

BRIMBIN NATURE RESERVE FOOTBRIDGE REPLACEMENT – ECOLOGICAL ASSESSMENT

NATIONAL PARKS AND WILDLIFE SERVICE

SEPTEMBER 2024

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EXECUTIVE SUMMARY

The site was assessed in accordance with the requirements of the NSW *Biodiversity Conservation Act 2016* (BC Act), *Biodiversity Conservation Regulation 2017* and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

Proposed Works

The NSW National Parks and Wildlife Service (NPWS) proposes to carry out infrastructure replacements on one of the collapsed pedestrian footbridges on the Dawson River walking track within Brimbin Nature Reserve. A minor extent of native vegetation removal will be required as a result of the proposed activity.

A site survey was conducted on the 22nd of May 2024. This survey recorded all fauna species utilising the study area; a random meander flora survey was conducted; and habitat assessments were completed to assess the likelihood of threatened species occurring on site. A desktop assessment of relevant literature and databases was also conducted.

Impact of the Proposal

The footbridge replacement works will require the removal of a small amount of ground cover vegetation. The proposal will not impact hollow-bearing trees or mature mangroves; however, mangrove pneumatophores and possibly a few propagules may be impacted.

There is potential for the works to result in indirect impacts on adjoining vegetation or fauna species utilising the site. These include erosion and sedimentation, weed invasion, biosecurity risks, edge effects and increased noise at the time of works. Specific mitigation measures are recommended to reduce the potential for indirect impacts.

Relevant Legislation

Environment Protection and Biodiversity Conservation Act 1999

Assessment under the EPBC Act determined that the impact of the proposal on Matters of National Environmental Significance (MNES) was unlikely to be significant. Hence referral to the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW) for approval is not required.

Fisheries Management Act 1994

The unnamed first order stream spanned by the bridge is mapped as Key Fish Habitat. As the proposal will require works within mapped Key Fish Habitat and harm mangroves, a permit will be required.

Biodiversity Conservation Act 2016

Several threatened fauna species have the potential to occur within the study area. The potential impacts of the proposed works on these entities have been assessed via a Test of Significance. These assessments have determined that the proposal is unlikely to significantly impact these threatened species or their habitats. As such, a Species Impact Statement or entry into the Biodiversity Offset Scheme is not required.

ABBREVIATION GLOSSARY

Abbreviation	Description
BC Act	<i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity Development Assessment Report
BOS	Biodiversity Offset Scheme
CBD	Central Business District
DAWE	Department of Agriculture, Water and the Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DCP	Development Control Plan
DPIE	Department of Planning, Industry and Environment
EEC	Endangered Ecological Community
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	<i>Fisheries Management Act 1994</i>
ha	Hectares
HBT	Hollow-bearing Tree
KFT	Koala Food Tree
km	Kilometres
KPoM	Koala Plan of Management
KTP	Key Threatening Process
LGA	Local Government Area
m	Metres
MNES	Matter of National Environmental Significance
NSW	New South Wales
OEH	Office of Environment and Heritage
PCT	Plant Community Type
SEPP	State Environmental Planning Policy
SVTM	State Vegetation Type Map
TEC	Threatened Ecological Community

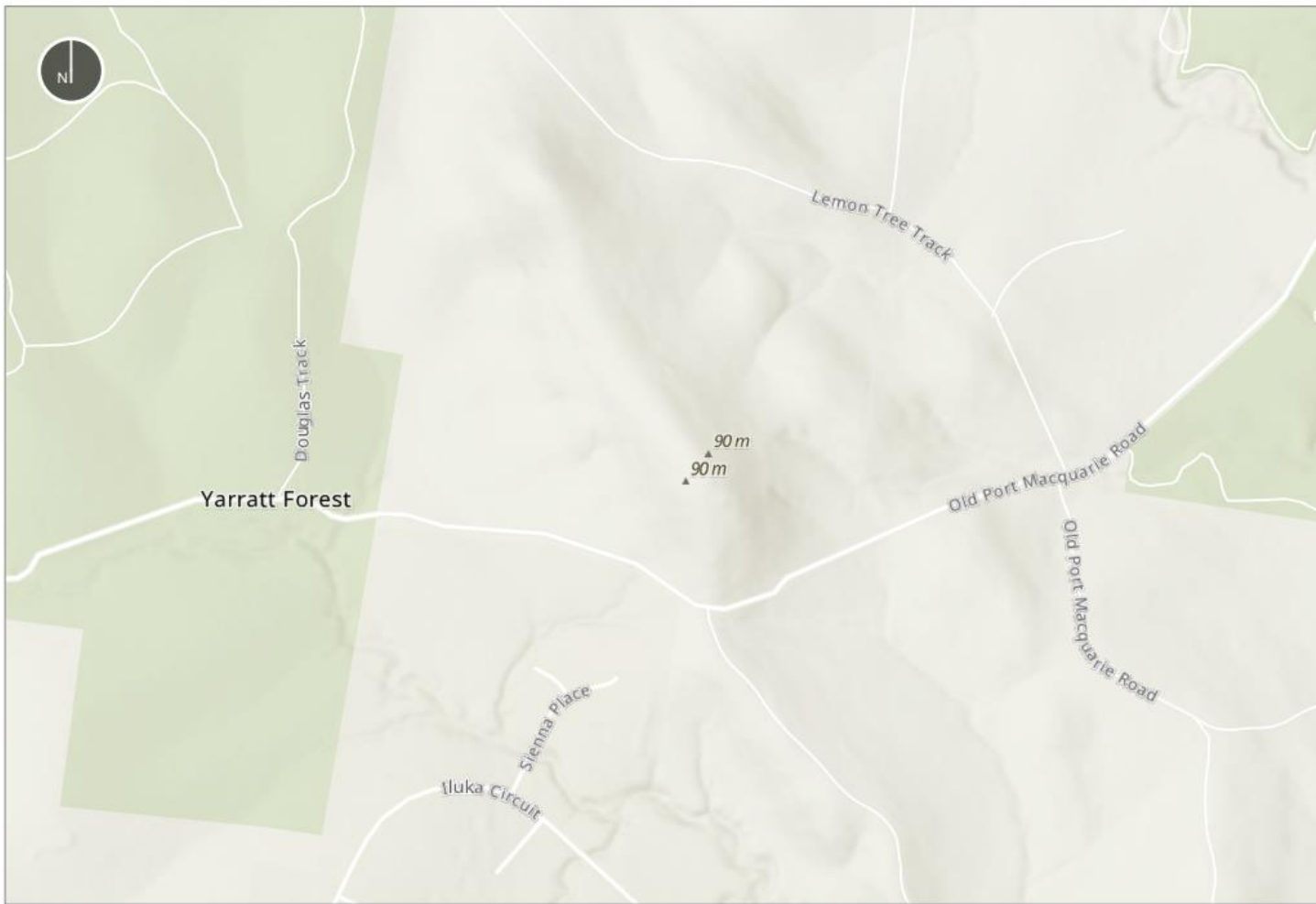
1. BACKGROUND INFORMATION

1.1 Site Description

1.1.1 Location

Brimbin Nature Reserve is located approximately 12-kilometres north of Taree on the mid-north coast of NSW. The activity will occur on one of the pedestrian bridges on the Dawson River walking track in the southern portion of the reserve.

The location of the proposed activity is shown in



Data Sources: Wolfpeak 2021, Imagery Esri Community Maps Contributors, Esri.

Legend

 Site location

Figure 1.

1.1.2 Soils, Geology and Topography

The Dawson River walking track crosses the south portion of Brimbin Nature Reserve towards Dawson River, it occurs in a Pipeclay Creek soil landscape characterised by gently inclined plains on Pleistocene alluvial sediments, with extremely low relief (1–2 m) and low elevation range (10–50 m), falling towards the coast. The soil is deep (>300 cm), poorly drained with seasonal waterlogging, comprising Mottled Natric Brown/Grey Kurosols (Soloths and Grey Clays) (eSPADE 2024).

Quaternary geology underlies the Brimbin Nature Reserve and consists of alluvial plains of silt, fluvial sand and clay.

1.2 The Proposed Activity

NPWS proposes to replace one of the footbridges on the Dawson River walking track as the pedestrian bridge has received damage due to localised weather events and requires replacement to improve the condition and safety of the trail. The bridge is located over an unmapped, unnamed tidal channel (Photo 1, 2).

The proposed activity is to remove the existing structure and replace it with a new footbridge fixed to a Surefoot system. The works will involve removing the existing footings from within the creek channel and placing the new footings either side of the channel on the banks.

An overview of the proposed footbridge design is shown in Figure 2.

1.3 Key Definitions

The subject site is defined as the area of land directly affected by the works (the impact footprint). The study area is land within 20 metres of the subject site. The locality is land within a ten-kilometre radius of the site.

Photo 1: The Dawson River walking track pedestrian bridge



Photo 2: Damaged bridge section



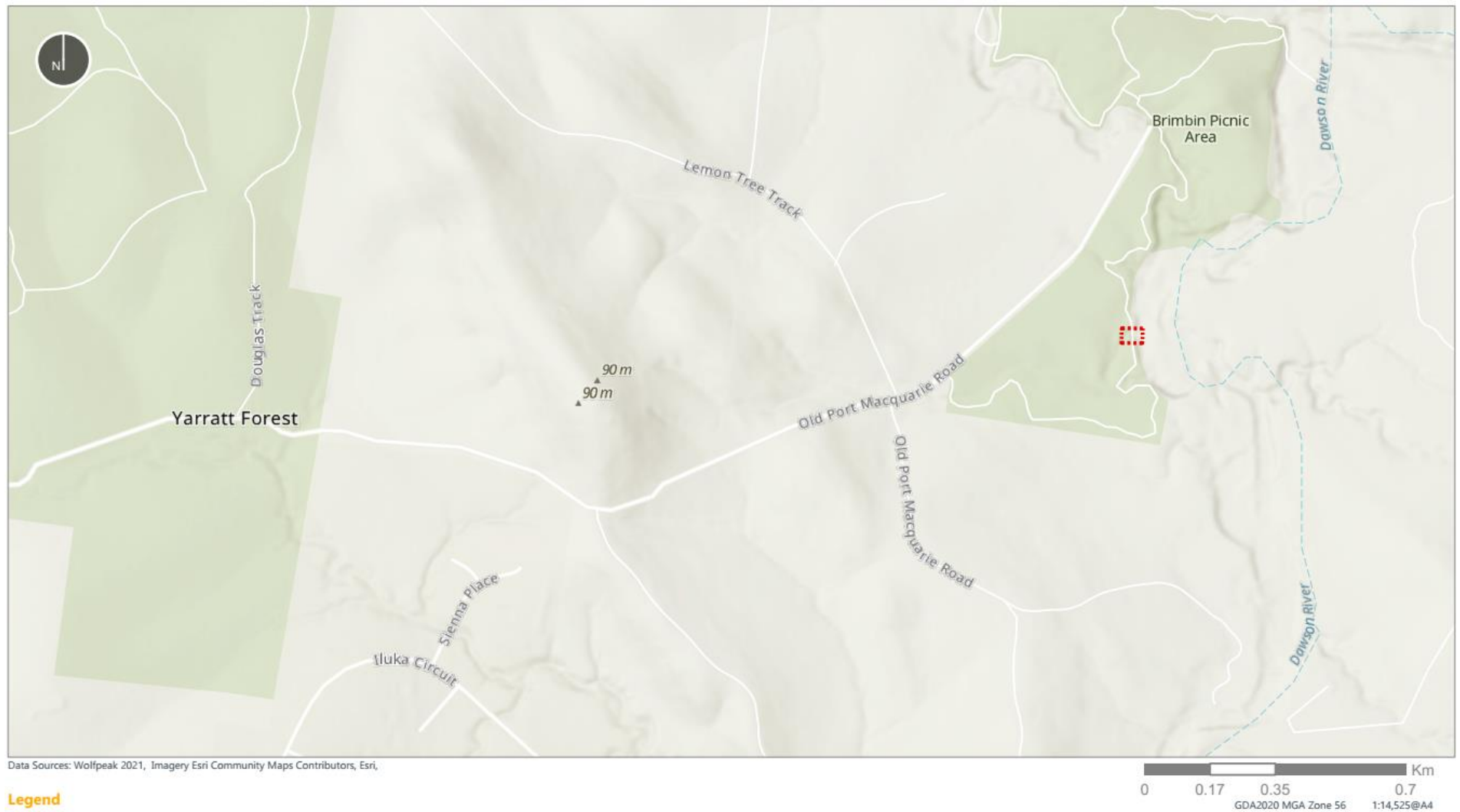


Figure 1: Location of the study area

ITEM NO.	QTY.	PART NUMBER	DESCRIPTION	SPECIFICATION	CUT LENGTH (mm)	HI-RISE PART NUMBER	NOTES
1	4		HANDRAIL	HARDWOOD, 140 X 45	6081		
2	4		KICKBOARD	HARDWOOD, 90 X 35	6030		
3	5		FRP GRATING	MINI MESH 19X19-38X38	3007		1527 X 30mm
4	10	21-22472.1-A105-00	ASSEMBLY- 2M SIDE SECTION	, NATURAL			
5	4	21-22472.1-A108-00	ASSEMBLY- MID BRACE	, NATURAL			
6	20	21-22472.1-A111-00	ASSEMBLY- WALKWAY SUPPORT	, NATURAL			
7	2	21-22472.1-A112-00	ASSEMBLY- END CHANNEL - RIGHT	, NATURAL			
8	2	21-22472.1-A113-00	ASSEMBLY- END CHANNEL - LEFT	, NATURAL			
9	3	21-22472.1-A114-00	ASSEMBLY- UNDER DECK BRACE 1	, NATURAL			
10	2	21-22472.1-A115-00	ASSEMBLY- UNDER DECK BRACE 2	, NATURAL			
11	1	21-22472.1-A117-00	ASSEMBLY- BLUE GUM END BRACE 1	, NATURAL			
12	1	21-22472.1-A118-00	ASSEMBLY- BLUE GUM END BRACE 2	, NATURAL			
13	280		PW-M16			HRA-3011	
14	140		FULL NUT-M16			HRA-3015	
15	140		SPRING WASHER-M16			HRA-3016	
16	12		HEX BOLT-M16 X 80			HRA-3031	
17	232		STRUCTURAL WASHER - M20			HRA-3052	
18	116		STRUCTURAL NUT - M20			HRA-3053	
19	128		HEX BOLT - M16 X 45			HRA-3075	
20	32		HEX BOLT-M20 X 70			HRA-3077	
21	84		HEX BOLT-M20 X 50			HRA-3187	

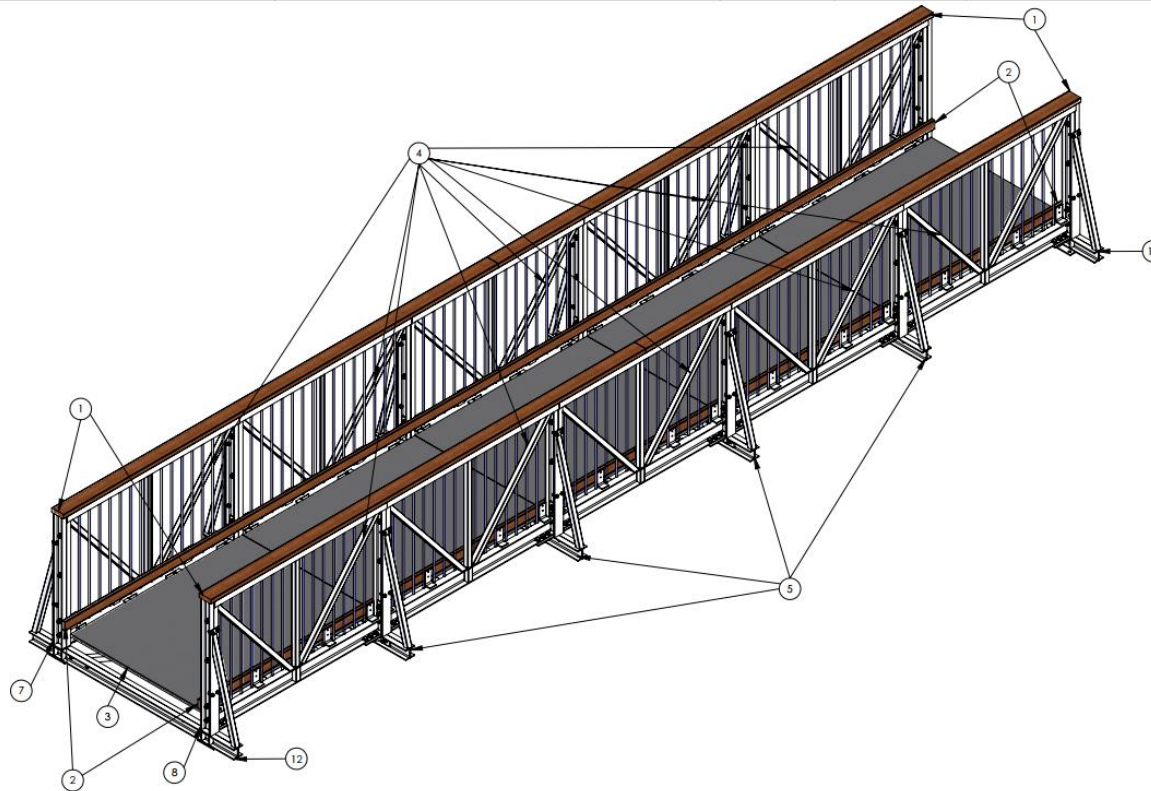


Figure 2: Example Footbridge(source HI-RISE ACCESS Pty Ltd)

2. LEGISLATIVE CONSIDERATIONS

The following legislative considerations have been addressed in relation to the proposed activity.

Table 1: Legislative considerations

Relevant Legislation	Report Section
Commonwealth	
<p><i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> Matters of National Environmental Significance have been identified in the assessment area. As such, an assessment as to the significance of impacts to these MNES is required.</p>	Section 6.3
State	
<p><i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i> The proposed activities are being assessed under Part 5 of the EP&A Act.</p>	All sections
<p><i>State Environmental Planning Policy (Biodiversity and Conservation) 2021</i> This SEPP does not apply to Part 5 developments. Assessment under this SEPP is not required.</p>	No further assessment required
<p><i>State Environmental Planning Policy (Resilience and Hazards) 2021</i> Coastal Wetlands, Littoral Rainforests, Coastal Environmental Areas and Coastal Use Areas are mapped within proximity to the study area. These are further discussed in this report.</p>	Section 6.1
<p><i>Biodiversity Conservation Act 2016 (BC Act)</i> Test of significance assessments are required to determine if entry into the Biodiversity Offset Scheme is required due to the potential for significant impacts on threatened entities.</p>	Section 6.2
<p><i>Fisheries Management Act 1994 (FM Act)</i> The proposed works are located near Key Fish Habitat and there will be harm to mangroves. As such, an assessment under this Act has been conducted.</p>	Section 6.4

3. METHODS

3.1 Desktop Study and Literature Review

A desktop study was carried out prior to the field survey to gather relevant information and data. The following databases and Geographic Information System (GIS) layers were searched/obtained:

- Commonwealth Department of Climate Change, Energy, the Environment and Water - Protected Matters Search Tool (DCCEEW 2024a).
- Commonwealth Department of Climate Change, Energy, the Environment and Water – Species Profile and Threats Database (DCCEEW 2024b).
- NSW Department of Climate Change, Energy, the Environment and Water – BioNet Atlas (DCCEEW 2024a).
- NSW Department of Climate Change, Energy, the Environment and Water – BioNet Vegetation Classification (DCCEEW 2024b).
- NSW Department of Climate Change, Energy, the Environment and Water – Threatened Biodiversity Profile Search (DCCEEW 2024c).
- NSW Department of Climate Change, Energy, the Environment and Water – NSW State Vegetation Type Map (DCCEEW 2023).
- Coastal Quaternary Geology – North Coast of NSW digital data layer (Troedson & Hashimoto 2008).

3.2 Habitat Suitability Assessments

Habitats within and adjacent to the study area were assessed for their suitability to support threatened species. The following survey methods were utilised.

3.2.1 Habitat Evaluations

Habitats on and adjacent to the study area were defined and assessed according to parameters such as:

- Structural and floristic characteristics of the vegetation.
- Vegetation connectivity.
- Degree and extent of disturbance.
- Availability of water.
- Size and abundance of tree hollows and fallen timber.
- Abundance of small cracks and crevices under build structures.
- Abundance of fauna-specific food resources, i.e., mistletoe, nectar, gum, seed and sap source, Koala Food Trees.
- Surface rocks and outcrops.

3.2.2 Secondary Evidence Searches

This survey method involved the inspection of the habitats within the study area for secondary evidence of use by threatened fauna. Searches involved:

- The inspection under fallen timber, rocks and debris.
- The inspection of dense vegetation, aquatic habitats and leaf litter for frogs and reptiles.
- The inspection of trees for Koalas and claw markings.
- Searches for Glider sap incisions.
- Searches for nests and dreys.
- Searches for scats, owl regurgitation pellets, tracks and feeding signs.

3.3 Flora Survey

The flora survey consisted of the following:

- Identification, description and mapping of the vegetation communities within the study area.
- Identification, mapping and condition assessment of any Threatened Ecological Communities (TECs) listed under the BC Act and/or EPBC Act.
- Searches for threatened species listed under the BC Act and EPBC Act.

Flora surveys were carried out by WolfPeak's Senior Ecologist on the 22nd of May 2024.

3.3.1 Vegetation Community Classification and Mapping

The vegetation communities were described from data collected during random meander surveys conducted throughout the study area. Vegetation communities are classified as per the NSW Plant Community Type (PCT) Classification.

Identification of possible TECs was based on the data collected in the survey and review of the relevant listings by the NSW Scientific Committee Final Determinations and the Commonwealth DCCEEW Species Profile and Threats Database (DCCEEW 2024b).

3.3.2 Threatened Flora Searches

Threatened flora searches were undertaken at each impact site, targeting species most likely to occur in the area. Opportunistic searches for threatened flora species were also undertaken during other activities.

3.4 Fauna Survey

Opportunistic Fauna surveys were carried out by WolfPeak's Senior Ecologist on the 22nd of May 2024.

3.4.1 Direct Observations

Passive and active observations of any fauna on or directly adjacent to the study area were carried out during the survey period. Searches for fauna focused on the crowns of trees for species such as the Koala, under decorticated bark or dense leaf litter for reptiles and amphibians and opportunistically for fauna such as Macropods.

All species observed or heard calling during the entire survey period were recorded.

3.5 Survey Limitations

Given the limited timeframe of the site survey, it can only provide a snapshot of the full species assemblages that may be present in the study area throughout the year. Some species only occur seasonally, or in particular climatic conditions and the detection of such species is recognised as a limitation.

To counter any limitations, qualitative and quantitative habitat evaluation was used as well as a standard ecological field survey to assess the study areas significance to threatened species.

4. RESULTS

4.1 Desktop Search Results

4.1.1 Locally Recorded Threatened Species

The following table lists the threatened flora and fauna species identified in a BioNet database search within a 10x10km search area around the study area (DCCEE 2024c).

Table 2: Locally recorded threatened species

Common Name	Scientific Name	BC Act	EPBC Act	Number of records
Flora				
White-flowered Wax Plant	<i>Cynanchum elegans</i>	E	E	1
	<i>Maundia triglochinoidea</i>	V	-	1
Slaty Red Gum	<i>Eucalyptus glaucina</i>	V	V	2
Eucalyptus seeana population in the Greater Taree local government area	<i>Eucalyptus seeana</i>	E	-	492
Scrub Turpentine	<i>Rhodamnia rubescens</i>	CE	CE	2
Native Guava	<i>Rhodomyrtus psidioides</i>	CE	CE	2
Pale Yellow Doubletail	<i>Diuris flavescens</i>	CE	CE	2
Reptiles				
Loggerhead Turtle	<i>Caretta caretta</i>	E	E	1
Green Turtle	<i>Chelonia mydas</i>	V	V	1
Hawksbill Turtle	<i>Eretmochelys imbricata</i>	-	V	1
Aves				
Wompoo Fruit-Dove	<i>Ptilinopus magnificus</i>	V	-	1
White-throated Needletail	<i>Hirundapus caudacutus</i>	V	V	2
Black-necked Stork	<i>Ephippiorhynchus asiaticus</i>	E	-	2
Australasian Bittern	<i>Botaurus poiciloptilus</i>	E	E	1
White-bellied Sea-Eagle	<i>Haliaeetus leucogaster</i>	V	-	1
Square-tailed Kite	<i>Lophoictinia isura</i>	V	-	15
Eastern Hooded Dotterel	<i>Thinornis cucullatus cucullatus</i>	CE	V	1

Common Name	Scientific Name	BC Act	EPBC Act	Number of records
South-eastern Glossy Black-Cockatoo	<i>Calyptorhynchus lathami lathami</i>	V	V	79
Little Lorikeet	<i>Glossopsitta pusilla</i>	V	-	2
Swift Parrot	<i>Lathamus discolor</i>	E	CE	1
Powerful Owl	<i>Ninox strenua</i>	V	-	8
Masked Owl	<i>Tyto novaehollandiae</i>	V	-	3
Varied Sittella	<i>Daphoenositta chrysoptera</i>	V	-	7
Dusky Woodswallow	<i>Artamus cyanopterus cyanopterus</i>	V	-	1
Mammalia				
Spotted-tailed Quoll	<i>Dasyurus maculatus</i>	V	E	3
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>	V	-	32
Koala	<i>Phascolarctos cinereus</i>	E	E	139
Squirrel Glider	<i>Petaurus norfolcensis</i>	V	-	1
Southern Greater Glider	<i>Petauroides volans</i>	E	E	1
Grey-headed Flying-fox	<i>Pteropus poliocephalus</i>	V	V	32
Eastern Coastal Free-tailed Bat	<i>Micronomus norfolkensis</i>	V	-	2
Southern Myotis	<i>Myotis macropus</i>	V	-	2
Golden-tipped Bat	<i>Phoniscus papuensis</i>	V	-	1
Little Bent-winged Bat	<i>Miniopterus australis</i>	V	-	12
Large Bent-winged Bat	<i>Miniopterus orianae oceanensis</i>	V	-	3
Key: Critically Endangered (CE), Endangered (E), Vulnerable (V), Migratory (M).				

4.1.2 Matters of National Environmental Significance

The results of the MNES search are provided in Section 6.2. The search was undertaken using a ten-kilometre search radius from the subject site. See Appendix C for the full report.

4.2 Flora Survey Results

4.2.1 NSW State Vegetation Type Mapping

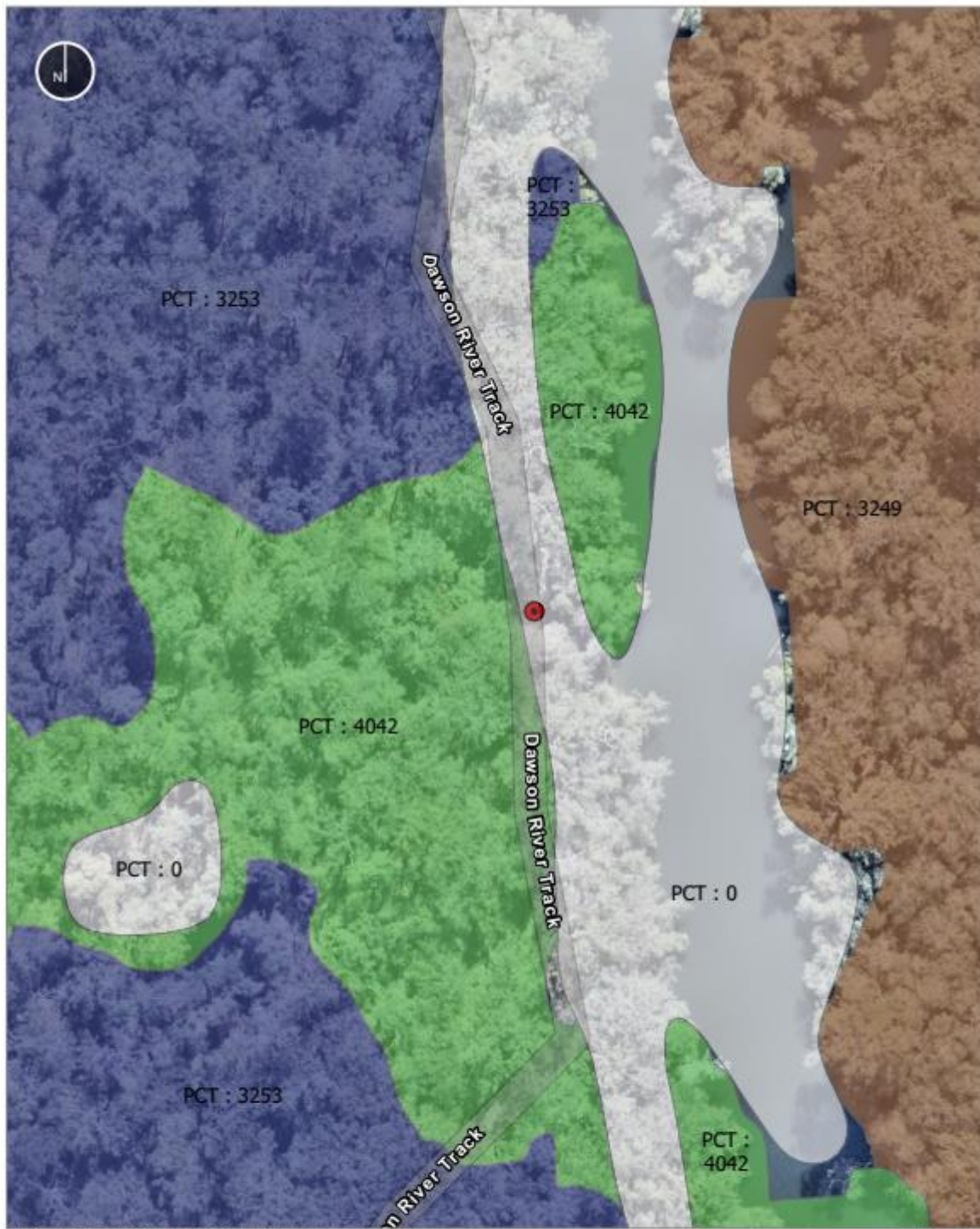
The NSW State Vegetation Type Map (SVTM) maps NSW Plant Community Types (PCTs) on a regional scale (DPE 2024f). The latest revision was released in December 2023 (C2.0M2.0).

The PCTs present in the vicinity of the bridge are listed in Table 3 and shown in Figure 3.

Table 3: Mapped Plant Community Types proximate to the sites

PCT ID	PCT Name	Location
PCT 3253	Northern Hinterland Grey Gum-Turpentine Mesic Forest	Mapped north and south outside PCT 4042
PCT 4042	Lower North Riverflat Eucalypt-Paperbark Forest	Dominant PCT mapped surrounding the bridge
PCT 3249	Northern Bloodwood-Ironbark Moist Grassy Forest	Mapped east of the study area across Dawson River
PCT 0	Not classified	Small areas of the walking track

Ground-truthing has determined that the site vegetation within the work's footprint more closely aligns with PCT 4042: Lower North Riverflat Eucalypt-Paperbark Forest, as described in Section 4.2.2.



Data Sources: Wolfpeak: 2024, Imagery Esri Community Maps Contributors, Spatial

Legend

Bridge

PCT Mapping

- PCT: 0 - Not classified
- PCT: 3249 - Northern Bloodwood-Ironbark Moist Grassy Forest
- PCT: 3253 - Northern Hinterland Grey Gum-Turpentine Mesic Forest
- PCT: 4042 - Lower North Riverflat Eucalypt-Paperbark Forest

0 0.01 0.02 0.04 Km
GDA2020 MGA Zone 56 t:1084@A4

Figure 3: NSW State Vegetation Type Mapping

4.2.2 Vegetation Community Site Description

A description of the vegetation community present at the site is provided in the following table. Photos of the vegetation are provided following the description.

Table 4: Vegetation Community Description

Vegetation Class	Coastal Floodplain Wetlands
PCT	PCT 4042: Lower North Riverflat Eucalypt-Paperbark Forest
Location and Area	Dawson River walking track at the north and south of the bridge
TEC Status	BC Act listed Endangered - Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion. EPBC Act listed Endangered - Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions
Description	<p>Canopy:</p> <p><i>Structure and Species:</i> Dominant species comprise Swamp Oak (<i>Casuarina glauca</i>) and Prickly-leaved Tea Tree (<i>Melaleuca styphelioides</i>), with Willow Bottlebrush (<i>Callistemon salignus</i>) commonly found.</p> <p>Height ranges from 12-15 metres, and cover is approximately 30%.</p> <p>Eucalypt species including Grey Ironbark (<i>Eucalyptus siderophloia</i>), Pink Bloodwood (<i>Corymbia intermedia</i>) and White Mahogany (<i>Eucalyptus acmenoides</i>) occur upslope from the footbridge where the vegetation transitions into Dry Sclerophyll Forest.</p> <p>Understory:</p> <p><i>Structure and Species:</i> A sparse layer dominated by Grey Myrtle (<i>Backhousia myrtifolia</i>) Prickly-leaved Tea Tree (<i>Melaleuca styphelioides</i>) and Swamp Oak (<i>Casuarina glauca</i>). Other understory species occasionally found comprise Forest Oak (<i>Allocasuarina torulosa</i>) and Red Ash (<i>Alphitonia excelsa</i>).</p> <p>Height ranges from approximately 4-8 m with a cover of approximately 25%.</p> <p>Shrub layer:</p> <p><i>Structure and species:</i> A sparse shrub layer dominated by River Mangrove (<i>Aegiceras corniculatum</i>) within the creekline. Native species, including Green Wattle (<i>Acacia irrorata</i>), Hop Goodenia (<i>Goodenia ovata</i>), Rough Fruit Pittosporum (<i>Pittosporum revolutum</i>) and Muttonwood (<i>Myrsine variabilis</i>) were also occasionally recorded in this layer in the riparian zone.</p> <p>Height ranges from 0.5-2.5 m with a cover of approximately 20%.</p> <p>Ground layer:</p> <p><i>Structure and Species:</i> The ground layer is open to moderately dense throughout the forested areas. Commonly recorded species include Red-fruit Saw-sedge (<i>Gahnia sieberiana</i>) Creeping Beard Grass (<i>Oplismenus imbecillis</i>) Common Reed (<i>Phragmites australis</i>) Spiny-headed Mat-rush (<i>Lomandra longifolia</i>), and Common Maidenhair (<i>Adiantum aethiopicum</i>).</p> <p>Height ranges from 0.1-0.8m with a cover of approximately 80%.</p>
Condition	This community is in good condition, with disturbed areas along the edges of the walking track.

Photo 3: Vegetation around footbridge



Photo 4: Adjoining vegetation



4.2.3 Threatened Flora

The Narrow-leaved Red Gum (*Eucalyptus seeana*), an endangered population of the Greater Taree Local Government area, was observed in the vicinity of the study area, with several trees noted during the survey. It was not recorded within the works footprint and the nearest tree was over 50m away. The population of *Eucalyptus seeana* in the Greater Taree local government area is classified as endangered. A small part of the population is known to occur in Brimbin Nature Reserve.

Searches of BioNet database (DCCEEW 2024a) within a 10x10km search area around the site identified six additional threatened flora species.

The Protected Matters Search Tool also produced a list of potential occurrences in the locality. These, along with local records, are assessed for their potential to occur in the study area in Appendix B.

4.2.4 Threatened Ecological Communities and Populations

4.2.4.1 Biodiversity Conservation Act 2016

The Coastal Floodplain Forest community present within the site is likely to conform to the BC Act-listed Threatened Ecological Community (TEC) *Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion*. This ecological community is listed as Endangered under the BC Act. The community on site contains a number of characteristic species from this TEC and is situated on a coastal floodplain associated with the Dawson River.

The extent of this TEC within the study area forms part of a larger patch extending offsite. A small extent of this TEC occurs within the impact footprint, however impacts would be very minor and only comprise groundcover.

4.2.4.2 Environment Protection and Biodiversity Conservation Act 1999

The Lower North Riverflat Eucalypt-Paperbark Forest (PCT 4042) has an associated Threatened Ecological Community (TEC) under the EPBC Act (DCCEEW 2024b), the Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions. This community is listed as Endangered under the EPBC Act.

4.3 Fauna and Habitat Survey Results

4.3.1 Habitat Evaluation

The following table summarises the survey findings for habitat within the study site and the constraints/opportunities it provides for potentially occurring threatened species.

Table 5: Habitat constraints/opportunities for threatened species

Habitat component	Values within the study area	Threatened species values
Aquatic	Aquatic habitat is present within the 1st-order unnamed tidal creek, with no aquatic vegetation apart from mangroves.	No threatened freshwater species are predicted to occur within the locality. Unlikely to provide potential habitat for threatened frog species due to tidal influence.
Groundcover	Moderately dense cover dominated by ferns, sedges and leaf litter.	Potential habitat for small ground-dwelling mammals, amphibians and reptiles.
Logs and debris	Logs include a fallen tree across the creek and other fallen timber and woody debris in surrounding forest.	Low potential shelter resources for ground-dwelling threatened mammals, reptiles and birds.

Habitat component	Values within the study area	Threatened species values
Hollows	Small to medium are present within the adjoining forest, and none occur within the impact footprint.	Hollows have a low potential to support threatened microchiropteran bats, small parrots and gliders.
Flowering Trees	A range of eucalypt species occurs on-site and in the wider area. This includes winter and summer flowering species that may also provide nectar foraging sources.	Flowering trees within the study area may provide a potential nectar resource for threatened nectivorous species and Gliders.
Sap Sources	Bloodwood and other eucalypt species surrounding the bridge site could also provide potential sap sources for gliders.	Suitable foraging resources for Squirrel Glider. No sap incisions were noted.
Primary preferred Koala browse species	Locally preferred Koala food trees are available near the site comprising mostly Tallowwood and Red Gum.	The study area contains a small potential foraging resource for Koalas.
Allocasuarinas	<i>Allocasuarina torulosa</i> occur within and adjoining the study area.	Potential foraging resource present for the South-eastern Glossy Black-Cockatoo.
Fruiting species	Fruiting species are common in the study area. Fruiting species include Red Ash, Muttonwood and Pittosporum.	Unlikely to provide potential foraging resource for frugivorous birds such as the Wompoo Fruit Dove or Rose-crowned Fruit Dove.
Caves, cliffs, overhangs, culverts, bridges	The pedestrian bridge has some crevices, is very low to the ground with little available egress (Photo 5).	No microbat potential.
Corridors and habitat links	The vegetation within the study area forms part of a vast forested area including Lower Manning Valley and Brimbin regional corridors linking the site with Yarrat State forest and other key habitat areas.	Site vegetation provides connectivity for a variety of fauna species including birds, macropods and arboreal species.

Photo 5: Underside of the pedestrian bridge at Dawson River walking track



4.3.2 Observed Fauna

The main fauna species detected during the survey consisted of common bird species including Eastern Yellow Robin, Rainbow Lorikeet, White-browed Scrubwren and Eastern Whipbird. Table 6 lists the fauna species recorded during the field survey.

Table 6: Fauna Species detected

Common Name	Scientific Name	Method of Detection
Black-faced Cuckoo-shrike	<i>Coracina novaehollandiae</i>	Heard Call
Lewin's Honeyeater	<i>Meliphaga lewinii</i>	Heard Call
Grey Fantail	<i>Rhipidura albiscapa</i>	Observed
White-throated Treecreeper	<i>Cormobates leucophaea</i>	Heard Call
Brown Thornbill	<i>Acanthiza pusilla</i>	Observed
White-browed Scrubwren	<i>Sericornis frontalis</i>	Heard Call
Australian Raven	<i>Corvus coronoides</i>	Observed
Golden Whistler	<i>Pachycephala pectoralis</i>	Heard Call
Yellow-faced Honeyeater	<i>Caligavis chrysops</i>	Heard Call

Common Name	Scientific Name	Method of Detection
Eastern Whipbird	<i>Psophodes olivaceus</i>	Heard Call
Key: Threatened under BC Act (bold), Threatened under EPBC Act (^), Introduced species (*)		

4.3.3 Threatened Fauna

No threatened fauna species were recorded in the study area during the field survey.

Searches of BioNet Atlas (DCCEEW 2024a) in a 10x10km search area around the site found records of 28 threatened fauna species. The Protected Matters Search Tool also produced a list of additional potential occurrences in the locality. An assessment of the likelihood of occurrence of these within the study area is provided in Appendix B.

5. IMPACT ASSESSMENT

5.1 Avoidance and Minimisation

The nature of the proposed activity limits the ability to avoid and minimise ecological impacts; however, only a small area of native vegetation will be impacted by the works. The new bridge will be constructed within the existing bridge footprint. A small extent of groundcover vegetation and will require removal on either side of the bridge. Any significant habitat features will be avoided, including mature Mangroves just outside the impact footprint. However, some pneumatophores and propagules from adjacent Mangroves will be disturbed by removing the existing bridge footings.

The activity will aim to minimise impacts on retained vegetation via implementing tree protection measures and exclusion zones around sensitive aquatic habitats.

5.2 Direct Impacts

A small amount of vegetation removal will be required on either side of the bridge. Vegetation to be removed is detailed in Table 7. The works will involve removing the existing footings from within the channel and placing the new footings (Surefoot system) within the riparian zones; in water works will be required, impacting mangrove pneumatophores and possibly a few propagules (Photo 6 to Photo 8). Some ground cover vegetation will also be affected at the bridge and the ancillary area north of the bridge on the west side of the walking track (Photo 9-10).

The unnamed tidal creek was running at the time of the survey, with small pools present on either side of the crossing. However, works are not expected to require diverting water flow.

The collapsed bridge offers no potential for microbat roosting, and no evidence of roosting was noted during the survey. As such, its loss will not significantly reduce roosting habitat.

Table 7: Direct Impacts

Location	Vegetation removal required
Upstream of the bridge	Ground cover vegetation including Common Maidenhair Fern, Red-fruit Saw-sedge, Broadleaf Paspalum, Basket Grass, Weeping Grass. Grey and/or River mangrove pneumatophores. Grey and/or River mangrove propagules (possibly).
Downstream of the bridge	Groundcover vegetation mostly native grasses and herbs. Grey and/or River mangrove pneumatophores. Grey and/or River mangrove propagules.
Ancillary Area	Native grasses and vines affected including Lomandra, Gahnia spp., Weeping grass, Water Vine, Ibbertia spp., Native grape, Wiry panic, Wonga vine, Lantana, and Basket grass.

Photo 6: Vegetation to be impacted downstream of the crossing



Photo 7: Footing to be removed



Photo 8: Mangrove propagules to be impacted



Photo 9: Ground cover vegetation to be removed



Photo 10: Proposed ancillary area, vegetation to be impacted



5.3 Indirect Impacts

The following potential indirect impacts may be associated with the proposal:

- a) **Injury/mortality during clearing:** Minimal risk of injury or mortality to fauna as no hollow-bearing trees will require removal. Minor risk of injury to fish and aquatic species that could be present within the works area during construction.
- b) **Inadvertent impacts on retained or adjoining vegetation:** If not properly demarcated and protected, it is possible that retained trees and vegetation adjacent to the construction site could be impacted by clearing, earthworks and construction vehicle movements. Recommendations are provided to reduce this risk.
- c) **Erosion and sedimentation:** Standard mechanisms and controls should ensure the prevention of erosion and sedimentation during construction and such impacts do not extend beyond the works footprint and sensitive aquatic habitats.
- d) **Weed invasion:** No weeds currently occur on the site. The proposal could potentially introduce new weed species on machinery and equipment and may increase the potential for spread of weeds within the site through vegetation modification. Weed hygiene and biosecurity measures are recommended along with ongoing weed monitoring and control along the walking track.
- e) **Noise and vibration:** The site is situated in a low noise environment as no roads or residential areas occur nearby. The works will generate noise during construction but this will be limited to daytime hence would only temporarily impact diurnal birds and mammals.

6. STATUTORY CONSIDERATIONS

6.1 SEPP (Resilience and Hazards)

Chapter 2 of the SEPP (Resilience and Hazards) 2021 applies to the proposed activity. This chapter addresses the provisions of the *Coastal Management Act 2016* (CM Act) in relation to the following coastal management areas:

- Coastal wetlands and littoral rainforest areas,
- Coastal vulnerability areas,
- Coastal environment areas, and
- Coastal use areas.

6.1.1 Coastal Wetlands and Littoral Rainforests Area

No mapped Coastal Wetland or Littoral Rainforest occurs within the subject site.

6.1.2 Coastal Vulnerability Area

The proposed activity is not situated on land that is within the area identified as “coastal vulnerability” on the *Coastal Vulnerability Area Map*.

6.1.3 Coastal Environment Area

The Dawson River pedestrian bridge is situated on land that is within the coastal environment area (Figure 4). Section 2.10 requires the consent authority to consider whether the proposed activity is likely to cause an adverse impact on coastal environment areas prior to consent of an application. Section 2.10 only applies to development applications under Part 4 of the EP&A Act and therefore does not apply to this proposal.

6.1.4 Coastal Use Area

The Dawson River pedestrian bridge is situated on land within the coastal use area (Figure 4). Section 2.11 requires the consent authority to consider whether the proposed development is likely to cause an adverse impact on coastal use areas prior to consent of an application. Section 2.11 only applies to development applications under Part 4 of the EP&A Act and therefore does not apply to this proposal.

6.1.5 Consideration of Coastal Management Values

Notwithstanding, the proposed activity will remain consistent with the values of the SEPP by implementing mitigation measures to protect coastal wetlands, coastal environment areas and coastal use areas.

Direct and indirect impacts from the works such as vegetation removal, erosion and sedimentation, weed invasion, changed hydrology and polluted runoff can lead to floristic and hydrological

changes to coastal wetland areas, can impact the resilience and integrity of the coastal environment, and can affect the visual amenity and scenic qualities of the coast.

The proposed activity will predominately occur within previously disturbed areas and does not involve significant ground disturbance or vegetation removal. Specific recommendations are provided to ensure any potential impacts are minimised, including clearing limit markup and exclusion zones, timing of works to periods of low flow, and sedimentation and erosion controls. These are further detailed in Section 7.



Data Sources: WolfPeak 2024, Imagery Earthstar Geographics, Esri Community Maps

Legend

- Bridge
- State Environmental Planning Policy (Resilience and Hazards) 2021
- Coastal Environment Area Map
- Coastal Use Area Map

0 0.05 0.1 0.2 Km

Figure 4: Coastal Environment and Coastal Use Area mapping

6.2 Biodiversity Conservation Act 2016

6.2.1 Assessment Pathway

Under the NSW *Biodiversity Conservation Act 2016* and *Biodiversity Conservation Regulation 2017*, Part 5 developments under the *Environmental Planning and Assessment Act 1979* are not required to enter into the Biodiversity Offset Scheme (BOS) as this is an optional assessment pathway.

Given that assessment under the BOS is not required for Part 5 proposals, a test of significance has been carried out to assess the potential impacts of the proposal on threatened species and ecological communities.

6.2.2 Test of Significance

The Test of Significance is prescribed in Part 7, Division 1, Section 7.3 of the *Biodiversity Conservation Act 2016*. The purpose of the Test of Significance is to determine whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

If it is determined that a development or activity will have a significant effect, a Biodiversity Development Assessment Report will be required if the proponent so elects, or if not, a Species Impact Statement must be prepared. The Test of Significance has been prepared in consideration of the *Threatened Species Test of Significance Guidelines* (OEH 2018).

6.2.2.1 Entities Assessed

The potential occurrence assessments in Appendix B have determined that the following species are considered to be potentially occurring in the study area and are subject to the Test of Significance:

- Brush-tailed Phascogale (*Phascogale tapoatafa*)
- Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*)
- Greater Broad-nosed Bat (*Scoteanax rueppellii*)
- Grey-headed Flying-fox (*Pteropus poliocephalus*)
- Koala (*Phascolarctos cinereus*)
- Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
- Little Bent-winged Bat (*Miniopterus australis*)
- Little Lorikeet (*Glossopsitta pusilla*)
- Masked Owl (*Tyto novaehollandiae*)
- Powerful Owl (*Ninox strenua*)
- Southern Myotis (*Myotis macropus*)
- Squirrel glider (*Petaurus norfolcensis*)
- Varied Sitella (*Daphoenositta chrysoptera*).

6.2.3 Test of Significance

The following table provides an assessment of whether the proposed works will significantly impact potentially occurring threatened entities within the study area. The Test of Significance has been prepared in consideration of the *Threatened Species Test of Significance Guidelines* (OEH 2018).

Table 8: Test of Significance

Assessment against Test of Significance Criteria
<p>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.</p>
<p>The proposal is to replace the collapsed Dawson River walking track pedestrian bridge. The proposed activity is to replace the existing structure with a new footbridge fixed to a Surefoot system. The works will involve removing the existing footings from within the channel and placing the new footings within the riparian zones. This will require some ground vegetation removal and direct impact to Grey and River mangrove pneumatophores and propagules. An ancillary area will also be established which will require the removal of a small area of native groundcover and vines.</p> <p>The impact of the proposal is addressed separately for different species or groups as follows:</p> <p><u>Highly mobile/large range species – Powerful Owl, Masked Owl, Square-tailed Kite, Grey-headed Flying-fox</u></p> <p>For the mobile and wide-ranging subject species, the vegetation to be impacted represents a minor extent of habitat given the occurrence of similar or higher quality habitat adjoining the subject area. Any potentially occurring local population of these species would extend well beyond the site to meet their daily and seasonal lifecycle requirements, and none would be dependent on habitat in the site alone for foraging or breeding.</p> <p>The extent of vegetation removal is unlikely to affect these species given only small extents of groundcover vegetation will be impacted.</p> <p>Given the above; that no barrier to connectivity for these species will be created; and that the local populations of the subject species would extend well beyond the site to meet their life cycle requirements: the works would be unlikely to result in a decline of the local population of these species.</p> <p><u>Koala</u></p> <p>There are numerous Koala records in the locality. No evidence of the Koala was found during the field survey. No Koala food trees will be removed for the activity. Hence, there will be no direct impact to their foraging success. The activity would not introduce or increase any potential threats such as road strikes, dog attacks or disease. Minor indirect impacts may result during clearing and construction works such as noise and vibration which may deter individuals from using the area temporarily. Considering the above, the works are unlikely to result in impacts of sufficient order of magnitude to place a local viable population at risk of extinction.</p> <p><u>Hollow-obligate Mammals – Squirrel Glider, Brush-tailed Phascogale</u></p> <p>There is potential for these species to den in hollow-bearing trees in the vicinity of the study area. No Hollow-bearing trees will be removed, thus no denning habitat will be impacted. Given this, the activity would not be expected to substantially impact the lifecycle of these species.</p> <p><u>Woodland birds - Little Lorikeet, Varied Sitella</u></p> <p>No trees will be clearing hence no reduction on available food sources. As a result, the proposal is unlikely to have an adverse impact on a local population’s life cycle.</p>

<p><u>Microbats</u></p> <p>The study area contains some potential roosting habitat for microbats comprising hollow-bearing trees and decorticating bark (no caves occur). However, given that no hollow-bearing trees will be removed and that foraging resources on the site do not meet a significant portion of any species' lifecycle's needs, the impact on these species is considered to be very low. These species will still retain the potential to forage in the study area post works, and the proposal is unlikely to lead to any significant reduction in foraging resources.</p> <p>In summary, the proposed activity is unlikely to have an adverse effect on the life cycle of the subject species such that a viable local population of the species is likely to be placed at risk of extinction.</p>
<p>b) In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:</p> <p>(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</p> <p>(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.</p>
<p>The TEC Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion occurs within the study area. The works will only require the removal of small patches of groundcover from this TEC. As such, the proposal will not place this TEC at risk of extinction. The proposed works has the potential to indirectly impact this TEC should weed control, erosion and sedimentation controls and clearing procedures not be adhered to. Recommendations have been provided to mitigate these risks.</p>
<p>c) In relation to the habitat of a threatened species or ecological community—</p> <p>(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and</p> <p>(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</p> <p>(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.</p>
<p>Habitat to be modified comprises small patches of groundcover around the existing bridge and proposed ancillary area and mangrove propagules within the creek channel. No fragmentation or isolation of habitat is likely to result from the works.</p> <p>The works footprint offers potential habitat for several threatened fauna species however given the extent of modification and limitations of the site habitats and the limited extent of the footprint, these species would be reliant on adjacent and nearby habitats to fulfil their lifecycle requirements and the site would not be of any key importance.</p>
<p>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).</p>
<p>The proposed development will not directly or indirectly affect an area of outstanding biodiversity value.</p>
<p>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.</p>
<p>A Key Threatening Process (KTP) is defined as a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, populations or ecological communities.</p> <p>The following lists the relevant KTPs listed under the BC Act and whether the proposed activity is recognised a threatening process:</p>

<ul style="list-style-type: none"> • Anthropogenic Climate Change <ul style="list-style-type: none"> – Use of fossil fuel in plant. This can be mitigated to a degree through the use of electric equipment instead of diesel/petrol powered equipment where practicable. • Clearing of native vegetation <ul style="list-style-type: none"> – A small extent of native vegetation removal will be required for the works comprising groundcovers. The clearing extent has been restricted to the smallest area necessary to facilitate the works. • Introduction and establishment of Exotic Rust Fungi of the order Pucciniales pathogenic on plants of the family Myrtaceae <ul style="list-style-type: none"> – Myrtle Rust is likely already present throughout the study area, and there is potential risk of further spread. Hygiene protocols are recommended to mitigate this risk. • Invasion and establishment of exotic vines and scramblers <ul style="list-style-type: none"> – Potential for introduction and spread through vegetation modification. This can be mitigated through weed hygiene controls recommended to reduced spread. • Invasion of native plant communities by exotic perennial grasses <ul style="list-style-type: none"> – Potential for spread through vegetation modification. This can be mitigated through weed hygiene controls recommended to reduced spread. • Invasion, establishment and spread of Lantana (<i>Lantana camara</i>) <ul style="list-style-type: none"> - Potential for introducing Lantana. This can be mitigated through weed hygiene controls.
Resulting Impact
<p>The Test of Significance has determined that the proposed development would not result in a significant impact on threatened species or ecological communities. A BDAR or Species Impact Statement is not required for the works.</p>

6.3 Environment Protection and Biodiversity Conservation Act 1999

6.3.1 MNES Assessment Summary

The provisions of the EPBC Act require determination of whether the proposal has, will or is likely to have a significant impact on a MNES. An assessment of potential MNES which could occur in the locality was undertaken using the Protected Matters Search Tool (DCCEEW 2024a). This search identified a range of MNES with the potential to occur. These matters are summarised in the following table.

Table 9: MNES Assessment Summary

Category	Result	Relevance	Significant Impact Likely?
World Heritage Properties	None	The proposed development will not affect any World Heritage areas.	No

National Heritage Places	None	The proposed development will not affect any National Heritage Places.	No
Wetlands of International Importance	None	The proposed development will not affect any Wetlands of International Importance.	No
Great Barrier Reef Marine Park	None	The proposed development will not affect the Great Barrier Reef Marine Park.	No
Commonwealth Marine Environment	None	The activity will not impact on a Commonwealth marine area.	No
Listed Threatened Ecological Communities	5	Field assessments confirmed that the TEC Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland occurs within the subject site.	No
Listed Threatened Species	85	Koala and Grey-headed Flying-fox are considered potential occurrences in the study area. Assessments have determined that the proposed works will not significantly impact these species.	No
Listed Migratory Species	42	Several migratory birds are considered potential occurrences in the study area. Assessments have determined that the proposed development will not significantly impact these species.	No

6.3.2 Threatened Ecological Community

The Protected Matters Search Tool identified the following EPBC Act listed TECs that are likely to occur within the assessment area:

- Coastal Swamp Oak (*Casuarina glauca*) Forest of NSW and South East Queensland.
- Coastal Swamp Sclerophyll Forest of NSW and South East Queensland.
- Littoral Rainforest and Coastal Vine Thickets of Eastern Australia
- Lowland Rainforest of Subtropical Australia.
- Subtropical and Temperate Coastal Saltmarsh.
- Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions.

Field assessments identified that one of these TECs is present within the study area. This comprises the Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland. A Significant Impact Assessment for this TEC is provided below.

6.3.2.1 Assessment of Significance

The following table provides an assessment of whether the proposed works will significantly impact the known EPBC Act-listed TECs within the study area. Threatened Ecological Communities assessed under this Significant Impact Criteria are:

- Subtropical eucalypt floodplain forest and woodland

Critical habitat refers to areas critical to the survival of an ecological community and may include areas that are necessary for:

- Activities such as foraging, breeding, roosting or dispersal.
- The long-term maintenance of the ecological community (including the maintenance of species essential to the survival of the ecological community)
- Maintain genetic diversity and long-term evolutionary development.
- Reintroduction of populations or recovery of the community.

Table 10 Significant impact assessment – Critically endangered and endangered TECs

Assessment of Significant Impact Criteria
Reduce the extent of an ecological community.
The proposal will result in the removal of small patches of vegetation from this community which comprises groundcover species only. This will reduce an exceedingly small fraction of its local extent.
Fragment or increase fragmentation of an ecological community, for example by clearing vegetation for roads or transmission lines.
Removal of vegetation will not lead to further fragmentation as only a marginal amount of vegetation is to be disturbed and no canopy trees will require removal.
Adversely affect habitat critical to the survival of an ecological community.
The proposal does not affect any habitat critical to the survival of the community.
Modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for an ecological community's survival, including reduction of groundwater levels, or substantial alteration of surface water drainage patterns.
The mitigation measures required to manage sedimentation and erosion would significantly reduce the risk of any adverse impacts.
Cause a substantial change in the species composition of an occurrence of an ecological community, including causing a decline or loss of functionally important species, for example through regular burning or flora or fauna harvesting.
The proposed works will not cause any change in the species occurrence within the TEC.
Cause a substantial reduction in the quality or integrity of an occurrence of an ecological community, including, but not limited to:
<ul style="list-style-type: none"> • assisting invasive species, that are harmful to the listed ecological community, to become established, or • causing regular mobilisation of fertilisers, herbicides or other chemicals or pollutants into the ecological community which kill or inhibit the growth of species in the ecological community.

Erosion and sedimentation controls will be established to minimise impacts. Some sedimentation may result from removing the existing bridge footings, however the new bridge is likely to lead to a better outcome as there will not be any structures in the waterway. No other impacts are likely to result in the reduction of integrity of the TEC.
Interfere with the recovery of an ecological community.
The potentially minor indirect impacts on the TEC is unlikely to interfere with its recovery.
Resulting Impact
No significant impact

6.3.3 Threatened Species

No federally listed threatened species were recorded in the study area during survey.

Potential occurrence assessments identified two species listed under the EPBC Act that are considered to have a fair to high chance of occurring on the study area. These species comprise the Koala and Grey-headed Flying-fox. Significance Assessments for these entities have determined that the proposed development will not significantly impact these threatened species listed under the EPBC Act.

A Significant Impact Assessment for these species is provided below.

6.3.3.1 Assessments of Significance

The following tables provide an assessment of whether the proposed works will significantly impact the known and potentially occurring threatened species within the study area. As per the MNES Significant Impact Guidelines (Department of the Environment 2013), the following definitions apply.

An *important population* is defined as one that is necessary for a species' long-term survival and recovery. This includes such populations as:

- Key populations either for breeding or dispersal.
- Populations that are necessary for maintaining genetic diversity.
- Populations that are near the limit of the species range.

Critical habitat refers to areas critical to the survival of a species and may include areas that are necessary for:

- Activities such as foraging, breeding, roosting or dispersal.
- The long-term maintenance of the species (including the maintenance of species essential to the survival of the species or ecological community, such as pollinators).
- Maintain genetic diversity and long-term evolutionary development.
- Reintroduction of populations or recovery of the species/community.

6.3.3.1.1 Vulnerable species

Threatened species assessed under this criterion that are listed as Vulnerable under the EPBC Act comprise:

- Grey-headed Flying-fox (*Pteropus poliocephalus*)

Table 11: Significant Impact Assessment – Vulnerable species

Assessment against Significant Impact Criteria
Lead to a long-term decrease in the size of an important population of a species
The proposal will require the modification of groundcover vegetation from within a larger area of potential foraging habitat for the Grey-headed Flying-fox. This loss is unlikely to have any detectable impacts on local Grey-headed Flying-fox populations. The proposal is unlikely to lead a long-term decrease in the size of a potentially occurring local population.
Reduce the area of occupancy of an important population
In context of the habitat available in the locality, the minor scale and temporary nature of the works will not reduce the area of occupancy of any of the subject species.
Fragment an existing important population into two or more populations
The Grey-headed Flying-fox is highly mobile and known to be capable of crossing human-modified habitat. The proposal will offer no barrier to movement to this species. Thus, it will not fragment an existing population.
Adversely affect habitat critical to the survival of a species
The vegetation to be removed is not considered critical habitat for the Grey-headed Flying-fox. Post-development, other habitats in the locality will retain the potential to support these species, hence helping support the viability of the local population.
Disrupt the breeding cycle of an important population
The vegetation within the works footprint is not considered critical habitat for the Grey-headed Flying-fox. Post-development, the site and other habitats in the locality will retain the potential to support this species. As such the removal of this habitat would not be capable of disrupting the breeding cycle of these species.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The degree of possible vegetation loss imposed by the proposed development is not significant enough to affect a local population of the Grey-headed Flying-fox, to the point that it could cause a decline of the species. Additionally, the habitat in the site does not contain an important population of this species and does not represent potential breeding habitat. The works would not be capable of disrupting the breeding cycle of the Grey-headed Flying-fox.
Result in invasive species, that are harmful (by competition, modification of habitat, or predation) to a Vulnerable species, becoming established in the Vulnerable species' habitat
No new species that affects the subject species is likely to be introduced as a direct result of the proposal.
Introduce a disease that may cause a species to decline
No disease that poses a potential risk to these species is likely to be introduced to the subject land.
Interferes substantially with the recovery of the species

The proposal will result in the removal of a minor area of potential foraging for the Grey-headed Flying-fox that is not significant enough to interfere with their recovery.
Resulting Impact
No significant impact

6.3.3.1.2 Critically endangered and endangered species

Threatened species assessed under this criterion that are listed as Critically Endangered or Endangered under the EPBC Act comprise:

- Koala (*Phascolarctos cinereus*)

Table 12: Significant impact assessment - Critically endangered and endangered species

Assessment against Significant Impact Criteria
Lead to a long-term decrease in the size of a population
The proposal will only require the removal of ground cover vegetation from an area of potential foraging habitat. No koala food trees will be affected, so the proposal is unlikely to decrease the potential local population.
Reduce the area of occupancy of this species
Given that no Koala food trees will be removed, the proposed activity is not expected to reduce the area of occupancy of a population
Fragment an existing population into two or more populations
The subject species are highly mobile and known to be capable of crossing human-modified habitat. The proposal will offer no barrier to movement. Thus, it will not fragment an existing population.
Adversely affect habitat critical to the survival of a species
The vegetation to be removed is not considered critical habitat for the subject species due to the ecology of the species. Post-development, the remainder of the development site and other habitats in the locality will retain the potential to support these species, hence helping support the viability of the local population.
Disrupt the breeding cycle of a population
The habitat to be removed does not represent potential breeding habitat for the subject species. The removal of this habitat would hence not be capable of disrupting the breeding cycle of the Koala.
Modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline
The proposal will require the temporary disturbance to lower stratum vegetation only. This does not provide a potential foraging resource for the Koala. The proposal therefore will not remove, modify or decrease the availability of habitat for the Koala and will not fragment the potential foraging resources for the Koala within the study area.
Result in invasive species that are harmful to a critically endangered species becoming established in the critically endangered species' habitat
No new species that affects the subject species is likely to be introduced as a direct result of the proposal.
Introduce a disease that may cause the species to decline

No disease that poses a potential risk to these species is likely to be introduced to the development site.
Interferes substantially with the recovery of the species
The proposal will not result in the removal of a area of foraging habitat for the Koala, therefore it won't interfere with their recovery.
Resulting Impact
No significant impact

6.3.4 Migratory Species

The Protected Matters Search Tool has identified 50 EPBC Act migratory species with the potential to occur within the locality. The majority of these are listed as Migratory Marine or Migratory Wetland species. As no marine or wetland environments occur within the development site, these species have been excluded from further assessment. The remaining six Migratory Terrestrial species listed under the Protected Matters Search Tool have been assessed for their potential to occur within the development site in the following table.

6.3.4.1 Assessment of Significance

The following tables provide an assessment of whether the proposed works will significantly impact the known and potentially occurring migratory species within the study area. As per the MNES Significant Impact Guidelines (Department of the Environment 2013), the following definitions apply.

An *important area of habitat* is defined under the MNES Impact Guidelines 1.1 (Department of the Environment 2013) as:

- Habitat used by a migratory species occasionally or periodically within a region that supports an ecologically significant proportion of the population of the species; or
- Habitat that is of critical importance to the species at particular life-cycle stages; or
- Habitat utilised by a migratory species which is at the limit of the species range; or
- Habitat within an area where the species is declining.

Table 13: Significant impact assessment – Migratory species

Assessment against Significant Impact Criteria
Substantially modify (including fragmenting, altering fire regimes, altering nutrient cycles or altering hydrological cycles), destroy or isolate an area of important habitat of the migratory species
The proposal will require the temporary disturbance to ground vegetation from an area not considered to be an important area of habitat. Given this, the proposed development would not substantially modify, destroy or isolate an area of important habitat for these migratory species.
Result in an invasive species that is harmful to the migratory species becoming established in an area of important habitat of the migratory species
An invasive species is one that may become established in the habitat, and harm the migratory species by direct competition, modification of habitat, or predation. The proposal will not introduce any such invasive species.

Seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of the species
No disruption of the lifecycle of these migratory birds is likely, as the no breeding habitat is located within the study area and the study area only represents a fraction suitable habitat within the locality. Additionally, vegetation requiring removal does not comprise a significant extent of potential foraging habitat.
Resulting Impact
No significant impact

6.3.4.2 Conclusion

The significance assessments have determined that the proposal is unlikely to have a significant impact on the subject species. Referral to the Commonwealth Department of Climate Change, Environment, Energy and Water (DCCEEW) is not required for these species.

6.4 Fisheries Management Act 1994

This section specifically focuses on habitats and organisms associated with the *Fisheries Management Act 1994* (FM Act) and *Fisheries Management (Amendments) Act 1997*. The study area for this assessment is the aquatic habitats of the unnamed tidal creek, spanned by a pedestrian bridge.

6.4.1 Waterway Definition and Description

The unnamed creek spanned by the footbridge is a first-order stream as defined by the Strahler system (Photo 11), which flows east and drains into Dawson River, a fifth-order stream.

Photo 11: Unnamed first-order stream



6.4.2 Aquatic Vegetation

6.4.2.1 Description

The unnamed stream is a tidal brackish first order stream, a narrow band of mangroves and reeds/sedges are present along the creek. The creek was flowing at the time of inspection, however.

6.4.2.2 Threatened Aquatic Vegetation

To date, no aquatic vegetation has been listed as threatened under the FM Act.

One endangered marine vegetation population¹ and four endangered aquatic ecological communities² have been listed under the FM Act. These comprise:

- Posidonia australis seagrass in the Port Hacking, Botany Bay, Sydney Harbour, Pittwater, Brisbane Waters and Lake Macquarie regions¹.
- Lowland Darling River aquatic ecological community².
- Lowland Lachlan River aquatic ecological community².

- Lowland Murray River aquatic ecological community².
- Snowy River aquatic ecological community².

These do not occur within the study area and are not considered likely to occur based on geographical limitations.

6.4.3 Key Fish Habitat

Under the FM Act, the Dawson River and the first-order stream within the study area qualify as Key Fish Habitats. The Department of Primary Industries Key Fish Habitat mapping is provided in Figure 5.

Based on the definitions provided in Policy and Guidelines and Fish Habitat Conservation and Management (DPI 2013), this watercourse would be defined as Type 2 Habitat (moderately sensitive key fish habitat) due to the presence of Mangroves.

6.4.4 Fauna Habitats

6.4.4.1 Description

The following table addresses the presence of estuarine fauna habitats within the study area and their ecological significance to aquatic fauna.

Table 14: Aquatic fauna habitat features

Habitat Component	Site Values	Significance to aquatic fauna
Mangroves	Scattered Mangroves occur along the unnamed stream and within the study area.	Provide generic fish habitat, subject to shallow inundation at high tide.
Seagrass	Absent	No significance to aquatic fauna
Artificial structures	Dawson trail pedestrian bridge.	No significance to aquatic fauna
Sand/mud banks	A minute area of muddy and rocky substrates are present within the study area during low tides.	Marginal potential habitat for estuarine invertebrates.
Saltmarsh	Absent	No significance to aquatic fauna
Water depth	The unnamed stream is tide dependant but likely to remain shallow during high-tide events.	Habitat available for small aquatic fauna.

6.4.4.2 Local Records of Threatened Fauna and Populations

A review of BioNet Atlas (DPE 2024a) identified that no local records of threatened aquatic fauna or populations occur within the study area.

6.4.4.3 Potential Occurrence Assessment

No threatened species listed under the FM Act are considered to potentially occur within the study area.

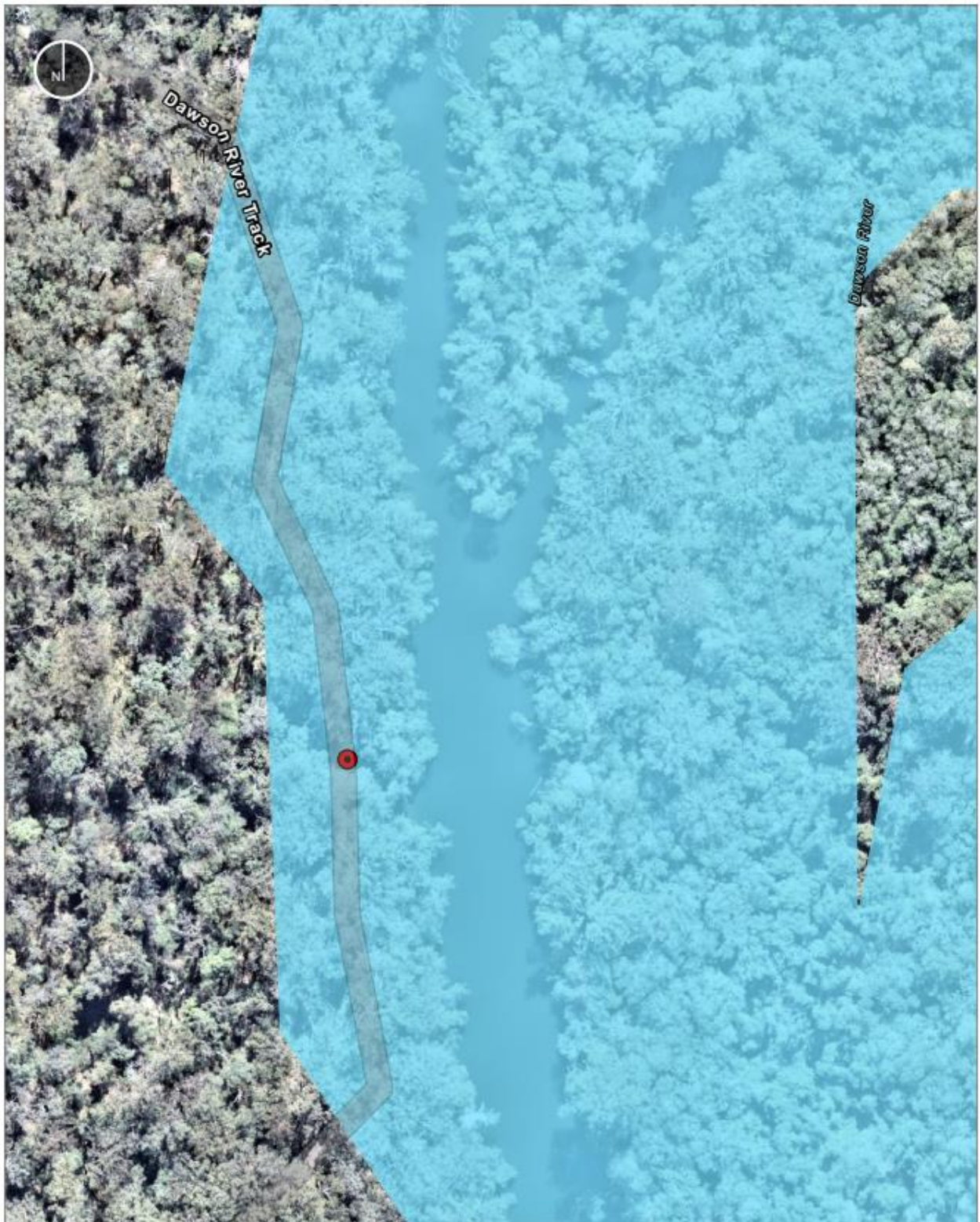
6.4.5 Impacts of the Proposal

The works will involve the removal of the existing structure and replace it with a new footbridge fixed to a Surefoot system. The works will involve removing the existing footing from within the water land of the channel, and placing the new footings within the riparian zones of water land. A handful of mangrove pneumatophores and propagules will be removed around the footbridge.

These works will result in temporary impacts to the aquatic and riparian habitat within the river and will lead to increased turbidity during works.

6.4.6 Permit Requirement

A fisheries permit is required for the proposed works.



Data Sources: WolfPeak 2024, Imagery Esri Community Maps Contributors, Spatial

Legend

-  Bridge
-  Key Fish Habitat



Figure 5: Mapped Key Fish Habitat

7. MITIGATION MEASURES

The following recommendations have been provided to minimise direct and indirect impacts on flora and fauna, especially threatened species. The conclusions of this assessment assume that the recommendations are fully implemented and successful in mitigating impacts.

Table 15: Mitigation measures

ID	Mitigation measure	Method
Prior to commencement of works		
P1	Clearing markup	The area to be cleared/modified should be clearly marked (e.g. with stakes and bunting) before clearing in order to prevent inadvertent clearance beyond what is required and has been assessed. Adjoining vegetation is to be identified for retention and protected via fencing and signage.
P2	Establishment of sedimentation and erosion control measure	Erosion and sediment mitigation devices are to be erected in a manner consistent with currently accepted Best Management Practice (i.e. Landcom [2004], Managing Urban Stormwater: Soils and Construction [4th Edition]) to prevent the entry of sediment into the waterway, or mobilisation of sediment within the waterway, prior to any earthworks being undertaken. <ul style="list-style-type: none"> • These erosion and sediment devices are to be maintained in good working order for the whole duration of the works and subsequently until the worksite has been stabilised and the risk of erosion and sediment movement from the site is minimal.
During works		
D1	Strategic Timing of Works	<ul style="list-style-type: none"> • Works are only to be undertaken during periods of low flow and low tide if possible. • Works are not to be undertaken during, or immediately following, periods of high rainfall. • Works shall not be undertaken at night, and works shall be undertaken in the shortest timeframe possible to minimise the period which fauna may be impacted.
D2	Pre-start briefing	An ecologist or environmental officer is to conduct a pre-start briefing to contractors prior to any vegetation removal. The contractors are to be briefed on all the requirements and mitigation measures. Site induction is to specify that: <ul style="list-style-type: none"> • No clearing is to occur beyond the marked area. • Vehicles are only to be parked in designated areas. • All rubbish is to be disposed of properly and not be placed within retained vegetation of the watercourses. • Any materials are to be stored outside the retained vegetation and away from the watercourses. • Clearing and earthworks is to avoid damage to root zones of the retained trees.

D3	Clearing supervision	Any habitat features that require removal or relocation (e.g. nests, dreys, logs) are to be fully supervised and directed by an ecologist or suitably qualified NPWS Officer and capture/relocate any fauna identified. Any fauna that are found to be injured are to be captured and taken into care by FAWNA or equivalent wildlife rehabilitation agency.
D4	Water Quality Measures and Monitoring	<ul style="list-style-type: none"> • The storage and handling of fuels and chemicals would comply with Australian Standard AS1940. • Do not re-fuel, wash, or maintain vehicles or plant within 40 metres of a waterway. Refuelling, fuel decanting and equipment maintenance work if required would take place in a designated sealed and bunded area. • At least one 'spill kit' would be kept on site at all times for potential chemical or fuel spills, one at each end of the proposal site. Construction contractors would be trained in the correct use of a spill kit. • Visual monitoring of local water quality (i.e., turbidity, hydrocarbons spills/slicks) will be periodically undertaken to identify any water quality issues.
D5	Hygiene Protocols	<p>Basic hygiene protocols as per the NSW Hygiene Guidelines: Protocols to protect priority biodiversity areas in NSW from <i>Phytophthora cinnamomi</i>, myrtle rust, amphibian chytrid fungus and invasive plants would be implemented to reduce the risk of spreading weeds, diseases, and pathogens:</p> <ul style="list-style-type: none"> • Check personnel, clothing, footwear, backpacks and equipment for soil, plant material/propagules and other debris. • Remove all soil, plant material and other debris. • Remove seeds from clothing, footwear, tools and equipment by hand. Where possible, have a co-worker double-check that all seeds are removed. • Where practicable, ensure hand, clothing, footwear, and equipment are dry before proceeding. • Check the exterior and interior of vehicles and machinery for soil, plant material and other debris. • Remove large clods of dirt and soil. • Remove all soil, plant material and other debris from interior.
D6	Weed control	<p>Removal of vegetation and disturbance of the sites soils has potential to encourage weed invasion. Machinery used to undertake vegetation management may also carry weed seeds. Hence, it is recommended that:</p> <ul style="list-style-type: none"> • Disturbance of vegetation and soils on the site should be limited to the areas of the proposed work and should not extend into adjacent vegetation. • All machinery, equipment and tools are to be thoroughly inspected for the presence of weeds prior to works commencing or relocation to a new works area.

		<ul style="list-style-type: none"> • Invasive <i>Biosecurity Act</i> listed are appropriately treated and collected prior to clearing and are disposed of at a licenced landfill facility. • Any new weed infestations that arise within the sites after management works have been completed are to be treated and removed.
Following the completion of works		
F1	Removal of anthropogenic materials	All materials used in the establishment of sedimentation and erosion controls, clearing markup and exclusion zones are to be removed and disposed of appropriately.
F2	Weed control	Should any new weed infestations arise as a result of the proposed works, these are to be subject to a weed management program post-works, to eradicate the infestation.

8. CONCLUSION

This report has assessed the ecological impacts of a footbridge upgrade in Brimbin Nature Reserve. The works will require the removal of a small extent of riparian vegetation at the bridge site, and small extent of groundcover at the ancillary site. No hollow-bearing trees will require removal.

No threatened flora species were recorded during the survey, however the site vegetation community qualifies as a Threatened Ecological Community. No threatened fauna species were identified during surveys. Numerous threatened fauna species were identified as having the potential to use the study area as a small part of a larger range. Assessment of these species concluded they were unlikely to be significantly impacted by the proposal due to their ecology, the historical disturbance of the site, small extent of disturbance proposed, and the mitigation measures recommended. Hence neither entrance into the BOS or a referral to the DCCEW is required.

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APPENDIX A – STUDY AREA VEGETATION LIST

Table 16: Vegetation list at Dawson River walking track

Common Name	Scientific Name	Frequency
Canopy Trees		
Swamp Oak	<i>Casuarina glauca</i>	C
Broad-leaved Paperbark	<i>Melaleuca quinquenervia</i>	U
Grey Ironbark	<i>Eucalyptus siderophloia</i>	O
Narrow-leaved Red Gum	<i>Eucalyptus seeana</i>	O
Pink Bloodwood	<i>Corymbia intermedia</i>	U
Prickly-leaved Tea Tree	<i>Melaleuca styphelioides</i>	D
Red Mahogany	<i>Eucalyptus resinifera</i>	C
White Mahogany	<i>Eucalyptus acmenoides</i>	O
Understorey Trees		
Common Silkpod	<i>Parsonsia straminea</i>	C
Forest Oak	<i>Allocasuarina torulosa</i>	O
Grey Mangrove	<i>Avicennia marina subsp. australasica</i>	U
Grey Myrtle	<i>Backhousia myrtifolia</i>	D
Red Ash	<i>Alphitonia excelsa</i>	O
Rough-barked Apple	<i>Angophora floribunda</i>	U
Willow Bottlebrush	<i>Callistemon salignus</i>	O
Shrubs and Vines		
Climbing Guinea Flower	<i>Hibbertia scandens</i>	O
Coffee Bush	<i>Breynia oblongifolia</i>	O
Green Wattle	<i>Acacia irrorata</i>	O
Hairy Apple Berry	<i>Billardiera scandens</i>	O
Heath Myrtle	<i>Sannantha similis</i>	U
Hop Goodenia	<i>Goodenia ovata</i>	O
Lance Leaf Geebung	<i>Persoonia lanceolata</i>	U
Large Mock-olive	<i>Notelaea longifolia</i>	U
Large-leaf Hop-bush	<i>Dodonaea triquetra</i>	O
Lawyer Vine	<i>Smilax australis</i>	O
Muttonwood	<i>Myrsine variabilis</i>	O
Narrow-leaved Orangebark	<i>Denhamia silvestris</i>	O
Narrow-leaved Palm Lily	<i>Cordyline stricta</i>	O
Prickly Beard-heath	<i>Leucopogon juniperinus</i>	O
River Mangrove	<i>Aegiceras corniculatum</i>	D
Rough Fruit Pittosporum	<i>Pittosporum revolutum</i>	O

Common Name	Scientific Name	Frequency
Star Jasmine	<i>Trachelospermum jasminoides</i>	O
Tree Heath	<i>Trochocarpa laurina</i>	U
Velvet-bush	<i>Lasiopetalum ferrugineum</i>	O
Villous Mint-bush	<i>Prostanthera densa</i>	O
White Dogwood	<i>Ozothamnus diosmifolius</i>	U
Wonga Wonga Vine	<i>Pandorea pandorana</i>	O
Grasses and Groundcovers		
Red-fruit Saw-sedge	<i>Gahnia sieberiana</i>	D
-	<i>Baumea spp.</i>	C
Bracken	<i>Pteridium esculentum</i>	D
Broadleaf Paspalum	<i>Paspalum mandiocanum</i>	O
Common Maidenhair	<i>Adiantum aethiopicum</i>	C
Common Reed	<i>Phragmites australis</i>	C
Creeping Beard Grass	<i>Oplismenus imbecillis</i>	C
Daisy goodenia	<i>Goodenia bellidifolia</i>	O
Downy Dodder-laurel	<i>Cassytha pubescens</i>	C
Spiny-headed Mat-rush	<i>Lomandra longifolia</i>	C
Twining glycine	<i>Glycine clandestina</i>	O
Whiteroot	<i>Lobelia purpurascens</i>	O
Wiry Panic	<i>Entolasia stricta</i>	D
Key: Introduced species (*), Dominant (D), Common (C), Occasional (O), Uncommon (U), Rare (R).		

APPENDIX B – POTENTIAL OCCURRENCE ASSESSMENT

The following tables provide an assessment of threatened entities, known or potentially occurring within the locality. Assessments address the likelihood of threatened entities occurring within the study area based on:

- Habitat extent (e.g., sufficient to support an individual or the local population; comprises all of home range; forms part of larger territory, etc.); quality (i.e., condition, including an assessment of threats, historical land uses on and off-site, and future pressures); interconnectivity to other habitat; and ability to provide all the species life-cycle requirements (either the site alone, or other habitat within its range).
- Occurrence frequency (i.e., on-site resident; portion of larger territory or seasonal migrant).
- Usage i.e., breeding or non-breeding; opportunistic foraging (e.g., seasonal, migratory or opportunistic); marginal fringe of core range; refuge; roosts; etc.

An indicative scale has been used to indicate the likelihood of the entity occurring. This scale is as follows:

- Unlikely (<1% probability) - no potentially suitable habitat; too disturbed; or habitat is very poor. No or few records in region or records/site very isolated e.g. by pastoral land, urbanisation, etc.
- Low (1-25%) - few minor areas of potential habitat; highly modified site/habitat; or few habitat parameters present, but others absent or relatively insignificant (sub-optimum habitat). Usually very few records in locality.
- Fair (25-50%) - some significant areas of potential habitat, but some habitat parameters limited. Potential for occasional foraging e.g. from nearby more optimal areas or known habitat. Records at least within 10-15 km radius of site.
- Moderate (50-75%) - quite good potentially suitable habitat on and adjacent to the site, and/or good quality and abundance of some vital habitat parameters. Records within <10km, or adjacent to site, or adjacent to high quality habitat where species likely to occur.
- High (>75%) - very good to optimum habitat occurring on or adjacent to the site (support breeding pair or population). Recorded within 5-10 km of site in same or similar habitat.

Further assessment is required for entities considered to have a fair-high chance of occurring within the study area.

Threatened Ecological Communities

Table 17: Potential occurrence assessment – threatened ecological communities

TEC Name	Listing Status	Potential Occurrence Assessment	Likelihood of Occurrence
BC Act			
<i>Coastal Saltmarsh in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i>	E	No Saltmarsh vegetation occurs in the study area.	Unlikely
<i>Freshwater Wetlands on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i>	E	The native vegetation community within the study area does not align with the floristic or structural attributes of this TEC.	Unlikely
<i>Hunter Lowland Redgum Forest in the Sydney Basin and New South Wales North Coast Bioregions</i>	E	No Forest Red Gum occurs in the study area and the vegetation present does not meet the geographic or floristic criteria.	Unlikely
<i>Littoral Rainforest in the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i>	E	The vegetation within the study area is not considered to comprise Rainforest vegetation due to the dominance of Eucalypts and failure to meet structural criteria such as canopy cover and vegetation layers.	Unlikely
<i>Lower Hunter Spotted Gum Ironbark Forest in the Sydney Basin and NSW North Coast Bioregions</i>	E	The vegetation present in the study area does not meet the geographic or floristic criteria of this TEC.	Unlikely
<i>Lower Hunter Valley Dry Rainforest in the Sydney Basin and NSW North Coast Bioregions</i>	E	The native vegetation community within the study area does not align with this TEC.	Unlikely
<i>Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions</i>	E	The vegetation within the study area is not considered to comprise Rainforest vegetation due to the dominance of Eucalypts and failure to meet structural criteria such as canopy cover and vegetation layers.	Unlikely

<i>Lowland Rainforest on Floodplain in the New South Wales North Coast Bioregion</i>	E	The vegetation within the study area is not considered to comprise Rainforest vegetation due to the dominance of Eucalypts and failure to meet structural criteria such as canopy cover and vegetation layers.	Unlikely
<i>River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i>	E	The vegetation present in the study area does not meet the geographic or floristic criteria of this TEC.	Unlikely
<i>Subtropical Coastal Floodplain Forest of the New South Wales North Coast Bioregion</i>	E	The vegetation present in the study area meets the geographic and floristic criteria of this TEC.	Known
<i>Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i>	E	The vegetation within the study area is not considered to comprise a Swamp Forest Community and does not contain Swamp Oak, which is a diagnostic species for this TEC.	Unlikely
<i>Swamp Sclerophyll Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions</i>	E	The vegetation within the study area is not considered to comprise a Swamp Forest community. Swamp Mahogany was record in low abundance with other Eucalypts and the suite of flora species recoded on site are not considered to be a floristic match for the TEC.	Unlikely
<i>Themeda grassland on seacliffs and coastal headlands in the NSW North Coast, Sydney Basin and South East Corner Bioregions</i>	E	The vegetation in the study area is not located on a coastal headland and therefore does not meet the geomorphological or floristic criteria of this TEC.	Unlikely
EPBC Act			
<i>Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community</i>	E	The vegetation within the study area is not considered to comprise a Swamp Forest Community and does not contain Swamp Oak, which is a diagnostic species for this TEC.	Unlikely

<i>Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland</i>	E	The vegetation within the study area is not considered to comprise a Swamp Forest community. Swamp Mahogany was record in low abundance with other Eucalypts and the suite of flora species recoded on site are not considered to be a floristic match for the TEC.	Unlikely
<i>Lowland Rainforest of Subtropical Australia</i>	CE	The vegetation within the study area is not considered to comprise Rainforest vegetation due to the dominance of Eucalypts and failure to meet structural criteria such as canopy cover and vegetation layers.	Unlikely
<i>Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions</i>	E	The vegetation present in the study area meets the geographic and floristic criteria of this TEC.	Known
Key: Critically Endangered (CE), Endangered (E), Vulnerable (V).			

Threatened Species

Table 18: Potential occurrence assessment – threatened species

Species	Listing Status		# of records	Potential Occurrence Assessment	Likelihood of Occurrence
	BC Act	EPBC Act			
Flora					
Trailing Woodruff <i>Asperula asthenes</i>	V	V	0	This species is found in damp sites, often along freshwater streams and drainages. Although some potentially suitable habitat occurs on site, this species was not detected during surveys and no local records occur.	Unlikely
Hairy-joint Grass <i>Arthraxon hispidus</i>	V	V	0	A rainforest species favouring habitat with richer loams soils (OEH 2024). Site is outside known range.	Unlikely
Leafless Tongue-orchid <i>Cryptostylis hunteriana</i>	V	V	0	Habitat within the study area may provide a potential habitat for this species however it would be unlikely to occur along a disturbed road edge and there are no local records.	Unlikely
White-flowered Wax Plant <i>Cynanchum elegans</i>	E	E	70	This species predominately occurs in dry rainforest and littoral rainforest communities. Habitat of this type does not occur on the subject site and this species was not found during survey.	Unlikely
Pale Yellow Doubletail <i>Diuris flavescens</i>	CE	CE	2	Grows in grassy tall eucalypt forest with Kangaroo Grass and Blady Grass on brown clay soil. No suitable habitat on site.	Unlikely
Big Nellie Hakea <i>Hakea archaeoides</i>	V	V	0	Found on steep, rocky, sheltered slopes and in deep gullies in open eucalypt forest, Commonly occurs at the interface of dry eucalypt forest and gully communities.	Unlikely
Slaty Red Gum <i>Eucalyptus glaucina</i>	V	V	2	This species grows in grassy woodland and dry eucalypt forest. It occurs on deep, well-drained soils. Not recoded in the study area.	Unlikely

Eucalyptus seeana <i>Eucalyptus seeana</i>	E	-	492	Population in the Greater Taree local government area, many records adjacent to the study area. Observed during the field survey.	Occurs in Brimbin Nature Reserve but not in the study area.
<i>Euphrasia arguta</i>	CE	CE	0	This species is historically known from the Bathurst area with plants from the Nundle area discovered in recent history. This re-discovery, north of its previously known range, was reported from eucalypt forests with a mixed grass and shrub understory. Site is located outside known range and no local records.	Unlikely
Macadamia Nut <i>Macadamia integrifolia</i>	-	V	0	This species is generally found in Queensland with the subject site occurring in the southern extent of this species' known distribution. No local records.	Unlikely
Knotweed <i>Persicaria elatior</i>	V	V	0	This species is known to grow in moist areas with a particular preference for areas adjacent to streams and lakes. Occasionally this species is recorded in swamp forests. Suitable habitat for this species occurs in the broader study area, however this species was not recorded during site surveys.	Unlikely
Scrub Turpentine <i>Rhodamnia rubescens</i>	CE	CE	2	A rainforest species which is also occasionally found in wet sclerophyll forest. Site contains a small extent of suitable habitat, however it was not found during surveys.	Unlikely
Native Guava <i>Rhodomyrtus psidioides</i>	-	CE	2	This species is often found near creeks and drainage lines within rainforest communities. Site contains a small extent of suitable habitat, however it was not found during surveys.	Unlikely
Magenta Lilly Pilly <i>Syzygium paniculatum</i>	E	V	0	Occurs in riverside gallery rainforests and remnant littoral rainforest communities. Site vegetation is not suitable for this species.	Unlikely
Austral Toadflax <i>Thesium australe</i>	V	V	0	The subject site contains areas of native groundcover, however the habitat in general is unlikely to be suitable for this species which is more often associated with grassland on coastal sea cliffs.	Unlikely

Amphibians					
Stuttering Frog <i>Mixophyes balbus</i>	E	V	0	This species is found in rainforest and wet, tall open forest. Site habitat is unsuitable.	Unlikely
Green & Golden Bell Frog <i>Litoria aurea</i>	E	V	0	This species inhabits permanent waterbodies with a preference for those which are still. No preferred waterbodies are present on site.	Unlikely
Giant Barred Frog <i>Mixophyes iteratus</i>	-	V	0	This species is found in moist forests and rainforests. Site habitat is unsuitable.	Unlikely
Aves					
Regent Honeyeater <i>Anthochaera phrygia</i>	CE	CE	0	Although winter flowering nectar sources for this species occur on site, very few favoured species are present. No records in the locality. Very low to nil chance of occurring.	Unlikely
Dusky Woodswallow <i>Artamus cyanopterus cyanopterus</i>	V	-	1	Site and study habitats are only marginally suitable and only single local record.	Unlikely
Australasian Bittern <i>Botaurus poiciloptilus</i>	E	E	1	An estuarine or freshwater species found in areas of dense sedges, reeds and rushes. The site does not contain suitable habitat.	Unlikely
South-eastern Glossy Black-Cockatoo <i>Calyptorhynchus lathami lathami</i>	V	V	79	This species occurs in woodlands and dry sclerophyll forest. Large tree hollows are required for breeding and Allocasuarinas are required as a food resource. Allocasuarinas are on site, searches at the base of these failed to detect evidence of feeding.	Unlikely
Little Lorikeet <i>Glossopsitta pusilla</i>	V	-	2	This species forages primarily in the canopy of open <i>Eucalyptus</i> forest and woodland. Small extent of suitable foraging habitat on site.	Fair
Varied Sittella <i>Daphoenositta chrysoptera</i>	V	-	7	This species forages in trees with rough bark or on dead trees. It is known to occur in a range of vegetation types excluding deserts and grassland. Site provides suitable habitat.	Fair

Black-necked Stork <i>Ephippiorhynchus asiaticus</i>	E	-	2	This species is found in close proximity to a water source. Generally inhabits lakes, swamps, mudflats and mangroves. No suitable habitat occurs on the site. No suitable habitat occurs on the site.	Unlikely
White-bellied Sea Eagle <i>Haliaeetus leucogaster</i>	V	-	1	This species is found in areas containing large open water for foraging. Nests are often build in tall emergent eucalypts and often have dead branches or trees nearby to be used as 'guard roosts' (OEH 2024). Suitable habitat for this species does not occur within the study area. vegetation within the study area is unlikely to provide a suitable nesting site for this species.	Unlikely
White-throated Needletail <i>Hirundapus caudacutus</i>	V	V	2	In Australia, this species is almost exclusively aerial (DCCEEW 2024b). This species could potentially forage over the site, however breeding occurs in Asia.	Unlikely
Swift Parrot <i>Lathamus discolor</i>	E	CE	1	This species is known to prefer winter-flowering eucalypts which occur within the study area. Low local records, hence the study area is unlikely to be a known foraging area for this species.	Unlikely
Square-tailed Kite <i>Lophoictinia isura</i>	V	-	15	This species is commonly found in open forests and woodlands. Large stick nests are constructed in forks of living trees. No nests were found on or adjacent to the site and it was not detected by the survey. Low chance of occurrence as part of a larger foraging range.	Low
South-eastern Hooded Robin <i>Melanodryas cucullata cucullata</i>	V	E	0	This species is found in a wide range of habitats as it requires structurally diverse vegetation. Lightly wooded vegetation of open eucalypt woodlands and acacia scrub mallee are preferred. The subject site may provide a potential habitat for this species however no local records.	Unlikely
Powerful Owl <i>Ninox strenua</i>	V	-	8	This species occurs in sclerophyll forests and requires an abundance and diversity of prey species. There is potential to forage over the site as part of a larger range.	Fair

Eastern Hooded Dotterel <i>Thinornis cucullatus cucullatus</i>	CE	-	1	This species prefers sandy ocean beaches, especially those that are broad and flat, with a wide wave-wash zone for feeding, much beachcast seaweed, and backed by sparsely vegetated sand-dunes for shelter and nesting.	Unlikely
Masked Owl <i>Tyto novaehollandiae</i>	V	-	3	This species occurs in forests and woodlands with a sparse understory. It requires tree hollows for nesting and an abundance and diversity of prey species. No large tree hollows were recorded on site and prey species are likely scarce across the study area, however there is some potential to forage over the site as part of a larger range.	Fair
Mammalia					
Large-eared Pied Bat <i>Chalinolobus dwyeri</i>	V	V	0	The subject site lacks preferred roosts such as caves, mines and Fairy Martin nests. Considered unlikely to occur on the subject site due to the lack of breeding habitat and no records in the locality.	Unlikely
Spotted-Tailed Quoll <i>Dasyurus maculatus</i>	V	E	3	This species prefers forest habitats with dense vegetation. For nesting, caves, large hollow logs or tree hollows are required. The site itself is unlikely to offer potential habitat for this species, however suitable habitat occurs in the larger reserve area.	Unlikely
Parma Wallaby <i>Macropus parma</i>	V	V	0	This species inhabits areas containing a dense understory within wet sclerophyll forests. The study area is unlikely to support this species.	Unlikely
Little Bent-winged Bat <i>Miniopterus australis</i>	V	-	12	This species is known to occur in well-forested areas and often found roosting in caves, old mines and old buildings. Suitable foraging habitat for this species occurs on site.	Moderate
Eastern Coastal Free-tailed Bat <i>Micronomus norfolkensis</i>	V	-	2	This species is most commonly recorded in woodland habitats with available roosting habitat such as tree hollows, house eaves and roofs.	Moderate

Large Bent-winged Bat <i>Miniopterus orianae oceanensis</i>	V	-	3	This species is known to occur in well-forested areas and often found roosting in caves, old mines and old buildings. Although ideal roosting habitat for this species does not occur on site, the site may form a small part of larger foraging range.	Moderate
Southern Myotis <i>Myotis macropus</i>	V	-	2	This species requires tree hollows, caves, tunnels or dense foliage for roosting. It forages along creek lines and other water bodies and prefers riparian habitat. The creek lines in the study area offer potential foraging habitat.	High
Squirrel Glider <i>Petaurus norfolcensis</i>	V	-	1	The Squirrel Glider has a preference for wet and dry sclerophyll forests and woodlands. This species requires abundant tree hollows for refuge and nest sites.	Fair
Southern Greater Glider <i>Petauroides volans</i>	E	E	1	This species requires a high density of tree hollows for shelter. Site is unlikely to contain enough habitat to support this species, and tree hollows in the area are rare.	Unlikely
Yellow-bellied Glider (south-eastern) <i>Petaurus australis australis</i>	V	V	0	This species occurs high rainfall areas of tall mature eucalypt forests. The site and surrounding habitats offer potential habitat for this species.	Unlikely
Brush-tailed Phascogale <i>Phascogale tapoatafa</i>	V	-	32	Generally found in areas of dry sclerophyll open forest containing sparse groundcover. Some potential habitat present within subject site.	Fair
Koala <i>Phascolarctos cinereus</i>	E	E	139	The study area contains a small potential foraging resource for Koalas. No Koalas recorded and Koala scat searches failed to detect evidence of the Koala.	Fair
Golden tipped bat <i>Phoniscus papuensis</i>	V	-	1	This species is found in rainforest, eucalypt forests and Casuarina-dominated riparian forests and roosts in rainforest gullies, usually roosts in abandoned hanging Yellow-throated Scrubwren and Brown Gerygone nests and occasionally hollows (DPIE 2021b). Some potential foraging habitat occurs, however few local records.	Unlikely
New Holland Mouse <i>Pseudomys novaehollandiae</i>	-	V	0	This species requires heathlands with a dense understory. Suitable habitat for this does not occur on the subject site.	Unlikely

Grey-headed Flying-fox <i>Pteropus poliocephalus</i>	V	V	32	A nomadic species which is dependent on winter flowering eucalypts. Suitable foraging resources occur on the subject site for this species however no breeding or roosting camps were located within the subject site. Likely to occur foraging as part of larger range.	High
Key: Critically Endangered (CE), Conservation Dependent (CD), Endangered (E), Vulnerable (V), Not listed (-), Migratory (M).					

APPENDIX C – PROTECTED MATTERS SEARCH TOOL RESULTS



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

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

Report created: 20-Mar-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	5
Listed Threatened Species:	85
Listed Migratory Species:	42

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	9
Commonwealth Heritage Places:	1
Listed Marine Species:	49
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	6
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	2
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities

[[Resource Information](#)]

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

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

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Lowland Rainforest of Subtropical Australia	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Subtropical eucalypt floodplain forest and woodland of the New South Wales North Coast and South East Queensland bioregions	Endangered	Community likely to occur within area	In feature area

Listed Threatened Species

[[Resource Information](#)]

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

Number is the current name ID.

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat may occur within area	In buffer area only
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only

FISH

Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
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FROG

Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat known to occur within area	In feature area
Mixophyes iteratus Giant Barred Frog, Southern Barred Frog [1944]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phyllorhina sphagnicola Sphagnum Frog [59709]	Vulnerable	Species or species habitat may occur within area	In buffer area only

INSECT

Argynnis hyperbius inconstans Australian Fritillary [88056]	Critically Endangered	Species or species habitat may occur within area	In buffer area only
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MAMMAL

Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may occur within area	In feature area
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Scientific Name	Threatened Category	Presence Text	Buffer Status
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	In feature area
Notamacropus parma Parma Wallaby [89289]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pseudomys oralis Hastings River Mouse, Koontoo [98]	Endangered	Species or species habitat may occur within area	In buffer area only
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
Arthraxon hispidus Hairy-joint Grass [9338]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Asperula asthenes Trailing Woodruff [14004]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat may occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat known to occur within area	In feature area
Diuris flavescens Pale Yellow Doubletail, Wingham Doubletail [55075]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Eucalyptus glaucina Slaty Red Gum [5670]	Vulnerable	Species or species habitat known to occur within area	In feature area
Euphrasia arguta [4325]	Critically Endangered	Species or species habitat may occur within area	In feature area
Hakea archaeoides [66702]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Leichhardtia longiloba listed as Marsdenia longiloba Clear Milkvine [91911]	Vulnerable	Species or species habitat may occur within area	In feature area
Macadamia integrifolia Macadamia Nut, Queensland Nut Tree, Smooth-shelled Macadamia, Bush Nut, Nut Oak [7326]	Vulnerable	Species or species habitat may occur within area	In feature area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Parsonsia dorrigoensis Milky Silkpod [64684]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area	In feature area
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In feature area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Sarcochilus fitzgeraldii Ravine Orchid [19131]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Solanum sulphureum [87381]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Vincetoxicum woollsii listed as Tylophora woollsii [40080]	Endangered	Species or species habitat likely to occur within area	In feature area
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Coeranoscincus reticulatus Three-toed Snake-tooth Skink [59628]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Myuchelys purvisi Purvis' Turtle [89459]	Endangered	Species or species habitat likely to occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat may occur within area	In buffer area only

SHARK

Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
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Listed Migratory Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardena grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
<i>Calonectris leucomelas</i> Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only
<i>Diomedea antipodensis</i> Antipodean Albatross [64458]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<i>Diomedea epomophora</i> Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<i>Diomedea exulans</i> Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
<i>Fregata ariel</i> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In buffer area only
<i>Fregata minor</i> Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only
<i>Macronectes giganteus</i> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
<i>Macronectes halli</i> Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
<i>Phaethon lepturus</i> White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
<i>Thalassarche bulleri</i> Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
<i>Thalassarche cauta</i> Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Marine Species			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area	In buffer area only
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area	In buffer area only
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area	In buffer area only

Other Matters Protected by the EPBC Act

Commonwealth Lands [\[Resource Information \]](#)

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

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [11818]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [11822]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [15879]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11823]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11824]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [11806]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [11817]	NSW	In buffer area only

Defence

Defence - TAREE GRES DEPOT ; MACQUARIE DEPOT-41 RNSWR-TAREE [11203]	NSW	In buffer area only
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Defence - Defence Housing Authority

Commonwealth Land - Defence Housing Authority [15682]	NSW	In buffer area only
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Commonwealth Heritage Places

[[Resource Information](#)]

Name	State	Status	Buffer Status
Historic			
Wingham Post Office	NSW	Listed place	In buffer area only

Listed Marine Species

[[Resource Information](#)]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat likely to occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Fregata ariel Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat likely to occur within area	In buffer area only
Fregata minor Great Frigatebird, Greater Frigatebird [1013]		Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat likely to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Breeding known to occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Sterna striata White-fronted Tern [799]		Migration route may occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche cauta Shy Albatross [89224]	Endangered	Species or species habitat may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat may occur within area overfly marine area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves [\[Resource Information \]](#)

Protected Area Name	Reserve Type	State	Buffer Status
Brimbin	Nature Reserve	NSW	In feature area
Coocumbac Island	Nature Reserve	NSW	In buffer area only
Goonook	Nature Reserve	NSW	In buffer area only
Khappinghat	National Park	NSW	In buffer area only
Lansdowne	Nature Reserve	NSW	In buffer area only
Wingham Brush	Nature Reserve	NSW	In buffer area only

Regional Forest Agreements [\[Resource Information \]](#)

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
North East NSW RFA	New South Wales	In feature area

EPBC Act Referrals [\[Resource Information \]](#)

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Brimbin New Town Biocertification	2023/09522		Assessment	In feature area

Not controlled action

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

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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