View of Thorley Sands and Gravel Quarry

BIODIVERSITY ASSESSMENT REPORT

THORLEY SANDS AND GRAVEL QUARRY PROPOSED RESOURCE RECOVERY FACILITY

255 ORCHARD ROAD, MOUNTAIN VIEW, NSW

CLARENCE VALLEY LOCAL GOVERNMENT AREA

NOVEMBER 2021

Report prepared by

OzArk Environment & Heritage

for InSitu Advisory Pty Ltd

on behalf of State Road Quarry Products Pty Ltd

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Acknowledgement

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by InSitu Advisory Pty Ltd on behalf of State Road Quarry Products Pty Ltd (SRQP; the proponent) to conduct a biodiversity assessment of the proposed Resource Recovery Facility (the proposal), at Thorley Sands and Gravel Quarry, 12km north of Grafton. The proposed facility will operate in an existing 20-hectare quarry area with an additional weighbridge to be installed on the existing access road. This Biodiversity Assessment Report assesses the potential impacts of the proposal on biodiversity.

A site inspection was conducted by an OzArk Ecologist on 12th of July 2021. At the time of the survey, a total of 0.573 ha of native vegetation occurred within the subject site, the remaining areas consisted of non-native vegetation, gravel roads, and the disturbed quarry. The 0.573 ha of native vegetation was identified as belonging to three Plant Community Types (PCTs):

- PCT 658 – Bailey's Stringybark - Needlebark Stringybark heathy woodland on sandstones of the lower Clarence Valley of the NSW North Coast Bioregion
- PCT 688 – Blackbutt - Spotted Gum shrubby open forest on sandstones of the lower Clarence Valley
- PCT 1136 – Scribbly Gum - Red Bloodwood heathy open forest of the coastal lowlands of the NSW North Coast Bioregion

None of these PCTs have associated Threatened Ecological Communities.

Since the completion of the field survey on the 12th of July 2021, the 0.573 ha of native vegetation described above has been removed under an existing approval for continued operation of the Thorley Sands and Gravel Quarry. As such, no native vegetation currently remains within the subject site.

No watercourses occur within the subject site. Within the wider study area, 64 watercourses occur, including:

- Fifty 1st Strahler order streams (all minor non-perennial)
- Ten 2nd Strahler order streams (all minor non-perennial)
- Three 3rd Strahler order streams (all minor non-perennial)
- One 4th Strahler order, minor perennial stream (Double Swamp Creek)

Some watercourses within the wider study area are identified as Protected Riparian lands or Key Fish Habitat (KFH) by the Department of Primary Industry – Fisheries. The proposed development will not impact any of these watercourses.

No habitat trees were identified within the subject site during the field survey.

A total of 70 *Biodiversity Conservation Act 2016* (BC Act)-listed threatened species were assessed as having a moderate or higher likelihood of occurring within the subject site based on habitat requirements. The significance of the impact of the proposal on these BC Act listed species was assessed. The area surrounding the subject site is either known habitat or a priority management area for several of these species. Given the lack of future vegetation clearing, the absence of habitat trees, and that none of these species have been previously recorded within the subject site and were not identified during the site survey, it is unlikely that the proposal will have any significant impact on these threatened species or result in the extinction of a local population.

An *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) protected matters search identified two TECs, 64 threatened species, 38 migratory species, and 43 marine species that are predicted or known to occur within 10 km of the subject site. No significant impact to a threatened, migratory, or marine species likely to result in the extinction of a local population was identified.

The Clarence Valley LGA is listed under Schedule 1 of SEPP 44 – Koala Habitat Protection and therefore, 2020 SEPP applies. There are 243 records of Koalas occurring within the 10 km search area. Only one record exists within the study area, with the closest record being one from 2005, approximately 1km from the subject site. The subject site is not considered “core koala habitat” (under SEPP 2020) as there is no evidence of breeding females at the site. Further, the subject site is not considered “potential koala habitat” (under SEPP 2020) because Schedule 2 koala feed trees did not constitute 15% of the trees in the upper or lower strata of vegetation within the subject site at the time of the July 2021 survey. As such, a Koala plan of management is not required for this proposal. Application of the Koala Habitat Assessment Tool contained within the EPBC Act referral guidelines for the vulnerable koala determined that the proposal site is not critical habitat for the Koala. Owing to the small area of impact, and low habitat score (3), it was determined that referral under the EPBC Act is not required.

This assessment covers the current form of the proposal. Any change to the scope of work may require re-assessment. If entry into the Biodiversity Offsets Scheme is triggered by a changed scope, additional field work completed according to the Biodiversity Assessment Method may be required.

CONTENTS

EXECUTIVE SUMMARY III

ABBREVIATIONS AND GLOSSARY 1

1 INTRODUCTION 4

1.1 Description of the proposal 4

1.2 Project Location and Context 5

1.3 Study area 9

2 STATUTORY AND PLANNING CONTEXT 10

2.1 Commonwealth legislation 10

2.1.1 Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act) 10

2.2 State Legislation 10

2.2.1 Environmental Planning and Assessment Act 1979 (EP&A Act) 10

2.2.2 Biodiversity Conservation Act 2016 (BC Act) 10

2.2.3 NSW Biosecurity Act 2015 11

2.2.4 Local Land Services Act 2013 11

2.2.5 Fisheries Management Act 1995 (FM Act) 11

2.2.6 Roads Act 1993 12

2.2.7 Clarence Valley Environmental Plan (2013) 12

2.2.8 State Environmental planning Policy (Infrastructure) 2007 (ISEPP) 13

2.2.9 SEPP (Koala Habitat Protection) 2020 and 2021 13

3 METHODS 14

3.1 Personnel 14

3.2 Background Research 15

3.3 Habitat assessment 17

3.4 Field survey 17

3.4.1 Vegetation surveys 18

3.4.2 Targeted fauna surveys 19

3.5 Limitations 19

4 EXISTING ENVIRONMENT 21

4.1 Bioregion 21

4.2 Mitchell Landscapes 21
4.3 Climate 24
4.4 Watercourses 24
4.5 Groundwater dependent ecosystems 25
5 RESULTS 28
5.1 Plant community types 28
5.2 Fauna observations 32
5.3 Threatened ecological communities 32
5.4 Threatened species and populations 32
5.4.1 Terrestrial threatened species 32
5.4.2 Aquatic ecological communities 34
5.4.3 Habitat trees and features 34
5.5 Wildlife connectivity corridors 34
5.6 SEPP (Koala Habitat Protection) 2020 and 2021 34
5.7 Matters of National Environmental Significance 35
6 IMPACT ASSESSMENT 36
6.1 Construction impacts 36
6.1.1 Removal of native vegetation 36
6.1.2 Impact to threatened flora and associated habitat 36
6.1.3 Impact to threatened fauna 36
6.1.4 Injury and mortality 37
6.2 Indirect/operational impacts 37
6.2.1 Wildlife connectivity and habitat fragmentation 37
6.2.2 Edge effects on adjacent native vegetation and habitat 37
6.2.3 Invasion and spread of weeds 37
6.2.4 Invasion and spread of pests 38
6.2.4 Invasion and spread of pathogens and disease 38
6.2.5 Noise, light and vibration 38
6.3 Cumulative impacts 38
6.4 Impact summary 39

7 AVOID, MINIMISE AND MITIGATE IMPACTS 40

7.1 Avoidance and minimisation 40

7.2 Mitigation measures 41

8 CONCLUSION 44

9 REFERENCES 46

APPENDIX A - DATABASE SEARCH RESULTS 49

APPENDIX B – FIELD SURVEY RESULTS 76

APPENDIX C – BC ACT HABITAT ASSESSMENT FOR THREATENED SPECIES AND COMMUNITIES PREDICTED TO OCCUR 79

APPENDIX D - BC ACT 5-PART TEST OF SIGNIFICANCE 178

APPENDIX E - EPBC ACT MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE 208

APPENDIX F – KEY THREATENING PROCESSES 227

APPENDIX G – KOALA HABITAT ASSESSMENT TOOL 231

FIGURES

Figure 1-1. Regional context for the proposal. Top right inset: the proposed main RRF, bottom right inset: the proposed weighbridge. 6
Figure 1-2: Proposed work showing main impact footprint of RRF. 7
Figure 1-3. Proposed work showing impact footprint of weighbridge. 8
Figure 4-1. NSW (Mitchell) Landscapes within the study area. 23
Figure 4-2. Climate Data for Grafton Airport weather station, showing minimum and maximum temperatures and mean monthly rainfall. 24
Figure 4-3. Watercourses, protected riparian lands, and key fish habitat within the study area. 26
Figure 4-4. Groundwater dependent ecosystems within the study area. 27
Figure 5-1. Predictive Plant Community Type (PCT) mapping for the study area. 28
Figure 5-2. Plant Community Types (PCTs) confirmed within the subject site at the time of the field survey in July 2021. Top right inset: proposed weighbridge. 30
Figure 5-3. Updated aerial imagery showing no remnant vegetation within the subject site. 31

TABLES

Table 1-1. Regional context for the project. 5
Table 3-1. Summary of OzArk personnel qualifications. 15
Table 3-2. Presence and/or proximity of environmental considerations. 16
Table 4-1. Description of the subregion of the subject site (OEH, 2018b). 21
Table 5-1. Plant community types (PCTs) confirmed within the subject site in July 2021. 29
Table 5-2. BC Act and EPBC Act listed threatened species assessed as potentially occurring on the subject site. 32
Table 5-3. Impacts to Matters of National Environmental Significance. 35
Table 6-1. List of significant weeds recorded in the subject site. 37
Table 7-1. Mitigation measures and environmental safeguards. 41

ABBREVIATIONS AND GLOSSARY

Glossary

Term	Description

Areas of outstanding biodiversity	An area of outstanding biodiversity value is:
	• an area important at a State, national or global scale, and
	• an area that makes a significant contribution to the persistence of at least one of the following:
	  ○ multiple species or at least one threatened species or ecological community
	  ○ irreplaceable biological distinctiveness
	  ○ ecological processes or ecological integrity
	  ○ outstanding ecological value for education or scientific research.
	
	The declaration of an area may relate, but is not limited, to protecting threatened species or ecological communities, connectivity, climate refuges and migratory species (BC Act).

Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Refer to Clause 228(2) of the EP&A Regulation 2000 for cumulative impact assessment requirements.
Direct impacts	Are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat (OEH 2018).
Habitat	The area occupied or used, including areas periodically or occasionally occupied or used, by any threatened species or ecological community and includes all the different aspects (both biotic and abiotic) used by species during the different stages of their life cycle (OEH 2018).
Important population	Is a population that is necessary for a species' long-term survival and recovery; this may include populations identified as such in recovery plans, and/or that are: • key source populations either for breeding or dispersal • populations that are necessary for maintaining genetic diversity, and/or • populations that are near the limit of the species range (DE 2013).
Indirect impact	Occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas (OEH 2018).
Invasive species	Is an introduced species, including an introduced (translocated) native species, which out-competes native species for space and resources, or which is a predator of native species. Introducing an invasive species into an area may result in that species becoming established. An invasive species may harm listed threatened species or ecological communities by direct competition, modification of habitat or predation.

Local population (in regard to a threatened species)	Comprises those individuals known or likely to occur in the study area, as well as any individuals occurring in adjoining areas (contiguous or otherwise) that are known or likely to utilise habitats in the study area (DECC 2007).
Mitchell landscape	Landscapes with relatively homogeneous geomorphology, soils and broad vegetation types, mapped at a scale of 1:250,000 (OEH 2018).
Mitigation	Action to reduce the severity of an impact.
Mitigation measure	Any measure that prevents, reduce or controls adverse environmental effects of a project.
Proposal	Is considered to include 'all activities likely to be undertaken within the subject site to achieve the objective of the proposed development' (DECC 2007).
Study area	Means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly. The study area should extend as far as is necessary to take all potential impacts into account (OEH 2018).
Study region	Is considered to 'include the lands that surround the subject site for a distance of 10 km' (DECC 2007). The study region has been used to search information sources to establish the landscape context of the subject site.
Subject site	Means the area directly affected by the proposal. The subject site includes the footprint of the proposal and any ancillary works, facilities, accesses or hazard reduction zones that support the construction or operation of the development or activity (OEH 2018).
Target species	A species that is the focus of a study or intended beneficiary of a conservation action or connectivity measure.

Abbreviations used

Term	Description
^{0}C	Degrees Celsius
AOBV	Areas of Outstanding Biodiversity Value
ASL	Above Sea Level
BAM	Biodiversity Assessment Method
BAR	Biodiversity Assessment Report
BC Act	NSW *Biodiversity Conservation Act 2016*
BOS	Biodiversity Offset Scheme
BVT	Biometric Vegetation Type
CAMBA	China-Australia Migratory Bird Agreement
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
DAWE	Commonwealth Department of Agriculture, Water and the Environment
DoE	Department of Environment
DPI	NSW Department of Primary Industries
DPIE	NSW Department of Planning, Industry and Environment
EEC	Endangered ecological community
EIS	Environmental Impact Statement
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
ESCP	Erosion and Sediment Control Plan

FM Act	NSW *Fisheries Management Act 1994*
GWDEs	Groundwater dependent ecosystems
GPS	Global Positioning System[1]
ha	Hectare
IBRA	Interim Biogeographically Regionalisation of Australia. Each region is a land area made up of a group of interacting ecosystems repeated in similar form across the landscape.
JAMBA	Japan-Australia Migratory Bird Agreement
KFH	Key Fish Habitat
KTP	Key Threatening Process
LEP	Local Environmental Plan
LGA	Local Government Area
mm/cm/m/m^2/km	Millimetres, centimetres, metres, square metres, kilometres
MNES	Matters of National Environmental Significance
NPW Act	NSW *National Parks and Wildlife Act 1974*
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PCT	Plant Community Type
PMST	Protected Matters Search Tool
RAMSAR	Convention on Wetlands of International Importance
REF	Review of Environmental Factors
ROKAMBA	Republic of Korea-Australia Migratory Bird Agreement
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
TECs	Threatened Ecological Communities
TSPD	Threatened Species Profile Database
VIS	Vegetation information system
WoNS	Weeds of National Significance

1 INTRODUCTION

1.1 DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by InSitu Advisory Pty Ltd, on behalf of State Road Quarry Products Pty Ltd (SRWP; the proponent) to complete a Biodiversity Assessment Report (BAR) at Thorley Sands and Gravel Quarry which may have the potential to be impacted by the proposed Resource Recovery Facility (RRF; the proposal). The proposal is located at 255 Orchard Road, Mountain View, NSW (**Figure 1-1**) in the Clarence Valley Local Government Area (LGA).

The proponent is seeking approval for the construction and operation of a construction and demolition (C&D) RRF at the existing Thorley Sands and Gravel Quarry to run alongside the existing quarrying operation. The existing quarry operations and RRF recycling operations will operate independently of each other, but will share some common existing infrastructure.

The proposal intends to have an importation and processing target of up to 99,00 tonnes per annum of construction and demolition waste within an existing quarried footprint. **Figure 1-2** shows the proposed impact footprint of the RRF.

As well as the RRF, the proponent is proposing the construction of an inbound weighbridge. This will be constructed within an approximate 100 metres (m) x 20 m study area (**Figure 1-3**).

1.2 PROJECT LOCATION AND CONTEXT

The proposal is located north of Grafton, at 255 Orchard Road, Mountain View, NSW (**Figure 1-1**) in the Clarence Valley Local Government Area (LGA).

Table 1-1. Regional context for the project.

Criteria	Value
Interim Biogeographic Regionalisation for Australia (IBRA Region)	South-Eastern Queensland Bioregion
Interim Biogeographic Regionalisation for Australia Sub-region (IBRA Sub-Region)	Clarence Lowlands and Clarence Sandstones subregions
State	NSW
Local Government Area	Clarence Valley Council
Nearest town	➢ Junction Hill
Nearest park, state forest or reserve	➢ Corymbia State Conservation Area ➢ Fortis Creek National Park
Mitchell Landscapes	➢ Richmond Range ➢ Grafton – Whipporie Basin
Nearest waterway (Name, Type)	➢ Clarence River
Surrounding land use	➢ Mining ➢ Grazing and Native vegetation ➢ Nature Conservation
Surrounding land zone	➢ RU2 – Rural Landscape (subject site) ➢ E1 – National Parks and Nature Reserves (study area)

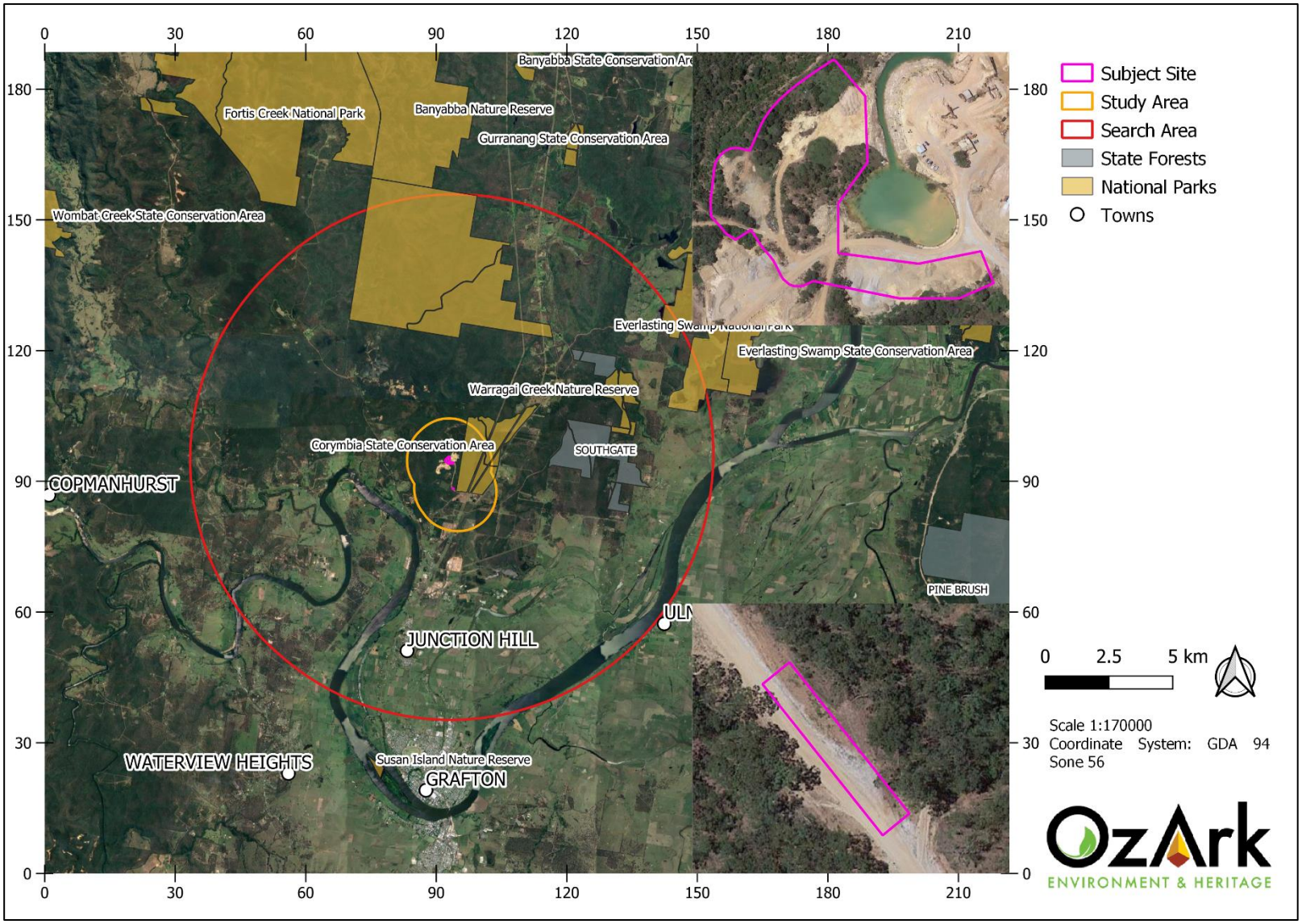

Figure 1-1. Regional context for the proposal. Top right inset: the proposed main RRF, bottom right inset: the proposed weighbridge.

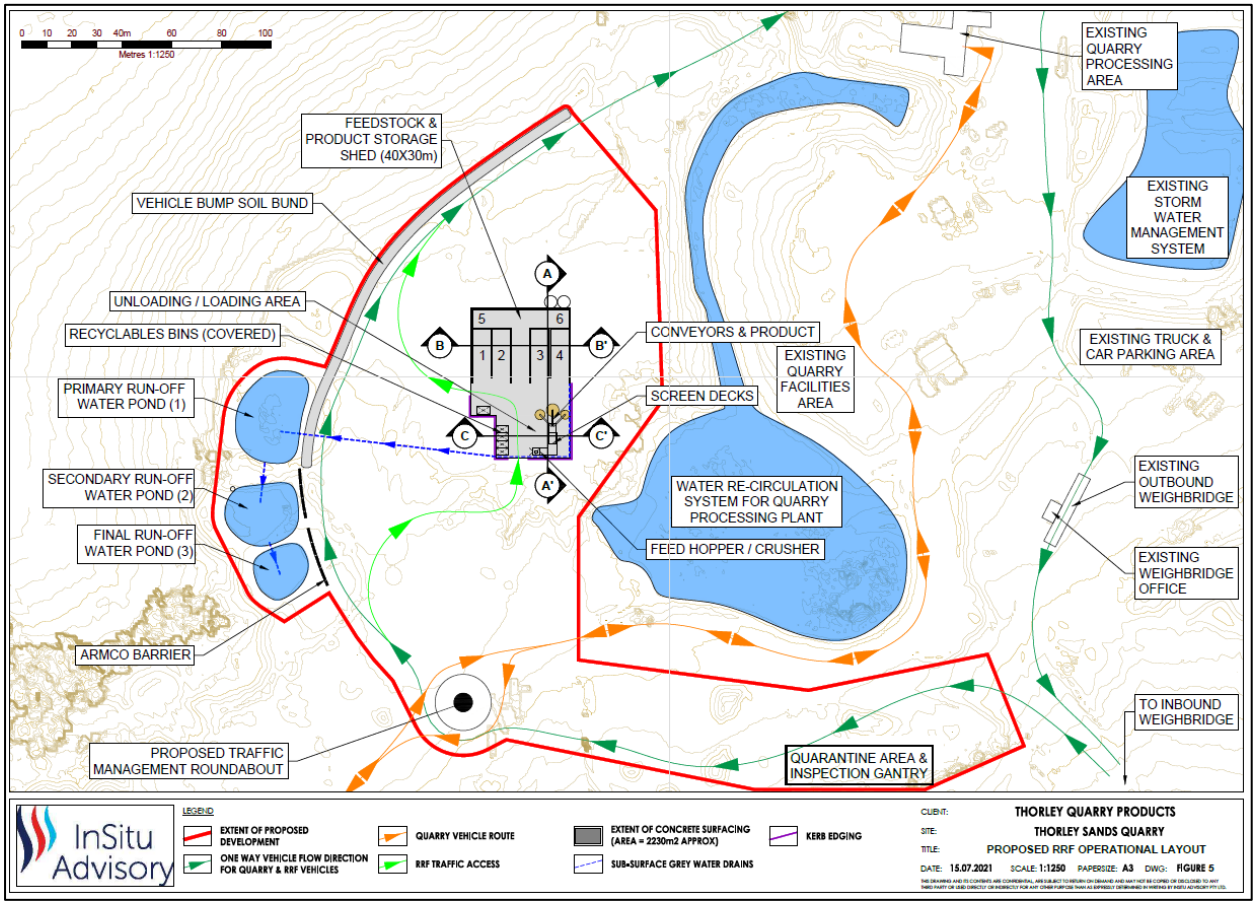

Figure 1-2: Proposed work showing main impact footprint of RRF.

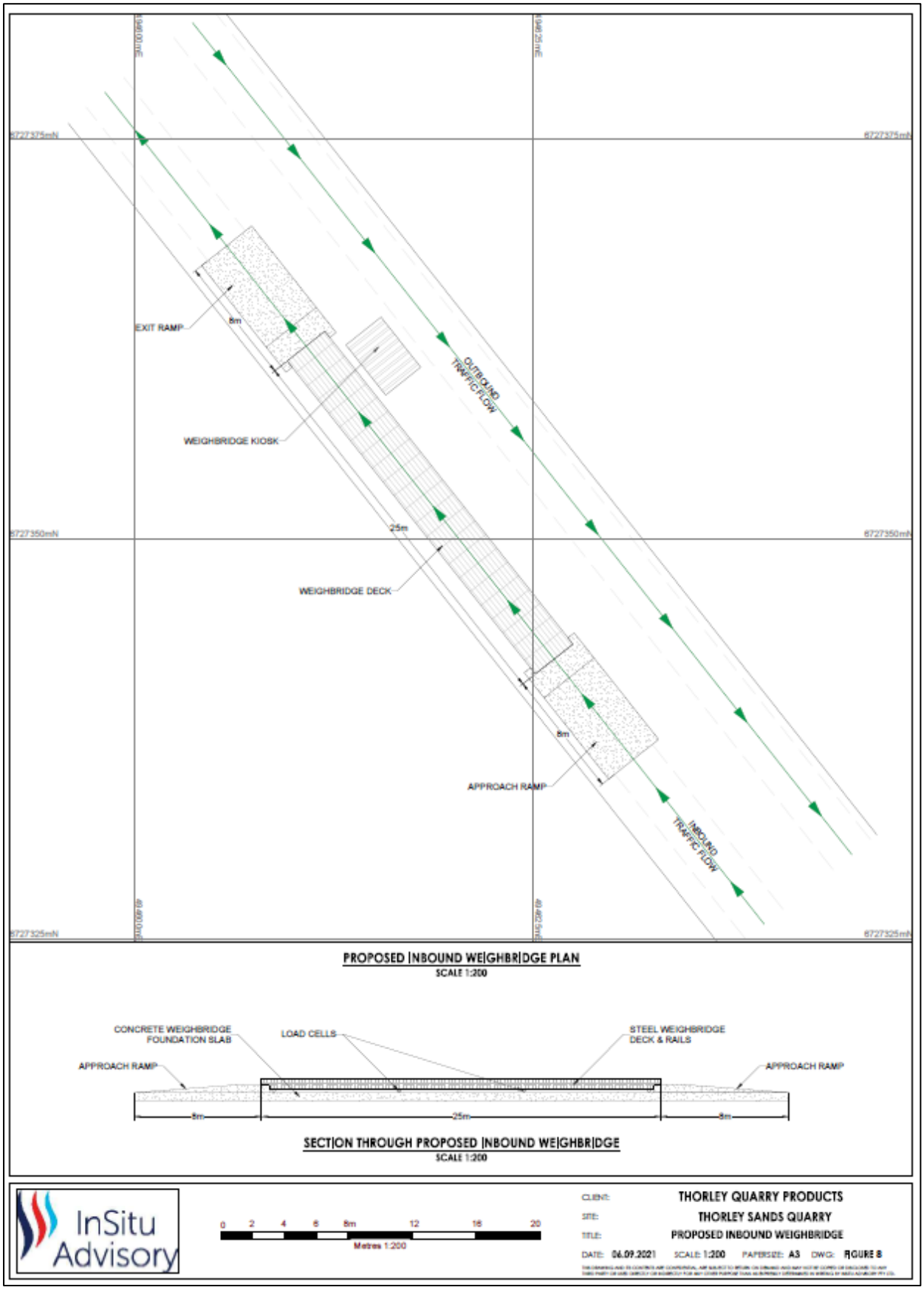

Figure 1-3. Proposed work showing impact footprint of weighbridge.

1.3 STUDY AREA

This report uses the following terms to describe and contextualise the development location:

Search area	the area within a 10 km radius of the subject site. This 10 km buffer has been used to search information sources to establish the landscape context of the subject site.
Study area	the area within a 1,500 m radius of the subject site. Native vegetation has been mapped within this 1,500 m buffer to provide some context regarding the connectivity and cover of native vegetation in the area affected by the proposal, and to inform the impact assessment of the proposal.
Subject site	the footprint of the proposal and the area directly affected by the development activities.

2 STATUTORY AND PLANNING CONTEXT

The environmental assessment and determination of the proposal has been undertaken in accordance with Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The BAR has been prepared in accordance with Clause 228 of the EP&A Regulation (2000).

2.1 COMMONWEALTH LEGISLATION

2.1.1 Environment Protection & Biodiversity Conservation Act 1999 (EPBC Act)

To assist with nationally listed matters assessments, the Matters of National Environmental Significance, the Significant impact guidelines 1.1. Environment Protection and Biodiversity Conservation Act 1999 (DoE 2013) are followed.

Birds listed in the following international agreements are classified as migratory birds under the EPBC Act.

- Japan-Australia Migratory Bird Agreement (JAMBA).
- China-Australia Migratory Bird Agreement (CAMBA).
- Republic of Korea-Australia Migratory Bird Agreement (ROKAMBA).

Matters which fall under this legislation are addressed in **Section 5.7** and **Appendix E**.

2.2 STATE LEGISLATION

2.2.1 Environmental Planning and Assessment Act 1979 (EP&A Act)

The EP&A Act is the principal planning legislation for NSW. It provides a framework for the overall environmental planning and assessment of proposals.

Part 5 of this Act requires that a determination be made as to whether a proposed action is likely to significantly affect threatened species or ecological communities, or their habitats listed on Schedule 1 and 2 of the BC Act. Where found, the assessment criteria under Part 7 Section 7.3 of the BC Act (the 'Assessment of Significance') will be drawn upon to determine whether there would be a significant effect on these species and hence whether a Species Impact Statement (or Biodiversity Development Assessment Report [BDAR] should the proponent elect that option) is required.

2.2.2 Biodiversity Conservation Act 2016 (BC Act)

The BC Act relates to the terrestrial environment and includes threatened species, ecological communities, key threatening processes and other protected animals and plants.

Section 7.3 of the BC Act contains a five-part test of significance for determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

Where a significant impact is likely to occur, the proponent must either opt int the BOS and prepare a BDAR or prepare a SIS for each significantly impacted BC listed entity.

BC Act listed species and communities are addressed in **Appendices C and D**.

2.2.3 NSW Biosecurity Act 2015

The Biosecurity Act aims to manage biosecurity risks from animal and plant pests and diseases, weeds and contaminants in NSW. The Biosecurity Act imposes a general biosecurity duty to ensure that, so far as is reasonably practicable, any biosecurity risk is prevented, eliminated or minimised.

The proponent is required to manage the presence of weeds in the study area.

2.2.4 Local Land Services Act 2013

The objects of the Act include ensuring “the proper management of natural resources in the social, economic and environmental interests of the State, consistently with the principles of ecologically sustainable development.” The Act regulates the clearing of native vegetation, however section 60(O)(b)(ii) excludes the need for consent under the LLS Act where the clearing is an activity carried out by a determining authority within the meaning of Part 5 of the EP&A Act 1979.

2.2.5 Fisheries Management Act 1995 (FM Act)

Part 7A of the FM Act along with schedules within the act, list threatened aquatic and marine species, populations and ecological communities and key threatening processes which must be considered as part of obligations under Section 5.5 of the EP&A Act.

Section 199 of the FM Act states a public authority must seek a permit from NSW Department of Primary Industries – Fisheries (DPI – Fisheries) for dredging or reclamation in a waterway. Dredging work means any work that involves excavating water land. Reclamation work means any work that involves depositing any material on water land.

Under section 198A of the FM Act:

"water land" means land submerged by water:

(a) whether permanently or intermittently, or

(b) whether forming an artificial or natural body of water,

and includes wetlands and any other land prescribed by the regulations as water land to which this Division applies.

Refer to **Section 4.4** for matters relevant to watercourses and the FM Act.

2.2.6 Roads Act 1993

Section 88 of the Roads Act states that a roads authority may, despite any other Act or law to the contrary, remove or lop any tree or other vegetation that is on or overhanging a public road if, in its opinion, it is necessary to do so for the purposes of carrying out road work or removing a traffic hazard.

2.2.7 Clarence Valley Environmental Plan (2013)

A Local Environmental Plan (LEP) is a legal document prepared by Council and approved by the State Government to regulate land use and development. LEPs guide planning decisions for local governments. The plan allows Council to regulate the ways in which all land both private and public may be used and protected through zoning and development controls.

The Clarence Valley LEP (2011) aims to:

(1) make local environmental planning provisions for land in Clarence Valley in accordance with the relevant standard environmental planning instrument under section 3.20 of the Act.

(2) The particular aims of this Plan are as follows—

(aa) to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts,

(a) to encourage and enable the sustainable use, development and management of natural and man-made resources, including agricultural land resources and productive rural lands,

(b) to limit dispersed rural settlement,

(c) to provide a mix of housing, including affordable housing, to meet the needs of the community,

(d) to protect areas of high ecological, scientific, cultural or aesthetic value,

(e) to provide adequate access and services to development carried out in accordance with this Plan,

(f) to maintain the character of villages and towns,

(g) to conserve items and areas of environmental and cultural heritage,

(h) to provide a hierarchy of business/retail centres,

(i) to identify land for industrial and business development that provides opportunities for employment,

(j) to protect key infrastructure and ensure adequate integration of infrastructure and development,

(k) to maintain or improve the natural conservation and scenic amenity values of the land, including significant habitat areas and wildlife corridors.

2.2.8 State Environmental planning Policy (Infrastructure) 2007 (ISEPP)

The aim of this Policy is to facilitate the effective delivery of infrastructure across NSW by identifying whether certain types of infrastructure require consent, can be carried out without consent or are exempt development.

Pursuant to clause 94 of the SEPP, development for the purpose of a road or road infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land. The proposed works are therefore assessed under Part 5 of the EP&A Act.

2.2.9 SEPP (Koala Habitat Protection) 2020 and 2021

The *SEPP (Koala Habitat Protection)* aims to encourage the 'proper conservation and management of areas of natural vegetation that provide habitat for Koalas to ensure a permanent free-living population over their present range and reverse the current trend of Koala population decline'. *SEPP (Koala Habitat Protection) 2020* commenced on 30th November 2020 and SEPP 2021 commenced on 17 March 2021. Currently both *SEPP 2020* and *SEPP 202*1 apply within NSW, this is an interim measure until all codes are developed under *SEPP 2021*. The SEPP 2020 applies to RU1, RU2 and RU3 zoned land, excluding 9 LGAs within the Sydney basin. The SEPP 2021 applies to all other zoned land within the additional 74 LGAs. In the current case SEPP 2020 applies as it is zoned RU2 in the Clarence Valley.

Koala habitat was assessed under the referral guidelines contained in the Commonwealth EPBC Act through use of the Koala Habitat Assessment tool (**Appendix G**).

3 METHODS

The ecological assessment was carried out in three stages:

1. Desktop searches and review of ecological databases and information to identify threatened species, populations or ecological communities listed in the NSW Biodiversity Conservation Act 2016, Fisheries Management Act 1994 or the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 that have the potential to occur in the study area.

2. Field survey of the subject site for the purposes of:

    - collating lists of those plants present, these being used to assist with the identification of the site' vegetation communities
    - determining the habitat structures present
    - determining habitat availability for fauna species recorded or expected to occur.

    - Where a threatened species or community or habitat feature is identified, document the nature and extent of the protected matter and describe its 'viable local population' or occurrence. Searches for fauna species were conducted by overturning logs and rocks, searching in habitat features such as culverts and traces and signs of fauna were recorded such as scat and tracks.

3. Preparation of a written BAR that describes the impacts of the proposed activity on native vegetation and threatened species, populations and ecological communities, and provides recommendations to avoid, minimise and mitigate these impacts.

3.1 PERSONNEL

OzArk Environment and Heritage Pty Ltd (OzArk) operates under NSW Scientific Research License 101908, and NSW Department of Primary Industries (DPI) Accreditation of a corporation as an animal research establishment Ref No. AW2017/012.

The field survey was completed by Senior Ecologist Dr Crystal Graham on the 12th of July 2021. For reference, the weather conditions experienced during the site inspection were cool, clear and fine. Reporting components were completed by Ecologist Ian Griffth with quality control provided by Senior Ecologist Crystal Graham. Key details of personnel are provided in **Table 3-1**.

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Table 3-1. Summary of OzArk personnel qualifications.

Name	Position	CV Details
Ian Griffith	Ecologist	• Honours in Genetics – La Trobe University • Bachelor of Science – La Trobe University • First Aid Training • WH&S induction Training for Construction Work
Dr Crystal Graham	Senior Ecologist	• Postdoctoral Fellow – Smithsonian Tropical Research Institute • Doctor of Philosophy (Biology) – University of Sydney • Honours in Biology – University of Sydney • Bachelor of Advanced Science – University of Sydney • 4WD Training • First Aid Training • WH&S Induction Training for Construction Work

3.2 BACKGROUND RESEARCH

Preliminary assessments drew on local experience, previous reporting and information held on government databases and archives. Results of database searches were used to assist in identifying distributions, suitable habitats and known records of threatened species to increase the effectiveness of field investigations. Information sources reviewed included the following:

- NSW Government online aerial imagery (www.maps.six.nsw.gov.au).
- Critical habitat register, available on the DPIE website at: http://www.environment.nsw.gov.au/criticalhabitat/CriticalHabitatProtectionByDoctype.htm
- NSW Government Biodiversity Values Map which identifies land with high biodiversity value, as defined by the Biodiversity Conservation Regulation 2017 (https://www.lmbc.nsw.gov.au).
- Flora and fauna records and profiles contained in the NSW Threatened Species Database, EPBC Protected Matters Search Tool and DPI threatened fish distribution maps.
- BioNet (www.bionet.nsw.gov.au) Wildlife Atlas and Plant Community Type (VIS) databases.
- Flora of NSW (Harden 1991-2002) and Flora NSW Online (www.plantnet.rbgsyd.nsw.gov.au).
- Regional Scale State Vegetation Map: Northern Rivers CMA; VIS_ID 524 (OEH, 2016)

Database searches were undertaken before the field assessment to determine the predicted species and also those previously recorded within 10 km of the subject site. The results of these searches led to the identification of key species for field survey effort and targeted searches.

Results of the database searches are provided in **Appendix A**.

A series of other background searches were performed to comply with legal standards (**Table 3-2**).

Table 3-2. Presence and/or proximity of environmental considerations.

Environmental Considerations	In the study area?
Land identified on the Biodiversity Values Map under the NSW *BC Act 2016*	Yes, but not in the subject site (**Appendix A**)
Area of Outstanding Biodiversity Value (AOBV) under the NSW *BC Act 2016*	No
Critical habitat nationally?	No
An area reserved or dedicated under the *National Parks and Wildlife Act 1974*?	Yes, but not in the subject site (**Figure 1-1**)
Is the proposal located within land reserved or dedicated within the meaning of the *Crown Lands Act 1989* for preservation of other environmental protection purposes?	No
A World Heritage Area?	No
Environmental Protection Zones in environmental planning instruments?	No
Lands protected under SEPP (Koala Habitat Protection) 2020	Yes
Lands protected under SEPP (Koala Habitat Protection) 2021	No
Lands protected under SEPP Sydney Drinking Water Catchment?	No
Land identified as wilderness under the *Wilderness Act 1987* or declared as wilder-ness under the *National Parks and Wildlife Act 1974?*	No
Aquatic reserves dedicated under the *Fisheries Management Act 1994*?	No
Aquatic Threatened Ecological Community?	No
Wetland areas dedicated under the Ramsar Wetlands Convention?	No
Land subject to a conservation agreement under the *National Parks and Wildlife Act 1974*?	No
Land identified as State Forest under the *Forestry Act 1916*?	No
Acid sulphate area?	No
Protected riparian habitat?	Yes, but not in the subject site (**Figure 4-2**)
Mapped Key Fish Habitat?	Yes, but not in the subject site (**Figure 4-2**)

3.3 HABITAT ASSESSMENT

The results of the desktop review and the field assessment were collated and reviewed in the context of local ecological knowledge to determine the likelihood of occurrence of threatened species and ecological communities, and potential impacts of the proposal (**Appendix C**). For instance, some threatened species may be predicted to occur locally but, on assessment of the site, key habitat elements or conditions are not present, in which case the species is assessed as not being present or impacted.

The likelihood of occurrence of threatened species, populations or ecological communities was categorised as follows:

- 'Known' – the species was observed or has been previously recorded on the site.
- 'High' – a medium to high probability that a species uses the site, based on nearby records and suitable habitat being present.
- 'Moderate' – suitable habitat for a species occurs on the site, but the species has not been observed or previously recorded at the site.
- 'Low' – a very low likelihood that the species uses the site, based on lack of the preferred type and size of habitat.
- 'Absent' – habitat on-site and in the vicinity is unsuitable for the species.

The species known or considered to have a moderate to high likelihood of occurring at the site, were then considered as to whether the extent and type of development would be likely to impact on them. Tests of significance were then completed for these species and ecological communities in accordance with the BC Act (**Appendix D**) and/or the assessment of significance under the EPBC Act **(Appendix E**), and the relevant guidelines for these assessments.

3.4 FIELD SURVEY

The field survey was completed on the 12th of July, 2021. The objectives of the field survey were to:

- Identify native species and vegetation communities present.
- Describe the quality and value of the vegetation and the flora and fauna habitat at the development site.
- Determine if species, populations or ecological communities listed as threatened under the BC Act or EPBC Act are/may be present.
- Determine the significance of impact to any threatened entities present or likely to be present.

3.4.1 Vegetation surveys

Vegetation communities were identified in accordance with the online NSW Master Plant Community Type Classification (OEH, 2018a), which is the current state-wide vegetation classification system for Plant Community Types (PCT). This classification system is used for vegetation mapping, development assessment and site planning purposes. It describes over 1,500 PCTs across the state, and groups the vegetation communities into vegetation Class and Formation / Sub-formation as per Keith (2004).

In this study PCTs were identified on the basis of the following inputs:

- Regional Scale State Vegetation Map: Northern Rivers CMA; VIS_ID 524 (OEH, 2016), which provides predictive mapping of PCTs in and around the subject site. This mapping is indicative only. It is not necessarily accurate at a fine scale for the purposes of the current study.
- Professional ecological knowledge about locally occurring vegetation types and landscape, soil and topographic patterns, including transitions from one community to another and potential for intergrades between plant communities.
- Field survey results confirming the flora species present, vegetation structure, landscape position and soil type at the subject site and the extent and condition of native vegetation.
- The BioNet Vegetation Classification database was used to identify the candidate vegetation communities likely to be present based on the site conditions (flora species present, vegetation structure, bioregion, and landscape position and soil type) and the relevant published PCT descriptions.

If any of the PCTs were identified as having potential to be part of a Threatened Ecological Community (TEC), the relevant identification guidelines (NSW Scientific Committee listing criteria and Commonwealth identification guides) were consulted to determine the status of the vegetation community present on the subject site. These guidelines provide the identification criteria used to positively identify the community as being part of the TEC. The criteria include location, species present, overstorey species, weed cover, number and type of native species including whether certain ‘important’ native species are present.

Plant identification followed nomenclature in the Royal Botanic Gardens PlantNet online database Royal Botanic Gardens and Domain Trust, 2018).

When surveying the assessment area, the Random Meander Method (Cropper 1993) was employed. This method involves conducting foot traverses through those sites that require investigation, during which time notes are made on the structure and floristic composition of the native vegetation present, as well as available habitat for threatened species.

3.4.2 Targeted fauna surveys

The subject site was searched for fauna using a meander method while undertaking floristic and habitat surveys. All habitat trees (i.e., hollow-bearing trees or trees containing nests) were GPS tagged. The size, number of hollows and/or type of nest were also recorded for each tree. Avian species were recorded as either present on the site or as flying over (and not using) the subject site. Potential habitat such as rocks, logs, loose bark and coarse woody debris was examined for cryptic species. Areas of suitable substrate were searched for animal tracks. Other evidence of fauna presence on the subject site, such as scats, feathers and sloughed skins were also recorded. Herpetological searches were conducted by overturning logs and rocks while traversing the site. Any culverts, crevices and structures were examined for nocturnal roosting fauna such as microbats.

Considering the scope of works proposed, combined with the condition of the fauna habitats observed during the site inspection, no targeted surveys such as live trapping, nocturnal searches, deployment of bat echolocation detectors and so forth, were carried out. No aquatic surveys were undertaken.

3.5 LIMITATIONS

This study is based upon the species data available at the time of the study, and the environmental conditions, season, and time constraints imposed by the project for the field survey. Specific limitations on this study include the following:

- The field survey was completed over one day in July 2021, which may not be the best time to survey some fauna species. Therefore, the fauna list included is not considered conclusive as a greater diversity of species are likely to use the site.
- Fauna trapping and nocturnal spotlighting were not undertaken for the current assessment.
- Microbat ultrasonic call capture and analysis was not undertaken.
- Many of the threatened plants predicted to occur may not have been detectable during the survey due to environmental or temporal constraints. As such non detection cannot be considered as actual absence.
- The field survey was undertaken in or very near to the subject site and plant community type extents outside of the proposal site were not confirmed.

To overcome some of these limitations, a ‘precautionary approach’ for species presence has been adopted where required. If suitable habitat for a particular threatened species is present on

the site or known to occur in the study area, then the species is assumed to also be present and the impact assessment is completed on that basis.

The above-mentioned constraints were also considered when preparing the recommendations of avoiding, minimising and mitigating potential impacts.

4 EXISTING ENVIRONMENT

4.1 BIOREGION

The study area falls within the Clarence Lowlands Subregion of the South Eastern Queensland Bioregion as per the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway & Cresswell, 1995). The subregion is characterised by geology, landforms, soil types and vegetation as described in **Table 4-1**.

Table 4-1. Description of the subregion of the subject site (OEH, 2018b).

Bioregion	Subregion	Geology	Landform	Soils	Vegetation
South Eastern Queensland	Clarence Lowlands	Jurassic and Cretaceous lithic, quartz sandstones, claystones and shales exposed in valleys. There are extensive areas of quaternary alluvials and coastal barrier sands in addition to tertiary volcanics of the Mount Warning complex	Low stepped hills and plains, with hillier areas in west and south. Beach, dune and lagoon barrier systems and estuarine fills along the main streams.	Wide variability in soil type. These include Clarence Sodic Soils around Grafton (Kurosols), Alstonville Plateau (Ferrosols), Casino Alluvials along the Richmond Valley (Vertosols), and North Coast Acid Sulfate Soils (Hydrosols) mainly in the lower parts of the Clarence and Richmond floodplain.	Dry sclerophyll forests and woodlands of spotted gum (*Corymbia maculate*), grey gum (*Eucalyptus punctata*), blackbutt, (*E. pilularis*), red bloodwood (*Corymbia gummifera*) and white mahogany (*Eucalyptus acmenoides*) in the hills. Numerous wetlands.

4.2 MITCHELL LANDSCAPES

The landscapes of NSW, termed Mitchell Landscapes, were mapped in 2002 to provide a framework for reporting reserve establishment and for determining over-cleared landscapes (Mitchell, 2002). These landscapes broadly describe areas of similar topography, geology, soils and vegetation. The Richmond Range and Grafton – Whiporie Basin occur within the subject site and wider study area (**Figure 4-1**). The characteristics of these landscapes are described below.

Richmond Range

Part of the Great Dividing Range and dissected plateau on the western side of the Clarence-Moreton Basin on middle Jurassic quartz sandstone and conglomerate. Red-brown and yellow texture-contrast soils on slopes and uniform clay loams along valleys with high organic content. General elevation 150 to 670m, local relief 250m. Discrete blocks of subtropical closed forest of; white booyong, red carabeen, rose marara, pigeonberry ash, myrtle ebony, incense cedar, teak, long jack, white cedar, yellow carabeen and emergent Moreton Bay fig, strangling fig, giant stinging tree and hoop pine. Drier sites and less fertile soils support dry closed forest communities

or hardwood forests of Sydney blue gum, tallow wood, turpentine, brush box with subtropical closed forest species in the understorey.

Grafton – Whiporie Basin

Extensive low undulating hills and large drainage basins on sub-horizontal upper Jurassic interbedded quartz sandstone, lithic sandstone, clayey siltstone and coal measures. Often exhibits ironstone concretions in the weathering profile. Yellow and brown texture-contrast soils on slopes and dark grey clays along valley floor streamlines. General elevation 50 to 150m. Dry hardwood forest of spotted gum, blackbutt, large-fruited blackbutt, with grasses and burrawang.

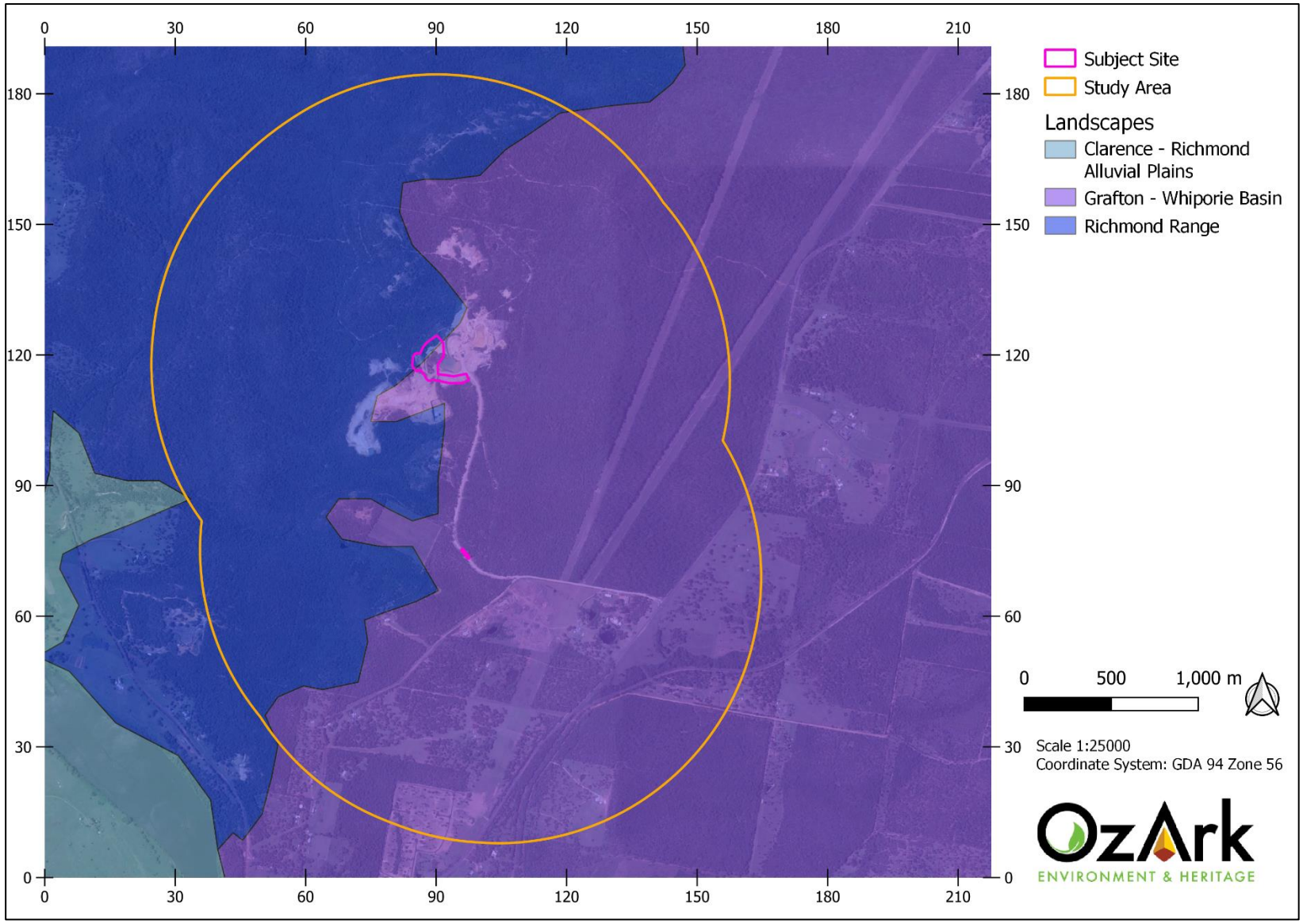

Figure 4-1. NSW (Mitchell) Landscapes within the study area.

4.3 CLIMATE

The nearest weather station is the Grafton Airport weather station (station 058161), which is approximately 20 km from the subject site. Records commenced at this station in 1988.

The area experiences a humid subtropical climate, with the highest average maximum temperature experienced in January, with a maximum temperature of 30.1°C and average minimum temperature of 19.1°C. The coldest temperatures being recorded in July, having an average minimum of 3.3°C and an average maximum of 20.6 °C (**Figure 4-2**).

The average annual rainfall at this station is 1112.8mm (1992- 2021). Rainfall occurs primarily in the warmer months (**Figure 4-2**), with March recording the highest average rainfall of 174.4 mm, followed by February (168.0 mm) and January (127.1 mm). The lowest monthly rainfall occurs in July (29.6 mm), followed by September (43.0 mm) and August (56.5 mm).

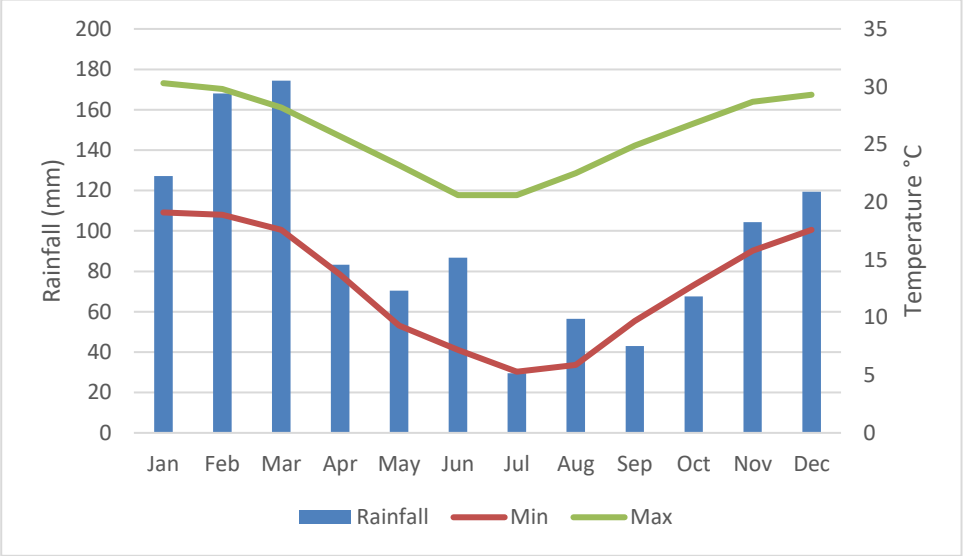

Figure 4-2. Climate Data for Grafton Airport weather station, showing minimum and maximum temperatures and mean monthly rainfall.

The weather during the field survey (12th July 2021) was warm and fine; the maximum temperature recorded was 21.1°C and the minimum was 5.0°C on the day of the survey. The most recently recorded rainfall was 4.2 mm that fell on the 10th July 2021.

4.4 WATERCOURSES

No watercourses occur within the subject site. Within the wider study area, 64 watercourses occur (**Figure 4-3**), including:

- Fifty 1st Strahler order streams (all minor non-perennial)
- Ten 2nd Strahler order streams (all minor non-perennial)
- Three 3rd Strahler order streams (all minor non-perennial)

- One 4th Strahler order minor perennial stream (Double Swamp Creek)

Areas of watercourses within the wider study area (not the subject site) have been identified as Protected Riparian Land or Key Fish Habitat (KFH) by the Department of Primary Industry – Fisheries (**Figure 4-3**). The proposed development should not impact the surrounding watercourses. Mitigation measures to reduce the proposal's impact on the watercourses have been provided in **Section 7.2**.

4.5 GROUNDWATER DEPENDENT ECOSYSTEMS

Groundwater plays an important ecological role in directly and indirectly supporting terrestrial and aquatic ecosystems. Groundwater sustains terrestrial and aquatic ecosystems by supporting vegetation and providing discharge to channels, lacustrine and palustrine wetlands, and both the estuarine and marine environment. Aquifer ecosystems are inherently groundwater dependent (QLD Department of Environment and Heritage Protection, 2017).

The Bureau of Meteorology Atlas of Groundwater Dependant Ecosystems (GDEs) identified areas low potential GDEs within the subject site and areas of moderate and high potential GDEs interaction within the study area (

Figure 4-4; Bureau of Meteorology, 2017).

The proposal does not include the extraction of groundwater. Mitigation measures to reduce the proposals impact on Groundwater Dependent Ecosystems have been provided in **Section 7.2.**

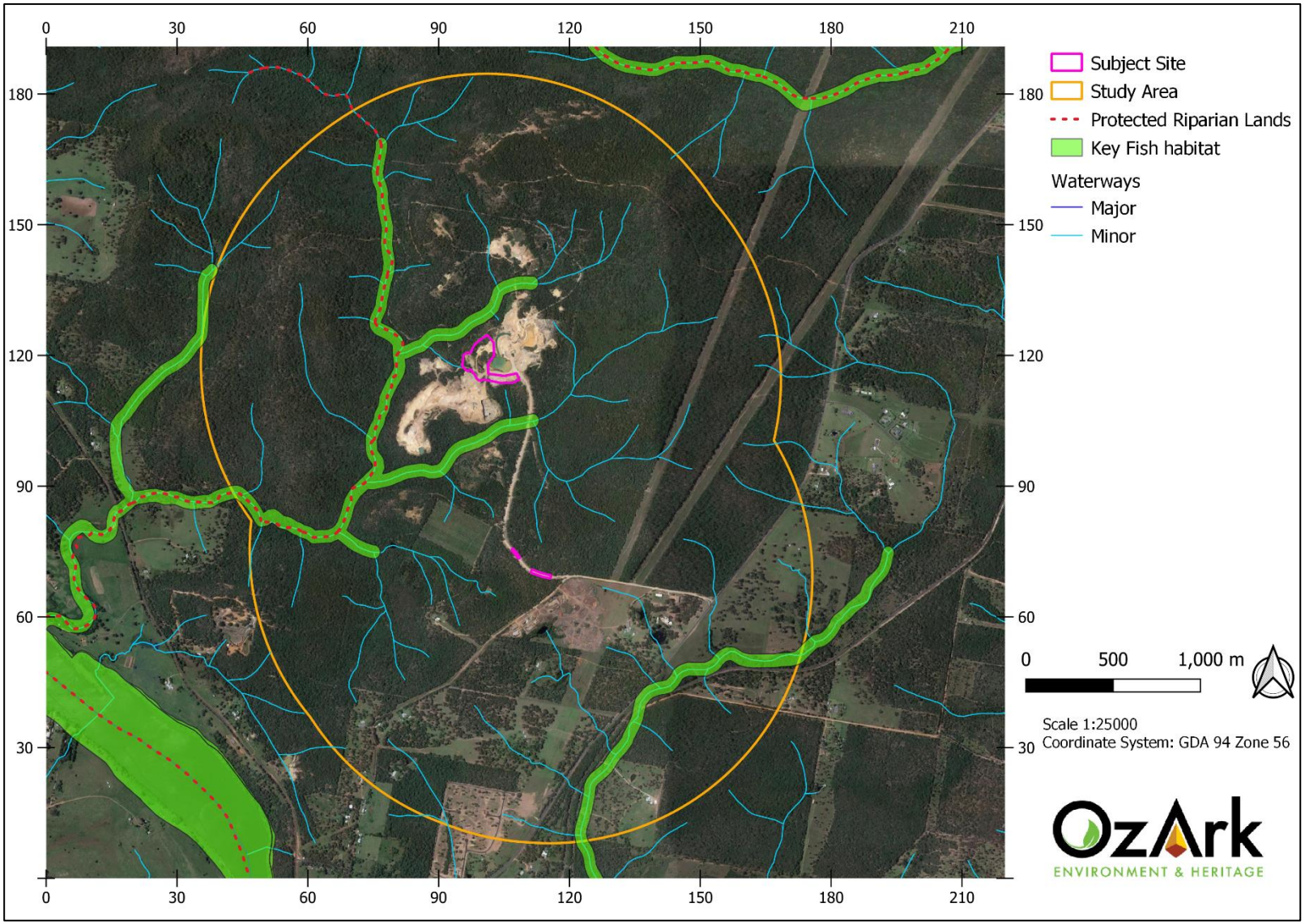

Figure 4-3. Watercourses, protected riparian lands, and key fish habitat within the study area.

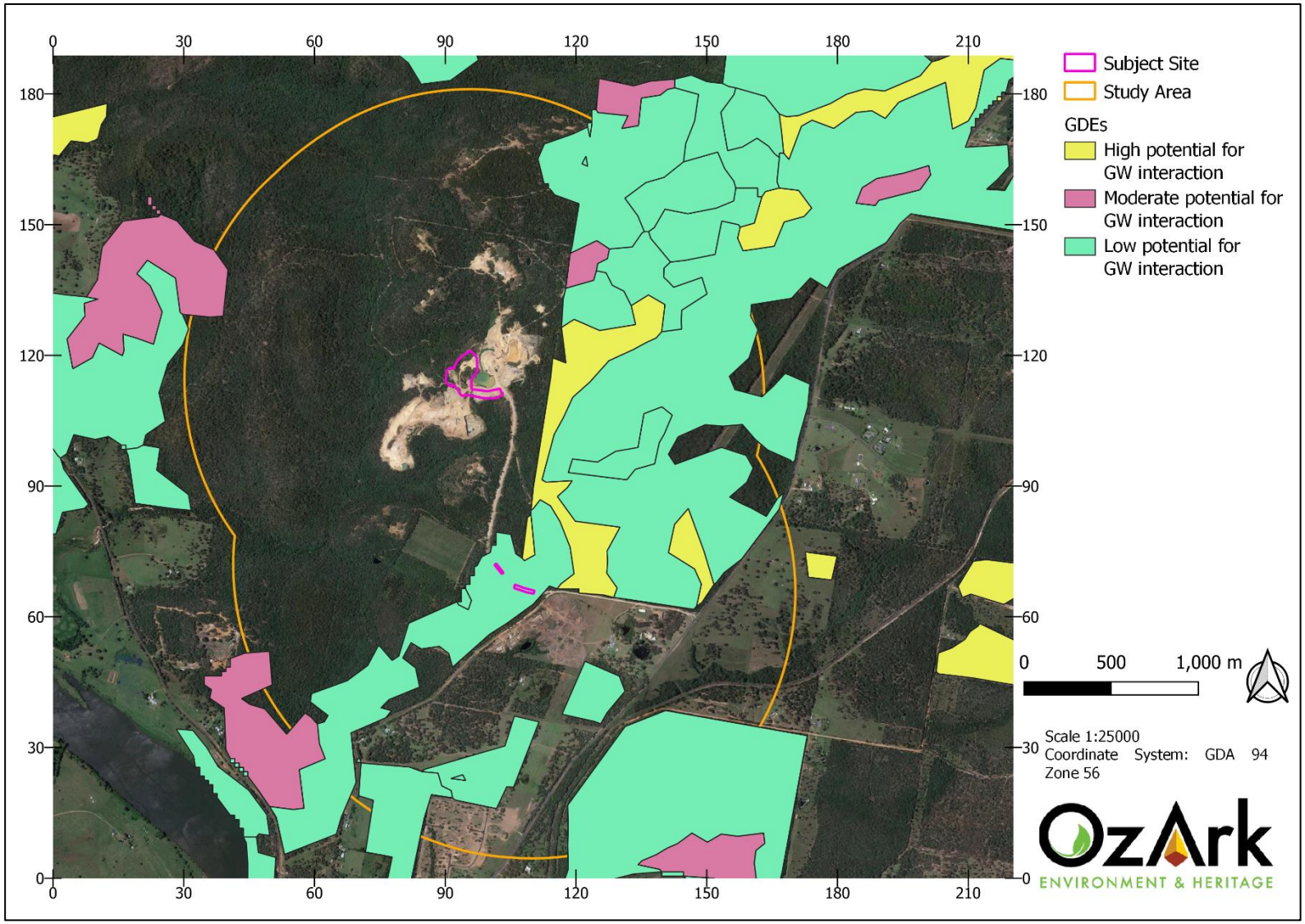

Figure 4-4. Groundwater dependent ecosystems within the study area.

5 RESULTS

5.1 PLANT COMMUNITY TYPES

The Regional Scale State Vegetation Map: Northern Rivers CMA; VIS_ID 524 (2006) maps non-native vegetation for the subject site, and predicts six PCTs for the wider study area.

- PCT 688 - Blackbutt - Spotted Gum shrubby open forest on sandstones of the lower Clarence Valley
- PCT 698 - Blackbutt grassy open forest of the lower Clarence Valley of the North Coast the NSW North Coast Bioregion
- PCT 837 - Lowland Red Gum Forest Red Gum - Swamp Box of the Clarence Valley lowlands of the North Coast
- PCT 852 - Grey Box - Grey Ironbark grassy open forest of the Clarence Valley lowlands of the North Coast
- PCT 867 - Grey Gum - Spotted Gum open forest of the southern Clarence lowlands of the NSW North Coast Bioregion
- PCT 1211 - Spotted Gum - Grey Ironbark - Pink Bloodwood open forest of the Clarence Valley lowlands of the NSW North Coast Bioregion

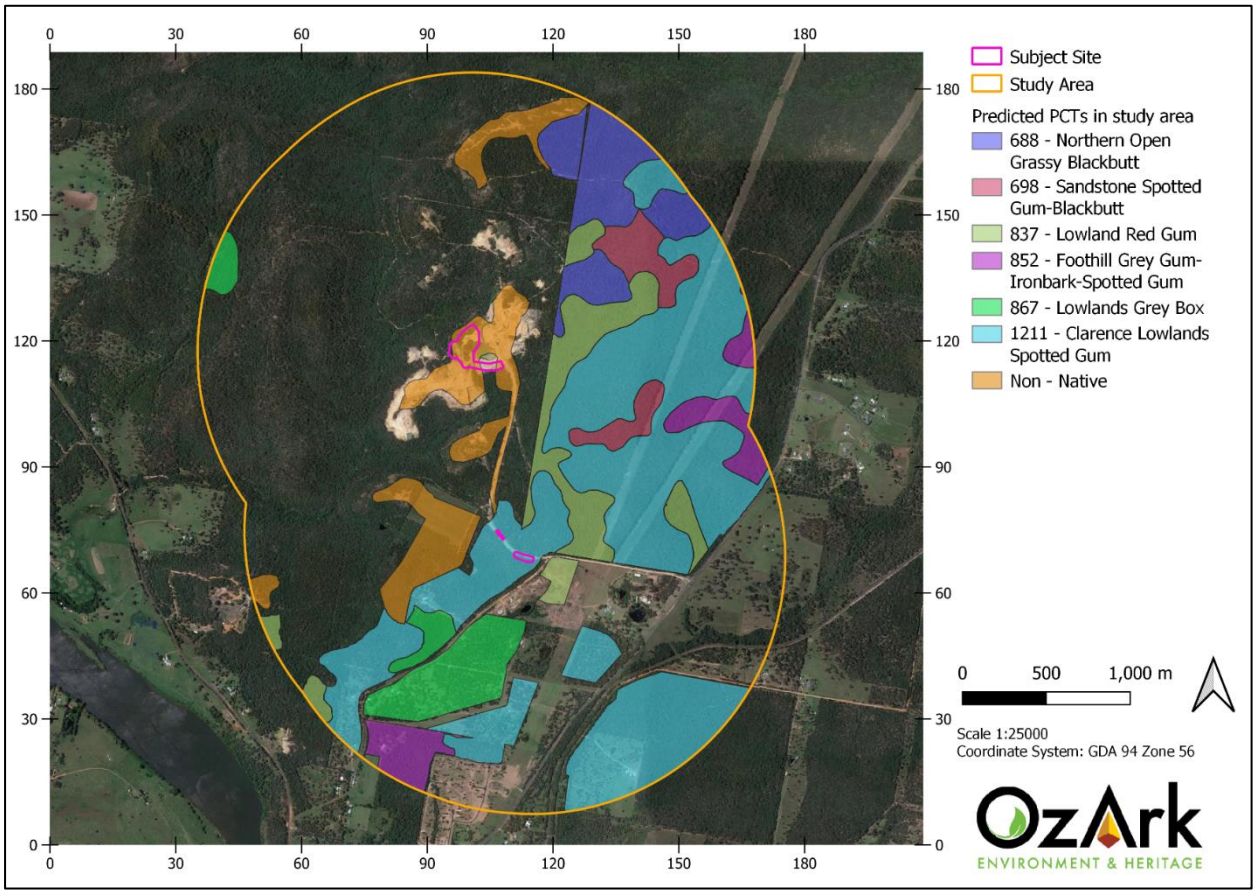

Figure 5-1. Predictive Plant Community Type (PCT) mapping for the study area.

Only one of the predicted PCTs (688) was present within the subject site. PCT 658 and 1136 while being identified in the subject site, were not predicted within the study area. The extent of the ground-truthed PCTs encountered on site during the field survey in July are presented in **Table 5-1** and mapped in **Figure 5-2**. It is worth noting, that the vegetation encountered in July, and mapped in **Figure 5-2** has since been cleared under an existing approval, such that no vegetation currently remains within the subject site **Figure 5-3**.

Table 5-1. Plant community types (PCTs) confirmed within the subject site in July 2021.

Plant community type (PCT)	Threatened Ecological Community?	Area (ha) in Subject Site
PCT 658 – Bailey's Stringybark - Needlebark Stringybark heathy woodland on sandstones of the lower Clarence Valley of the NSW North Coast Bioregion	No	0.193 ha
PCT 688 – Blackbutt - Spotted Gum shrubby open forest on sandstones of the lower Clarence Valley of the NSW North Coast Bioregion	No	0.358 ha
PCT 1136 – Scribbly Gum - Red Bloodwood heathy open forest of the coastal lowlands of the NSW North Coast Bioregion	No	0.021 ha
Total native vegetation		**0.572 ha**
Non-native vegetation or previously cleared areas		**3.57 ha**
TOTAL		**4.14 ha**

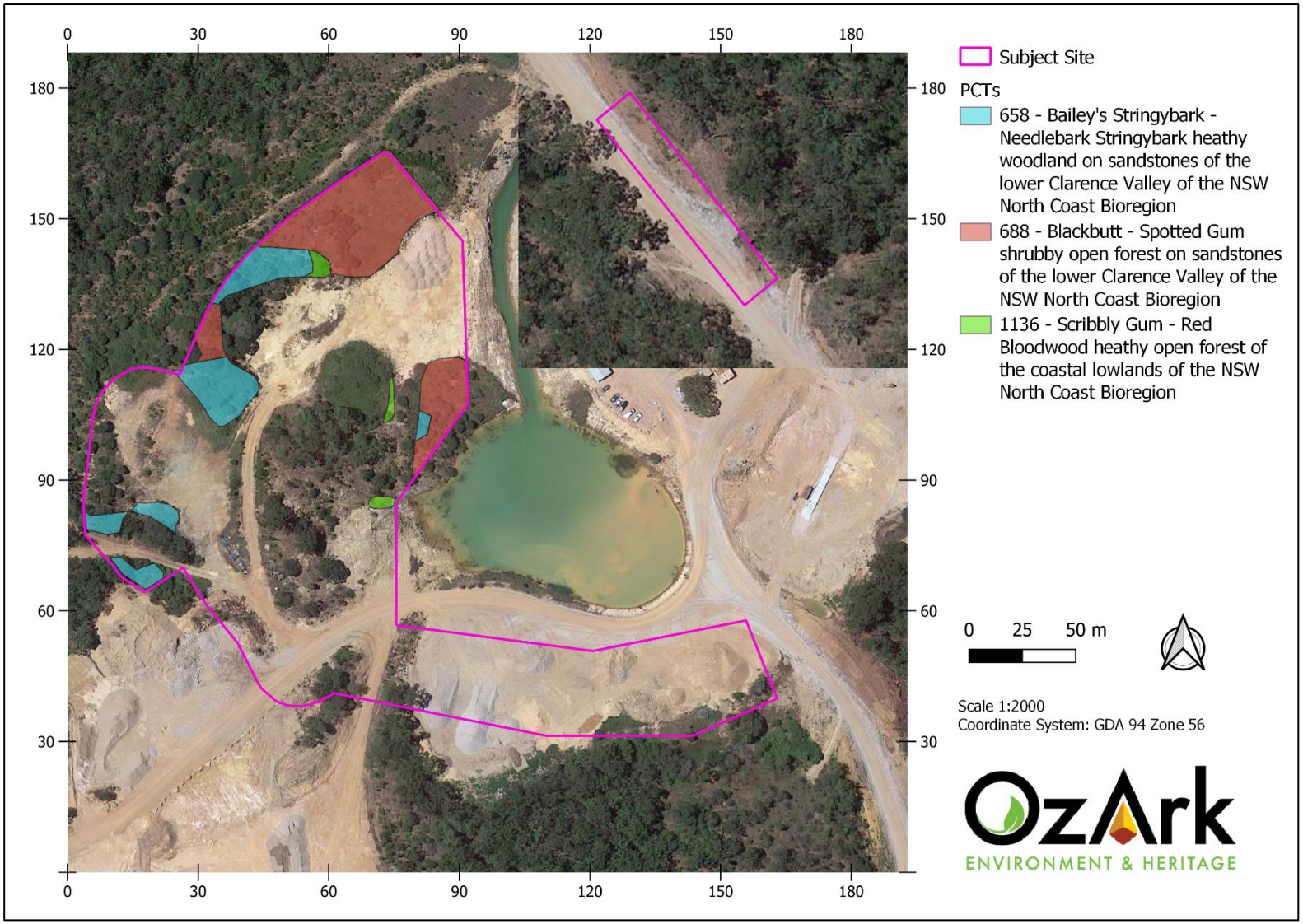

Figure 5-2. Plant Community Types (PCTs) confirmed within the subject site at the time of the field survey in July 2021. Top right inset: proposed weighbridge.

Figure 5-3. Updated aerial imagery showing no remnant vegetation within the subject site.

5.2 FAUNA OBSERVATIONS

Two native birds were recorded during the field survey (**Appendix B**), none of which are listed, or currently being considered for listing, under the BC Act and/or EPBC Act. It is assumed that the subject site provides habitat for a wider variety of fauna species, however as the focus of the field survey was to determine plant communities and associated habitat attributes, only incidental observations of fauna are recorded here.

5.3 THREATENED ECOLOGICAL COMMUNITIES

None of the three PCTs identified within the subject site are associated with any threatened ecological communities.

5.4 THREATENED SPECIES AND POPULATIONS

5.4.1 Terrestrial threatened species

Review of the Threatened Species Profiles database has found that 283 threatened flora and fauna species listed under the BC Act are predicted or are known to occur in the Clarence Sandstone and Clarence Lowlands Subregions (**Appendix A**). Based on proximity of past records, habitat requirements and the results of the field survey (**Appendix D**), 70 species were assessed as having a moderate or higher likelihood of occurring within the subject site. These are listed in **Table 5-2**.

Surveys of the subject site did not detect any of the predicted threatened species. However, due to the timing of the survey, over one day in winter, when many of the flora species were not in flower, non-detection cannot be considered as confirmation of their absence.

Table 5-2. BC Act and EPBC Act listed threatened species assessed as potentially occurring on the subject site.

Scientific Name	Common Name	NSW status*	Comm. status+	Record within 10km?
Litoria brevipalmata	Green-thighed Frog	E1,P,2	E	No
^^Calyptorhynchus lathami	Glossy Black-Cockatoo	V,P,2		Yes
^^Erythrotriorchis radiatus	Red Goshawk	E4A,P,2	V	Yes
Anthochaera phrygia	Regent Honeyeater	E4A,P	CE	No
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P		Yes
Burhinus grallarius	Bush Stone-curlew	E1,P		No
Chthonicola sagittata	Speckled Warbler	V,P		Yes
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P		Yes
Coracina lineata	Barred Cuckoo-shrike	V,P		No
Daphoenositta chrysoptera	Varied Sittella	V,P		No
Dromaius novaehollandiae	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	E2,P		Yes

Scientific Name	Common Name	NSW status*	Comm. status+	Record within 10km?
Glossopsitta pusilla	Little Lorikeet	V,P		Yes
Hydroprogne caspia	Caspian Tern	P	J	No
Lathamus discolor	Swift Parrot	E1,P,3	CE	Yes
Lophoictinia isura	Square-tailed Kite	V,P,3		Yes
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V,P		Yes
Ninox connivens	Barking Owl	V,P,3		Yes
Ninox strenua	Powerful Owl	V,P,3		Yes
Petroica phoenicea	Flame Robin	V,P		Yes
Pezoporus wallicus wallicus	Eastern Ground Parrot	V,P,3		Yes
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P		Yes
Stagonopleura guttata	Diamond Firetail	V,P		Yes
Tyto novaehollandiae	Masked Owl	V,P,3		No
^^Cryptostylis hunteriana	Leafless Tongue Orchid	V,P,2	V	No
^^Geodorum densiflorum	Pink Nodding Orchid	E1,P,2		Yes
^^Oberonia complanata	Yellow-flowered King of the Fairies	E1,P,2		No
Acacia ruppii	Rupp's Wattle	E1	E	Yes
Allocasuarina defungens	Dwarf Heath Casuarina	E1	E	No
Ancistrachne maidenii		V		Yes
Angophora robur	Sandstone Rough-barked Apple	V	V	No
Centranthera cochinchinensis	Swamp Foxglove	E1		Yes
Eleocharis tetraquetra	Square-stemmed Spike-rush	E1		No
Elionurus citreus	Lemon-scented Grass	E1		No
Eucalyptus tetrapleura	Square-fruited Ironbark	V	V	Yes
Grevillea beadleana	Beadle's Grevillea	E1,3	E	No
Grevillea hilliana	White Yiel Yiel	E1		No
Grevillea masonii	Mason's Grevillea	E1,3	E	Yes
Grevillea quadricauda	Four-tailed Grevillea	V	V	No
Hibbertia marginata	Bordered Guinea Flower	V	V	No
Lindsaea incisa	Slender Screw Fern	E1,3		No
Maundia triglochinoides		V		No
Melaleuca irbyana	Weeping Paperbark	E1		Yes
Melichrus sp. Gibberagee	Narrow-leaf Melichrus	E1	E	No
Melichrus hirsutus	Hairy Melichrus	E1	E	No
Olax angulata	Square-stemmed Olax	V	V	Yes
Paspalidium grandispiculatum		V	V	No
Phyllanthus microcladus	Brush Sauropus	E1		Yes
Polygala linariifolia	Native Milkwort	E1		Yes
Prostanthera sejuncta		V		Yes
Tephrosia filipes		V		No
Aepyprymnus rufescens	Rufous Bettong	V,P		Yes
Chalinolobus dwyeri	Large-eared Pied Bat	V,P	V	No
Chalinolobus nigrogriseus	Hoary Wattled Bat	V,P		Yes
Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	Yes
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V,P		No

Scientific Name	Common Name	NSW status*	Comm. status+	Record within 10km?
Miniopterus australis	Little Bent-winged Bat	V,P		Yes
Miniopterus orianae oceanensis	Large Bent-winged Bat	V,P		Yes
Myotis macropus	Southern Myotis	V,P		Yes
Nyctophilus bifax	Eastern Long-eared Bat	V,P		No
Petauroides volans	Greater Glider	P	V	Yes
Petaurus norfolcensis	Squirrel Glider	V,P		Yes
Petrogale penicillata	Brush-tailed Rock-wallaby	E1,P	V	No
Phascogale tapoatafa	Brush-tailed Phascogale	V,P		Yes
Phascolarctos cinereus	Koala	V,P	V	Yes
Planigale maculata	Common Planigale	V,P		Yes
Pseudomys gracilicaudatus	Eastern Chestnut Mouse	V,P		No
Pseudomys novaehollandiae	New Holland Mouse	P	V	No
Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	Yes
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P		Yes
Scoteanax rueppellii	Greater Broad-nosed Bat	V,P		Yes

***NSW Status**: ^^=Category 2 sensitive species, P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population,
E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.
+ **Comm. Status**: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

5.4.2 Aquatic ecological communities

Endangered aquatic ecological communities are determined by the NSW Fisheries Scientific Committee and listed under the FM Act as aquatic systems that have undergone a very large reduction in ecological function, geographic distribution or genetic diversity, and continue to be affected by a threatening process (NSW Department of Primary Industries, 2016). The subject site is not located within the distribution of any endangered aquatic communities.

5.4.3 Habitat trees and features

No hollow-bearing habitat trees or stags were recorded as occurring within the subject site.

5.5 WILDLIFE CONNECTIVITY CORRIDORS

The subject site is part of an operational quarry, which is mostly cleared; the wider study area contains the Corymbia State Conservation Area and large forested areas. As the proposal is contained to vegetation within the quarry and directly surrounding the quarry, the proposal is not expected to create any additional fragmentation.

5.6 SEPP (KOALA HABITAT PROTECTION) 2020 AND 2021

The Clarence Valley LGA is listed under Schedule 1 of SEPP 44 – Koala Habitat Protection and therefore, 2020 SEPP applies. There are 243 records of Koalas occurring within the 10 km search area. Only one record exists within the study area, with the closest record being one from 2005, approximately 1km from the subject site. The subject site is not considered core koala habitat as

there is no evidence of breeding females at the site. Further, the subject site is not considered potential koala habitat (under SEPP 2020) because Schedule 2 koala feed trees did not constitute 15% of the trees in the upper or lower strata of vegetation within the subject site at the time of the July 2021 survey. As such, a Koala plan of management is not required for this proposal.

5.7 MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

Under the environmental assessment provisions of the EPBC Act, Matters of National Environmental Significance (MNES) and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Government DoEE. The EPBC Act protected matters search has identified two wetlands of international importance, two TECs, 64 endangered and critically endangered species, 38 migratory species and 43 marine species that could possibly occur in the study area (**Appendix A**). A summary of these matters and whether the proposal is likely to impact them is provided in **Table 5-3**. The EPBC tests of significance have been carried out in **Appendix E.**

Table 5-3. Impacts to Matters of National Environmental Significance.

Factor	Potential impact?
Any impact on a World Heritage property?	Nil
Any impact on a National Heritage place?	Nil
Any impact on a wetland of international importance?	Nil
Any impact on a listed threatened species or communities?	Yes (non-significant). See **Appendices D & E.**
Any impacts on listed migratory species?	Yes (non-significant). See **Appendix E.**
Any impact on a Commonwealth marine area?	Nil
Does the proposal involve a nuclear action (including uranium mining)?	Nil
Additionally, any impact (direct or indirect) on Commonwealth land?	Nil
Any impact on a water resource, in relation to coal seam gas development and large coal mining development?	Nil

6 IMPACT ASSESSMENT

Management of biodiversity issues for this proposal should follow the "avoid, minimise, mitigate, and offset" hierarchy, as follows:

1. Avoid and minimise impacts as the highest priority.
2. Mitigate impacts where avoidance is not feasible or practicable in the circumstance.
3. Offset where residual, significant unavoidable impacts would occur.

The following general recommendations are offered to inform proposal activities.

6.1 CONSTRUCTION IMPACTS

6.1.1 Removal of native vegetation

At the time of survey in July 2021, three PCTs were present within the subject site. In total, the area covered by native vegetation within the subject site was 0.573 ha. An additional 3.514 ha consisted of non-native vegetation or previously cleared areas. Therefore, up to 0.573 ha of native vegetation is required to be cleared (**Table 5-1, Figure 5-2)**. It is worth noting, that since the field survey was conducted in July, this clearing has already taken place under existing approvals, such that no native vegetation currently remains within the site (see **Figure 5-3**).

'Clearing of native vegetation' is a Key Threatening Process under the BC Act (see **Appendix F**). However, due to the low magnitude of clearing involved and the generally degraded state of the site, the impact is not considered to be significant.

6.1.2 Impact to threatened flora and associated habitat

Within the proposal site, 27 threatened plant species were assessed as having moderate or greater potential to occur. The NSW north coast has several endemic threatened flora and priority management areas for many of these species. The 5-part test of significance and EPBC test of significance (if applicable) was applied to each species **(Appendices D and E)**. The tests concluded that the proposal would not constitute a significant impact on these species or their habitats.

6.1.3 Impact to threatened fauna

Within the proposal site, 43 threatened fauna species were assessed as having moderate or greater potential to occur within the subject site. No threatened fauna species were detected during the field survey. The 5-part test of significance and EPBC test of significance (if applicable) was applied to each species **(Appendices D and E)**. The tests concluded that the proposal would not constitute a significant impact on these species or their habitats.

The subject site was assessed under the referral guidelines contained in the Commonwealth EPBC Act as to whether it might constitute critical koala habitat. Application of the Koala Habitat

Assessment Tool (**Appendix G**) determined that the site did not qualify as critical habitat for the Koala (total habitat score = 3), therefore referral under the EPBC Act is not required in this case.

6.1.4 Injury and mortality

During the construction phase of the proposal, there will be an increase in vehicle traffic within the subject site, this is likely to result in additional vehicle strike risk to fauna. In addition, fauna may become trapped in or may choose to shelter in machinery that is stored in the study area overnight. If these animals were to remain inside the machinery, or under the wheels or tracks, they may be injured or die once the machinery is in use.

Mitigation measures designed to reduce injury and mortality of fauna are provided in **Section 7.**

6.2 INDIRECT/OPERATIONAL IMPACTS

6.2.1 Wildlife connectivity and habitat fragmentation

As impacts will be confined to an existing quarry and access road, no significant impacts to landscape connectivity are expected as a result of operation.

Mitigation measures designed to reduce the impact of the proposal on wildlife connectivity and habitat fragmentation are provided in **Section 7**.

6.2.2 Edge effects on adjacent native vegetation and habitat

The proposal site is in an area that is currently subject to a high level of edge effects from the existing quarry and access road. No additional edge effects are expected from this proposal.

6.2.3 Invasion and spread of weeds

Five significant weeds – including four identified as high-threat exotic species (HTE), one Weed of National Significance (WoNS), and two priority weeds for the North Coast (PW) – were recorded during the field survey (**Table 6-1, Appendix B**).

Table 6-1. List of significant weeds recorded in the subject site.

Growth Form	Common name	Scientific name	HTE	WoNS	PW
GG	*Andropogon virginicus*	Whisky Grass	Yes	No	No
FG	*Canna indica*	Canna Lily	Yes	No	No
SG	*Lantana camara*	Lantana	Yes	Yes	Yes
SG	*Ricinus communis*	Castor Oil	Yes	No	No
SG	*Sporobolus pyramidalis*	Giant rat's tail grass	No	No	Yes

Proliferation of weed and pest species is an indirect impact (i.e., not a direct result) of proposal activities. The most likely causes of weed dispersal and importation associated with the proposal include earthworks, movement of soil, and attachment of seed (and other propagules) to vehicles

and machinery. Mitigation measures designed to limit the spread of weeds are provided in **Section 7**.

6.2.4 Invasion and spread of pests

The study area is already habitat for a range of pest species such as feral pigs (*Sus scrofa*), foxes (*Vulpes vulpes*), cats (*Felis catus)*, European rabbits (*Oryctolagus cuniculus*), and wild dogs (*Canis lupus*). Mitigation measures designed to limit the spread of pests are provided in **Section 7.**

6.2.4 Invasion and spread of pathogens and disease

Several pathogens known from NSW have potential to impact on biodiversity as a result their movement and infection during construction. Of these, two are listed as Key Threatening Processes under either the EPBC Act and/or BC Act (**Appendix F**) including:

- Infection of frogs by amphibian chytrid fungus causing the disease chytridiomycosis.
- Infection of native plants by *Phytophthora cinnamomi*.

These pathogens were not observed or tested for in the study area. The most likely causes of pathogen dispersal and importation associated with the proposal include earthworks, movement of soil, and attachment of plant matter to vehicles and machinery during establishment of the pipeline. Mitigation measures designed to limit the invasion and spread of pathogens and disease are provided in **Section 7.** If these mitigation measures are followed, the likelihood of invasion and spread of pathogens and disease is low.

6.2.5 Noise, light and vibration

Some noise and vibration impacts will occur during the construction and operational phase of this proposal, however given the proposal's location within an active quarry any additional sources of noise and vibration resulting from the proposal will likely not impact biodiversity locally. Nonetheless, several mitigation measures are provided in **Section 7**.

6.3 CUMULATIVE IMPACTS

The potential biodiversity impacts of the proposal must be considered in light of the construction and operation of the proposal within the existing environment. The proposal would not act alone in causing impacts to biodiversity. The Clarence Valley region currently has many development activities at various stages of approval, including the Pacific Highway upgrade from Woolgoolga to Ballina, residential subdivisions, and other quarry expansions. The incremental effects of multiple sources of impact (past, present and future) are referred to as cumulative impacts and provide an opportunity to consider the proposal within a strategic context.

In general, the accumulating impacts of historic vegetation clearing for agriculture, rural development, and development and maintenance of infrastructure have contributed to the loss of biodiversity in the local region. The proposal will not, in isolation, significantly increase the reduction of biodiversity values within the region; however, historic and future construction and operation constitutes a cause of ongoing and severe loss of biodiversity values.

6.4 IMPACT SUMMARY

Based on the assessment above, the proposal will not have a significant impact on biodiversity, including predicted populations of threatened species. Separate assessments of significance were undertaken under the differing impact significance criteria of the NSW BC Act and Commonwealth EPBC Act (**Appendix D** and **Appendix E**). The assessments under the BC Act and the EPBC Act concluded that the proposal would not significantly impact on threatened species. However, opportunities to avoid and minimise impacts should be considered in finalising the proposal design.

7 AVOID, MINIMISE AND MITIGATE IMPACTS

A key part of the proponent's management of biodiversity for this proposal is the application of the 'avoid, minimise, mitigate and offset' hierarchy as follows:

1. Avoid and minimise impacts as the highest priority

2. Mitigate impacts where avoidance is not feasible or practicable in the circumstance

3. Offset where residual, significant unavoidable impacts would occur

7.1 AVOIDANCE AND MINIMISATION

The following impact avoidance methods are recommended to be implemented:

- To avoid impacts associated with weed introduction and spread, inspect all machinery before entering and exiting the subject site. Machinery must be clean of all mud, soil and vegetation material.

In addition, the following minimisation measures are proposed:

- The construction works and vehicle access to the construction site is to be constrained to the minimum area practical. The proposed access will provide the sole access to the construction site.
- Material stockpiles, equipment and machinery storage and laydown areas will be consolidated within a defined impact area to minimise the overall impact footprint.
- The impact footprint will be minimised by restricting access across the site to the defined development footprint, including avoiding unnecessary vehicle and personnel movements across unused land.
- Where any future clearing of living or dead vegetation is planned:
    - A pre-clearance survey should be conducted to identify hollows and logs currently utilised by fauna where possible.
    - All hollow-bearing habitat trees and stags are to be identified and felled under the supervision of a fauna spotter-catcher.
    - All encountered fauna should be relocated to suitable habitat nearby.

7.2 MITIGATION MEASURES

Mitigation measures are to be undertaken during the construction and operational phases, including managing the vegetation clearing process, weed management, and installation of erosion and sediment controls as appropriate.

The following mitigation measures are recommended for implementation (see **Table 7-1**).

Table 7-1. Mitigation measures and environmental safeguards.

Impact	Environmental safeguards	Responsibility	Timing
General	• Any change in design outside the assessed impact footprint within the proposal site will require further ecological survey and/or assessment.	Proponent	Pre-construction, construction, operation
Accidental death of fauna	• Where fauna is encountered, a suitably qualified fauna handler/ecologist/veterinarian will be engaged to remove the animal(s).	Contractor	During construction
Clearing and prevention of over-clearing	• All personnel should be inducted to be aware that any deliberate or accidental damage of a stand of native vegetation outside the proposal site has legislative consequences under Part 4 or 5 of the EP&A Act. Evidence of all personnel receiving an induction would be kept on file (signed induction sheets etc.). • Before starting work, a physical vegetation clearing boundary at the approved clearing limit is to be demarcated and implemented. The delineation of such a boundary may include the use of temporary fencing, parawebbing or similar. • Where possible, trees should be lopped, rather than removed. • Where any further vegetation is required to be removed, it would be removed in such a way as to avoid damage to surrounding vegetation. Ensure groundcover disturbance would be kept to a minimum. • Where possible, vegetation to be removed (if required) would be mulched on-site and re-used to stabilise disturbed areas.	Contractor	Pre-construction

Impact	Environmental safeguards	Responsibility	Timing
Soil Management	• Erosion and sediment controls are required. An Erosion and Sediment Control Plan (ESCP) shall be prepared for the work and would be in line with Landcom's Managing Urban Stormwater, Soils & Construction Guidelines (The Blue Book. Landcom 2004). • Stockpile topsoil in suitable areas for later use during rehabilitation.	Contractor	Pre-construction
Damage to native vegetation outside of impact zone	• Any stockpile and compound sites should be located using the following criteria: o At least 40 m away from the nearest waterway o In areas of low ecological conservation significance (i.e. previously disturbed land) o On relatively level ground o Outside the one in 10-year Average Recurrence Interval (ARI) floodplain • Stockpiling materials and equipment and parking vehicles would be avoided within the dripline (extent of foliage cover) of any tree.	Contractor	Construction
Introduction and spread of noxious weeds and pathogens	• Any declared noxious weeds identified during construction would be managed according to the requirements of the *Biosecurity Act 2015*. • Construction machinery (bulldozers, excavators, trucks, loaders, and graders) would be cleaned using a high-pressure washer (or other suitable device) before entering and exiting work sites. • Weed-free fill would be used for on-site earthwork. • All pesticides would be used in accordance with the requirements on the label. Any person carrying out pesticide (including herbicide) application would be trained to do so and have the proper certificate of completion/competency or statement of attainment issued by a registered training organisation.	Contractor	Construction
Disturbance to fallen timber, dead wood, and bush rock	• Any fallen timber, dead wood, and bush rock (if present) encountered on site would be left *in situ* or relocated to a suitable place nearby. Rock would be removed with suitable machinery so as not to damage the underlying rock or result in excessive soil disturbance.	Contractor	Construction

Impact	Environmental safeguards	Responsibility	Timing
Replacement of native vegetation	• Revegetation of any bare soil or cleared areas with locally occurring native flora species typical of the original habitat types is usually recommended. • Stockpiled topsoil to be re-spread over cleared areas following backfilling of trench.	Proponent, contractor	Construction and post-construction
Attracting fauna to the study area	• All food scraps and rubbish are to be appropriately disposed of in sealed receptacles to prevent providing forage habitats for foxes, rats, dogs, and cats.	Contractor	Construction
Increased risk of fire	• If any “hot works” are to be undertaken, these activities will not take place on days of extreme fire danger (where possible).	Contractor	Construction

8 CONCLUSION

OzArk Environment & Heritage (OzArk) has been engaged by InSitu Advisory Pty Ltd on behalf of State Road Quarry Products Pty Ltd (SRQP; the proponent) to conduct a biodiversity assessment of the proposed Resource Recovery Facility (the proposal), at Thorley Sands and Gravel Quarry, 12km north of Grafton. The proposed facility will operate in the existing 20-hectare quarry processing area with an additional weighbridge to be installed on the existing access road. This Biodiversity Assessment Report assesses the potential impacts of the proposal on biodiversity.

A site inspection was conducted by an OzArk Ecologist on 12th of July 2021. At the time of the survey, a total of 0.573 ha of native vegetation occurred within the subject site, the remaining areas consisted of non-native vegetation, gravel roads, and the disturbed quarry. The 0.573 ha of native vegetation was identified as belonging to three Plant Community Types (PCTs):

- PCT 658 – Bailey's Stringybark - Needlebark Stringybark heathy woodland on sandstones of the lower Clarence Valley of the NSW North Coast Bioregion
- PCT 688 – Blackbutt - Spotted Gum shrubby open forest on sandstones of the lower Clarence Valley
- PCT 1136 – Scribbly Gum - Red Bloodwood heathy open forest of the coastal lowlands of the NSW North Coast Bioregion

None of these PCTs have associated Threatened Ecological Communities.

Since the completion of the field survey on the 12th of July 2021, the 0.573 ha of native vegetation described above has been removed under an existing approval for continued operation of the Thorley Sands and Gravel Quarry. As such, no native vegetation currently remains within the subject site.

No watercourses occur within the subject site. Within the wider study area, 64 watercourses occur, including:

- Fifty 1st Strahler order streams (all minor non-perennial)
- Ten 2nd Strahler order streams (all minor non-perennial)
- Three 3rd Strahler order streams (all minor non-perennial)
- One 4th Strahler order, minor perennial stream (Double Swamp Creek)

Some watercourses within the wider study area are identified as Protected Riparian lands or Key Fish Habitat (KFH) by the Department of Primary Industry – Fisheries. The proposed development will not impact any of these watercourses.

No habitat trees were identified within the subject site during the field survey.

A total of 70 BC Act-listed threatened species were assessed as having a moderate or higher likelihood of occurring within the subject site based on habitat requirements. The significance of the impact of the proposal on these BC Act listed species was assessed. The area surrounding the subject site is either known habitat or a priority management area for several of these species. Given the lack of future vegetation clearing, the absence of habitat trees, and that none of these species have been previously recorded within the subject site and were not identified during the site survey, it is unlikely that the proposal will have any significant impact on these threatened species or result in the extinction of a local population.

An EPBC Act protected matters search identified two TECs, 64 threatened species, 38 migratory species, and 43 marine species that are predicted or known to occur within 10 km of the subject site. No significant impact to a threatened, migratory, or marine species likely to result in the extinction of a local population was identified.

The Clarence Valley LGA is listed under Schedule 1 of SEPP 44 – Koala Habitat Protection and therefore, 2020 SEPP applies. There are 243 records of Koalas occurring within the 10 km search area. Only one record exists within the study area, with the closest record being one from 2005, approximately 1km from the subject site. The subject site is not considered “core koala habitat” (under SEPP 2020) as there is no evidence of breeding females at the site. Further, the subject site is not considered “potential koala habitat” (under SEPP 2020) because Schedule 2 koala feed trees did not constitute 15% of the trees in the upper or lower strata of vegetation within the subject site at the time of the July 2021 survey. As such, a Koala plan of management is not required for this proposal. Application of the Koala Habitat Assessment Tool contained within the EPBC Act referral guidelines for the vulnerable koala determined that the proposal site is not critical habitat for the Koala. Owing to the small area of impact, and low habitat score (3), it was determined that referral under the EPBC Act is not required.

This assessment covers the current form of the proposal. Any change to the scope of work may require re-assessment. If entry into the Biodiversity Offsets Scheme is triggered by a changed scope, additional field work completed according to the Biodiversity Assessment Method may be required.

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APPENDIX A - DATABASE SEARCH RESULTS

EPBC Act Protected Matters Report

Australian Government
Department of Agriculture, Water and the Environment

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

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

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

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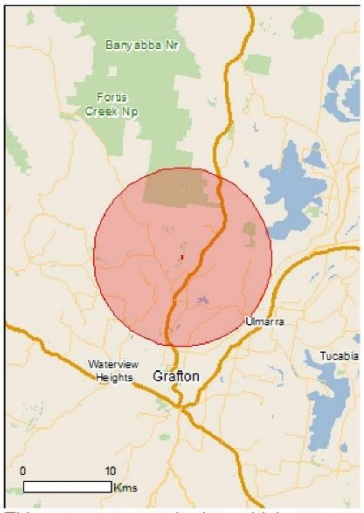
Summary
Details
- Matters of NES
- Other Matters Protected by the EPBC Act
- Extra Information

Caveat
Acknowledgements



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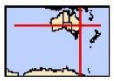

Summary

Matters of National Environmental Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	64
Listed Migratory Species:	38

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Land:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	43
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

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

State and Territory Reserves:	5
Regional Forest Agreements:	1
Invasive Species:	37
Nationally Important Wetlands:	2
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Name	Status	Type of Presence
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat known to occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
Turnix melanogaster Black-breasted Button-quail [923]	Vulnerable	Species or species habitat may occur within area
Fish		
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Frogs		
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Endangered	Species or species habitat may occur within area
Insects		
Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area
Mammals		
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat known to occur within area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE Mainland) [66645]	Vulnerable	Species or species habitat may occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Plants		
Acacia ruppii Rupp's Wattle [7559]	Endangered	Species or species habitat known to occur within area
Angophora robur Sandstone Rough-barked Apple [56088]	Vulnerable	Species or species habitat known to occur within area
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area
Cryptocarya foetida Stinking Cryptocarya, Stinking Laurel [11976]	Vulnerable	Species or species habitat may occur within area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area
Dichanthium setosum bluegrass [14159]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus tetrapleura Square-fruited Ironbark [7490]	Vulnerable	Species or species habitat known to occur within area
Grevillea masonii [64523]	Endangered	Species or species habitat known to occur within area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area
Macadamia tetraphylla Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut [6581]	Vulnerable	Species or species habitat likely to occur within area
Marsdenia longiloba Clear Milkvine [2794]	Vulnerable	Species or species habitat may occur within area
Olax angulata Minnie Waters Olax [10666]	Vulnerable	Species or species habitat known to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat likely to occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
Tylophora woollsii [20503]	Endangered	Species or species habitat may occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat likely to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

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

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna grisea		
Sooty Shearwater [82651]		Species or species habitat likely to occur within area
Calonectris leucomelas		
Streaked Shearwater [1077]		Species or species habitat may occur within area
Diomedea antipodensis		
Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea epomophora		
Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans		
Wandering Albatross [89223]	Vulnerable	Species or species habitat may occur within area
Diomedea sanfordi		
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Macronectes giganteus		
Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli		
Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta		
Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche eremita		
Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
Migratory Marine Species		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur

Name	Threatened	Type of Presence within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat may occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Manta alfredi		
Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris		
Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat may occur within area
Migratory Terrestrial Species		
Cuculus optatus		
Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Monarcha melanopsis		
Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus		
Spectacled Monarch [610]		Species or species habitat known to occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca		
Satin Flycatcher [612]		Species or species habitat known to occur within area
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species

Name	Threatened	Type of Presence
		habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species [Resource Information]

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

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Anseranas semipalmata Magpie Goose [978]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Breeding likely to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat may occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat may occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species

Name	Threatened	Type of Presence
		habitat may occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Species or species habitat may occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area
Pandion haliaetus Osprey [952]		Breeding known to occur within area
Puffinus griseus Sooty Shearwater [1024]		Species or species habitat likely to occur within area

Name	Threatened	Type of Presence
Rhipidura rufifrons		
Rufous Fantail [592]		Species or species habitat known to occur within area
Rostratula benghalensis (sensu lato)		
Painted Snipe [889]	Endangered*	Species or species habitat likely to occur within area
Thalassarche cauta		
Shy Albatross [89224]	Endangered	Species or species habitat may occur within area
Thalassarche eremita		
Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]		Species or species habitat may occur within area
Reptiles		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat may occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat may occur within area

Extra Information

State and Territory Reserves [Resource Information]

Name	State
Corymbia	NSW
Everlasting Swamp	NSW
Fortis Creek	NSW
UNE Special Management Zone No1	NSW
Warragai Creek	NSW

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included.

Name	State
North East NSW RFA	New South Wales

Invasive Species [Resource Information]

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

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat known to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Dolichandra unguis-cati Cat's Claw Vine, Yellow Trumpet Vine, Cat's Claw Creeper, Funnel Creeper [85119]		Species or species habitat likely to occur within area
Eichhornia crassipes Water Hyacinth, Water Orchid, Nile Lily [13466]		Species or species

Name	Status	Type of Presence
		habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892]		Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area

Nationally Important Wetlands	[Resource Information]
Name	State
Alumy Creek/Bunyip Swamp	NSW
Clarence River Estuary	NSW

Caveat

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

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

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

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

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

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-29.57446 152.944737,-29.574516 152.944448,-29.574661 152.943353,-29.574637 152.942962,-29.574707 152.942672,-29.574404 152.942586,-29.573882 152.94249,-29.573634 152.94242,-29.573396 152.942157,-29.573504 152.942055,-29.573457 152.941932,-29.573424 152.941867,-29.57313 152.941717,-29.572902 152.941707,-29.572757 152.941884,-29.572678 152.942189,-29.572556 152.942195,-29.572412 152.942356,-29.572263 152.942495,-29.572067 152.942849,-29.572431 152.943262,-29.573261 152.943343,-29.573602 152.942967,-29.574306 152.943064,-29.574292 152.943343,-29.574301 152.943879,-29.574152 152.944426,-29.57446 152.944737

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-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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BioNET Atlas search – threatened species predicted to occur within the Clarence Sandstone and Clarence Lowlands Subregion of the Southern Eastern Queensland Bioregion

Class	Scientific Name	Common Name	NSW status*	Comm. Status+	Records
Amphibia	^^*Mixophyes iteratus*	Giant Barred Frog	E1,P,2	E	91
Amphibia	*Litoria aurea*	Green and Golden Bell Frog	E1,P	V	3
Amphibia	*Litoria booroolongensis*	Booroolong Frog	E1,P	E	P
Amphibia	*Litoria brevipalmata*	Green-thighed Frog	V,P		64
Amphibia	*Litoria olongburensis*	Olongburra Frog	V,P	V	71
Amphibia	*Litoria subglandulosa*	Glandular Frog	V,P		P
Aves	^^*Calyptorhynchus banksii banksii*	Red-tailed Black-Cockatoo (coastal subspecies)	E4A,P,2		1
Aves	^^*Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		1017
Aves	^^*Erythrotriorchis radiatus*	Red Goshawk	E4A,P,2	V	19
Aves	*Actitis hypoleucos*	Common Sandpiper	P	C,J,K	57
Aves	*Amaurornis moluccana*	Pale-vented Bush-hen	V,P		2
Aves	*Anous stolidus*	Common Noddy	P	C,J	8
Aves	*Anseranas semipalmata*	Magpie Goose	V,P		114
Aves	*Anthochaera phrygia*	Regent Honeyeater	E4A,P	CE	23
Aves	*Apus pacificus*	Fork-tailed Swift	P	C,J,K	20
Aves	*Ardenna carneipes*	Flesh-footed Shearwater	V,P	J,K	10
Aves	*Ardenna grisea*	Sooty Shearwater	P	J	9
Aves	*Ardenna pacifica*	Wedge-tailed Shearwater	P	J	38
Aves	*Ardenna tenuirostris*	Short-tailed Shearwater	P	C,J,K	65
Aves	*Arenaria interpres*	Ruddy Turnstone	P	C,J,K	97
Aves	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		142
Aves	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E	15
Aves	*Burhinus grallarius*	Bush Stone-curlew	E1,P		66
Aves	*Calidris acuminata*	Sharp-tailed Sandpiper	P	C,J,K	228
Aves	*Calidris alba*	Sanderling	V,P	C,J,K	29
Aves	*Calidris canutus*	Red Knot	P	E,C,J,K	97
Aves	*Calidris ferruginea*	Curlew Sandpiper	E1,P	CE,C,J,K	150
Aves	*Calidris melanotos*	Pectoral Sandpiper	P	J,K	15
Aves	*Calidris ruficollis*	Red-necked Stint	P	C,J,K	177
Aves	*Calidris subminuta*	Long-toed Stint	P	C,J,K	2
Aves	*Calidris tenuirostris*	Great Knot	V,P	CE,C,J,K	117
Aves	*Carterornis leucotis*	White-eared Monarch	V,P		56
Aves	*Charadrius leschenaultii*	Greater Sand-plover	V,P	V,C,J,K	61
Aves	*Charadrius mongolus*	Lesser Sand-plover	V,P	E,C,J,K	108
Aves	*Chlidonias leucopterus*	White-winged Black Tern	P	C,J,K	18
Aves	*Chthonicola sagittata*	Speckled Warbler	V,P		61
Aves	*Circus assimilis*	Spotted Harrier	V,P		35
Aves	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P		383
Aves	*Coracina lineata*	Barred Cuckoo-shrike	V,P		27

Class	Scientific Name	Common Name	NSW status*	Comm. Status+	Records
Aves	*Cuculus optatus*	Oriental Cuckoo	P	C,J,K	22
Aves	*Daphoenositta chrysoptera*	Varied Sittella	V,P		174
Aves	*Diomedea exulans*	Wandering Albatross	E1,P	E	1
Aves	*Dromaius novaehollandiae*	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	E2,P		2783
Aves	*Ephippiorhynchus asiaticus*	Black-necked Stork	E1,P		3244
Aves	*Esacus magnirostris*	Beach Stone-curlew	E4A,P		130
Aves	*Falco subniger*	Black Falcon	V,P		1
Aves	*Fregata ariel*	Lesser Frigatebird	P	C,J,K	1
Aves	*Fregata minor*	Great Frigatebird	P	C,J	3
Aves	*Gallinago hardwickii*	Latham's Snipe	P	J,K	158
Aves	*Gelochelidon nilotica*	Gull-billed Tern	P	C	127
Aves	*Glossopsitta pusilla*	Little Lorikeet	V,P		539
Aves	*Grus rubicunda*	Brolga	V,P		192
Aves	*Gygis alba*	White Tern	V,P		2
Aves	*Haematopus fuliginosus*	Sooty Oystercatcher	V,P		55
Aves	*Haematopus longirostris*	Pied Oystercatcher	E1,P		777
Aves	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		488
Aves	*Hamirostra melanosternon*	Black-breasted Buzzard	V,P,3		1
Aves	*Hieraaetus morphnoides*	Little Eagle	V,P		67
Aves	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	180
Aves	*Hydroprogne caspia*	Caspian Tern	P	J	94
Aves	*Irediparra gallinacea*	Comb-crested Jacana	V,P		247
Aves	*Ixobrychus flavicollis*	Black Bittern	V,P		40
Aves	*Lathamus discolor*	Swift Parrot	E1,P,3	CE	22
Aves	*Lichenostomus fasciogularis*	Mangrove Honeyeater	V,P		74
Aves	*Limicola falcinellus*	Broad-billed Sandpiper	V,P	C,J,K	11
Aves	*Limosa lapponica*	Bar-tailed Godwit	P	C,J,K	635
Aves	*Limosa lapponica baueri*	Bar-tailed Godwit (baueri)	P	V	3
Aves	*Limosa limosa*	Black-tailed Godwit	V,P	C,J,K	51
Aves	*Lophoictinia isura*	Square-tailed Kite	V,P,3		163
Aves	*Macronectes giganteus*	Southern Giant Petrel	E1,P	E	1
Aves	*Melanodryas cucullata cucullata*	Hooded Robin (south-eastern form)	V,P		21
Aves	*Melithreptus gularis gularis*	Black-chinned Honeyeater (eastern subspecies)	V,P		235
Aves	*Menura alberti*	Albert's Lyrebird	V,P		5
Aves	*Neophema pulchella*	Turquoise Parrot	V,P,3		1
Aves	*Nettapus coromandelianus*	Cotton Pygmy-Goose	E1,P		2
Aves	*Ninox connivens*	Barking Owl	V,P,3		224
Aves	*Ninox strenua*	Powerful Owl	V,P,3		299
Aves	*Numenius madagascariensis*	Eastern Curlew	P	CE,C,J,K	391
Aves	*Numenius minutus*	Little Curlew	P	C,J,K	3
Aves	*Numenius phaeopus*	Whimbrel	P	C,J,K	387

Class	Scientific Name	Common Name	NSW status*	Comm. Status+	Records
Aves	*Onychoprion fuscata*	Sooty Tern	V,P		8
Aves	*Oxyura australis*	Blue-billed Duck	V,P		6
Aves	*Pachycephala olivacea*	Olive Whistler	V,P		K
Aves	*Pandion cristatus*	Eastern Osprey	V,P,3		810
Aves	*Petroica boodang*	Scarlet Robin	V,P		22
Aves	*Petroica phoenicea*	Flame Robin	V,P		8
Aves	*Pezoporus wallicus wallicus*	Eastern Ground Parrot	V,P,3		136
Aves	*Phaethon lepturus*	White-tailed Tropicbird	P	C,J	6
Aves	*Phaethon rubricauda*	Red-tailed Tropicbird	V,P	C,J	4
Aves	*Philomachus pugnax*	Ruff	P	C,J,K	5
Aves	*Pluvialis fulva*	Pacific Golden Plover	P	C,J,K	170
Aves	*Pluvialis squatarola*	Grey Plover	P	C,J,K	16
Aves	*Podargus ocellatus*	Marbled Frogmouth	V,P		2
Aves	*Pomatostomus temporalis temporalis*	Grey-crowned Babbler (eastern subspecies)	V,P		670
Aves	*Procelsterna cerulea*	Grey Ternlet	V,P		1
Aves	*Pterodroma leucoptera leucoptera*	Gould's Petrel	V,P	E	1
Aves	*Pterodroma solandri*	Providence Petrel	V,P		1
Aves	*Ptilinopus magnificus*	Wompoo Fruit-Dove	V,P		70
Aves	*Ptilinopus regina*	Rose-crowned Fruit-Dove	V,P		124
Aves	*Ptilinopus superbus*	Superb Fruit-Dove	V,P		5
Aves	*Puffinus assimilis*	Little Shearwater	V,P		1
Aves	*Rostratula australis*	Australian Painted Snipe	E1,P	E	8
Aves	*Stagonopleura guttata*	Diamond Firetail	V,P		39
Aves	*Stercorarius longicaudus*	Long-tailed Jaeger	P	C,J	2
Aves	*Stercorarius parasiticus*	Arctic Jaeger	P	C,J,K	7
Aves	*Sterna dougallii*	Roseate Tern	P	C,J	1
Aves	*Sterna hirundo*	Common Tern	P	C,J,K	112
Aves	*Sterna sumatrana*	Black-naped Tern	P	C,J	1
Aves	*Sternula albifrons*	Little Tern	E1,P	C,J,K	162
Aves	*Stictonetta naevosa*	Freckled Duck	V,P		25
Aves	*Thalassarche cauta*	Shy Albatross	V,P	V	1
Aves	*Thalassarche melanophris*	Black-browed Albatross	V,P	V	1
Aves	*Thalasseus bergii*	Crested Tern	P	J	499
Aves	*Todiramphus chloris*	Collared Kingfisher	V,P		5
Aves	*Tringa brevipes*	Grey-tailed Tattler	P	C,J,K	158
Aves	*Tringa glareola*	Wood Sandpiper	P	C,J,K	8
Aves	*Tringa incana*	Wandering Tattler	P	J	10
Aves	*Tringa nebularia*	Common Greenshank	P	C,J,K	189
Aves	*Tringa stagnatilis*	Marsh Sandpiper	P	C,J,K	61
Aves	*Turnix maculosus*	Red-backed Button-quail	V,P		11
Aves	*Tyto longimembris*	Eastern Grass Owl	V,P,3		112
Aves	*Tyto novaehollandiae*	Masked Owl	V,P,3		192
Aves	*Tyto tenebricosa*	Sooty Owl	V,P,3		31
Aves	*Xenus cinereus*	Terek Sandpiper	V,P	C,J,K	129

Class	Scientific Name	Common Name	NSW status*	Comm. Status+	Records
Flora	^^*Cryptostylis hunteriana*	Leafless Tongue Orchid	V,P,2	V	1
Flora	^^*Davidsonia jerseyana*	Davidson's Plum	E1,2	E	2
Flora	^^*Dendrobium melaleucaphilum*	Spider orchid	E1,P,2		14
Flora	^^*Diploglottis campbellii*	Small-leaved Tamarind	E1,2	E	1
Flora	^^*Diuris byronensis*	Byron Bay Diuris	E1,P,2		1
Flora	^^*Fontainea oraria*	Coastal Fontainea	E4A,2	E	35
Flora	^^*Geodorum densiflorum*	Pink Nodding Orchid	E1,P,2		13
Flora	^^*Oberonia complanata*	Yellow-flowered King of the Fairies	E1,P,2		5
Flora	^^*Oberonia titania*	Red-flowered King of the Fairies	V,P,2		41
Flora	^^*Peristeranthus hillii*	Brown Fairy-chain Orchid	V,P,2		8
Flora	^^*Phaius australis*	Southern Swamp Orchid	E1,P,2	E	74
Flora	^^*Pterostylis nigricans*	Dark Greenhood	V,P,2		7
Flora	^^*Sarcochilus hartmannii*	Hartman's Sarcochilus	V,P,2	V	P
Flora	*Acacia ruppii*	Rupp's Wattle	E1	E	1005
Flora	*Acalypha eremorum*	Acalypha	E1		P
Flora	*Acronychia littoralis*	Scented Acronychia	E1	E	74
Flora	*Aldrovanda vesiculosa*	Waterwheel Plant	E1		3
Flora	*Allocasuarina defungens*	Dwarf Heath Casuarina	E1	E	4
Flora	*Allocasuarina inophloia*	Stringybark She-Oak population in the Clarence Valley local government area	E2		2
Flora	*Ancistrachne maidenii*		V		56
Flora	*Angophora robur*	Sandstone Rough-barked Apple	V	V	1918
Flora	*Archidendron hendersonii*	White Lace Flower	V		55
Flora	*Arthraxon hispidus*	Hairy Jointgrass	V	V	6384
Flora	*Astrotricha cordata*	Heart-leaved Star Hair	E1		183
Flora	*Belvisia mucronata*	Needle-leaf Fern	E1		18
Flora	*Bertya sp. (Chambigne NR, M. Fatemi 24)*	Chambigne Bertya	E1		26
Flora	*Boronia hapalophylla*	Shannon Creek Boronia	E1,P		587
Flora	*Boronia umbellata*	Orara Boronia	V,P	V	423
Flora	*Callistemon linearifolius*	Netted Bottle Brush	V,3		7
Flora	*Centranthera cochinchinensis*	Swamp Foxglove	E1		133
Flora	*Chamaesyce psammogeton*	Sand Spurge	E1		81
Flora	*Clematis fawcettii*	Northern Clematis	V	V	2
Flora	*Coatesia paniculata*	Axe-Breaker	E1		14
Flora	*Corynocarpus rupestris subsp. rupestris*	Glenugie Karaka	V	V	19
Flora	*Cryptocarya foetida*	Stinking Cryptocarya	V	V	98
Flora	*Cynanchum elegans*	White-flowered Wax Plant	E1	E	P
Flora	*Cyperus aquatilis*	Water Nutgrass	E1		64
Flora	*Davidsonia johnsonii*	Smooth Davidson's Plum	E1	E	P
Flora	*Desmodium acanthocladum*	Thorny Pea	V	V	46
Flora	*Doryanthes palmeri*	Giant Spear Lily	V,P		1

Class	Scientific Name	Common Name	NSW status*	Comm. Status+	Records
Flora	*Drynaria rigidula*	Basket Fern	E1,3		2
Flora	*Eleocharis tetraquetra*	Square-stemmed Spike-rush	E1		1392
Flora	*Elionurus citreus*	Lemon-scented Grass	E1		3
Flora	*Endiandra floydii*	Crystal Creek Walnut	E1	E	P
Flora	*Endiandra hayesii*	Rusty Rose Walnut	V	V	8
Flora	*Endiandra muelleri subsp. bracteata*	Green-leaved Rose Walnut	E1		35
Flora	*Eucalyptus glaucina*	Slaty Red Gum	V	V	503
Flora	*Eucalyptus pachycalyx subsp. banyabba*	Banyabba Shiny-barked Gum	E1,3	E	42
Flora	*Eucalyptus tetrapleura*	Square-fruited Ironbark	V	V	1068
Flora	*Gossia fragrantissima*	Sweet Myrtle	E1	E	74
Flora	*Grammitis stenophylla*	Narrow-leaf Finger Fern	E1,3		20
Flora	*Grevillea banyabba*	Banyabba Grevillea	V	V	442
Flora	*Grevillea beadleana*	Beadle's Grevillea	E1,3	E	23
Flora	*Grevillea hilliana*	White Yiel Yiel	E1		1
Flora	*Grevillea masonii*	Mason's Grevillea	E1,3	E	191
Flora	*Grevillea quadricauda*	Four-tailed Grevillea	V	V	97
Flora	*Harnieria hygrophiloides*		E1		P
Flora	*Hibbertia marginata*	Bordered Guinea Flower	V	V	387
Flora	*Hygrocybe rubronivea*		V		P
Flora	*Hypolepis elegans*		E4		2
Flora	*Indigofera baileyi*	Bailey's Indigo	E1		19
Flora	*Kardomia prominens*		E4A		10
Flora	*Kardomia silvestris*	Woodland Babingtonia	E1		3
Flora	*Lindernia alsinoides*	Noah's False Chickweed	E1		85
Flora	*Lindsaea fraseri*	Fraser's Screw Fern	E1,3		1
Flora	*Lindsaea incisa*	Slender Screw Fern	E1,3		294
Flora	*Macadamia integrifolia*	Macadamia Nut		V	1
Flora	*Macadamia tetraphylla*	Rough-shelled Bush Nut	V	V	57
Flora	*Macrozamia johnsonii*	Johnson's Cycad	E1,P		1
Flora	*Marsdenia longiloba*	Slender Marsdenia	E1	V	17
Flora	*Maundia triglochinoides*		V		282
Flora	*Melaleuca irbyana*	Weeping Paperbark	E1		291
Flora	*Melichrus sp. Gibberagee*	Narrow-leaf Melichrus	E1	E	772
Flora	*Melichrus sp. Newfoundland State Forest*		E1	E	641
Flora	*Myrsine richmondensis*	Ripple-leaf Muttonwood	E1	E	10
Flora	*Niemeyera whitei*	Rusty Plum, Plum Boxwood	V		532
Flora	*Ochrosia moorei*	Southern Ochrosia	E1	E	2
Flora	*Olax angulata*	Square-stemmed Olax	V	V	27
Flora	*Oldenlandia galioides*		E1		7
Flora	*Owenia cepiodora*	Onion Cedar	V	V	1
Flora	*Parsonsia dorrigoensis*	Milky Silkpod	V	E	22
Flora	*Paspalidium grandispiculatum*		V	V	132
Flora	*Persicaria elatior*	Tall Knotweed	V	V	202

Class	Scientific Name	Common Name	NSW status*	Comm. Status+	Records
Flora	*Philotheca papillata*		V,P		10
Flora	*Phyllanthus microcladus*	Brush Sauropus	E1		81
Flora	*Plectranthus nitidus*	Nightcap Plectranthus	E1	E	1
Flora	*Polygala linariifolia*	Native Milkwort	E1		42
Flora	*Prostanthera palustris*	Swamp Mint-bush	V,3	V	536
Flora	*Prostanthera sejuncta*		V		582
Flora	*Psilotum complanatum*	Flat Fork Fern	E1,3		2
Flora	*Pultenaea maritima*	Coast Headland Pea	V		1
Flora	*Quassia sp. Moonee Creek*	Moonee Quassia	E1	E	1437
Flora	*Randia moorei*	Spiny Gardenia	E1	E	P
Flora	*Rhodamnia rubescens*	Scrub Turpentine	E4A		106
Flora	*Rhodomyrtus psidioides*	Native Guava	E4A		168
Flora	*Rotala tripartita*		E1		357
Flora	*Rutidosis heterogama*	Heath Wrinklewort	V	V	7
Flora	*Senna acclinis*	Rainforest Cassia	E1		2
Flora	*Sophora fraseri*	Brush Sophora	V	V	2
Flora	*Sophora tomentosa*	Silverbush	E1		68
Flora	*Syzygium hodgkinsoniae*	Red Lilly Pilly	V	V	12
Flora	*Syzygium moorei*	Durobby	V	V	1
Flora	*Tephrosia filipes*		V		77
Flora	*Thesium australe*	Austral Toadflax	V	V	1
Flora	*Tinospora smilacina*	Tinospora Vine	E1		8
Flora	*Tinospora tinosporoides*	Arrow-head Vine	V		19
Flora	*Triplarina imbricata*	Creek Triplarina	E1	E	3
Flora	*Tylophora woollsii*	Cryptic Forest Twiner	E1	E	P
Flora	*Typhonium sp. aff. brownii*	Stinky Lily	E1,3		1
Flora	*Xylosma terrae-reginae*	Queensland Xylosma	E1		1
Gastropoda	*Thersites mitchellae*	Mitchell's Rainforest Snail	E1	CE	3
Insecta	*Argynnis hyperbius*	Laced Fritillary	E1	CE	P
Insecta	*Petalura gigantea*	Giant Dragonfly	E1		P
Insecta	*Petalura litorea*	Coastal Petaltail	E1		67
Insecta	*Phyllodes imperialis southern subspecies*	Southern Pink Underwing Moth	E1	E	P
Mammalia	*Aepyprymnus rufescens*	Rufous Bettong	V,P		587
Mammalia	*Arctocephalus pusillus doriferus*	Australian Fur-seal	V,P		2
Mammalia	*Cercartetus nanus*	Eastern Pygmy-possum	V,P		1
Mammalia	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	28
Mammalia	*Chalinolobus nigrogriseus*	Hoary Wattled Bat	V,P		139
Mammalia	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	173
Mammalia	*Dugong dugon*	Dugong	E1,P		4
Mammalia	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		31
Mammalia	*Macropus dorsalis*	Black-striped Wallaby	E1,P		15
Mammalia	*Macropus parma*	Parma Wallaby	V,P		4
Mammalia	*Megaptera novaeangliae*	Humpback Whale	V,P	V	2

Class	Scientific Name	Common Name	NSW status*	Comm. Status+	Records
Mammalia	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V,P		49
Mammalia	*Miniopterus australis*	Little Bent-winged Bat	V,P		718
Mammalia	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		74
Mammalia	*Myotis macropus*	Southern Myotis	V,P		231
Mammalia	*Nyctophilus bifax*	Eastern Long-eared Bat	V,P		157
Mammalia	*Ozimops lumsdenae*	Northern Free-tailed Bat	V,P		4
Mammalia	*Petauroides volans*	Greater Glider	P	V	632
Mammalia	*Petaurus australis*	Yellow-bellied Glider	V,P		801
Mammalia	*Petaurus norfolcensis*	Squirrel Glider	V,P		666
Mammalia	*Petrogale penicillata*	Brush-tailed Rock-wallaby	E1,P	V	359
Mammalia	*Phascogale tapoatafa*	Brush-tailed Phascogale	V,P		355
Mammalia	*Phascolarctos cinereus*	Koala	V,P	V	6119
Mammalia	*Phoniscus papuensis*	Golden-tipped Bat	V,P		4
Mammalia	*Planigale maculata*	Common Planigale	V,P		70
Mammalia	*Potorous tridactylus*	Long-nosed Potoroo	V,P	V	84
Mammalia	*Pseudomys gracilicaudatus*	Eastern Chestnut Mouse	V,P		5
Mammalia	*Pseudomys novaehollandiae*	New Holland Mouse	P	V	31
Mammalia	*Pseudomys oralis*	Hastings River Mouse	E1,P	E	1
Mammalia	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	2097
Mammalia	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		47
Mammalia	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		73
Mammalia	*Syconycteris australis*	Common Blossom-bat	V,P		101
Mammalia	*Thylogale stigmatica*	Red-legged Pademelon	V,P		5
Mammalia	*Vespadelus troughtoni*	Eastern Cave Bat	V,P		45
Reptilia	*Cacophis harriettae*	White-crowned Snake	V,P		18
Reptilia	*Caretta caretta*	Loggerhead Turtle	E1,P	E	32
Reptilia	*Chelonia mydas*	Green Turtle	V,P	V	9
Reptilia	*Coeranoscincus reticulatus*	Three-toed Snake-tooth Skink	V,P	V	45
Reptilia	*Dermochelys coriacea*	Leatherback Turtle	E1,P	E	5
Reptilia	*Eretmochelys imbricata*	Hawksbill Turtle	P	V	3
Reptilia	*Hoplocephalus bitorquatus*	Pale-headed Snake	V,P		7
Reptilia	*Hoplocephalus stephensii*	Stephens' Banded Snake	V,P		27
Reptilia	*Oxyuranus microlepidotus*	Fierce Snake	E4,P		1

*NSW Status: P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

+ Comm. Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

- Number of Records: P = predicted to occur.

BioNET Atlas search – threatened ecological communities predicted to occur within the Clarence Sandstone and Clarence Lowlands Subregion of the Southern Eastern Queensland Bioregion.

Scientific Name	NSW Status*	Comm. Status+	Records
Coastal Cypress Pine Forest in the New South Wales North Coast Bioregion	E3		K
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	V	K
Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K
Grey Box—Grey Gum Wet Sclerophyll Forest in the NSW North Coast Bioregion	E3		K
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	CE	K
Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E3	CE	K
Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	E3	CE	K
Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion	E3		K
Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	E	K
Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		K
Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions	E3		K

*NSW Status: P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.

+Comm. Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable.

- Number of Records: P = predicted to occur.

BioNET Atlas search – Key Threatening Processes predicted to occur within the Clarence Sandstone and Clarence Lowlands Subregion of the Southern Eastern Queensland Bioregion.

Common Name	NSW Status*	Comm. Status+	Records
Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala* (Latham, 1802)	KTP	KTP	P
Alteration of habitat following subsidence due to longwall mining	KTP		P
Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP		P
Anthropogenic Climate Change	KTP	KTP	P
Bushrock removal	KTP		P
Clearing of native vegetation	KTP	KTP	P
Competition and grazing by the feral European Rabbit, Oryctolagus cuniculus (L.)	KTP	KTP	P
Competition and habitat degradation by Feral Goats, *Capra hircus Linnaeus* 1758	KTP	KTP	P
Competition from feral honey bees, *Apis mellifera* L.	KTP		P
Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP		P
Herbivory and environmental degradation caused by feral deer	KTP		P

Common Name	NSW Status*	Comm. Status+	Records
High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	KTP		P
Importation of Red Imported Fire Ants *Solenopsis invicta Buren* 1972	KTP	KTP	P
Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP	P
Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP	P
Infection of native plants by *Phytophthora cinnamomi*	KTP	KTP	P
Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	KTP		P
Introduction of the Large Earth Bumblebee *Bombus terrestris* (L.)	KTP		P
Invasion and establishment of exotic vines and scramblers	KTP		P
Invasion and establishment of Scotch Broom (*Cytisus scoparius)*	KTP		P
Invasion and establishment of the Cane Toad (*Bufo marinus*)	KTP	KTP	P
Invasion of native plant communities by African Olive *Olea europaea subsp. cuspidata* (Wall. ex G. Don) Cif.	KTP		P
Invasion of native plant communities by *Chrysanthemoides monilifera*	KTP		P
Invasion of native plant communities by exotic perennial grasses	KTP		P
Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW	KTP		P
Invasion, establishment and spread of Lantana (*Lantana camara L. sens. Lat*)	KTP		P
Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	P
Loss of Hollow-bearing Trees	KTP		P
Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP		P
Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*	KTP		P
Predation by *Gambusia holbrooki Girard*, 1859 (Plague Minnow or Mosquito Fish)	KTP		P
Predation by the European Red Fox Vulpes *Vulpes (Linnaeus*, 1758)	KTP	KTP	P
Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)	KTP	KTP	P
Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa Linnaeus* 1758	KTP	KTP	P
Removal of dead wood and dead trees	KTP		P

Biodiversity Values Map

NSW GOVERNMENT

Biodiversity Offset Scheme (BOS) Entry Threshold Map

983.7 0 491.83 983.7 Metres

WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Legend

- Biodiversity Values that have been mapped for more than 90 days
- Biodiversity Values added within last 90 days

Notes

NSW GOVERNMENT

Biodiversity Values Map and Threshold Report

Results Summary

Date of Calculation	06/10/2021 4:46 PM		**BDAR Required***
Total Digitised Area	6.62	ha	
Minimum Lot Size Method	LEP		
Minimum Lot Size	40	ha	
Area Clearing Threshold	1	ha	
Area clearing trigger Area of native vegetation cleared	Unknown #		Unknown #
Biodiversity values map trigger Impact on biodiversity values map(not including values added within the last 90 days)?	no		no
Date of the 90 day Expiry	N/A		

*If BDAR required has:

- at least one 'Yes': you have exceeded the BOS threshold. You are now required to submit a Biodiversity Development Assessment Report with your development application. Go to https://customer.lmbc.nsw.gov.au/assessment/AccreditedAssessor to access a list of assessors who are accredited to apply the Biodiversity Assessment Method and write a Biodiversity Development Assessment Report
- 'No': you have not exceeded the BOS threshold. You may still require a permit from local council. Review the development control plan and consult with council. You may still be required to assess whether the development is "likely to significantly affect threatened species' as determined under the test in s. 7.3 of the Biodiversity Conservation Act 2016. You may still be required to review the area where no vegetation mapping is available.

Where the area of impact occurs on land with no vegetation mapping available, the tool cannot determine the area of native vegetation cleared and if this exceeds the Area Threshold. You will need to work out the area of native vegetation cleared - refer to the BOSET user guide for how to do this.

On and after the 90 day expiry date a BDAR will be required.

Disclaimer

This results summary and map can be used as guidance material only. This results summary and map is not guaranteed to be free from error or omission. The State of NSW and Office of Environment and Heritage and its employees disclaim liability for any act done on the information in the results summary or map and any consequences of such acts or omissions. It remains the responsibility of the proponent to ensure that their development application complies will all aspects of the *Biodiversity Conservation Act 2016*.

The mapping provided in this tool has been done with the best available mapping and knowledge of species habitat requirements. This map is valid for a period of 30 days from the date of calculation (above).

Acknowledgement

I as the applicant for this development, submit that I have correctly depicted the area that will be impacted or likely to be impacted as a result of the proposed development.

Signature_____ Date:06/10/2021 04:46 PM

APPENDIX B – FIELD SURVEY RESULTS

Flora species list

The following table lists all 40 flora species recorded within or immediately adjacent to the subject site during the July 2021 survey. Of these, 26 species (65%) are native and 14 (35%) introduced.

Growth Form[1]	Species Name	Common Name	Status[2]	HTE[3]	WoNS[4]	PW[5]
SG	*Acacia complanata*	Flat-stemmed Wattle	N	-	-	-
SG	*Acacia falcata*	Hickory Wattle	N	-	-	-
SG	*Acacia leiocalyx*	Black Wattle	N	-	-	-
TG	*Allocasuarina littoralis*	Black She-oak	N	-	-	-
TG	*Allocasuarina torulosa*	Forest Oak	N	-	-	-
FG	*Ambrosia artemisiifolia*	Annual Ragweed	I	No	No	No
TG	*Alphitonia excelsa*	Red Ash	N	-	-	-
GG	*Andropogon virginicus*	Whisky Grass	I	Yes	No	No
GG	*Aristida calycina*	Wiregrass	N	-	-	-
FG	*Bidens pilosa*	Cobblers Peg	I	No	No	Yes
FG	*Bossiaea rhombifolia*	Bossiaea	N	-	-	-
FG	*Canna indica*	Canna Lily	I	Yes	No	No
EG	*Chelanthes* sp.	Fern	N	-	-	-
GG	*Chloris ventricosa*	Plump windmill grass	N	-	-	-
TG	*Corymbia henryi*	Large-leaved Spotted Gum	N	-	-	-
FG	*Cucumis myriocarpus*	Prickly paddy melon	I	No	No	No
GG	*Cyanthilium cinereum*	Iron Weed	I	No	No	No
FG	*Cyperus polystachyos*	Sedge	I	No	No	No
FG	*Emilia sonchifolia*	Lilac Tasselflower	I	No	No	No
GG	*Eragrostris brownii*	Browns lovegrass	N	No	No	No
TG	*Eucalyptus baileyana*	Bailey's stringybark	N	-	-	-
TG	*Eucalyptus planchoniana*	Needlebark stringybark	N	-	-	-
TG	*Eucalyptus pyrocarpa*	Large-fruited Blackbutt	N	-	-	-
FG	*Eustrephus latifolius*	Wombat Berry	N	-	-	-
FG	*Goodenia rotundifolia*	Goodenia	N	-	-	-
TG	*Grevillea robusta*	Silky Oak	N	-	-	-
FG	*Hardenbergia violacea*	Purple Coral Pea	N	-	-	-
GG	*Imperata cylindrica*	Blady Grass	N	-	-	-
SG	*Jacksonia scoparia*	Dogwood	N	-	-	-
SG	*Lantana camara*	Lantana	I	Yes	Yes	Yes
FG	*Lobelia purpurascens*	Whiteroot	N	-	-	-
FG	*Maekawaea rhytidophylla*		N	-	-	-
SG	*Persoonia stradbrokensis*		N	-	-	-
GG	*Phragmites australis*	Common reed	N	-	-	-
FG	*Richardia sp.*	White Eye	I	No	No	No
SG	*Ricinus communis*	Castor Oil	I	Yes	No	No
SG	*Solanum mauritianum*	Wild tobacco tree	I	No	No	No
FG	*Sphagneticola trilobata*	Trailing daisy	I	-	-	-
GG	*Sporobolus pyramidalis*	Giant rat's tail grass	I	No	No	No
GG	*Themeda triandra*	Kangaroo Grass	N	-	-	-

[1]Growth form: FG = Forb, GG = Grass and Grass-like, SG = Shrub, TG = Tree, EG = Fern, OG = Other. [2]Status: N = Native, I = Introduced. [3]High-threat exotic species (Yes/No). [4]Weed of National Significance (Yes/No). [5]Priority weed for the North Coast (Yes/No).

Fauna species list

Two fauna species were identified on the subject site during the July 2021 field survey. These species are listed in the table below.

Class	Species Name	Common Name	Native or Exotic
Aves	*Rhipidura albiscapa*	Grey Fantail	Native
Aves	*Dacelo novaeguineae*	Laughing Kookaburra	Native

APPENDIX C – BC ACT HABITAT ASSESSMENT FOR THREATENED SPECIES AND COMMUNITIES PREDICTED TO OCCUR

List generated by conducting a vegetation associations report for the Clarence Lowlands and Clarence Sandstones subregions of the South-Eastern Queensland bioregion and filtering the results by the PCTs present within the subject site. To determine whether any threatened species were known to occur near the subject site, BioNet Atlas records of threatened species within these subregions were downloaded and the records clipped to within 10 km of the subject site in QGIS.

Likelihood of occurrence table for BC Act listed threatened species

Species Name	Common Name	NSW Status*	Comm. Status+	Record within 10 km	Likelihood of Occurrence	5-part test required (Yes / No)
^^*Mixophyes iteratus*	Giant Barred Frog	E1,P,2	E	No	The Giant Barred Frog is distributed along the coast and ranges from Eumundi in south-east Queensland to Warrimoo in the Blue Mountains. Declines appear to have occurred at the margins of the species' range, with no recent records south of the Hawkesbury River and disappearances from a number of streams in QLD. Northern NSW, particularly the Coffs Harbour-Dorrigo area, is a stronghold. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Litoria aurea	Green and Golden Bell Frog	E1,P	V	No	Formerly distributed from the NSW north coast near Brunswick Heads, southwards along the NSW coast to Victoria where it extends into east Gippsland. Records from west to Bathurst, Tumut and the ACT region. Since 1990 there have been approximately 50 recorded locations in NSW, most of which are small, coastal, or near coastal populations. These locations occur over the species' former range, however they are widely separated and isolated. Large populations in NSW are located around the metropolitan areas of Sydney, Shoalhaven and mid north coast (one an island population). There is only one known population on the NSW Southern Tablelands. Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (Typha spp.) or spikerushes (*Eleocharis spp*.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Litoria booroolongensis	Booroolong Frog	E1,P	E	No	The Booroolong Frog is restricted to NSW and north-eastern Victoria, predominantly along the western-flowing streams of the Great Dividing Range. It has disappeared from much of the Northern Tablelands, however several populations have recently been recorded in the Namoi catchment. The species is rare throughout most of the remainder of its range. Live along permanent streams with some fringing vegetation cover such as ferns, sedges or grasses. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Litoria brevipalmata	Green-thighed Frog	V,P		No	Green-thighed Frogs are named for the bright green or blue-green colour on the groin and back of the thighs. They are small frogs (to 40 mm in length), rich brown to chocolate brown on the back, sometimes with smaller black flecks. A broad black stripe runs from the snout to the flank, ending as a series of blotches. Green-thighed Frogs occur in a range of habitats from rainforest and moist eucalypt forest to dry eucalypt forest and heath, typically in areas where surface water gathers after rain. It prefers wetter forests in the south of its range, but extends into drier forests in northern NSW and southern Queensland. Breeding occurs following heavy rainfall from spring to autumn, with larger temporary pools and flooded areas preferred. Frogs may aggregate around breeding sites and eggs are laid in loose clumps among waterplants, including water weeds. The larvae are free swimming. The frogs are thought to forage in leaf-litter **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes
Litoria olongburensis	Olongburra Frog	V,P	V	No	Olongburra Frogs are found in coastal wallum swamps from Fraser Island in southern Queensland to Yuraygir National Park in northern NSW. The Olongburra Frog is an "acid" frog confined to the coastal sandplain wallum swamps. Their life-cycle is adapted to the acidic pH (2.8-5.5) of these wetlands. Frogs are highest in abundance in relatively undisturbed wallum swamps. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Litoria subglandulosa	Glandular Frog	V,P		No	Known only from stream habitats on the eastern escarpment of the Great Dividing Range from the "The Flags" near Walcha in the south to Girraween National Park in the north, a distance of about 250 km. Glandular Frogs may be found along streams in rainforest, moist and dry eucalypt forest or in subalpine swamps. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Calyptorhynchus banksii banksii*	Red-tailed Black-Cockatoo (coastal subspecies)	E4A,P,2		No	The Red-tailed Black-Cockatoo is the most widespread of the black-cockatoos, with five subspecies ranging broadly across northern, eastern and western Australia with and an isolated subspecies in Victoria and South Australia. The nominate subspecies (*banksii*) of the Red-tailed Black-Cockatoo is now confined to northern and eastern coastal Queensland and, possibly, far north-eastern NSW. In NSW, it occurred historically at least as far south as the Bellinger River and it is likely to have extended as far south as Sydney. The NSW Scientific Committee in its final determination on the status of the species in NSW accepted only four apparently valid records all in the far north-east of the state: in the Tweed and Richmond Valleys: at Bungawalbin Nature Reserve, Round Mountain (Bogangar), Wilsons Creek (north of Alstonville), and at Cabarita. It is thought the most productive habitats for this subspecies were forests and woodlands of fertile riparian flats and floodplains. These areas were heavily cleared for agriculture and settlements, with remaining patches severely fragmented, and also degraded by logging. In north-eastern NSW, the subspecies has been reported from dry open forest and mixed rainforest-eucalypt forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

^^*Calyptorhynchus lathami*	Glossy Black-Cockatoo	V,P,2		Yes	The species is uncommon although widespread throughout suitable forest and woodland habitats, from the central Queensland coast to East Gippsland in Victoria, and inland to the southern tablelands and central western plains of NSW, with a small population in the Riverina. An isolated population exists on Kangaroo Island, South Australia. Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, Allocasuaraina diminuta, and A. gymnathera. Belah is also utilised and may be a critical food source for some populations. Dependent on large hollow-bearing eucalypts for nest sites. A single egg is laid between March and May. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km. Popular food trees: Black Sheoak and Forest Sheoak present.**	Yes
^^*Erythrotriorchis radiatus*	Red Goshawk	E4A,P,2	V	Yes	This unique Australian endemic raptor is distributed sparsely through northern and eastern Australia, from the western Kimberley Division of northern Western Australia to north-eastern Queensland and south to far north-eastern NSW, and with scattered records in central Australia. The species is very rare in NSW, extending south to about 30°S, with most records north of this, in the Clarence River Catchment, and a few around the lower Richmond and Tweed Rivers. Formerly, it was at least occasionally reported as far south as Port Stephens. Red Goshawks inhabit open woodland and forest, preferring a mosaic of vegetation types, a large population of birds as a source of food, and permanent water, and are often found in riparian habitats along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and riparian *Eucalyptus* forest of coastal rivers. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and one historical record within 10 km.**	Yes

Actitis hypoleucos	Common Sandpiper	P	C,J,K	No	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia. The species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The muddy margins utilised by the species are often narrow and may be steep. The species is often associated with mangroves, and sometimes found in areas of mud littered with rocks or snags. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Amaurornis moluccana	Pale-vented Bush-hen	V,P		No	In Australia, the Pale-vented Bush-hen occurs mainly in coastal and subcoastal regions from the Top End of the Northern Territory and Cape York Peninsula south through eastern Queensland to north-eastern NSW. There are a few records in the Kimberley Division of northern Western Australia. In NSW, Bush-hens are an apparently uncommon resident from the Queensland border south to the Clarence River, though the species appears to be expanding its range southwards with recent records as far south as the Nambucca River. Outside Australia, the species occurs in the Moluccas, western and southern New Guinea, the Bismarck Archipelago and the Solomon Islands. The subspecies present in Australia is *ruficrissa* which also occurs in southern and eastern New Guinea. The Pale-vented Bush-hen inhabits tall dense understorey or ground-layer vegetation on the margins of freshwater streams and natural or artificial wetlands, usually within or bordering rainforest, rainforest remnants or forests. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Anous stolidus	Common Noddy	P	C,J	No	Common throughout the tropical regions of the Alantic, Pacific and Indian Oceans, the Common Noddy usually occurs out to sea during the non-breeding season, but when breeding it usually stays near islands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Anseranas semipalmata	Magpie Goose	V,P		Yes	The Magpie Goose is still relatively common in the Australian northern tropics but had disappeared from south-east Australia by 1920 due to drainage and overgrazing of reed swamps used for breeding. Since the 1980s there have been an increasing number of records in central and northern NSW. Vagrants can follow food sources to south-eastern NSW. Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. **Low - Subject site within known distribution. No associated vegetation communities present and records within 10 km. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No

Anthochaera phrygia	Regent Honeyeater	E4A,P	CE	No	The Regent Honeyeater mainly inhabits temperate woodlands and open forests of the inland slopes of south-east Australia. Birds are also found in drier coastal woodlands and forests in some years. Once recorded between Adelaide and the central coast of Queensland, its range has contracted dramatically in the last 30 years to between north-eastern Victoria and south-eastern Queensland. There are only three known key breeding regions remaining: north-east Victoria (Chiltern-Albury), and in NSW at Capertee Valley and the Bundarra-Barraba region. In NSW the distribution is very patchy and mainly confined to the two main breeding areas and surrounding fragmented woodlands. In some years flocks converge on flowering coastal woodlands and forests. The Regent Honeyeater is a flagship threatened woodland bird whose conservation will benefit a large suite of other threatened and declining woodland fauna. The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. **Moderate - Subject site within known distribution. Associated vegetation communities present (688, 1136) and no records within 10 km.**	Yes
Apus pacificus	Fork-tailed Swift	P	C,J,K	No	In NSW, the Fork-tailed Swift is recorded in all regions. Many records occur east of the Great Divide; however, a few populations have been found west of the Great Divide. These are widespread but scattered further west of the line joining Bourke and Dareton. Sightings have been recorded at Milparinka, the Bulloo River and Thurloo Downs (Higgins 1999). The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No

Ardenna carneipes	Flesh-footed Shearwater	V,P	J,K	No	Ranges throughout the Pacific and Indian Oceans. There are two main breeding areas in the world: one in the South West Pacific includes Lord Howe Island and New Zealand; the other along the coast of Western Australia. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No
Ardenna grisea	Sooty Shearwater	P	J	No	Sooty Shearwater is found in the southern hemisphere from the iceberg zone around Antactica northwards to its breeding islands around New Zealand, southern Australia and southern South America. In the non-breeding season it has been recorded as passing near Tonga, east of Hawaii and elsewhere in the North Pacific. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No
Ardenna pacifica	Wedge-tailed Shearwater	P	J	No	Return from the North Pacific to their burrows on islands off the coast of NSW. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No
Ardenna tenuirostris	Short-tailed Shearwater	P	C,J,K	No	In summer months, the Short-tailed Shearwater is the most common shearwater along the south and south-east coasts of Australia. Enormous flocks of birds head south to breeding grounds off these coasts as they return from wintering grounds in the North Pacific. Some counts have recorded numbers as great as 60 000 individuals passing every hour, with over 18 million birds making the trek. At this time a number of birds are washed up on beaches and die as a result of exhaustion, sickness and bad weather. Most are birds hatched during the previous breeding season. Considering the incredible numbers of birds that make this annual migration, the number of fatalities is fairly small. The Short-tailed Shearwater feeds on krill, small fish and other small marine creatures. Food is caught mostly on the surface of the water but sometimes birds are seen diving for food. The Short-tailed Shearwater is found in coastal waters. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No

Arenaria interpres	Ruddy Turnstone	P	C,J,K	No	Typically occur in tropical and sub-tropical oceans across the Pacific and Indian Oceans. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Artamus cyanopterus cyanopterus	Dusky Woodswallow	V,P		Yes	Dusky woodswallows are widespread in eastern, southern and south western Australia. The species occurs throughout most of New South Wales, but is sparsely scattered in, or largely absent from, much of the upper western region. Most breeding activity occurs on the western slopes of the Great Dividing Range. Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Botaurus poiciloptilus	Australasian Bittern	E1,P	E	No	Australasian Bitterns are widespread but uncommon over south-eastern Australia. In NSW they may be found over most of the state except for the far north-west. Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha* spp.) and spikerushes (*Eleocharis* spp.). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails. Feeding platforms may be constructed over deeper water from reeds trampled by the bird; platforms are often littered with prey remains. Breeding occurs in summer from October to January; nests are built in secluded places in densely-vegetated wetlands on a platform of reeds; there are usually six olive-brown eggs to a clutch. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Burhinus grallarius	Bush Stone-curlew	E1,P		No	The Bush Stone-curlew is found throughout Australia except for the central southern coast and inland, the far south-east corner, and Tasmania. Only in northern Australia is it still common however and in the south-east it is either rare or extinct throughout its former range. Inhabits open forests and woodlands with a sparse grassy ground layer and fallen timber. Largely nocturnal, being especially active on moonlit nights. Feed on insects and small vertebrates, such as frogs, lizards and snakes. Nest on the ground in a scrape or small bare patch. Two eggs are laid in spring and early summer. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136), no records within 10 km.**	Yes
Calidris acuminata	Sharp-tailed Sandpiper	P	C,J,K	No	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats. Many inland records are of birds on passage. In Australasia, the Sharp-tailed Sandpiper 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 saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgelands and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and swamps and creeks lined with mangroves. They tend to occupy coastal mudflats mainly after ephemeral terrestrial wetlands have dried out, moving back during the wet season. They may be attracted to mats of algae and water weed either floating or washed up around terrestrial wetlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Calidris alba	Sanderling	V,P	C,J,K	No	A regular summer migrant from Siberia and other Arctic breeding grounds to most of the Australian coastline. It is uncommon to locally common, arriving from September and leaving by May (some may overwinter in Australia). Sanderlings occur along the NSW coast, with occasional inland sightings. Often found in coastal areas on low beaches of firm sand, near reefs and inlets, along tidal mudflats and bare open coastal lagoons; individuals are rarely recorded in near-coastal wetlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Calidris canutus	Red Knot	P	E,C,J,K	No	The Red Knot is migratory, breeding overseas. The omnivorous species feeds predominantly within wetland and coastal environments. There are no sites of international importance for the species listed within NSW. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Calidris ferruginea	Curlew Sandpiper	E1,P	CE,C,J,K	No	In Australia, Curlew Sandpipers occur around the coasts and are also quite widespread inland, though in smaller numbers. Records occur in all states during the non-breeding period, and also during the breeding season when many non-breeding one-year old birds remain in Australia rather than migrating north. In NSW, they are widespread east of the Great Divide, especially in coastal regions. They are occasionally recorded in the Tablelands and are widespread in the Riverina and south-west NSW, with scattered records elsewhere. Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. Occasionally they are recorded around floodwaters. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Calidris melanotos	Pectoral Sandpiper	P	J,K	No	The Pectoral Sandpiper breeds in northern Russia and North America. Within Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. In New South Wales (NSW), the Pectoral Sandpiper is widespread, but scattered. Records exist east of the Great Divide, from Casino and Ballina, south to Ulladulla. West of the Great Divide, the species is widespread in the Riverina and Lower Western regions. The species is usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. The species has also been recorded in swamp overgrown with lignum. They forage in shallow water or soft mud at the edge of wetlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Calidris ruficollis	Red-necked Stint	P	C,J,K	No	In Australasia, the Red-necked Stint is mostly found in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks and pools in salt flats. They sometimes use flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Calidris subminuta	Long-toed Stint	P	C,J,K	No	The Long-toed Stint is a regular summer visitor to Australia, but uncommon in the east. The Long-toed Stint is irregular with widely scattered records in NSW. The species has been recorded at the estuary of the Richmond River, Kooragang Island, Pitts Town Lagoon, McGrath's Hill, Bushell's Lagoon, the Hawkesbury River, Shell Point, Botany Bay, Parkes, Fivebough Swamp, Tullakool Saltworks, Dareton, Mortanally Billabong, Wentworth and Cobar. The Long-toed Stint occurs in a variety of terrestrial wetlands. They prefer shallow freshwater or brackish wetlands including lakes, swamps, river floodplains, streams, lagoons and sewage ponds. The species is also fond of areas of muddy shoreline, growths of short grass, weeds, sedges, low or floating aquatic vegetation, reeds, rushes and occasionally stunted samphire. It has also been observed at open, less vegetated shores of larger lakes and ponds and is common on muddy fringes of drying ephemeral lakes and swamps. The Long-toed Stint also frequents permanent wetlands such as reservoirs and artificial lakes. They are uncommon, but not unknown, at tidal estuaries, saline lakes, saltponds and bore swamps. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Calidris tenuirostris	Great Knot	V,P	CE,C,J,K	No	In NSW, the species has been recorded at scattered sites along the coast down to about Narooma. It has also been observed inland at Tullakool, Armidale, Gilgandra and Griffith. Occurs within sheltered, coastal habitats containing large, intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Carterornis leucotis	White-eared Monarch	V,P		No	The species is endemic to the coastal lowlands and eastern slopes of the Great Divide of eastern Australia, extending from Cape York Peninsula south to north-eastern NSW. In NSW, White-eared Monarchs are generally found from the Queensland border south to Iluka at the mouth of the Clarence River, and inland as far as the Richmond Range. There are occasional records south of the Clarence River, near Woolgoolga and around Port Macquarie. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Charadrius leschenaultii	Greater Sand-plover	V,P	V,C,J,K	No	The Greater Sand-plover breeds in central Asia from Armenia to Mongolia, moving further south for winter. In Australia the species is commonly recorded in parties of 10-20 on the west coast, with the far northwest being the stronghold of the population. The species is apparently rare on the east coast, usually found singly. In NSW, the species has been recorded between the northern rivers and the Illawarra, with most records coming from the Clarence and Richmond estuaries. Almost entirely restricted to coastal areas in NSW, occurring mainly on sheltered sandy, shelly or muddy beaches or estuaries with large intertidal mudflats or sandbanks. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Charadrius mongolus	Lesser Sand-plover	V,P	E,C,J,K	No	The Lesser Sand-plover breeds in central and north eastern Asia, migrating further south for winter. In Australia the species is found around the entire coast but is most common in the Gulf of Carpentaria, and along the east coast of Queensland and northern NSW. Individuals are rarely recorded south of the Shoalhaven estuary, and there are few inland records. Almost entirely coastal in NSW, favouring the beaches of sheltered bays, harbours and estuaries with large intertidal sandflats or mudflats; occasionally occurs on sandy beaches, coral reefs and rock platforms **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Chlidonias leucopterus	White-winged Black Tern	P	C,J,K	Yes	The species is a non-breeding migrant to Australia, where it is widespread and common along south-western, northern and central-eastern coasts, with only scattered records of small numbers along the coasts elsewhere in southern Australia. In Australia, and elsewhere in their non-breeding range, the species mostly inhabits fresh, brackish or saline, and coastal or subcoastal wetlands. White-winged Black Terns frequent tidal wetlands, such as harbours, bays, estuaries and lagoons, and their associated tidal sandflats and mudflats. Terrestrial wetlands, including swamps, lakes, billabongs, rivers, floodplains, reservoirs, saltworks, sewage ponds and outfalls are also inhabited. In NSW, the species is widespread east of the Great Divide, mainly south to about Wollongong, but with scattered records further south along the coast and on inland wetlands west of the Great Divide, for example Lake Cowal, Narran Lake and as far west as the Menindee Lakes. **Low - Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No

Chthonicola sagittata	Speckled Warbler	V,P		Yes	The Speckled Warbler has a patchy distribution throughout south-eastern Queensland, the eastern half of NSW and into Victoria, as far west as the Grampians. The species is most frequently reported from the hills and tablelands of the Great Dividing Range, and rarely from the coast. There has been a decline in population density throughout its range, with the decline exceeding 40% where no vegetation remnants larger than 100ha survive. The Speckled Warbler lives in a wide range of Eucalyptus dominated communities that have a grassy understorey, often on rocky ridges or in gullies. Typical habitat would include scattered native tussock grasses, a sparse shrub layer, some eucalypt regrowth and an open canopy. Large, relatively undisturbed remnants are required for the species to persist in an area. The diet consists of seeds and insects, with most foraging taking place on the ground around tussocks and under bushes and trees. Pairs are sedentary and occupy a breeding territory of about ten hectares, with a slightly larger home-range when not breeding. The rounded, domed, roughly built nest of dry grass and strips of bark is located in a slight hollow in the ground or the base of a low dense plant, often among fallen branches and other litter. A side entrance allows the bird to walk directly inside. A clutch of 3-4 eggs is laid, between August and January, and both parents feed the nestlings. The eggs are a glossy red-brown, giving rise to the unusual folk names 'Blood Tit' and 'Chocolatebird'. Some cooperative breeding occurs. The species may act as host to the Black-eared Cuckoo. Speckled Warblers often join mixed species feeding flocks in winter, with other species such as Yellow-rumped, Buff-rumped, Brown and Striated Thornbills. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Circus assimilis	Spotted Harrier	V,P		No	The Spotted Harrier occurs throughout the Australian mainland, except in densely forested or wooded habitats of the coast, escarpment and ranges, and rarely in Tasmania. Individuals disperse widely in NSW and comprise a single population. Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	V,P		Yes	The Brown Treecreeper is endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range. It is less commonly found on coastal plains and ranges. The western boundary of the range of Climacteris picumnus victoriae runs approximately through Corowa, Wagga Wagga, Temora, Forbes, Dubbo and Inverell and along this line the subspecies intergrades with the arid zone subspecies of Brown Treecreeper Climacteris picumnus picumnus which then occupies the remaining parts of the state. The eastern subspecies lives in eastern NSW in eucalypt woodlands through central NSW and in coastal areas with drier open woodlands such as the Snowy River Valley, Cumberland Plains, Hunter Valley and parts of the Richmond and Clarence Valleys. The population density of this subspecies has been greatly reduced over much of its range, with major declines recorded in central NSW and the northern and southern tablelands. Declines have occurred in remnant vegetation fragments smaller than 300 hectares, that have been isolated or fragmented for more than 50 years. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Coracina lineata	Barred Cuckoo-shrike	V,P		No	Coastal eastern Australia from Cape York to the Manning River in NSW. Barred Cuckoo-shrikes are generally uncommon in their range, and are rare in NSW. Rainforest, eucalypt forests and woodlands, clearings in secondary growth, swamp woodlands and timber along watercourses. They are usually seen in pairs or small flocks foraging among foliage of trees for insects and fruit. They are active birds, frequently moving from tree to tree. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136), no records within 10 km.**	Yes
Cuculus optatus	Oriental Cuckoo	P	C,J,K	No	The Oriental Cuckoo is not believed to breed in Australia. Mostly found in top end of Australia and coastal Queensland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Daphoenositta chrysoptera	Varied Sittella	V,P		No	The Varied Sittella is sedentary and inhabits most of mainland Australia except the treeless deserts and open grasslands. Distribution in NSW is nearly continuous from the coast to the far west. The Varied Sittella's population size in NSW is uncertain but is believed to have undergone a moderate reduction over the past several decades. Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136), no records within 10 km.**	Yes
Diomedea exulans	Wandering Albatross	E1,P	E	No	The Wandering Albatross visits Australian waters extending from Fremantle, Western Australia, across the southern water to the Whitsunday Islands in Queensland between June and September. It has been recorded along the length of the NSW coast. At other times birds roam the southern oceans and commonly follow fishing vessels for several days. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No

Dromaius novaehollandiae	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	E2,P		Yes	On the NSW north coast, Emus occur in a range of predominantly open lowland habitats, including grasslands, heathland, shrubland, open and shrubby woodlands, forest, and swamp and sedgeland communities, as well as the ecotones between these habitats. They also occur in plantations of tea-tree and open farmland, and occasionally in littoral rainforest. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Ephippiorhynchus asiaticus	Black-necked Stork	E1,P		Yes	In Australia, Black-necked Storks are widespread in coastal and subcoastal northern and eastern Australia, as far south as central NSW (although vagrants may occur further south or inland, well away from breeding areas). In NSW, the species becomes increasingly uncommon south of the Clarence Valley, and rarely occurs south of Sydney. Since 1995, breeding has been recorded as far south as Buladelah. Floodplain wetlands (swamps, billabongs, watercourses and dams) of the major coastal rivers are the key habitat in NSW for the Black-necked Stork. Secondary habitat includes minor floodplains, coastal sandplain wetlands and estuaries. Black-necked Storks build large nests high in tall trees close to water. Trees usually provide clear observation of the surroundings and are at low elevation (reflecting the floodplain habitat). **Low - Subject site within known distribution. No associated vegetation communities present and records within 10 km. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No

Esacus magnirostris	Beach Stone-curlew	E4A,P		No	The Beach Stone-curlew occupies coastlines from about Point Cloates in Western Australia, across northern and north-eastern Australia south to north-eastern NSW, with occasional vagrants to south-eastern NSW and Victoria. In NSW, the species occurs regularly to about the Manning River, and the small population of north-eastern NSW is at the limit of the normal range of the species in Australia. Surveys in 2000 put the NSW popluation at a minimum of 13 adult birds. Outside Australia, the species also occurs in south-eastern Asia, from the Malay Peninsula through Indonesia and southern New Guinea, east to the Solomon Islands, Vanuatu and New Caledonia. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Falco subniger	Black Falcon	V,P		No	The Black Falcon is widely, but sparsely, distributed in New South Wales, mostly occurring in inland regions. Some reports of 'Black Falcons' on the tablelands and coast of New South Wales are likely to be referable to the Brown Falcon. In New South Wales there is assumed to be a single population that is continuous with a broader continental population, given that falcons are highly mobile, commonly travelling hundreds of kilometres. The Black Falcon occurs as solitary individuals, in pairs, or in family groups of parents and offspring. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Fregata ariel	Lesser Frigatebird	P	C,J,K	No	Major breeding populations of the Lesser Frigatebird are found in tropical waters of the Indian and Pacific Ocean (excluding the east Pacific), as well as one population in the South Atlantic (Trinidade and Martim Vaz, Brazil). Outside the breeding season it is sedentary, with immature and non-breeding individuals dispersing throughout tropical seas, especially of the Indian and Pacific Oceans. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Fregata minor	Great Frigatebird	P	C,J	No	The great frigatebird has a global distribution throughout the world's tropical seas. A few nesting locations in Coral Sea. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Gallinago hardwickii	Latham's Snipe	P	J,K	Yes	Latham's Snipe is a non-breeding visitor to south-eastern Australia and is a passage migrant through northern Australia (i.e. it travels through northern Australia to reach non-breeding areas located further south). The species has been recorded along the east coast of Australia from Cape York Peninsula through to south-eastern South Australia (including the Adelaide plains and Mount Lofty Ranges, and the Eyre Peninsula). The range extends inland over the eastern tablelands in south-eastern Queensland (and occasionally from Rockhampton in the north), and to west of the Great Dividing Range in New South. The species is widespread in Tasmania and is found in all regions of Victoria except for the north-west. Most birds spend the non-breeding period at sites located south of the Richmond River in New South Wales. In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. **Low - Subject site within known distribution. No associated vegetation communities present and records within 10 km. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No
Gelochelidon nilotica	Gull-billed Tern	P	C	No	The Gull-billed Tern occurs on all continents except Antarctica. Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. They are only rarely found over the ocean. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Glossopsitta pusilla	Little Lorikeet	V,P		Yes	The Little Lorikeet is distributed widely across the coastal and Great Divide regions of eastern Australia from Cape York to South Australia. NSW provides a large portion of the species' core habitat, with lorikeets found westward as far as Dubbo and Albury. Nomadic movements are common, influenced by season and food availability, although some areas retain residents for much of the year and 'locally nomadic' movements are suspected of breeding pairs. Forages primarily in the canopy of open *Eucalyptus* forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Grus rubicunda	Brolga	V,P		Yes	The Brolga was formerly found across Australia, except for the south-east corner, Tasmania and the south-western third of the country. It is still abundant in the northern tropics, but very sparse across the southern part of its range. Though Brolgas often feed in dry grassland or ploughed paddocks or even desert claypans, they are dependent on wetlands too, especially shallow swamps, where they will forage with their head entirely submerged. They feed using their heavy straight bill as a 'crowbar' to probe the ground or turn it over, primarily on sedge roots and tubers. They will also take large insects, crustaceans, molluscs and frogs. **Absent – Subject site lacks habitat features for this species.**	No
Gygis alba	White Tern	V,P		No	Occurs widely in tropical and subtropical seas and islands. The subspecies on Lord Howe Island is rarely seen on the mainland but occurs on Norfolk and Kermadec Islands. Most breeding sites on Lord Howe Island are close to the lagoon in the settlement area. **Absent – Subject site lacks habitat features for this species.**	No

Haematopus fuliginosus	Sooty Oystercatcher	V,P		No	Sooty Oystercatchers are found around the entire Australian coast, including offshore islands, being most common in Bass Strait. Small numbers of the species are evenly distributed along the NSW coast. The availability of suitable nesting sites may limit populations. Favours rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries. **Absent – Subject site lacks habitat features for this species.**	No
Haematopus longirostris	Pied Oystercatcher	E1,P		Yes	The species is distributed around the entire Australian coastline, although it is most common in coastal Tasmania and parts of Victoria, such as Corner Inlet. In NSW the species is thinly scattered along the entire coast, with fewer than 200 breeding pairs estimated to occur in the State. 'Pied' Oystercatchers are occasionally recorded on Lord Howe island but it is uncertain which species is involved. Favours intertidal flats of inlets and bays, open beaches and sandbank **Absent – Subject site lacks habitat features for this species.**	No

Haliaeetus leucogaster	White-bellied Sea-Eagle	V,P		Yes	The White-bellied Sea-eagle is distributed around the Australian coastline, including Tasmania, and well inland along rivers and wetlands of the Murray Darling Basin. In New South Wales it is widespread along the east coast, and along all major inland rivers and waterways. Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass. Feed mainly on fish and freshwater turtles, but also waterbirds, reptiles, mammals and carrion. Hunts its prey from a perch or whilst in flight (by circling slowly, or by sailing along 10–20 m above the shore). Prey is usually carried to a feeding platform or (if small) consumed in flight, but some items are eaten on the ground. May be solitary, or live in pairs or small family groups consisting of a pair of adults and dependent young. Typically lays two eggs between June and September with young birds remaining in the nest for 65-70 days. **Low - Subject site within known distribution. No associated vegetation communities present and records within 10 km. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	Yes

Hamirostra melanosternon	Black-breasted Buzzard	V,P,3		No	The Black-breasted Buzzard is found sparsely in areas of less than 500mm rainfall, from north-western NSW and north-eastern South Australia to the east coast at about Rockhampton, then across northern Australia south almost to Perth, avoiding only the Western Australian deserts. Lives in a range of inland habitats, especially along timbered watercourses which is the preferred breeding habitat. Also hunts over grasslands and sparsely timbered woodlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Hieraaetus morphnoides	Little Eagle	V,P		No	The Little Eagle is found throughout the Australian mainland excepting the most densely forested parts of the Dividing Range escarpment. It occurs as a single population throughout NSW. Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Hirundapus caudacutus	White-throated Needletail	P	V,C,J,K	No	The White-throated Needletail is widespread in eastern and south-eastern. In eastern Australia, it is recorded in all coastal regions of Queensland and NSW, extending inland to the western slopes of the Great Divide and occasionally onto the adjacent inland plains. In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Hydroprogne caspia	Caspian Tern	P	J	Yes	Within Australia, the Caspian Tern has a widespread occurrence and can be found in both coastal and inland habitat (Higgins & Davies 1996). The following table presents the distribution and breeding sites of the Caspian Tern in Australia. Widespread east of the Great Divide, mainly in coastal regions, and also in the Riverina and Lower and Upper Western Regions, with occasional records elsewhere (Higgins & Davis 1996). The Caspian Tern is mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Irediparra gallinacea	Comb-crested Jacana	V,P		No	The Comb-crested Jacana occurs on freshwater wetlands in northern and eastern Australia, mainly in coastal and subcoastal regions, from the north-eastern Kimberley Division of Western Australia to Cape York Peninsula then south along the east coast to the Hunter region of NSW, with stragglers recorded in south-eastern NSW (possibly in response to unfavourable conditions further north). Inhabit permanent freshwater wetlands, either still or slow-flowing, with a good surface cover of floating vegetation, especially water-lilies, or fringing and aquatic vegetation. **Absent – Subject site lacks habitat features for this species. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No

Ixobrychus flavicollis	Black Bittern	V,P		No	The Black Bittern has a wide distribution, from southern NSW north to Cape York and along the north coast to the Kimberley region. The species also occurs in the south-west of Western Australia. In NSW, records of the species are scattered along the east coast, with individuals rarely being recorded south of Sydney or inland. Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. **Absent – Subject site lacks habitat features for this species.**	No
Lathamus discolor	Swift Parrot	E1,P,3	CE	Yes	Breeds in Tasmania during spring and summer, migrating in the autumn and winter months to south-eastern Australia from Victoria and the eastern parts of South Australia to south-east Queensland. In NSW mostly occurs on the coast and south west slopes. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*, Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Forest Red Gum *E. tereticornis*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens.* **High - Subject site within known distribution. Associated vegetation communities present (688, 1136) and records within 10 km.**	Yes
Lichenostomus fasciogularis	Mangrove Honeyeater	V,P		No	The Mangrove Honeyeater is confined to the coastal fringe and offshore islands of eastern Australia, from Townsville, Queensland, south to the northern coast of NSW, where it may be expanding its range. It is common in Queensland but rare in NSW, where birds are found at several scattered localities. In NSW, most observations occur south to the Clarence River: around Tweed Heads, near Broken Head, and in the estuary of the Clarence River, near Iluka and Yamba. South of the Clarence, individuals or small numbers have been recorded around the mouth of the Macleay River between Stuarts Point and South West Rocks, and at Wauchope on the lower Hastings River. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Limicola falcinellus	Broad-billed Sandpiper	V,P	C,J,K	No	The eastern form of this species breeds in northern Siberia before migrating southwards in winter to Australia. In Australia, Broad-billed Sandpipers overwinter on the northern coast, particularly in the north-west, with birds located occasionally on the southern coast. In NSW, the main site for the species is the Hunter River estuary, with birds occasionally reaching the Shoalhaven estuary. There are few records for inland NSW. Broad-billed Sandpipers favour sheltered parts of the coast such as estuarine sandflats and mudflats, harbours, embayments, lagoons, saltmarshes and reefs as feeding and roosting habitat. Occasionally, individuals may be recorded in sewage farms or within shallow freshwater lagoons. Broad-billed Sandpipers roost on banks on sheltered sand, shell or shingle beaches **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Limosa lapponica	Bar-tailed Godwit	P	C,J,K	No	Bar-tailed Godwits arrive in Australia each year in August from breeding grounds in the northern hemisphere. Birds are more numerous in northern Australia. Bar-tailed Godwits inhabit estuarine mudflats, beaches and mangroves. They are common in coastal areas around Australia. They are social birds and are often seen in large flocks and in the company of other waders. **Absent – Subject site lacks habitat features for this species.**	No

Limosa lapponica baueri	Bar-tailed Godwit (baueri)	P	V	No	The Bar-tailed Godwit is a migratory wader which undertakes the largest non-stop flight of any bird. The trans-Pacific route from its breeding grounds in the Arctic to its non-breeding grounds in the southern hemisphere covers over 11,000 km. Birds arrive in New South Wales between August and October and then leave between February and April, with a small number of individuals overwintering. The subspecies is most frequently recorded along major coastal river estuaries and sheltered embayments, particularly the Tweed, Richmond, Clarence, Macleay, Hastings, Hunter and Shoalhaven river estuaries, Port Stephens and Botany Bay. It is a rare visitor to wetlands away from the coast with scattered records as far west as along the Darling River and the Riverina. It is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Less frequently it occurs in salt lakes and brackish wetlands, sandy ocean beaches and rock platforms. **Absent – Subject site lacks habitat features for this species. There is no brackish or saltwater habitat present. The only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, this species is unlikely to make use of the subject site.**	No
Limosa limosa	Black-tailed Godwit	V,P	C,J,K	No	The Black-tailed Godwit is a migratory wading bird that breeds in Mongolia and Eastern Siberia and flies to Australia for the southern summer, arriving in August and leaving in March. In NSW, it is most frequently recorded at Kooragang Island (Hunter River estuary), with occasional records elsewhere along the coast, and inland. Records in western NSW indicate that a regular inland passage is used by the species, as it may occur around any of the large lakes in the western areas during summer, when the muddy shores are exposed. The species has been recorded within the Murray-Darling Basin, on the western slopes of the Northern Tablelands and in the far north-western corner of the state. Primarily a coastal species. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Lophoictinia isura	Square-tailed Kite	V,P,3		Yes	The Square-tailed Kite ranges along coastal and subcoastal areas from south-western to northern Australia, Queensland, NSW and Victoria. In NSW, scattered records of the species throughout the state indicate that the species is a regular resident in the north, north-east and along the major west-flowing river systems. It is a summer breeding migrant to the south-east, including the NSW south coast, arriving in September and leaving by March. Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Macronectes giganteus	Southern Giant Petrel	E1,P	E	No	The Southern Giant Petrel has a circumpolar pelagic range from Antarctica to approximately 20° S and is a common visitor off the coast of NSW. Over summer, the species nests in small colonies amongst open vegetation on Antarctic and subantarctic islands, including Macquarie and Heard Islands and in Australian Antarctic territory. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	V,P		No	The Hooded Robin is widespread, found across Australia, except for the driest deserts and the wetter coastal areas - northern and eastern coastal Queensland and Tasmania. However, it is common in few places, and rarely found on the coast. It is considered a sedentary species, but local seasonal movements are possible. The south-eastern form (subspecies cucullata) is found from Brisbane to Adelaide and throughout much of inland NSW, with the exception of the extreme north-west, where it is replaced by subspecies picata. Two other subspecies occur outside NSW. Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas. Requires structurally diverse habitats featuring mature eucalypts, saplings, some small shrubs and a ground layer of moderately tall native grasses. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	V,P		Yes	The Black-chinned Honeyeater has two subspecies, with only the nominate (gularis) occurring in NSW. he eastern subspecies extends south from central Queensland, through NSW, Victoria into south eastern South Australia, though it is very rare in the last state. In NSW it is widespread, with records from the tablelands and western slopes of the Great Dividing Range to the north-west and central-west plains and the Riverina. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts, especially Mugga Ironbark (Eucalyptus sideroxylon), White Box (E. albens), Inland Grey Box (E. microcarpa), Yellow Box (E. melliodora), Blakely's Red Gum (E. blakelyi) and Forest Red Gum (E. tereticornis). Also inhabits open forests of smooth-barked gums, stringybarks, ironbarks, river sheoaks (nesting habitat) and tea-trees. A gregarious species usually seen in pairs and small groups of up to 12 birds. Feeding territories are large making the species locally nomadic. Recent studies have found that the Black-chinned Honeyeater tends to occur in the largest woodland patches in the landscape as birds forage over large home ranges of at least 5 hectares. Moves quickly from tree to tree, foraging rapidly along outer twigs, underside of branches and trunks, probing for insects. Nectar is taken from flowers, and honeydew is gleaned from foliage. Breeds solitarily or co-operatively, with up to five or six adults, from June to December. The nest is placed high in the crown of a tree, in the uppermost lateral branches, hidden by foliage. It is a compact, suspended, cup-shaped nest. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Menura alberti	Albert's Lyrebird	V,P		No	Albert's Lyrebird is restricted to a small area of far south-eastern Queensland and north-eastern NSW. In NSW, it is mainly found in the McPherson and Tweed Ranges, but occurs west to the Acacia Plateau in the Border Ranges and south to the Koonyum and Nightcap Ranges, and with an isolated population at the species' eastern and southern limit in the Blackwall Range, between Alstonville and Bagotville. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Neophema pulchella	Turquoise Parrot	V,P,3		No	The Turquoise Parrot's range extends from southern Queensland through to northern Victoria, from the coastal plains to the western slopes of the Great Dividing Range. Lives on the edges of eucalypt woodland adjoining clearings, timbered ridges and creeks in farmland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Nettapus coromandelianus	Cotton Pygmy-Goose	E1,P		No	Although once found from north Queensland to the Hunter River in NSW, the Cotton Pygmy-Goose is now only a rare visitor to NSW. Uncommon in Queensland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Ninox connivens	Barking Owl	V,P,3		Yes	The Barking Owl is found throughout continental Australia except for the central arid regions. Although common in parts of northern Australia, the species has declined greatly in southern Australia and now occurs in a wide but sparse distribution in NSW. Core populations exist on the western slopes and plains and in some northeast coastal and escarpment forests. Many populations crashed as woodland on fertile soils was cleared over the past century, leaving linear riparian strips of remnant trees as the last inhabitable areas. Surveys in 2001 demonstrated that the Pilliga Forest supported the largest population in southern Australia. The owls sometimes extend their home range into urban areas, hunting birds in garden trees and insects attracted to streetlights. Inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. It is flexible in its habitat use, and hunting can extend in to closed forest and more open areas. Sometimes able to successfully breed along timbered watercourses in heavily cleared habitats (e.g. western NSW) due to the higher density of prey on these fertile riparian soils. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Ninox strenua	Powerful Owl	V,P,3		Yes	The Powerful Owl is endemic to eastern and south-eastern Australia, mainly on the coastal side of the Great Dividing Range from Mackay to south-western Victoria. In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains suggesting occupancy prior to land clearing. Now at low densities throughout most of its eastern range, rare along the Murray River and former inland populations may never recover. The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine Syncarpia glomulifera, Black She-oak Allocasuarina littoralis, Blackwood Acacia melanoxylon, Rough-barked Apple Angophora floribunda, Cherry Ballart Exocarpus cupressiformis and a number of eucalypt species. Powerful Owls nest in large tree hollows (at least 0.5 m deep), in large eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old. While the female and young are in the nest hollow the male Powerful Owl roosts nearby (10-200 m) guarding them, often choosing a dense "grove" of trees that provide concealment from other birds that harass him. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Numenius madagascariensis	Eastern Curlew	P	CE,C,J,K	No	The Eastern Curlew is widespread in coastal regions in the north-east and south of Australia, including Tasmania, and scattered in other coastal areas. It is rarely seen inland. It breeds in Russia and north-eastern China. On passage, they are commonly seen in Japan, Korea and Borneo. Small numbers visit New Zealand. The Eastern Curlew is found on intertidal mudflats and sandflats, often with beds of seagrass, on sheltered coasts, especially estuaries, mangrove swamps, bays, harbours and lagoons. The Eastern Curlew eats mainly small crabs and molluscs. Foraging by day and night, it is slow and deliberate, stalking slowly on sandy and muddy flats, picking from the surface or probing deep with its long bill. Eastern Curlews breed in the northern hemisphere on swampy moors and boggy marshes. Both sexes have similar plumage, with the males using their haunting calls and display flights to attract a mate and defend their territory. The nest is a shallow depression lined with grass. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Numenius minutus	Little Curlew	P	C,J,K	No	The Little Curlew is widespread in the north of Australia and scattered elsewhere. It is an irregular visitor to New Zealand and Tasmania. It breeds in Siberia and is seen on passage through Mongolia, China, Japan, Indonesia and New Guinea. Little Curlews may gather in large flocks on coastal and inland grasslands and black soil plains in northern Australia, near swamps and flooded areas. They also feed on playing fields, paddocks and urban lawns. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Numenius phaeopus	Whimbrel	P	C,J,K	No	The Whimbrel is a regular migrant to Australia and New Zealand, with a primarily coastal distribution. There are also scattered inland records of Whimbrels in all regions. It is found in all states but is more common in the north. It is found along almost the entire coast of Queensland and NSW and regularly at some places in Victoria, Tasmania, and South Australia. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Onychoprion fuscata	Sooty Tern	V,P		No	The Sooty Tern is found over tropical and sub-tropical seas and on associated islands and cays around Northern Australia. In NSW only known to breed at Lord Howe Island. Occasionally seen along coastal NSW, especially after cyclones. Large flocks can be seen soaring, skimming and dipping but seldom plunging in off shore waters. **Absent – Subject site lacks habitat features for this species**	No
Oxyura australis	Blue-billed Duck	V,P		No	The Blue-billed Duck is endemic to south-eastern and south-western Australia. It is widespread in NSW, but most common in the southern Murray-Darling Basin area. Birds disperse during the breeding season to deep swamps up to 300 km away. It is generally only during summer or in drier years that they are seen in coastal areas. The Blue-billed Duck prefers deep water in large permanent wetlands and swamps with dense aquatic vegetation. The species is completely aquatic, swimming low in the water along the edge of dense cover. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km. Since the only freshwater available is a pond that is lacking dense vegetation and is surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No

Pachycephala olivacea	Olive Whistler	V,P		No	The Olive Whistler inhabits the wet forests on the ranges of the east coast. It has a disjunct distribution in NSW chiefly occupying the beech forests around Barrington Tops and the MacPherson Ranges in the north and wet forests from Illawarra south to Victoria. In the south it is found inland to the Snowy Mountains and the Brindabella Range. Mostly inhabit wet forests above about 500m. During the winter months they may move to lower altitudes. Forage in trees and shrubs and on the ground, feeding on berries and insects. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Pandion cristatus	Eastern Osprey	V,P,3		Yes	The Osprey has a global distribution with four subspecies previously recognised throughout its range. Eastern Ospreys are found right around the Australian coastline, except for Victoria and Tasmania. They are common around the northern coast, especially on rocky shorelines, islands and reefs. The species is uncommon to rare or absent from closely settled parts of south-eastern Australia. There are a handful of records from inland areas. Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea. **Low - Subject site within known distribution. Associated vegetation communities present (1136) and records within 10 km. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	Yes

Petroica boodang	Scarlet Robin	V,P		No	The Scarlet Robin is found from south east Queensland to south east South Australia and also in Tasmania and south west Western Australia. In NSW, it occurs from the coast to the inland slopes. After breeding, some Scarlet Robins disperse to the lower valleys and plains of the tablelands and slopes. Some birds may appear as far west as the eastern edges of the inland plains in autumn and winter. The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. Scarlet Robin habitat usually contains abundant logs and fallen timber: these are important components of its habitat. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude. The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees. The Scarlet Robin is a quiet and unobtrusive species which is often quite tame and easily approached. Birds forage from low perches, fenceposts or on the ground, from where they pounce on small insects and other invertebrates which are taken from the ground, or off tree trunks and logs; they sometimes forage in the shrub or canopy layer. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Petroica phoenicea	Flame Robin	V,P		Yes	The Flame Robin is endemic to south eastern Australia, and ranges from near the Queensland border to south east South Australia and also in Tasmania. In NSW, it breeds in upland areas and in winter, many birds move to the inland slopes and plains. It is likely that there are two separate populations in NSW, one in the Northern Tablelands, and another ranging from the Central to Southern Tablelands. Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Prefers clearings or areas with open understoreys. In winter, birds migrate to drier more open habitats in the lowlands (i.e. valleys below the ranges, and to the western slopes and plains), in dry forests, open woodlands and in pastures and native grasslands, with or without scattered trees. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Pezoporus wallicus wallicus	Eastern Ground Parrot	V,P,3		Yes	There are three recognised subspecies of the Ground Parrot in Australia, though the subspecies in Tasmania (leachii) is not always recognised. Recently, the possibility that the western subspecies (flaviventris) may be a separate species has been raised. The eastern subspecies (wallicus) inhabits south-eastern Australia from southern Queensland through NSW to western Victoria. It formerly occurred in South Australia, but was last recorded in 1945. In NSW populations have declined and contracted to islands of coastal or subcoastal heathland and sedgeland habitats. The species is found in relatively large numbers on the north coast (Broadwater, Bundjalung, Yuraygir and Limeburners Creek NPs) and in smaller numbers at Myall Lakes on the central coast. There are also large populations on the NSW south coast, particularly Barren Grounds NR, Budderoo NP, the Jervis Bay area and Nadgee NR. Small numbers are recorded at Morton and Ben Boyd NP and other areas on the south coast. Estimated population size is about 2000 birds. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes

Phaethon lepturus	White-tailed Tropicbird	P	C,J	No	Ranges throughout tropical and subtropical zones of the Indian and West Pacific Oceans, breeding on oceanic islands. Lord Howe Island is said to have the greatest breeding concentration in the world. Breeds in coastal cliffs and under bushes in tropical Australia. Nests on cliffs of the northern hills and southern mountains on the main island at Lord Howe Island. Vagrant birds occur in coastal NSW waters, and occasionally even inland, particularly after storm events. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Phaethon rubricauda	Red-tailed Tropicbird	V,P	C,J	No	Ranges throughout tropical and subtropical zones of the Indian and West Pacific Oceans, breeding on oceanic islands. Lord Howe Island is said to have the greatest breeding concentration in the world. Breeds in coastal cliffs and under bushes in tropical Australia. Nests on cliffs of the northern hills and southern mountains on the main island at Lord Howe Island. Vagrant birds occur in coastal NSW waters, and occasionally even inland, particularly after storm events. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Philomachus pugnax	Ruff	P	C,J,K	No	A rare non-breeding visitor to Australia. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Pluvialis fulva	Pacific Golden Plover	P	C,J,K	No	Within Australia, the Pacific Golden Plover is widespread in coastal regions, though there are also a number of inland records (in all states), sometimes far inland and usually along major river systems, especially the Murray and Darling Rivers and their tributaries. As the species breeds overseas, in non-breeding grounds in Australia this species usually inhabits coastal habitats, though it occasionally occurs around inland wetlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Pluvialis squatarola	Grey Plover	P	C,J,K	No	The Grey Plover breeds around the Arctic regions and migrates to the southern hemisphere, being a regular summer migrant to Australia, mostly to the west and south coasts. It is generally sparse but not uncommon in some areas. It is occasionally found inland. The Grey Plover is almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Podargus ocellatus	Marbled Frogmouth	V,P		No	In Australia, there are two widely separated subspecies of Marbled Frogmouth, one confined to central-eastern Cape York Peninsula, and other currently restricted to south-eastern Queensland and north-eastern NSW, between about Gladstone and Lismore, and inland to Burnett Range in Queensland and west of the Richmond Range. There are earlier records south to about Grafton, but no confirmed records south of Lismore since 1980, with most reports misidentifications of the much more common Tawny Frogmouth. Outside Australia, the species is widespread throughout New Guinea and on its associated islands, as well as on Bougainville and the Solomon Islands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	V,P		Yes	The eastern subspecies (temporalis) occurs from Cape York south through Queensland, NSW and Victoria and formerly to the south east of South Australia. This subspecies also occurs in the Trans-Fly Region in southern New Guinea. In NSW, the eastern sub-species occurs on the western slopes of the Great Dividing Range, and on the western plains reaching as far as Louth and Balranald. It also occurs in woodlands in the Hunter Valley and in several locations on the north coast of NSW. It may be extinct in the southern, central and New England tablelands. Inhabits open Box-Gum Woodlands on the slopes, and Box-Cypress-pine and open Box Woodlands on alluvial plains. Woodlands on fertile soils in coastal regions. Lives in family groups that consist of a breeding pair and young from previous breeding seasons. A group may consist of up to fifteen individuals. Feed on invertebrates and nests in several conspicuous, dome-shaped stick structures that are about the size of a football. A nest is used as a dormitory for roosting each night. Nests are maintained year-round, and old nests are often dismantled to build new ones. **High - Subject site within known distribution. No associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Procelsterna cerulea	Grey Ternlet	V,P		No	Widely distributed in the southern Pacific Ocean, breeding on oceanic islands including Lord Howe Island. **Absent – Subject site lacks habitat features for this species.**	No
Pterodroma leucoptera leucoptera	Gould's Petrel	V,P	E	No	Breeds on both Cabbage Tree Island, 1.4 km offshore from Port Stephens and on nearby Boondelbah island. The range and feeding areas of non-breeding petrels are unknown. The first arrival of Gould's petrel on cabbage tree Island occurs from mid to late September. **Absent – Subject site lacks habitat features for this species**	No
Pterodroma solandri	Providence Petrel	V,P		No	Ranges across eastern Pacific. Only known breeding sites are at Lord Howe Island and Philip Island, offshore from Norfolk Island. Previously also bred on main Norfolk Island but extinct there by 1800. **Absent – Subject site lacks habitat features for this species**	No

Ptilinopus magnificus	Wompoo Fruit-Dove	V,P		No	Occurs along the coast and coastal ranges from the Hunter River in NSW to Cape York Peninsula Occurs in, or near rainforest, low elevation moist eucalypt forest and brush box forests. Feeds on a diverse range of tree and vine fruits and is locally nomadic - following ripening fruit. Thought to be an effective medium to long-distance vector for seed dispersal. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Ptilinopus regina	Rose-crowned Fruit-Dove	V,P		No	Coast and ranges of eastern NSW and Queensland, from Newcastle to Cape York. Vagrants are occasionally found further south to Victoria. Rose-crowned Fruit-doves occur mainly in sub-tropical and dry rainforest and occasionally in moist eucalypt forest and swamp forest, where fruit is plentiful. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Ptilinopus superbus	Superb Fruit-Dove	V,P		No	The Superb Fruit-dove occurs principally from north-eastern in Queensland to north-eastern NSW. It is much less common further south, where it is largely confined to pockets of suitable habitat as far south as Moruya. There are records of vagrants as far south as eastern Victoria and Tasmania. Inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Puffinus assimilis	Little Shearwater	V,P		No	A widespread species in the subtropical Atlantic, Pacific and Indian Oceans. Lord Howe Island has one of the larger breeding colonies in the Australian region. **Absent – Subject site lacks habitat features for this species.**	No

Rostratula australis	Australian Painted Snipe	E1,P	E	No	The Australian Painted Snipe is restricted to Australia. Most records are from the south east, particularly the Murray Darling Basin, with scattered records across northern Australia and historical records from around the Perth region in Western Australia. In NSW many records are from the Murray-Darling Basin including the Paroo wetlands, Lake Cowal, Macquarie Marshes, Fivebough Swamp and more recently, swamps near Balldale and Wanganella. Other important locations with recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds. Forages nocturnally on mud-flats and in shallow water. Feeds on worms, molluscs, insects and some plant-matter. **Absent – Subject site lacks habitat features for this species. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No
Stagonopleura guttata	Diamond Firetail	V,P		Yes	The Diamond Firetail is endemic to south-eastern Australia, extending from central Queensland to the Eyre Peninsula in South Australia. It is widely distributed in NSW, with a concentration of records from the Northern, Central and Southern Tablelands, the Northern, Cental and South Western Slopes and the North West Plains and Riverina. Not commonly found in coastal districts, though there are records from near Sydney, the Hunter Valley and the Bega Valley. This species has a scattered distribution over the rest of NSW, though is very rare west of the Darling River. Found in grassy eucalypt woodlands, including Box-Gum Woodlands and Snow Gum Eucalyptus pauciflora Woodlands. Also occurs in open forest, mallee, Natural Temperate Grassland, and in secondary grassland derived from other communities. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km .**	Yes
Stercorarius longicaudus	Long-tailed Jaeger	P	C,J	No	Breeds on Arctic tundra and spends the rest of the year at sea. **Absent – Subject site lacks habitat features for this species**	No

Stercorarius parasiticus	Arctic Jaeger	P	C,J,K	No	In Australia, Arctic Jaegers are found along the entire coast line. They spend most of their time on in the high sea but occasionally come close to shore. **Absent – Subject site lacks habitat features for this species**	No
Sterna dougallii	Roseate Tern	P	C,J	No	Roseate Terns (*Sterna dougallii*) nest in tropical and subtropical areas of the Indian and North Atlantic Oceans, but temperate zone breeding populations can be found in North America, Europe, South Africa, and Western Australia. Rare in eastern Australia **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No
Sterna hirundo	Common Tern	P	C,J,K	No	In Australia the Common Tern is a regular non-breeding visitor. The Common Tern is mainly coastal when not breeding and found in offshore waters, ocean beaches, estuaries and large lakes. Common Terns are occasionally seen in freshwater swamps, floodwaters, sewage farms and brackish and saline lakes. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No
Sterna sumatrana	Black-naped Tern	P	C,J	No	An ocean bird found in the tropics of the pacific and Indians oceans, rarely found inland. **Absent – Subject site lacks habitat features for this species**	No
Sternula albifrons	Little Tern	E1,P	C,J,K	No	Migrating from eastern Asia, the Little Tern is found on the north, east and south-east Australian coasts, from Shark Bay in Western Australia to the Gulf of St Vincent in South Australia. In NSW, it arrives from September to November, occurring mainly north of Sydney, with smaller numbers found south to Victoria. It breeds in spring and summer along the entire east coast from Tasmania to northern Queensland, and is seen until May, with only occasional birds seen in winter months. Almost exclusively coastal, preferring sheltered environments; however may occur several kilometres from the sea in harbours, inlets and rivers (with occasional offshore islands or coral cay records) **Absent – Subject site lacks habitat features for this species.**	No

Stictonetta naevosa	Freckled Duck	V,P		No	The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere. It breeds in large temporary swamps created by floods in the Bulloo and Lake Eyre basins and the Murray-Darling system, particularly along the Paroo and Lachlan Rivers, and other rivers within the Riverina. The duck is forced to disperse during extensive inland droughts when wetlands in the Murray River basin provide important habitat. The species may also occur as far as coastal NSW and Victoria during such times. Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds. Generally, rest in dense cover during the day, usually in deep water. Feed at dawn and dusk and at night on algae, seeds and vegetative parts of aquatic grasses and sedges and small invertebrates. Nesting usually occurs between October and December but can take place at other times when conditions are favourable. Nests are usually located in dense vegetation at or near water level. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No
Thalassarche cauta	Shy Albatross	V,P	V	No	This species is circumpolar in distribution, occurring widely in the southern oceans. Islands off Australia and New Zealand provide breeding habitat. In Australian waters, the Shy Albatross occurs along the east coast from Stradbroke Island in Queensland along the entire south coast of the continent to Carnarvon in Western Australia. Although uncommon north of Sydney, the species is commonly recorded off southeast NSW, particularly between July and November, and has been recorded in Ben Boyd National Park. This pelagic or ocean-going species inhabits subantarctic and subtropical marine waters, spending the majority of its time at sea **Absent – Subject site lacks habitat features for this species.**	No

Thalassarche melanophris	Black-browed Albatross	V,P	V	No	The Black-browed Albatross has a circumpolar range over the southern oceans, and are seen off the southern Australian coast mainly during winter. This species migrates to waters off the continental shelf from approximately May to November and is regularly recorded off the NSW coast during this period. The species has also been recorded in Botany Bay National Park. **Absent – Subject site lacks habitat features for this species.**	No
Thalasseus bergii	Crested Tern	P	J	No	Crested Terns are seen along coastal areas throughout Australia and Tasmania. Prefer island beaches, lakes and inlets. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Todiramphus chloris	Collared Kingfisher	V,P		No	In Australia, the Collared Kingfisher extends around the northern coasts, from Shark Bay in northern Western Australia to the estuary of the Tweed River in far north-eastern NSW, with rare scattered records south of there, mainly south to the Clarence River. In NSW, the species is observed regularly only at Ukerebagh and nearby Cobaki Broadwater, and it breeds along the Tweed River estuary. Beyond Australia, the species is widely distributed from the Red Sea and Arabian Gulf in the Middle East, through southern and south-eastern Asia to Indonesia and New Guinea and east to the Solomon Islands, Vanuatu, Fiji, Tonga and Samoa. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Tringa brevipes	Grey-tailed Tattler	P	C,J,K	No	Grey-tailed Tattlers breed in Siberia and on passage are seen along the East Asian-Australasian Flyway (the migration route to Australia). When non-breeding they are found in China, Philipines, Taiwan, Vietnam, Malay Peninsula, Indonesia, New Guinea, Micronesia, Fiji, New Zealand and Australia. They are more commonly seen in the north of Australia. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Tringa glareola	Wood Sandpiper	P	C,J,K	No	Wood Sandpipers are more numerous in the north than the south of Australia and are also found in New Guinea, Africa, the Indian subcontinent and South-east Asia. They breed widely across the north of Europe and Asia, mostly in Scandinavia, Baltic countries and Russia. They are the most abundant migratory wader in non-coastal areas of Asia. Wood Sandpipers are seen in small flocks or singly on inland shallow freshwater wetlands, often with other waders. They prefer ponds and pools with emergent reeds and grass, surrounded by tall plants or dead trees and fallen timber. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Tringa incana	Wandering Tattler	P	J	No	The Wandering Tattler is found alone or in small numbers along rocky shores in Queensland and New South Wales. **Absent – Subject site lacks habitat features for this species.**	No
Tringa nebularia	Common Greenshank	P	C,J,K	No	The Common Greenshank does not breed in Australia, however, the species occurs in all types of wetlands and has the widest distribution of any shorebird in Australia. The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores. The edges of the wetlands used are generally of mud or clay, occasionally of sand, and may be bare or with emergent or fringing vegetation, including short sedges and saltmarsh, mangroves, thickets of rushes, and dead or live trees. It was once recorded with Black-winged Stilts (*Himantopus himantopus*) in pasture, but are generally not found in dry grassland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Tringa stagnatilis	Marsh Sandpiper	P	C,J,K	Yes	The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. The species is widespread in coastal Queensland, but few records exist north of Cooktown. It is recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and western plains. The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes. In north Australia they prefer intertidal mudflats (Higgins & Davies 1996), although surveys in Kakadu National Park recorded more birds around shallow freshwater lakes than in areas influenced by tide (Bamford 1988). At the Top End they often use ephemeral pools on inundated freshwater and tidal floodplains (Higgins & Davies 1996). Three of the five sites with highest recorded numbers are saltwater habitats (Hunter Estuary, NSW; Port Hedland Saltworks, Western Australia; Tullakool Evaporation Ponds, NSW) (Watkins 1993). In the south-east Gulf of Carpentaria they have been recorded round both saline and fresh waters (Garnett 1989). Elsewhere they said to avoid, or rarely occur in, tidal habitats, and rarely occur on beaches. In Western Australia they prefer freshwater to marine environments. In south-east Australia they prefer inland saline lakes and coastal saltworks. They are found infrequently around mangroves (Higgins & Davies 1996). **Absent – Subject site lacks habitat features for this species. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site.**	No
Turnix maculosus	Red-backed Button-quail	V,P		No	Over their Australian range, Red-backed Button-quail inhabit grasslands, open and savannah woodlands with grassy ground layer, pastures and crops of warm temperate areas, typically only in regions subject to annual summer rainfall greater than 400 mm. In NSW, said to occur in grasslands, heath and crops. Said to prefer sites close to water, especially when breeding. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Tyto longimembris	Eastern Grass Owl	V,P,3		No	Eastern Grass Owls have been recorded occasionally in all mainland states of Australia but are most common in northern and north-eastern Australia. In NSW they are more likely to be resident in the north-east. Eastern Grass Owl numbers can fluctuate greatly, increasing especially during rodent plagues. Habitat and ecology Eastern Grass Owls are found in areas of tall grass, including grass tussocks, in swampy areas, grassy plains, swampy heath, and in cane grass or sedges on flood plains. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Tyto novaehollandiae	Masked Owl	V,P,3		No	Extends from the coast where it is most abundant to the western plains. Overall records for this species fall within approximately 90% of NSW, excluding the most arid north-western corner. There is no seasonal variation in its distribution. Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136 and no records within 10 km.**	Yes
Tyto tenebricosa	Sooty Owl	V,P,3		No	This species is distributed across relatively large areas and is subject to threatening processes that generally act at the landscape scale (e.g. habitat loss or degradation) rather than at distinct, defineable locations. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Xenus cinereus	Terek Sandpiper	V,P	C,J,K	No	A rare migrant to the eastern and southern Australian coasts, being most common in northern Australia, and extending its distribution south to the NSW coast in the east. The two main sites for the species in NSW are the Richmond River estuary and the Hunter River estuary. The latter has been identified as nationally and internationally important for the species. In Australia, has been recorded on coastal mudflats, lagoons, creeks and estuaries. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Cryptostylis hunteriana*	Leafless Tongue Orchid	V,P,2	V	No	The Leafless Tongue Orchid has been recorded from as far north as Gibraltar Range National Park south into Victoria around the coast as far as Orbost. It is known historically from a number of localities on the NSW south coast and has been observed in recent years at many sites between Batemans Bay and Nowra (although it is uncommon at all sites). Also recorded at Munmorah State Conservation Area, Nelson Bay, Wyee, Washpool National Park, Nowendoc State Forest, Ku-Ring-Gai Chase National Park and Ben Boyd National Park. Does not appear to have well defined habitat preferences and is known from a range of communities, including swamp-heath and woodland. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes
^^*Davidsonia jerseyana*	Davidson's Plum	E1,2	E	No	Restricted to north-east NSW to as far south as Wardell. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

^^*Dendrobium melaleucaphilum*	Spider orchid	E1,P,2		No	Occurs in coastal districts and nearby ranges, extending from Queensland to its southern distributional limit in the lower Blue Mountains. In NSW, it is currently known from seven recent collections. There has been no subsequent confirmation from the locations of three earlier (pre-1922) collections and it is possible that these are now extinct. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Diploglottis campbellii*	Small-leaved Tamarind	E1,2	E	No	Recorded from the coastal lowlands between Richmond River on the Far North Coast of NSW and Mudgeeraba Creek on the Gold Coast hinterland, Queensland. Confined to the warm subtropical rainforests of the NSW-Queensland border lowlands and adjacent low ranges. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Diuris byronensis*	Byron Bay Diuris	E1,P,2		No	This orchid is known from a single location only, at Byron Bay in north-east NSW. Only about 20 plants have been recorded. Occurs in low-growing grassy heath on clay soil. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Fontainea oraria*	Coastal Fontainea	E4A,2	E	No	Coastal Fontainea is extremely rare, restricted to a small number of trees at Lennox Head in north-east NSW. Coastal Fontainea occurs in remnant regrowth littoral rainforest on highly fertile red-brown krasnozem soils derived from the basalt. These remnants occur on stony slopes within 1km of the sea and at about 50 m above sea level. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

^^*Geodorum densiflorum*	Pink Nodding Orchid	E1,P,2		Yes	There are thought to be less than 20 populations of Pink Nodding Orchid in NSW, all north of Bundjalung National Park, and including Tweed Shire. The species also occurs in Queensland. Dry eucalypt forest and coastal swamp forest at lower altitudes, often on sand. **Moderate - Subject site within known distribution. No associated vegetation communities present records within 10 km.**	Yes
^^*Oberonia complanata*	Yellow-flowered King of the Fairies	E1,P,2		No	Within NSW, there are several historical collections (all pre 1917) of this species from Byron Bay and Lismore, and a collection from Coffs Harbour from 1961. More recent observations of this species have been made from Lismore and Wollumbin. This species grows on trees and rocks in littoral rainforest, subtropical rainforest, dry rainforest, wet or dry eucalypt forests, dunes (including stabilised sands), stream-side areas, swampy forests and mangrove. **Moderate - Subject site within known distribution. No associated vegetation communities present (1136) and no records within 10 km.**	Yes
^^*Oberonia titania*	Red-flowered King of the Fairies	V,P,2		No	Red-flowered King of the Fairies occurs on the NSW north coast north from Kendall, and also in in Queensland and Norfolk Island. It is known from 10 locations in NSW, two of which occur within Dorrigo National Park and Washpool National Park. Red-flowered King of the Fairies occurs in littoral and subtropical rainforest and paperbark swamps, but it can also occur in eucalypt-forested gorges and in mangroves. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Peristeranthus hillii*	Brown Fairy-chain Orchid	V,P,2		No	Found in north-eastern NSW, north from Port Macquarie, extending to north-eastern Queensland as far as the Bloomfield River. Restricted to coastal and near-coastal environments, particularly Littoral Rainforest and the threatened ecological community Lowland Rainforest on Floodplain. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

^^*Phaius australis*	Southern Swamp Orchid	E1,P,2	E	No	Occurs in Queensland and north-east NSW as far south as Coffs Harbour. Historically, it extended farther south, to Port Macquarie. Swampy grassland or swampy forest including rainforest, eucalypt or paperbark forest, mostly in coastal areas. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Pterostylis nigricans*	Dark Greenhood	V,P,2		No	The Dark Greenhood occurs in north-east NSW north from Evans Head, and in Queensland. Coastal heathland with Heath Banksia (*Banksia ericifolia*), and lower-growing heath with lichen-encrusted and relatively undisturbed soil surfaces, on sandy soils. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
^^*Sarcochilus hartmannii*	Hartman's Sarcochilus	V,P,2	V	No	From the Richmond River in northern NSW to Gympie in south-east Queensland. Favours cliff faces on steep narrow ridges supporting eucalypt forest and clefts in volcanic rock from 500 to 1,000 m in altitude. Also found occasionally at the bases of fibrous trunks of trees, including cycads and grass-trees. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Acacia ruppii	Rupp's Wattle	E1	E	Yes	Occurs at altitudes of 50–150 m in the Banyabba–Coaldale area to the north-west of Grafton. Although plentiful in some locations it is restricted to a small area. Dry open forest and shrubland in sandstone areas, often near creeks and on roadsides. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Acalypha eremorum	Acalypha	E1		No	Though widespread and moderately common in south-east Queensland, in NSW it occurs in only a few localities, including the Chaelundi, Lismore and Burringbar areas. Subtropical rainforest, dry rainforest and vine thickets. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Acronychia littoralis	Scented Acronychia	E1	E	No	Scented Acronychia is found between Fraser Island in Queensland and Port Macquarie on the north coast of NSW. Scented Acronychia occurs in transition zones between littoral rainforest and swamp sclerophyll forest; between littoral and coastal cypress pine communities; and margins of littoral forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Aldrovanda vesiculosa	Waterwheel Plant	E1		No	The species is more commonly found in northern Australia and tropical regions of Asia and Africa. Known in NSW only from lagoons in the Moruya area on the south coast, from the Evans Head area on the north coast and from north of Guyra on the New England Tablelands. Found free-floating in near-coastal shallow freshwater lagoons that are rich in organic matter. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Allocasuarina defungens	Dwarf Heath Casuarina	E1	E	No	Dwarf Heath Casuarina is found only in NSW from the Nabiac area, north-west of Forster, to Byron Bay on the NSW north coast. Dwarf Heath Casuarina grows mainly in tall heath on sand, but can also occur on clay soils and sandstone. **Moderate - Subject site within known distribution. No associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes
Allocasuarina inophloia	Stringybark She-Oak population in the Clarence Valley local government area	E2		No	Stringybark She-Oak occurs in northern NSW, southern Queensland and far north Queensland. In NSW the species is known from the Torrington-Emmaville, Yetman and Clarence Valley areas. The Clarence Valley population is disjunct form other populations. It occurs at Kungala, south of Grafton, approximately 150 km to the east of the closest known population at Torrington. It is estimated that there are less than 1,500 individuals in the population confined to an area of approximately 4 square kilometres. The Clarence Valley population occurs on a narrow sandstone ridge in grassy dry schlerophyll woodland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Ancistrachne maidenii		V		Yes	Restricted to northern Sydney, around St Albans - Mt White - Maroota - Berowra areas and to the Shannon Creek area south-west of Grafton. Habitat requirements appear to be specific, with populations occurring in distinct bands in areas associated with a transitional geology between Hawkesbury and Watagan soil landscapes. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Angophora robur	Sandstone Rough-barked Apple	V	V	Yes	Occurs in a band from around Glenreagh, north-west of Coffs Harbour, to the Coaldale area north-west of Grafton, with an isolated occurrence farther west near Nymboida. It can be locally common. Dry open forest in sandy or skeletal soils on sandstone, or occasionally granite, with frequent outcrops of rock. **High - Subject site within known distribution. No associated vegetation communities present (658, 688) and records within 10 km.**	Yes
Archidendron hendersonii	White Lace Flower	V		No	Restricted to northern Sydney, around St Albans - Mt White - Maroota - Berowra areas and to the Shannon Creek area south-west of Grafton. Habitat requirements appear to be specific, with populations occurring in distinct bands in areas associated with a transitional geology between Hawkesbury and Watagan soil landscapes. Flowers in summer. Grows in dry sclerophyll forest on sandstone-derived soils. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Arthraxon hispidus	Hairy Jointgrass	V	V	No	Occurs over a wide area in south-east Queensland, and on the northern tablelands and north coast of NSW, but is never common. Also found from Japan to central Eurasia. Moisture and shade-loving grass, found in or on the edges of rainforest and in wet eucalypt forest, often near creeks or swamps. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Astrotricha cordata	Heart-leaved Star Hair	E1		No	Known from Mount Belmore State Forest and Mount Neville Nature Reserve in north-east NSW. Grows in dry eucalypt forest on exposed rocky summits, cliff edges and rocky slopes. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Belvisia mucronata	Needle-leaf Fern	E1		No	In Australia, this species is restricted to Queensland and NSW. In NSW, it is known from only five locations on the far north coast, north from Evans Head. Forms small clumps on trees or rocks in dry rainforest or along creeks in moist open forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Bertya sp. (Chambigne NR, M. Fatemi 24)	Chambigne Bertya	E1		No	*Bertya* sp. Chambigne NR occurs in the NSW North Coast Bioregion within the Northern Rivers Catchment Management Authority management area. The species has been recorded from two disjunct locations. A single specimen collected in 1967 from Whitemans Creek north of Grafton, represents a population now thought to be extinct. The known surviving population occurs in the Chambigne Nature Reserve and on the nearby escarpment above Shannon Creek. Approximately 30% of the total population occurs within the boundary of the Chambigne Nature Reserve. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Boronia hapalophylla	Shannon Creek Boronia	E1,P		No	This newly discovered species was originally only known from a small area near Shannon Creek, west of Coutts Crossing, in the Clarence Valley. A number of other populations have since been found, however, the distribution of the species still remains highly restricted to the area between Shannon Creek, Glenreagh and Halfway Creek. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Boronia umbellata	Orara Boronia	V,P	V	No	Found at only a few locations between Glenreagh and Lower Bucca, north of Coffs Harbour, but it is locally common in the restricted area where it occurs. This Boronia grows as an understorey shrub in and around gullies in wet open forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Callistemon linearifolius	Netted Bottle Brush	V,3		No	Recorded from the Georges River to Hawkesbury River in the Sydney area, and north to the Nelson Bay area of NSW. Recorded in 2000 at Coalcliff in the northern Illawarra. For the Sydney area, recent records are limited to the Hornsby Plateau area near the Hawkesbury River. The species was more widespread in the past, and there are currently only 5-6 populations remaining from the 22 populations historically recorded in the Sydney area. Three of the remaining populations are reserved in Ku-ring-gai Chase National Park, Lion Island Nature Reserve and Spectacle Island Nature Reserve. The species has also been recorded from Yengo National Park. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km**	No
Centranthera cochinchinensis	Swamp Foxglove	E1		Yes	Occurs in northern Australia and south-east Asia and known from NSW north from Wooli. Uncommon in swampy areas and other moist sites. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Chamaesyce psammogeton	Sand Spurge	E1		No	Sand Spurge is found sparsely along the coast from south of Jervis Bay (at Currarong, Culburra and Seven Mile Beach National Park) to Queensland (and Lord Howe Island). Populations have been recorded in Wamberal Lagoon Nature Reserve, Myall Lakes National Park, Moonee Beach Nature Reserve and Bundjalung National Park. Grows on fore-dunes, pebbly strandlines and exposed headlands, often with Spinifex (*Spinifex sericeus*) and Prickly Couch (*Zoysia macrantha*). **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Clematis fawcettii	Northern Clematis	V	V	No	Found in widely dispersed areas in southern Queensland and in north-east NSW north from Lismore. Drier rainforest, usually near streams. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Coatesia paniculata	Axe-Breaker	E1		No	Moderately common in restricted habitat in Queensland between the Brisbane River and the central Queensland coast, but very rare in north-east NSW, where it is known from the Tweed, Lismore and Wardell areas. Axe-Breaker is found in dry subtropical rainforest and vine scrub, often along rivers. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Corynocarpus rupestris subsp. rupestris	Glenugie Karaka	V	V	No	This tree is known from Glenugie Peak Flora Reserve, south-east of Grafton, north to Wardell. Dry rainforest on steep basalt boulder slopes. Soil is scarce but relatively high in nutrients and very well-drained. Fire is generally excluded by the rocky terrain and absence of ground litter. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Cryptocarya foetida	Stinking Cryptocarya	V	V	No	Coastal south-east Queensland and north-east NSW south to Iluka. Found in littoral, warm temporate and subtropical rainforest, wet sclerophyll forest and Camphor laural forest usually on sandy soils, but mature trees are also known on basalt soils **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Cynanchum elegans	White-flowered Wax Plant	E1	E	No	Restricted to eastern NSW where it is distributed from Brunswick Heads on the north coast to Gerroa in the Illawarra region. The species has been recorded as far west as Merriwa in the upper Hunter River valley. The White-flowered Wax Plant usually occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest; Coastal Tea-tree *Leptospermum laevigatum* – Coastal Banksia *Banksia integrifolia* subsp. *integrifolia* coastal scrub; Forest Red Gum *Eucalyptus tereticornis* aligned open forest and woodland; Spotted Gum *Corymbia maculata* aligned open forest and woodland; and Bracelet Honeymyrtle *Melaleuca armillaris* scrub to open scrub. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Cyperus aquatilis	Water Nutgrass	E1		No	In NSW, known only from a few sites north from Grafton. Also occurs in Queensland, Northern Territory, Western Australia and New Guinea. Grows in ephemerally wet sites, such as roadside ditches and seepage areas from small cliffs, in sandstone areas. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Davidsonia johnsonii	Smooth Davidson's Plum	E1	E	No	Restricted distribution in south-east Queensland and north-east NSW south to Tintenbar. Lowland subtropical rainforest and wet eucalypt forest at low altitudes (below 300m). Many trees are isolated in paddocks and on roadsides in cleared land. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Desmodium acanthocladum	Thorny Pea	V	V	No	Occurs only in north-east NSW. It is found in the Lismore area, and there are also records from near Grafton, Coraki, Casino and the Mount Warning area. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Doryanthes palmeri	Giant Spear Lily	V,P		No	Giant Spear Lily occurs in far north-east NSW and south-east Queensland. In NSW, it occurs on the coastal ranges that are part of the Mt Warning Caldera. Its southern distributional limit is Mount Billen. The species is currently known from eleven sites within NSW, five of which are conservation reserves. Most populations consist of only a few hundred individuals. Giant Spear Lily occurs on exposed rocky outcrops on infertile soils or on bare rock. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Drynaria rigidula	Basket Fern	E1,3		No	Occurs widely in eastern Queensland as well as islands of the Pacific and parts of south-east Asia. In NSW it is only found north of the Clarence River, in a few locations at Maclean, Bogangar, Byron Bay, Mullumbimby, in the Tweed Valley and at Woodenbong. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Eleocharis tetraquetra	Square-stemmed Spike-rush	E1		No	Thought to be extinct in NSW until it was rediscovered in 1997 at Boambee near Coffs Harbour. It has since been found in other north coast localities near Grafton and Murwillumbah. The species also occurs in south-east Queensland. Found in damp locations on stream edges and in and on the margins of freshwater swamps. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688) and no records within 10 km.**	Yes
Elionurus citreus	Lemon-scented Grass	E1		No	Lemon-scented Grass occurs north from Grafton in NSW. It is only known from localities south of Casino, north-west of Grafton, near Cudgen Lake on the Tweed coast and in Yuraygir National Park. It also occurs in Queensland, NT, WA and New Guinea. Lemon-scented Grass grows in sandy soils near rivers or along the coast in wallum areas or sand dunes. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes

Endiandra floydii	Crystal Creek Walnut	E1	E	No	Confined to the Tweed and Brunswick Valleys and Byron Bay area of north-east NSW, and to one or two locations in south-east Queensland. Warm temperate, subtropical rainforest or wet sclerophyll forest with Brush Box overstorey, and in and Camphor Laurel forest. The species can occur in disturbed and regrowth sites. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Endiandra hayesii	Rusty Rose Walnut	V	V	No	A restricted distribution from Burleigh Heads in Queensland to the Richmond River in north-east NSW. It is locally abundant in some parts of its range in NSW. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Endiandra muelleri subsp. bracteata	Green-leaved Rose Walnut	E1		No	Occurs in Queensland and in north-east NSW south to Maclean. It is sparsely distributed within this range. Occurs in subtropical and warm temperate rainforests and Brush Box forests, including regrowth and highly modified forms of these habitats. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Eucalyptus glaucina	Slaty Red Gum	V	V	No	Found only on the north coast of NSW and in separate districts: near Casino where it can be locally common, and farther south, from Taree to Broke, west of Maitland. Grows in grassy woodland and dry eucalypt forest. Grows on deep, moderately fertile and well-watered soils **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Eucalyptus pachycalyx subsp. banyabba	Banyabba Shiny-barked Gum	E1,3	E	No	Confined to Banyabba Nature Reserve, north-west of Grafton, where it occurs in only two small stands, the largest of which is 2 ha in extent. A closely related subspecies occurs in southern-central and northern Queensland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Eucalyptus tetrapleura	Square-fruited Ironbark	V	V	Yes	Restricted to the coastal lowlands and foothills of northern NSW around Casino and Grafton. Dry or moist eucalypt forest on moderately fertile soil, often in low areas with poor drainage **High - Subject site within known distribution. Associated vegetation communities present (688) and records within 10 km.**	Yes
Gossia fragrantissima	Sweet Myrtle	E1	E	No	Occurs in south-east Queensland and in north-east NSW south to the Richmond River. Mostly found on basalt-derived soils. Dry subtropical and riverine rainforest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Grammitis stenophylla	Narrow-leaf Finger Fern	E1,3		No	*Grammitis stenophylla* is known from 30 locations across New South Wales. The species is known to occur in 24 conservations reserves. It is common in several areas,such as the Mount Warning Shield, the sandstone reserves of the lower Clarence, creeks in southern Wollemi, the granites of Washpool, Gibraltar and Nymbioda National Parks, and also Mt Jerusalem and Nightcap National Park. The species was also recently recorded from New England National Park. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Grevillea banyabba	Banyabba Grevillea	V	V	No	Known from Banyabba Nature Reserve, Fortis Creek National Park and Wombat Creek State Conservation Area. Shrubby open eucalypt forest growing on low ridges and slopes with poor sandy soil. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Grevillea beadleana	Beadle's Grevillea	E1,3	E	No	Known from four separate areas, all in north-east NSW: the Torrington area west of Tenterfield, Oxley Wild Rivers National Park, Guy Fawkes River National Park and at Shannon Creek south-west of Grafton. Historical records suggest it was also once found near Walcha. Open eucalypt forest with a shrubby understorey **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688) and records within 10 km.**	Yes
Grevillea hilliana	White Yiel Yiel	E1		No	The species occurs north from Brunswick Heads on the north coast of NSW and in Queensland. The only populations currently known in NSW are near Brunswick Heads, on the slopes of Mt Chincogan near Byron Shire, and in patches of remnant habitat in theTweed Shire, particularly around Terranora. White Yiel Yiel grows in subtropical rainforest, often on basalt-derived soils. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688) and no records within 10 km.**	Yes
Grevillea masonii	Mason's Grevillea	E1,3	E	Yes	Occurs in only a few locations between Grafton and Casino in north-eastern NSW. Occurs on gravely loam soils and in sand in open eucalypt woodland. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Grevillea quadricauda	Four-tailed Grevillea	V	V	No	In NSW it is found to the north-west of Whiporie in Mount Belmore State Forest and Mount Neville Nature Reserve, and at Tucabia east of Grafton. It also occurs near Toowoomba in south-east Queensland. Grows in gravely loam, in the understorey of dry eucalypt forest, usually along or near creeks. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688) and no records within 10 km.**	Yes

Harnieria hygrophiloides		E1		No	Though relatively widespread in eastern Queensland, this plant is rarely seen in NSW. It has been recorded only at Hortons Creek and two other places south of Nymboida, and at Brunswick Heads. The understorey of littoral rainforest, dry rainforest and wet eucalypt forest, usually in well-drained areas. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Hibbertia marginata	Bordered Guinea Flower	V	V	No	Occurs only in north-east NSW, where it is restricted to the southern Richmond Range between Casino and Grafton. Grassy or shrubby dry open eucalypt forest at low altitudes on sandstone. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688) and no records within 10 km.**	Yes
Hygrocybe rubronivea		V		No	Known in a few locations including in Lane Cove Bushland Park and the Blue Mountains in NSW and in areas of south-east Queensland. However little information exists for populations outside Lane Cove Bushland Park. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Hypolepis elegans		E4		No	The species is presumed to be extinct on mainland NSW and Victoria and now only occurs on Lord Howe Island. *Hypolepis elegans* occurs in open spaces on forest margins. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Indigofera baileyi	Bailey's Indigo	E1		No	Bailey's Indigo occurs in Queensland and reaches its southern limit in NSW. It is restricted to the far north-east corner of the State, north of a line between the lower Clarence Valley and Inverell. It is known from only five locations across two limited areas in the eastern fall, and also around Inverell and Ashford in the western inland slopes. Open woodlands on loam and clay loam soils, typically from granite or basalt, but also from sediments in the Clarence lowlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Kardomia prominens		E4A		No	A NSW endemic that is known from only two locations: Nymboida and Moses Rock (Nymboi-Binderay National Park). Dry open forest on rocky ridges and steep rocky slopes with very shallow soils. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Kardomia silvestris	Woodland Babingtonia	E1		No	Scattered localities in north-east NSW and southern Queensland. In NSW the species is known from the Dorrigo area and Mount Neville Nature Reserve. Grows amongst granite or rhyolite rock outcrops in shrubby woodland. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Lindernia alsinoides	Noah's False Chickweed	E1		No	Recorded in coastal areas from Buladelah to Coopernook and with occurrences further north at Shannon Creek west of Coutts Crossing and at Bungawalbyn. Grows in swamp forests and wetlands along coastal and hinterland creeks. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Lindsaea fraseri	Fraser's Screw Fern	E1,3		No	In NSW it is known only from two areas - near Hastings Point on the Tweed coast and in the Pillar Valley east of Grafton. Also occurs in far north and south-east Queensland. Poorly drained, infertile soils in swamp forest or open eucalypt forest, usually as part of a ferny understorey. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Lindsaea incisa	Slender Screw Fern	E1,3		No	In NSW it is known only from a few locations between Woombah and just south of Coffs Harbour. Also occurs in north and south-east Queensland. Dry eucalypt forest on sandstone and moist shrubby eucalypt forest on metasediments. It is usually found in waterlogged or poorly drained sites along creeks, where ferns, sedges and shrubs grow thickly. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes

Macadamia integrifolia	Macadamia Nut		V	No	Confined chiefly to the north of the Richmond River in north-east NSW, extending just across the border into Queensland. Many records, particularly those further south, are thought to be propagated. Found in subtropical rainforest, usually near the coast. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Macadamia tetraphylla	Rough-shelled Bush Nut	V	V	No	Confined chiefly to the north of the Richmond River in north-east NSW, extending just across the border into Queensland. Many records, particularly those further south, are thought to be propagated. Found in subtropical rainforest, usually near the coast. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Macrozamia johnsonii	Johnson's Cycad	E1,P		No	Found only in north-east NSW. Locally common in restricted areas west of Grafton, in the Dalmorton and Chaelundi districts. Grows in colonies on sheltered ridges and steep southerly and easterly slopes in wet and dry eucalypt forest on shallow and rocky soils. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Marsdenia longiloba	Slender Marsdenia	E1	V	No	Scattered sites on the north coast of NSW north from Barrington Tops. Also occurs in south-east Queensland. Subtropical and warm temperate rainforest, lowland moist or open eucalypt forest adjoining rainforest and, sometimes, in areas with rock outcrops. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Maundia triglochinoides		V		Yes	Restricted to coastal NSW and extending into southern Queensland. The current southern limit is Wyong; former sites around Sydney are now extinct. Grows in swamps, lagoons, dams, channels, creeks or shallow freshwater. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Melaleuca irbyana	Weeping Paperbark	E1		Yes	Found in only a few places in north-east NSW, including near Coraki, Casino and Coutts Crossing south of Grafton. Also occurs in near Ipswich in south-east Queensland. Only two populations are recorded in conservation reserves in NSW, these are Warragai Creek Nature Reserve and Bungawalbin National Park. Open eucalypt forest in poorly drained, usually clay, sandstone or alluvial soils. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Melichrus sp. Gibberagee	Narrow-leaf Melichrus	E1	E	No	Restricted to north-east NSW. Known only from a single population in Gibberagee State Forest and adjacent private property, about 40 km south of Casino. Low-altitude dry eucalypt forest on gentle slopes. Found mainly in grassy forests under tall spotted gum and ironbarks. **Moderate - Subject site within known distribution. Associated vegetation communities present (688) and no records within 10 km.**	Yes
Melichrus hirsutus	Hairy Melichrus	E1	E	No	Restricted to a few locations near Grafton in north-east NSW. Dry eucalypt forest with a shrubby understorey with sandstone rock outcrops. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688) and no records within 10 km.**	Yes

Myrsine richmondensis	Ripple-leaf Muttonwood	E1	E	No	Known only from a few populations at Coraki, Boatharbour near Lismore, and the Cherry Tree area west of Casino. Subtropical and dry rainforest and swamp forest on creek flats and slopes on basalt derived soil and alluvial deposits. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Niemeyera whitei	Rusty Plum, Plum Boxwood	V		No	Rusty Plum occurs in the coast and adjacent ranges of northern NSW from the Macleay River into southern Queensland. Its distributional stronghold is on the mid north coast around Coffs Harbour. Found in gully, warm temperate or littoral rainforests and the adjacent understorey of moist eucalypt forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Ochrosia moorei	Southern Ochrosia	E1	E	No	Southern Ochrosia is found in north-east NSW north from the Richmond River, and in south-east Queensland. It is very sparsely distributed within this range. Southern Ochrosia is found in riverine and lowland subtropical rainforest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Olax angulata	Square-stemmed Olax	V	V	Yes	Known from a small area east of Grafton, near Minnie Water and Wooli, mainly in Yuraygir National Park and on nearby leasehold land. Locally common. Also known from an area north of Grafton in Banyabba Nature Reserve, Fortis Creek National Park and adjoining freehold land. Low-lying coastal heaths and heathy woodlands on sandy soils near swamps, often in association with Wallum Banksia (*Banksia aemula*). **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes

Oldenlandia galioides		E1		No	In north-east NSW, known from Whiporie State Forest south of Casino and one location in the Tweed district. Also occurs on the north-west plains of NSW and in Queensland, Northern Territory and Western Australia. Margins of seasonally inundated wetlands in paperbark swamps and Forest Red Gum (*Eucalyptus tereticornis*) woodlands. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Owenia cepiodora	Onion Cedar	V	V	No	North from the Richmond River in north-east NSW extending just across the border into Queensland. Subtropical and dry rainforest on or near soils derived from basalt. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Parsonsia dorrigoensis	Milky Silkpod	V	E	No	Milky Silkpod is found only within NSW, with scattered populations in the north coast region between Kendall and Woolgoolga. Found in subtropical and warm-temperature rainforest, on rainforest margins, and in moist eucalypt forest up to 800 m, on brown clay soils. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Paspalidium grandispiculatum		V	V	No	*Paspalidium grandispiculatum* occurs in south east Queensland and north east NSW. In NSW, it is known from the north of Grafton in the Mount Neville, Gibberagee and Doubleduke vicinities. Information on the number of individual plants is lacking, but there are probably many thousands of ramets; the degree of clonality within populations is unknown.In NSW, *Paspalidium grandispiculatum* is likely to be restricted to poor sandy soils on sandstone. It has been found in open forest of Turpentine (*Syncarpia glomulifera*) on undulating topography as well as in drier forest types on ridges **Moderate - Subject site within known distribution. Associated vegetation communities present (658) and no records within 10 km.**	Yes

Persicaria elatior	Tall Knotweed	V	V	No	Tall Knotweed has been recorded in south-eastern NSW (Mt Dromedary (an old record), Moruya State Forest near Turlinjah, the Upper Avon River catchment north of Robertson, Bermagui, and Picton Lakes. In northern NSW it is known from Raymond Terrace (near Newcastle) and the Grafton area (Cherry Tree and Gibberagee State Forests). The species also occurs in Queensland. This species normally grows in damp places, especially beside streams and lakes. Occasionally in swamp forest or associated with disturbance. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Philotheca papillata		V,P		No	The geographic distribution of *Philotheca papillata* is very highly restricted. The species is known only from the type locality of a sandstone cliff escarpment in Sherwood Nature Reserve (NR), east of Glenreagh, northern NSW. The species occurs primarily in areas of low heath with emergent Needlebark Stringybark (*Eucalyptus planchoniana*), and a sparse shrub layer of Black She-oak (*Allocasuarina littoralis*) and Old Man Banksia (*Banksia serrata*). **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Phyllanthus microcladus	Brush Sauropus	E1		Yes	In NSW confined to a few locations in the Tweed, Brunswick, Richmond and Wilson River Valleys with an outlying population near Grafton. Also occurs in south-east Queensland. Usually found on banks of creeks and rivers, in streamside rainforest or dry rainforest. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes

Plectranthus nitidus	Nightcap Plectranthus	E1	E	No	The species occurs within north-east NSW and south-east Queensland. In NSW it was previously known only from Nightcap National Park near Terania Creek in northern NSW. However, the species has now been recorded as far south as Chaelundi National Park near Nymboida. Grows on rocky cliff-faces and boulders, in the shelter and shade provided by the adjacent rainforest and dry rainforest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Polygala linariifolia	Native Milkwort	E1		Yes	North from Copeton Dam and the Warialda area to southern Queensland; also found on the NSW north coast near Casino and Kyogle, and there is an isolated population in far western NSW near Weebah Gate, west of Hungerford. This species also occurs in Western Australia. In the Pilliga area, this species has been recorded in Fuzzy Box woodland, White Cypress Pine-Bulloak - Ironbark woodland, Rough-barked Apple riparian forb-grass open forest, and Ironbark - Brown Bloodwood shrubby woodland. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Prostanthera palustris	Swamp Mint-bush	V,3	V	No	Only known from the Jerusalem Creek area in the north of Bundjalung National Park, near Evans Head. Grows in in wet shrubland to heathland subject to extended waterlogging in poorly drained white siliceous sandy soil with a high organic content. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Prostanthera sejuncta		V		Yes	*Prostanthera spinosa* is now considered to be restricted to Victoria and South Australia, and the NSW taxon *P. sejuncta* is restricted to a small area to the north of Grafton on the NSW North Coast. There are five populations known from confirmed records, and possibly several other small populations from anecdotal sightings in Banyabba Nature Reserve. The confirmed records include locations within Fortis Creek National Park and Banyabba Nature Reserve. All known populations are within a linear range of 16-20 km. Within this range, two subspecies may exist. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes
Psilotum complanatum	Flat Fork Fern	E1,3		No	Found in moist tropical areas in Queensland, the Pacific and tropical America. In NSW, there is a historic record for Ballina but it has not been seen for many years and may be extinct in NSW. Grows in moist tropical or subtropical rainforest, or moist eucalypt forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Pultenaea maritima	Coast Headland Pea	V		No	Occurs in New South Wales and Queensland. Within NSW, the species has been recorded from Newcastle north to Byron Bay on 16 headlands. Populations vary from a few plants to larger populations of many hundreds of individuals where the species is a major component of the Kangaroo Grass Headland community. Five sites occur within conservation reserves. The species occurs in grasslands, shrublands and heath on exposed coastal headlands and adjoining low coastal heath. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Quassia sp. Moonee Creek	Moonee Quassia	E1	E	No	Scattered distribution from the Moonee Creek area north of Coffs Harbour to north-east of Grafton. Shrubby layer below tall moist eucalypt forest and tall dry eucalypt forest, including forest edges, mostly at lower altitudes. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Randia moorei	Spiny Gardenia	E1	E	No	Found from Lismore in north-east NSW north to the Logan River in south-east Queensland. Sparsely distributed, with most records in the Tweed and Brunswick areas. Spiny Gardenias occurs in subtropical, riverine, littoral and dry rainforest. In NSW, Hoop Pine and Brush Box are common canopy species. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Rhodamnia rubescens	Scrub Turpentine	E4A		No	Occurs in coastal districts north from Batemans Bay in New South Wales, approximately 280 km south of Sydney, to areas inland of Bundaberg in Queensland. Populations of *R. rubescens* typically occur in coastal regions and occasionally extend inland onto escarpments up to 600 m abs. in areas with rainfall of 1,000-1,600 mm. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils. This species is characterised as highly to extremely susceptible to infection by Myrtle Rust. Myrtle Rust affects all plant parts **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Rhodomyrtus psidioides	Native Guava	E4A		No	Occurs from Broken Bay, approximately 90 km north of Sydney, New South Wales, to Maryborough in Queensland. Populations are typically restricted to coastal and sub-coastal areas of low elevation however the species does occur up to c. 120 km inland in the Hunter and Clarence River catchments and along the Border Ranges in NSW. Habitat and ecology. Pioneer species found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest often near creeks and drainage lines. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Rotala tripartita		E1		No	*Rotala tripartita* occurs in New South Wales, Queensland and the Northern Territory. In New South Wales the species is currently known from few locations, generally between the Casino district and the South Grafton area, in the Southeast Queensland bioregion. These locations are separated by a distance of less than c. 100 km. The geographic distribution of the species in New South Wales is therefore highly restricted. There are no records of *Rotala tripartita* in any reserve or State Forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Rutidosis heterogama	Heath Wrinklewort	V	V	No	Recorded from near Cessnock to Kurri Kurri with an outlying occurence at Howes Valley. On the Central Coast it is located north from Wyong to Newcastle. There are north coast populations between Wooli and Evans Head in Yuraygir and Bundjalung National Parks. It also occurs on the New England Tablelands from Torrington and Ashford south to Wandsworth south-west of Glen Innes. Grows in heath on sandy soils and moist areas in open forest, and has been recorded along disturbed roadsides. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Senna acclinis	Rainforest Cassia	E1		No	Occurs in coastal districts and adjacent tablelands of NSW from the Illawarra in NSW to Queensland. Grows on the margins of subtropical, littoral and dry rainforests **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Sophora fraseri	Brush Sophora	V	V	No	Bush Sophora occurs north from the Casino district in north-east NSW, where it is very rare. Also in south-east Queensland where it is widespread but not common. Brush Sophora is usually found in wet situations in wet sclerophyll forest or vine forest, often near rainforest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Sophora tomentosa	Silverbush	E1		No	Silverbush occurs in coastal areas in Queensland and northern NSW. It was previously common north from Port Stephens but is now uncommon and found only north of Old Bar, near Taree. The largest known population, at Port Macquarie, is estimated at up to 500 plants, other populations are of less than 20 plants. It is found in a number of other countries. Silverbush occurs on coastal dunes. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Syzygium hodgkinsoniae	Red Lilly Pilly	V	V	No	A restricted range from the Richmond River in north-east NSW to Gympie in Queensland. Locally common in some parts of its range, but otherwise sparsely distributed. Usually found in riverine and subtropical rainforest on rich alluvial or basaltic soils. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Syzygium moorei	Durobby	V	V	No	Found in the Richmond, Tweed and Brunswick River valleys in north-east NSW and with limited occurrence in south-east Queensland. Durobby is found in subtropical and riverine rainforest at low altitude. It often occurs as isolated remnant paddock trees. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Tephrosia filipes		V		No	Relatively widespread in Queensland but in NSW confined to the north-eastern section on the escarpment east of Tenterfield south to west of Grafton. Grows in a range of woodland and forest habitats on soils derived from granite, sandstone or metasediments. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688) and no records within 10 km.**	Yes

Thesium australe	Austral Toadflax	V	V	No	Austral Toad-flax is found in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands. It is also found in Tasmania and Queensland and in eastern Asia. Although originally described from material collected in the SW Sydney area, populations have not been seen in a long time. It may persist in some areas in the broader region. Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Tinospora smilacina	Tinospora Vine	E1		No	North from the Coffs Harbour district in north-east NSW, where it is rare. Its distribution also includes Queensland, Northern Territory and Western Australia. Dry rainforest and along the boundaries of dry rainforest and dry eucalypt forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Tinospora tinosporoides	Arrow-head Vine	V		No	North from the Richmond River in north-east NSW, where it is locally common in some parts of its range. Also recorded from a single location in south-east Queensland. Wetter subtropical rainforest, including littoral rainforest, on fertile, basalt-derived soils. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Triplarina imbricata	Creek Triplarina	E1	E	No	Found only in a few locations in the ranges south-west of Glenreagh and near Tabulam in north-east NSW. The species was previously recorded in Parramatta, near Sydney, however, the species is no longer thought to occur in this area. Occurs along watercourses in low open forest with Water Gum (*Tristaniopsis laurina*) or in montane bogs, often with *Baekea amissa*. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Tylophora woollsii	Cryptic Forest Twiner	E1	E	No	The Cryptic Forest Twiner is found from the NSW north coast and New England Tablelands to southern Queensland, but is very rare within that range. Known on the Tablelands from the Bald Rock and Boonoo Boonoo areas north of Tenterfield. This species grows in moist eucalypt forest, moist sites in dry eucalypt forest and rainforest margins. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Typhonium sp. aff. brownii	Stinky Lily	E1,3		No	Only known from four locations in the range's west of Coffs Harbour and Woolgoolga: Kangaroo River, Bruxner Park, Bindarri National Park and Upper Corindi. Occurs on reasonably fertile soils, in moist eucalypt forest and the moist eucalypt forest-subtropical rainforest interface. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Xylosma terrae-reginae	Queensland Xylosma	E1		No	The species is found along coastal areas in north-east NSW from Ballina, north to the Maryborough region in Queensland. Littoral and subtropical rainforest on coastal sands or soils derived from metasediments. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Thersites mitchellae	Mitchell's Rainforest Snail	E1	CE	No	Found in remnant vegetation on the coastal plain between the Richmond River and Tweed River on the NSW north coast. It has also been recorded from some adjacent mid-elevation areas including Wilsons River and Mount Jerusalem. Remnant areas of lowland subtropical rainforest and swamp forest on alluvial soils. Slightly higher ground around the edges of wetlands with palms and fig trees are particularly favoured habitat. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Argynnis hyperbius	Laced Fritillary	E1	CE	No	The Australian Fritillary is restricted to south-east Queensland and north-east NSW in open swampy coastal areas where the larval food plant Arrowhead Violet *Viola betonicifolia* occurs. Most recently known from a few widespread localities between Port Macquarie and Gympie, populations have declined dramatically to the extent that the butterfly has not been verified at any site for over a decade. The Australian Fritillary is found in open swampy coastal habitat. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Petalura gigantea	Giant Dragonfly	E1		No	The Giant Dragonfly is found along the east coast of NSW from the Victorian border to northern NSW. It is not found west of the Great Dividing Range. There are known occurrences in the Blue Mountains and Southern Highlands, in the Clarence River catchment, and on a few coastal swamps from north of Coffs Harbour to Nadgee in the south. Live in permanent swamps and bogs with some free water and open vegetation. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Petalura litorea	Coastal Petaltail	E1		Yes	The Coastal Petaltail is known from Byfield (near Yeppoon in Queensland) to Bonville (south of Coffs Harbour). In NSW it is known from a very small number of locations, including Brooms Head, Tucabia, Diggers Camp and Bonville. The Coastal Petaltail occupies a variety of permanent to semi-permanent coastal freshwater wetlands. **Low - Subject site within known distribution. No associated vegetation communities present and records within 10 km. Since the only freshwater available is a pond surrounded by an active quarry with a high degree of heavy machinery operation, it is unlikely to make use of the subject site..**	No

Phyllodes imperialis southern subspecies	Southern Pink Underwing Moth	E1	E	No	The Southern Pink Underwing Moth is distributed from Nambour in south-eastern Queensland to Bellingen in northern NSW. In NSW it is known to occur in a small number of localities from the QLD border to Wardell, and there is a disjunct population in the Bellingen area. The Southern Pink Underwing Moth is found in subtropical rainforest below about 600 m elevation. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Aepyprymnus rufescens	Rufous Bettong	V,P		Yes	The original range from Coen in north Queensland to central Victoria has been reduced to a patchy distribution from Cooktown, Queensland, to north-eastern NSW as far south as Mt Royal National Park. In NSW it has largely vanished from inland areas but there are sporadic, unconfirmed records from the Pilliga and Torrington districts. Rufous Bettongs inhabit a variety of forests from tall, moist eucalypt forest to open woodland, with a tussock grass understorey. A dense cover of tall native grasses is the preferred shelter. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Arctocephalus pusillus doriferus	Australian Fur-seal	V,P		No	Reported to have bred at Seal Rocks, near Port Stephens and Montague Island in southern NSW. Haul outs are observed at isolated places along the NSW coast. Prefers rocky parts of islands with flat, open terrain. They occupy flatter areas than do New Zealand Fur-seals where they occur together. **Absent – Subject site lacks habitat features for this species.**	No

Cercartetus nanus	Eastern Pygmy-possum	V,P		No	The Eastern Pygmy-possum is found in south-eastern Australia, from southern Queensland to eastern South Australia and in Tasmania. In NSW it extents from the coast inland as far as the Pilliga, Dubbo, Parkes and Wagga Wagga on the western slopes. Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Chalinolobus dwyeri	Large-eared Pied Bat	V,P	V	No	Found mainly in areas with extensive cliffs and caves, from Rockhampton in Queensland south to Bungonia in the NSW Southern Highlands. It is generally rare with a very patchy distribution in NSW. There are scattered records from the New England Tablelands and North West Slopes. Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (Petrochelidon ariel), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes
Chalinolobus nigrogriseus	Hoary Wattled Bat	V,P		Yes	Widely distributed across northern Australia although absent from the arid centre. In north east NSW it extends from Port Macquarie in the south, north to the Queensland border. The species has been recorded as far west as Armidale and Ashford. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Dasyurus maculatus	Spotted-tailed Quoll	V,P	E	Yes	The range of the Spotted-tailed Quoll has contracted considerably since European settlement. It is now found in eastern NSW, eastern Victoria, south-east and north-eastern Queensland, and Tasmania. Only in Tasmania is it still considered relatively common. Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Dugong dugon	Dugong	E1,P		No	Extends south from warmer coastal and island waters of the Indo-West Pacific to northern NSW, where its known from incidental records only. **Absent - Only occurs in marine environments.**	No
Falsistrellus tasmaniensis	Eastern False Pipistrelle	V,P		Yes	The Eastern False Pipistrelle is found on the south-east coast and ranges of Australia, from southern Queensland to Victoria and Tasmania. Prefers moist habitats, with trees taller than 20 m. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes

Macropus dorsalis	Black-striped Wallaby	E1,P		No	From the Townsville area in Queensland to northern NSW where it occurs on both sides of the Great Divide. On the north west slopes of NSW it occurs in Brigalow remnants to south of Narrabri. On the north coast it is confined to the upper catchments of the Clarence and Richmond Rivers. Preferred habitat is characterised by dense woody or shrubby vegetation within three metres of the ground. This dense vegetation must occur near a more open, grassy area to provide suitable feeding habitat. On the north west slopes, associated with dense vegetation, including brigalow, ooline and semi-evergreen vine thicket. On the north coast, closely associated with dry rainforest but also occur in moist eucalypt forest with a rainforest understorey or a dense shrub layer. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Macropus parma	Parma Wallaby	V,P		No	Once occurred from north-eastern NSW to the Bega area in the southeast. Their range is now confined to the coast and ranges of central and northern NSW from the Gosford district to the Queensland border. Preferred habitat is moist eucalypt forest with thick, shrubby understorey, often with nearby grassy areas, rainforest margins and occasionally drier eucalypt forest. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Megaptera novaeangliae	Humpback Whale	V,P	V	No	Only occurs in marine habitat **Absent - Only occurs in marine environments.**	No
Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	V,P		Yes	The Eastern Freetail-bat is found along the east coast from south Queensland to southern NSW. Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Miniopterus australis	Little Bent-winged Bat	V,P		Yes	East coast and ranges of Australia from Cape York in Queensland to Wollongong in NSW. Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Miniopterus orianae oceanensis	Large Bent-winged Bat	V,P		Yes	Eastern Bentwing-bats occur along the east and north-west coasts of Australia. Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Myotis macropus	Southern Myotis	V,P		Yes	The Southern Myotis is found in the coastal band from the north-west of Australia, across the top-end and south to western Victoria. It is rarely found more than 100 km inland, except along major rivers. Generally roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish by raking their feet across the water surface. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Nyctophilus bifax	Eastern Long-eared Bat	V,P		Yes	Found from Cape York through eastern Queensland to the far north-east corner of NSW. In NSW they appear to be confined to the coastal plain and nearby coastal ranges, extending south to the Clarence River area, with a few records further south around Coffs Harbour. The species can be locally common within its restricted range. **Moderate - Subject site within known distribution. No associated vegetation communities present and records within 10 km.**	Yes
Ozimops lumsdenae	Northern Free-tailed Bat	V,P		No	Widely distributed across northern Australia from Western Australia to Queensland, extending south to the north-east corner of NSW. The only confirmed record in NSW is of a colony found in the roof of a house in Murwillumbah, however, calls have been detected from a few other locations in the far north east of the State. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Petauroides volans	Greater Glider	P	V	Yes	The greater glider is found in southern Queensland, eastern Australia, southeastern New South Wales, and the montane forests of the Victorian central highlands. The greater glider chooses habitat based on several factors, the dominant factor being the presence of specific species of eucalypt. Distribution levels are higher in regions of montane forest containing manna gum (*E. viminalis*) and mountain gum (*E. dalrympleana, E*. o*bliqu*a). Furthermore, the presence of E*. cypellocarpa* appears to improve the quality of habitat for the greater glider in forests dominated by E. *obliqua*. Another factor determining population density is elevation. Optimal levels are 845 m above sea level.[16] Within a forest of suitable habitat, they prefer overstorey basal areas in old-growth tree stands. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes

Petaurus norfolcensis	Squirrel Glider	V,P		Yes	Squirrel Gliders are distributed in eastern Australia, from northern Queensland to western Victoria. Inhabits mature or old growth Box, Box-Ironbark woodlands and River Red Gum forest west of the Great Dividing Range and Blackbutt-Bloodwood forest with heath understorey in coastal areas **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Petrogale penicillata	Brush-tailed Rock-wallaby	E1,P	V	No	The range of the Brush-tailed Rock-wallaby extends from south-east Queensland to the Grampians in western Victoria, roughly following the line of the Great Dividing Range. However the distribution of the species across its original range has declined significantly in the west and south and has become more fragmented. In NSW they occur from the Queensland border in the north to the Shoalhaven in the south, with the population in the Warrumbungle Ranges being the western limit. Occupy rocky escarpments, outcrops and cliffs with a preference for complex structures with fissures, caves and ledges, often facing north. Shelter or bask during the day in rock crevices, caves and overhangs and are most active at night when foraging. Browse on vegetation in and adjacent to rocky areas eating grasses and forbs as well as the foliage and fruits of shrubs and trees. Highly territorial and have strong site fidelity with an average home range size of about 15 ha. Males tend to have larger home ranges than females. The home range consists of a refuge area and a foraging range linked by habitually used commuting routes. Females settle in or near their mother's range, while males mainly disperse between female groups within colonies, and less commonly between colonies. **Moderate - Subject site within known distribution. No associated vegetation communities present (658, 688) and no records within 10 km.**	Yes

Phascogale tapoatafa	Brush-tailed Phascogale	V,P		Yes	The Brush-tailed Phascogale has a patchy distribution around the coast of Australia. In NSW it is mainly found east of the Great Dividing Range although there are occasional records west of the divide. Prefer dry sclerophyll open forest with sparse groundcover of herbs, grasses, shrubs or leaf litter. Also inhabit heath, swamps, rainforest and wet sclerophyll forest. **High - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and records within 10 km.**	Yes
Phascolarctos cinereus	Koala	V,P	V	Yes	The Koala has a fragmented distribution throughout eastern Australia from north-east Queensland to the Eyre Peninsula in South Australia. In New South Wales, koala populations are found on the central and north coasts, southern highlands, southern and northern tablelands, Blue Mountains, southern coastal forests, with some smaller populations on the plains west of the Great Dividing Range. Inhabit eucalypt woodlands and forests. Gray box (*Eucalyptus microcarpa*) is a known forage tree for koalas and was recorded on site. **High - Subject site within known distribution. Associated vegetation communities present (688, 1136) and records within 10 km.**	Yes
Phoniscus papuensis	Golden-tipped Bat	V,P		No	The Golden-tipped Bat is distributed along the east coast of Australia in scattered locations from Cape York Peninsula in Queensland to south of Eden in southern NSW. It also occurs in New Guinea. Found in rainforest and adjacent wet and dry sclerophyll forest up to 1000m. Also recorded in tall open forest, *Casuarina*-dominated riparian forest and coastal *Melaleuca* forests. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Planigale maculata	Common Planigale	V,P		Yes	Coastal north-eastern NSW, coastal east Queensland and Arnhem Land. The species reaches its confirmed southern distribution limit on the NSW lower north coast however there are reports of its occurrence as far south as the central NSW coast west of Sydney. Common Planigales inhabit rainforest, eucalypt forest, heathland, marshland, grassland and rocky areas where there is surface cover, and usually close to water. **High - Subject site within known distribution. Associated vegetation communities present (688, 1136) and records within 10 km.**	Yes
Potorous tridactylus	Long-nosed Potoroo	V,P	V	No	The long-nosed potoroo is found on the south-eastern coast of Australia, from Queensland to eastern Victoria and Tasmania, including some of the Bass Strait islands. There are geographically isolated populations in western Victoria. In NSW it is generally restricted to coastal heaths and forests east of the Great Dividing Range, with an annual rainfall exceeding 760 mm. Inhabits coastal heaths and dry and wet sclerophyll forests. Dense understorey with occasional open areas is an essential part of habitat, and may consist of grass-trees, sedges, ferns or heath, or of low shrubs of tea-trees or melaleucas. A sandy loam soil is also a common feature. The fruit-bodies of hypogeous (underground-fruiting) fungi are a large component of the diet of the Long-nosed Potoroo. They also eat roots, tubers, insects and their larvae and other soft-bodied animals in the soil. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Pseudomys gracilicaudatus	Eastern Chestnut Mouse	V,P		No	In NSW the Eastern Chestnut Mouse mainly occurs north from the Hawkesbury River area as scattered records along to coast and eastern fall of the Great Dividing Range extending north into Queensland. There are however isolated records in the Jervis bay area. In NSW the Eastern Chestnut Mouse is mostly found, in low numbers, in heathland and is most common in dense, wet heath and swamps. In the tropics it is more an animal of grassy woodlands. **Moderate - Subject site within known distribution. No associated vegetation communities present (658, 688, 1136), no records within 10 km.**	Yes

Pseudomys novaehollandiae	New Holland Mouse	P	V	No	The New Holland Mouse has a fragmented distribution across Tasmania, Victoria, New South Wales and Queensland. Genetic evidence indicates that the New Holland Mouse once formed a single continuous population on mainland Australia and the distribution of recent subfossils further suggest that the species has undergone a large range contraction since European settlement. Total population size of mature individuals is now estimated to be less than 10,000 individuals although, given the number of sites from which the species is known to have disappeared between 1999 and 2009, it is likely that the species' distribution is actually smaller than current estimates. Known to inhabit open heathlands, woodlands and forests with a heathland understorey and vegetated sand dunes. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136), no records within 10 km.**	Yes
Pseudomys oralis	Hastings River Mouse	E1,P	E	No	A patchy distribution spanning the Great Dividing Range from the Hunter Valley, south of Mt Royal, north to the Bunya Mountains near Kingaroy in south-east Queensland, at elevations between 300 m and 1100 m. A variety of dry open forest types with dense, low ground cover and a diverse mixture of ferns, grass, sedges and herbs. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Pteropus poliocephalus	Grey-headed Flying-fox	V,P	V	Yes	Grey-headed Flying-foxes are generally found within 200 km of the eastern coast of Australia, from Rockhampton in Queensland to Adelaide in South Australia. In times of natural resource shortages, they may be found in unusual locations. Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Individual camps may have tens of thousands of animals and are used for mating, and for giving birth and rearing young. Annual mating commences in January and conception occurs in April or May; a single young is born in October or November. Site fidelity to camps is high; some camps have been used for over a century. Can travel up to 50 km from the camp to forage; commuting distances are more often <20 km. Feed on the nectar and pollen of native trees, in particular Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines. Also forage in cultivated gardens and fruit crops. **High - Subject site within known distribution. Associated vegetation communities present (688, 1136) and records within 10 km.**	Yes
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	V,P		Yes	The Yellow-bellied Sheathtail-bat is a wide-ranging species found across northern and eastern Australia. In the most southerly part of its range - most of Victoria, south-western NSW and adjacent South Australia - it is a rare visitor in late summer and autumn. There are scattered records of this species across the New England Tablelands and North West Slopes. Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory. Breeding has been recorded from December to mid-March, when a single young is born. Seasonal movements are unknown; there is speculation about a migration to southern Australia in late summer and autumn. **High - Subject site within known distribution. Associated vegetation communities present (688, 1136) and records within 10 km.**	Yes

Scoteanax rueppellii	Greater Broad-nosed Bat	V,P		Yes	The Greater Broad-nosed Bat is found mainly in the gullies and river systems that drain the Great Dividing Range, from north-eastern Victoria to the Atherton Tableland. It extends to the coast over much of its range. In NSW it is widespread on the New England Tablelands, however, does not occur at altitudes above 500 m. Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Forages after sunset, flying slowly and directly along creek and river corridors at an altitude of 3 - 6 m. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species. **High - Subject site within known distribution. Associated vegetation communities present (688, 1136) and records within 10 km.**	Yes
Syconycteris australis	Common Blossom-bat	V,P		No	The NSW distribution of Syconycteris australis is centred on sand-based coastal forest mosaics and wallum habitat, which is different to much of the QLD habitat. Though the species is relatively secure in QLD, it is highly susceptible to habitat degradation from coastal development and associated infrastructure and its primary food sources (a mosaic of nectar producing plant communities) are heavily impacted by high frequency fires, weed invasion, and impacts from climate change. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Thylogale stigmatica	Red-legged Pademelon	V,P		No	Patchily distributed along coastal and subcoastal eastern Australia from Cape York to the Hunter Valley in NSW. Southern range records are from the Watagan Mountains and the Wyong district. There are unconfirmed records from the western New England Tablelands (e.g. west of Emmaville). This species is also found in New Guinea. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Vespadelus troughtoni	Eastern Cave Bat	V,P		No	The Eastern Cave Bat is found in a broad band on both sides of the Great Dividing Range from Cape York to Kempsey, with records from the New England Tablelands and the upper north coast of NSW. The western limit appears to be the Warrumbungle Range, and there is a single record from southern NSW, east of the ACT. Very little is known about the biology of this uncommon species. A cave-roosting species that is usually found in dry open forest and woodland, near cliffs or rocky overhangs; has been recorded roosting in disused mine workings, occasionally in colonies of up to 500 individuals. Occasionally found along cliff-lines in wet eucalypt forest and rainforest. Little is understood of its feeding or breeding requirements or behaviour. BioNet Atlas states that the species occurs within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, crevices or boulder piles, or within two kilometres of old mines, tunnels, old buildings or sheds. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

Cacophis harriettae	White-crowned Snake	V,P		Yes	Coastal and near-coastal areas from central eastern Queensland south to the vicinity of Coffs Harbour in north-east NSW. The western limit is the Legume area near the NSW-Queensland border; however, their stronghold appears to be the middle Clarence Valley. **High - Subject site within known distribution. Associated vegetation communities present (688, 1136) and records within 10 km.**	Yes
Caretta caretta	Loggerhead Turtle	E1,P	E	No	Occupies oceans and coastal habitat **Absent - Only occurs in marine environments.**	No
Chelonia mydas	Green Turtle	V,P	V	No	Usually found in tropical waters around Australia but also occurs in coastal waters of NSW **Absent - Only occurs in marine environment.**	No
Coeranoscincus reticulatus	Three-toed Snake-tooth Skink	V,P	V	No	The Three-toed Snake-tooth Skink occurs on the coast and ranges from the Macleay valley in NSW to south-eastern Queensland. It is very uncommon south of Grafton. **Low – Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Dermochelys coriacea	Leatherback Turtle	E1,P	E	No	Occurs in inshore and offshore marine waters. Rarely breeds in Australia **Absent – Only occurs in marine environments.**	No
Eretmochelys imbricata	Hawksbill Turtle	P	V	No	In Australia the hawksbill turtle is found along the tropical coasts of northern and eastern Australia, from mid-western Western Australia to southern Queensland **Absent - Only occurs in marine environments.**	No

Hoplocephalus bitorquatus	Pale-headed Snake	V,P		No	A patchy distribution from north-east Queensland to the north-eastern quarter of NSW. In NSW it has historically been recorded from as far west as Mungindi and Quambone on the Darling Riverine Plains, across the north west slopes, and from the north coast from Queensland to Sydney. A small number of historical records are known for the New England Tablelands from Glenn Innes and Tenterfield; however, the majority of records appear to be from sites of relatively lower elevation. Although the Pale-headed snake distribution is very cryptic, it now appears to have contracted to a patchy and fragmented distribution. The Pale-headed Snake is a highly cryptic species that can spend weeks at a time hidden in tree hollows. Found mainly in dry eucalypt forests and woodlands, cypress forest and occasionally in rainforest or moist eucalypt forest. In drier environments, it appears to favour habitats close to riparian areas. **Moderate - Subject site within known distribution. Associated vegetation communities present (658, 688, 1136) and no records within 10 km.**	Yes
Hoplocephalus stephensii	Stephens' Banded Snake	V,P		No	Coast and ranges from Southern Queensland to Gosford in NSW. Rainforest and eucalypt forests and rocky areas up to 950 m in altitude. **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No
Oxyuranus microlepidotus	Fierce Snake	E4,P		No	The Fierce Snake is native to the arid regions of central Australia. Its range extends from the southeast part of the Northern Territory into west Queensland. The snake can also be found north of Lake Eyre and to the west of the split of the Murray River, Darling River, and Murrumbidgee River. The Fierce Snake inhabits the black soil plains in the region where Queensland, South Australia and the Northern Territory borders converge. There is little cover or vegetation in these areas and the snakes utilise the deep cracks and fissures formed in the dry soil to escape predators and the searing heat **Low - Subject site within known distribution. No associated vegetation communities present and no records within 10 km.**	No

NSW Status: P=Protected, P13=Protected native plant, V=Vulnerable, E1=Endangered, E2=Endangered population, E4=Extinct, E4A=Critically endangered, 2=Category 2 sensitive species, 3=Category 3 sensitive species.
Commonwealth Status: C=CAMBA, J=JAMBA, K=ROKAMBA, CE=Critically endangered, E=Endangered, V=Vulnerable

Likelihood of occurrence table for BC Act Threatened Ecological Community

Community	NSW Status	Comm. Status	Likelihood of Occurrence	5-part test required (Yes / No)
Coastal Cypress Pine Forest in the New South Wales North Coast Bioregion	E3		Coastal Cypress Pine Forest is apparently restricted to the NSW North Coast bioregion. The dominant species, *C. columellaris*, extends into south-east Queensland as far north as Hervey Bay. Any occurrence of the community in south-east Queensland is likely to be highly restricted. In NSW, Coastal Cypress Pine Forest is currently known from the local government areas of Tweed, Byron, Ballina, Richmond Valley and Clarence Valley, but may occur elsewhere within the bioregion. **Absent – Community does not occur within the proposal site.**	No
Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	V	Coastal Saltmarsh occurs in the intertidal zone on the shores of estuaries and lagoons that are permanently or intermittently open to the sea. It is frequently found as a zone on the landward side of mangrove stands. Characteristic plants include *Baumea juncea*, Sea Rush (*Juncus krausii* subsp. *australiensis*), Samphire (*Sarcocornia quinqueflora* subsp. *quinqueflora*), Marine Couch (*Sporobolus virginicus*), Streaked Arrowgrass (*Triglochin striata*), Knobby Club-rush (*Ficinia nodosa*), Creeping Brookweed (*Samolus repens*), Swamp Weed (*Selliera radicans*), Seablite (*Suaeda* australis) and Prickly Couch (*Zoysia macrantha*). Occasionally mangroves are scattered through the saltmarsh. Tall reeds may also occur, as well as salt pans. **Absent – Community does not occur within the proposal site.**	No

Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3		Known from along the majority of the NSW coast. However, it is distinct from Sydney Freshwater Wetlands which are associated with sandplains in the Sydney Basin bioregion. Extensively cleared and modified. In the 1990s the extent remaining were: 3% in the NSW North Coast bioregion, 66% in the lower Hunter – Central coast region, 40% on the Cumberland Plain, 70% in the Sydney – South Coast region, and 30% in the Eden region. There is less than 150 ha remaining on the Tweed lowlands (estimate in 1985); about 10,600 ha on the lower Clarence floodplain (in 1982); about 11,200 ha on the lower Macleay floodplain (in 1983); about 3,500 ha in the lower Hunter – Central Hunter region (in 1990s); less than 2,700 ha on the NSW south coast from Sydney to Moruya (in the mid 1990s), including about 660 ha on the Cumberland Plain (in 1998) and about 100 ha on the Illawarra Plain (in 2001); and less than 1000 ha in the Eden region (in 1990). Poorly reserved, known to occur in Ukerebagh, Tuckean, Tabbimoble Swamp, Hexham Swamp, Pambalong and Pitt Town Nature Reserves and Bungawalbin, Scheyville and Seven Mile Beach National Parks. **Absent – Community does not occur within the proposal site.**	No
Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions	E3	CE	Littoral Rainforest occurs only on the coast and is found at locations in the NSW North Coast Bioregion, Sydney Basin Bioregion and South East Corner Bioregion. Littoral Rainforest is very rare and occurs in many small stands. In total, it comprises less than one percent of the total area of rainforest in NSW. The largest known stand occurs in Iluka Nature Reserve, which is about 136 hectares in size. Not all stands of this community have been included in mapping for the Environmental Planning Policy 26, Littoral rainforest. **Absent – Community does not occur within the proposal site.**	No
Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions	E3	CE	The Hawkesbury River notionally marks the southern limit of Lowland Rainforest in the NSW North Coast and Sydney Basin bioregions. South of the Sydney metropolitan area, Lowland Rainforest is replaced by Illawarra Subtropical Rainforest of the Sydney Basin Bioregion, which is listed as an endangered ecological community. Milton Ulladulla Subtropical Rainforest is also a related rainforest endangered ecological community that occurs still further south in the South East Corner Bioregion. **Absent – Community does not occur within the proposal site.**	No

Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion	E3	CE	Lowland Rainforest on Floodplain generally occupies riverine corridors and alluvial flats with rich, moist silts often in subcatchments dominated by basic volcanic substrates. Major examples once occurred, and remnants remain, on the floodplains of the Tweed, Richmond, Clarence, Bellinger, Macleay, Hastings, Manning, and Hunter Rivers. Other minor river systems also support the community. **Absent – Community does not occur within the proposal site.**	No
Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion	E3		Subtropical Coastal Floodplain Forest is known from parts of the Local Government Areas of Tweed, Byron, Lismore, Ballina, Richmond Valley, Clarence Valley, Coffs Harbour, Bellingen, Nambucca, Kempsey, Hastings, Greater Taree, Great Lakes and Port Stephens, but may occur elsewhere in this bioregion. Major examples once occurred on the floodplains of the Tweed, Richmond, Clarence, Macleay, Hastings and Manning Rivers, although smaller floodplains would have also supported considerable areas of this community. The extent of the Subtropical Coastal Floodplain Forest prior to European settlement has not been mapped across its entire range. However, the remaining area of Subtropical Coastal Floodplain Forest is likely to be considerably smaller and is likely to represent much less than 30% of its original range. There are less than 350 ha of native floodplain vegetation on the Tweed lowlands. Small areas of Subtropical Coastal Floodplain Forest are contained within existing conservation reserves, including Stotts Island, Ukerebagh and Limeburners Creek Nature Reserves and Bundjalung and Myall Lakes National Parks. These are unevenly distributed throughout the range and unlikely to represent the full diversity of the community. **Absent – Community does not occur within the proposal site.**	No

APPENDIX D - BC ACT 5-PART TEST OF SIGNIFICANCE

BIODIVERSITY CONSERVATION ACT 2016 TEST OF SIGNIFICANCE

The threatened species 'test of significance' (or '5-part test') is used to determine if a development or activity is likely to significantly affect threatened species or ecological communities, or their habitats. The test of significance is set out in s.7.3 of the Biodiversity Conservation Act 2016, and is completed in accordance with the questions set out below:

The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:

a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

   i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

   ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

c) in relation to the habitat of a threatened species or ecological community:

   i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

   ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

   iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

BC Act Test of Significance

Species Name	Common Name	a.	b.	c.	d.	e.	Impact Significance
Litoria brevipalmata	Green-thighed Frog	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not impact on breeding habitat (freshwater) and therefore will not significantly impact the lifecycle such that the species will be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, this constitutes 2.5% of the estimated of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. Since no sightings have been recorded within the 10km search area, there is no suitable freshwater, and the species was not identified during the site survey, it is unlikely the proposal site contains an important population.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
^^*Calyptorhynchus lathami*	Glossy Black-Cockatoo	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not impact hollow bearing trees required for breeding and will therefore not significantly impact the lifecycle such that the species will be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. The subject site did contain *Allocasuarina* (the preferred food of this species) at the time of the field survey. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.09% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. Five recorded sightings have been recorded within the 10km search area, the most recent (in 2013) was 5km from the subject site with no sightings within the study area. It is therefore unlikely the subject site is critical habitat for this species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

^^*Erythrotriorchis radiatus*	Red Goshawk	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.09% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. One historical sighting was recorded 8km from subject site in 1866. Since no sightings have been recorded since, it is unlikely the subject site constitutes critical habitat for this species. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Anthochaera phrygia	Regent Honeyeater	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688 and 1136. Consequently, up to 0.406 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.09% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Artamus cyanopterus cyanopterus	Dusky Woodswallow	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus an additional 415.7ha of other associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Burhinus grallarius	Bush Stone-curlew	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these, plus an additional 415.7ha of other associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Chthonicola sagittata	Speckled Warbler	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus an additional 415.7ha of other associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, plus 415.7ha of other associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Coracina lineata	Barred Cuckoo-shrike	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus an additional 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Daphoenositta chrysoptera	Varied Sittella	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus an additional 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Dromaius novaehollandiae	Emu population in the New South Wales North Coast Bioregion and Port Stephens local government area	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.		i. This species is not associated with any PCT recorded within the subject site. Three sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Glossopsitta pusilla	Little Lorikeet	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Hydroprogne caspia	Caspian Tern	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. One sighting of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed and weedy vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Lathamus discolor	Swift Parrot	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688 and, 1136. Consequently, up to 0.406 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.09% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Lophoictinia isura	Square-tailed Kite	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Melithreptus gularis gularis	Black-chinned Honeyeater (eastern subspecies)	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Six sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Ninox connivens	Barking Owl	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Ninox strenua	Powerful Owl	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Petroica phoenicea	Flame Robin	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. One sightings of this species have been recorded within the 10km search area with no sightings within study area. The subject site therefore unlikely to ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Pezoporus wallicus wallicus	Eastern Ground Parrot	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. One sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Pomatostomus temporalis temporalis	Grey-crowned Babbler (eastern subspecies)	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Stagonopleura guttata	Diamond Firetail	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Three sightings of this species have been recorded within the 10km search area with no sightings within study area. 415.7ha of additional associated PCTs will remain within the study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Tyto novaehollandiae	Masked Owl	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
^^*Cryptostylis hunteriana*	Leafless Tongue Orchid	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, this constitutes 2.5% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
^^*Geodorum densiflorum*	Pink Nodding Orchid	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Two sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

^^*Oberonia complanata*	Yellow-flowered King of the Fairies	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, this constitutes 2.49% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. As no sightings have been recorded within the 10km search area, and it was not detected during the field survey, the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Acacia ruppii	Rupp's Wattle	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, are predicted within the study area, this will constitute 2.49% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. Although, the area north of Grafton is the core habitat for this species, only two records occur within 10kmof the subject site. The most recent being in 2017, 7.5km from the subject site. As no species were recorded during the field survey, the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Allocasuarina defungens	Dwarf Heath Casuarina	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, are predicted within the study area, this will constitute 2.49% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. Although this species is endemic to the north coast of NSW, no records occur within the 10km search area, and no individuals were recorded during site survey. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Ancistrachne maidenii		Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of other additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Angophora robur	Sandstone Rough-barked Apple	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. 261 sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Centranthera cochinchinensis	Swamp Foxglove	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Thirty-five sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Eleocharis tetraquetra	Square-stemmed Spike-rush	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688 and 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of other additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Elionurus citreus	Lemon-scented Grass	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped within the study area, this constitutes 2.5% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Eucalyptus tetrapleura	Square-fruited Ironbark	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688. Consequently, up to 0.358 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute a reduction of 0.13% of the estimated suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Grevillea beadleana	Beadle's Grevillea	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688. Consequently, up to 0.551 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute a reduction of 0.13% of the estimated suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Grevillea hilliana	White Yiel Yiel	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688. Consequently, up to 0.551 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute a reduction of 2.4% of the estimated suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Grevillea masonii	Mason's Grevillea	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Two sightings of this species have been recorded within the 10km search area with no sightings within study area. The proposal lies just outside the core habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Grevillea quadricauda	Four-tailed Grevillea	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688. Consequently, up to 0.551 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute a reduction of 2.49% of the estimated suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Hibbertia marginata	Bordered Guinea Flower	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658 and 688. Consequently, up to 0.551 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs plus 312.74ha of additional associated PCTs within the study area, this will constitute a reduction of 0.16% of the estimated suitable habitat for this species ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Lindsaea incisa	Slender Screw Fern	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, this constitutes 2.49% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site lies just outside the priority management area for this species in Fortis Creek national park. As no records occur within the 10km search area and was not recorded during site survey, the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Maundia triglochinoides		Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Two sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Melaleuca irbyana	Weeping Paperbark	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Nine sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site lies just outside the priority management area for this species. No recorded sightings occur within the study area, and was not recorded during site survey. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Melichrus sp. Gibberagee	Narrow-leaf Melichrus	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688. Consequently, up to 0.358 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute a reduction of 2.4% of the estimated suitable habitat for this species ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site lies just outside the priority management area for this species in Gibberagee State Forest. No recorded sightings occur within the study area and was not recorded during site survey. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Melichrus hirsutus	Hairy Melichrus	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688. Consequently, up to 0.551 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute a reduction of 2.4% of the estimated suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site lies just outside the priority management area for this species in Chambigne Nature Reserve. No recorded sightings occur within the study area and was not recorded during site survey. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Olax angulata	Square-stemmed Olax	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Three sightings of this species have been recorded within the 10km search area with no sightings within the study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site lies just outside the priority management area for this species in Banyabba nature reserve and Fortis Creek national park. No recorded sightings occur within the study area and was not recorded during site survey. The proposal will not remove habitat likely to be critical for the long-term survival of the species. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Paspalidium grandispiculatum		Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.		i. This species is associated with PCT 658 and. Consequently, up to 0.193 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute a reduction of 0.84% of the estimated suitable habitat for this species. The subject sites lies outside of the priority management site for this species in the Doubleduke state forest. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Phyllanthus microcladus	Brush Sauropus	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Nine sightings of this species have been recorded within the 10km search area with no sightings within the study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site lies outside the priority management area for this species in Chambingue Nature reserve and a small reserve near Junction Hill. No recorded sightings occur within the study area and was not recorded during site survey. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Polygala linariifolia	Native Milkwort	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. One sighting of this species have been recorded within the 10km search area with no recorded sightings within the study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Prostanthera sejuncta		Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. 148 sightings of this species have been recorded within the 10km search area with no recorded sightings within the study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site lies just outside the core habitat for this species in the Fortis Creek national park. No recorded sightings occur within the study area and was not recorded during site survey. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Tephrosia filipes		Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658 and 688. Consequently, up to 0.358 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute a reduction of 1.56% of the estimated suitable habitat for this species ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Aepyprymnus rufescens	Rufous Bettong	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Fourteen sightings of this species have been recorded within the 10km search area with no sightings within the study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Chalinolobus dwyeri	Large-eared Pied Bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute 2.49% of the estimated local extent of suitable habitat for this species. No records occur within the 10km search area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Chalinolobus nigrogriseus	Hoary Wattled Bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are predicted within the study area, this will constitute 2.49% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The subject site occurs in generally vicinity of known habitat for this species in the NSW north coast. Eight records occur within the 10km search area with none on the study area. The most recent sighting was in 2009. Considering the lack of habitat features for this species within the subject site, the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Dasyurus maculatus	Spotted-tailed Quoll	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of other additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal lies outside of the Priority management site for this species. Fifteen sightings have been recorded within the 10km search area, none within the study area. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Micronomus norfolkensis	Eastern Coastal Free-tailed Bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Five sightings of this species have been recorded within the 10km search area however no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal lies within the priority management area for this species in the NSW north coast. Given the low number of sightings in the search area and lack habitat, the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Miniopterus australis	Little Bent-winged Bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Eighteen sightings of this species have been recorded within the 10km search area with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Miniopterus orianae oceanensis	Large Bent-winged Bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. Six sightings of this species have been recorded within the 10km search area however no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Myotis macropus	Southern Myotis	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this will constitute 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Nyctophilus bifax	Eastern Long-eared Bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is not associated with any PCT recorded within the subject site. One sightings of this species have been recorded within the 10km search area in 2008 with no sightings within study area. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Petauroides volans	Greater Glider	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs plus 415.7ha of additional associated PCTs are predicted within the study area, this constitutes 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Petaurus norfolcensis	Squirrel Glider	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, this constitutes 2.5% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Petrogale penicillata	Brush-tailed Rock-wallaby	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658 and 688. Consequently, up to 0.551 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, this constitutes 2.5% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Phascogale tapoatafa	Brush-tailed Phascogale	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688, 1136. Consequently, up to 0.379 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs plus 415.7ha of additional associated PCTs are predicted within the study area, this constitutes 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Phascolarctos cinereus	Koala	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688, 1136. Consequently, up to 0.379 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs that are predicted within the study area, this constitutes 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Planigale maculata	Common Planigale	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658. 688, 1136. Consequently, up to 0.527 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs, plus 415.7ha of additional associated PCTs are predicted within the study area, this constitutes 0.13% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Pseudomys gracilicaudatus	Eastern Chestnut Mouse	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these constitutes 2.49% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Pseudomys novaehollandiae	New Holland Mouse	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 658, 688, 1136. Consequently, up to 0.573 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs are mapped in the study area, this constitutes 2.5% of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. Since no records of this species occur within the 10km search, the proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Pteropus poliocephalus	Grey-headed Flying-fox	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688, 1136. Consequently, up to 0.527 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs plus 415.7ha of additional associated PCTs are predicted within the study area, will constitute 0.13 % of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.
Saccolaimus flaviventris	Yellow-bellied Sheathtail-bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688, 1136. Consequently, up to 0.527 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs plus 415.7ha of additional associated PCTs are predicted within the study area, will constitute 0.13 % of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

Scoteanax rueppellii	Greater Broad-nosed Bat	Some impacts to the occupation of the proposal site by this species may occur during construction. No long-term disturbance is anticipated. The proposal will not significantly impact the lifecycle such that the species will likely be placed at risk of local extinction.	N/A	i. This species is associated with PCT 688, 1136. Consequently, up to 0.527 ha of habitat for this species will be impacted. As 23.0 ha of these PCTs plus 415.7ha of additional associated PCTs are predicted within the study area, will constitute 0.13 % of the estimated local extent of suitable habitat for this species. ii. As impacts will be confined to an already disturbed vegetation patch, no additional fragmentation is likely to result from this proposal. iii. The proposal will not remove habitat likely to be critical for the long-term survival of the species.	No, AOBV not present within or close to the proposal site.	Yes. See **Appendix F.**	No significant impact will arise to the local viability of this species or its habitat due to the undertaking of the proposal.

APPENDIX E - EPBC ACT MATTERS OF NATIONAL ENVIRONMENTAL SIGNIFICANCE

The EPBC Act protects nationally and internationally important flora, fauna, ecological communities and heritage places, which are defined in the EPBC Act as matters of national environmental significance. The EPBC Act policy Matters of National Environmental Significance: Significant Impact Guidelines 1.1 (DoE, 2013) forms the basis of determining if impact to protected matters is significant.

A Protected Matters Search identified no Endangered Ecological Communities, 65 threatened species, 38 migratory species and 44 marine species as potentially occurring within 10 km of the subject site.

The following tables give an overview of the assessments of these threatened entities and shows that the Proposed activity:

1. Is not likely to have a significant impact on a matter of national environmental significance. The matters of national environmental significance are:
    i. World heritage properties.
    ii. National heritage places.
    iii. Wetlands of international importance.
    iv. Threatened species and ecological communities.
    v. Migratory species.
    vi. Commonwealth marine areas.
    vii. The Great Barrier Reef Marine Park. And;
    viii. Nuclear actions (including uranium mines).
    ix. A water resource, in relation to coal seam gas development and large coal mining development.
2. Is not likely to have a significant impact on the environment in general (for actions by Commonwealth agencies or actions on Commonwealth land) or the environment on Commonwealth land (for actions outside Commonwealth land).

Notes: Important Population as determined by the Environment Protection and Biodiversity Conservation Act 1999, is one that for a vulnerable species:

a) is likely to be key source populations either for breeding or dispersal

b) is likely to be necessary for maintaining genetic diversity

c) is at or near the limit of the species range.

A ‘significant impact’ is an impact which is important, notable, or of consequence, having regard to its context or intensity (DoE, 2013).

Wetlands of International Importance

Name	Proximity	Assessment of significance required (Yes / No)
Alumy Creek/Bunyip Swamp	4-5 km	No. This proposal does not involve activities in waterways and should not impact this wetland provided erosion and sediment control measures are followed (**Section 7**).
Clarence River Estuary	40 – 50km	No

Listed Threatened Ecological Communities

Name	Status	Assessment of significance required (Yes / No)
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland Ecological Community	Endangered	No
Lowland Rainforest of Subtropical Australia	Critically Endangered	No

EPBC Act-listed Critically Endangered and Endangered Species

Regent Honeyeater - *Anthochaera phrygia*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to 0.406 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of the species	The proposal will remove up to 0.406 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	As the proposal site occurs outside of the nearby priority management area and with no recorded sightings within 10km of the subject site, it is not known to be critical habitat for this species. Activities will be confined to the existing disturbed vegetation and will have minimal impact on habitat for this species.
Disrupt the breeding cycle of a population	As no known population occurs within the surrounding area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.406 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Swift Parrot - *Lathamus discolor*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to 0.406 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of the species	The proposal will remove up to 0.406 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does..
Fragment an existing population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs outside of the nearby priority management area. There have been three recorded sightings approximately 2km from the proposal in 2011. As activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of a population	As no known population occurs within the surrounding area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.406 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Spotted-tailed Quoll - *Dasyurus maculatus*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to 0.573 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of the species	The proposal will remove up to 0.573ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs outside of the nearby priority management area. There have been 14 recorded sightings of this species within the 10km search area. The closest recording is approximately 2km from the proposal and was recorded in 2009. As activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of a population	As no known population occurs within the surrounding area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.573 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Rupp's Wattle – *Acacia ruppi*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will impact up to 0.573 ha of potential habitat for this species. The proposal lies outside the core habitat for the species. Two sightings have been recorded within the 10km search area but none within the study area. As no sightings were recorded during the field survey, this proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of the species	The proposal will remove up to 0.573ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs outside of the nearby priority management area. There have been 14 recorded sightings within the 10km search area. The closest recording is approximately 2km from the proposal and was recorded in 2009. As activities will be confined to the already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of a population	As no known population occurs within the surrounding area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.573 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Mason's Grevillea - *Grevillea masonii*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of a population	The proposal will not impact any potential habitat for this species. The proposal site lies just outside a priority management area for the species. As activities will be confined to generally disturbed vegetation and records within the study area, this proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of the species	The proposal will not remove any vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs just outside of a nearby priority management site for this species. There have been six recorded sightings within the 10km search area. The nearest recording is approximately 8km from the proposal and was recorded in 2007. As activities will be confined to already disturbed vegetation, the proposal will have little to no impact on habitat for this species.
Disrupt the breeding cycle of a population	As no known population occurs within the proposed subject site, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

EPBC listed Vulnerable Species

Red Goshawk - *Erythrotriorchis radiatus*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.573 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.573ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs does not occur within a priority management area. There has been one historical sighting recorded in 1866 within the 10km search area. As activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within the surrounding area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.573 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Large-eared Pied Bat - *Chalinolobus dwyeri*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.573 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the size of an important population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.573ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site does not occur within a priority management area. Since there has been no recorded sightings within the 10km search area, and activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within the surrounding area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.573 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Greater Glider - *Petauroides volans*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.573 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.573 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs does not occur within a priority management. There have been 11 recorded sighting within the 10km search area. The nearest recorded sighting was approximately 5km from the subject site in 1998. As activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within the study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.573 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Brush-tailed Rock-wallaby - *Petrogale penicillata*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.551 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.551 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs does not occur within a priority management site. There have been no recorded sightings within the 10km search area. Since activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.551 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Koala - *Phascolarctos cinereus*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.379 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.379 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site does not occur within a priority management site for this species, but it does occur within a Koala Prioritisation Management Area. There have been 243 recorded sightings within the 10km search area, including one record approximately 1km from the subject site in 2005. Since activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species. See **Section 5.6** and **Appendix G** for further details.
Disrupt the breeding cycle of an important population	As no known population occurs within study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.379 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

New Holland Mouse - *Pseudomys novaehollandiae*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.573 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.573 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs does not occur within a priority management area for this species. There have been no recorded sightings within the 10km search area. Since activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.573 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Grey-headed Flying-fox - *Pteropus poliocephalus*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.527 ha of potential habitat for this species. The proposal site is not within a priority management area for the species and activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.527 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs does not occur within a priority management area for this species. There have been 29 recorded sightings within the 10km search area. The nearest sighting was recorded approximately 5km from the subject site in 2014. Since activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.527 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Sandstone Rough-barked Apple - *Angophora robur*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.527 ha of potential habitat for this species. Activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.527 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site occurs does not occur within a priority management area for this species. There have been 240 recorded sightings within the 10km search area, including two records within 2km from the subject site from 2008. This species was specifically targeted during the field survey in July, since this species was not identified during the site survey, the proposal is unlikely to impact critical habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within the subject site, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.527 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Leafless Tongue Orchid - *Cryptostylis hunteriana*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.573 ha of potential habitat for this species. Activities will be confined to generally disturbed vegetation. This proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.573 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site does not occur within a priority management area for this species. There have been no recorded sightings within the 10km search area. Since activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.573 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

Square-fruited Ironbark - *Eucalyptus tetrapleura*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	The proposal will impact up to 0.358 ha of potential habitat for this species. Activities will be confined to generally disturbed vegetation. Since there has not been any recorded sightings within the study area and it was not detected during the field survey, it is unlikely this proposal will not lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will remove up to 0.358 ha of vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site does not occur within a priority management area for this species. There have been 15 recorded sightings within the 10km search area, including six records within 3km from the subject site, with the most recent recorded in 2020. Since activities will be confined to already disturbed vegetation and no Individuals were recorded during the field survey, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposal will remove/modify up to 0.358 ha of vegetation associated with this species. As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region.
Conclusion	Non-significant impact

Minnie Waters Olax - *Olax angulata*	
Significant Impact Guideline	**Assessment**
Lead to a long-term decrease in the size of an important population of a species	As not associated habitat for this species will be impacted, and no sightings have been recorded within the study area, it is unlikely the proposal will impact lead to the long-term decrease in the population of this species.
Reduce the area of occupancy of an important population	The proposal will not remove vegetation associated with this species. Extensive areas of similar habitat will remain within the wider study area and the proposal is unlikely to prevent the species from colonising the area any more than the existing quarry already does.
Fragment an existing important population into two or more populations	As all impacts will be confined to an area surrounding a quarry with degraded vegetation, no additional fragmentation will result from this proposal.
Adversely affect habitat critical to the survival of a species	The proposal site does not occur within a priority management area for this species. There have been three recorded sightings within the 10km search area, the nearest was approximately 5km from the subject site in 2011. Since activities will be confined to already disturbed vegetation, the proposal will have minimal impact on habitat for this species.
Disrupt the breeding cycle of an important population	As no known population occurs within study area, the proposal is not expected to disrupt the breeding cycle of this species.
Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	As extensive areas of similar vegetation occur within the surrounding environment, this reduction of available habitat is unlikely to cause the species to decline at a regional scale.
Result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	There is the potential for works to introduce invasive species to the subject site or exacerbate existing infestations of significant invasive. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Introduce disease that may cause the species to decline, or	Machinery used on site can potentially act as a transport for biosecurity risks. Environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Interfere with the recovery of the species.	The proposal is unlikely to directly interfere with the recovery of the species within the region, though some associated threats will be exacerbated as a result.
Conclusion	Non-significant impact

EPBC listed migratory/marine species

Swift Parrot - *Lathamus discolor*	
Significant Impact Guideline	**Assessment**
Substantially modify (including by fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or iso-late an area of important habitat for a migratory species	It is unlikely that the proposal constitutes important habitat for this species as no sightings have been recorded within the study area and it lacks ideal habitat features such as intact forest. It is therefore unlikely that any important habitat for this species will be impacted by the proposal. Further, it is unlikely that the impacts associated with this proposal will substantially alter available habitat for this species.
Result in an invasive species that is harmful to the migratory species be-coming established in an area of important habitat for the migratory species, or	While there is potential for works to introduce invasive species to the proposal site or exacerbate existing infestations of significant invasive species, environmental safeguards for the management of biosecurity risks will be implemented (see **Section 7**).
Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species.	Considering that the subject site is an active quarry, it is unlikely that an ecologically significant proportion of the population occurs within or is dependent on the proposal site. The proposal is unlikely to seriously disrupt the lifecycle of this species.
Conclusion	Non-significant impact

APPENDIX F – KEY THREATENING PROCESSES

Key Threatening Processes (KTP) predicted as acting on the study area that may be exacerbated by the proposal.

Class	Name	NSW Status	Comm. Status	Likelihood of Occurrence	Exacerbated by Proposal
Threat	Aggressive exclusion of birds from woodland and forest habitat by abundant Noisy Miners, *Manorina melanocephala* (Latham, 1802)	KTP	KTP	**Unlikely** The Noisy Miner was not detected during the field survey.	No
Threat	Alteration of habitat following subsidence due to longwall mining	KTP		**Unlikely** Longwall mining is not part of the proposal.	No
Threat	Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands	KTP		**Unlikely** Impact on the flow regimes of nearby rivers / streams is not expected.	No
Threat	Anthropogenic Climate Change	KTP	KTP	**Very Likely** Some unavoidable emissions will occur from construction machinery and operational machinery.	Yes
Threat	Bushrock removal	KTP		**Unlikely** No bushrock is expected to be removed.	No
Threat	Clearing of native vegetation	KTP	KTP	**Very Likely** Up to 0.573 ha of native vegetation will be cleared, though this clearing was approved under a different development application.	Yes
Threat	Competition and grazing by the feral European Rabbit, Oryctolagus cuniculus (L.)	KTP	KTP	**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758	KTP	KTP	**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No

Threat	Competition from feral honey bees, *Apis mellifera* L.	KTP		**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners	KTP		**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Herbivory and environmental degradation caused by feral deer	KTP		**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition	KTP		**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Importation of Red Imported Fire Ants *Solenopsis invicta* Buren 1972	KTP	KTP	**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations	KTP	KTP	**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Infection of frogs by amphibian chytrid causing the disease chytridiomycosis	KTP	KTP	**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Infection of native plants by *Phytophthora cinnamomi*	KTP	KTP	**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential

Threat	Introduction of the Large Earth Bumblebee *Bombus terrestris (L.)*	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Invasion and establishment of exotic vines and scramblers	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Invasion and establishment of Scotch Broom (*Cytisus scoparius*)	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Invasion and establishment of the Cane Toad (*Bufo marinus)*	KTP	KTP	**Likely** Machinery used on site can potentially act as a transport for biosecurity risks. Cane toads occur as far south as Yamba, which is relatively near to the subject site.	Potential
Threat	Invasion of native plant communities by African Olive *Olea europaea subsp. cuspidata* (Wall. ex G. Don) Cif.	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Invasion of native plant communities by *Chrysanthemoides monilifera*	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Invasion of native plant communities by exotic perennial grasses	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW	KTP		**Unlikely** Machinery used on site can potentially act as a transport for biosecurity risks.	Potential
Threat	Invasion, establishment and spread of Lantana (*Lantana camara L. sens. Lat*)	KTP		**Very likely** Lantana was recorded during the field survey, machinery is likely to spread this even further and potentially to other sites if mitigation measures are not followed.	Yes

Threat	Loss and degradation of native plant and animal habitat by invasion of escaped garden plants, including aquatic plants	KTP	KTP	**Likely** Machinery used on site may spread existing weeds and bring new weeds into quarry and the surrounding environment if not controlled. .	Potential
Threat	Loss of Hollow-bearing Trees	KTP		**Unlikely** No hollow bearing trees will be impacted by this proposal.	No
Threat	Loss or degradation (or both) of sites used for hill-topping by butterflies	KTP		**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Predation and hybridisation by Feral Dogs, Canis *lupus familiaris*	KTP		**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish)	KTP		**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Predation by the European Red Fox Vulpes *Vulpes (Linnaeus*, 1758)	KTP	KTP	**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)	KTP	KTP	**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 1758	KTP	KTP	**Unlikely** The proposal does not include any activities that would exacerbate this threat.	No
Threat	Removal of dead wood and dead trees	KTP		**Likely** The proposal is likely to remove or disturb dead trees.	Yes

APPENDIX G – KOALA HABITAT ASSESSMENT TOOL

Table 4: Koala habitat assessment tool

Attribute	Score	Inland	Coastal
Koala occurrence	+2 (high)	Evidence of one or more koalas within the last 5 years.	Evidence of one or more koalas within the last 2 years.
	+1 (medium)	Evidence of one or more koalas within 2 km of the edge of the impact area within the last 10 years.	Evidence of one or more koalas within 2 km of the edge of the impact area within the last 5 years.
	0 (low)	None of the above.	None of the above.
Vegetation composition	+2 (high)	Has forest, woodland or shrubland with emerging trees with 2 or more known koala food tree species, **OR** 1 food tree species that alone accounts for >50% of the vegetation in the relevant strata.	Has forest or woodland with 2 or more known koala food tree species, **OR** 1 food tree species that alone accounts for >50% of the vegetation in the relevant strata.
	+1 (medium)	Has forest, woodland or shrubland with emerging trees with only 1 species of known koala food tree present.	Has forest or woodland with only 1 species of known koala food tree present.
	0 (low)	None of the above.	None of the above.
Habitat connectivity	+2 (high)	Area is part of a contiguous landscape ≥ 1000 ha.	Area is part of a contiguous landscape ≥ 500 ha.
	+1 (medium)	Area is part of a **contiguous landscape** < 1000 ha, but ≥ 500 ha.	Area is part of a contiguous landscape < 500 ha, but ≥ 300 ha.
	0 (low)	None of the above.	None of the above.
Key existing threats	+2 (high)	Little or no evidence of koala mortality from vehicle strike or dog attack at present in areas that score 1 or 2 for koala occurrence. Areas which score 0 for koala occurrence and have no dog or vehicle threat present	
	+1 (medium)	Evidence of infrequent or irregular koala mortality from vehicle strike or dog attack at present in areas that score 1 or 2 for koala occurrence, **OR** Areas which score 0 for koala occurrence and are likely to have some degree dog or vehicle threat present.	
	0 (low)	Evidence of frequent or regular koala mortality from vehicle strike or dog attack in the study area at present, **OR** Areas which score 0 for koala occurrence and have a significant dog or vehicle threat present.	
Recovery value	+2 (high)	Habitat is likely to be important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1.	
	+1 (medium)	Uncertain whether the habitat is important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1.	
	0 (low)	Habitat is unlikely to be important for achieving the interim recovery objectives for the relevant context, as outlined in Table 1.	

Koala occurrence: The nearest record is within 1 km of the subject site and was observed in 2005. 243 sightings have been recorded within 10 km, the most recent being from 2019, approximately 6 km from site.

Vegetation composition: No koala feed trees occur within the proposal site.

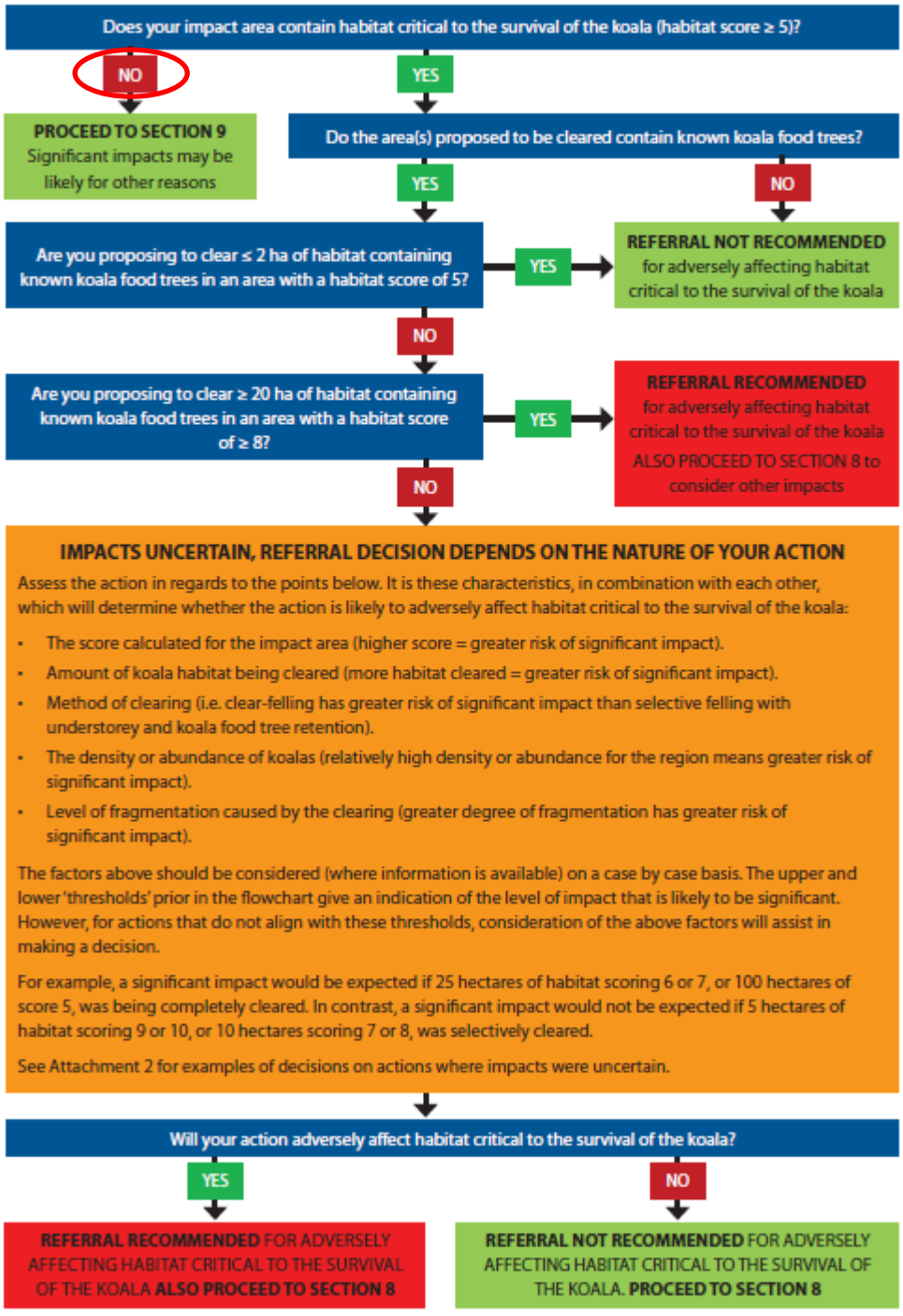
Habitat connectivity: The proposal site is within a large expanse of surrounding vegetation, including the Corymbia State Conservation Area.

Key existing threats: There is likely to be some risk of vehicle strike.

Recovery value: The site is within a Koala Prioritisation Management Area, however, the site is an existing quarry and is generally disturbed.

Total score: 3. The site does not qualify as critical Koala habitat (score < 5).

Figure 2: Assessing adverse effects on habitat critical to the survival of the koala



Assessment outcome: The subject site does not constitute critical Koala habitat as it returned a score of 3, therefore referral is not required in this case.