



Narrabeen North Public School Aquatic Ecology Assessment

[Narrabeen, NSW]

Prepared for: School Infrastructure NSW

A403021.1595.00 | FFA.V1F | Date: 01/02/2023



ADE
CONSULTING
GROUP

Document Information

Report Title: Narrabeen North Public School Aquatic Ecology Assessment
Prepared for: School Infrastructure NSW
Project Address: 6 Namona Street, North Narrabeen New South Wales 2101
File Reference: A403021.1595.00
Report Reference: Aquatic Ecology Assessment Report
Date: 1 February 2023

Document Control

Version	Date	Author	Revision description	Reviewer
V1D	23 January 2023	John Keep	1 st Draft	Richard Floyd
FINAL	1 February 2023		FINAL	Richard Floyd

For and on behalf of,
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1 Introduction

1.1 Background and General Information

ADE Consulting Group (ADE) was commissioned by School Infrastructure NSW to undertake an Aquatic Ecology Assessment of the site for proposed ancillary works in a mapped Coastal Wetlands area within the Narrabeen North Public School located at 6 Namona Street, North Narrabeen New South Wales 2101 (the “Subject Site”).

It is proposed to upgrade sections of the existing school site. Some sections of the proposed works occur within a mapped Coastal Wetland, making the development ‘Designated Development’ under the *Environmental Planning and Assessment Act (1979)*.

1.2 Proposed Development

The proposed works that are the subject of the Designated Development application at the Narrabeen North Public School comprise:

- Removal of eight (8) trees
- New accessible pedestrian pathways
- New substation on Namona Street frontage along with associated conduit connections
- New fire hydrant booster and associated conduit connections; and
- New hard and soft landscaping including the planting of twelve (12) new trees.

This report has been prepared to address the requirements of the NSW *Biodiversity Conservation Act 2016*, NSW *Fisheries Management Act 1994* (FM Act) and the Commonwealth’s *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) with respect to aquatic ecology values present on and adjacent to the Subject Site.

The location of the Property is shown in **Figure 8.1** and the layout of proposed works are shown in **Figure 1.2**.

Table 1.1 Summary of Site Information

Site Details	
Client Name:	NSW Department of Education
ADE Project Number:	A403021.1595.00
Site Address:	6 Namona Street, North Narrabeen New South Wales 2101
Date of Inspection:	1st December 2021
Date of Report:	24 January 2023
Study Area:	North Narrabeen Public School



Figure 8.1 - Location of the Site (Shown in Red Outline)

1.3 Planning Secretary's Environmental Assessment Requirements (SEARS) for the North Narrabeen School Project

The following ecology specific requirements were extracted from the SEARS and form the objectives of this aquatic ecology assessment report:

Coastal wetland including:

- An assessment of the proposed development potential impacts on the coastal zone and management objectives for coastal management areas within the meaning of the *Coastal Management Act 2016*.
- An assessment of potential impacts on the coastal wetlands in accordance with the *State Environmental Planning Policy (Resilience and Hazards) 2021*.
- A description of impacts upon and mitigation measures to protect the biophysical, hydrological or ecological integrity of the adjacent coastal wetland, as well as the quantity and quality of surface and ground water flows to and from the adjacent coastal wetland.
- Biodiversity and aquatic ecology– including:
- Assess any biodiversity impacts associated with the proposed development in accordance with the *Biodiversity Conservation Act 2016* and *Biodiversity Assessment Method 2020* including the preparation of a Biodiversity Development Assessment Report.
- Consideration of section 7.6 Biodiversity of Pittwater Local Environmental Plan 2014 and section B4.4 of the Pittwater 21 Development Control Plan.
- An assessment of the hydrology of the coastal wetland and marine vegetation in relation to the ecological and hydrological function of the wetland, including drainage through the wetland, particularly changes to the depth of standing water and any effects on survival of wetland and marine plants.
- A detailed description of temporary and permanent impacts of the proposal with details of affected vegetation type and quality, and details of hydrological changes expected to occur in the wetland as a result of works.
- Details of weed management during construction and operation in accordance with existing State, regional or local weed management plans or strategies.
- A detailed description of the measures to avoid, minimise, mitigate and/or offset biodiversity impacts.
- Details on any proposed impacts to marine vegetation (mangroves or saltmarsh) and mitigation measures to avoid and minimise impacts to marine vegetation.
- Any unavoidable impacts to marine vegetation will require a Marine Biodiversity Offset Strategy (separate to Biodiversity Development Assessment Report offsets).

1.4 Study Aims and Objectives

The aim of this assessment was to address the SEARS for the Narrabeen North Public School proposal within the mapped Coastal Wetland Area. To achieve this aim assessment relied upon the following objectives:

- Describe the wetland or riparian communities on or adjacent to the Site
- Detail aquatic fauna habitats and their occurrence on and adjacent to the Site
- Identify any threatened aquatic species with potential to occur on or adjacent to the Site
- Assess the likelihood of occurrence of threatened aquatic species on or adjacent to the Site; and
- Assess potential impacts of the project on conservation significant aquatic values identified on or adjacent to the Site and propose mitigation measures to reduce the impact of the proposed development on these values.

2 Regulatory Framework

2.1 Commonwealth

2.1.1 *Environment Protection and Biodiversity Conservation Act 1999*

The Commonwealth of Australia identifies threatened aquatic flora, fauna and ecological communities under the EPBC Act to provide protection to matters of national environment significance (MNES) including, but not limited to, threatened aquatic species, threatened aquatic ecological communities (TEC) and migratory species. Should a listed matter be significantly impacted, the Minister of the Environment must approve the activity causing the impact. Where there is the potential for significant impacts the action must be referred to the Department of Agriculture, Water and Environment for a decision as to whether the approval of the Minister is required.

2.1.2 *International Treaties and Agreements*

Australia is a signatory to the Japan–Australia (JAMBA), Republic of Korea–Australia (ROKAMBA), China – Australia (CAMBA) Migratory Bird Agreements and the Bonn Convention on the Conservation of Migratory Species of Wild Animals. JAMBA, ROKAMBA and CAMBA require the parties to protect migratory birds by:

- Limiting circumstances under which migratory birds are taken or traded
- Protecting and conserving important habitats
- Exchanging information; and
- Building cooperative relationships.

This assessment will identify those migratory species that may potentially be impacted by the proposed development.

2.2 New South Wales

2.2.1 *Biodiversity Conservation Act 2016*

The NSW *Biodiversity Conservation Act 2019* (BC Act) is the primary legislation that identifies and protects threatened species populations and ecological communities in NSW. This act was brought in to replace the *Threatened Species Conservation Act 1995*, the *Nature Conservation Trust Act 2001* and the sections of the *National Parks and Wildlife Act 1974*.

2.2.2 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act), provides the system of environmental planning and assessment for the state of New South Wales. The Act requires the relevant planning authority to take into consideration the impacts to the environment (natural and built) and also the community, of proposed development or land-use change. Relevant objects of the Act include promoting the social and economic welfare of the community and a better environment; facilitating ecologically sustainable development; promoting orderly and economic use and development of the land; and protecting the environment, including the conservation threatened and other species of native animals and plants, communities, and habitats.

2.2.3 Coastal Resilience and Hazards SEPP 2021

2.2.3.1 Coastal Wetland Area

The proposed development occurs within the Coastal Environment Area and contains a mapped Coastal Wetland Area. This area is consistent with a mapped Biodiversity Value Area under the BC Act, which resulted in the preparation of a BDAR for the proposed development within the mapped Coastal Wetland Area.

2.2.3.2 Coastal Environment Area

The site also occurs within an area mapped as Coastal Environment Area under the Coastal Resilience and Hazards SEPP. The Coastal Environment Area identifies the importance of environmental features of the coastal zone, such as state waters, estuaries, coastal lakes and coastal lagoons. It also includes land adjoining those features including beaches, dunes, coastal headlands and rock platforms.

The objectives for the protection of features in the Coastal Environment Area under the SEPP are:

- to protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons
- enhance natural character, scenic value, biological diversity and ecosystem integrity
- to reduce threats to, and improve the resilience of, coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change
- to maintain and improve water quality and estuary health
- to support the social and cultural values of coastal waters, estuaries, coastal lakes and coastal lagoons
- to maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system
- to maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.

3 Methodology

3.1 Literature Review

The desktop assessment for this report was undertaken on the 23rd January 2023 and included a review of Commonwealth and State government databases as well as various interest groups as listed below:

- The Department of Environment (DoE) Protected Matters Search Tool which was used to identify MNES within a 5 km radius of a central point of the Site (-33.6999556 latitude, 151.297535 longitude)
- The NSW Office of Environment and Heritage (OEH) Atlas of NSW Wildlife was used to identify the occurrence of threatened aquatic flora and fauna species listed under the New South Wales (NSW) *Biodiversity Conservation Act 2016* (BC Act) recorded previously within 5 km of the Site
- Bird data from Birds Australia Database as defined as a 5 km radius search from the central coordinate [-33.6999556 latitude, 151.297535 longitude]; and
- NSW Government Biodiversity Values Map which identified areas of high biodiversity values which are sensitive to development impacts.

3.2 Field Inspection

An Ecological Assessment was undertaken by ADE Ecologist Duncan Meyer and Arborist Chantalle Brackenridge Hughes on the 1st December 2021. A subsequent field survey was undertaken by Mr Isaac Mamott for the preparation of a Biodiversity Development Assessment Report on the 6 July of 2022.

3.2.1 Flora survey

The flora survey undertaken by the Ecologist and the Arborist involved identifying, recording, and mapping of vegetation types and species present on the Site.

3.2.2 Habitat Assessment

The fauna habitat assessment, undertaken by an ecologist, assessed all potential habitat present on the site. This includes micro habitats such as aquatic habitats, tree hollows, fallen logs, rocks, dense leaf litter, dense shrubs, possum dreys, and nests. The survey also included an assessment of the presence of habitat features with the potential to house threatened fauna species known from the locality.

3.2.3 Incidental Observations

All aquatic fauna species seen or heard were recorded whilst on Site. Additionally, any scats or scratches found on the site were assessed, and the associated species added to the species observed on site.

4 Results

4.1 Literature Review Results

The Site occurs in the suburb of Neutral Bay in the Lower North Shore of Sydney, New South Wales. The Site is surrounded by residential development, with limited vegetation in the surroundings, and the closest vegetated area being Forsyth Park approximately 260 m to the west of the Site.

The Site doesn't contain any areas of mapped Biodiversity Values (**Appendix II**). The closest Biodiversity Values mapped area occurs within nearby Reid Park approximately 1.1 km to the south-east of the Site.

4.1.1 Assessment of Ecologically Significant Areas

Review of the ePlanning Spatial Viewer indicates (**Figure 4.1** below) that a Coastal Wetland area occurs on the Subject Site (area shown in blue).

4.1.2 Resilience and Hazards SEPP

The ePlanning Spatial Viewer also indicates that the Site occurs within the Coastal Environmental Area under Chapter 2 of the Resilience and Hazards SEPP.

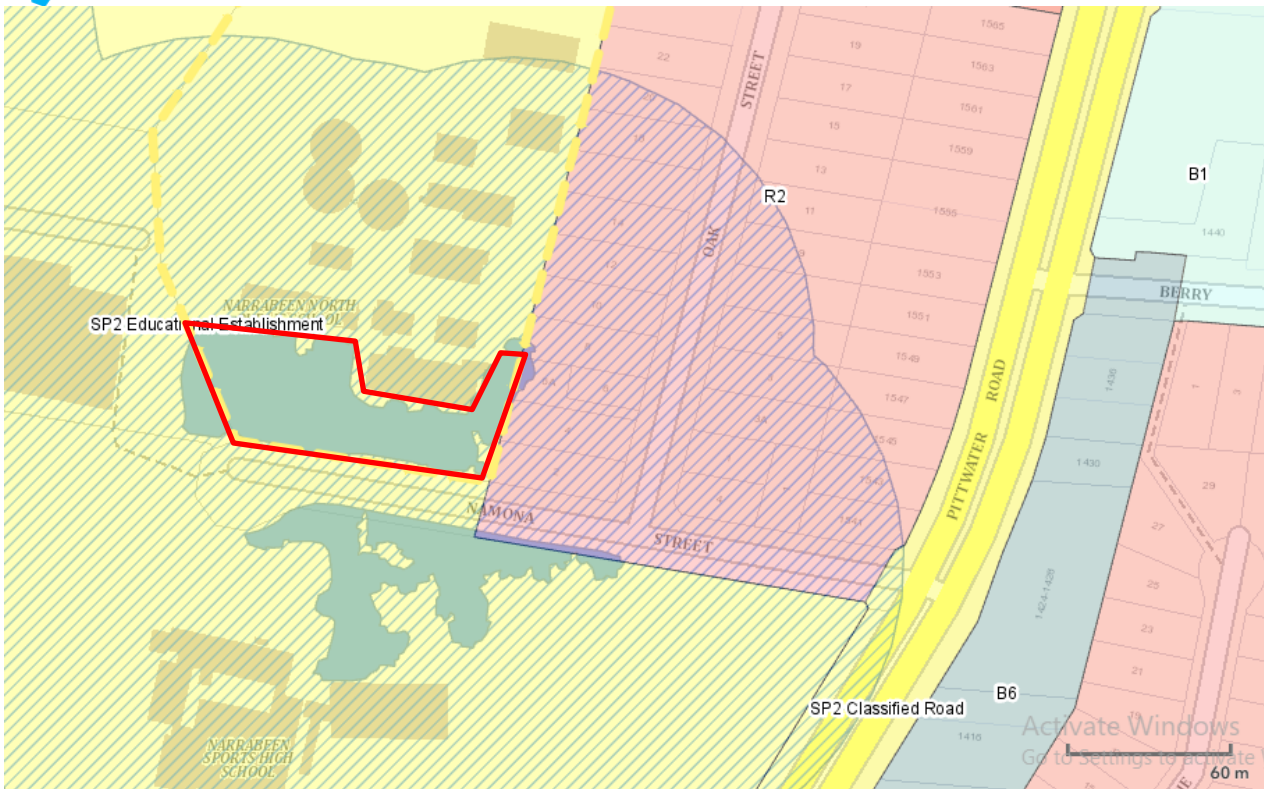


Table 4.1 Coastal Wetland Mapping and 1km Buffer

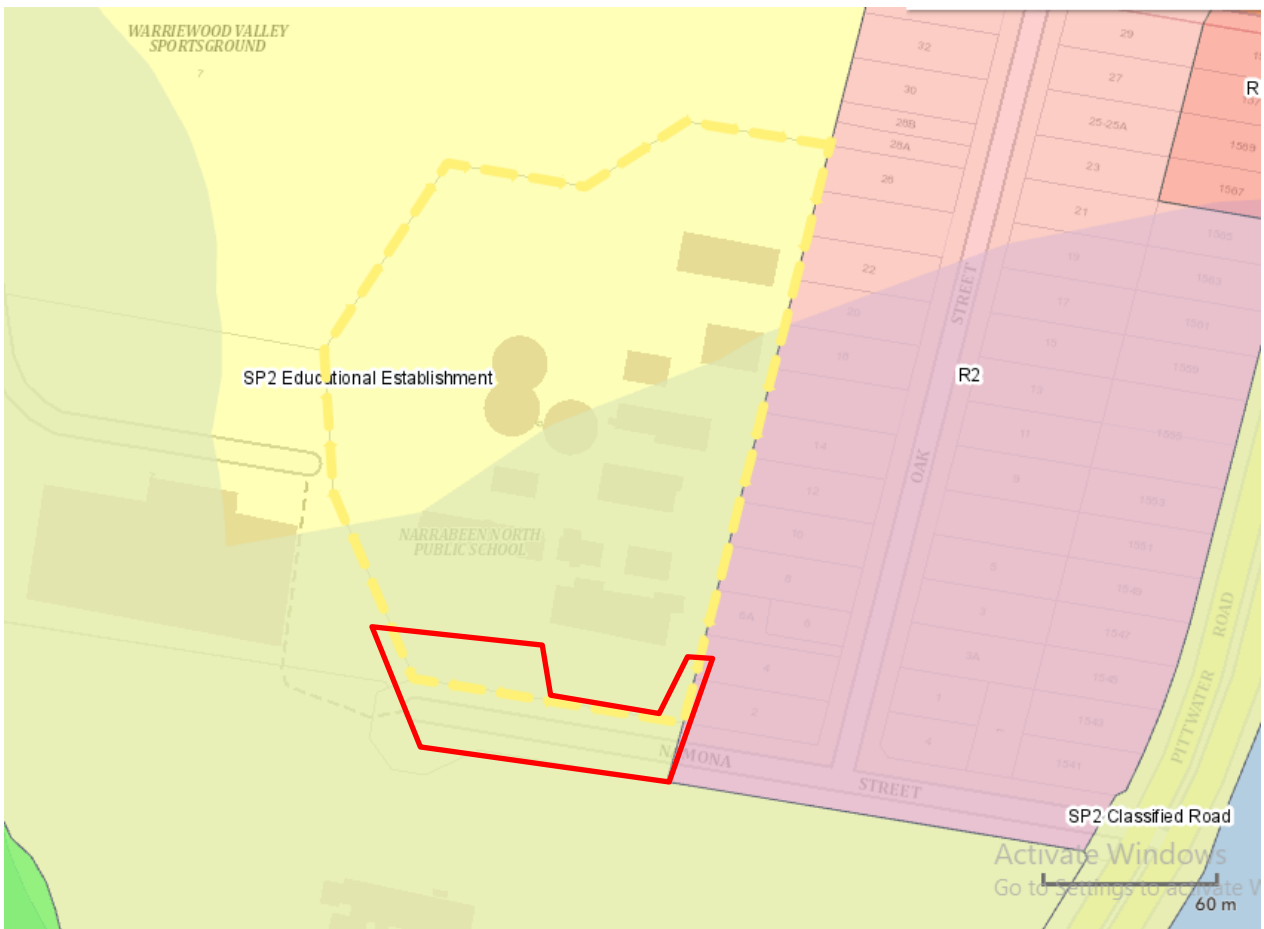


Figure 4.1 Coastal Environmental Area from the Resilience and Hazards SEPP

4.1.3 Threatened Species

No threatened aquatic flora or fauna species have previously been identified as occurring on or adjacent to the Site. Based on recorded sighting of aquatic flora and fauna species collected throughout the locality, a number of species may have potential to occur on the Site. These species and their likelihood of occurrence are assessed in **Appendix II**.

4.1.3.1 Aquatic Flora

The literature review did not identify any conservation significant aquatic flora species as occurring on the Site. The field surveys undertaken throughout the site found that no aquatic or wetland habitats occur within the Site.

Estuarine habitats were found to occur along Mullet Creek 200 m to the west of the Site. The banks of Mullet Creek are lined by Casuarina Woodland.

4.1.3.2 Aquatic Fauna

Based upon the likelihood of occurrence assessment undertaken in **Appendix II**, no aquatic fauna are expected to occur on the Site.

Various other terrestrial fauna species have potential to occur on the property, the vegetation on the property is considered sufficient to provide limiting roosting and foraging habitats. No aquatic fauna habitats were identified on the Site.

4.1.4 Wetlands and Watercourses

While a Coastal Wetland has been mapped as occurring on the Site, field surveys undertaken by ADE (2022) and for the preparation of the BDAR report (LandEco Consulting 2022) found that no wetland areas are present on the Site. The area mapped as a Coastal Wetland was found to consist of Coastal Sand Bangalay Forest (PCT1793) by both ADE (2022) and (LandEco Consulting 2022). This vegetation type has the following characteristics:

- Moderately tall open forest
- Occurs on low-lying coastal marine sand deposits of the coastal zones
- Canopy dominated by *Eucalyptus botryoides* and *Angophora costata* with tall banksias (*Banksia integrifolia*)
- Mixture of mesophyllous and sclerophyllous shrub layer including *Pittosporum undulatum*, *Glochidion ferdinandi*, *Breynia oblongifolia* and *Monotoca elliptica*.
- Native groundlayer dominated by *Pteridium esculentum*, *Commelina cyanea* and *Lomandra longifolia*

No water courses were present on or immediately adjacent to the Site. Mullet Creek occurs approximately 200 m to the west of the Site.

4.2 Field Survey Results

4.2.1 General Ecological Values

The Site contains few ecological values with the majority of vegetation on site containing no hollows, fallen timber or water bodies. It should be noted that this area has been landscaped for use as a School ground, and as such remnant trees are generally all that remains of the original forest type.

The vegetated garden beds on site (**Plate 4-1**) have the potential to act as refuge habitat for locally common reptile, frog and mammal species. There were also a number of tree species flowering during the property inspection, including a number of Eucalypt species. These flowers provide a feeding resource for local bird species as well as Flying Fox species.





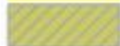
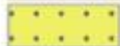
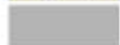
Plate 4-1 Photo of Vegetation within Mapped Wetland area

4.2.2 Plant Community Types

The field surveys undertaken by ADE (2022) and LandEco Consulting (2022) confirmed that no wetland vegetation type is present on the Site. The vegetation in this area was found to consist of a dry sclerophyll community of known as Coastal Sand Bangalay Forest. The vegetation of the Site is shown in **Figure 4.2**.



Legend

-  Subject Land
-  PCT 1793: Retained
-  PCT 1793: To Be Removed
-  PCT 1793: Overhang
-  Existing Infrastructure

0 10 20 40 60 80 Metres



Date: 12/12/2022

Imagery: © NSW EPI
Nearmap

Coordinate System: GDA 1994 MGA Zone 56

Land Eco
consulting
www.landeco.com.au

Figure 4.2 Vegetation of the Property as shown in the BDAR Report prepared by LandEco Consulting (2022)

4.2.3 Conservation Significant Aquatic Species

4.2.3.1 Aquatic Flora

No conservation significant aquatic flora species were identified on the Site during the field surveys. Further to this no aquatic habitats are present on the Site, as the terrestrial habitats present are not conducive to the growth of aquatic flora species.

4.2.3.2 Aquatic Fauna

The assessment of likely occurrence undertaken in **Appendix II** found that no aquatic fauna species have potential to occur within the Site, as no aquatic habitats were present.

5 Potential Impacts

5.1 Direct and Indirect Impacts of the Development

Direct impacts relate to the clearing of native vegetation on the Site.

5.1.1 *Vegetation Clearing*

The proposed development within the Coastal Wetland Area involves the clearing of eight (8) trees.

5.1.2 *Alterations to the Site Hydrology*

5.1.2.1 Stormwater Management

Uncontrolled stormwater has the potential to carry gross pollutants (vegetative and man made debris) into downstream environments. Uncontrolled stormwater also has potential to carry excess nutrients from construction sites to downstream environments.

A stormwater swale is proposed to be constructed in association with this development. This swale will capture many of the potential pollutants from construction activities, and will also include the installation of a bio-retention swale and a gross pollutant trap. This will avoid or mitigate impacts to downstream environments.

5.1.2.2 Erosion and Sedimentation

The loss of vegetation from the Site has the potential to expose and disturb soils during construction activities. The movement of sediment to downstream environments has the potential to harm aquatic flora and fauna values.

Erosion controls including bunding, sedimentation fencing are detailed within the Civil Report prepared by Enstruct (2023). These measures have been proposed to avoid or mitigate impacts on downstream environments.

5.2 Threatened Aquatic Flora

No threatened aquatic flora were identified as known to occur or as having potential to occur on the Site. Therefore, there are not expected to be any impacts on threatened aquatic flora species as a consequence of the proposed refurbishment. Further to this, as no aquatic habitats were present on the Site, no impacts to aquatic flora generally will occur.

5.3 Aquatic Threatened Fauna

The likelihood of occurrence assessment contained in **Appendix II** identified that no threatened aquatic species are expected to occur on the Site. The Coastal Wetland mapping is incorrect as the mapped area consists of Coastal Sand Bangalay Forest.

Assessment of potential impacts as outlined in the SEARS, included impacts on the Coastal Environmental Area values as mapped for Chapter 2 of the Resilience and Hazards SEPP are also discussed further in **Section 6** of this report.

6 Assessment of Impacts

An assessment of the ecological requirements from the SEAR, objectives from the Resilience and Hazards SEPP (Chapter 2 – Coastal Management) and Pittwater Councils policies are provided in the following sections.

6.1 Assessment Against SEARs

Assessments of the requirements from the SEAR for the proposal are detailed in **Table 6.1**.

Table 6.1 Assessment of Aquatic Ecology SEARS Requirements

Requirements	Comment
<i>An assessment of the proposed development potential impacts on the coastal zone and management objectives for coastal management areas within the meaning of the <u>Coastal Management Act 2016</u>.</i>	The required Designated Development Application is for the mapped Coastal Wetland Area only. However, the proposed development also occurs within the mapped Coastal Environmental Area identified under the Resilience and Hazards SEPP and the <i>Coastal Management Act 2016</i> . An assessment of the proposed development against the objectives of this area are contained in Section 6.2 below.
<i>An assessment of potential impacts on the coastal wetlands in accordance with the <u>State Environmental Planning Policy (Resilience and Hazards) 2021</u>.</i>	The BDAR Assessment undertaken by LandEco Consulting, 2022) and Ecological Impact Assessment prepared by ADE (2022) found that there is no wetland areas present on the Site. Therefore, the proposed development will not impact upon Coastal Wetland values.
<i>A description of impacts upon and mitigation measures to protect the biophysical, hydrological or ecological integrity of the adjacent coastal wetland, as well as the quantity and quality or surface and ground water flows to and from the adjacent coastal wetland.</i>	No Coastal Wetland occurs within the Site. Erosion and Sedimentation measures will be employed during construction activities. Landscaping and replanting of the construction area will occur at the completion of activities.
<p><i>Biodiversity and aquatic ecology– including:</i></p> <ul style="list-style-type: none"> ▪ <i>Assess any biodiversity impacts associated with the proposed development in accordance with the Biodiversity Conservation Act 2016 and Biodiversity Assessment Method 2020 including the preparation of a Biodiversity Development Assessment Report.</i> ▪ <i>Consideration of section 7.6 Biodiversity of Pittwater Local Environmental Plan 2014 and</i> 	<p>A BDAR prepared by Land Eco (2022) has been prepared for the development. No aquatic species were identified as requiring offset within the BDAR report.</p> <p>Consideration of section 7.6 Biodiversity of the Pittwater LEP (2014) and DCP section B4.4 are contained in Section 6.3 of this report.</p>

section B4.4 of the Pittwater 21 Development Control Plan.

- *An assessment of the hydrology of the coastal wetland and marine vegetation in relation to the ecological and hydrological function of the wetland, including drainage through the wetland, particularly changes to the depth of standing water and any effects on survival of wetland and marine plants.*

Field surveys for the BDAR assessment (LandEco, 2022) found that no Coastal Wetland area occurs on the Site. Consideration of potential offsite impacts on the Mullet Creek estuary has been considered within the Enstruct (2023) Civil report. Measures are recommended within this report to ensure avoidance and minimization of impacts to Mullet Creek are implemented.
- *A detailed description of temporary and permanent impacts of the proposal with details of affected vegetation type and quality, and details of hydrological changes expected to occur in the wetland as a result of works.*

Field surveys for the BDAR assessment (LandEco, 2022) found that no Coastal Wetland area occurs on the Site. Clearing has been confined to the absolute minimum required for the proposed development. A Bio-retention Swale and gross pollutant trap are proposed for the broader area redevelopment to protected downstream environments associated with Mullet Creek. These measures are detailed within the Civil Report prepared by Enstruct (2023)
- *Details of weed management during construction and operation in accordance with existing State, regional or local weed management plans or strategies.*

Weeds will be managed prior to, during and following construction activities. Prior to construction commencing, weeds will be removed from the construction area. Any weed regrowth will be treated during and immediately following construction. Landscaping and replanting of the construction will occur following construction of ancillary infrastructure (pathways and services relocation), with resultant management of landscaping areas occurring sporadically thereafter, in accordance with School garden maintenance requirements.
- *A detailed description of the measures to avoid, minimise, mitigate and/or offset biodiversity impacts.*

There will be no impacts on any Coastal Wetland. Clearing of the forest type present on the Site has been kept to an absolute minimum required for the proposed development. Later landscaping of the Site will involve the replanting of native vegetation throughout this area. The BDAR report (LandEco, 2022) prepared for the Site details the required Offsets for terrestrial species impacted by the proposed development.
- *Details on any proposed impacts to marine vegetation (mangroves or saltmarsh) and*

Stormwater from the Site will also be controlled and managed via a 34.5 m Bio-retention Swale as well as an Ocean Protect Oceanguard to filter and disperse collected stormwater into Mullet Creek. There will be no impacts on marine vegetation as a consequence of the proposed development.



6.2 Assessment under the Coastal Environment Area of the Resilience and Hazards SEPP

Table 6.2 contains an assessment of the objectives of the Coastal Environment Area objectives from the Resilience and Hazards SEPP (Chapter 2 – Coastal Management).

Table 6.2 Assessment of the Proposed Development Against the Aims of the Resilience and Hazards SEPP

Aims	Comment
<p>To protect and enhance the coastal environmental values and natural processes of coastal waters, estuaries, coastal lakes and coastal lagoons</p>	<p>No coastal waters, estuaries, coastal lakes or coastal lagoons occur on the Subject Site. The Narrabeen North Public School Civil Report (Enstruct, 2023) prepared for the development, indicates that a 34.5 m Bio-retention Swale as well as an Ocean Protect Oceanguard to filter and disperse collected stormwater from the proposed development.</p> <p>Erosion and sediment control measures will be in place during construction to prevent contamination of the downstream stormwater system and tracking of grit and sediment onto roadway surfaces. The utilised measures will consist of sandbags, siltation fencing, and catch drains.</p> <p>These measures will be employed to ensure water leaving the site does not cause ecological impacts to down stream environments.</p>
<p>Enhance natural character, scenic value, biological diversity and ecosystem integrity</p>	<p>The broader development will involve the revegetation of the Site. During construction erosion and sedimentation control measures will be implemented to prevent contamination of downstream environments. In addition to this, the proposed stormwater measures including a bio-retention swale, and the installation of an Ocean Protect Oceanguard will enhance the stormwater quality already entering downstream environments.</p>
<p>To reduce threats to, and improve the resilience of, coastal waters, estuaries, coastal lakes and coastal lagoons, including in response to climate change</p>	<p>No coastal waters, estuaries, coastal lakes or coastal lagoons occur on the Subject Site. The Narrabeen North Public School Civil Report (Enstruct, 2023) prepared for the development, indicates that a 34.5 m Bio-retention Swale as well as an Ocean Protect Oceanguard to filter and disperse collected stormwater from the proposed development.</p> <p>Erosion and sediment control measures will be in place during construction to prevent contamination of the downstream stormwater</p>

Aims	Comment
	<p>system and tracking of grit and sediment onto roadway surfaces. The utilised measures will consist of sandbags, siltation fencing, and catch drains.</p> <p>These measures will be employed to ensure water leaving the site does not cause ecological impacts to down stream environments.</p>
<p>To maintain and improve water quality and estuary health</p>	<p>No coastal waters, estuaries, coastal lakes or coastal lagoons occur on the Subject Site. The Narrabeen North Public School Civil Report (Enstruct, 2023) prepared for the development, indicates that a 34.5 m Bio-retention Swale as well as an Ocean Protect Oceanguard to filter and disperse collected stormwater from the proposed development.</p> <p>Erosion and sediment control measures will be in place during construction to prevent contamination of the downstream stormwater system and tracking of grit and sediment onto roadway surfaces. The utilised measures will consist of sandbags, siltation fencing, and catch drains.</p> <p>These measures will be employed to ensure water leaving the site does not cause ecological impacts to down stream environments.</p>
<p>To support the social and cultural values of coastal waters, estuaries, coastal lakes and coastal lagoons</p>	<p>The proposed development has been designed to avoid and minimize any potential impacts on coastal waters, estuaries and coastal lagoons. The measures proposed provide support to these coastal values.</p>
<p>To maintain the presence of beaches, dunes and the natural features of foreshores, taking into account the beach system</p>	<p>The proposed development will not impact on beaches, dunes or the natural features of foreshores.</p>
<p>To maintain and, where practicable, improve public access, amenity and use of beaches, foreshores, headlands and rock platforms.</p>	<p>The proposed development does not occur in proximity to to any beach, foreshore, headland or rock platform.</p>

6.3 Assessment Against Section 7.6 of the Pittwater Local Environmental Plan (2014)

The Site occurs in the Biodiversity area contained within the Pittwater LEP 2014. The objectives of section 7.6 of the Pittwater LEP 2014 and the assessment requirements from the LEP are reproduced below:

(1) *The objective of this clause is to maintain terrestrial, riparian and aquatic biodiversity by—*

(a) protecting native fauna and flora, and

(b) protecting the ecological processes necessary for their continued existence, and

(c) encouraging the conservation and recovery of native fauna and flora and their habitats.

(4) *Development consent must not be granted to development on land to which this clause applies unless the consent authority is satisfied that—*

(a) the development is designed, sited and will be managed to avoid any significant adverse environmental impact, or

(b) if that impact cannot be reasonably avoided by adopting feasible alternatives—the development is designed, sited and will be managed to minimise that impact, or

(c) if that impact cannot be minimised—the development will be managed to mitigate that impact.

Assessment Against Objectives

The proposed development has been designed, sited and will be managed to avoid any significant adverse environmental impacts. Assessment of the mapped Coastal Wetland Area found that this area is not a Coastal Wetland but does represent a Threatened Ecological Community. Historic disturbance associated with this area being used as a School playground reduces its ecological values. The impacts associated with the Site are further discussed within the BDAR Assessment prepared by LandEco (2022). In summary, impacts to this area have been minimised to the areas needed for development. Landscaping of this area will be undertaken following construction activities to augment the ecological values this area currently contains.

6.3.1 Pittwater 21 Development Control Provisions

The Pittwater 21 DCP contains provisions relating to native vegetation. Section B4.4 Flora and Fauna Conservation Category 2 and Wildlife Corridor list the controls are outlined in **Table 6.3** and the proposed outcomes from this development respectively.

Table 6.3 Section B4.4 Flora and Fauna Conservation Category 2 Requirements

DCP Requirement	Comment
Development shall retain and enhance habitat for threatened species, endangered populations, endangered ecological communities, and other locally native species.	No threatened aquatic species have been recorded on the Site. The locations of proposed new ancillary works have been selected to minimise impacts on native vegetation. While a Coastal Wetland area is mapped on the Site, no wetland areas were found to occur during field surveys LandEco (2022) and ADE (2022). Replacement tree planting will be undertaken as a component of the proposed development so there will be an increase in the number of native trees in this area. Replacement plantings are detailed within the Landscape Plan for the site.

DCP Requirement	Comment
Development shall provide wildlife corridors via creation, restoration, and / or regeneration of habitat.	The vegetation along Mullet Creek to the west of the proposal has been avoided by this development. This vegetation represents the only functional corridor which runs 200 m to the west of the Site.
Development shall result in no significant onsite loss of canopy cover and no net loss in native canopy trees.	Replacement tree planting will be undertaken as a component of the proposed development so there is no net loss of trees. Replacement plantings are detailed within the Landscape Plan for the Site.
Caretakers of domestic animals shall prevent them from entering wildlife habitat areas.	Domestic pets are not permitted on the school grounds.
Fencing, where permitted, shall be passable by native wildlife.	The school site is currently fenced with man proof fencing so as to ensure the safety of students. No additional fencing is proposed as a result of this development.

7 Conclusions and Recommendations

7.1 Direct Impacts

7.1.1 Coastal Wetland Area

Field surveys contained within the report by LandEco (2022) and ADE (2022) found that there is no Coastal Wetland present on the Site. The BDAR Assessment (LandEco, 2022) prepared to address the clearing of vegetation within the mapped Coastal Wetland Area found that this vegetation conforms to 'Bangalay Sand Forest of the Sydney Basin and South East Corner bioregions' which is not recognized as having wetland values..

7.1.2 Threatened Ecological Communities

The Site has been confirmed to contain the TEC 'Bangalay Sand Forest of the Sydney Basin and South East Corner bioregions'. A BDAR Assessment (LandEco, 2022) has been prepared for this community and the terrestrial flora and fauna species that occur within it.

7.1.3 Threatened Aquatic Flora

No threatened aquatic flora species have previously been recorded on or adjacent to the Site. Due to the lack of aquatic habitats present on the Site, no aquatic flora were recorded or are expected to occur.

7.1.4 Threatened Aquatic Fauna

No threatened aquatic fauna species have been recorded on or adjacent to the survey site. No aquatic or marine habitats were identified as occurring on the site.

7.2 Indirect Impacts

7.2.1 Erosion and Sedimentation Control

Site specific sedimentation and erosion control plan have been proposed during clearing and construction activities by Enstruct (2023). These measures will ensure that no downstream impacts will occur on any conservation significant aquatic species.

7.2.2 Stormwater Management

Stormwater from the site will be managed via a Bio-retention Swale and the installation of an Ocean Guard gross pollutant trap and diffuser. The installation of these measures will eliminate impacts of stormwater discharge from the Site.

8 References

ADE (2022) Ecological Assessment Report for the Upgrade of School Facilities, Narrabeen North Public School. Dept. School Infrastructure.

Australian Government (2023) *Atlas of Living Australia* website at <http://www.ala.org.au>. Accessed 23 January 2023.

Bionet Atlas (2023) Database search for flora and fauna species. (Accessed 23 January 2023 via [Environment & Heritage | NSW BioNet](#))

DEC (NSW) (2006). Recovery Plan for the Large Forest Owls: Powerful Owl *Ninox strenua*; Sooty Owl *Tyto tenebricosa*; Masked Owl *Tyto novaehollandiae*. Department of Environment and Conservation (NSW), Hurstville.

DoE (2015). "EPBC Protected Matters Search Tool." Retrieved January 2023, from <http://www.environment.gov.au/arcgis-framework/apps/pmst/pmst-coordinate.jsf>.

Enstruct (2023) Civil Engineering Report for the Upgrade of the North Narrabeen Public School. Prepared for NSW School Infrastructure.

LandEco (2022) Biodiversity Development Assessment Report prepared for the Upgrade of School Facilities, Narrabeen North Public School. Dept. School Infrastructure.

Appendix I – PMST 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: 24-Jan-2023

[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:	1
Wetlands of International Importance (Ramsar)	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	103
Listed Migratory Species:	61

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:	19
Commonwealth Heritage Places:	None
Listed Marine Species:	81
Whales and Other Cetaceans:	13
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:	4
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	11
Key Ecological Features (Marine):	None
Biologically Important Areas:	4
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

National Heritage Places [\[Resource Information \]](#)

Name	State	Legal Status	Buffer Status
Natural			
Ku-ring-gai Chase National Park, Lion, Long and Spectacle Island Nature Reserves	NSW	Listed place	In buffer area only

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

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

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

Community Name	Threatened Category	Presence Text	Buffer Status
Coastal Swamp Oak (<i>Casuarina glauca</i>) Forest of New South Wales and South East Queensland ecological community	Endangered	Community 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
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community likely to occur within area	In feature area
Eastern Suburbs Banksia Scrub of the Sydney Region	Critically Endangered	Community may occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
Posidonia australis seagrass meadows of the Manning-Hawkesbury ecoregion	Endangered	Community likely to occur within area	In buffer area only
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	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

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
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Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
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 known to occur within area	In feature area
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 known to occur within area	In feature area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	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
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
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]	Vulnerable	Species or species habitat known to occur within 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Breeding likely to occur within 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 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 carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour 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	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to 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
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat known to occur within area	In buffer area only
Macquaria australasica Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Prototroctes maraena Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Seriolella brama Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
Thunnus maccoyii Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only
FROG			
Heleioporus australiacus Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat known to occur within area	In feature area
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature area
Mixophyes balbus Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat likely to occur within area	In feature area
MAMMAL			
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat known to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Isoodon obesulus obesulus Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Notamacropus parma Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In feature area
Petauroides volans Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area	In feature area
Petaurus australis australis Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Petrogale penicillata Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area	In feature area
Potorous tridactylus tridactylus Long-nosed Potoroo (northern) [66645]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
OTHER			
Dendronephthya australis Cauliflower Soft Coral [90325]	Endangered	Species or species habitat may occur within area	In buffer area only
PLANT			
Acacia bynoeana Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area	In feature area
Acacia terminalis subsp. terminalis MS Sunshine Wattle (Sydney region) [88882]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Asterolasia elegans [56780]	Endangered	Species or species habitat known to occur within area	In feature area
Caladenia tessellata Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Cynanchum elegans White-flowered Wax Plant [12533]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Darwinia biflora [14619]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Eucalyptus camfieldii Camfield's Stringybark [15460]	Vulnerable	Species or species habitat known to occur within area	In feature area
Genoplesium baueri Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat known to occur within area	In feature area
Grevillea caleyi Caley's Grevillea [9683]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Grevillea shiressii [19186]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Haloragodendron lucasii Hal [6480]	Endangered	Species or species habitat may occur within area	In buffer area only
Kunzea rupestris [8798]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lasiopetalum joyceae [20311]	Vulnerable	Species or species habitat known to occur within area	In feature area
Leptospermum deanei Deane's Tea-tree [21777]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area	In feature area
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Microtis angusii Angus's Onion Orchid [64530]	Endangered	Species or species habitat known to occur within area	In buffer area only
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In feature area
Persoonia hirsuta Hairy Geebung, Hairy Persoonia [19006]	Endangered	Species or species habitat known to occur within area	In feature area
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat known to occur within area	In feature area
Prostanthera densa Villous Mintbush [12233]	Vulnerable	Species or species habitat known to occur within area	In feature area
Prostanthera junonis Somersby Mintbush [64960]	Endangered	Species or species habitat may occur within area	In buffer area only
Prostanthera marifolia Seaforth Mintbush [7555]	Critically Endangered	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
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 likely to occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat known 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

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	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour 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
Hoplocephalus bungaroides Broad-headed Snake [1182]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

SHARK

Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat known to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area	In buffer area only

SNAIL

Meridolum maryae Maroubra Woodland Snail, Maroubra Land Snail [89884]	Endangered	Species or species habitat known 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 feature area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna grisea Sooty Shearwater [82651]		Species or species habitat likely to occur within area	In buffer area only
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may 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 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		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 carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour 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	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
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	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dugong dugon Dugong [28]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to 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
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Rhincodon typus Whale Shark [66680]	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

Scientific Name	Threatened Category	Presence Text	Buffer Status
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
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely 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 may 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]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known 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]		Species or species habitat known to occur within area	In feature area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area	In feature area

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 [13239]	NSW	In buffer area only
Commonwealth Land - Australian Postal Commission [13228]	NSW	In buffer area only
Commonwealth Land - Australian Postal Corporation [16525]	NSW	In buffer area only
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [13231]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13226]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13225]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Commonwealth Land - Australian Telecommunications Commission [13240]	NSW	In buffer area only
Commonwealth Land - Australian Telecommunications Commission [13241]	NSW	In buffer area only
Defence		
Defence - DEE WHY DEPOT [11095]	NSW	In buffer area only
Defence - Defence Housing Authority		
Commonwealth Land - Defence Housing Authority [13236]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13232]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13233]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13234]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13238]	NSW	In buffer area only
Commonwealth Land - Defence Housing Authority [13235]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13237]	NSW	In buffer area only
Commonwealth Land - Director of War Service Homes [13230]	NSW	In buffer area only
Unknown		
Commonwealth Land - [13229]	NSW	In buffer area only
Commonwealth Land - [13227]	NSW	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 feature area
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]		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]		Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may 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 may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat known 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within 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
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]		Species or species habitat may occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebastria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
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 known to occur within area overfly marine area	In feature area
Stercorarius skua as Catharacta skua Great Skua [823]		Species or species habitat may occur within area	In buffer area only
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In buffer area only
Symptotermis trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may 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
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour 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	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat likely to occur within area overfly marine area	In feature area
Fish			
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area	In buffer area only
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area	In buffer area only
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat known to occur within area	In buffer area only
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area	In buffer area only
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Dugong dugon Dugong [28]		Species or species habitat may occur within 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Foraging, feeding or related behaviour 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	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Pelamis platurus Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area	In buffer area only

Whales and Other Cetaceans [[Resource Information](#)]

Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area	In buffer area only
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		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
Garigal	National Park	NSW	In buffer area only
Ku-ring-gai Chase	National Park	NSW	In buffer area only
Long Reef	Aquatic Reserve	NSW	In buffer area only
Narrabeen	Aquatic Reserve	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Construction of a high-capacity fibre optic submarine cable	2006/2914	Not Controlled Action	Completed	In feature area
Demolition of Ablutions Block, Snapper Island, NSW	2018/8303	Not Controlled Action	Completed	In buffer area only
Fuel Reduction Proposal Redfield Road, East Killara	2003/1238	Not Controlled Action	Completed	In buffer area only
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
Installation of Sydney-Guam Submarine Cable	2007/3848	Not Controlled Action	Completed	In buffer area only
Japan-Guam-Australia Sunshine Coast Branch Marine Cable Route Survey (JGA) QLD	2018/8373	Not Controlled Action	Completed	In buffer area only
sewage treatment plant process and reliability renewals project	2005/2186	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
Construction and operation of a subsea telecommunications cable, between Sydney and New Zealand	2015/7480	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Japan-Guam-Australia (JGA) Fibre Optic Cable project	2016/7795	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Tasman Global Access submarine cable marine route survey, Narrabeen, NSW	2015/7442	Not Controlled Action (Particular Manner)	Post-Approval	In buffer area only
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only
Biologically Important Areas				
Scientific Name		Behaviour	Presence	Buffer Status
Dolphins				
Tursiops aduncus				
Indo-Pacific/Spotted Bottlenose Dolphin [68418]		Breeding	Likely to occur	In buffer area only
Seabirds				
Ardena pacifica				
Wedge-tailed Shearwater [84292]		Foraging	Likely to occur	In buffer area only

Scientific Name	Behaviour	Presence	Buffer Status
Sharks			
Carcharias taurus			
Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae			
Humpback Whale [38]	Foraging	Known to occur	In buffer area only
Bioregional Assessments			
SubRegion	BioRegion	Website	Buffer Status
Sydney	Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Appendix II – Likelihood of Occurrence Table

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
BIRDS									
<i>Actitis hypoleucos</i>	Common Sandpiper	P	C,J,K	✓	✓			Common summer visitor to rocky shores, mudflats, rivers, lakes and sewerage farms throughout Australia. (Slater, 2003).	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Species not previously recorded on or adjacent to the Site. Species not detected during field survey. Considered unlikely to be present.
<i>Anous stolidus</i>	Common Noddy		Mig	✓				During the breeding season, the Common Noddy usually occurs on or near islands, on rocky islets and stacks with precipitous cliffs, or on shoals or cays of coral or sand. When not at the nest, individuals will remain close to the nest, foraging in the surrounding waters. Birds may nest in bushes, saltbush, or other low vegetation. They may also nest on the ground in Pigface (<i>Carpobrotus</i> spp.) or grass, on bare rock, on top of rocks protruding above vegetation, on shingle beaches, among coral rubble or in sand close to grassy areas (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Species not previously recorded on or adjacent to the Site. Species not detected during field survey. Considered unlikely to be present.
<i>Anseranas semipalmata</i>	Magpie Goose	V,P			✓			Mainly found in shallow wetlands (less than 1 m deep) with dense growth of rushes or sedges. Equally at home in aquatic or terrestrial habitats; often seen walking and grazing on land; feeds on grasses, bulbs and rhizomes. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Species not previously recorded on or adjacent to the Site. Species not detected during field survey. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
<i>Ardenna carneipes</i>	Flesh-footed Shearwater	V,P	J,K	✓	✓			Pairs breed on islands in burrows on sloping ground in coastal forest, scrubland, shrubland or grassland (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Ardenna grisea</i>	Sooty Shearwater	P	J	✓	✓			The Sooty Shearwater breeds mainly on subtropical and sub-Antarctic islands, as well as on the mainland of New Zealand. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	P	J		✓			The Wedge-tailed Shearwater is a pelagic, marine bird known from tropical and subtropical waters. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	P	C,J,K		✓			Nests in burrows on islands of Bass Strait and off south-east coast. Migrates northwards along east coast to northern Pacific. Common about south-east and Tas Sep-May. Occasional "wrecks" of beachdrifts on east coast, usually of migrant birds returning Oct-Dec (Slater, 2003)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
									Considered unlikely to be present.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E1,P	E		✓			Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (<i>Typha</i> spp.) and spikerushes (<i>Eleocharis</i> spp.). (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper		Mig		✓			Prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, salt pans and hypersaline salt lakes inland. They use flooded paddocks, sedgeland and other ephemeral wetlands, but leave when they dry. They use intertidal mudflats in sheltered bays, inlets, estuaries or seashores, and also swamps and creeks lined with mangroves (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Calidris canutus</i>	Red Not		E		✓			Mainly inhabits intertidal mudflats, sandflats and sandy beaches of sheltered coasts, in estuaries, bays, inlets, lagoons and harbours; sometimes on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms or coral reefs. They are occasionally seen on terrestrial saline wetlands near the coast, such as lakes, lagoons, pools and pans, and recorded on sewage ponds and saltworks, but rarely use freshwater swamps. They rarely use inland lakes or swamps (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
<i>Calidris ferruginea</i>	Curlew Sandpiper		CE	✓				Occurs in intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. They are also recorded inland, though less often, including around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand. They occur in both fresh and brackish waters. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Calidris melanotos</i>	Pectoral Sandpiper		Mig	✓				prefers shallow fresh to saline wetlands. The species is found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. Usually found in coastal or near coastal habitat but occasionally found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or samphire. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Calonectris leucomelas</i>	Streaked Shearwater		Mig	✓				Uncommon migrant from northern Pacific to north-east, more common off north coast. (Slater, 2003)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Diomedea antipodensis</i>			V, Mig	✓				Marine, pelagic and aerial. Sleeps and rests on ocean waters when not breeding. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
									Considered unlikely to be present.
<i>Diomedea epomophora</i>	Southern Royal Albatross		V, Mig	✓				Marine, pelagic and aerial. sleeps and rests on ocean waters when not breeding. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Diomedea exulans</i>	Wandering Albatross	E1,P	E	✓	✓			Marine, pelagic and aerial. sleeps and rests on ocean waters when not breeding. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Diomedea sanfordi</i>	Northern Royal Albatross		E, Mig	✓				Marine, pelagic and aerial. sleeps and rests on ocean waters when not breeding. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Fregata ariel</i>	Lesser Frigatebird		Mig	✓				Nests on islands of northern coast from Bedout I in west to Swain Reef in east, common around breeding islands and uncommon elsewhere around coast north of tropic. Rare vagrant south. (Slater, 2003)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
<i>Fregata minor</i>	Great Frigatebird		Mig	✓				Nests in mangrove or on shrub on cays of outer Barrier Reef and Coral Sea. Uncommon to common about coast north of tropic, rare vagrant farther south (Slater, 2003)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Gallinago hardwickii</i>	Latham's Snipe		Mig	✓				Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies). (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	V,P			✓			Favours rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Haematopus longirostris</i>	Pied Oystercatcher	E1,P			✓			Favours intertidal flats of inlets and bays, open beaches and sandbanks. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V,P	LM	✓	✓	✓		White-bellied Sea Eagles occur at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
								flats, grassland, heathland, woodland, and forest (including rainforest)..(Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)	Considered unlikely to be present.
<i>Hydroprogne caspia</i>	Caspian Tern	P	J		✓			mostly found in sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas) and those with sandy or muddy margins are preferred. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks. They also use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs (Department of the Environment (2021). Species Profile and Threats Database).	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Ixobrychus flavicollis</i>	Black Bittern	V,P			✓			Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Limosa lapponica</i>	Bar-tailed Godwit	P	C,J,K	✓	✓			Found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. It is found often around beds of seagrass and, sometimes, in nearby saltmarsh. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
<i>Macronectes giganteus</i>	Southern Giant Petrel		E	✓				<p>Marine bird that occurs in Antarctic to subtropical waters. In summer, it mainly occurs over Antarctic waters, and it is widespread south as far as the pack-ice and onto the Antarctic continent (Department of the Environment (2021). Species Profile and Threats Database)</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Macronectes halli</i>	Northern Giant Petrel		V	✓				<p>This species breeds in the sub-Antarctic, and visits areas off the Australian mainland mainly during the winter months (May-October). Immature and some adult birds are commonly seen during this period in offshore and inshore waters from around Fremantle (WA) to around Sydney (NSW) (Department of the Environment (2021). Species Profile and Threats Database)</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Numenius madagascariensis</i>	Eastern Curlew		CE	✓				<p>The Eastern Curlew occupies coastal lakes, inlets, bays and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Onychoprion fuscatus</i>	Sooty Tern	V,P			✓			<p>Large flocks can be seen soaring, skimming and dipping but seldom plunging in off shore waters. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Pachyptila turtur</i>	Fairy Prion		LM	✓				<p>Oceans and coastal breeding islands. (ALA)</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p>

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
									Considered unlikely to be present.
<i>Pandion cristatus</i>	Eastern Osprey	V,P,3			✓			Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Pandion haliaetus</i>	Osprey		Mig	✓				Eastern Ospreys occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands. They are mostly found in coastal areas but occasionally travel inland along major rivers, particularly in northern Australia. They exhibit a preference for coastal cliffs and elevated islands in some parts of their range, but may also occur on low sandy, muddy or rocky shores and over coral cays. They may occur over atypical habitats such as heath, woodland or forest when travelling to and from foraging sites. (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Phaethon lepturus</i>	White-tailed Tropicbird	P	C,J		✓			Marine Neritic, Marine Oceanic, Marine Coastal/Supratidal (IUCN Red List)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	V,P	E		✓			Gould's Petrel is a pelagic marine species, spending much of its time foraging at sea and coming ashore only to breed. The Australian subspecies breeds and roosts on two islands off NSW, Cabbage Tree and Boondelbah Islands, and the at-sea distribution is poorly known (Department of the Environment (2021). Species Profile and Threats Database)	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
<i>Puffinus carneipes</i>	Flesh-footed Shearwater		LM	✓				<p>The Flesh-footed Shearwater mainly occurs in the subtropics over continental shelves and slopes and occasionally inshore waters. Individuals also pass through the tropics and over deeper waters when on migration (Department of the Environment (2021). Species Profile and Threats Database)</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Puffinus griseus</i>	Sooty Shearwater		LM	✓				<p>The Sooty Shearwater breeds mainly on subtropical and sub-Antarctic islands, as well as on the mainland of New Zealand. (Department of the Environment (2021). Species Profile and Threats Database)</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Stercorarius pomarinus</i>	Pomarine Jaeger	P	C,J,K		✓			<p>Uncommon summer visitor Aug-June, mostly Oct-Apr, usually offshore, in seas off east and south and south-west coast. (Slater, 2003).</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Sterna hirundo</i>	Common Tern	P	C,J,K		✓			<p>marine, pelagic and coastal. In Australia, they are recorded in all marine zones, but are commonly observed in near-coastal waters, both on ocean beaches, platforms and headlands and in sheltered waters, such as bays, harbours and estuaries with muddy, sandy or rocky shores. (Department of the Environment (2021). Species Profile and Threats Database).</p>	<p>No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance.</p> <p>Considered unlikely to be present.</p>
<i>Sternula albifrons</i>	Little Tern	E1,P	C,J,K	✓	✓			<p>In Australia, Little Terns inhabit sheltered coastal environments, including lagoons, estuaries, river mouths</p>	<p>No suitable habitat occurs on the site. Site is subject</p>

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
								and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches (Department of the Environment (2021). Species Profile and Threats Database)	to historic and on-going disturbance. Considered unlikely to be present.
<i>Thalassarche cauta</i>	Shy Albatross		E	✓				Marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Thalassarche eremita</i>	Chatham Albatross		E	✓				Marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Thalassarche impavida</i>	Cambell Abatross		V	✓				Marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
<i>Thalassarche melanophris</i>	Black-browed Albatross		V	✓				Marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Thalassarche salvini</i>	Salvin's Albatross		V	✓				Marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Thalassarche steadi</i>	White-capped Albatross		V	✓				Marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean.	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Thalasseus bergii</i>	Crested Tern	P	J		✓	✓		Coastal bays and inlets, lakes and large rivers. (Atlas of Living Australia).	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Tringa nebularia</i>	Common Greenshank		Mig	✓				The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. Habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. (Department of	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
								the Environment (2021). Species Profile and Threats Database).	
FISH									
<i>Epinephelus daemeli</i>	Black Rockcod	-	V	✓				Found in coastal and offshore reefs, and island marine environments (Atlas of Living Australia)	Species habitat not present on site. Considered unlikely to be present.
<i>Hippocampus whitei</i>	White's Seahorse	-	E	✓				Shallow temperate waters in seagrass, algae beds and under wharves in depths down to about 25 m (Atlas of Living Australia)	Species habitat not present on site. Considered unlikely to be present.
<i>Macquaria australasica</i>	Macquarie Perch	-	E	✓				Macquarie Perch is a riverine, schooling species. It prefers clear water and deep, rocky holes with lots of cover. As well as aquatic vegetation, additional cover may comprise of large boulders, debris and overhanging banks. Spawning occurs just above riffles (shallow running water). Populations may survive in impoundments if able to access suitable spawning sites (DOE SPRAT Profile 2021).	Species habitat not present on site. Considered unlikely to be present.
REPTILES									
<i>Caretta caretta</i>	Loggerhead Turtle	E1,P	E	✓	✓			In Australia, Loggerhead Turtles nest on open, sandy beaches. Loggerhead Turtles do not use refuge habitat. (Department of the Environment (2021). Species Profile and Threats Database).	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
<i>Dermochelys coriacea</i>	Leatherback Turtle	E1,P	E	✓	✓			The Leatherback Turtles is a highly pelagic species, venturing close to shore mainly during the nesting season (Department of the Environment (2021). Species Profile and Threats Database).	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Chelonia mydas</i>	Green Turtle	V, P	V	✓	✓			Green Turtles spend their first five to ten years drifting on ocean currents. During this pelagic (ocean-going) phase, they are often found in association with drift-lines and rafts of Sargassum (a floating marine plant that is also carried by currents) (DOE SPRAT Profile 2021).	Species habitat not present on site. Unlikely to Occur.
<i>Eretmochelys imbricata</i>	Hawksbill Turtle	-		✓				Hawksbill Turtles settle and forage in tropical tidal and sub-tidal coral and rocky reef habitat. have been seen in temperate regions as far south as northern NSW (DOE SPRAT Profile 2021).	Species habitat not present on site. Unlikely to Occur.
<i>Natator depressus</i>	Flatback Turtle	-	V	✓				Flatback turtles are typically found in coastal, marine environments (Atlas of Living Australia)	Species habitat not present on site. Unlikely to Occur.
AMPHIBIANS									
<i>Litoria aurea</i>	Green and Golden Bell Frog	E1,P	V		✓			Inhabits permanent or ephemeral swamps, dams and slow flowing streams with emergent vegetation such as reeds, particularly those containing bulrushes (<i>Typha</i> spp.) and Spikerushes (<i>Eleocharis</i> spp.). Optimal habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (<i>Gambusia holbrooki</i>), have a grassy area nearby and sheltering sites available. Can occur in highly disturbed areas. It inhabits a variety of forest types including coastal forest, open woodland and cleared areas. (Department of the Environment (2021). Species Profile and Threats Database).	No suitable habitat occurs on the site. Site is subject to historic and on-going disturbance. Considered unlikely to be present.
<i>Pseudophryne australis</i>	Red-crowned Toadlet	V,P			✓			Occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses	No suitable habitat occurs on the site. Site is subject

Scientific Name	Common Name	Protection Status		Observations				Preferred Habitat	Likelihood of species or species habitat occurring
		BCA	EPBC	PMST	BioNet	Birds Aust	Field		
								or cappings. (Office of Environment & Heritage (2021). Threatened Biodiversity Profile Search).	to historic and on-going disturbance. Considered unlikely to be present.
<i>Mixophyes balbus</i>	Stuttering Frog	V, P	-		✓			Generally found in very wet forests, including rainforests (Atlas of Living Australia)	Species habitat not present on site. The creek line is too saline with limited shelter vegetation for frogs. Unlikely to Occur.
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V, P	V	✓	✓			The Giant Burrowing Frog inhabits ephemeral or semi-permanent small sandy streams in heathland or open woodland. Foraging may occur several hundred metres from a breeding site within the same habitat (DOE SPRAT Profile 2021).	Species habitat not present on site. The creek line is too saline with limited shelter vegetation for frogs. Unlikely to Occur.

EPBC - Environment Protection and Biodiversity Conservation Act 1999

LM – LM
 Mig – Mig (other)
 C – CHAMBA
 J – JAMBA
 K – KAMBA
 V – Vulnerable
 E – Endangered
 CE – Critically Endangered
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