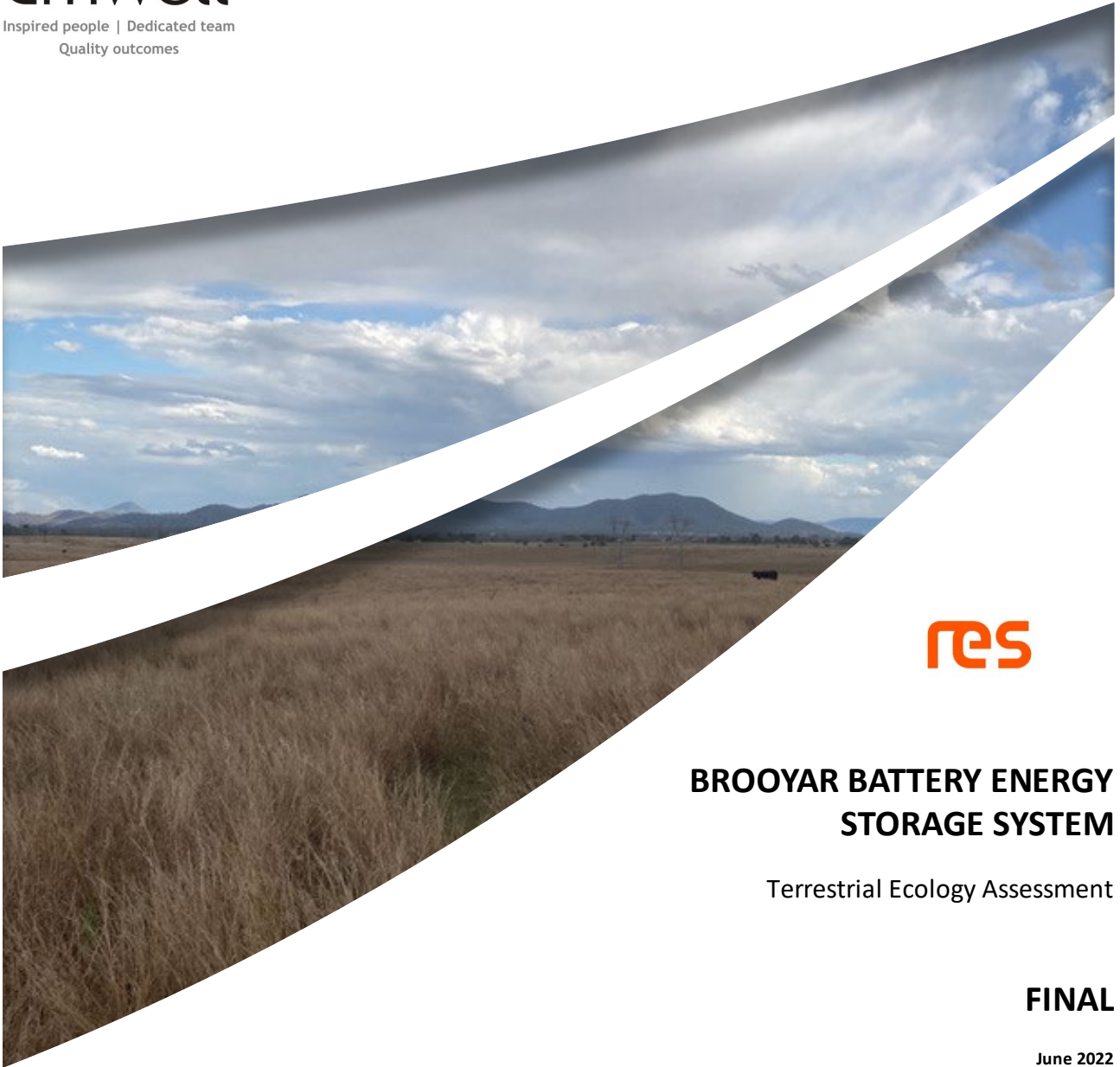




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BROOYAR BATTERY ENERGY STORAGE SYSTEM

Terrestrial Ecology Assessment

FINAL

June 2022



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Terrestrial Ecology Assessment

FINAL

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
RES Australia Pty Ltd

Project Director: David Gatfield
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Report No. 21787_R01
Date: June 2022



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1.0 Introduction

Umwelt (Australia) Pty Ltd (Umwelt) was engaged by RES Australia Pty Ltd (RES) to undertake an ecological assessment to identify existing ecological values and key risk areas for a proposed Brooyar Battery Energy Storage System (the Project) site. This report presents the findings of the ecological assessment, which has been informed by both desktop review and two field surveys undertaken in September 2021 and April 2022.

1.1 Project Site

The Project site (Land Parcel) and Development Area are located on freehold property that is legally described as Lot 235 LX2129, near the township of Woolooga, approximately 30 km north-west of Gympie in Queensland (**Figure 1.1**). The Project site is currently used for cattle grazing and consists of predominantly cleared paddocks and is bisected by one stream order 2 and three stream order 1 waterways.

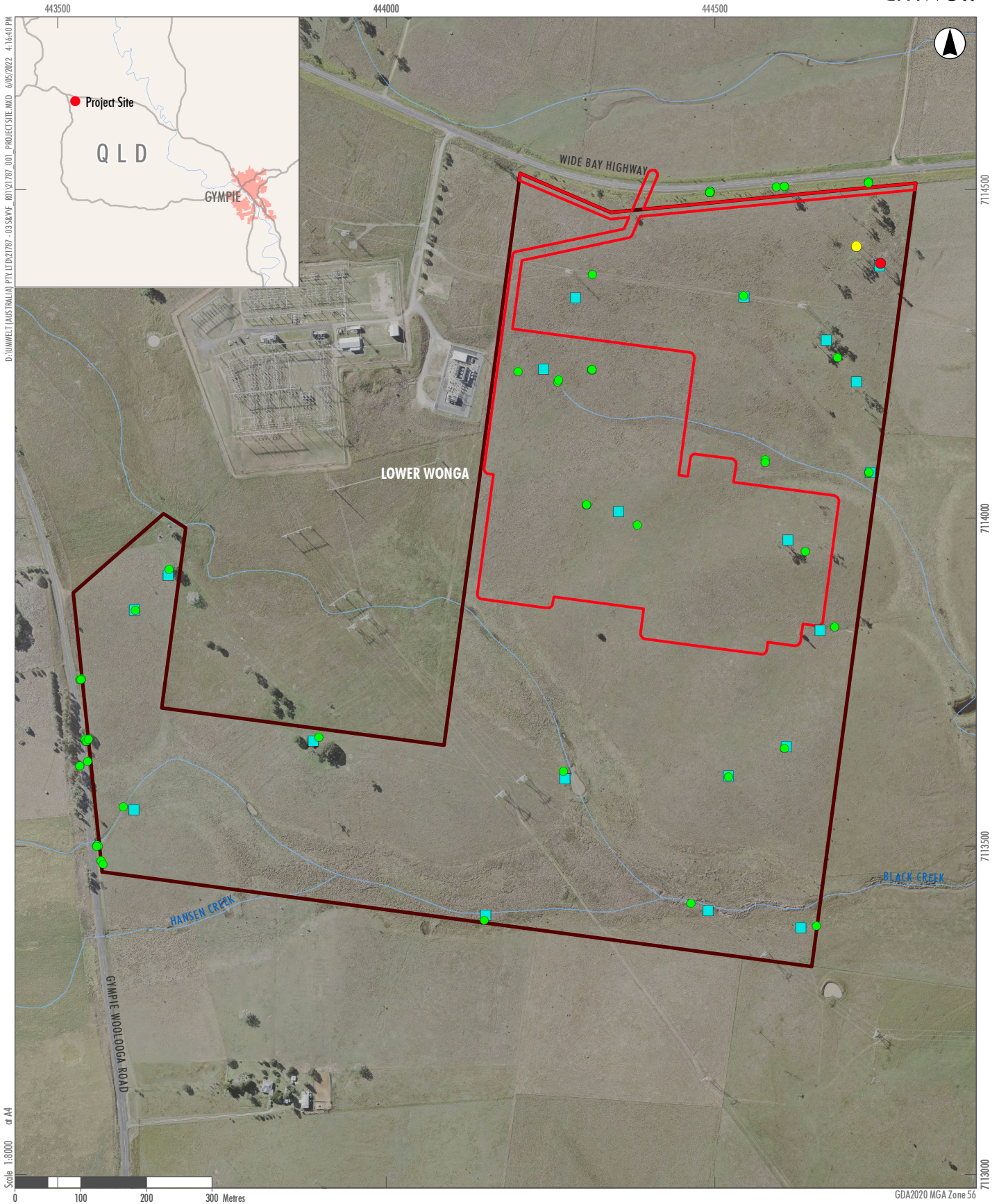
The Project site adjoins Woolooga substation, which is currently operated by Powerlink.

1.2 Aim and Scope of Works

The aim of this ecology assessment was to identify and characterise ecological values that are potentially supported within and adjoining the Project site, with particular reference to threatened values which may constrain or otherwise impact the design, construction or operation of the Project.

To achieve this aim, the following scope of works was undertaken:

- Completion of a desktop assessment, involving a desktop review of relevant database searches and published literature, to understand the potential ecological values within the Project site including:
 - Matters of National Environmental Significance (MNES) including migratory species.
 - Matters of State Environmental Significance (MSES) pertaining to flora and fauna values.
- Completion of two field surveys to identify and map flora and fauna values within and adjoining the Project site including MSES, MNES and fauna habitat.
- Preparation of a report detailing the findings of the desktop assessment and field surveys, including relevant spatial data, maps, and tables.



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Legend

- Development Area
- Land Parcel Boundary
- Flora Quaternary Survey Location
- Flora Secondary Survey - Start Point
- Flora Secondary Survey - End Point
- Fauna Habitat Assessment Location
- Watercourses

FIGURE 1.1

Project Site and Survey Locations

2.0 Legislative Context

The Commonwealth and State legislation relevant to the Project and this ecology assessment are detailed below in **Table 2.1**.

Table 2.1 Key Relevant Legislation

Relevant Legislation	Governing Agency	Summary	Project Relevance
Commonwealth			
<i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	Department of Agriculture, Water and the Environment (DAWE)	The EPBC Act is Australia's key piece of environmental legislation. It outlines nine MNES. Actions that adversely affect MNES may be deemed to be a controlled action requiring assessment under the EPBC Act.	Two MNES are relevant to the Project: <ul style="list-style-type: none"> Threatened species and ecological communities Migratory species.
State Legislation			
<i>Nature Conservation Act 1992 (NC Act)</i>	Department of Environment and Science (DES)	The purpose of the NC Act is to conserve biodiversity by creating and managing protected areas, managing and protecting native plants and animals, and managing the spread of non-native plants and animals.	Where a proposed development will result in such impacts to flora and/or fauna protected under the NC Act, authorisation from the Director General of the DES is required.
<i>Vegetation Management Act 1999 (VM Act)</i>	Department of Resources (DoR)	The VM Act establishes the vegetation management framework for Queensland that applies to all vegetation with the exception of State forests, National parks, forest reserves, and certain other tenures defined under the NC Act and the <i>Forestry Act 1959</i> .	Regulated vegetation (Category R – Regrowth watercourse in Great Barrier Reef catchment) that is mapped on the Regulated Vegetation Management Map and regulated by the VM Act is mapped within the Project site.
<i>Biosecurity Act 2014 (Biosecurity Act)</i>	Department of Agriculture and Fisheries	The Biosecurity Act lists fauna and flora pest species as either a prohibited or restricted biosecurity matter.	The Biosecurity Act defines specific requirements for notification and management actions for all listed biosecurity matters, including specific requirements for the disposal of restricted matters. Flora species listed as a restricted matter are present within the Project site.

Relevant Legislation	Governing Agency	Summary	Project Relevance
<p><i>Environmental Offsets Act 2014 (EO Act)</i></p>	<p>DES</p>	<p>An environmental offset condition may be imposed for prescribed activities under the EO Act. Activities which have an impact on MSES may require offsetting under the EO Act.</p>	<p>Consideration of offsetting requirements for the Project will need to be determined once a fixed design for the Project is completed. Requirements for offsets are therefore not discussed as part of this report.</p> <p>Two MSES are relevant to the Project:</p> <ul style="list-style-type: none"> • Regulated vegetation (Category R - Regrowth watercourse in Great Barrier Reef catchment) • Protected wildlife habitat.

3.0 Methods

3.1 Desktop Assessment

A desktop assessment of publicly available data sources was completed in late 2021 to identify ecology values within the Project site. The following sources were consulted:

- DAWE Protected Matters Search Tool (PMST) (**Appendix A**)
- DES Wildlife Online database (**Appendix A**)
- DES (2019) Protected Plants Flora Survey Trigger Map (Version 8.0)
- Regional Ecosystem Description Database (Version 12) (Queensland Herbarium, 2021)
- DoR (2021) Vegetation Management Regional Ecosystem Map (Version 12)
- DoR Vegetation Management Supporting Map, including Essential Habitat mapping
- Atlas of Living Australia database
- eBird and Birdlife Australia databases
- published and unpublished ecology reports for the Project site or adjacent areas, where available.

In mid-2022, the DAWE Protected Matters Search Tool was re-run to ensure all relevant ecology values had been assessed.

3.2 Field Survey

Field surveys of the Project site were undertaken by two ecologists during 13 – 14 September 2021 and 12 April 2022. The methods employed during the field surveys, including survey effort, are detailed in **Table 3.1**. Field survey locations are shown on **Figure 1.1**.

Table 3.1 Field Survey Methods and Effort

Method	Description	Survey Effort
Secondary Level Flora Surveys	For the identification and mapping of regional ecosystems (REs), a full species list and vegetation structural description was recorded including strata, height, and cover values for each species in accordance with the Queensland Herbarium <i>Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland</i> (Neldner <i>et al.</i> , 2020).	1 site
Quaternary Level Flora Surveys	Dominant species were recorded including a vegetation structural description of the dominant overstorey species for the identification and mapping of REs, as per Neldner <i>et al.</i> (2020).	30 sites
Random Meander Surveys	Targeted threatened flora searches were undertaken by traversing the Project site using the random meander technique as described by Cropper (1993) and recommended in the <i>Flora Survey Guidelines – Protected Plants</i> (DES, 2020).	3 hours

Method	Description	Survey Effort
Fauna Habitat Assessments	The relative abundance of key habitat attributes was recorded, including hollows, coarse woody debris, surface rocks, soil cracks, leaf litter and vegetated cover. Disturbances or threats such as fire, invasive weeds and pests were also noted.	20 sites
Diurnal Bird Surveys	Diurnal birds were sampled using an area census method, supplemented by broad observational surveys throughout the Project site.	4 hours
Opportunistic Fauna Sightings	All fauna observed directly or indirectly (scats and tracks) during the survey were recorded.	2 days

3.3 Likelihood of Occurrence Assessment

A likelihood of occurrence assessment was undertaken for threatened communities, flora and fauna species (including migratory fauna) identified as potentially occurring within the Project site during the desktop assessment.

The likelihood of occurrence assessment was based on a review of historical records, known habitat preferences and the broad habitats provided by verified vegetation communities mapped within the Project site. Species were assigned to one of the categories described in **Table 3.2**.

The likelihood of occurrence assessment is presented in **Appendix B**.

Table 3.2 Likelihood of Occurrence Categories

Category	Description
Known	The species or community is known to the Project site, confirmed during the field survey.
High	The species or community has been historically recorded in the Project site or recently recorded (less than 20 years) within the immediate vicinity and the site contains preferred habitat resources which may support a population of the species.
Moderate	The species or community is known from the broader area and some of the preferred habitat is present within the Project site.
Low	The Project site supports some suitable habitat, though often marginal. The species may disperse through the Project infrequently and is unlikely to depend on the habitat for their survival. Aerial foragers and other migratory birds that may overfly the Project site are also included in this category.
Unlikely	The Project site offers limited or no potential habitat for the species, is outside its known range and/or is without broader habitat requirements.

4.0 Results

4.1 Project Site Description

The Project site is currently used for cattle grazing and consists of predominantly cleared paddocks with a mixture of native and introduced grasses and herbs (**Photo 4.1**). A few scattered trees remain across the site including forest red gum (*Eucalyptus tereticornis*), pink bloodwood (*Corymbia intermedia*), Moreton Bay ash (*Corymbia tessellaris*) and Moreton Bay fig (*Ficus macrophylla*).



Photo 4.1 Cleared grazing paddocks which characterise the Project site, with a single forest red gum (*Eucalyptus tereticornis*) and the Woolooga Substation in the background.

4.2 Flora

4.2.1 Flora Diversity

A total of 76 flora species were recorded within the Project site during the field survey. The dominant plant families recorded include Poaceae (17 taxa), Asteraceae (9 taxa) and Fabaceae (8 taxa).

The full list of flora recorded during the field survey is provided as **Appendix C**.

4.2.1.1 Threatened Flora

No flora species listed as threatened under the NC Act or EPBC Act were recorded during the field survey.

Database searches identified the presence or potential presence of 21 threatened flora species within 10 km of the Project site. The likelihood of occurrence assessment did not identify any threatened flora species with a Moderate or High likelihood of occurring within the Project site (**Appendix C**).

No high-risk areas for protected plants on the flora survey trigger map were identified within the Project site. The closest mapped high-risk areas for protected plants are 2.5 km to the north of the Project site.

4.2.1.2 Introduced Flora

Of the 76 species recorded, 36 (47.4 %) are introduced species. Common introduced species included balloon cotton bush (*Gomphocarpus physocarpus*), Rhodes grass (*Chloris gayana*), creeping bluegrass (*Bothriochloa insculpta*), devil's figs (*Solanum torvum*) and *Verbena rigida*.

Of the 36 introduced species recorded, three are listed as Category 3 restricted plants in Queensland under the Biosecurity Act. These species are:

- creeping lantana (*Lantana montevidensis*)
- lantana (*Lantana camara*)
- opuntia cactus (*Opuntia stricta* var. *dellinii*).

These species were only recorded as scattered individuals across the Project site (refer **Photo 4.2**).



Photo 4.2 Single individual of opuntia cactus (*Opuntia stricta* var. *dellinii*)

4.2.2 Vegetation Communities

Consistent with the Regulated Vegetation Management Map (DoR 2021), no remnant vegetation communities were identified during the field survey. No EPBC Act-listed Threatened Ecological Communities (TECs) were recorded or are considered to potentially occur (**Appendix B**).

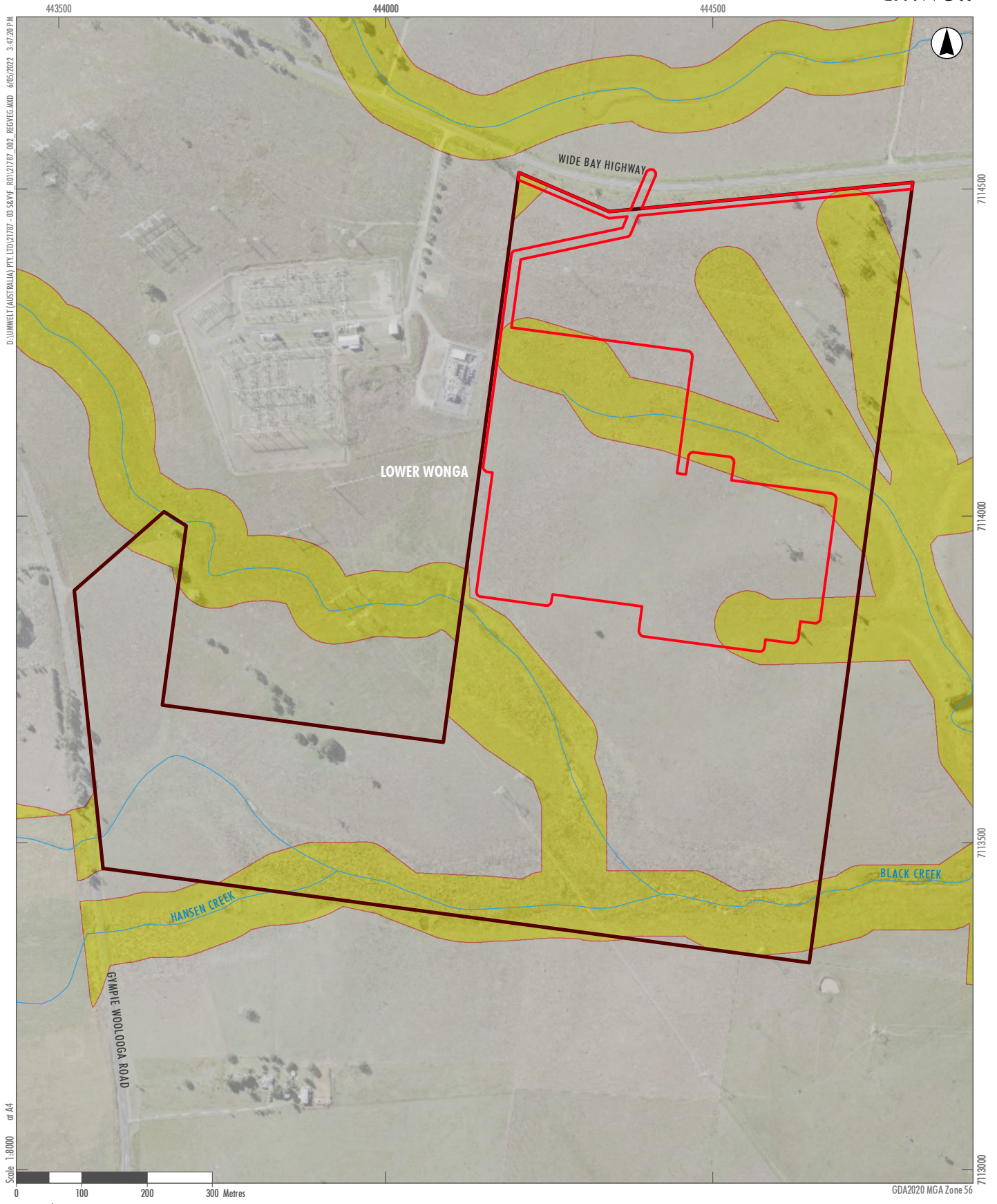
One non-remnant vegetation community was characterised during the field survey, defined as a modified grassland comprising a mix of native and introduced grass species and herbs. The dominant species within this community included:

- black speargrass (*Heteropogon contortus*)
- blady grass (*Imperata cylindrica*)
- Rhodes grass (*Chloris gayana*)
- creeping bluegrass (*Bothriochloa insculpta*)
- couch (*Cynodon dactylon*)
- spear thistle (*Cirsium vulgare*)
- Verbena rigida.

4.2.2.1 Regulated Vegetation

The Regulated Vegetation Management Map (DoR 2021) indicates that the Development Area comprises 4.45ha of Category R (Regrowth watercourse) vegetation and 14.74 ha of Category X (non-remnant) vegetation (**Figure 4.1**).

During the field surveys, a survey of mapped Category R areas within the Development Area (**Figure 4.1**) determined that these areas did not contain any 'vegetation' as defined under the VM Act. Accordingly, it is considered that activities within the Development Area will not involve the clearing of vegetation for the purposes of the VM Act. This interpretation has been confirmed by DoR's 'Vegetation Hub' by email dated 9 March 2022.



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GDA2020 MGA Zone 56

- Legend**
- Land Parcel Boundary
 - Development Area
 - Watercourses
 - Regulated Vegetation Management Category**
 - R – Regrowth Reef Watercourse
 - X – Non-remnant, Not Regulated

FIGURE 4.1

Regulated Vegetation and Watercourses

4.3 Fauna

4.3.1 Fauna Diversity

A total of 25 bird species and 1 mammal were recorded within the Project site and no threatened fauna were identified during the field visit. The full species list is provided in **Appendix C**.

Database searches indicated the presence or potential presence of 31 threatened and 12 Special Least Concern (NC Act) species within 10 km of the Project site. None of these species were identified in the likelihood of occurrence assessment (**Appendix B**) as having a Moderate or High potential of occurrence within the Development Area.

4.3.2 Fauna Habitat

The Project site offers limited fauna habitat and supports one main habitat type: modified grassland. Trees are generally scarce within the Project site, although an isolated stand of pink bloodwood (*Corymbia intermedia*) and Moreton Bay ash (*C. tessellaris*) was noted in the north-eastern corner of the Project site (**Photo 4.3**). This stand of trees may provide habitat for common fauna species through the provision of small hollows. Across the rest of the Project site, *Eucalyptus tereticornis* and *C. tessellaris* were occasionally observed, with some bearing hollows.

4.3.3 Essential Habitat

No essential habitat is mapped within the Project site.

4.3.4 Connectivity

The Project site represents non-remnant pasture with limited connectivity to the surrounding region. The Project site is bounded to the north by Wide Bay Highway, and to the west by Gympie Woolooga Road and Woolooga substation, which may limit the ability of ground-dwelling fauna to disperse through the Project site. The Project site is not located within a Biodiversity Planning Assessment (BPA) Statewide Biodiversity Corridor.



Photo 4.3 View of typical pasture grassland looking north towards isolated stand of pink bloodwood (*Corymbia intermedia*) and Moreton Bay ash (*Corymbia tessellaris*)

4.4 Watercourses and Waterways

A review of the Watercourse Identification Map did not indicate the presence of watercourses for the purpose of the *Water Act 2000* within the development area or broader land parcel. Further, a review of the 'Queensland waterways for waterway barrier works' layer on the Development Assessment Mapping System did not identify any waterways for the purpose of the *Fisheries Act 1994* within the proposed development area.

Whilst neither of these values are identified as occurring within the development area, there are mapped waterways on the 'Queensland waterways for waterway barrier works' layer along the eastern boundary of the broader land parcel. These mapped values are downstream of the proposed development area.

Further, it is noted that the development area is mapped on the Gympie Regional Council's Temporary Local Planning Instrument – Protection of Biodiversity Values as containing 'Stream orders 1 and 2' values. These mapped stream order 1 and 2 values generally coincide with mapped Category R areas discussed in **Section 4.2.2.1**. Incidental observations made by ecologists during the site visit determined that areas mapped as containing these values appear to be highly ephemeral, as they were dry at the time of the survey (refer **Photo 4.4**).



Photo 4.4 Drainage Depression near an area mapped as Category R – reef regrowth vegetation

5.0 Conclusion and Recommendations

The ecology field assessments undertaken on the 13 – 14 September 2021 and 12 April 2022 identified the Project site as supporting non-remnant modified grassland used for cattle grazing. As the Project site has been historically cleared it supports reduced flora and fauna diversity and habitat values.

The following are the main outcomes of the assessment:

- No threatened flora species listed under the EPBC Act or NC Act were recorded during the field survey or are considered likely to occur within the Project site.
- No threatened or migratory fauna species listed under the EPBC Act or NC Act were recorded during the field survey or are considered likely to occur within the Project site.
- 4.45 ha of Category R (Regrowth watercourse) and 14.74 ha of Category X (non-remnant) vegetation is mapped across the Project site. Category R vegetation is regulated under the NC Act and is also a MSES, however areas within the proposed Development Area do not contain 'vegetation' as defined under the VM Act and accordingly are not subject to regulation.

Based on this assessment the following is recommended:

- Any proposed development footprint should avoid or reduce impacts to the areas mapped as Category R vegetation that are not outside of the mapped Development Area (**Figure 4.1**) and have not been assessed. Any infrastructure proposed within these Category R areas must comply with the relevant accepted development vegetation clearing code under the VM Act. Other secondary approvals may also apply.

6.0 References

Cropper, S. C. (1993) *Management of endangered plants, Management of endangered plants*. Melbourne: CSIRO Publications. doi: 10.2307/4110653.

Department of Agriculture Water and the Environment (2021) *Species Profile and Threats Database*. Available at: <https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

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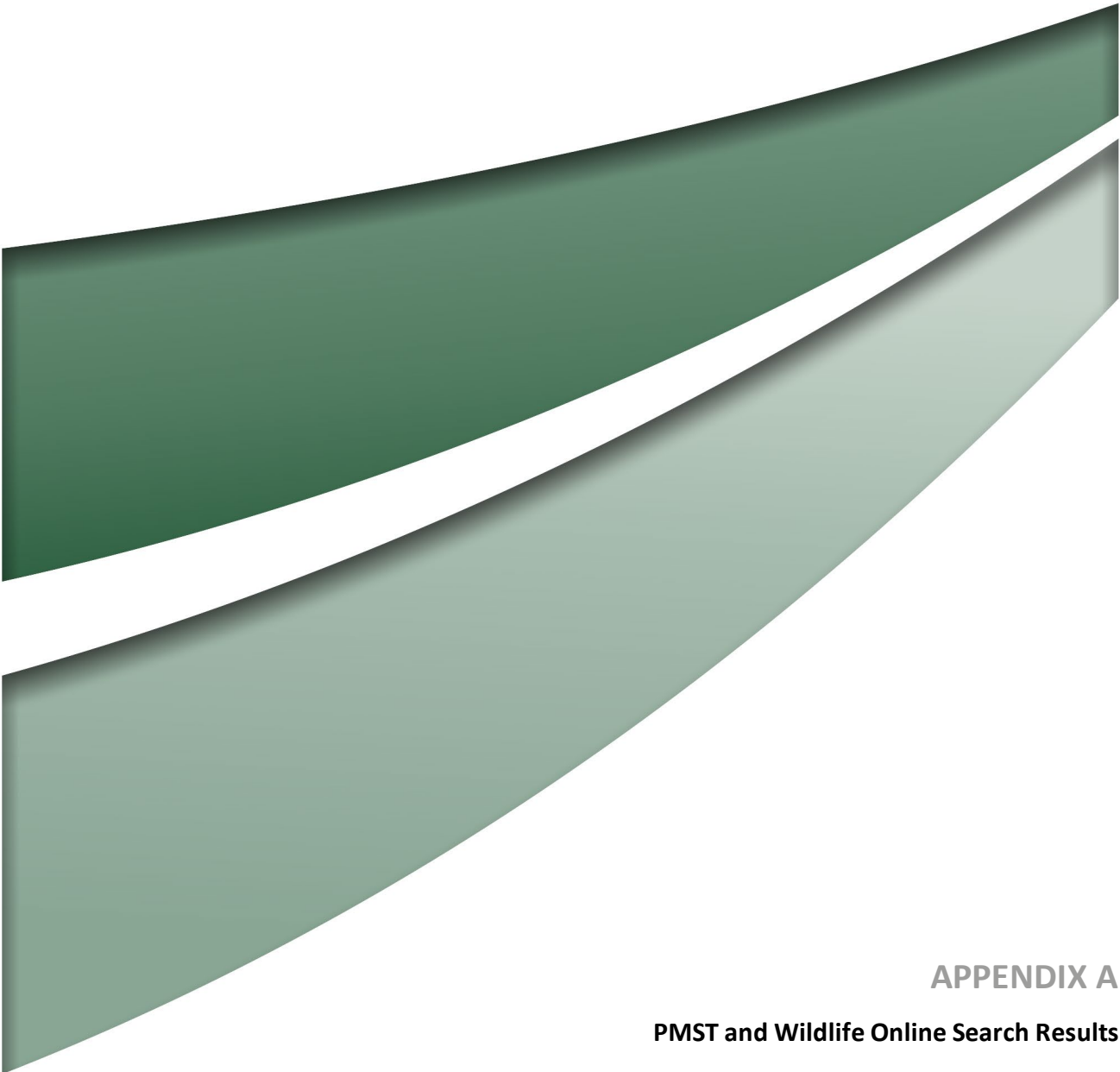
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Neldner, V. *et al.* (2020) *Methodology for surveying and mapping regional ecosystems and vegetation communities in Queensland (Version 5.1)*. Queensland Herbarium, Department of Environment and Science, Brisbane.

Queensland Herbarium (2021) *Regional Ecosystem Description Database (REDD) (Version 12)*. Department of Environment and Science, Brisbane QLD.



APPENDIX A

PMST and Wildlife Online Search Results



EPBC Act Protected Matters Report

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

Report created: 17-Jun-2022

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	4
Listed Threatened Species:	49
Listed Migratory Species:	14

Other Matters Protected by the EPBC Act

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

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

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

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

Extra Information

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

State and Territory Reserves:	3
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	3
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

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

Ramsar Site Name	Proximity	Buffer Status
Great sandy strait (including great sandy strait, tin can bay and tin can inlet)	40 - 50km upstream from Ramsar site	In feature area

Listed Threatened Ecological Communities [\[Resource Information \]](#)

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

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

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In buffer area only
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
Poplar Box Grassy Woodland on Alluvial Plains	Endangered	Community may occur within area	In buffer area only

Listed Threatened Species [\[Resource Information \]](#)

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Cyclopsitta diophthalma coxeni Coxen's Fig-Parrot [59714]	Endangered	Species or species habitat may occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Geophaps scripta scripta Squatter Pigeon (southern) [64440]	Vulnerable	Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat known to occur within area	In feature area
FISH			
Maccullochella mariensis Mary River Cod [83806]	Endangered	Species or species habitat known to occur within area	In buffer area only
Neoceratodus forsteri Australian Lungfish, Queensland Lungfish [67620]	Vulnerable	Species or species habitat known to occur within area	In buffer area only

FROG

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mixophyes fleayi Fleay's Frog [25960]	Endangered	Species or species habitat may occur within area	In feature area
INSECT			
Phyllodes imperialis smithersi Pink Underwing Moth [86084]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat may occur within area	In feature area
Dasyurus hallucatus Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat likely to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat may occur within area	In feature area
Macroderma gigas Ghost Bat [174]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
PLANT			
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bosistoa transversa Three-leaved Bosistoa, Yellow Satinheart [16091]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cossinia australiana Cossinia [3066]	Endangered	Species or species habitat known to occur within area	In feature area
Cupaniopsis shirleyana Wedge-leaf Tuckeroo [3205]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cycas megacarpa [55794]	Endangered	Species or species habitat may occur within area	In feature area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Fontainea venosa [24040]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lepidium peregrinum Wandering Pepper-cress [14035]	Endangered	Species or species habitat may occur within area	In buffer area only
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Macadamia ternifolia Small-fruited Queensland Nut, Gympie Nut [7214]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macrozamia pauli-guilielmi Pineapple Zamia [5712]	Endangered	Species or species habitat likely to occur within area	In feature area
Plectranthus omissus [55729]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Rhaponticum australe Austral Cornflower, Native Thistle [22647]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area	In feature area
Samadera bidwillii Quassia [29708]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sophora fraseri [8836]	Vulnerable	Species or species habitat may occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area	In feature area
REPTILE			
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat may occur within area	In feature area
Delma torquata Adorned Delma, Collared Delma [1656]	Vulnerable	Species or species habitat may occur within area	In feature area
Egernia rugosa Yakka Skink [1420]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Elseya albagula Southern Snapping Turtle, White-throated Snapping Turtle [81648]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Elusor macrurus Mary River Turtle, Mary River Tortoise [64389]	Endangered	Species or species habitat known to occur within area	In buffer area only
Furina dunmali Dunmall's Snake [59254]	Vulnerable	Species or species habitat may occur within area	In feature area
Nangura spinosa Nangur Spiny Skink [59550]	Critically Endangered	Species or species habitat likely to occur within area	In buffer area only

Listed Migratory Species [[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
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Migratory Marine Birds

Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
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Migratory Marine Species

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

Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
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Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
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Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area	In feature area
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Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
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Scientific Name	Threatened Category	Presence Text	Buffer Status
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area

Other Matters Protected by the EPBC Act

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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area overfly marine area	In feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Reptile			
Crocodylus porosus Salt-water Crocodile, Estuarine Crocodile [1774]		Species or species habitat likely to occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Greene Dale	Nature Refuge	QLD	In buffer area only
Oakview	National Park	QLD	In buffer area only
Oakview Wildlife	Nature Refuge	QLD	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Controlled action				
Woolooga Solar Farms	2019/8554	Controlled Action	Post-Approval	In feature area

Not controlled action

275 kV double-circuit transmission line between Woolooga Substation & new substation	2009/4840	Not Controlled Action	Completed	In feature area
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Queensland Government

WildNet species list

Search Criteria: Species List for a Specified Point
Species: All
Type: All
Queensland status: Rare and threatened species
Records: All
Date: All
Latitude: -26.0928
Longitude: 152.4413
Distance: 10
Email: pworth@umwelt.com.au
Date submitted: Thursday 02 Sep 2021 14:49:31
Date extracted: Thursday 02 Sep 2021 14:50:05

The number of records retrieved = 12

Disclaimer

Information presented on this product is distributed by the Queensland Government as an information source only. While every care is taken to ensure the accuracy of this data, the State of Queensland makes no statements, representations or warranties about the accuracy, reliability, completeness or suitability of any information contained in this product.

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Information about your Species lists request is logged for quality assurance, user support and product enhancement purposes only.

The information provided should be appropriately acknowledged as being derived from WildNet database when it is used. As the WildNet Program is still in a process of collating and vetting data, it is possible the information given is not complete. Go to the WildNet database webpage (<https://www.qld.gov.au/environment/plants-animals/species-information/wildnet>) to find out more about WildNet and where to access other WildNet information products approved for publication. Feedback about WildNet species lists should be emailed to wildlife.online@des.qld.gov.au.

Kingdom	Class	Family	Scientific Name	Common Name	I	Q	A	Records
animals	birds	Accipitridae	<i>Erythrotriorchis radiatus</i>	red goshawk		E	V	1
animals	birds	Apodidae	<i>Hirundapus caudacutus</i>	white-throated needletail		V	V	2
animals	birds	Turnicidae	<i>Turnix melanogaster</i>	black-breasted button-quail		V	V	6
animals	mammals	Phascolarctidae	<i>Phascolarctos cinereus</i>	koala		V	V	10
animals	mammals	Pseudocheiridae	<i>Petauroides armillatus</i>	central greater glider		V	V	2
animals	reptiles	Chelidae	<i>Elseya albagula</i>	southern snapping turtle		CR	CE	45
animals	reptiles	Chelidae	<i>Elusor macrurus</i>	Mary River turtle		E	E	103
plants	land plants	Corynocarpaceae	<i>Corynocarpus rupestris subsp. arborescens</i>	southern corynocarpus		V		1/1
plants	land plants	Euphorbiaceae	<i>Fontainea venosa</i>			V	V	7/7
plants	land plants	Myrtaceae	<i>Rhodamnia dumicola</i>	rib-fruited malletwood		CR		3
plants	land plants	Proteaceae	<i>Floydia praealta</i>	ball nut		V	V	1/1
plants	land plants	Sapindaceae	<i>Cossinia australiana</i>			E	E	6/4

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).

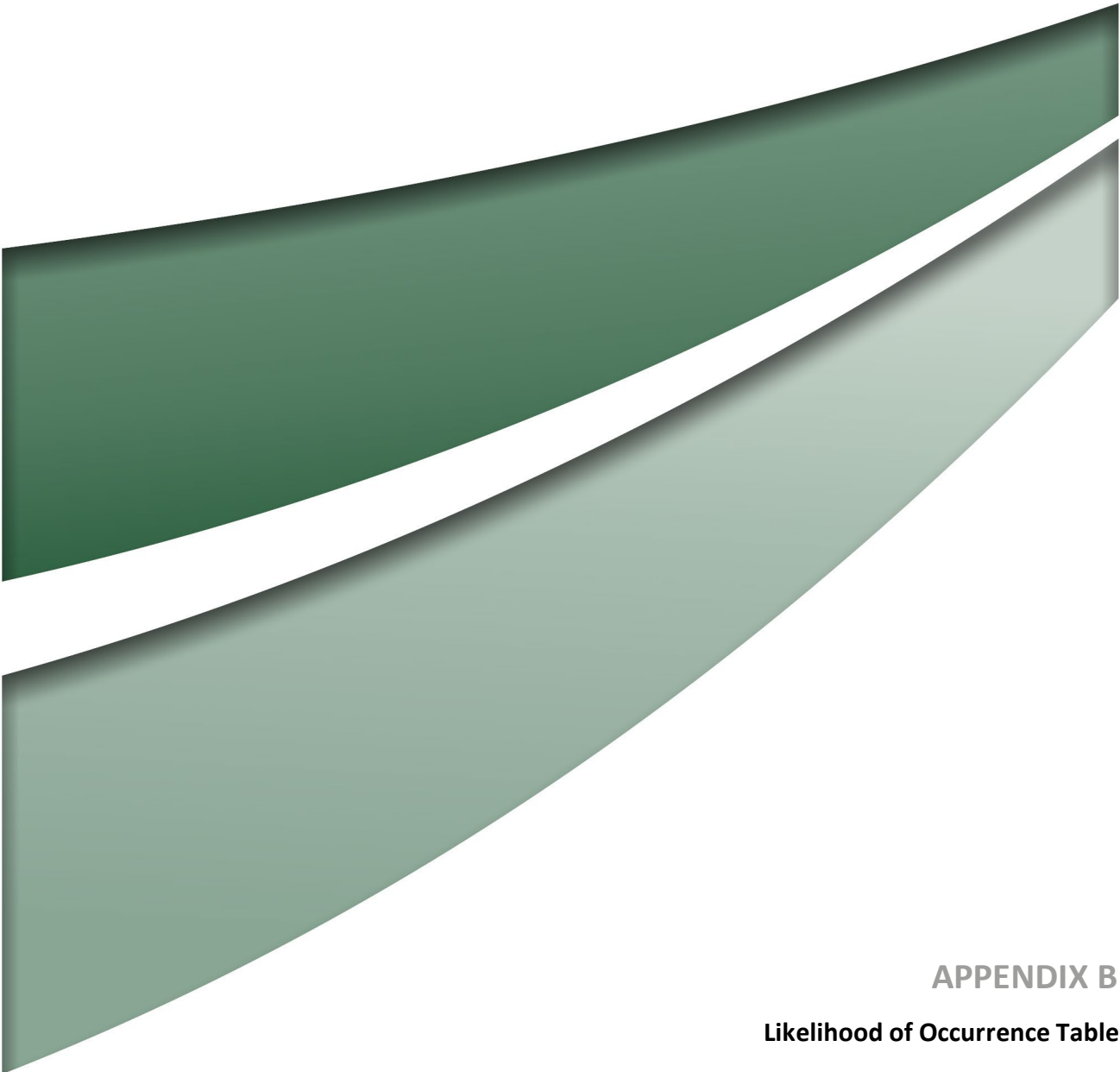
A - Indicates the Australian conservation status of each taxon under the *Environment Protection and Biodiversity Conservation Act 1999*.

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.



APPENDIX B

Likelihood of Occurrence Table

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Threatened Species					
Birds					
Australasian bittern	<i>Botaurus poiciloptilus</i>	E	E	The species occurs mainly in freshwater wetlands and, rarely, in estuaries or tidal wetlands. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
curlew sandpiper	<i>Calidris ferruginea</i>	CE, M	CE	The species mainly occurs on intertidal mudflats in sheltered coastal areas such as estuaries, bays, inlets and lagoons, and around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded less often inland, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand, occurring in both fresh and brackish waters.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
Coxen's fig-parrot	<i>Cyclopsitta diophthalma coxeni</i>	E	E	The species occurs in rainforest habitats including subtropical rainforest, dry rainforest, littoral and developing littoral rainforest, and vine forest, from sea level to approximately 900 m asl. The species is likely to favour alluvial areas that support figs and other trees with fleshy fruits. It has also been recorded in other habitat types including corridors of riparian vegetation in woodland, open woodland or other types of cleared habitat and isolated stands of fig or other trees on urban, agricultural or cleared land.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
red goshawk	<i>Erythrotriorchis radiatus</i>	V	E	The species occurs in coastal and sub-coastal tall open forests and woodlands, preferring areas with a mosaic of vegetation types, permanent water and abundant small birds. Associated with gorge and escarpment country in partially cleared country in eastern Queensland. In eastern Australia, populations seem to move from inland nest sites to coastal plains in winter, thus occupying home ranges of 50-220 km ² .	Low – species has been recorded within 10 km from the Project site. The Development Area does not provide habitat suitable habitat for this species.
grey falcon	<i>Falco hypoleucos</i>	V	V	The species frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses. It has been observed hunting in treeless areas and frequents tussock grassland and open woodland, especially in winter.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat for foraging.
squatter pigeon (southern)	<i>Geophaps scripta</i>	V	V	The species occurs in open, dry woodland with a grassy understorey in proximity to permanent water. Prefers areas of sandy soil with sparser cover of low grasses; and less common on heavier soils with dense grass cover.	Low – species has been historically recorded in the broader region (within 15 km) and the Development Area may provide stopover for transiting individuals or short flocks.
white-throated needletail	<i>Hirundapus caudacutus</i>	V, M	V	The species is found across a range of habitats, more often over wooded areas, where it is almost exclusively aerial, though it roosts in tree hollows and the foliage canopy. It forages for insects aerially, flying anywhere between “cloud level” and “ground level”, often forming mixed feeding flocks with other species. The species roosts in tall trees at night, mainly in forests.	Low – given its aerial nature, the species is likely to overfly the Development Area and has been recorded within 5 km of the Development Area. There are two WildNet records within 10 km of the Project site.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
swift parrot	<i>Lathamus discolor</i>	CE	E	The species breeds in Tasmania during the summer and the population migrates north to mainland Australia for the winter. Their distribution fluctuates with food availability as they feed on psyllid lerps, seeds and fruit. Non-breeding birds preferentially feed in inland box-ironbark and grassy woodlands, and coastal swamp mahogany (<i>Eucalyptus robusta</i>) and spotted gum (<i>Corymbia maculata</i>) woodland.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
eastern curlew	<i>Numenius madagascariensis</i>	CE, M	E	The species occurs in sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. The species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. They are often recorded among saltmarsh and on mudflats fringed by mangroves, sometimes within the mangroves. They are also found in coastal saltworks and sewage farms.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
Australian painted snipe	<i>Rostratula australis</i>	E	E	The species occurs in shallow freshwater wetlands or saltmarshes, including inundated grasslands, dams and bore drains, generally with good cover of grasses or low scrub.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
black-breasted button-quail	<i>Turnix melanogaster</i>	V	V	The species is restricted to rainforests and forests, mostly in areas with 770-1,200 mm rainfall per annum. They prefer drier low closed forests, particularly semi-evergreen vine thicket, low microphyll vine forest, Araucarian microphyll vine forest and Araucarian notophyll vine forest. They may also be found in low, dense acacia thickets and, in littoral areas, in vegetation behind sand dunes.	Unlikely – species has been recorded (six WildNet records) in the desktop search extent however the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Fish					
Mary River cod	<i>Maccullochella mariensis</i>	E	-	The species occurs in southeast Qld in three areas in the Mary River system: Tinana-Coondoo Creek upstream from Tinana Barrage, Six Mile Creek downstream from Lake Macdonald, and upper Obi Creek. They have also been reported from Widgee, Glastonbury, Amamoor, and Yabba Creeks, and other parts of the Mary River since 1990, however numbers in these areas are very low. It inhabits high gradient, rocky, upland streams, to large, slow-flowing pools in lowland areas. Anecdotally, the ideal habitat comprises deep, shaded, slow flowing pools with plenty of snags and log-piles.	Unlikely – There are no suitable watercourses within the Development Area.
Australian lungfish	<i>Neoceratodus forsteri</i>	V	-	The species occurs in the Mary, Burnett and Brisbane River systems and possibly the Pine River system. It occurs in a number of water body types, ranging from relatively undisturbed streams to highly altered environments, such as Lake Samsonvale and Lake Wivenhoe. It requires still or slow-flowing, shallow, vegetated pools with clear or turbid water in which to spawn and feed and is restricted to areas of permanent water.	Unlikely – There are no suitable watercourses within the Development Area.
Amphibians					
Fleay's frog	<i>Mixophyes fleayi</i>	E	E	The species is associated with montane rainforest and open forest communities adjoining rainforest. It occurs along stream habitats from first to third order streams and is not found in ponds or ephemeral pools. Adults may be found in leaf litter and along watercourses in rainforest and adjoining wet sclerophyll forests.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Insects					
pink underwing moth	<i>Phyllodes imperialis smithersi</i>	E	-	The species is found below the altitude of 600 m in undisturbed, subtropical rainforest on rich volcanic soils and fertile alluvium. It occurs in association with the vine <i>Carronia multise palea</i> , a collapsed shrub that provides the food and habitat the moth requires in order to breed. The vine appears to be relatively rare and is largely restricted to old growth subtropical rainforests on the coast and nearby ranges below 1,000 m.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Mammals					
large-eared pied bat	<i>Chalinolobus dwyeri</i>	V	V	In south-east Qld, the species has primarily been recorded from higher altitude moist tall open forest adjacent to rainforest. Most records are from canopied habitat, although narrow connecting riparian strips in otherwise cleared habitat are sometimes quite heavily used. Rainforest and moist eucalypt forest habitats on rhyolite, trachyte and basalt at high elevation are important roosting habitat for the species.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
northern quoll	<i>Dasyurus hallucatus</i>	E	-	The species occupies a diversity of habitats including rocky areas, eucalypt forest and woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert. The species is also known to occupy non-rocky lowland habitats such as beach scrub communities in central Queensland. The species generally encompasses some form of rocky area for denning purposes, with surrounding vegetated habitats used for foraging and dispersal. Rocky habitats are usually of high relief, often rugged and dissected.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
spotted-tail quoll, tiger quoll	<i>Dasyurus maculatus</i>	E	-	The species occurs in a variety of habitats including closed forests (including temperate and sub-tropical rainforest), tall eucalypt forests, open woodlands, open forests, drier rainshadow woodlands and coastal heathlands. During the day they shelter in fallen logs, boulder piles, burrows, tree hollows and occasionally under dwellings.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
ghost bat	<i>Macroderma gigas</i>	V	E	The species currently occurs in habitats ranging from the arid Pilbara to tropical savanna woodlands and rainforests. During the daytime they roost in caves, rock crevices and old mines. Roost sites used permanently are generally deep natural caves or disused mines. Foraging areas have been reported to occur on average, 1.9 km from the daytime roost.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
greater glider	<i>Petauroides volans</i>	V	V	The species is largely restricted to eucalypt forests and woodlands; it is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows.	Low – species has been recorded in the desktop search extent (two WildNet records) and the Development Area may provide some suitable (marginal) habitat. Habitat present is unlikely to be utilised due to its low connectivity in the landscape.
yellow-bellied glider	<i>Petaurus australis australis</i>	V	V	The species occurs in eucalypt-dominated woodlands and forests, including both wet and dry sclerophyll forests. Abundance is highly dependent on habitat suitability, which is in turn determined by forest age and floristics. The subspecies shows a preference for large patches of mature old growth forest that provide suitable trees for foraging and shelter.	Low – one 1998 ALA record occurs within the desktop search extent, located to the south east within the Brooyar State Forest. The Brooyar State Forest is largely disconnected from the Project site. Although some hollow bearing trees were present, habitat is not sufficient to sustain an individual or a population of this species.
brush-tailed rock-wallaby	<i>Petrogale penicillata</i>	V	V	The species prefers rocky habitats, including loose boulder-piles, rocky outcrops, steep rocky slopes, cliffs, gorges and isolated rock stacks. They typically shelter during the day in rock crevices, caves and overhangs, yet often bask in exposed sunny spots. Within their home range, they habitually use the same refuges, sunning spots, feeding areas and pathways.	Unlikely – species has not been recorded in the desktop search extent and the Development Area does not provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
koala (combined populations of Qld, NSW and the ACT)	<i>Phascolarctos cinereus</i>	E	V	The species inhabits a range of temperate, sub-tropical and tropical forest, woodland and semi-arid communities dominated by eucalypt species. The species is limited by habitat (restricted to below 800 m asl (above sea level)), temperature and, at the western and northern ends of the range, leaf moisture.	Low – species has been recorded in the desktop search extent (10 WildNet records) and the Development Area may provide some suitable (marginal) habitat. Habitat present is unlikely to be utilised due to its low connectivity in the landscape.
grey-headed flying-fox	<i>Pteropus poliocephalus</i>	V	-	The species occurs in rainforests, open forests, woodlands and Melaleuca swamps. Roosting camps are usually in dense riparian vegetation.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.
Plants					
hairy-joint grass	<i>Arthraxon hispidus</i>	V	V	The species is found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps as well as woodland. In south-east Qld, it has also been recorded growing around freshwater springs on coastal foreshore dunes, in shaded small gullies, on creek banks, and on sandy alluvium in creek beds in open forests, and also with bog mosses in mound springs.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
three-leaved bosistoa	<i>Bosistoa transversa</i>	V	-	The species grows in wet sclerophyll forest, dry sclerophyll forest and rainforest up to 300 m in altitude. Associated vegetation includes <i>Argyrodendron trifoliolatum</i> , <i>Syzygium hodgkinsoniae</i> , <i>Endiandra pubens</i> , <i>Dendrocnide photinophylla</i> , <i>Acmena ingens</i> , <i>Diploglottis australis</i> and <i>Diospyros mabacea</i> .	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
southern corynocarpus	<i>Corynocarpus rupestris</i> subsp. <i>arborescens</i>	-	V	The species is found in Araucarian notophyll vineforest, often on red basaltic slopes.	Unlikely – species has been recorded in the desktop search extent however the Development Area is unlikely to provide suitable habitat.
cossinia	<i>Cossinia australiana</i>	E	E	The species is known from fragmented relict patches of Araucarian vine forests or vine thickets on fertile soils. At most sites it is recorded as uncommon, usually as scattered individuals.	Unlikely – species has been recorded in the desktop search extent however the Development Area is unlikely to provide suitable habitat.
wedge-leaf tuckeroo	<i>Cupaniopsis shirleyana</i>	V	V	The species occurs in a variety of dry rainforest vegetation types, including vine thicket communities on hillsides, stream beds and along riverbanks at altitudes of 60-550 m asl. This species is also likely to occur on the margins of native vegetation in scrubby urbanised areas. It is predominately found on dark brown sandy loams and sandy clay loams (pH 5-7.5) and rocky scree slopes.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
-	<i>Cycas megacarpa</i>	E	E	The species is found in woodland, open woodland and open forests, often in conjunction with a grassy understory. This species is found in habitat dominated by <i>Eucalyptus crebra</i> and <i>Corymbia citriodora</i> as well as <i>C. erythrophloia</i> , <i>E. melanophloia</i> and <i>Lophostemon confertus</i> . There are also reports that it can be found in or on the edge of rainforest habitat.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.
bluegrass	<i>Dichanthium setosum</i>	V	-	The species occurs on heavy soils (predominantly cracking clays or alluvium, often in gilgai) in woodland or open woodland usually dominated by Acacia and/or Eucalyptus species. Associated climate is tropical to subtropical and seasonal, with the habitat drying out for part of the year.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
ball nut	<i>Floydia praealta</i>	V	V	The species occurs in riverine and lowland subtropical rainforest. It is recorded on gently sloping alluvial levees to moderately sloped footslopes and hillslopes, as well as steeply sloping screeslopes at altitudes from 50–350 m. It generally occurs in red loam soil on basalt with slightly acidic to neutral pH (range 5.0-7.0).	Unlikely – species has been recorded in the desktop search extent however the Development Area is unlikely to provide suitable habitat.
-	<i>Fontainea venosa</i>	V	V	The species occurs in Araucarian microphyll vine forest with a mean annual rainfall of 1000 mm on alluvial soil along creeks. Associated species include <i>Backhousia citriodora</i> , <i>Actephila lindleyi</i> and <i>Bosistoa medicinalis</i> .	Unlikely – species has been recorded in the desktop search extent however the Development Area is unlikely to provide suitable habitat.
wandering pepper-cress	<i>Lepidium peregrinum</i>	E	-	The ecology and habitat of the species is poorly known. In Clifton, southeast Qld, it grows in riparian open forest dominated by <i>Eucalyptus camaldulensis</i> and <i>Casuarina cunninghamiana</i> with a variably dense shrubby understorey. This species was most abundant in the tussock grassland fringe of the riparian open forest and also occurred in shade under shrubs close to the creek bank.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
macadamia nut	<i>Macadamia integrifolia</i>	V	V	The species occurs in a range of habitat types from complex notophyll mixed forest, extremely tall closed forest, simple notophyll mixed very tall closed forest to simple microphyll-notophyll mixed mid-high closed forest with <i>Araucaria</i> and <i>Argyrodendron</i> emergents. It can be found on hill crests, hill slopes, scree slopes and foot slopes, gullies, benches and terrace plains. The slopes range from level to steep, with altitudes from 5–340 m asl.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
small-fruited Queensland nut	<i>Macadamia ternifolia</i>	V	V	The species' remaining habitat is fragmented and found within lowland warm complex notophyll vine forest and Araucarian notophyll vine forest on basic and intermediate volcanic soils and alluvia in higher rainfall areas of south-east Queensland. It generally occurs in south-facing gullies with fertile, basalt-derived krasnozems soils or the interface between sandstone and basalt krasnozems.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
pineapple zamia	<i>Macrozamia pauli-guilielmi</i>	E	E	The species occurs in lowland (5–230 m altitude) open forest or woodland (wallum) dominated by banksias or eucalypts, or in shrub land or heath land, generally on stabilised sand dunes. It does not have a preferred aspect.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
-	<i>Plectranthus omissus</i>	E		The species is known from only four sites between Gympie and Gayndah, Qld. All sites were previously under state forest tenure but are currently protected as forest reserves. It grows on rock outcrops in eucalypt open forest and adjacent to vine forest.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
Austral cornflower	<i>Rhaponticum australe</i>	V	V	The species often found in woodland and grassland and in association with <i>Eucalyptus crebra</i> , <i>E. orgadophila</i> , <i>E. populnea</i> , <i>E. tereticornis</i> , <i>E. melanophloia</i> , <i>Angophora subvelutina</i> , <i>A. floribunda</i> , <i>Cirsium vulgare</i> , <i>Dichanthium sericeum</i> and <i>Themeda triandra</i> . Populations are often confined to roadsides and cultivation headlands. It usually grows on heavy black or red-brown clay, or clay loams derived from basalt.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.
rib-fruited malletwood	<i>Rhodamnia dumicola</i>		-	There is very little published information on the habitat of this species other than it occurs in dry rainforest.	Unlikely – species has been recorded in the desktop search extent however the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
native guava	<i>Rhodamnia rubescens</i>	CE	CE	The species commonly occurs in all rainforest subforms except cool temperate rainforest. It occupies a range of volcanically derived and sedimentary soils and is a common pioneer species in eucalypt forests. It is often found in wet sclerophyll associations in rainforest transition zones and Creekside riparian associations.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
-	<i>Rhodomyrtus psidioides</i>	CE	CE	The species occurs in subtropical rainforest, warm temperate rainforest, littoral rainforest and wet sclerophyll forest. It may be found in the adjoining margins of sclerophyll vegetation associated with any of these rainforest formations.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
quassia	<i>Samadera bidwillii</i>	V	V	The species occurs in lowland rainforest or on rainforest margins, but it can also be found in other forest types, such as open forest and woodland. It is commonly found in areas adjacent to both temporary and permanent watercourses in locations up to 510 m altitude. The species occurs on lithosols, skeletal soils, loam soils, sands, silts and sands with clay subsoils.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
-	<i>Sophora fraseri</i>	V	V	The species grows in moist habitats, often in hilly terrain at altitudes from 60–660 m on shallow soils along rainforest margins in eucalypt forests or in large canopy gaps in closed forest communities.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
austral toadflax	<i>Thesium australe</i>	V	V	The species is semi-parasitic on roots of a range of grass species, notably kangaroo grass (<i>Themeda triandra</i>). It occurs in subtropical, temperate and subalpine climates over a wide range of altitudes. It occurs on soils derived from sedimentary, igneous and metamorphic geology on a range of soils including black clay loams to yellow podzolics and peaty loams.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Reptiles					
three-toed snake-tooth skink	<i>Coeranoscincus reticulatus</i>	V	-	The species occurs in rainforest, closed forest, wet sclerophyll forest, tall open blackbutt (<i>Eucalyptus pilularis</i>) forest, tall layered open eucalypt forest and closed brush box (<i>Lophostemon confertus</i>) forest. It has been found in loose, well mulched friable soil, in and under rotting logs, in forest litter, under fallen hoop pine (<i>Araucaria cunninghamii</i>) bark and under decomposing cane mulch. It has also been recorded from extensive regrowth in heavily logged areas.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
collared delma	<i>Delma torquata</i>	V	V	The species normally inhabits eucalypt-dominated woodlands and open-forests in the following land zones: alluvium, undulating country on fine-grained sedimentary rocks, and sandstone ranges. The presence of rocks, logs, coarse woody debris and leaf litter are essential characteristics of the species' microhabitat.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.
yakka skink	<i>Egernia rugosa</i>	V	V	The species occurs in a variety of drier forests and woodlands, usually on well-drained, gritty soils, including <i>Eucalyptus populnea</i> on alluvial soils, <i>Callitris glaucophylla</i> on sands, <i>Allocasuarina luehmannii</i> , <i>Acacia harpophylla</i> , <i>A. catenulata</i> and <i>A. aneura</i> . The species inhabits burrows, abandoned rabbit warrens, and hollow logs or in deep rock crevices.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.
southern snapping turtle	<i>Elseya albagula</i>	CE	CE	The species is only found in the Burnett, Fitzroy, Raglan and Mary river drainages of south-east Queensland. It prefers permanent flowing water habitats where there are suitable shelters and refuges.	Unlikely – There are no suitable watercourses within the Development Area.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Mary River turtle	<i>Elusor macrurus</i>	E	E	The species is endemic to the Mary River, Qld, occurring from Kenilworth, 262.8 km from the river mouth, to the area upstream of the Mary River Tidal Barrage at Tiaro, 59.3 km from the river mouth. It occupies riffles and shallow stretches alternating with deeper, flowing pools in flowing, well-oxygenated sections of streams. Juveniles may occur in rocky areas with sand or gravel on the riverbed, in a variety of water depths.	Unlikely – There are no suitable watercourses within the Development Area.
Dunmall's snake	<i>Furina dunmali</i>	V	V	The species has been found in a broad range of habitats, including forests and woodlands on black alluvial cracking clay/ clay loams dominated by <i>Acacia harpophylla</i> and other <i>Acacia</i> spp., <i>Callitris</i> spp. or <i>Allocasuarina luehmannii</i> , and various spotted gum (<i>Corymbia citriodora</i>), ironbark (<i>Eucalyptus crebra</i> and <i>E. melanophloia</i>) and bulloak (<i>Callitris glaucophylla</i>) open forest and woodland associations on sandstone derived soils.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.
Nangur spiny skink	<i>Nangura spinosa</i>	CE	CE	The species occurs in two locations within southeast Qld: part of Oakview Sate Forest and Oakview Forest Reserve and Nangur Forest Reserve. It has been recorded in hoop pine (<i>Araucaria cunninghamii</i>) plantation and in semi-evergreen vine thicket/forest, between 315–600 m altitude. Burrows are in soils with a significant clay content on Neara Volcanics.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
Migratory Species					
Marine Birds					
fork-tailed swift	<i>Apus pacificus</i>	M	SLC	The species is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher.	Low – given its aerial nature, the species is likely to overfly the Development Area and is known from the broader region.

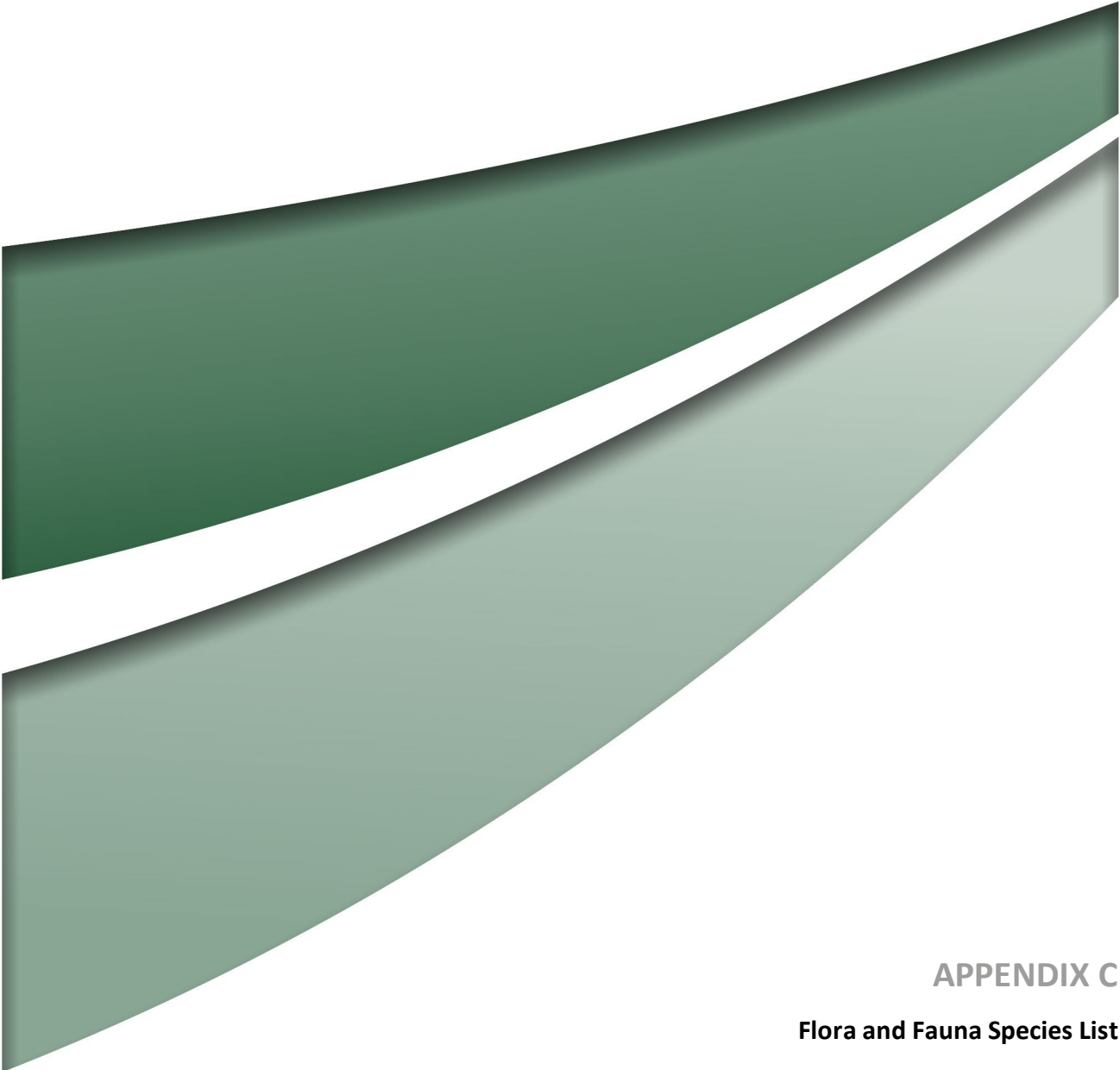
Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Marine Species					
salt-water crocodile	<i>Crocodylus porosus</i>	M	SLC	The species mostly occurs in tidal rivers, coastal floodplains and channels, billabongs and swamps up to 150 km inland from the coast. It usually inhabits the estuarine reaches of rivers. In Queensland, the species is usually restricted to coastal waterways and floodplain wetlands. Floating rafts of vegetation provide important nesting habitat.	Unlikely – There are no suitable watercourses within the Development Area.
Terrestrial Species					
oriental cuckoo	<i>Cuculus optatus</i>	M	SLC	The species uses a range of vegetated habitats such as monsoon rainforest, wet sclerophyll forest, open woodlands and often along edges of forests, or ecotones between forest types.	Low – species has not been recorded in the desktop search extent however the Development Area may provide some suitable (marginal) habitat.
black-faced monarch	<i>Monarcha melanopsis</i>	M	SLC	The species is a wet forest specialist, occurring mainly in rainforests and riparian vegetation. In wet sclerophyll forest, the species mostly frequents sheltered gullies and slopes with a dense understorey of ferns and/or shrubs. They forage from trees and shrubs or by taking insect prey from the air (sallying).	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
spectacled monarch	<i>Monarcha trivirgatus</i>	M	SLC	The species occurs in thick understorey in rainforests, wet gullies and waterside vegetation, as well as mangroves.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
satin flycatcher	<i>Myiagra cyanoleuca</i>	M	SLC	The species inhabits heavily vegetated gullies in eucalypt-dominated forests and taller woodlands, and on migration, occur in coastal forests, woodlands, mangroves and drier woodlands and open forests.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
rufous fantail	<i>Rhipidura rufifrons</i>	M	SLC	In east and south-east Australia, the species mainly inhabits wet sclerophyll forests, often in gullies dominated by eucalypts; usually with a dense shrubby understorey often including ferns.	Unlikely – species has been recorded in the desktop search extent however the Development Area is unlikely to provide suitable habitat.
Wetland Species					
common sandpiper	<i>Actitis hypoleucos</i>	M	SLC	The species utilises a wide range of coastal wetlands and some inland wetlands with varying levels of salinity. The species is mostly found around muddy margins or rocky shores and rarely on mudflats. It has been recorded in estuaries and deltas of streams, as well as on banks further upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
sharp-tailed sandpiper	<i>Calidris acuminata</i>	M	SLC	The species prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline salt lakes inland. They also occur in salt works and sewage farms.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
pectoral sandpiper	<i>Calidris melanotos</i>	M	SLC	The species prefers shallow fresh to saline wetlands. It is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
Latham's snipe	<i>Gallinago hardwickii</i>	M	SLC	In Australia, the species occurs in permanent and ephemeral wetlands up to 2000 m asl. They usually inhabit open, freshwater wetlands with low, dense vegetation such as swamps, flooded grasslands or heathlands, around bogs and other water bodies.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
osprey	<i>Pandion haliaetus</i>	M	SLC	The species occurs in littoral and coastal habitats and terrestrial wetlands. They are mostly found in coastal areas but occasionally travel inland along major rivers and require extensive areas of open fresh, brackish or saline water for foraging.	Unlikely – species has not been recorded in the desktop search extent and the Development Area is unlikely to provide suitable habitat.
Threatened Ecological Communities					
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland	E	-	The TEC occurs in sub-tropical, sub-humid and temperate climatic zones from Curtis Island in Qld to Bermagui in southern NSW. It occurs in coastal catchments, mostly at elevations of less than 20 m asl, typically on unconsolidated sediments including alluvium deposits. Structure can vary from forest to woodland. The canopy layer is dominated by swamp oak (<i>Casuarina glauca</i>), while <i>Eucalyptus</i> spp. can emerge from the canopy. If a mid-layer is present, it is typically sparse, but a sub-canopy of smaller trees can often be present (typically composed of canopy species). The ground layer typically comprises either forbs, ferns, sedges, grasses and/or plant litter, but can often be patchy.	Unlikely – The TEC is analogous to two Qld REs: 12.1.1 and areas within RE 12.3.20, neither of which are mapped within the Development Area or Project site.	
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	E	-	The TEC occurs on the mainland and islands near to the coast (within 20 km) in south-east Qld and NSW. It typically occurs in low-lying coastal alluvial areas with minimal relief, such as swamps, floodplain pockets, depressions, alluvial flats, back-barrier flats, fans, terraces, and behind fore-dunes. The structure varies from open woodland to closed forest with a crown cover of at least 10% and typically no more than 70%. The canopy is typically dominated or co-dominated by <i>Melaleuca quinquenervia</i> and/or <i>Eucalyptus robusta</i> . In Qld, five regional ecosystems correspond (at least in part) with the ecological community including RE 12.2.7, 12.3.4/4a, 12.3.5, 12.3.6 and 12.3.20.	Unlikely – The TEC is analogous to five Qld REs, none of which are mapped within the Development Area or Project site.	

Common Name	Scientific Name	EPBC Act Status [^]	NC Act Status [^]	Potential Habitat (DAWE 2021)	Likelihood of Occurrence
Lowland Rainforest of Subtropical Australia		CE	-	The TEC occurs on basalt and alluvial soils, mostly in areas <300 m asl and typically in areas with high annual rainfall (>1,300 mm). It is generally a moderately tall (≥20 m) to tall (≥30 m) closed forest (canopy cover ≥70%). Tree species with compound leaves are common and leaves are relatively large (notophyll to mesophyll). There is typically a relatively low abundance of species from the genera <i>Eucalyptus</i> , <i>Melaleuca</i> and <i>Casuarina</i> . Buttresses are common as is an abundance and diversity of vines.	Unlikely – The TEC is analogous to seven Qld REs: 12.3.1, 12.5.13, 12.8.3, 12.8.4, 12.11.1, 12.11.10 and 12.12.1, none of which are mapped within the Development Area or Project site.
Poplar Box Grassy Woodland on Alluvial Plains		E	-	The TEC is located west of the Great Dividing Range, typically at less than 300 m asl. It is typically a grassy woodland with a canopy dominated by <i>Eucalyptus populnea</i> and understorey mostly of grasses and other herbs. It mostly occurs in gently undulating to flat landscapes and occasionally on gentle slopes on a wide range of soil types of alluvial and depositional origin. It may include a low density of shrubs, however patches of the ecological community generally lack a substantial mid layer (tall shrub).	Unlikely – The TEC is analogous to five Qld REs: 11.3.2, 11.3.17, 11.4.7, 11.4.12 and 12.3.10, none of which are mapped within the Development Area.

[^] Abbreviations: V = Vulnerable E = Endangered CE = Critically Endangered M = Migratory SLC = Special Least Concern



APPENDIX C
Flora and Fauna Species List

Class	Family	Common Name	Species	Status ¹
Land Plants	Acanthaceae	blue trumpet	<i>Brunoniella australis</i>	LC
Land Plants	Amaranthaceae	gomphrena weed	<i>Gomphrena celosioides</i>	*
Land Plants	Apocynaceae	red-head cottonbush	<i>Asclepias curassavica</i>	*
Land Plants	Apocynaceae	balloon cottonbush	<i>Gomphocarpus physocarpus</i>	*
Land Plants	Asteraceae		<i>Ageratum conyzoides</i>	*
Land Plants	Asteraceae	creeping Cinderella weed	<i>Calyptocarpus vialis</i>	*
Land Plants	Asteraceae		<i>Chrysocephalum apiculatum</i>	LC
Land Plants	Asteraceae	spear thistle	<i>Cirsium vulgare</i>	*
Land Plants	Asteraceae		<i>Emilia sonchifolia</i>	*
Land Plants	Asteraceae		<i>Erigeron bonariensis</i>	*
Land Plants	Asteraceae		<i>Euchiton sphaericus</i>	LC
Land Plants	Asteraceae	smooth catsear	<i>Hypochaeris glabra</i>	*
Land Plants	Asteraceae	catsear	<i>Hypochaeris radicata</i>	*
Land Plants	Asteraceae	applebush	<i>Pterocaulon sphacelatum</i>	LC
Land Plants	Bignoniaceae	jacaranda	<i>Jacaranda mimosifolia</i>	*
Land Plants	Cactaceae		<i>Opuntia stricta</i>	*, C3
Land Plants	Caesalpinaceae	roundleaf cassia	<i>Chamaecrista rotundifolia</i>	*
Land Plants	Caesalpinaceae		<i>Sida hackettiana</i>	LC
Land Plants	Cyperaceae		<i>Cyperus</i> sp.	LC
Land Plants	Cyperaceae	common fringe-rush	<i>Fimbristylis dichotoma</i>	LC
Land Plants	Fabaceae		<i>Acacia leiocalyx</i>	LC
Land Plants	Fabaceae		<i>Crotalaria montana</i> var. <i>angustifolia</i>	LC
Land Plants	Fabaceae	glycine pea	<i>Glycine tabacina</i>	LC
Land Plants	Fabaceae		<i>Hardenbergia</i> sp.	LC
	Fabaceae		<i>Indigofera linifolia</i>	LC
Land Plants	Fabaceae		<i>Lotus</i> sp.	*
Land Plants	Fabaceae		<i>Lotus subbiflorus</i>	*
Land Plants	Fabaceae	siratro	<i>Macroptilium atropurpureum</i>	*
Land Plants	Fabaceae	Townsville stylo	<i>Stylosanthes humilis</i>	*
Land Plants	Fabaceae		<i>Stylosanthes scabra</i>	*

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Land Plants	Fabaceae		<i>Trifolium pratense</i>	*
Land Plants	Goodeniaceae	blue pincushion	<i>Brunonia australis</i>	LC
Land Plants	Goodeniaceae		<i>Goodenia glabra</i>	LC
Land Plants	Hemerocallidaceae		<i>Dianella longifolia</i>	LC
Land Plants	Juncaceae		<i>Juncus usitatus</i>	LC
Land Plants	Malvaceae	flannel weed	<i>Sida cordifolia</i>	*
Land Plants	Moraceae	Moreton Bay fig	<i>Ficus macrophylla forma macrophylla</i>	LC
Land Plants	Moraceae		<i>Ficus obliqua</i>	LC
Land Plants	Moraceae		<i>Ficus sp.</i>	LC
Land Plants	Moraceae		<i>Ficus virens</i>	LC
Land Plants	Myrtaceae	pink bloodwood	<i>Corymbia intermedia</i>	LC
Land Plants	Myrtaceae	Moreton Bay ash	<i>Corymbia tessellaris</i>	LC
Land Plants	Myrtaceae		<i>Eucalyptus tereticornis</i>	LC
Land Plants	Phyllanthaceae		<i>Phyllanthus sp.</i>	LC
Land Plants	Poaceae		<i>Aristida calycina</i>	LC
Land Plants	Poaceae		<i>Bothriochloa bladhii</i> subsp. <i>bladhii</i>	LC
Land Plants	Poaceae	desert bluegrass	<i>Bothriochloa ewartiana</i>	LC
Land Plants	Poaceae		<i>Bothriochloa insculpta</i>	*
Land Plants	Poaceae	Rhodes grass	<i>Chloris gayana</i>	*
Land Plants	Poaceae	feathertop Rhodes grass	<i>Chloris virgata</i>	*
Land Plants	Poaceae		<i>Chrysopogon fallax</i>	LC
Land Plants	Poaceae		<i>Cynodon dactylon</i> var. <i>dactylon</i>	*
Land Plants	Poaceae		<i>Dichanthium sericeum</i> subsp. <i>sericeum</i>	LC
Land Plants	Poaceae	curly windmill grass	<i>Enteropogon acicularis</i>	LC
Land Plants	Poaceae	elastic grass	<i>Eragrostis tenuifolia</i>	*
Land Plants	Poaceae	black speargrass	<i>Heteropogon contortus</i>	LC
Land Plants	Poaceae		<i>Hyparrhenia rufa</i>	*
Land Plants	Poaceae	blady grass	<i>Imperata cylindrica</i>	LC
Land Plants	Poaceae		<i>Megathyrsus maximus</i>	*
Land Plants	Poaceae	red Natal grass	<i>Melinis repens</i>	*
Land Plants	Poaceae		<i>Panicum decompositum</i>	LC

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Land Plants	Poaceae		<i>Setaria sphacelata</i>	*
Land Plants	Poaceae		<i>Sporobolus elongatus</i>	LC
Land Plants	Poaceae		<i>Sporobolus</i> sp.	LC
Land Plants	Poaceae	kangaroo grass	<i>Themeda triandra</i>	LC
Land Plants	Poaceae		<i>Urochloa panicoides</i>	*
Land Plants	Pteridaceae		<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	LC
Land Plants	Ranunculaceae	river buttercup	<i>Ranunculus inundatus</i>	LC
Land Plants	Solanaceae		<i>Solanum</i> sp.	LC
Land Plants	Solanaceae	devil's fig	<i>Solanum torvum</i>	*
Land Plants	Typhaceae	broad-leaved cumbungi	<i>Typha orientalis</i>	*
Land Plants	Verbenaceae	lantana	<i>Lantana camara</i>	*, C3
Land Plants	Verbenaceae	creeping lantana	<i>Lantana montevidensis</i>	*, C3
Land Plants	Verbenaceae		<i>Verbena rigida</i>	*
Land Plants	Verbenaceae		<i>Verbena</i> sp.	*
Birds	Acanthizidae	white-throated gerygone	<i>Gerygone olivacea</i>	LC
Birds	Accipitridae	wedge-tailed eagle	<i>Aquila audax</i>	LC
Birds	Accipitridae	whistling kite	<i>Haliastur sphenurus</i>	LC
Birds	Accipitridae	black kite	<i>Milvus migrans</i>	LC
Birds	Artamidae	white-breasted woodswallow	<i>Artamus leucorhynchus</i>	LC
Birds	Artamidae	pied butcherbird	<i>Cracticus nigrogularis</i>	LC
Birds	Artamidae	Australian magpie	<i>Gymnorhina tibicen</i>	LC
Birds	Cacatuidae	sulphur-crested cockatoo	<i>Cacatua galerita</i>	LC
Birds	Cacatuidae	little corella	<i>Cacatua sanguinea</i>	LC
Birds	Cacatuidae	galah	<i>Eolophus roseicapilla</i>	LC
Birds	Campephagidae	black-faced cuckoo-shrike	<i>Coracina novaehollandiae</i>	LC
Birds	Corvidae	Torresian crow	<i>Corvus orru</i>	LC
Birds	Cuculidae	pheasant coucal	<i>Centropus phasianinus</i>	LC
Birds	Falconidae	nankeen kestrel	<i>Falco cenchroides</i>	LC
Birds	Halcyonidae	laughing kookaburra	<i>Dacelo novaeguineae</i>	LC
Birds	Hirundinidae	welcome swallow	<i>Hirundo neoxena</i>	LC
Birds	Hirundinidae	tree martin	<i>Petrochelidon nigricans</i>	LC

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Birds	Megaluridae	brown songlark	<i>Cincloramphus cruralis</i>	LC
Birds	Monarchidae	magpie-lark	<i>Grallina cyanoleuca</i>	LC
Birds	Motacillidae	Australasian pipit	<i>Anthus novaeseelandiae</i>	LC
Birds	Psittacidae	pale-headed rosella	<i>Platycercus adscitus</i>	LC
Birds	Psittacidae	rainbow lorikeet	<i>Trichoglossus moluccanus</i>	LC
Birds	Rhipiduridae	willie wagtail	<i>Rhipidura leucophrys</i>	LC
Birds	Sturnidae	common myna	<i>Acridotheres tristis</i>	*
Birds	Threskiornithidae	straw-necked ibis	<i>Threskiornis spinicollis</i>	LC
Mammals	Bovidae	European cattle	<i>Bos taurus</i>	*

¹LC = Least Concern under the NC Act, * = Introduced, C3 = Category 3 Restricted under the Biosecurity Act

