: CE/CR – critically endangered; E – endangered; V – vulnerable; NT – near threatened; Mig – migratory; Mar – Marine; SL – special least concern; LC – least concern; NL – not listed; N/A – not applicable						

Appendix F

Criteria used to map habitat for conservation significant fauna species

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
Calidris canutus Curlew sandpiper	Curlew sandpiper habitat has been defined based on the formal habitat definition in the Commonwealth listing advice for the species (DoE 2015a). During the non-breeding period and breeding season for non-breeding birds, the species occurs within suitable habitats along the coast and inland Australia (DoE 2015a). In Australia, the species occurs on intertidal mudflats in sheltered coastal areas, including estuaries, and non-tidal swamps, including lakes and lagoons near the coast (DoE 2015a). The species forages mainly on invertebrates, including worms, molluscs, crustaceans, and insects in tidal and non-tidal habitats, such as mudflats, sandy shores, flooded paddocks and inundated saltflats (DoE 2015a). The curlew sandpiper roosts around coastal or near-coastal lagoons and other wetlands on open substrates. The species has been recorded roosting in mangroves (DoE 2015a). The breeding range of the curlew sandpiper is restricted to the Arctic of northern Siberia. The species departs breeding grounds in July and August, stops over in northern Australia and then continues the direct route to south-east Australia in late August and September. The species return to breeding grounds begins in March (DoE 2015a).	Suitable habitat for the species was observed in areas where the pipeline alignment intersects tidal (i.e. mangroves, saltmarshes and mudflats) and non-tidal habitats (i.e. seasonal wetlands). Mapping of curlew sandpiper habitat has been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery. The following habitat types were mapped as predicted habitat for the curlew sandpiper: – Estuarine environments; and – Freshwater waterbodies and seasonal wetlands.
Calyptorhynchus lathami Glossy black-cockatoo	Glossy black-cockatoo habitat has been defined based on the formal definition outlined in the essential habitat factors listed by Queensland DoR (2022b). Essential habitat factors for the glossy black-cockatoo as detailed by the Queensland DoR include: Lowland and highland eucalypt forest and woodland, including riparian, *Callitris* and brigalow scrub areas, with *Casuarina* (*C. glauca, C. cristata)*/*Allocasuarina spp. (A. torulosa, A. littoralis*). Nest in large vertical hollow (1-2 m deep, 25-50 cm diameter) up to 28 m above ground in tall slightly isolated tree usually near principal food source (*Allocasuarina*/*Casuarina*).	Suitable foraging and nesting habitat is restricted in the south-east extent of the GSDA pipeline alignment. Narrow strips of *Casuarina cunninghamiana* were recorded along riparian woodland areas, providing potentially suitable foraging habitat for the species. Hollow-bearing trees were moderately low within woodland areas in proximity to suitable foraging habitat, providing potential suitable nesting habitat for the species. Mapping of glossy black-cockatoo habitat has been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery. The following habitat types were mapped as predicted habitat for the glossy black-cockatoo: – Mature eucalypt woodland; and – Fringing riparian vegetation.
Crocodylus porosus Estuarine crocodile	The species is found in a wide range of habitats including rivers, estuaries, creeks, swamps, lagoons and billabongs. The species usually inhabits the lower estuarine sections of rivers and creeks, within Queensland the species is usually restricted to coastal waterways and floodplain wetlands (DCCEEW 2022). Preferred nesting habitat for the species includes elevated, isolated freshwater swamps that are not subject to tidal waters, whilst floating rafts of vegetation also provides suitable habitat for nesting (DCCEEW 2022). Nesting usually occurs within 10 m of permanent water above the water mark to prevent inundation of the nest by floodwaters (DES 2022b).	Due to the species' aquatic and migratory nature, the species has no strict reliance on defined foraging habitats. Foraging habitat has not been mapped on that basis.
Denisonia maculata	Ornamental snake habitat has been defined based on the formal habitat definition in the	Suitable habitat for the ornamental snake was recorded in vegetated areas retaining *Eucalyptus*

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
Ornamental snake	Commonwealth listing advice for the species (DAWE 2022; DoE 2014). The ornamental snake's preferred habitat is within, or close to, habitat that is favoured by its prey–-frogs. The species is known to prefer woodlands and open forests associated with moist areas, particularly gilgai (melon-hole) mounds and depressions in Queensland Regional Ecosystem Land Zone 4, but also lake margins and wetlands (Brigalow Belt Reptiles Workshop 2010). Gilgai formations are found where deep-cracking alluvial soils with high clay contents occur (Brigalow Belt Reptiles Workshop 2010). Ornamental snake habitat is likely to be found in Brigalow (*Acacia harpophylla*), Gidgee (*Acacia cambagei*), Blackwood (*Acacia argyrodendron*) or Coolibah (*Eucalyptus coolabah*)-dominated vegetation communities, or pure grassland associated with gilgais (Brigalow Belt Reptiles Workshop 2010). Whilst the species shows a preference for moist areas, and there are records from riparian areas, the specie'' presumed preference for riparian habitat is questionable (Brigalow Belt Reptiles Workshop 2010). The most common Queensland Regional Ecosystems (RE) in which the species has been recorded is RE 11.4.3. Other common RE types where the species has been recorded are (Brigalow Belt Reptiles Workshop 2010): 11.4.3 Open forest dominated by Brigalow and/or Belah clay soils not associated with current alluvium. 11.4.6 Gidgee woodland clay soils not associated with current alluvium. 11.4.8 Woodland to open forest dominated by Dawson Gum (*Eucalyptus cambageana*) and Brigalow or, sometimes in the north of the specie'' range, Blackwood/Black Gidgee. Yapunyah (*E. thozetiana*) is sometimes present on shallower clay soils not associated with current alluvium. 11.4.9 Open forest, occasionally woodland, dominated by Brigalow on clay soils not associated with current alluvium. A low tree mid-storey of yellow-wood (*Terminalia oblongata) and False Sandalwood (Eremophila mitchellii*) is usually present. Belah sometimes dominates in place of Brigalow in the overstory and Bauhinia (*Lysiphyllum cunninghamii*) sometimes co-dominates. Other Queensland Regional Ecosystems where the species has been recorded are: 11.3.3 Coolibah woodland adjacent to a large, treeless, ephemeral wetland on alluvium (river and creek flats). 11.5.16 Brigalow and/or Belah open-forest in depressions in Cainozoic old loamy and sandy plains. Associated with gilgai with one-metre local relief and 5–6 m in diameter. Habitat critical to the survival of the species There is no formal definition of habitat critical to the survival of the ornamental snake. The definition outlined in the Significant impact guidelines 1.1 (DoE 2013a) has been applied.	*coolabah* and brigalow woodlands retaining seasonally inundated habitats (i.e. gilgais) within the SGIC SDA study area. Suitable ground-level microhabitats, such as ground logs, were recorded within *E. coolabah* woodlands. The Arup (2008) field surveys recorded two individuals within *E. coolabah* woodlands near Casuarina Road, Midgee. Suitable ground-level microhabitats such as cracking clays, ground logs, woody debris and rocks were low within remnant brigalow areas; however, these ground-level microhabitats are very sparse to absent within regrowth brigalow areas, and are heavily altered by intensive cultivation, and cattle grazing and trampling. Mapping of ornamental snake habitat has been based on DoR and field verified RE communities, species records, habitat assessments and high-resolution aerial imagery. Vegetated areas retaining *E. coolabah* woodland near Casuarina Road, Midgee, and Brigalow (*Acacia harpophylla*) woodland, was mapped as predicted habitat for the ornamental snake.

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
Elseya albagula White-throated snapping turtle	Habitat that is critical to the survival of the White-throated snapping turtle is defined as per *The National Recovery Plan for the White-throated Snapping Turtle* (*Elseya albagula*) (Commonwealth of Australia 2020) as: – Parts of riverine systems with permanent water, including pools, within the species' distribution that contain shelter and refuges (e.g. bank overhangs, overhanging riparian vegetation, macrophyte beds, moderate to high densities of submerged boulders and/or log jams). – All currently known and new aggregated nesting sites (all nesting sites should be considered to be part of an aggregation unless it can be demonstrated otherwise).	Due to the species' aquatic nature, the species has no strict reliance on defined foraging habitats. Foraging habitat has not been mapped on that basis.
Epthianura crocea macgregori Yellow chat (Dawson)	Yellow chat (Dawson) habitat has been defined based on the formal habitat definition in the Commonwealth listing advice for the species (DCCEEW 2022) and *Yellow chat (Capricorn subspecies)* Epthianura crocea macgregori *recovery plan* (Houston and Melzer 2008). It is distributed in coastal areas of central Queensland, with two separate breeding populations being located on the Torrila Plain and the Fitzroy River Delta (DoE 2022). The yellow chat (Dawson) inhabits marine wetlands that are subjected to extensive seasonal inundation. They often occupy marine plains that have a network of shallow drainage channels with a large variety of vegetation (DoE 2022). Nests are often found close to the ground in grasses and/or rushes while supporting a small cup shape. These often consist of 2 or 3 eggs (DoE 2022). The diet consists of insects, including moths, damselflies, caterpillars, mosquito larvae as well as other invertebrates such as spiders. These will often be targeted from surface of shallow water, stems of rushes, grasses and occasionally low shrubs (DoE 2022).	Suitable habitat for the species was recorded in vegetated marine plains near Inkerman Creek and Twelve Mile Creek and sedgelands to grasslands on Quaternary plains. Mapping of yellow chat (Dawson) habitat has been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery. Suitable habitat within the following RE communities has been mapped as predicted habitat for the yellow chat (Dawson): – 11.1.1 *Sporobolus virginic*us grassland on marine clay plains – 11.1.2 Samphire forbland on marine clay plains – 11.3.27 Freshwater wetlands.
Geophaps scripta scripta Squatter pigeon (southern)	Squatter pigeon (southern) habitat has been defined based on the formal habitat definition in the Commonwealth listing advice for the species (DCCEEW 2022). Habitat is generally defined as open-forests to sparse, open-woodlands and scrub that are (DCCEEW 2022; Squatter Pigeon Workshop 2011): – Mostly dominated in the overstorey by *Eucalyptus*, *Corymbia*, *Acacia* or *Callitris* species – Remnant, regrowth or partly modified vegetation communities, and – Within 3 km of water bodies or courses. **Breeding habitat:** Occurs on stony rises occurring on sandy or gravelly soils, within 1 km of a suitable, permanent waterbody (Squatter Pigeon Workshop 2011). **Foraging habitat:** Any remnant or regrowth open-forest to sparse, open-woodland or scrub dominated by *Eucalyptus*, *Corymbia*, *Acacia* or *Callitris* species, on sandy or gravelly soils, within 3	Mapping of squatter pigeon (southern) habitat was based on remnant and regrowth RE communities that are identified by the Queensland (DoR) essential habitat mapping framework as essential habitat factors for the squatter pigeon (southern) as a basis for mapping. This was differentiated into breeding and foraging habitat based on the categories below. **Breeding habitat:** Remnant and regrowth open forest to woodland in the following REs that occur on suitable (stony) Land Zones and occur within 1 km of permanent waterbody. The Commonwealth listing advice nominates only Land Zone 5 and 7 as suitable breeding habitat. As no Land Zone 5 or 7 occurs within proximity of the local records, Land Zone 11 REs have been included due to their suitable stony substrate: – 11.11.4 *Eucalyptus crebra* woodland on old sedimentary rocks with vary degrees of metamorphism and folding. Coastal ranges

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
	km of a suitable, permanent or seasonal waterbody (Squatter Pigeon Workshop 2011). In Queensland, the Commonwealth listing advice specifically nominates RE Land Zone 5 (well-draining, sandy or loamy soils on low, gently sloping, flat to undulating plains and foothills) and RE Land Zone 7 (lateritic (duplex) soils on low''jump-up'' and escarpments) as suitable foraging and breeding habitat for the species. Ground-level vegetation is typically patchy with vegetation cover rarely exceeding 33% (Squatter Pigeon Workshop 2011).	– 11.11.15 *Eucalyptus crebra* woodland to open woodland on deformed and metamorphosed sediments and interbedded volcanics – 11.11.16 *Eucalyptus cambageana*, *Acacia harpophylla* open forest to woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Lowlands – 12.11.14 *Eucalyptus crebra*, *E. tereticornis*, *Corymbia intermedia* woodland on metamorphics +/- interbedded volcanics. **Foraging habitat:** Remnant and regrowth open forest and woodland in the REs nominated below that occur on sandy or stony Land Zones and occur within 3 km of permanent or seasonal water: – 11.3.1 *Acacia harpophylla* and/or *Casuarina cristata* open forest on alluvial plains – 11.3.2 *Eucalyptus populnea* woodland on alluvial plains – 11.3.3 *Eucalyptus coolabah* woodland on alluvial plains – 11.3.4 *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains – 11.3.25 *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines – 11.3.26 *Eucalyptus moluccana* or *E. microcarpa* woodland to open forest on margins of alluvial plains – 11.3.27 Freshwater wetlands – 11.3.29 *Eucalyptus crebra*, *E. exserta*, *Melaleuca* spp. woodland on alluvial plains – 12.3.3 *Eucalyptus tereticornis* woodland on Quaternary alluvium.
Hemiaspis damelii Grey snake	Grey snake habitat has been defined based on the species distribution and habitat outlined in the *Targeted Species Survey Guidelines* (Rowland 2012). The species prefers woodlands habitat (typically brigalow and belah woodlands), favouring heavier cracking clay soils associated with gullies, ditches and water bodies (Rowland 2012). Within the woodland habitat this species takes shelter in seasonally moist habitat such as in soil cracks, abandoned burrows, or under flood debris, logs and rocks (Rowland 2012). Frogs almost exclusively make up the diet of this species (Rowland 2012). The core distribution of this species within Queensland is in the Brigalow Belt, south of the Great Dividing Range between Glenmorgan and Dalby (Rowland 2012).	Suitable habitat for the grey snake was recorded in brigalow woodlands retaining seasonally inundated habitats (i.e. gilgais) within the SGIC SDA study area. Suitable ground-level microhabitats such as cracking clays, ground logs, woody debris and rocks were moderately low within remnant brigalow areas; however, these ground-level microhabitats are very sparse to absent within regrowth brigalow areas, and are heavily altered by intensive cultivation, and cattle grazing and trampling. Mapping of grey snake habitat has been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery. The habitat type, Brigalow (*Acacia harpophylla*) woodland, was mapped as predicted habitat for the grey snake.
Hirundapus caudacutus White-throated needletail	White-throated needletail habitat has been defined based on the formal habitat definition in the Commonwealth listing advice for the species (TSSC 2019; DCCEEW 2022) and recent peer-reviewed literature (Tarburton 2021). In Australia, the white-throated needletail is mostly aerial, from heights of less than 1 m up to more than 1000 m above the ground (Coventry 1989; Tarburton 1993). Although they occur over most	Due to the species' aerial nature, the species has no strict reliance on defined foraging habitats. Species habitat has not been mapped on that basis.

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
	types of habitats, they are recorded most often above wooded areas, including open forest and rainforest, and may also fly below the canopy between trees or in clearings (Higgins 1999). The species is a non-breeding migrant to Australia (TSSC 2019). **Roosting habitat:** The species roosts in trees amongst dense foliage in the canopy or in hollows (TSSC (2019). Roosting is typically on vertical trunks and upper branches of trees at the edge of forest breaks or on ridgetops, where birds would have some height to gain air-speed when departing in the morning (Tarburton 2021). **Foraging habitat:** In Australia, white-throated needletails almost always forage aerially, at heights up to''cloud leve'', above a wide variety of habitats ranging from heavily treed forests to open habitats, such as farmland, heathland or mudflats (DCCEEW 2022). Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable (Cramp 1985), but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most habitat types, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland (DCCEEW 2022).	
Ninox strenua Powerful owl	Powerful owl habitat has been defined based on the formal definition outlined in the essential habitat factors listed by Queensland DoR (2022b). Essential habitat factors for the powerful owl as detailed by the Queensland DoR include: Wet and dry tall open eucalypt forest (*E. tereticornis, E. camaldulensis, E. crebra, Corymbia citriodora* and *C. intermedia*), including mountain forest gullies/gorges; forests aged 60+ years (large and old) on fertile soils with suitable hollows; roosting in dense foliage of closed forest (occasionally caves) and foraging in open forest and woodland including areas adjacent to urban/rural development. Individual RE communities that represent essential habitat factors for the species have been nominated by DoR. Additional information from peer-reviewed literature is also provided below. **Nesting habitat:** Essential habitat definition: The species nests in large hollows (45-75 cm diameter, 50-180 cm deep) 6-45 m above ground, in large (>100 cm dbh) old eucalypts on the side or at the head of heavily wooded gully (DoR 2022a). Riparian nesting habitats of the powerful owl are typically located in larger intact remnants of forest associated with small streams and minor drainage lines (DEC 2006). The species typically does not occur within fragmented forest remnants <200 ha (Kavanagh and Stanton 2002). The species nests in large hollows (1 m wide and 2 m deep) usually in mature living eucalypts in unlogged, unburnt gullies and lower slopes immediately adjacent (within 100 m) to streams or minor drainage lines, surrounded by canopy trees and sub-canopy or understorey trees or tall shrubs.	Suitable habitat for the powerful owl was observed within areas retaining remnant, mature vegetation within the GSDA and southern extent of the SGIC SDA pipeline alignment. These areas were identified as suitable habitat for the species as they retain large, mature hollow-bearing trees, and suitable nesting and denning habitat for the arboreal mammals upon which the powerful owl preys. Mapping of powerful owl habitat has largely been based on habitats that are likely to support suitable hollow-bearing trees, necessary for provision of food (i.e. hollow-dependent arboreal mammal prey) and nesting sites for the powerful owl. Habitat mapping has also been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery. The habitat type, mature eucalypt woodland, was mapped as predicted habitat for the powerful owl.

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
	Foraging habitat: The species relies on the presence of mature, hollow-bearing trees which provide den sites for the hollow-dwelling arboreal mammals which form the bulk of its prey. Given the reliance on hollow-bearing trees, the species favours mature mid-to-late succession, mixed age or multi-aged forest greater than 60 years old (Davey, 1993; Milledge *et al*.1991; Higgins, 1999).	
Ornithorhynchus anatinus Platypus	Platypus habitat includes freshwater creeks, slow-moving rivers, lakes joined by rivers, and built water storages such as farm dams. Preferred habitat for the species is defined as areas that have steep, well vegetated banks (Grant and Temple-Smith 1998). Burrows occur in the river banks, often above the water line and amongst tree roots (DES 2022b)	Due to the species' aquatic nature, the species has no strict reliance on defined foraging habitats. Foraging habitat has not been mapped on that basis.
Petauroides volans Greater glider (southern and central)	Greater glider habitat has been defined based on the formal habitat definition in the Commonwealth conservation advice for the species (DCCEEW 2022a) and in the *Guide to greater glider habitat in Queensland* (Eyre 2022). Eucalypt forests and woodlands, occurring in highest abundance in taller, montane, moist Eucalypt forests with relatively old trees and abundant hollows (DCCEEW 2022a). The species dens in large hollows (diameter >10 cm) in mature trees (DCCEEW 2022a). The greater glider (southern and central) has been most frequently recorded feeding on trees including, *Corymbia citriodora*, *C. intermedia*, *Eucalyptus fibrosa*, *E. moluccana* and *E. portuensis*, with *C. citriodora* and *E. tereticornis* being important species in greater glider habitat (Eyre *et al.* 2022). Greater gliders have a relatively small home range, typically 1-4 ha (DCCEEW 2022a). Studies revealed that the occupation of a small (< 3 ha) home range is consistent throughout the species Australian geographic range, and therefore, small patches should not be dismissed as important habitat especially if connected to other patches of suitable habitat (Eyre *et al.* 2022).	Mapping of greater glider (southern and central) habitat has been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery. Predicted habitat for the greater glider (southern and central) was differentiated into denning and foraging habitat based on the categories below. **Denning habitat:** Remnant woodland retaining large, mature eucalypt trees supporting suitable hollows (diameter >10 cm) (DCCEEW 2022a), and the patch of vegetation is larger than 1 ha and is connected to other patches of remnant woodland with gaps no larger than 35 m, as the species average glide length is typically 25 to 35 m (with a launch height of 20 to 25 m) (Australian Museum Business Service 2001).. **Foraging habitat:** Remnant and regrowth woodland retaining suitable feed tree species including, *Corymbia tessellaris*, *C. intermedia*, *Eucalyptus crebra*, *E. moluccana* and *E. tereticornis*, and is connected to continuous habitats with gaps no larger than 35 m. –
Petaurus australis australis Yellow-bellied glider (south-eastern)	Yellow-bellied glider (south-eastern) habitat has been defined based on the formal definition in the Commonwealth conservation advise for the subspecies (DAWE 2022a). The yellow-bellied glider occurs in eucalypt-dominated woodland and forest. The species is reliant on mature hollow-bearing trees for denning sites. The subspecies is very mobile and occupies large home ranges between 50-85 ha in order to utilise sufficient foraging resources (DAWE 2022). The yellow-bellied glider (south-eastern) primarily sap from incisions cut in smooth-bark eucalypts including *Eucalyptus tereticornis*, *E. moluccana*, *Corymbia citriodora and C. intermedia.* The subspecies diet also comprises insets, nectar, manna and pollen (DAWE 2022a).	Mapping of yellow-bellied glider (south-eastern) habitat has been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery. Predicted habitat for the yellow-bellied glider (south-eastern) was differentiated into denning and foraging habitat based on the categories below. **Denning habitat:** Remnant woodland retaining large, mature eucalypt trees supporting suitable hollows, and is connected to large patches of remnant woodland (< 200 km^2). **Foraging habitat:** Remnant and regrowth woodland retaining smooth-bark tree species including, *Corymbia tessellaris*, *E. moluccana* and *E. tereticornis*, and is connected to continuous habitats.
Phascolarctos cinereus	**Koala habitat - general** Koala habitat has been defined using the criteria outlined in the Commonwealth approved	**Koala habitat** Forest, woodland, open woodland and shrubland that contains koala food trees including,

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
Koala	conservation advice for the species (DAWE 2022c) and National Recovery Plan for the koala (DAWE 2022d). Biophysical habitat attributes for the koala include places that contain the resources necessary for individual foraging, survival (including predator avoidance), growth, reproduction, and movement. For an individual koala, these resources include access to sufficient quality food and shelter trees to meet their daily energetic requirements and reproductive needs, and a place to avoid predators. Koala habitat includes forests or woodlands, roadside and rail vegetation and paddock trees, safe intervening ground matrix for travelling between trees and patches to forage and shelter and reproduce and access to vegetated corridors or paddock trees to facilitate movement between patches. These resources fall within individual koala's home ranges and allow for interaction with adjacent individuals.	*Eucalyptus moluccana*, *E. tereticornis*, *E. coolabah*, *E. crebra*, *E. exserta*, *Corymbia citriodora*, *C. erythrophloia*, *C. tessellaris*, *C. intermedia* and *Lophostemon suaveolens.* Mapping criteria was based on essential habitat factors for the koala (DoR) and definitions of habitat from the Commonwealth approved conservation advice and National Recovery Plan for the Koala.
	Koala habitat – remnant vegetation Koala habitat includes forests or woodlands. These resources fall within individual koala's home ranges and allow for interaction with adjacent individuals.	Remnant woodland in the RE communities nominated below that contain the koala food trees listed above as a diagnostic criteria were mapped based on DoR and field verified RE communities, habitat assessments and high resolution aerial imagery. – 11.3.1 *Acacia harpophylla* and/or *Casuarina cristata* open forest on alluvial plains – 11.3.2 *Eucalyptus populnea* woodland on alluvial plains – 11.3.3 *Eucalyptus coolabah* woodland on alluvial plains – 11.3.4 *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains – 11.3.25 *Eucalyptus tereticornis* or *E. camaldulensis* woodland fringing drainage lines – 11.3.26 *Eucalyptus moluccana* or *E. microcarpa* woodland to open forest on margins of alluvial plains – 11.3.29 *Eucalyptus crebra*, *E. exserta*, *Melaleuca* spp. woodland on alluvial plains – 11.11.4 *Eucalyptus crebra* woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Coastal ranges – 11.11.15 *Eucalyptus crebra* woodland to open woodland on deformed and metamorphosed sediments and interbedded volcanics – 11.11.16 *Eucalyptus cambageana*, *Acacia harpophylla* open forest to woodland on old sedimentary rocks with varying degrees of metamorphism and folding. Lowlands.
	Koala habitat – non-remnant vegetation Koala habitat includes roadside and rail vegetation and paddock trees, safe intervening ground matrix for travelling between trees and patches to forage and shelter and reproduce and access to vegetated corridors or paddock trees to facilitate movement	Patches of koala food trees within areas of non-remnant vegetation that provide connectivity to other patches of remnant or non-remnant vegetation within the landscape were mapped as predicted koala habitat. These were mapped using high resolution aerial imagery based on

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
	between patches. These resources fall within individual koala's home ranges and allow for interaction with adjacent individuals.	ground-truthed information from field observations. Isolated koala food trees that do not provide connectivity to other areas of remnant and non-remnant vegetation within the landscape with a distance of more than 100 m from the nearest food tree were not mapped.
Pteropus poliocephalus Grey-headed flying-fox	Grey-headed flying-fox habitat has been defined based on the formal definition outlined in the Commonwealth listing advice for the species (DAWE 2022ax) and the National Recovery Plan for the Grey-headed Flying-fox *Pteropus poliocephalus* (DAWE 2021). **Roosting habitat:** Roost vegetation includes rainforest patches, stands of *Melaleuca*, mangroves and riparian vegetation (DAWE 2021), but colonies also use highly modified vegetation in urban and suburban areas (DAWE 2021). The species can maintain fidelity to roost sites for extended periods (DCCEEW 2022j), although new sites have been colonised (DAWE 2021). **Foraging habitat:** The grey-headed flying-fox is a canopy-feeding frugivore and nectarivore, with a diet supplemented by leaves. The species utilises vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and Banksia woodlands. It also feeds on commercial fruit crops and on introduced tree species in urban areas. The primary food source is blossom from *Eucalyptus* and related genera but in some areas, it also utilises a wide range of rainforest fruits (DCCEEW 2022j; DAWE 2021). The species is known to fly up to 40 km from camp to feed. Almost none of the vegetation communities used by the grey-headed flying-fox produce continuous foraging resources throughout the year. As a result, the species has adopted complex migration traits in response to ephemeral and patchy food resources (DCCEEW 2022j; DAWE 2021). **Habitat critical to the survival of the species** Habitat critical to the survival of the species includes plant species that flower in winter and spring, when foraging resources are in limited supply. Important winter and spring vegetation communities are those that contain *Eucalyptus tereticornis, E. albens, E. crebra, E. fibrosa, E. melliodora, E. paniculata, E. pilularis, E. robusta, E. seeana, E. sideroxylon, E. siderophloia, Banksia integrifolia, Castanospermum australe, Corymbia citriodora citriodora, C. eximia, C. maculata, Grevillea robusta, Melaleuca quinquenervia* or *Syncarpia glomulifera* (DAWE 2021).	Remnant and non-remnant vegetation retaining suitable feed trees (i.e. *Eucalyptus tereticornis, E. crebra, Corymbia citriodora* and *Melaleuca quinquenervia*) within 40 km of the nearest flying-fox camp has been mapped as predicted grey-headed flying-fox habitat. Species habitat mapping was based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery.
Rheodytes leukops Fitzroy River turtle	The Fitzroy River turtle, endemic to the Fitzroy River and associated tributaries prefers flowing river sections with large deep pools with rocky, gravel or sandy substrates, connected by shallow riffles (Cogger, et.al 1993). Critical habitat for the Fitzroy River turtle includes: – Parts of riverine systems with permanent water, including pools, within the species' distribution that contain shelter and refuges (e.g. bank	Due to the species' aquatic nature, the species has no strict reliance on defined foraging habitats. Foraging habitat has not been mapped on that basis.

Species	Habitat description in Commonwealth/State listing advise	Criteria use to map habitat
	overhangs, overhanging riparian vegetation, macrophyte beds, moderate to high densities of submerged boulders and/or log jams). All currently known and new aggregated nesting sites (all nesting sites should be considered to be part of an aggregation unless it can be demonstrated otherwise).	
Rostratula australis Australian painted snipe	The Australian painted snipe is recorded in wetlands in all states of Australia. The most common occurrence is eastern Australia, scattered through much of Queensland, NSW, Victoria and south-eastern South Australia (DoE 2022). They occur in shallow freshwater wetlands, both ephemeral and permanent, including lakes, swamps, inundated or waterlogged grassland/saltmarsh, dams, sewage farms and bore drains (DSEWPC 2013). Nests are often placed in a scrape in the ground and is either a shallow bowl shaped made of dry grass or other material or has scant lining (DoE 2022). These are often located in swamps, cane grass swamps, flooded areas, grazing lands, among cumbungi, sedges, grasses, saltwater couch, saltbush and grass. The diet of the Australian painted snipe consists of vegetation, seeds, insects, worms and molluscs, crustaceans and other invertebrates (DoE 2022).	Suitable habitat for the species was observed in areas where the pipeline alignment intersects freshwater waterbodies and seasonal wetlands. Mapping of Australian painted snipe habitat has been based on DoR and field verified RE communities, habitat assessments and high-resolution aerial imagery.

Appendix G

Field survey site photos of suitable and non-suitable koala habitat

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Appendix H

Field survey species list

Scientific name	Common name	GSDA	SGIC SDA	Northern Section
Birds				
Anas superciliosa	Pacific Black Duck		X	X
Anseranas semipalmata	Magpie Goose			X
Anthus novaeseelandiae	Australasian Pipit	X	X	X
Aprosmictus erythropterus	Red-winged Parrot	X	X	
Aquila audax	Wedge-tailed Eagle		X	
Ardea ibis	Cattle Egret		X	
Ardea intermedia	Intermediate Egret		X	
Ardea modesta	Eastern Great Egret			X
Ardea pacifica	White-necked Heron		X	
Ardeotis australis	Australian Bustard		X	X
Burhinus grallarius	Bush Stone-curlew		X	
Cacatua galerita	Sulphur-crested Cockatoo	X	X	
Calyptorhynchus banksii	Red-tailed Black-Cockatoo	X	X	
Centropus phasianinus	Pheasant Coucal	X	X	
Chenonetta jubata	Australian Wood Duck		X	X
Cincloramphus cruralis	Brown Songlark			X
Cisticola exilis	Golden-headed Cisticola		X	X
Cisticola juncidus	Zitting Cisticola		X	
Coracina novaehollandiae	Black-faced Cuckoo-shrike	X	X	
Corvus orru	Torresian Crow	X	X	X
Coturnix ypsilophora	Brown Quail	X	X	
Cracticus nigrogularis+	Pied Butcherbird	X		X
Cracticus tibicen	Australian Magpie	X	X	X
Cygnus atratus	Black Swan			X
Dacelo leachii	Blue-winged Kookaburra	X	X	

Scientific name	Common name	GSDA	SGIC SDA	Northern Section
Dacelo novaeguineae	Laughing Kookaburra	X	X	
Dendrocygna eytoni	Plumed Whistling-Duck		X	X
Dicaeum hirundinaceum	Mistletoebird	X	X	
Dicrurus bracteatus	Spangled Drongo	X	X	
Dromaius novaehollandiae	Emu			X
Egretta novaehollandiae	White-faced Heron			X
Elseyornis melanops	Black-fronted Dotterel		X	
Entomyzon cyanotis	Blue-faced Honeyeater	X	X	
Eolophus roseicapillus	Galah	X	X	X
Ephippiorhynchus asiaticus	Black-necked Stork		X	
Eurystomus orientalis	Dollarbird	X	X	
Falco berigora	Brown Falcon		X	
Falco cenchroides	Nankeen Kestrel	X	X	X
Gallinula tenebrosa	Dusky Moorhen		X	X
Geopelia cuneata	Diamond Dove	X	X	
Geopelia humeralis	Bar-shouldered Dove	X	X	
Geopelia striata	Peaceful Dove	X	X	X
Geophaps scripta scripta	Squatter Pigeon	X		
Gerygone albogularis	White-throated Gerygone	X	X	
Glossopsitta pusilla	Little Lorikeet	X		
Grallina cyanoleuca	Magpie-lark	X	X	X
Grus rubicunda	Brolga		X	
Haliaeetus leucogaster	White-bellied Sea-Eagle		X	
Haliastur sphenurus	Whistling Kite	X	X	X
Himantopus himantopus	Black-winged Stilt		X	
Hirundo neoxena	Welcome Swallow		X	X
Lichmera indistincta	Brown Honeyeater	X	X	
Malurus melanocephalus	Red-backed Fairy-wren	X	X	X

Scientific name	Common name	GSDA	SGIC SDA	Northern Section
Manorina melanocephala	Noisy Miner	X	X	X
Meliphaga lewinii	Lewin's Honeyeater	X		
Melithreptus albogularis	White-throated Honeyeater	X	X	
Merops ornatus	Rainbow Bee-eater	X	X	X
Microcarbo melanoleucos	Little Pied Cormorant			X
Milvus migrans	Black Kite	X	X	X
Mirafra javanica	Horsfield's Bushlark			X
Myiagra rubecula	Leaden Flycatcher	X	X	
Nymphicus hollandicus	Cockatiel	X		
Ocyphaps lophotes	Crested Pigeon	X	X	
Pachycephala rufiventris	Rufous Whistler		X	
Pardalotus striatus	Striated Pardalote		X	
Pelecanus conspicillatus	Australian Pelican			X
Petrochelidon ariel	Fairy Martin		X	X
Petrochelidon nigricans	Tree Martin			X
Philemon citreogularis	Little Friarbird	X	X	
Philemon corniculatus	Noisy Friarbird	X	X	
Platycercus adscitus	Pale-headed Rosella	X	X	
Podargus strigoides	Tawny Frogmouth		X	
Porphyrio porphyrio	Purple Swamphen		X	
Rhipidura albiscapa	Grey Fantail	X	X	
Rhipidura leucophrys	Willie Wagtail	X	X	X
Smicrornis brevirostris	Weebill	X	X	
Struthidea cinerea	Apostlebird		X	X
Sturnus tristis	Common Myna		X	
Tachybaptus novaehollandiae	Australasian Grebe		X	X
Taeniopygia bichenovii	Double-barred Finch	X	X	X
Threskiornis molucca	Australian White Ibis		X	X

Scientific name	Common name	GSDA	SGIC SDA	Northern Section
Todiramphus macleayii	Forest Kingfisher	X	X	
Trichoglossus chlorolepidotus	Scaly-breasted Lorikeet	X	X	
Trichoglossus haematodus	Rainbow Lorikeet	X	X	
Vanellus miles	Masked Lapwing	X	X	X
Zosterops lateralis	Silvereye		X	
Mammals				
Aepyprymnus rufescens	Rufous Bettong		X	
Austronomus australis	White-striped Free-tail Bat		X	
Canis lupus familiaris	Wild Dog		X	
Chaerephon jobensis	Northern Freetail Bat	X	X	
Chalinolobus gouldii	Gould's Wattled Bat	X	X	
Chalinolobus nigrogriseus	Hoary Wattled Bat	X	X	
Chalinolobus picatus	Little Pied Bat		X	
Felis catus	Cat			X
Macropus agilis	Agile Wallaby		X	
Macropus giganteus	Eastern Grey Kangaroo	X	X	
Macropus parryi	Whiptail Wallaby	X		
Miniopterus australis	Little Bent-wing Bat	X	X	
Miniopterus orianae	Large Bent-winged Bat		X	
Myotis macropus	Large-footed Myotis	X		
Oryctolagus cuniculus	European Rabbit	X	X	X
Ozimops lumsdenae	Northern Free-tailed Bat	X	X	
Ozimops ridei	Ride's Free-tailed Bat	X	X	
Petaurus norfolcensis	Squirrel Glider		X	
Pteropus scapulatus	Little Red Flying-fox	X		
Saccolaimus flaviventris	Yellow-bellied Sheath-tailed Bat	X	X	
Scotorepens greyii	Little Broad-nosed Bat		X	
Scotorepens sanborni	Northern Broad-nosed Bat	X		

Scientific name	Common name	GSDA	SGIC SDA	Northern Section
Sus scrofa	Feral Pig	X	X	X
Trichosurus vulpecula	Common Brushtail Possum		X	
Vulpes vulpes	European Red Fox	X	X	
Wallabia bicolor	Swamp Wallaby	X	X	
Reptiles				
Gehyra dubia	Dubious Dtella	X	X	X
Heteronotia binoei	Bynoe's Gecko	X	X	X
Pogona barbata	Eastern Bearded Dragon	X	X	X
Tropidonophis mairii	Keelback			X
Amphibians				
Cyclorana alboguttata	Green-striped Burrowing Frog			X
Limnodynastes tasmaniensis	Spotted Marsh Frog			X
Litoria caerulea	Green Tree Frog	X	X	X
Litoria fallax	Eastern Sedge Frog		X	
Litoria rubella	Desert Tree Frog	X	X	X
Platyplectrum ornatum	Ornate Burrowing Frog			X
Rhinella marina	Cane Toad	X	X	X

Appendix I

Microbat call identification reports

Microbat Call Identification Report

Prepared for ("Client"):	GHD
Survey location/project name:	Gladstone-Fitzroy Pipeline
Survey dates:	21-25 February 2022
Client project reference:	12559247
Job no.:	GHD-2205
Report date:	26 April 2022

Methods

Data received

Balance! Environmental received some 4600 full-spectrum acoustic (WAV) files, recorded using two Anabat Swift detectors (Titley Scientific, Brisbane). Based on the GPS coordinates saved in the WAV files, the detector labelled "SD1" (SN583127) was deployed at a single site (23.8619° S 151.0483° E) for four nights (21-24 February 2022), while detector "SD2" (SN583123) sampled two separate sites for two nights each: 23.8403° S 151.1251° E on 21-22 February; and 23.8437° S 151.1109° E on 23-24 February.

Data post-processing and analysis

The data were processed using *Anabat Insight* (Version 2.0.1; Titley Scientific, Brisbane). A generic noise filter was applied to all WAV files to separate those that contained only non-bat background noise from files with potentially identifiable bat calls. The Decision Tree analysis tool was then used to group similar calls and assign tentative species labels.

All Decision Tree groups were reviewed manually to confirm and/or reassign correct species identities. Manual species verification was achieved by comparing call spectrograms and derived metrics of all labelled files with those of reference calls from northern and central Queensland and/or with published call descriptions (e.g. Reinhold et al. 2001). The likelihood of a species' occurrence was further confirmed by referring to published distributional in formation (e.g., Australasian Bat Society 2022; Churchill 2008; van Dyck *et al.* 2013).

Where calls could not be reliably identified to a single species ("unresolved" calls), due to overlapping call characteristics, they were assigned to multi-species groups. All members of such groups should be considered probably present during the survey.

Reporting standard

The format and content of this report follows Australasian Bat Society standards for the interpretation and reporting of bat call data (Reardon 2003), available on-line at http://www.ausbats.org.au/. Species nomenclature follows Armstrong *et al.* (2020).

Results & Discussion

Most of the WAV files contained only non-bat background noise. A total of 217 individual bat calls were identified in the 204 files that passed the noise filter. Most (202) of those calls were reliably attributed to one of nine distinct species (see **Table 1**). The other 15 calls could not be positively identified but belonged to two species (*Chalinolobus gouldii* and/or *Ozimops ridei*) that were otherwise reliably identified.

Sample call spectrograms for each species appear in **Appendix 2**.

Table 1 Bats recorded during the Gladstone-Fitzroy Pipeline survey, 21-24 February 2022.

Detector code-serial number:	SD1-SN583127	SD2-SN583123		Species total
Location:	23.8619° S 151.0483° E	23.8403° S 151.1251° E	23.8437° S 151.1109° E	
Nights deployed:	21-24 Feb	21-22 Feb	23-24 Feb	
Positively identified calls				
Chalinolobus gouldii	2	20	1	23
Chalinolobus nigrogriseus		41		41
Myotis macropus		21		21
Scotorepens sanborni		13		13
Miniopterus australis		12	6	18
Chaerephon jobensis	5	14		19
Ozimops lumsdenae	7	19	5	31
Ozimops ridei		34	1	35
Saccolaimus flaviventris	1			1
Unresolved calls				
C. gouldii / O. ridei	4	10	1	15
Detector-night total	19	184	14	217

References

Armstrong, K.N., Reardon, T.B., and Jackson, S.M. (2020). A current taxonomic list of Australian Chiroptera. Australasian Bat Society. Version 2020-06-09. URL: http://ausbats.org.au/species-list/4593775065

Australasian Bat Society (2022). *BatMap*. http://ausbats.org.au/batmap. Accessed 20/4/2022.

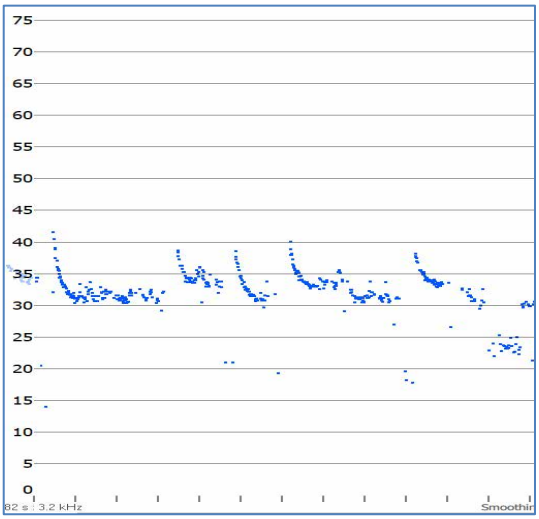
Churchill, S. (2008). *Australian Bats.* Jacana Books, Allen & Unwin; Sydney.

Reardon, T. (2003). Standards in bat detector based surveys. *Australasian Bat Society Newsletter* **20**, 41-43.

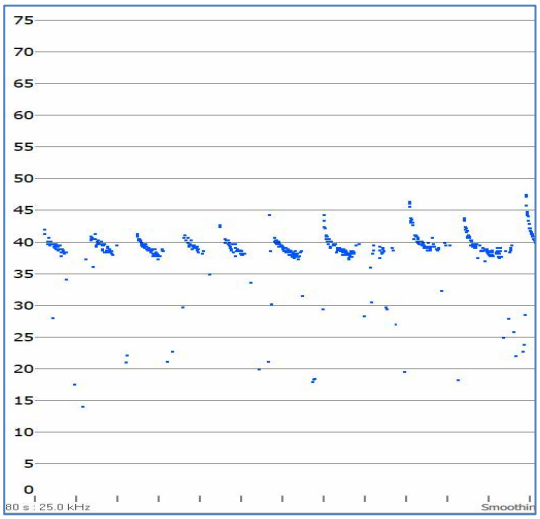
Reinhold, L., Law, B., Ford, G. and Pennay, M. (2001). *Key to the bat calls of south-east Queensland and north-east New South Wales*. Department of Natural Resources and Mines, Brisbane.

van Dyck, S., Gynther, I. and Baker, A. (ed.) (2013). *Field Companion to the Mammals of Australia*. New Holland; Sydney.

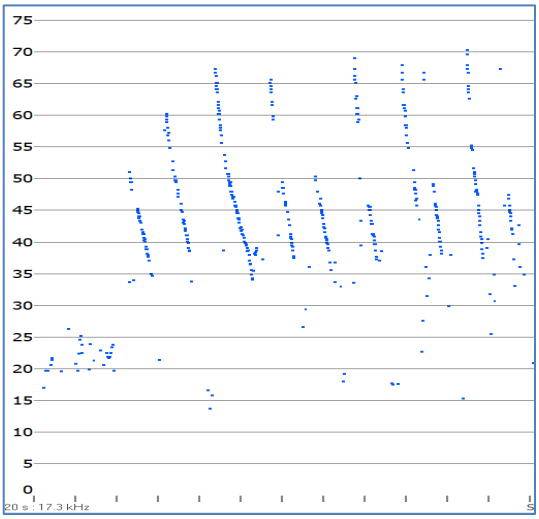
Appendix 1 Representative call sequences: Gladstone-Fitzroy pipeline survey, February 2022.
x-axis = 10 ms per tick-mark; time between pulses removed ("compressed")



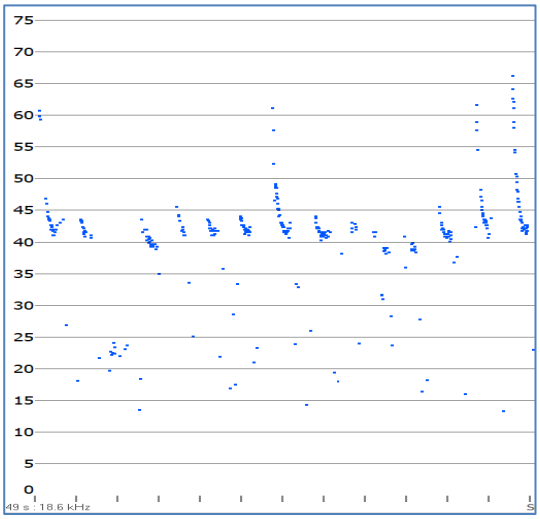
Chalinolobus gouldii



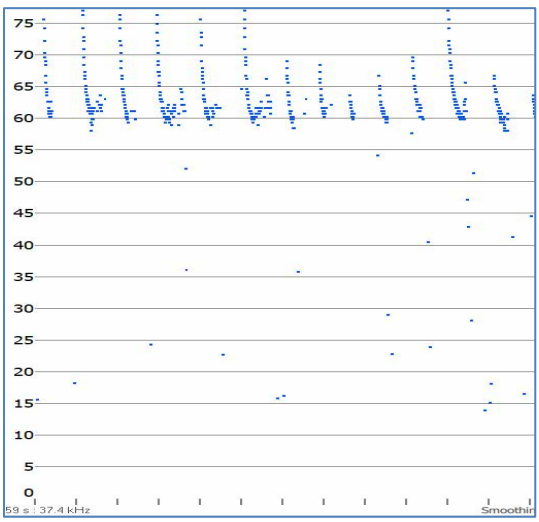
Chalinolobus nigrogriseus



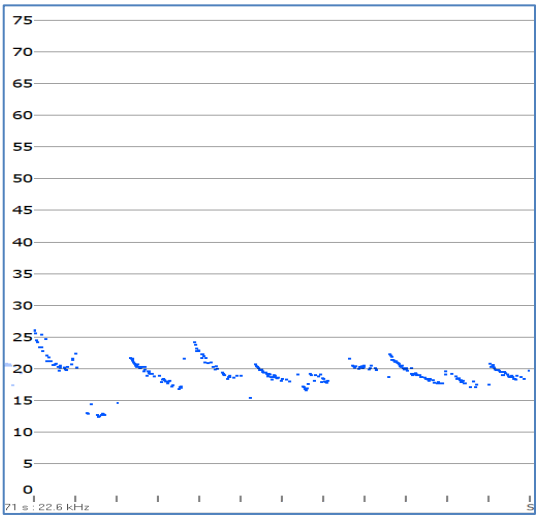
Myotis macropus



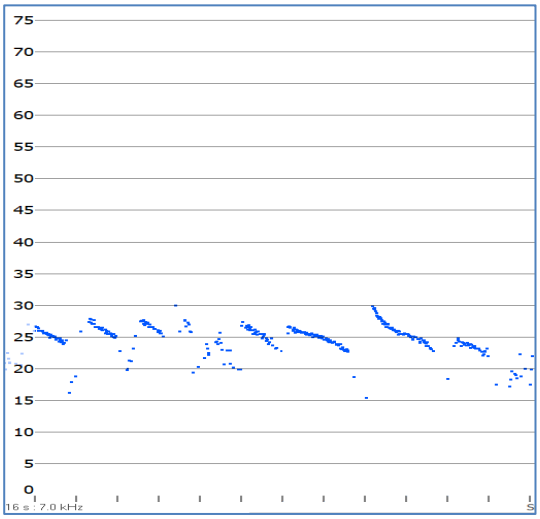
Scotorepens sanborni



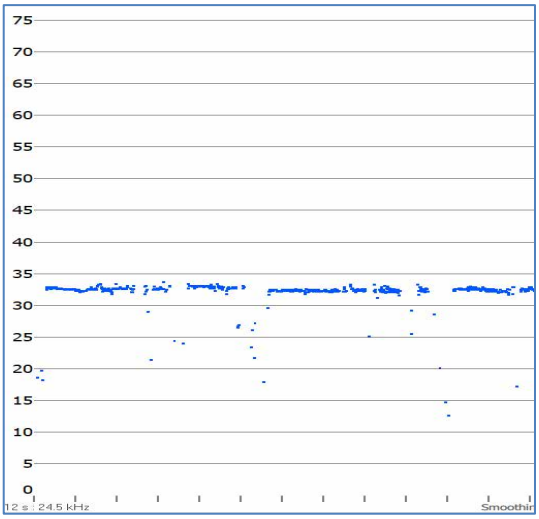
Miniopterus australis



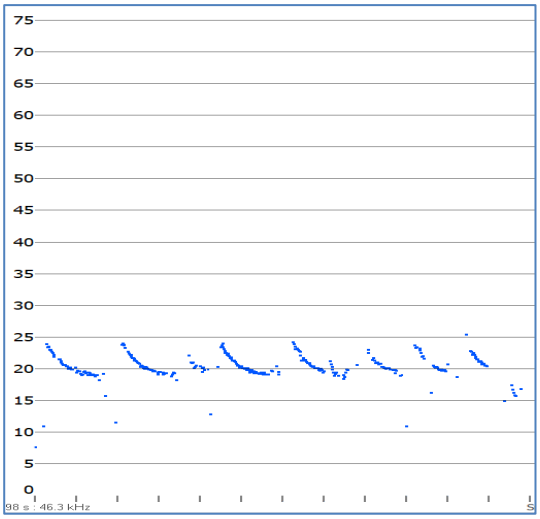
Chaerephon jobensis



Ozimops lumsdenae



Ozimops ridei



Saccolaimus flaviventris

Microbat Call Identification Report

Prepared for ("Client"):	GHD
Survey location/project name:	Marmor & Mount Larcom
Survey dates:	3-6 May 2022
Client project reference:	12559247 GAWB GFP
Job no.:	GHD-2208
Report date:	16 June 2022

Methods

Data received

Balance! Environmental received some 351 full-spectrum acoustic (WAV) files from an Anabat Swift detector, plus three raw ZCA files from an Anabat Express detector. The data were recorded from two sites between 3rd and 6th May 2022 (see **Table 1**).

Data post-processing and analysis

Analyses were performed in *Anabat Insight* (Version 2.0.2; Titley Scientific, Brisbane).

The "Convert ZCA" function was used to extract individual trigger events (ZC sequence files) from the raw ZCA files. All resulting ZC files, plus the WAV files were then subjected to a noise filter, which set aside files that contained only non-bat background noise. Files that passed the noise filter (i.e., contained bat calls) were then processed with the Decision Tree analysis tool to group similar calls and assign tentative species labels.

All Decision Tree groups were reviewed manually to confirm and/or reassign correct species identities. Manual species verification was achieved by comparing call spectrograms and derived metrics of all labelled files with those of reference calls from northern and central Queensland and/or with published call descriptions (e.g. Reinhold et al. 2001). The likelihood of a species' occurrence in the study area was confirmed by referring to published distributional in formation (e.g., Australasian Bat Society 2022; Churchill 2008; van Dyck *et al.* 2013).

Where calls could not be reliably identified to a single species due to overlapping call characteristics ("unresolved" calls), they were assigned to multi-species groups. All members of such groups should be considered probably present during the survey.

Reporting standard

The format and content of this report follows Australasian Bat Society standards for the interpretation and reporting of bat call data (Reardon 2003), available on-line at http://www.ausbats.org.au/. Species nomenclature follows Armstrong *et al.* (2020).

Table 1 Anabat deployment details for the surveys at Marmor and Mount Larcom, 3-6 May 2022.

Detector	Serial #	Nights	Location	Latitude	Longitude
Balance	SN583127	4th & 5th May	Twelve Mile Rd, Marmor	-23.6820	150.7577
GHD	SN507226	3rd, 4th & 5th May	The Narrows Rd, Mount Larcom	-23.8114	150.9977

Results & Discussion

The ZCA conversion process yielded 2904 ZC files for the Mount Larcom site; however, 2220 of those files contained only non-bat background noise. The noise filter also excluded 120 non-bat WAV files from the Marmor site. A total of 965 individual bat calls were identified in remaining dataset.

Some 62% (603) of the identifiable calls were reliably attributed to twelve distinct species (see upper portion of **Table 2**). The other 362 "unresolved" calls were allocated to seven multi-species groups (**Table 2**, bottom section), six of which represented only species that were otherwise positively identified. The remaining group included calls made by either *Myotis macropus* or one or more *Nyctophilus* species. Based on the GPS coordinates in the metadata (see **Table 1**), it appears both detectors were deployed adjacent to watercourses, so it is highly probable these calls all belonged to *M. macropus*, which forages predominantly over open water. Despite this, it is possible that some calls in the group also represented one or more of *N. bifax, N. geoffroyii* or *N. gouldi*.

Sample call spectrograms for each species appear in **Appendix 1**.

Table 2 Bats recorded at Marmor and Mount Larcom, May 2022.

Site:	Marmor	Mount Larcom	Species Total
Positively identified calls			
Chalinolobus gouldii	3	23	26
Chalinolobus nigrogriseus		25	25
Chalinolobus picatus		4	4
Scotorepens greyii		13	13
Scotorepens sanborni		127	127
Miniopterus australis	1	79	80
Miniopterus orianae	1	7	8
Austronomus australis	3	1	4
Chaerephon jobensis	141	36	177
Ozimops lumsdenae	1	18	19
Ozimops ridei	1	20	21
Saccolaimus flaviventris	52	47	99
Unresolved calls			
C. gouldii / O. ridei	2	36	38
C. nigrogriseus / S. greyii		130	130
C. picatus / S. sanborni		65	65
Myotis macropus / Nyctophilus sp.	10	25	35
S. greyii / S. sanborni		15	15
S. flaviventris / C. jobensis	22	54	76
S. flaviventris / O. lumsdenae		3	3
Site Total	237	728	965

References

Armstrong, K.N., Reardon, T.B., and Jackson, S.M. (2020). A current taxonomic list of Australian Chiroptera. Australasian Bat Society. Version 2020-06-09. URL: http://ausbats.org.au/species-list/4593775065

Australasian Bat Society (2022). *BatMap*. http://ausbats.org.au/batmap. Accessed 20/4/2022.

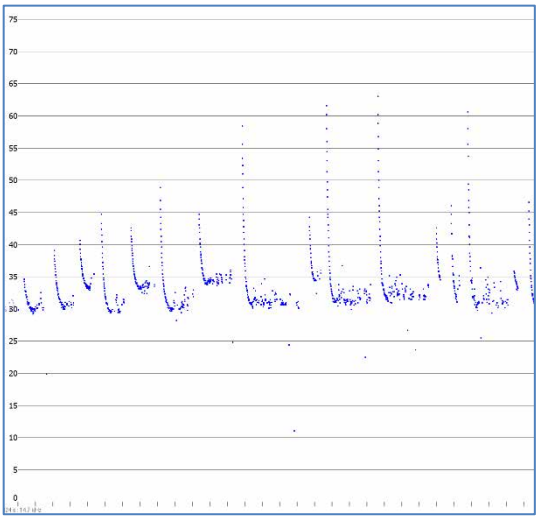
Churchill, S. (2008). *Australian Bats.* Jacana Books, Allen & Unwin; Sydney.

Reardon, T. (2003). Standards in bat detector based surveys. *Australasian Bat Society Newsletter* **20**, 41-43.

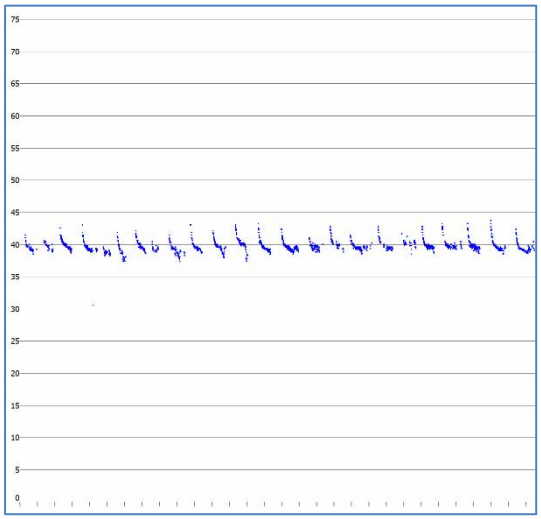
Reinhold, L., Law, B., Ford, G. and Pennay, M. (2001). *Key to the bat calls of south-east Queensland and north-east New South Wales*. Department of Natural Resources and Mines, Brisbane.

van Dyck, S., Gynther, I. and Baker, A. (ed.) (2013). *Field Companion to the Mammals of Australia*. New Holland; Sydney.

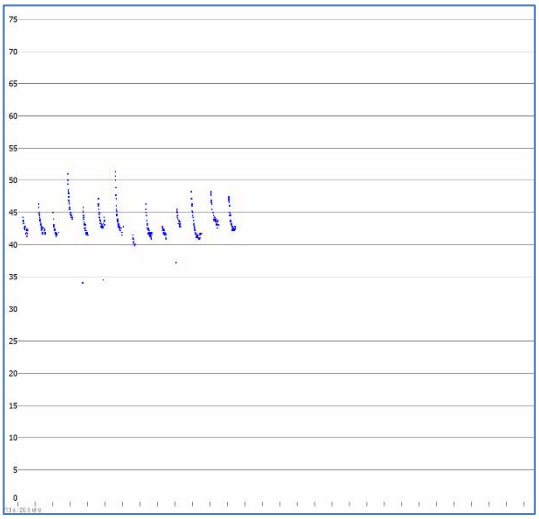
Appendix 1 Representative call sequences: Marmor & Mount Larcom survey, May 2022.
x-axis = 10 ms per tick-mark; time between pulses removed ("compressed")



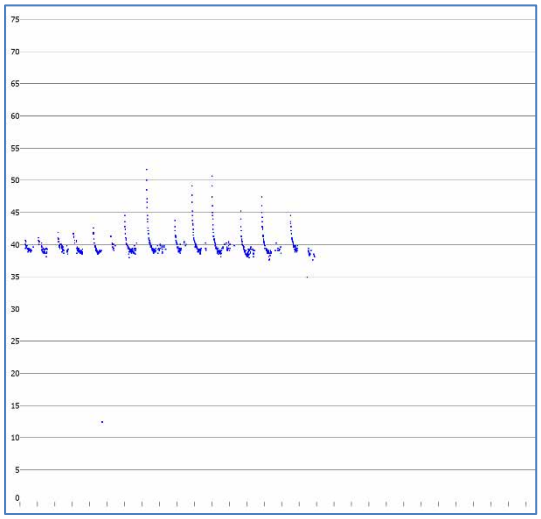
Chalinolobus gouldii



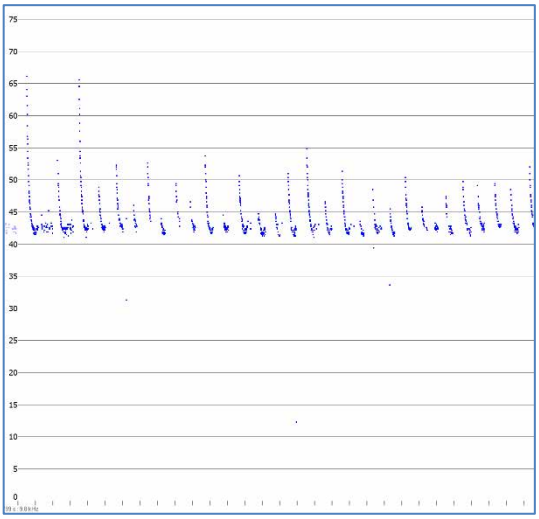
Chalinolobus nigrogriseus



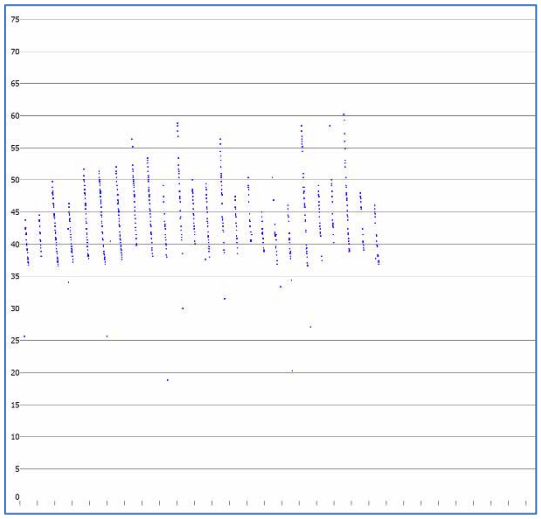
Chalinolobus picatus



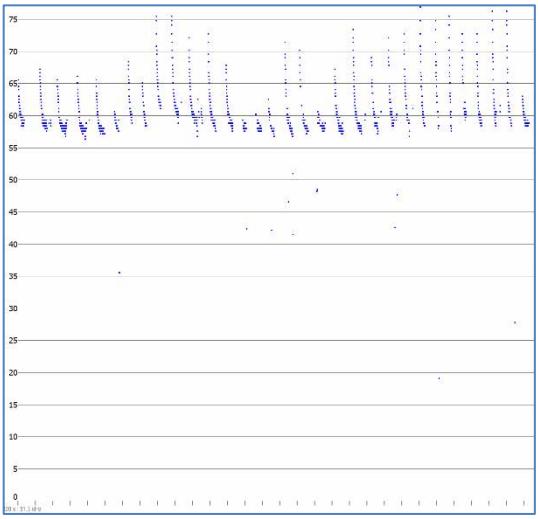
Scotorepens greyii



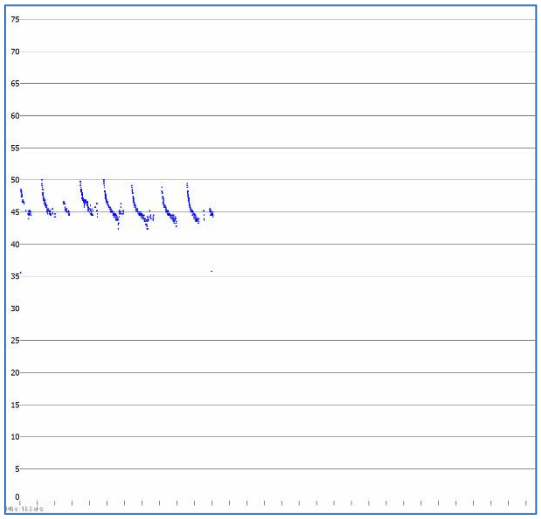
Scotorepens sanborni



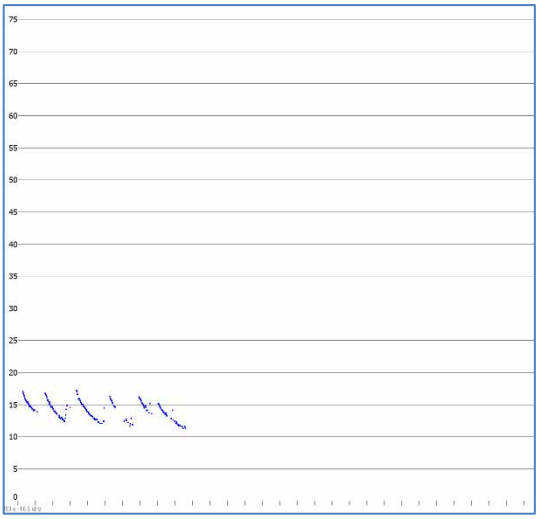
Myotis macropus / Nyctophilus sp.



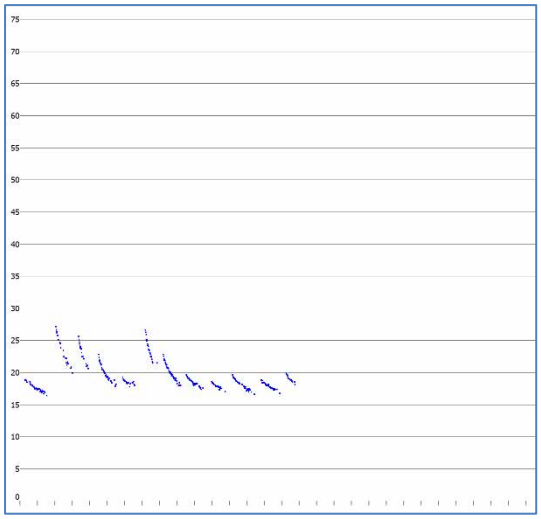
Miniopterus australis



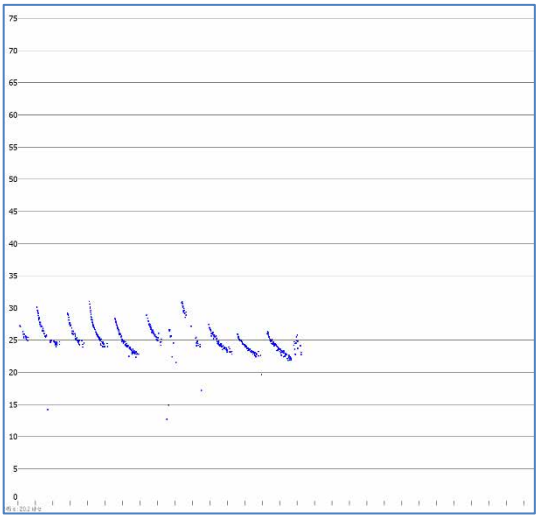
Miniopterus orianae



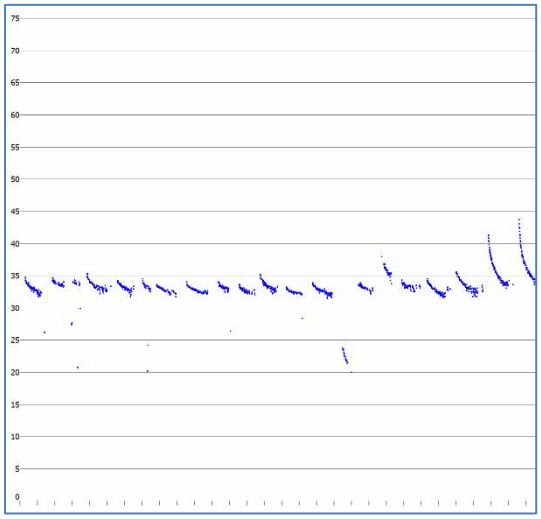
Austronomus australis



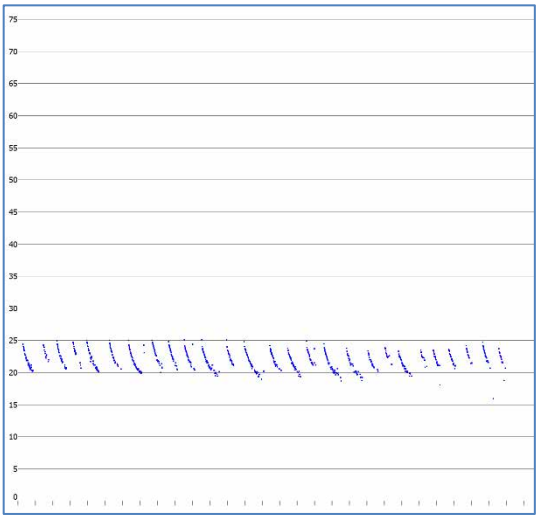
Chaerephon jobensis



Ozimops lumsdenae



Ozimops ridei



Saccolaimus flaviventris

Appendix J

Aquatic field survey result lists

Site 1

Species Name	Number of Adults	Number of Intermediate	Number of Juveniles
Agassiz's glassfish (*Ambassis agassizii*)	6		
Fly-specked hardyhead (*Craterocephalus stercusmuscarum*)	4		
Mouth almighty (*Glossamia aprion*)	4	1	1
Firetail gudgeon (*Hypseleotris galii*)	1	1	1
Western carp gudgeon (*Hypseleotris klunzingeri*)	2	1	
Hyrtl's tandan (*Neosilurus hyrtlii*)	3		
Krefft's river turtle (*Emydura macquarii krefftii*)			1

Site 3

Species Name	Number of Adults	Number of Intermediate	Number of Juveniles
Western carp gudgeon (*Hypseleotris klunzingeri*)			5
Krefft's river turtle (*Emydura macquarii krefftii*)	1		

Site 5

Species Name	Number of Adults	Number of Intermediate	Number of Juveniles
Agassiz's glassfish (*Ambassis agassizii*)		53	
Fly-specked hardyhead (*Craterocephalus stercusmuscarum*)		4	
Western carp gudgeon (*Hypseleotris klunzingeri*)		10	5
Spangled perch (*Leiopotherapon unicolor*)		3	8

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