EUROBODALLA SHIRE COUNCIL

Long Beach Coastal Protection Works

Review of Environmental Factors

Document no. Rev 0: 311015-00622-EN-REF-0101

14 May 2025

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PROJECT 311015-00622 - 311015-00622-EN-REF-0101: Long Beach Coastal Protection Works - Review of Environmental Factors

Rev	Description	Originator	Reviewer	Worley Approver	Revision Date	Customer Approver	Approval Date
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Certification

This Review of Environmental Factors (REF) has been prepared in accordance with the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act), the Environmental Planning and Assessment Regulation 2021 (NSW) (EP&A Regulation) and the Guidelines approved under section 170 of the EP&A Regulation; the information in this document is neither false nor misleading.

Signed:	[redacted]
Name:	Claire Jones
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	Graduate Diploma in Heritage Conservation, University of Sydney
	NSW Registered Environmental Assessment Practitioner
Date:	14 May 2025

Certification

I certify that I have reviewed and endorsed the contents of this REF document, and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation, and the Guidelines approved under section 170 of the EP&A Regulation, and the information it contains is neither false nor misleading. I accept it on behalf of Council.

Signed:	[redacted]
Name:	**Philip Oste**
Title:	**Division Manager - Major Projects**
Qualifications:	**BEng (Civil)**
Date:	**20/06/2025**

Executive Summary

Worley Consulting has been commissioned by Eurobodalla Shire Council (Council), to prepare a Review of Environmental Factors (REF) for the proposed Long Beach Coastal Protection Works (the proposal), located at Long Beach, Batemans Bay (the site). The site is approximately 4 kilometres (km) east of the Batemans Bay town centre.

A REF is an environmental assessment used to determine if a proposed activity should proceed, by considering all potential environmental impacts. An REF is required for certain activities, especially by government or public authorities, under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It also ensures compliance with other key NSW and federal legislation, such as the *Biodiversity Conservation Act 2016*, *Fisheries Management Act 1994*, Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, and others, as well as relevant planning policies and guidelines.

The proposal

Long Beach has been identified as being at immediate risk from coastal hazards in the Eurobodalla Open Coast Coastal Management Program (CMP) (Rhelm and Baird, 2022). The aim of this Proposal is to address this risk by constructing a low-lying sloped rock revetment to protect the beach and adjacent road, maintain beach access, and preserve the natural foreshore character. The structure, made of rock boulders set parallel to the shore, is designed to be mostly buried, with only the top visible. After storms, more of the revetment may be exposed, but sand is expected to return within months. It is designed to last up to 50 years.

The proposal includes a rock armour revetment using quarry stone with an average diameter of 1.12 metres (m). It will be built to a depth of 1.4 m Australian Height Datum (AHD), with the crest sitting just below road level (approx. 2.9 m AHD), finished with 100 mm of fill and vegetation. The proposal is divided into two sections. The first section is the high priority works that is around 250 m long and extends from near Fauna Avenue across from 38 Bay Road to beyond the cul-de-sac near 70 Bay Road. The second section is the extended revetment that would be constructed at a later date and extends from the western end of the high priority works for around 700 m to just west of 96 Sandy Place.

Proposal objectives

The proposal objectives are as follows:

- Investigation and design of coastal protection works, which may include seawall, revetment, geotextile containers or a combination of these over an approximate length of 850 m (noting the length was extended to around 950m)
- Design/construction to be undertaken in a staged approach with the initial construction phase to be for immediate "high priority" works (around 200 m, noting the length was extended to around 250m) to protect the eastern end of Bay Road
- Design should aim to protect the existing at-risk beachfront infrastructure and properties from coastal erosion with initial damage (non-rigid structures) at 100 year average recurrence interval (ARI) wave and water level conditions and design failure at

a minimum of 500 year ARI conditions (to be confirmed during detailed design following selection of preferred option by Council/community)

- Design to be developed in consultation with community, Council, DCCEEW and other relevant agencies of the NSW government.

Options considered and preferred solution

Apart from the 'do nothing' option, three main options have been considered:

- Option 1 – Vertical Concrete Seawall
- Option 2 – Sloped Rock Revetment
- Option 3 – Stepped geotextile sandbag revetment.

Following evaluation of the proposal's feasibility viability, and consultation with Council, the community and relevant stakeholders on the options for Long Beach, the preferred solution is Option 2 which is a sloped rock revetment to address the beach erosion hazard.

Statutory and planning framework

Coastal protection works in the "coastal zone" may be carried out by, or on behalf of a public authority under Section 2.16(2)(a) of *State Environmental Planning Policy (Resilience and Hazards) 2021* (RH SEPP) provided they are identified in a certified coastal management program (CMP). The coastal protection works at Long Beach were included in the CMP which was certified by the Minister for Local Government under Section 17(2) of the *Coastal Management Act 2016*. The proposal can be assessed and determined by Council under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Development consent under Part 4 of the EP&A Act from Council is therefore not required.

Licences and permits expected to be required are:

- Licence to occupy areas of Crown land under the *Crown Land Management Act 2016*
- Permit for any dredging and reclamation work under Section 200 of the *Fisheries Management Act 1994*
- Permit for activities within the Batemans Marine Park
- Consent for any works proposed to be carried out on public roads under Section 138 of the *Roads Act 1993*.

Community and stakeholder consultation

As part of developing the 2022 CMP, Rhelm on behalf of Council prepared a Stakeholder and Community Engagement Plan and completed a range of stakeholder engagement and communication activities. Through this process, Council developed an understanding of current stakeholder and community interests, issues, concerns and opportunities for coastal management.

Worley Consulting subsequently developed a proposal specific Community and Stakeholder Engagement Plan which built upon Council's earlier communications and engagement as well as their existing relationships with stakeholders in order to support and enhance stakeholders

trust and respect. A range of engagement and communication tools were used to engage with stakeholders and the community to inform them of the proposed coastal protection works, engage and obtain input on the proposal.

Community and stakeholder engagement activities included:

- The first community consultation, held on 18 June 2024 from 4pm-6pm and 10 December 2024 from 4pm-6:30pm at the Long Beach NSW Fire Brigade station to present the proposed options to the community
- Online/mail online/mail feedback period for the options was open from mid-June 2024 until 10 July 2024
- An optional online information session for government agencies was held on 19 November 2024
- Various government agencies and stakeholders were consulted in writing
- A community consultation session, held on 10 December 2024 from 4pm-6:30pm at the Long Beach NSW Fire Brigade station to present the preferred concept design to the community
- The Batemans Bay Local Aboriginal Land Council was consulted with in-person on 12 March 2025.

Key issues raised by the community, government agencies and stakeholders have informed the development of the proposal.

Environmental impacts

This REF has been prepared in accordance with Section 5.5 of the EP&A Act, Section 171 of the EP&A Regulation and other relevant legislation, taking into account to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the proposal.

Based on the environmental assessment carried out in Section 6 of this REF, the potential negative impacts of the proposal are considered to be minor during construction (including minimal impacts to terrestrial and aquatic ecology, water quality and to the community from temporary generation of noise and changes to site access). The potential impacts identified can be effectively mitigated and managed through adoption of best practices and adherence to accepted industry guidelines and standards, as outlined in Section 7.1.

This REF has considered and assessed these impacts in accordance with Section 171 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) and the requirements of the EPBC Act. Based on the assessment contained in this REF, it is considered that the proposal is not likely to have a significant impact upon the environment or any threatened species, populations, communities or their habitats. Accordingly, an Environmental Impact Statement (EIS) and a Biodiversity Development Assessment Report (BDAR) is not required, nor is the approval of the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act.

Terms and Acronyms

Acronym/abbreviation	Definition
AHD	Australian Height Datum
AHIP	Aboriginal Heritage Impact Permit
AMSL	Above Mean Sea Level
AOBVS	Areas of Outstanding Biodiversity Value
ARI	Average Recurrence Interval
BC Act	Biodiversity Conservation Act 2016
BDAR	Biodiversity Development Assessment Report
BMSL	Below Mean Sea Level
CAA	Controlled Activity Approval
CEMP	Construction Environment Management Plan
CLM Act	Crown Land Management Act 2016
CM Act	Coastal Management Act 2016
CMP	Coastal Management Program
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPHI	Department of Planning, Housing and Infrastructure
DPIRD	Department of Primary Industries and Regional Development
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979 /Regulations 2021
EP&A Regulation	Environmental Planning and Assessment Regulation 2021
EPA	Environmental Protection Authority
EPBC	Environmental Protection and Biodiversity Conservation Act 1999
EPI	Environmental Planning Instruments
EPLs	Environmental Protection Licenses
ESD	Ecologically Sustainable Development
FM Act	Fisheries Management Act 1994
GDE	Groundwater Dependent Ecosystems
ICNG	Interim Construction Noise Guideline
KEFs	Key Ecological Features
KFH	Key Fish Habitat
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
MEM Act	Marine Estate Management Act 2014
MNES	Matters of National Environmental Significance
NPW Act	National Parks and Wildlife Act 1974
NPWS	National Parks and Wildlife Service
NT Act	Native Title Act 1993
PCT	Plant Community Types

Acronym/abbreviation	Definition
POAA	Priority Oyster Aquaculture Area
POEO Act	Protection of the Environment Operations Act 1997
REF	Review of Environmental Factors
SDS	Safety Data Sheet
SEPP	State Environmental Planning Policy
SIS	Species Impact Statement
TfNSW	Transport for New South Wales
WM Act	Water Management Act 2000
WRL	Water Research Laboratory

1. Introduction

This Review of Environmental Factors (REF) has been prepared by Worley Consulting for Eurobodalla Shire Council (the Council) to assess the environmental impacts of the proposed coastal protection works (the proposal). The Council is both the proponent and determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The REF describes the proposal, assesses potential impacts, and identifies mitigation measures in line with Section 5.5 of the EP&A Act. It also considers relevant NSW legislation, planning policies and guidelines including Sections 170 and 171 of the Environmental Planning and Assessment Regulation 2021 (EP&A Regulation) and the factors in Guidelines for Division 5.1 assessments (Department of Planning and Environment, 2022), as well as potential impacts on Matters of National Environmental Significance under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

1.1 Scope of the assessment

This REF was prepared to assess the impacts of the proposal at Long Beach on the northern side of Batemans Bay. Long Beach has been identified as being at immediate threat from coastal hazards in the Eurobodalla Open Coast Coastal Management Program (CMP) (Rhelm Baird, 2022). The Council proposes to construct a sloped rock revetment that allows continued beach access, is low-lying and maintains the natural character of the foreshore and protects both the beach's amenity and Bay Road.

The assessment includes:

- A description of the existing environment (based on publicly available information and the results of the site inspection of 19 June 2024) and the strategic context of the proposal
- Alternatives and options considered during project planning
- A detailed description of the proposed works
- An overview of the relevant statutory and planning framework
- A description of relevant consultation activities undertaken and results of the consultation
- An assessment of environmental value and potential impacts and identification of appropriate mitigation measures
- Environmental management measures to minimise impacts and ensure compliance with relevant legislation and policies.

1.2 Proposal location

Long Beach, located on the northern side of Batemans Bay, is approximately 4 kilometres (km) directly east of the Batemans Bay town centre primarily on Lot 7301 DP 1143292. Figure 1-1 shows the proposed extent of the works including the "high priority works area".

Road access is from the Princes Highway, approximately 5 km north of Batemans Bay, via Cullendulla Drive, Long Beach Road and Bay Road. The township of Long Beach is within the Eurobodalla Local Government Area (LGA), with the adjoining Batemans Bay and Clyde River estuary being within State waters.

Maloneys Beach and Murramarang National Park are located to the east of Long Beach, with Cullendulla Creek Nature Reserve and the suburbs of Surfside and North Batemans Bay to the west. A foreshore reserve connects Cullendulla Creek Nature Reserve to Murramarang National Park. Figure 1-2 shows the coastal erosion and existing infrastructure at risk at the site.

Figure 1-1 Long Beach Investigation and High Priority Works Area (Source: Eurobodalla Open Coast CMP, 2022)

Figure 1-2 Images of coastal erosion and infrastructure at the site (Worley, 2024)

1.3 Proposal identification

This REF was prepared to assess the impacts of proposed coastal protection works (the proposal) at Long Beach on the northern side of Batemans Bay.

The NSW Government, through the Department of Climate Change, Energy, the Environment and Water (DCCEEW) oversees the State's coastal management program. DCCEEW also administers the Coastal and Estuary Grants Program which provides funding to councils to prepare local CMPs and once certified, funding for their implementation.

The CMP (Rhelm & Baird, 2022) identified residential lots and public infrastructure along Long Beach as being at continued risk from coastal erosion, with the eastern end of the beach a high priority for works to protect a section of Bay Road from immediate risk. The current and predicted future coastal erosion hazard lines due to sea level rise, are shown in Figure 1-1

A low-crested rock revetment concept was put forward in the CMP as one approach to protect Bay Road, with this option likely to require beach nourishment to ensure beach

amenity. It should be noted that this concept was for the purposes of informing cost estimates, rather than being a preferred design outcome at the time.

In 2024, further investigations, consultation (see Section 5) and design development were undertaken by Worley Consulting. A rock revetment was identified as the preferred option, with the alignment shown in Figure 1-3. A detailed description of the proposal is provided in Section 3.

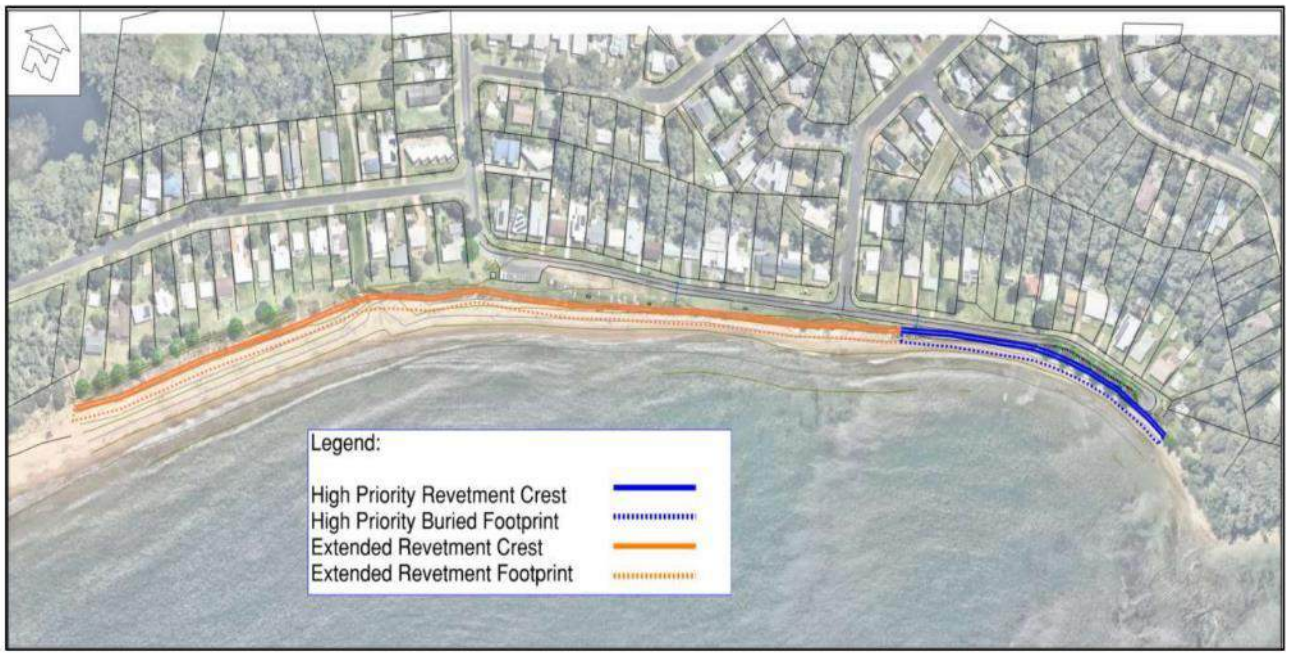


Figure 1-3 Revetment alignment (including Bay Road, Sandy Place, Fauna Ave and Long Beach Road on map) (Worley, 2025)

2. Existing Environment and Strategic Context

2.1 Existing infrastructure and local environment

The study area at Long Beach, Batemans Bay, NSW, was visited by Worley Consulting personnel on the 19 June 2024. The study area is shown in Figure 1-1.

2.1.1 Infrastructure

Long Beach is a coastal suburb which features a beachside reserve, a car park and a mixture of residential and holiday rental houses. The site's general infrastructure can be seen in Figure 2-1. Long Beach's infrastructure includes a sealed road, this road shows signs of erosion related damage, particularly near the larger drainage outlet. Geotextile sandbags have been used previously to protect infrastructure against coastal erosion. There are plenty of bins, places to sit and signage along the grass sections of the area. Figure 2-5 shows the area where the extended revetment will be, these areas feature more bins, seating areas and a small public car park.

Figure 2-1 Existing infrastructure at the site (Worley, 2024)

2.1.2 Marine Habitat

The study area lies within the estuarine zone of the Batemans Bay / Clyde River system. The Batemans Bay / Clyde River estuary is extensive and contains regionally significant coastal wetlands, and a range of habitats including rocky shorelines, offshore islands, sandy beaches, seagrass beds and sand shoals. The Long Beach site includes an approximately 1 km beach area. Batemans Bay, and all areas below the mean high water mark (MHWM) at the site, are part of the Batemans Marine Park (a NSW marine park). Even though the proposed works are landward of the MHWM, there may be temporary coastal protection works (i.e. sand bunding) and movement of equipment seaward of the MHWM at the eastern section of the site as shown on Figure 2-2. As such, the site is located within the marine park. Refer to Appendix A for the Long Beach revetment general arrangement plan (*311015-00622-MA-DWG-0105)* for the full extent of the proposed works which includes the MHWM.

Figure 2-2 Eastern section of the site where the MHWM shown in magenta is close to the proposed works. The Purple line represents the Mean Sea Level (Worley, 2025)

The site comprises a gently curving sandy shoreline interspersed with rocky outcrops, fringing vegetation, and low-energy wave action characteristic of semi-protected bays. Field observations, as captured through photographs (Figure 2-3) indicate a range of intertidal and subtidal marine habitats supporting a variety of ecological communities.

The sandy intertidal zones of Long Beach are broad and sloping, marked by deposits of organic wrack including seaweed, shell fragments, and driftwood. Although not directly visible in the images, the presence of pipis (*Donax deltoides*), ghost crabs (*Ocypode spp.*), and various amphipods would be expected in this zone, taking advantage of the nutrient-rich detritus. The relatively calm wave conditions observed support finer sediment retention, contributing to suitable conditions for burrowing organisms and small intertidal fish species.

The rocky intertidal platforms are characterised by weathered, layered rock surfaces with visible algal growth and encrusting organisms. Such platforms typically host diverse assemblages of molluscs, barnacles, and macroalgae, and are likely to include species such as limpets (*Patelloida spp*.), blue mussels (*Mytilus planulatus*), and whelks (*Neptunea spp.*). The presence of brown macroalgae, including *Hormosira banksii*, can be inferred from the typical zonation patterns and habitat structure visible. Tidal pools, although not shown in close detail, are expected to support echinoderms like small starfish, sea urchins (*Centrostephanus rodgersii*), and crustaceans including hermit crabs.

Environmental degradation is also evident along portions of the beach, where signs of erosion are present. Exposed root systems and the use of sandbags for shoreline protection indicate ongoing coastal retreat, which may affect sediment deposition patterns and disturb intertidal habitats. The ecological integrity of the upper beach and intertidal zone could be compromised by sediment loss, reducing habitat availability for species dependent on specific beach profiles and sediment types.

Figure 2-3 Intertidal beach habitat and rock pools at Long Beach (Worley, 2024)

2.1.3 Terrestrial Habitat

The terrestrial environment featured in the study area and to surrounding areas within Long Beach is described below. The study area is characterised by coastal vegetation communities, with varying degrees of natural integrity and anthropogenic influence. This narrow space between land and sea supports a range of plant species adapted to coastal conditions, many of which play vital roles in stabilising dune systems, reducing erosion, and providing habitat for local fauna. Visual observations from the site highlight the presence of both native and introduced vegetation and managed urban greenspace within close proximity to the shoreline.

Closer to the dune and upper beach zones, dense understory vegetation is present, including species such as *Spinifex sericeus* (Beach Spinifex), a common species which colonises coastal dunes and *Carpobrotus glaucescens* (Pigface), a native succulent commonly used in dune stabilisation due to its sprawling growth and salt tolerance. This species appears to dominate the groundcover in an area adjacent to residential buildings. Its growth is interspersed with grasses and other introduced species, which may compete for space and affect native plant succession. In nearby zones, dense mats of *Myoporum* and *Rhagodia* or similar native saltbush species were observed, forming a

thick coastal fringe. These plants are crucial for resisting wind erosion and maintaining soil structure along the shoreline.

In the more vegetated inland areas bordering the foreshore and outside the proposal site, a transition to more complex plant communities is evident. Photographs (see below Figure 2-4) reveal the presence of coastal banksia woodland and melaleuca-dominated understorey, with various native grasses and sedges forming a continuous ground layer. Trees such as *Melaleuca quinquenervia* (Paperbark) and *Allocasuarina littoralis* (Black she-oak are present based on bark texture and growth habit). Their root systems contribute to the stability of embankments and protection of the foreshore. Some erosion is visible along the tree line, particularly in areas where the roots of large trees have become exposed, likely due to wave action or storm surge undermining the bank.

Further inland, urbanisation becomes more apparent, as seen in images of residential dwellings fronted by neat rows of *Araucaria* species, including the *Araucaria heterophylla* (Norfolk Island Pine). These iconic trees, while not native to the Batemans Bay region, have been historically planted in coastal towns throughout Australia for their aesthetic appeal and salt tolerance. Their presence indicates a managed landscape and reinforces the strong interface between natural and human environments in this location. While these trees provide visual amenity and some habitat for bird species, they do not contribute to dune stability or native coastal ecosystem functions.

Figure 2-5 shows the area for the extended revetment occurring at Long Beach. Overall, the areas terrestrial qualities are the same as those found towards the high priority work area (closer towards the Norfolk Island Pines).

The terrestrial vegetation at Long Beach reflects a landscape undergoing ongoing interaction between natural processes and human activity. Vegetation in the lower dunes and along the immediate foreshore is performing key ecological functions, including erosion control and buffering of marine incursion. However, signs of bank instability and encroachment by built infrastructure suggest that these systems are under pressure. Restoration efforts should prioritise the retention and re-establishment of a variety of locally indigenous plant species, particularly in erosion-prone areas. Long-term resilience of the terrestrial zone will depend on managing urban spread, controlling invasive species, and supporting the ecological integrity of coastal vegetation communities.

Figure 2-4 Terrestrial habitat at Long Beach (Worley, 2024)

Figure 2-5 View of the area of the extended revetment alignment (Worley, 2024)

2.2 Zoning, tenure and management

Long Beach Reserve adjoins Bay Road and is a Crown Reserve under Council control and zoned Environmental Conservation (C2) under the *Eurobodalla Local Environmental Plan* (LEP) 2012, see Figure 2-6. The foreshore reserves immediately to the east and west are Council owned community land (refer to Figure 2-7) also zoned C2. A Plan of Management (PoM) for the Long Beach foreshore and adjacent wetlands was adopted by Council (Oculus 2002).

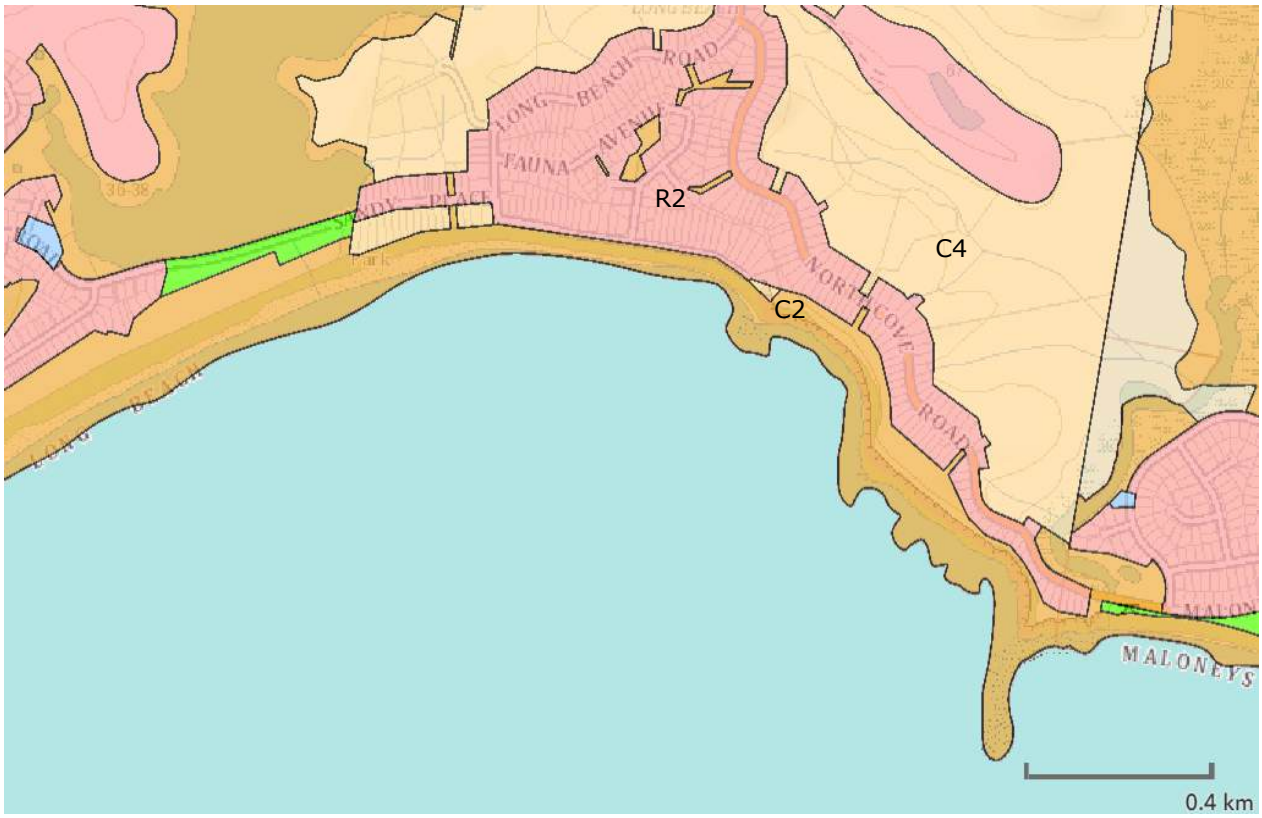


Figure 2-6 Land Zoning Map for Long Beach (NSW Planning Portal, 2024)

The adjoining seabed of Batemans Bay below MHWM is unzoned Crown land (outside the Eurobodalla LGA) managed by NSW Crown Lands, an agency within the Department of Planning, Housing and Infrastructure (DPHI). Recreational boating and associated assets are regulated by NSW Maritime, an agency within Transport for NSW.

Batemans Marine Park covers the Batemans Bay waterway and tributaries to mean high water mark and extends to the three nautical mile offshore limit of NSW waters. The Department of Primary Industries and Regional Development (DPIRD) manages the Batemans Marine Park (Figure 2-8).

The Batemans Marine Park zoning map is shown in Figure 2-8. Adjacent to Long Beach, the waterway is zoned as a Habitat Protection Zone. The Batemans Bay waterway is also mapped as key fish habitat (KFH) under the NSW *Fisheries Management Act* (FM Act) *1994* (Figure 6-1). Fisheries NSW (an agency within DPIRD) is responsible for regulating fishing activities within the Marine Park and the conservation and management of fish habitats.

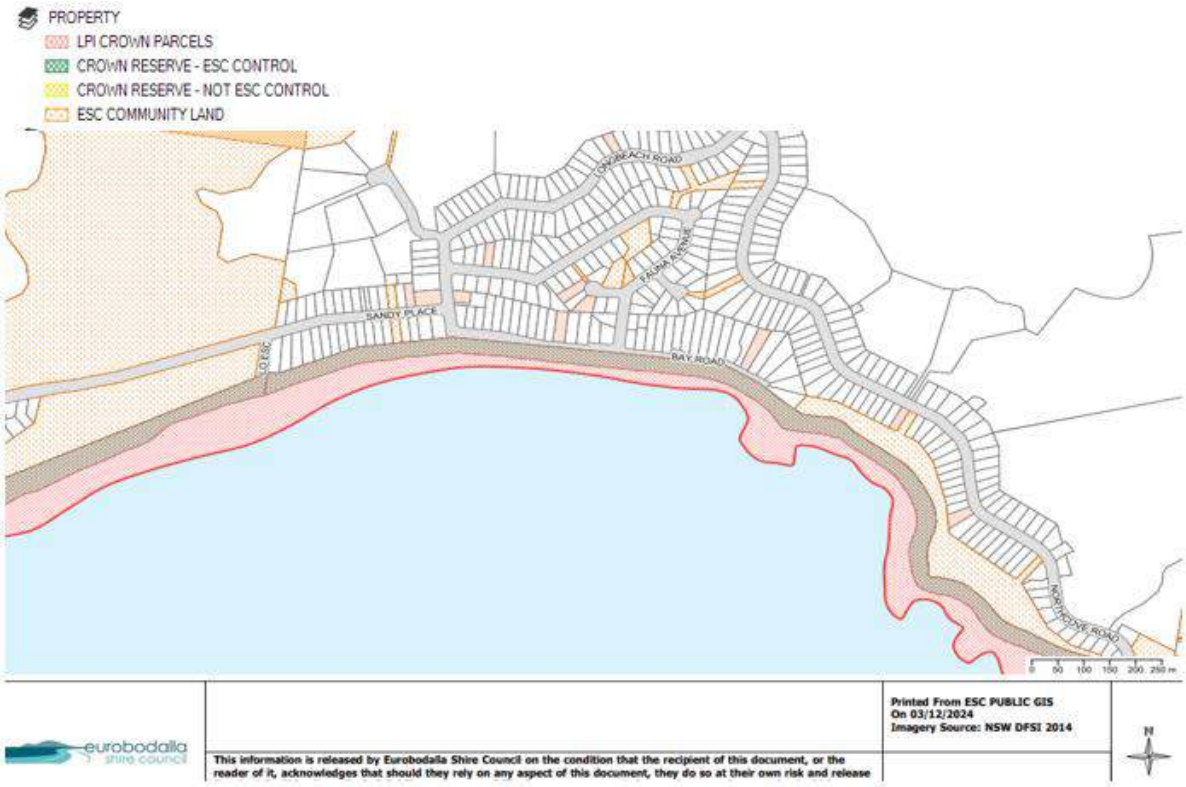


Figure 2-7 Crown and Community Land (ESC, 2024)

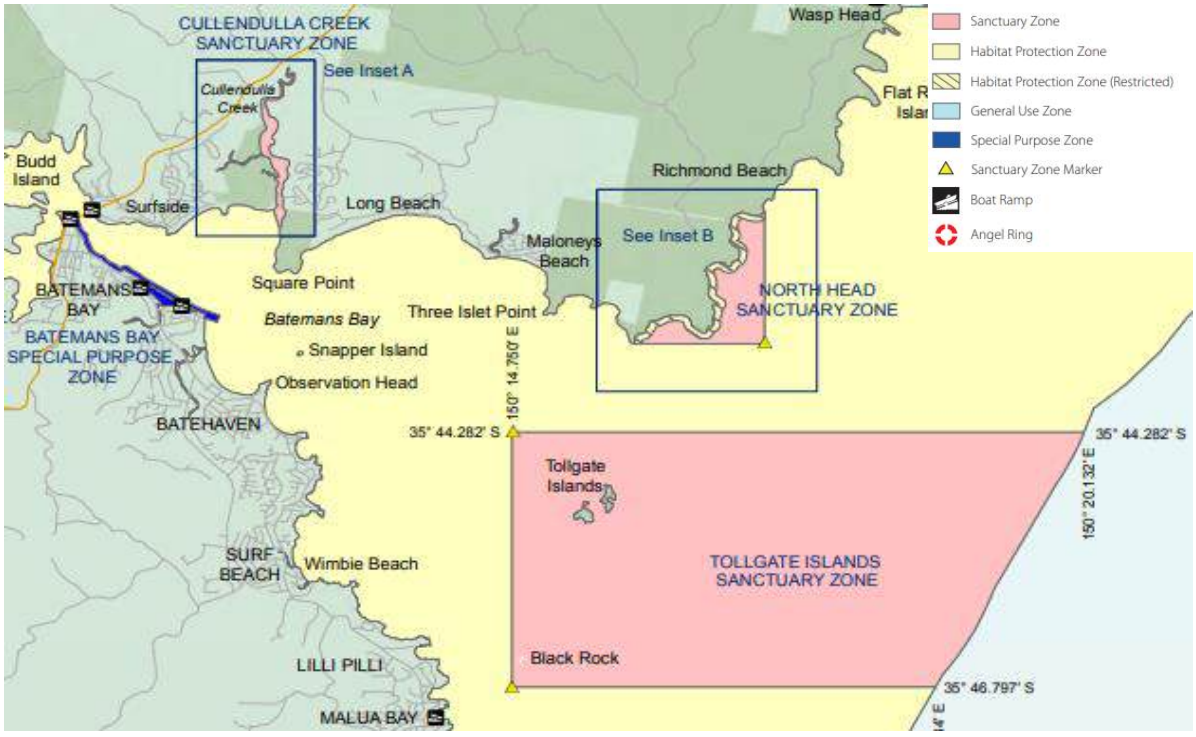


Figure 2-8 Batemans Marine Park Zoning (DPIRD, 2024)

2.3 Strategic need for the proposal

East coast lows have caused significant erosion of the Long Beach coastline, exposing the edge of Bay Road leaving it vulnerable to collapse. The roots of the large Norfolk Island Pines have also been exposed. As Bay Road is critical for vehicle access for beachside properties, in July 2022, following erosion caused by an east coast low, the Council placed 2.5m^3 geotextile containers along the affected area to protect Bay Road. In July-August 2023 after further erosion exposed the edge of Bay Road, the Council installed more robust geotextile containers as a 'medium-term' solution.

In 2022, Council, with the assistance of the NSW Government, prepared the CMP for the Eurobodalla Coastline; in accordance with the NSW *Coastal Management Act 2016* (CM Act). The 2022 CMP identified a number of key threats impacting the Eurobodalla coastline, including erosion, shoreline recession and coastal/tidal inundation. To deliver high priority coastal protection works, Council received funding from the NSW Government for three coastal protection activities along the northern side of Batemans Bay, including at Long Beach. As part of implementing the CMP for Long Beach, Council engaged Worley Consulting to investigate, design and assess the proposed coastal erosion protection works. As a part of this process, a range of stakeholder and community engagement activities have been undertaken.

2.4 Proposal objectives

The primary purpose of the coastal protection works is to develop a holistic design for coastal erosion protection taking account of projected sea level rise over the structure design life. The works are to be undertaken in a staged approach and be cognisant of community drivers.

The proposal boundary limits are shown in Figure 1-1, and comprise the "high priority works area" at the eastern end of Bay Road, along with the remainder of the investigation area encompassing the entire urbanised frontage of Long Beach.

The proposal objectives include the following:

- Investigation and design of coastal protection works, which may include seawall, revetment, geotextile containers or a combination of these over an approximate length of 850 m (noting the final revetment design length is approximately 940 m) The increase length of the revetment, when compared to the CMP estimate, is a result of extending the revetment at each end to better mitigate the impacts of scouring edge effects. The extension of the revetment to the east will push any edge effects further towards a more rocky and less erodible foreshore. The extension to the western side, will push possible edge effects away from existing property boundaries.
- Design/construction to be undertaken in a staged approach with the initial construction phase to be for immediate "high priority" works (around 200 m, noting the length was extended to around 250 m) to protect the eastern end of Bay Road. The "high priority works" were extended and additional 50 m past a

pipe culvert discharging stormwater onto the Beach to protect Council managed infrastructure and detrimental end effects at this location

- Design should aim to protect the existing at-risk beachfront infrastructure and properties from coastal erosion with initial damage (non-rigid structures) at 100-year average recurrence interval (ARI) wave and water level conditions and design failure at a minimum of 500 year ARI conditions (to be confirmed during detailed design following selection of preferred option by Council/community)
- Design to be developed in consultation with community, Council, DCCEEW and other relevant agencies of the NSW government.

Engagement with the local community during the preparation of the CMP identified the following key issues for consideration as part of the design process:

- Minimising the crest level to not disturb the visual amenity and beach access
- Vegetation selection to consider access, amenity and bushfire risk, with a preference for low lying dune stabilisers to maintain dune over of revetment
- Retaining the existing rock revetment as part of the short-term priority works
- Minimising the footprint of the coastal protection structure so as to minimise disturbance to the existing beach and dune areas
- A footpath is not necessarily preferred by the community along the stretch of works and the absence of this design feature would allow for the structure to be placed further back from the high tide mark, allowing better beach recovery between events.

2.5 Alternatives and options considered

This section outlines the alternatives and options considered during the development of the proposed coastal protection works at Long Beach. The assessment of alternatives forms an important part of the planning process, ensuring that the preferred option achieves the proposal objectives while minimising environmental impacts. Consideration has been given to the 'do-nothing' scenario, as well as a range of design and construction options, taking into account technical feasibility, environmental constraints, community needs, and alignment with the strategic objectives identified in the CMP.

2.5.1.1 'Do Nothing' option

There are historical signs of past coastal erosion events found at Long Beach. A 'do nothing' option would likely see increased levels of erosion; this would mainly impact public infrastructure such as roads, the surrounding environment and if left unattended to, could eventually lead to local property instability/damage.

2.5.1.2 Option 1 – Vertical Concrete Seawall

A vertical concrete seawall is a structure set parallel to the back of the beach, designed to protect the land behind it from erosion caused by wave action (Figure 2-9). The wall would be around 1 m high above the normal level of the beach and below the existing road level. It would extend below the sand by about 2 – 3m to stop it becoming undermined when large waves break onto the wall. The wall can be designed to reduce the amount of seawater overtopping onto the road. During a storm, the beach level could drop 2–3m below the top of the wall. After a few weeks to months, the sand would typically return to the beach and reach the level it was at prior to the storm. The wall would last around 50 years with little maintenance needed.

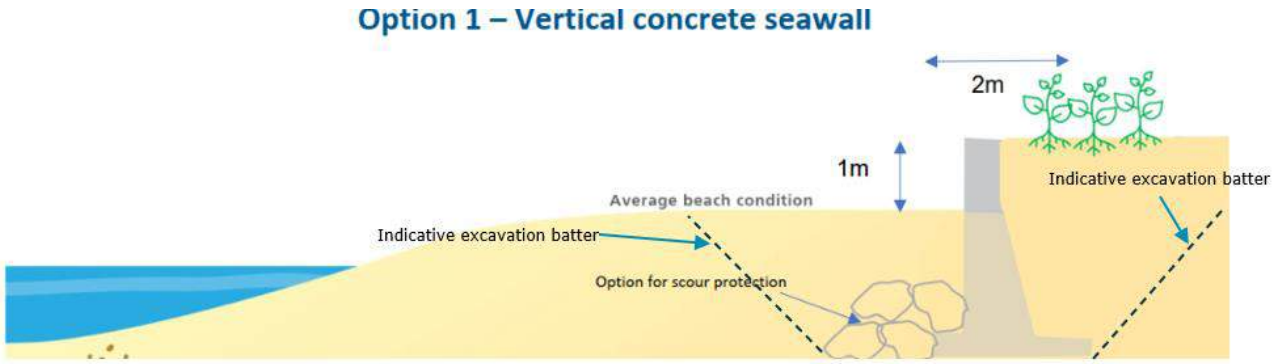


Figure 2-9 Option 1 Vertical concrete seawall (Worley, 2024)

Advantages and disadvantages of the vertical seawall option are given below:

Advantages:

- Minimises footprint of structure and encroachment onto beach
- Can be designed for 50-year lifespan
- Effective in reducing erosion behind structure
- Can incorporate access via stairs and pedestrian access along crest
- Can use a variety of materials as a facing to blend in with the environment e.g. sandstone blocks
- Lowest maintenance requirements of the three options

Disadvantages:

- Most expensive option
- Needs deep foundations and extensive disruption during construction
- Structure will reflect more wave energy back onto the beach if it is exposed after a storm than the other options

2.5.1.3 Option 2 – Sloped Rock Revetment

A sloped rock revetment is a structure constructed of rock boulders set parallel to the beach (Figure 2-10). Like a vertical seawall, the structure is designed to protect the land behind it from erosion caused by large waves and to reduce the amount of seawater reaching the road. The structure is designed to be completely or partially buried under the beach, and typically only a small portion of the structure would be visible above the beach level. Immediately after a storm, the structure might become exposed, and the beach level could be 2–3 m below the top of the revetment. After a few weeks to months, the sand would typically return to the beach and reach the level it was at prior to the storm. The revetment would be designed to last for up to 50 years before needing to be replaced.

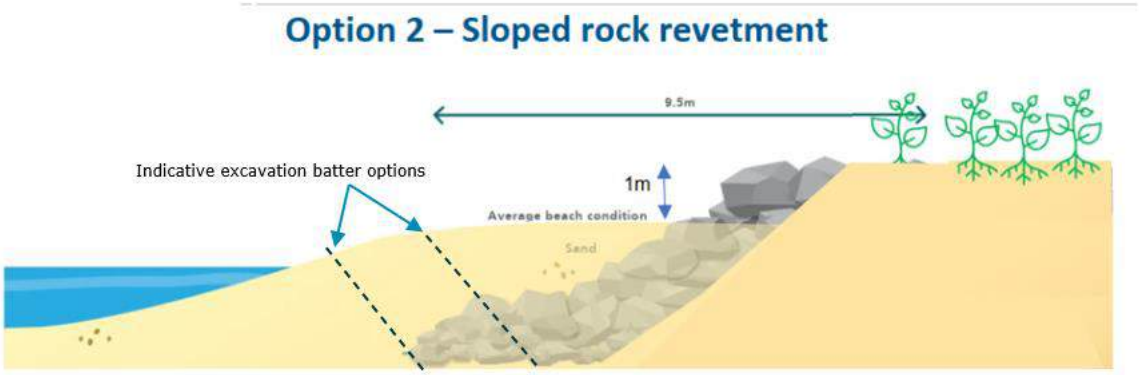


Figure 2-10 Option 2 sloped rock revetment (Worley, 2024)

Advantages and disadvantages of the vertical seawall option are given below:

Advantages:

- Medium cost
- Can be buried and vegetated to look like a natural dune
- Can be designed for 50-year lifespan
- Can be more easily adapted for future sea level rise than the other options
- Flexible structure that can absorb wave energy with less wave reflections that the other options
- Effective in reducing erosion behind structure
- Can be placed without damaging Norfolk Island Pine tree roots
- Easier construction than vertical seawall

Disadvantages:

- Larger footprint on beach than concrete seawall

- Can be visually unappealing when exposed

2.5.1.4 Option 3 – Stepped geotextile sandbag revetment

A stepped geotextile sandbag revetment is a structure built using large specially designed sandbags (Figure 2-11). Like the sloping rock revetment and vertical seawall, the sandbags are designed to protect the land behind them from erosion caused by ocean waves. The bags are typically buried under the beach, with only one or two layers of sandbags visible under normal conditions. Immediately after a storm, the structure can become exposed, and the beach level could be 2–3 m below the top of the sandbags. After a few weeks to months, the sand would typically return to the beach and reach the level it was at prior to the storm. The sandbags would last around 5–10 years and would then need to be replaced.

Figure 2-11 Option 3 Geotextile sandbags (Worley, 2024)

Advantages and disadvantages of the sandbag option are given below:

Advantages:

- Lowest initial cost
- Can be buried and revegetated to appear like a natural dune
- Can be placed without damaging Norfolk Island Pine tree roots
- Easier construction than vertical seawall
- Softer appearance than other two options when exposed

Disadvantages:

- Susceptible to damage from vandalism
- Much shorter lifespan of 5-10 years then will need to be replaced
- More susceptible to damage in large storms than other options
- Higher maintenance and ongoing cost than other options
- Larger footprint on beach than vertical seawall when exposed

2.6 Conclusion

Several alternatives, including the 'do-nothing' option and different design approaches, were assessed based on their ability to meet project objectives, minimise environmental impacts, and address technical and community considerations. Each option has a range of advantages and disadvantages to consider.

Option 2, a sloped rock revetment (Figure 2-10) was selected as the preferred option. This design aligns with the objective of the CMP and addresses community concerns. This option forms the basis of the environmental assessment and proposed mitigation measures outlined in this REF.

2.7 Design refinements

There have been no major design refinements since the selection of the preferred option. In the event of any significant change as a result of design refinements during detailed design, further assessment of potential impacts and an addendum to this REF may be required.

3. Description of Proposal

3.1 Proposal overview

The chosen design for the Long Beach coastal protection works is a rock revetment to address the beach erosion hazard. The aim of the design is to provide a structure that allows continued beach access, is low-lying and maintains the natural character of the foreshore and protects both the beach's amenity and the road. The rock revetment has been designed to be mostly buried, with only the top part visible. After storms, more of the structure may be exposed, but the sand should return within a few months.

The first section is the high priority works that is around 250 m-long structure and extends from near Fauna Avenue across from 38 Bay Road to beyond the cul-de-sac near 70 Bay Road (Figure 3-1). The second section is the extended revetment that would be constructed at a later date and extends from the western end of the high priority works for around 700 m to just west of 96 Sandy Place. Further details on the extended revetment are described in Section 3.1.1.

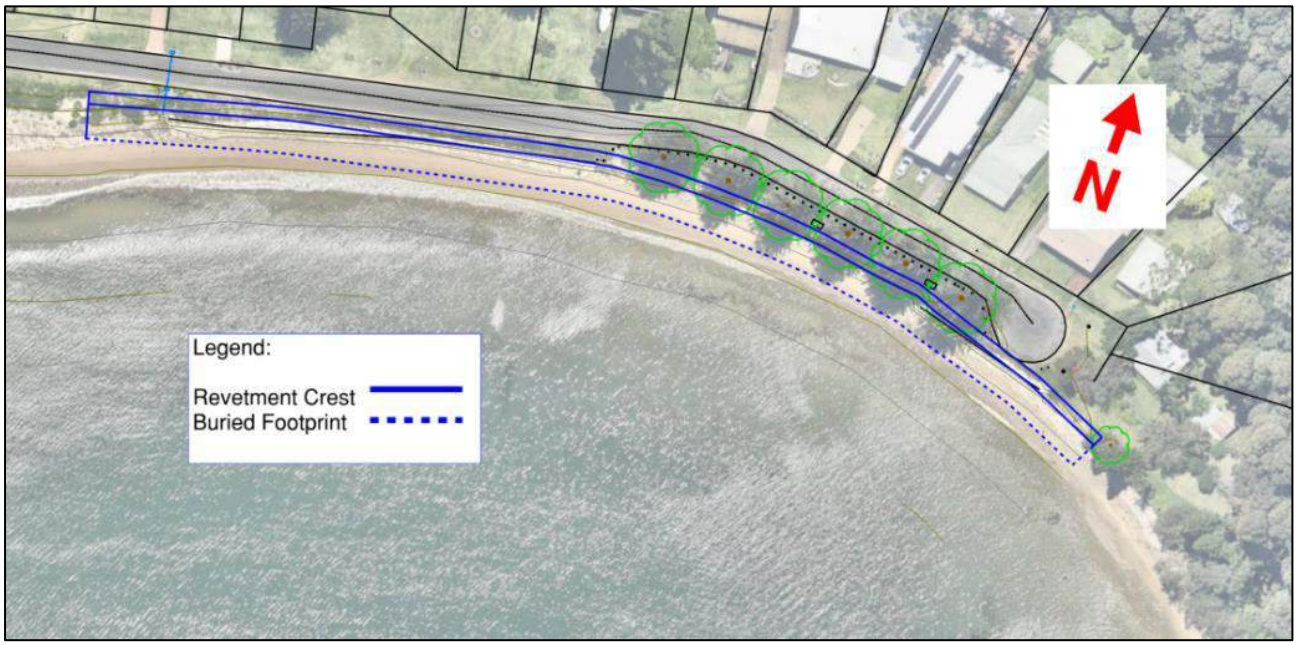


Figure 3-1 Indicative revetment alignment at Long Beach high priority area (Worley, 2025)

The design uses quarry stone with an average diameter of 1.12 m. It will be built to a depth of 1.4 m Australian Height Datum (AHD), with the crest sitting just below road level (approx. 2.9 m AHD), finished with 100 mm of fill and vegetation. Sand from construction will cover the structure. The revetment is designed to last up to 50 years.

This proposed design follows the natural beach alignment and existing revetment, including a smooth transition between both areas (beach and grass zones) to limit beach erosion from coastal processes. The alignment for the high priority works area has also

been extended west by around 30 m to tie into the existing buried revetment (approximately 20 m past the existing culvert on the western end). Further design information is provided in Section 3.2 and in the proposal drawings in Appendix A.

3.1.1 Extended revetment alignment

In the future the revetment will be extended by approximately 700 m to the west and be buried within the seaward portion of dune system. The indicative alignment of the future extension of the revetment is shown in Figure 3-2. It should be noted that construction of this extended section is not a part of the construction scope for this stage, it has however been accounted for in the design. The revetment is proposed to be extended once funding becomes available. This may be triggered if this stretch of beach was to experience significant erosion events and long-term beach recession putting the surrounding infrastructure (roads, car park and stormwater outlets) and residential properties at a greater risk to coastal hazards. The extended alignment would be constructed as far landward as possible with a 5 m buffer to infrastructure and property boundaries where possible and would also be subject to the beach conditions at the time. The extended alignment should be constructed seaward of the existing seawall (where it exists).

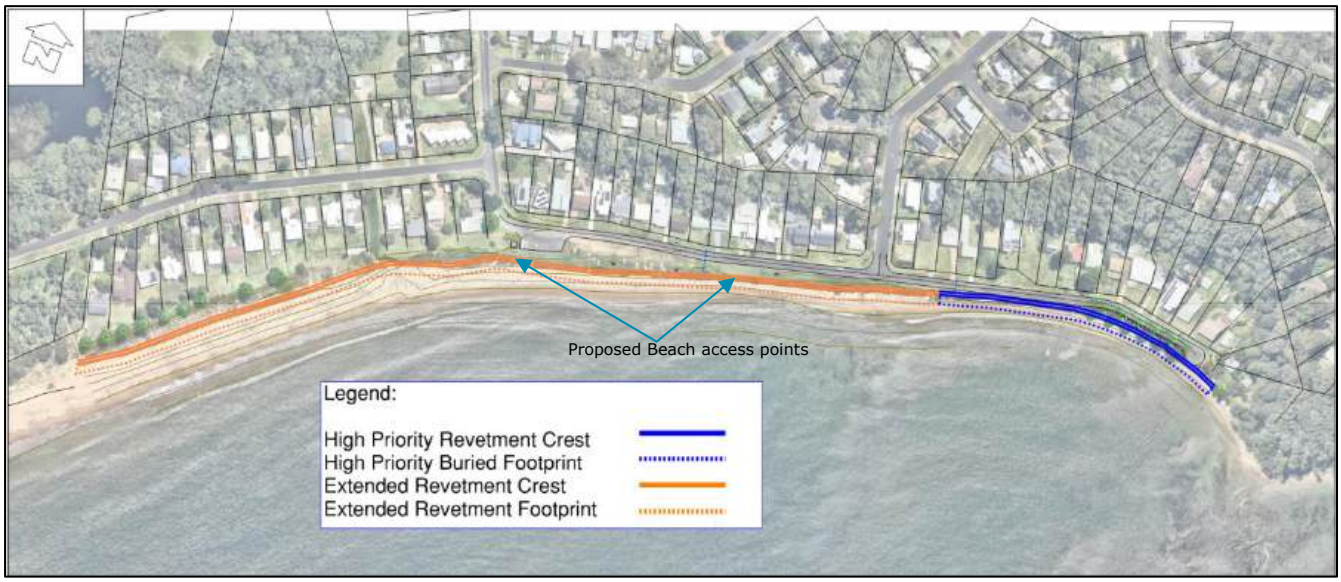


Figure 3-2 Indicative extended revetment alignment (Worley, 2025)

Two beach access points would be provided along the revetment at the car park and the park area just west of Fauna Avenue. In the event the extended revetment was to be buried within the dune system, beach access would be provided as standard board and chain construction in accordance with the NSW Dune Management Manual (refer Figure 3-3). Alternatively, where the revetment is exposed, a set of stairs could be constructed from Fibre Reinforced Plastic (FRP) over the revetment (refer Figure 3-4) and is to be designed to accommodate the design scour levels and wave conditions. FRP material provides greater durability than timber to accommodate the coastal environment. As FRP

material is a propriety product, the stairs if required, would be procured as a Design and Construct component based on a supplied layout.

Figure 3-3 Example board and chain beach accessway Shell Cove (Worley, 2025)

Figure 3-4 Example FRP beach access stairs at Currarong (Worley, 2025)

3.2 Design

3.2.1 Design criteria

A holistic design for the proposed coastal erosion protection has been developed, taking into account projected sea level rise over the structure's design life. The works are to be undertaken in a staged approach and be cognisant of community drivers.

As part of the design process several key criteria have been considered in order to address the overall amenity of the selected design. These criteria included impact on safety and amenity, visual impact, and beach access. Each concept design option was compared against these criteria as part of a multi-criteria analysis to select a preferred design. Additional beach access has not been incorporated into the design.

Ecologically sustainable development (ESD) is development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends. The principles of ESD have been an integral consideration throughout the development of the project.

3.2.2 Design features

The typical design cross section is shown in Figure 3-5 and comprises a rock armour revetment of specially placed quarry stone with average rock diameter size of 1.12 m. The revetment would be constructed to a scour depth of -1.4 m AHD. The crest of the revetment would be 100 mm below the existing road level (approx. 2.9 m AHD) and be finished with 100 mm of top cover fill and primary vegetation. Sand obtained from excavation during construction would be used to cover the structure. Beach nourishment is not included as part of this design, however, would be welcomed for aesthetic and recreational purposes should a suitable sand source and funding become available in the future.

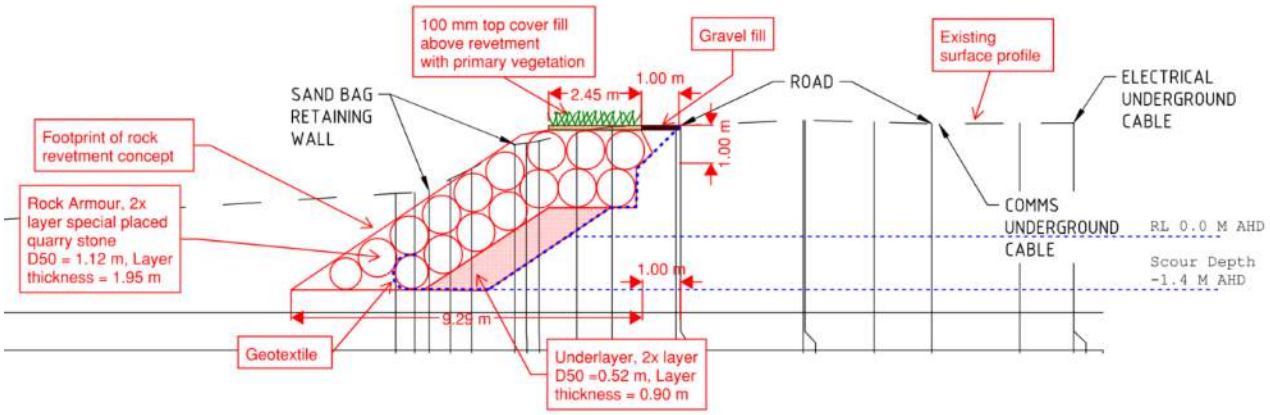


Figure 3-5 Long Beach typical cross section taken through the existing (and temporary) geotextile container wall (Worley, 2025)

As part of the concept design phase, visualisations (Worley, 2025) were produced for the rock revetment seawall at Long Beach, refer to Figure 3-6 and Figure 3-7. During

community consultation, some feedback was received on the sizing of the rocks in that they do not match the approximately 0.50 m diameter average rock sizing as per the cross-sections. This feedback will be addressed by Worley in the final visualisations developed during the detailed design phase.

Figure 3-6 Long Beach rock revetment seawall visualisation (Worley, 2025)

Figure 3-7 Long Beach rock revetment visualisation near Norfolk Island Pines (Worley, 2025)

3.3 Construction activities

3.3.1 Work methodology

The proposal is likely to involve the following construction phasing and activities:

- Site and contractors yard/compound establishment – including build of temporary beach access ramp
- Site establishment survey
- Relocation of the geotextile containers to form the seaward portion of the temporary sand bund
- Excavation of the lower revetment profile, and stockpiling the excavated clean beach sand to create the landward side of the temporary sand bund. If the underlying stiff clay layer is encountered during excavation, this is considered the unerodable material and under the direction of the Superintendent, deeper excavation in this area is not required. Clay material is not to be removed from site. A member of the LALC is to be onsite to monitor all excavation activities within natural material
- Profiling the existing upper revetment profile, with surplus material to be stockpiled on the reserve and reused as backfill
- Removal and delivery of excess soils to certified landfill as required or a suitable Council stockpile for future reuse. All excavated material would be screened for re-purposing clean beach sand, however where rock fragments and/or solid soil contaminants (construction waste) are encountered, this material will need to be removed from site. Screened rock and debris will not be stockpiled on the beach, rather stock piling if required will occur using appropriate contained bins where wave action cannot result in their dispersal
- Survey of excavated slope
- Sequential placement of geotextile, rock underlayer and rock armour including periodic survey
- Survey of the constructed revetment
- Removal of the temporary sand bund with placement of sand over the revetment and geotextile containers opened and sand emptied over the revetement
- Install vegetation onto the reserve and revetment, and maintenance of the vegetation until it is deemed established
- Site de-establishment, and undertake Work As Executed Survey.

Site access and tidal inundation is a high risk to the delivery of works. Consequently, a temporary sand bund is required to be installed seaward of the works using the same

sand excavated from the works and any existing geotextile containers where available. Dewatering is not proposed, rather the Contractor may have to work within the tidal zone when working below around R.L 0.5 m AHD. The design has been developed to minimise working below sea level. Geotextile placed below water is required to be pinned and possibly ballasted with rock to hold it in place.

Screening of beach sand within the site that has been disturbed by the works and where rock fragments and other foreign objects are present is to be undertaken. Screening shall be undertaken to remove all rock fragments and construction debris greater than 20 mm from the beach area adjacent to construction works and shall also extend along the beach wherever contamination has become evident, or as directed by the site superintendent. The depth of beach sand to be screened will be determined by the degree of contamination but is to be at least 1.0 m below the natural beach level of the immediate work area seaward of the constructed revetement/seawall. Clean screened beach sand will then be returned to the beach, and rock and foreign debris removed and disposed of off-site. Screened rock and debris will not be stockpiled on the beach, rather stock piling if required will occur using appropriate contained bins where wave action cannot result in their dispersal. It is expected that such scattering and distribution may occur during revetment construction activities including delivery and placement of rock and turnover of sand material during tracking and excavation.

3.3.2 Construction hours and duration

Works would be carried out within the following working hours:

- Weekdays – 7am to 6pm
- Saturdays – 8am to 3pm
- Sundays and Public Holidays – Nil.

Any out of hours works proposed by the Contractor would require approval from Council before commencing.

The estimated construction duration for the high priority works is four months and for the extended revetment alignment is six months.

3.3.3 Plant and equipment

The plant and equipment needed to build the proposal would vary depending on the construction activity. Below is an indicative list of plant and equipment likely to be used during construction, however this would be confirmed by the Contractor:

- Backhoe loader and excavators
- Crane
- Generator

- Hand-held tools
- Trucks
- Wheelbarrows.

3.3.4 Traffic management and access

Trucks would be required to transport equipment and construction materials to the contractor's work area which would be defined by fencing and signage. The works are intended to be undertaken in a staged approach with 80 m sections completed at a time to minimise exposure of the construction works, road and Norfolk Island Pine trees to coastal processes.

Access between the construction works zone and the Contractor's site compound (see Section 3.3.5) would need to be carefully managed to minimise impact on beach users during the construction works. During the works, sections of beach would be closed to the public where plant and equipment is directly working or travelling. Traffic controls would also be required to manage the small volume of residential traffic. Controls such as exclusion zones, traffic signage, two-way communications, and speed limits, may be put in place to mitigate any foreseen risks associated with these works. Potential impacts on pedestrian, vehicular and bicycle movements would be managed in accordance with the measures outlined in the Contractor's Construction Environmental Management Plan (CEMP).

3.3.5 Ancillary facilities

A potential site compound for the high priority works and extended alignment works, including a temporary beach access ramp at the beach reserve has been laid out in Figure 3-8 and Figure 3-9, respectively.

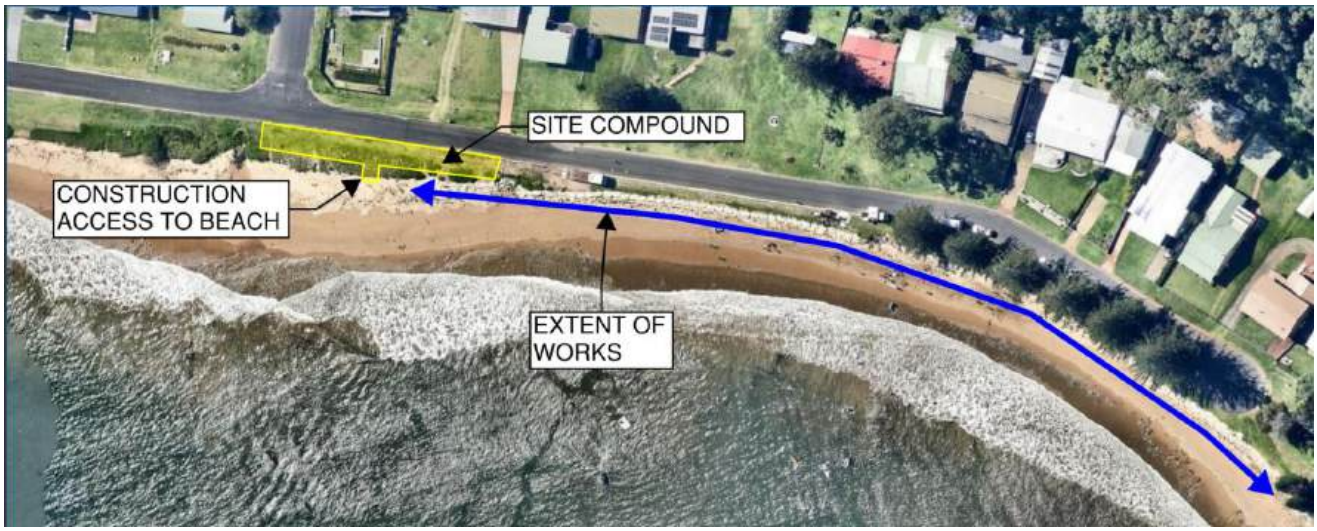


Figure 3-8 Construction plan for the high priority works (Worley, 2025)

Figure 3-9 Construction plan for the extended alignment works (Worley, 2025)

The site compound would accommodate site offices, crib units and ablutions. Power would be required. The area would also be used to store construction waste, materials and house tool stores. Minimal vegetation clearing is required for the establishment of the site compound.

3.4 Potential Construction Impacts

The proposed construction activities have the potential to result in a range of environmental impacts. These impacts have been considered in relation to both the marine and terrestrial environments. Appropriate safeguards will be implemented to minimise these impacts and support environmental protection during the works (Section 7.1).

Marine Environment:

- **Increased turbidity and sedimentation:** Excavation and sand handling near the shoreline may lead to runoff into marine waters, reducing water quality and potentially impacting marine species and benthic habitats
- **Disturbance to intertidal habitats:** Temporary beach access ramp construction and bund formation may disturb intertidal zones, affecting local marine invertebrates and sediment-dwelling organisms
- **Underwater noise and vibration:** Use of machinery close to the waterline may generate noise and vibration that could disturb nearby fish and marine fauna
- **Temporary alteration of coastal processes and habitats:** Placement of sand bunds, and rock may temporarily change shoreline structure and influence wave or sediment dynamics

- **Contamination:** Operation of plant and equipment near the foreshore presents a minor risk of hydrocarbon spills or other pollutants entering the marine environment.

Terrestrial Environment:

- **Vegetation disturbance:** Temporary use of reserve areas for compound establishment and material stockpiling may disturb or remove existing vegetation, with reinstatement required post-construction
- **Soil disturbance and erosion:** Excavation and material movement may result in exposed soils and potential erosion
- **Noise, dust, and vibration:** Earthworks, machinery use, and transport activities may generate noise and dust, with potential impacts to nearby residents and fauna
- **Visual impacts:** Presence of construction equipment, materials, and exposed works may temporarily alter the visual character of the area
- **Traffic and access impacts:** Increased vehicle movements may impact local roads and pedestrian access near the reserve and beach
- **Introduction of weeds and invasive species:** Movement of machinery and equipment to and from the site may introduce or spread weed species, particularly if vehicles are not cleaned prior to arrival. This poses a risk to the ecological integrity of surrounding vegetation and may require active weed management during and after construction
- **Waste generation:** Excavated material not suitable for reuse may require off-site disposal, increasing waste volumes and transport needs.

3.5 Public utility adjustment

The design has been created to avoid potential service clashes wherever possible. The Contractor is to perform their own services checks prior to construction including but not limited to Before You Dig Australia, service locators, etc. The Contractor would manage the risk of damaging services by limiting heavy vehicles over service zones and documenting risks in the CEMP.

3.6 Property acquisition

No property acquisition is required for the proposal.

4. Statutory and Planning Framework

4.1 Environmental planning and approvals pathway

The EP&A Act and EP&A Regulation include requirements for environmental impact assessment depending on whether a proposal requires development consent (Part 4 matter) or is considered an activity under Part 5 of the EP&A Act.

Environmental Planning Instruments (EPIs) made under the EP&A Act provide specifics on the classification of proposals, impact assessment requirements and consultation, depending on a number of factors including the type of works proposed, land zoning and tenure, whether or not the works would be carried out by or on behalf of a public authority and the sensitivity of the environment affected. They also identify which provisions prevail over other EPIs in the event of an inconsistency.

Under the LEP, environmental protection works (such as dune restoration to mitigate erosion) are permitted without consent in the Environmental Conservation zone, however, this does not include coastal protection works such as revetments and beach nourishment.

However, coastal protection works in the "coastal zone" may be carried out by, or on behalf of a public authority under Section 2.16(2)(a) of *State Environmental Planning Policy (Resilience and Hazards)* 2021 (RH SEPP) provided they are identified in a certified CMP.

The CM Act defines four coastal zone management areas which are mapped under the RH SEPP. As shown in Figure 4-1, the proposal would be located within the coastal zone. The coastal protection works were included in the CMP which was certified by the Minister for Local Government under Section 17(2) of the CM Act and commenced on 2 March 2023, upon publishing in the NSW Government Gazette.

Accordingly, as the proposed works would be undertaken on behalf of Council (a public authority), they are classified as an activity under the EP&A Act and can therefore be assessed and determined by the Council.

Section 6 of this REF contains an environmental assessment of the proposed activity against the requirements of Section 5.5 of the EP&A Act. Section 171 of the EP&A Regulation defines the factors which must be considered when determining if an activity assessed under Division 5.1 of the EP&A Act has, or is likely to have, a significant impact on the environment. A summary of the environmental impact assessment of the proposal in accordance with Section 171 is included in Section 8.

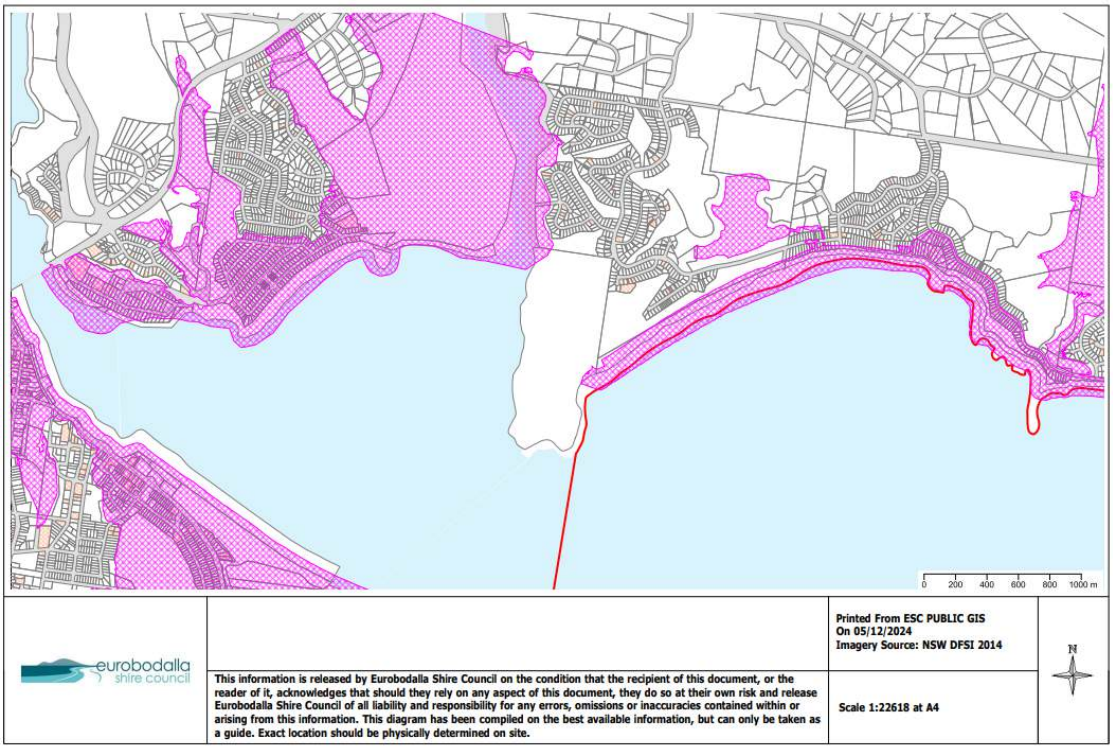


Figure 4-1 CMP Draft coastal vulnerability area as shown in the purple hatched areas (ESC, 2024)

4.2 Commonwealth legislation

4.2.1 Biosecurity Act 2015

The *Biosecurity Act 2015* provides a framework for the prevention, elimination and minimisation of biosecurity risks. Part 3 of the *Biosecurity Act 2015* applies a general biosecurity duty for any person who deals with biosecurity matter or a carrier to prevent, eliminate or minimise any biosecurity risk they may pose. Under Section 23 of the Act, a person who fails to discharge a biosecurity duty is guilty of an offence.

4.2.2 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act, a referral is required to the Australian Government for proposed 'actions that have the potential to significantly impact on matters of national environmental significance (MNES) or the environment of Commonwealth land'.

The nine MNES protected under the EPBC Act are:

- World heritage properties
- National heritage places
- Wetlands of international importance (Listed under the Ramsar Convention)

- Listed threatened species and ecological communities
- Migratory species protected under international agreements
- Commonwealth marine areas
- The Great Barrier Reef Marine Park
- Nuclear Actions (including uranium mines)
- A water resource, in relation to coal seam gas development and large coal mining development.

An 'action' is defined to include a project, development, undertaking, activity or series of activities. An approval for such an action may be required from the Minister for the Environment and Water.

The Protected Matters Search is provided in Appendix B. The proposal is unlikely to have a significant impact on any MNES or the environment of Commonwealth land (refer to Section 9). Further information is provided in Section 6.1 in relation to biodiversity. Accordingly, the proposal has not been referred to the Australian Government Department of Climate Change. Energy, the Environment and Water (DCCEEW) under the EPBC Act.

4.2.3 Native Title Act 1993

The *Native Title Act* (NT) *1993* recognises and protects Native Title. The Act covers actions affecting Native Title and the processes for determining whether Native Title exists and compensation for actions that affect Native Title. It establishes the Native Title Registrar, the National Native Title Tribunal, the Register of Native Title Claims and the Register of Indigenous Land Use Agreements, and the National Native Title Register. Under the NT Act a future act includes proposed public infrastructure on land or waters that affects Native Title rights or interest.

A search of all three registers by Apex Archaeology on 4 June 2024 identified a registered Native Title claim by the South Coast People (NC2017/003) over the study area; however, this claim has not yet been determined. No determined Native Title or Indigenous Land Use Agreements exist over the study area. The South Coast People were consulted via NTSCorp as requested. A summary of consultation with the Aboriginal community is provided in Section 5.3.

4.3 NSW legislation

4.3.1 Crown Land Management Act 2016

The *Crown Land Management Act* (CLM Act) *2016* aims to provide for the ownership, use and management of the Crown land of NSW. The site is mapped as Crown land and is partly located within Crown Reserve R72057 (notified 11 October 1946) which is reserved for the purpose of Public Recreation-Resting Place (Figure 4-2). The Crown

Reserve is managed by Council on behalf of the Minister. The PoM (Oculus 2002) notes that trusteeship is vested with Council and as such the land is classified as community land under the *Local Government Act 1993*, providing Council with a specific approach to the management and classification of Crown Land. The site is classified as Crown Land – Recreation and Resting in the PoM. A licence under the CLM Act will be required for any works that extend beyond the seaward reserve boundary i.e. below the MHWM.

Section 2.2.2 of the PoM describes management issues are presented by coastal hazards such as beach erosion, climate changes induced recession and coastal inundation. References to previous suggested mitigative engineering measures in the PoM have been superseded by the CMP and the current proposal design. However, the proposal is considered consistent with the requirements of the Coastal Crown Land Guidelines.

Figure 4-2 Crown land mapping (NSW Planning Portal, 2025)

4.3.2 Fisheries Management Act 1994

The FM Act aims to conserve threatened species, populations and ecological communities of fish and key fish habitats. Part 7 of the FM Act relates to the protection of aquatic habitats including providing management of dredging and reclamation work within permanently or intermittently flowing watercourses as well as for the management of marine vegetation. Where a proposal site does not require a licence under the CLM Act, a permit under Section 200 of the FM Act for carrying out dredging and reclamation works. The proposal would not harm marine vegetation (i.e. seagrasses, mangroves or saltmarsh) and therefore does not require a permit under Section 205 of the FM Act.

Part 7A of the FM Act requires that an assessment of significance be undertaken for species of fish and marine vegetation (i.e. seagrasses, mangroves and seaweeds), and populations or ecological communities listed under its Schedules that may be affected by a proposed action, development or activity. If a significant impact on a threatened species is likely, a Species Impact Statement (SIS) must be completed and the concurrence of, or consultation with NSW Fisheries is required. The proposal is not

expected to have a significant impact on any threatened species, populations or ecological communities, therefore no assessments of significance were deemed necessary (refer to Section 6.1).

4.3.3 Marine Estate Management Act 2014

The *Marine Estate Management Act 2014* (MEM Act) aims to provide for the management of the marine estate of NSW consistent with the principles of ecologically sustainable development to promote a biologically diverse, healthy and productive marine estate. The Batemans Marine Park management rules are addressed in Part 7 of the Marine Estate Management (Management Rules) Regulation 1999 and include a description of the zoning plan for the Marine Park. In addition, the Batemans Marine Park Operational Plan (Marines Parks Authority, 2010) applies. It identifies the natural, cultural and economic values, including priority threats to these values and management actions being undertaken by the Marine Parks Authority to achieve the goals of the plan.

Construction activities are proposed to partly occur in the Habitat Protection Zone (i.e. areas below the MHWM) of the Batemans Marine Park and therefore proposal require a permit under the MEM Act. Section 1.8 of the Marine Estate Management (Management Rules) Regulation 1999 states the objects of habitat protection zone are:

"a) to provide a high level of protection for biological diversity, habitat, ecological processes, natural features and cultural features (both Aboriginal and non-Aboriginal) in the zone, and

b) where consistent with paragraph (a), to provide opportunities for recreational and commercial activities (including fishing), scientific research, educational activities and other activities, so long as they are ecologically sustainable, do not have a significant impact on fish populations within the zone and have a negligible impact on other animals, plants and habitat."

The proposal is permissible within the zone as an "other activity" subject to a permit being obtained for construction works in accordance with Section 1.22(2) of the Marine Estate Management (Management Rules) Regulation 1999. When considering the permit application, DPIRD would be required to consider the application against the criteria outlined in Section 9 of the Marine Estate Management Regulation 2017. These criteria are in Table 4-1.

Table 4-1 Assessment criteria for the Marine Park permit

Assessment criteria	Consistency of the REF proposal
(a) the objects of the Act	The proposal meets these objectives including the proposal's contribution to the cultural, social and recreational use of the marine estate, and its ongoing function for regional economic opportunities.

Assessment criteria	Consistency of the REF proposal
	It is not considered to contravene the objectives of the habitat protection zone as it would not result in substantial impacts on the biological diversity of the zone or substantial impacts to heritage due to the relatively small-scale nature of the works, and the proposed protection measures. The proposal is consistent with the principles of ecologically sustainable development.
(b) the purposes of marine parks and aquatic reserves (as specified in Sections 22 and 33 of the Act respectively)	The proposal is intended to support the purposes of marine parks via the objectives including that the proposal is not considered to impact on the primary purpose of a Marine Park which is to conserve biological diversity. This is because the proposal would only impact on a small area of the waterway (i.e. not the completed revetment structure which is above MHWM but potentially some of the temporary works such as the sand bund during construction) which is located within the Marine Park and therefore is not considered to reduce the diversity within the marine park. The small area. Further detail is provided in Section 6.1.
(c) the objects of the zone in which the activity is proposed to be carried out	The proposal meets the objects of the Habitat Protection Zone, which allows activities such as the proposal as long as it ecologically sustainable and does not have a significant impact on biodiversity.
(d) the activities that are permissible in the zone in which the activity is proposed to be carried out (as specified in the relevant management rules)	The proposal is for the purpose of coastal protection works which is categorised as an "other activity" and is to ensure public safety for Long Beach and surrounding holiday parks and residential areas. This is consistent with the uses for which consent may be given (and a permit) within the zone, under Section 1.16(2) of the Marine Estate Management (Management Rules) Regulation 1999.
(e) any operational plan for the marine park adopted by the Marine Parks Authority pursuant to section 25 (4) of the *Marine Parks Act 1997* (before its repeal) that continues to have effect because of clause 5 of Schedule 2 to	The 2010 Batemans Marine Park Operational Plan states "This zoning also influences developments within the marine park (e.g. wharfs, boat ramps) to ensure they concur with the objects of the zone and minimise impacts to key habitats". Due to the small-scale nature of the proposal, it is considered

Assessment criteria	Consistency of the REF proposal
the *Marine Estate Management Act 2014*	consistent with the management actions outlined in the plan as it would not involve any substantial impacts on biological diversity within the marine park.
(f) any management plan for the marine park or aquatic reserve	The 2010 Batemans Marine Park Operational Plan is considered to be the management plan for this Marine Park.
(g) any threatened species or other protected flora or fauna under the Fisheries Management Act 1994, the National Parks and Wildlife Act 1974 or the Threatened Species Conservation Act 1995 that may be affected by the proposed activity	Impacts on threatened species or other protected flora and fauna are discussed further in Section 6.1.
(h) the form of transport to be used to gain access to the zone in, on or from which the activity is proposed to be carried out, having regard to the adequacy of facilities for parking, mooring and landing vehicles, vessels and aircraft, and for loading and unloading them	Construction site access and traffic is described in Section 3.3.4.
(i) the type of equipment to be used in connection with the proposed activity	Construction equipment is described in Section 3.3.3.
(j) the arrangements that have been made for the prevention, mitigation and making good of any damage to the marine park or aquatic reserve arising from the proposed activity	Mitigation measures are provided in Section 7.1 to prevent and mitigate any potential impacts to the marine park arising from the proposal.
(k) such other requirements as the relevant Ministers consider appropriate to the proposed activity	Not applicable.

Section 55(3)(a) of the MEM Act requires a determining authority to take into consideration:

"(i) if there are management rules for the marine park or aquatic reserve, the purposes of the zone within which the area concerned is situated as specified in those management rules, and

(ii) the permissible uses of the area concerned under the regulations or the management rules, and

(iii) if a management plan for the marine park or aquatic reserve has been made, the objectives of the marine park or aquatic reserve, and

(iv) any relevant marine park or aquatic reserve notifications, and"

An assessment of the proposal against the above consideration forms part of the assessment criteria for the Marine Park permit. Table 4-1 demonstrates how the proposal meets the above considerations. In summary, the proposal is not expected to have any impact on the objectives of the Habitat Protection Zone if the safeguards in this REF are adopted.

4.3.4 Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act 2016* (BC Act) seeks to conserve biological diversity at bioregional and State scales; to maintain the diversity and quality of ecosystems and enhance their capacity to adapt to change and provide for the needs of future generations; to assess the extinction risk of species and ecological communities and identify key threatening processes through an independent and rigorous scientific process; and to establish a framework to avoid, minimise and offset the impacts of proposed development and land use change on biodiversity.

Under Section 7.2 of the BC Act, an assessment of significance must be completed to determine the significance of impacts to threatened species, populations and/or communities or their habitat which are likely to occur and be impacted by the proposed development. A significant impact also occurs if the activity is carried out in an area of outstanding biodiversity (AOBV) value or if the impact exceeds thresholds under the biodiversity offset scheme.

A BioNet atlas search for species threatened and protected under the BC Act was carried out within a 10 km buffer of the study area and the likelihood of occurrence determined. The proposal is not expected to have a direct or indirect adverse impact on any threatened species, populations or ecological communities listed under the BC Act (refer to Section 6.1). No tests of significance were triggered.

4.3.5 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides controls in relation to the protection of land reserved under the NPW Act as well as controls in relation to the protection of items of cultural heritage. It is an offence under the NPW Act to 'harm' Aboriginal objects or sites of Aboriginal significance without an Aboriginal Heritage Impact Permit (AHIP). An Aboriginal Cultural Heritage Assessment has been undertaken for the proposal. Refer to 6.6 for further details.

4.3.6 Heritage Act 1977

The *Heritage Act 1977* contains the provisions for listing sites or places on the State Heritage Register and the protection of relics. Section 170 requires State Government Agencies to establish and keep a Heritage and Conservation Register. The site does not

contain any known (land-based) relics either within the site or in the vicinity of the site. There are no maritime heritage sites listed at or in the vicinity of the site.

4.3.7 Coastal Management Act 2016

The CM Act manages the coastal environment of NSW in a manner consistent with the principles of ecologically sustainable development (ESD) for the social, cultural and economic well-being of the people of the State. The RH SEPP gives effect to the objectives of the CM Act from a land use planning perspective, by defining the four coastal management areas of the 'coastal zone' listed in the CM Act:

- Coastal wetlands and littoral rainforests area
- Coastal vulnerability area
- Coastal environment area
- Coastal use area.

Section 23 of the CM Act requires that a public authority is to have regard to the relevant CMP and coastal management manual. The proposal is generally consistent with several actions in the certified CMP, including CH1_D (Phase 1 and 2) for Long Beach Coastal Protection Works.

4.3.8 Contaminated Land Management Act 1994

Contaminated land is regulated in NSW under the *Contaminated Land Management Act 1997*. The Act seeks to impose the obligation and cost of remediating contaminated land on the person who caused the contamination, rather than on the community. A search of the contaminated land record was conducted on 9 July 2024 which found no contaminated sites in the study area that would be impacted by the proposal.

4.3.9 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) regulates activities which may result in pollution. Part 3.2 and Schedule 1 of the POEO Act describes Environment Protection Licences (EPLs) for scheduled development work and scheduled activities. Construction and operation of the proposal are not classified as a scheduled activity and do not require an EPL.

In addition, Section 120 of the POEO Act prohibits the pollution of waters. Council and future contractors are obliged to notify the NSW Environment Protection Authority (EPA) if a pollution incident occurs that causes or threatens material harm to the environment.

4.3.10 Water Management 2000

The *Water Management Act 2000* (WM Act) manages NSW water in a sustainable and integrated manner that will benefit current generations without compromising future generations' ability to meet their needs. The WM Act is administered by the Natural

Resources Access Regulator (NRAR) and establishes an approval regime for activities within waterfront land, defined as the land 40 m from the highest bank of a river, lake or estuary.

A Controlled Activity Approval (CAA) is typically required for work within waterfront land. Section 91E of the Act creates an offence for carrying out a controlled activity within waterfront land without approval. According to Section 41 of the Water Management (General) Regulation 2018, a public authority is exempt from Section 91E of the Act. Therefore, Council does not need to obtain a CAA from the NRAR.

4.3.11 Roads Act 1993

The *Roads Act 1993* outlines the processes involved with the opening of roads, road levels, closing of public roads, roadwork and regulation of traffic by Roads Authorities, entry onto land and financial assistance to Roads Authorities.

The proposal is expected to require partial road closures and temporary structures during construction and will need to mitigate impacts to traffic during construction hours. Hence, under Section 138 of the *Roads Act 1993* consent would need to be sought from Council for any works proposed to be carried out on public roads.

4.4 State Environmental Planning Policies

4.4.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The proposal is being carried out under the provisions of the RH SEPP; therefore, the TI SEPP including the consultation provisions under Part 2.2 is not applicable.

4.4.2 State Environmental Planning Policy (Resilience and Hazards) 2021

The proposal is located within the coastal environment area and the coastal use area under Chapter 2 of the RH SEPP. Whilst no coastal vulnerability area has yet been mapped under the RH SEPP, the proposal is within the Draft CVA that was mapped in the CMP. Under the RH SEPP, development consent on land within these areas must not be granted unless the consent authority (for developments under Part 4 of the EP&A Act) has considered whether the proposed development is likely to cause an adverse impact on the matters outlined in Sections 2.9 to 2.11. As the proposal is being assessed under Division 5.1 of the EP&A Act, the consideration of these development controls is not a requirement. However, it is considered that the proposal would not cause any adverse impacts on the coastal use and coastal environment areas with the adoption of the mitigation measures outlined in this REF. There are no Coastal Wetland, Littoral Rainforest or proximity areas as determined under the RH SEPP occurring within or surrounding the site.

Chapter 4 of the RH SEPP applies to the whole of the State and aims to promote the remediation of contaminated land for the purpose of reducing the risk of harm to human health or any other aspect of the environment by specifying when consent is required, and when it is not required, for a remediation work. In accordance with Chapter 4 of the RH SEPP, a consent authority must not consent to the carrying out of any development on land unless it has considered whether the land is contaminated and, if the land is contaminated, it is satisfied that the land is suitable in its contaminated state for the purpose for which the development is proposed to be carried out.

The site is not known to be sited on contaminated land. Earthworks would be undertaken for the proposal. Any surplus material requiring off-site disposal will be classified in accordance with the EPA's Waste Classification Guidelines and managed in accordance with the POEO Act and Protection of the Environment Operations (Waste) Regulation 2014.

4.5 Local Environmental Plans

4.5.1 Eurobodalla Local Environmental Plan 2012

Long Beach Reserve is zoned Environmental Conservation (C2) under the Eurobodalla LEP and the immediate surrounding zone is Low Density Residential (Figure 2-6).

C2 (Environmental Conservation) zoned areas under the Eurobodalla LEP have the following objectives:

- To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values
- To prevent development that could destroy, damage or otherwise have an adverse effect on those values
- To identify sensitive coastal lakes, estuaries, wetlands, overland flow paths and riparian zones and those areas at risk from coastline hazards, including sea level rise
- To protect and improve water quality
- To protect and enhance the natural environment for recreation purposes
- To manage items, places and landscapes of Aboriginal cultural heritage significance into the future in collaboration with the local Aboriginal community.

The proposal is consistent with the objectives of the zone that is in keeping with the existing use of the site. Further, the proposal is compatible with the site and does not detract from the provision of infrastructure. Notwithstanding, the proposal is permissible without development consent under the RH SEPP. Therefore, the permissibility and consent provisions of the LEP do not apply.

5. Consultation

5.1 Consultation strategy

As a part of developing the 2022 CMP, Rhelm on behalf of Council prepared a Stakeholder and Community Engagement Plan and completed a range of stakeholder engagement and communications activities. Through this process, Council developed an understanding of current stakeholder and community interests, issues, concerns and opportunities for coastal management.

Worley Consulting subsequently developed a proposal specific Community and Stakeholder Engagement Plan which builds upon Council's earlier communications and engagement as well as their existing relationships with stakeholders in order to support and enhance stakeholders trust and respect. To inform, engage and obtain input from stakeholders and community during the development of concept designs, a range of engagement and communication tools were used. Details of this consultation is provided in the following sections.

5.2 Community involvement

Information on the proposal is available on Council's website at esc.nsw.gov.au (using search 'Batemans Bay coastal protection work') and a QR code has been provided to the community to scan from information sheets.

A preferred concept design option was not determined during the preparation of the CMP for the Long Beach Coastal Erosion Protection Works, therefore additional targeted community consultation has been undertaken.

An initial community consultation session was held on Tuesday 18 June 2024 from 4pm to 6pm at the Long Beach NSW RFS Fire Brigade station in Long Beach, NSW, and had a recorded attendance of 48 members of the community. The RFS Station was set up with informational sheets, posters, and feedback forms for the three Long Beach coastal protection options outlined in the CMP. Worley Consulting, DCCEEW and Council staff were present to address any questions from the public regarding the different design options. Figure 5-1 below shows a summary of each considered option at the time of the community consultation.

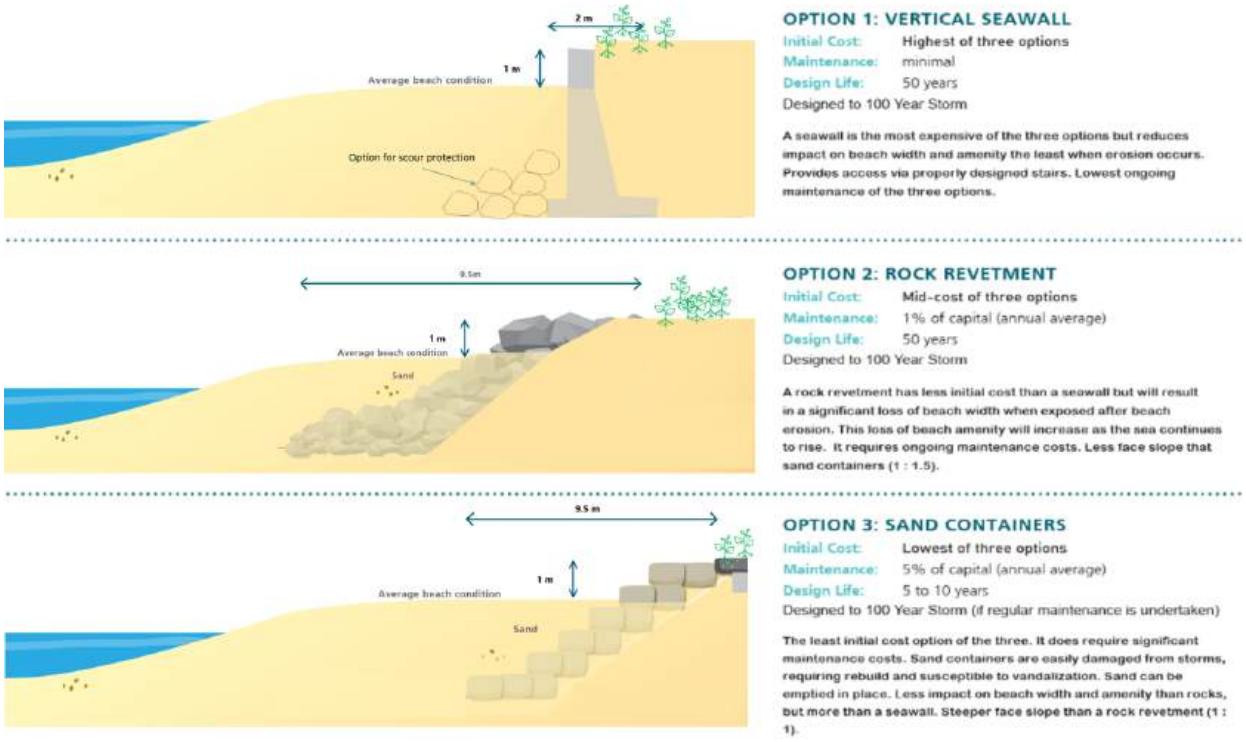


Figure 5-1 Summary of options presented at the community consultation session (Worley, 2024)

In addition to the in-person community consultation, an online/mail feedback period was open from mid-June 2024 until 10 July 2024. In total, 64 community responses were received Of these, two responses did not have a preference for design options, so these have been omitted. The remaining 62 option responses are summarised in Table 5-1.

Table 5-1 Long Beach Coastal Erosion Protection Summary of Responses

Preferred Option	Number of responses in favour
Option 1 – Vertical Concrete Seawall	14
Option 2 – Sloped Rock Revetment	20
Option 3 – Geotextile Sandbags	8
Other	20
Total	62

Twenty (20) responses were received that did not express a clear preference for any one of the three design options in isolation. Thirteen (13) of these responses favoured a combined option of Rock Revetment with geotextile sandbags. In general, the main concerns were protection of the Norfolk Island Pines, visual concerns over a concrete wall, visual concerns over an exposed rock revetment (desire for landscaping), and safety concerns over exposed rock surfaces.

A second community information session was held on 10 December 2024 at the Long Beach NSW RFS Fire Brigade station from 4:00pm to 6:30pm and had a recorded attendance of 27 members of the community along with Worley Consulting and Council staff. The RFS Station was set up with fact sheets, posters, and visualisations for the preferred option for Long Beach. The purpose of the session was to present the preferred concept design (rock revetment seawall) to the community and for Worley Consulting and Council staff to respond to any questions from community members.

5.3 Aboriginal community involvement

Apex Archaeology were engaged to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for proposed coastal erosion works at Surfside West Beach and Long Beach which was finalised in January 2025 (Appendix C). This ACHA has been prepared in accordance with the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (April 2011); the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW, April 2010) (the ACHCRs), and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (September 2010) (the Code of Practice). It details the results of the archaeological assessment completed in accordance with the Code of Practice and the consultation undertaken with the Aboriginal community in accordance with the ACHCRs.

A total of nine Aboriginal people and organisations registered an interest in being consulted for the proposal. The following list comprises the registered Aboriginal parties (RAPs):

- Batemans Bay Local Aboriginal Land Council (LALC)
- Clive Freeman
- Corroboree Aboriginal Corporation
- Gnublum Cultural Services
- Guntawang Aboriginal Resources Incorporated
- South Coast Culture and Heritage
- South Coast People native title claimants
- Southern Native
- Thomas Dahlstrom.

Consultation with the RAPs has been conducted over four stages in accordance with the ACHCRs. The draft ACHA report was provided to all RAPs on 6 December 2024. As the comment period fell over the holiday shut-down period, the date for providing comment was extended to 10 January 2025. No comments were received from any of the RAPs. In addition, the Batemans Bay LALC and NTSCorp was consulted separately in writing for the purposes of the REF. No written comments were received.

On the 12 March 2025, Worley Consulting and Council met face-to-face with the Batemans Bay LALC onsite to further discuss the proposal. All parties agreed that the LALC would have an onsite presence to monitor any excavation into natural material during the works.

5.4 Government agency and stakeholder involvement

Various government agencies and stakeholders were consulted in writing (letter dated 14 November 2024) about the proposal, including:

- [redacted]

In addition, an optional online information session was held on 19 November 2024 for the above stakeholders.

Issues that were raised as a result of written consultation with these agencies and stakeholders are outlined below in Table 5-2.

Table 5-2 Issues raised through stakeholder consultation

Group	Issue Raised	Response/Where Addressed in REF
DPIRD – Fisheries and Batemans Marine Park, letter	Site is located within a Habitat Protection Zone (HPZ) and will require a Marine Parks Permit. The REF must demonstrate compliance with HPZ requirements and provide a clear justification for the development.	See Section 2.3 and Section 2.4 for strategic need and proposal objectives. See Section

Group	Issue Raised	Response/Where Addressed in REF
dated 28 November 2024	Section 9 of the MEM Act must be addressed, as future Marine Parks Permit applications will be assessed against these criteria.	4.3.3 for consideration of Section 9 of the MEM Act.
	A site not requiring a licence under the CLM Act will require a Part 7 Fisheries Permit for dredging and reclamation activities. Under Section 199 of the FM Act, Crown Lands will need to consult with DPIRD Fisheries prior to issuing an authorisation for these works. The REF must address Sections 3.3 and 5.2 of the Fisheries Policy through an aquatic habitat/impact assessment, as these sections will inform the permit assessment.	See Section 2.1 for a description of marine habitat at the site based on a field survey undertaken in June 2024. See Section 6.1 for a background review of other marine environmental and ecological features of the site.
	Justify the selection of the proposed structure and explain how it aligns with the CM Act and the CMP. Any deviations from the initial concept must be explained and justified in the REF.	Section 2.6 for alternatives and options considered and Section 4.3.7 for alignment with the CM Act.
	Assess drainage impacts behind all proposed structures to ensure there are no landward drainage issues.	Stormwater management has been incorporated into the design. No landward drainage issues will be created.
	Include modelling in the REF to analyse existing sand movement patterns within the compartments and predict changes resulting from the proposed structures. Specify the parameters used in the modelling.	Following consultation it was agreed with Council and DPIRD Fisheries that desktop calculations will be performed to address this matter. Refer to Section 6.3.
	Provide an aerial image (preferably from Nearmap or drone imagery) for the site. Clearly show the extent of the structures below MHWM within Batemans Marine Park, including measurements of the impacted area, habitat types affected, and construction impacts.	Refer to Section 2.1.2 and Appendix A.
	Ensure the design and construction of the works minimise impacts on water quality and habitat within the receiving environments. The REF should include detailed construction plans for the structure and recommend erosion and sediment controls to mitigate impacts on Batemans Marine Park.	Refer to Sections 6.1 (biodiversity), 6.2 (water quality), 6.7 (soil, erosion and contamination) and 7 (environmental management)

Group	Issue Raised	Response/Where Addressed in REF
	DPIRD Fisheries notes that the design is consistent with the CMP. The batter slope needs to be confirmed. The concept design in the CMP outlined a 1-1.5 n slope. Provide evidence that sand used to cover the structure would remain or accrete time. DPIRD Fisheries is concerned that the area will be left with an exposed rock wall, given the current erosional state of Long Beach.	Batter slope is 1:1.5 slope. As shown on the section drawings and visualisations the revetment will be exposed. The extent to which sand will cover the structure will vary with changing beach conditions as is currently the case. Further, there will be plans to plant native vegetation to soften and cover most of the structure.
	DPIRD Fisheries requests to review the REF once drafted.	Noted. Council is to provide a copy of the REF.
DPHI – Crown Lands and Public Spaces, letter dated 10 December 2024	The proposed coastal erosion protection works at Long Beach appears to be mostly located on Reserve R72057 – Lot 7301 DP 1143292 (unsurveyed) – notified on 11 October 1946. Eurobodalla Shire Council (Council) is the appointed Crown Land Manager of this reserve for the purpose of Public Recreation, Resting Place. Council should procure an identification survey to identify the notified boundaries of this reserve and the footprint of the proposed works in relation to this reserve.	Council has undertaken the survey and has been used for the proposal drawings.
	A licence under the CLM Act will be required for any works that extend beyond the seaward reserve boundary i.e. below the MHWM.	Noted.
	The proposed works are considered broadly consistent with several actions in the certified Eurobodalla Open Coast Coastal Management Program (Dec 2022). These actions include CH1-D (Phase 1 and 2) and CH4_D (Phase 1 and 2). In this context, the proposed developments at Long Beach and Surfside Beach are considered broadly consistent with the requirements of the Coastal Crown Land Guidelines.	No response required.
	The REF needs to consider the impact of the proposed developments on R72057 and R58089, with a focus on their respective reserve purposes, being Public Recreation, Resting Place (R72057) and Access, Public	Refer to Section 4.3.1

Group	Issue Raised	Response/Where Addressed in REF
	Recreation (R58089). It is important that the proposed developments are consistent with these reserve purposes, and that the REF proposes measures to mitigate negative impacts on public foreshore access and recreational amenity, including consideration of measures to maintain public access to and along these foreshore reserves over the designated 'design life' of the works.	
	The REF must consider the cumulative environmental effect with other existing or likely future activities.	No cumulative effects are expected.
	The REF must consider the impact on coastal processes and hazards, including under projected climate change conditions.	Refer to Section 6.3.
	Council must consider the Commonwealth Native Title Act 1993 and any implications on the proposed works.	See Section 4.2.3.
	Council must consider the existence of any unresolved land claims on the Crown Land lodged under the Aboriginal land Rights Act 1983.	Council will investigate if any claims exist.
	Council must consider whether the proposal is consistent with any Plan of Management (draft or adopted) for the reserves.	See Section 4.3.1.
	Crown Lands requests an opportunity to review the draft REF before determination.	Noted. Council is to provide a copy of the REF.
NSW DCCEEW – CPHR, letter dated 12 December 2024	It is an objective of the CM Act, that beach access and amenity be maintained, and where possible improved. Currently the design does not incorporate any public access points along its approximately 220m length. The design could readily be modified to incorporate beach access points to meet amenity objectives in the CM Act, community needs and safety risks associated with uncontrolled access over the revetment.	Informal access using flatter rocks at a section in the design that may act as informal stairs can be allowed for. This decision and liability would sit with Council. Alternatively, formal stairs with an appropriate engineered foundation can be designed but a formal structure would add significant cost to the project.
	Whilst impacts to the beach footprint should be minimised, the space between the road and rock revetment should include room for suitable plantings to soften the visual appearance of the wall and to meet any pedestrian or road safety requirements.	Road reserve has been maintained as much as possible with revegetation incorporated in design.

Group	Issue Raised	Response/Where Addressed in REF
	The funding agreement for the priority projects related to actions in the certified CMP. As there are now some deviations from the CMP action concept designs, the intended outcomes should align with both coastal and catchment flood planning objectives in a co-ordinated manner consistent with the principles of the Flood and Coastal manuals.	Noted.
NSW SES, letter dated 5 December 2024	Consider the impact of flooding and storms on the proposed coastal protection infrastructure and people using the area up to and including the Probable Maximum Flood (PMF), along with the impact of climate change on the flood risks.	The revetment would provide protection to Bay Road from storm erosion and long-term recession, as well as any impacts from reduced foundation capacity, for storm erosion events up to the 1 in 500 year ARI storm.
	Pursue, if relevant, site design and stormwater management that reduces the impact of flooding and minimises any risk to the community. Any improvements to flood resilience that can be made to reduce flood risk and provide protection from large coastal storms and widespread coastal inundation will benefit the community.	Stormwater management has been incorporated into the design to reduce flood risks to the community.
	Consider the impact of climate change on the risk for the coastal communities and allow for the designs to incorporate and adapt to projected sea level rise, changes to rainfall run off and extreme weather events.	Consideration of sea level rise has been included in the design process.
	NSW SES would also be interested in receiving the REF and future correspondence regarding the outcome of this referral via this email address.	Noted. Council is to provide a copy of the REF.

5.5 Ongoing or future consultation

Following determination, the final REF will be published on Council's website in accordance with Section 171(4) of the EP& A Regulation.

Council will continue to provide updates through its website, media releases, and other communication channels. Notifications regarding upcoming works will also be provided to nearby residents in line with Council's standard notification procedures.

6. Environmental Assessment

This section outlines the existing Environmental conditions within the study area and assesses the potential environmental impacts of the proposed works on these conditions. In addition to biodiversity considerations, the assessment also addresses related environmental factors including water quality, coastal processes, noise, visual impacts, heritage, soil erosion and contamination, waste management, community impacts, and air quality. The assessment identifies potential risks associated with the proposed works and recommends appropriate biodiversity safeguards and mitigation measures to minimise environmental impacts and support responsible project delivery in line with regulatory requirements.

6.1 Biodiversity

This section describes the existing biodiversity values within the study area and assesses the potential impacts of the proposed works. It also outlines recommended safeguards and mitigation measures to protect local flora, fauna, and habitats.

6.1.1 Matters of National Environmental Significance

MNES associated within the marine environment occurring within a 5 km radius of the study area were identified in an EPBC Act 1999 Protected Matters Report (see Appendix B) which was generated on 2 July 2024 as follows:

- No Wetlands of International Significance occur within 5 km of the study area and will not be impacted by the proposal.
- The Great Barrier Reef Marine Park does not occur within 5 km of the study area and will not be impacted by the proposal
- The Commonwealth Marine Area does not occur within 5 km of the study area and will not be impacted by the proposal
- Eight (8) Listed Threatened Ecological Communities occur within 5 km of the study area including:
    - Araluen Scarp Grassy Forest – Endangered, community may occur within area
    - Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Whales and South East Queensland Ecological Community – Endangered, community likely to occur within area
    - Coastal Swamp Sclerophyll Forest of New South Whales and South East Queensland – Endangered, community may occur within area
    - Illawarra and South Coast Lowland Forest and Woodland Ecological Community – Critically Endangered, community may occur within area
    - Littoral Rainforest and Coastal Vine Thickets of Eastern Australia – Critically Endangered, community likely to occur within area

- Lowland Grassy Woodland in the South East Corner Bioregion – Critically Endangered, community likely to occur within area
- River-flat Eucalypt Forest on Coastal Floodplains of Southern New South Wales and Eastern Victoria- Critically Endangered, community likely to occur within area
- Subtropical and Temperate Coastal Saltmarsh – Vulnerable, community likely to occur within area.

- Eighty-five (85) Listed Threatened Species Under the EPBC Act occur within 5 km of the area
- Fifty-eight (58) Listed Migratory Species occur within 5 km of the area.

"Other Protected Mattes" listed under the EPBC Act relating to the proposed area include:

- Eighty-one (81) Listed Marine Species occur within 5 km of the study area
- Twelve (12) Whales and Other Cetaceans occur within 5 km of the study area
- No Critical Habitat occurs within 5 km of the study area
- No Australian Marine Parks occur within 5 km of the study area
- Two (2) Nationally Important Wetland occur within 5 km of the study area
  - Clyde River Estuary
  - Cullen Creek and Embayment
- One (1) Key Ecological Marine Feature (Upwelling East of Eden) occur within 5 km of the study area
- Eight (8) Biologically Important Areas (BIAs) occur within 5 km of the study area.

Based on the results of the PMST there are no Wetlands of International Significance, Commonwealth Marine Areas, or Marine Parks occur within the study area. However, Eight Threatened Ecological Communities are identified as occurring or likely to occur, along with 85 Threatened Species, 58 Migratory Species, and 81 Marine Species. Two nationally important wetlands, one Key Ecological Feature, and eight Biologically Important Areas are located within 5 km of the study area. The following section further investigates the potential for these matters to occur within the study area.

6.1.2 Key Fish Habitat

One of the objectives of the FM Act is to 'conserve key fish habitats'. DPIRD Fisheries has identified 'Key Fish Habitats' as those aquatic habitats that are important to the sustainability of the recreational and commercial fishing industries, the maintenance of fish populations generally, and the survival and recovery of threatened aquatic species.

A policy definition of the term 'Key Fish Habitat' (KFH) was developed to guide the compilation of maps. KFH was defined to include all marine and estuarine habitats up to highest astronomical tide level (that reached by 'king' tides) and most permanent and

semipermanent freshwater habitats including rivers, creeks, lakes, lagoons, billabongs, weir pools and impoundments up to the top of the bank.

Small headwater creeks and gullies (known as first and second order streams), that only flow for a short period after rain are generally excluded, as are farm dams constructed on such systems. Wholly artificial waterbodies such as irrigation channels, urban drains and ponds, salt and evaporation ponds are also excluded except where they are known to support populations of threatened fish or invertebrates.

KFH in the study area was mapped using the Fisheries NSW Spatial Data Portal and is shown in Figure 6-1. KFH occurs below the MHWM of the Long Beach site.

Figure 6-1 Map of key fish habitat in the general study area (NSW DPIRD, 2024).

6.1.2.1 Type and Sensitivity

The Waterway and KFH classification of the study area was determined using the NSW Policy and Guidelines for Fish Habitat Conservation and Management (NSW DPI, 2013) that considers the specific attributes of the aquatic habitats in the study area, as determined via the desktop review (refer to Figure 6-2 and Figure 6-3).

The KFH and associated sensitivity classification scheme is shown in Figure 6-2. The classification of waterways for fish passage types is shown in Figure 6-3.

The KFH at the site would be a CLASS 1 – major key fish habitat and be classified as a Type 2 – moderately sensitive key fish habitat. The habitat at the site comprises "stable intertidal sand/mud flats, coastal and estuarine sandy beaches with large populations of infauna" and is "aquatic habitat within 100 m of a marine park, an aquatic reserve or intertidal protected area".

With proper management procedures being followed during construction (outlined in Section 6.1.16), impacts would be minor and therefore it is unlikely there would be impacts to key fish habitats as a result of the proposed works.

TYPE 1 - Highly sensitive key fish habitat:

- *Posidonia australis* (strapweed)
- *Zostera, Heterozostera, Halophila and Ruppia* species of seagrass beds >5m^2 in area
- Coastal saltmarsh >5m^2 in area
- Coral communities
- Coastal lakes and lagoons that have a natural opening and closing regime (i.e. are not permanently open or artificially opened or are subject to one off unauthorised openings)
- Marine park, an aquatic reserve or intertidal protected area
- SEPP 14 coastal wetlands, wetlands recognised under international agreements (e.g. Ramsar, JAMBA, CAMBA, ROKAMBA wetlands), wetlands listed in the Directory of Important Wetlands of Australia[2]
- Freshwater habitats that contain in-stream gravel beds, rocks greater than 500 mm in two dimensions, snags greater than 300 mm in diameter or 3 metres in length, or native aquatic plants
- Any known or expected protected or threatened species habitat or area of declared 'critical habitat' under the FM Act
- Mound springs

TYPE 2 – Moderately sensitive key fish habitat:

- *Zostera, Heterozostera, Halophila* and *Ruppia* species of seagrass beds <5m^2 in area
- Mangroves
- Coastal saltmarsh <5m^2 in area
- Marine macroalgae such as *Ecklonia* and *Sargassum* species
- Estuarine and marine rocky reefs
- Coastal lakes and lagoons that are permanently open or subject to artificial opening via agreed management arrangements (e.g. managed in line with an entrance management plan)
- Aquatic habitat within 100 m of a marine park, an aquatic reserve or intertidal protected area
- Stable intertidal sand/mud flats, coastal and estuarine sandy beaches with large populations of in-fauna
- Freshwater habitats and brackish wetlands, lakes and lagoons other than those defined in TYPE 1
- Weir pools and dams up to full supply level where the weir or dam is across a natural waterway

TYPE 3 – Minimally sensitive key fish habitat may include:

- Unstable or unvegetated sand or mud substrate, coastal and estuarine sandy beaches with minimal or no in-fauna
- Coastal and freshwater habitats not included in TYPES 1 or 2
- Ephemeral aquatic habitat not supporting native aquatic or wetland vegetation

Notes: For the purposes of these policy and guidelines the following are **not considered key fish habitat**[5]:

- First and second order streams on gaining streams (based on the Strahler method of stream ordering)
- Farm dams on first and second order streams or unmapped gullies
- Agricultural and urban drains
- Urban or other artificial ponds (e.g. evaporation basins, aquaculture ponds)
- Sections of stream that have been concrete-lined or piped (not including a waterway crossing)
- Canal estates

Figure 6-2 Key fish habitat and associated sensitivity classification scheme (for assessing potential impacts of certain activities and developments on key fish habitat (NSW DPI, 2013)

Classification	Characteristics of waterway class
CLASS 1 Major key fish habitat	Marine or estuarine waterway or permanently flowing or flooded freshwater waterway (e.g. river or major creek), habitat of a threatened or protected fish species or 'critical habitat'.
CLASS 2 Moderate key fish habitat	Non-permanently flowing (intermittent) stream, creek or waterway (generally named) with clearly defined bed and banks with semi-permanent to permanent waters in pools or in connected wetland areas. Freshwater aquatic vegetation is present. TYPE 1 and 2 habitats present.
CLASS 3 Minimal key fish habitat	Named or unnamed waterway with intermittent flow and sporadic refuge, breeding or feeding areas for aquatic fauna (e.g. fish, yabbies). Semi-permanent pools form within the waterway or adjacent wetlands after a rain event. Otherwise, any minor waterway that interconnects with wetlands or other CLASS 1-3 fish habitats.
CLASS 4 Unlikely key fish habitat	Waterway (generally unnamed) with intermittent flow following rain events only, little or no defined drainage channel, little or no flow or free standing water or pools post rain events (e.g. dry gullies or shallow floodplain depressions with no aquatic flora present).

Example: NSW DPI will not approve the permanent obstruction of fish passage on a CLASS 1 or 2 waterway (major or moderate fish habitat) (see Chapter 4).

Figure 6-3 Classification of waterways for fish passage types (NSW DPI, 2013)

6.1.3 Aquaculture and Oyster Reefs

6.1.3.1 Site Aquaculture

Figure 6-4 shows the current Aquaculture leases near the site, they are located throughout the Clyde River, this is approximately 5.2 km from the site. The sites shown are also classified as Priority Oyster Aquaculture Areas (POAA current). Figure 6-5 also shows the approved Shellfish Harvest Areas, these are also approximately 5.2 km from the site. Overall, the Clyde River does contain a number of Aquaculture sites including Oyster Farms and Shellfish Harvesting Areas. However, it is unlikely that the proposed works will impact areas of the Clyde River.

Figure 6-4 Current Aquaculture Leases (NSW DPIRD, 2025)

Figure 6-5 Shellfish Harvest Areas (NSW DPIRD, 2025)

6.1.3.2 NSW Oyster Reefs

Figure 6-6 shows mapped NSW Oyster Reefs near to the site. These occur in two major zones which are shown. The first is the Clyde River, to the west, with the closest NSW Oyster Reeds occurring approximately 5.2 km from the site. These are unlikely to be impacted by the proposed works. The other recorded Oyster Reef site is Cullendulla Creek, this is approximately 2 km from the site, and it should be noted that the proposed site and Cullendulla Creek are separated by Square Head. The Oyster Reefs seen here are a mixture of high profile (0.15-0.5 m) and combination, this typically refers to multiple habitat types that overlap i.e. oyster reef and seagrass. Due to the considerable distance between the proposed works and these Oyster Reefs, and the proposed activities to be undertaken, it is very unlikely the Oyster Reefs identified would be impacted by the proposal.

Figure 6-6 NSW Oyster Reefs (NSW DPIRD, 2025)

6.1.4 Wetlands

6.1.4.1 Coastal Wetlands

The CM Act establishes a strategic framework and objectives for managing coastal issues in NSW. The coastal wetlands and littoral rainforests are mapped areas which display the characteristics of coastal wetlands or littoral rainforests that were previously protected by SEPP 14 and SEPP 26.

Coastal Wetlands and Littoral Rainforests in the study area were mapped using the Fisheries NSW Spatial Data Portal and are shown in Figure 6-7. There are many expansive areas of Coastal Wetlands mapped within Batemans Bay and the Clyde River, including in the areas inland from Long Beach. However, the mapped Coastal Wetlands are located at least 130 m from the closest section of the proposal site and based on the expected impacts from construction outlined in Section 6.1.15, the mapped Coastal Wetlands and proximity areas are not expected to be impacted. As there are no Littoral Rainforests mapped in the vicinity of the proposed works and none were identified during the site visit, there is a low likelihood of Littoral Rainforests being impacted as a result of the proposed works.

Figure 6-7 Coastal Wetlands and Littoral Rainforests mapped in the general study area (NSW DPIRD, 2024)

6.1.4.2 Internationally and Nationally Significant Wetlands

Australia has 65 Internationally Significant Wetlands (Ramsar sites) covering more than 8.3 million hectares. Provisions for their protection are outlined in the EPBC Act. The Protected Matters Search result found in Appendix B indicates that there are no Ramsar sites occurring within or in proximity to the proposed site, therefore RAMSAR wetlands are unlikely to be impacted by the proposed works. There are 851 Nationally Important Wetlands in Australia, with 178 of these located in NSW, as listed in the third edition of The Directory of Important Wetlands (DCCEEW, 2023b). There are no Nationally Important Wetlands within the immediate study area and therefore will not be impacted by the proposed works.

6.1.5 Marine Protected Areas

Marine protected areas are parts of the NSW marine estate managed to conserve marine biodiversity and support marine science, recreation and education. The NSW system of marine protected areas includes:

- Marine parks – six multiple use marine parks cover around one third (approximately 345,000 hectares) of the NSW marine estate (refer to Section 6.1.5.1)
- Aquatic reserves – 12 aquatic reserves cover around 2,000 hectares of the NSW marine estate (refer to Section 6.1.5.2)

- National parks and nature reserves – include around 20,000 hectares of estuarine and oceanic habitats (refer to Section 6.1.6).

DPIRD undertakes the day to day management of marine parks and aquatic reserves. A map of marine protected areas in NSW is provided in Figure 6-8.

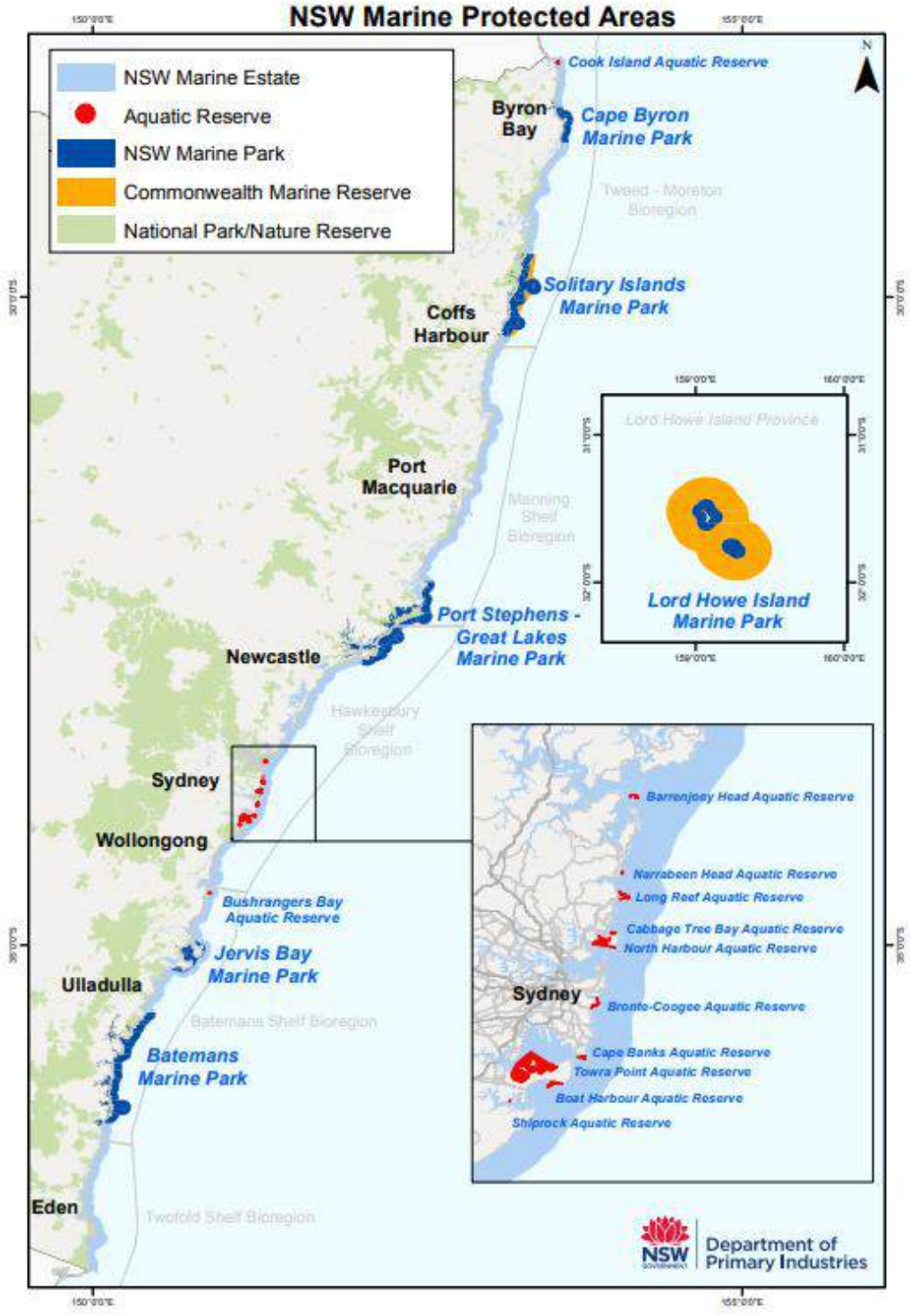


Figure 6-8 NSW Marine Protected Areas (NSW DPIRD, 2025)

6.1.5.1 Marine Parks - Batemans Marine Park

Batemans Marine Park is located in the study area. This park covers approximately 850 km^2 extending from the most northerly point of Murramarang Beach to the southern side of Wallaga Lake. It extends from the three-nautical-mile limit of NSW waters to the mean high-water mark within all rivers, estuaries, bays lagoons, inlets, and saline and brackish coastal lakes. It also includes offshore islands including Tollgate Islands and Montague Island.

Batemans Marine Park features large expanses of rocky reef that supports fish, invertebrate and algae, plus other habitats including rocky shores, kelp beds, seagrasses, mangroves, sponge gardens, sandy beaches, estuaries and open waters. Each habitat supports a diverse range of species, such as the critically endangered grey nurse shark.

Montague Island, within the Marine Park, provides important habitat to a range of species by offing the following:

- A breeding place for over 40,000 sea birds
- An Australian and New Zealand fur seal haul-out site
- A nesting location for three shearwaters species, crested terns and silver gulls
- A nesting site for 8,000-12,000 little penguins.

Batemans Marine Park consists of four zones: Sanctuary, Habitat Protection, General Use and Special Purpose. The Long Beach project site falls within a Habitat Protection Zone. This comprehensive zoning scheme is designed to protect the natural values and sensitive areas including providing for recreational and commercial use. The Batemans Marine Park Zoning Map is included in Appendix D, with an excerpt of this map showing the location of the Long Beach site shown in Figure 6-9.

Fishing is a popular recreational activity within the marine park, with over 80% of the park available to fish from. Batemans Marine Park is also a popular location for swimming, boating, surfing, snorkeling, diving and sightseeing.

The proposal is not expected to have direct or long-term impacts to the Batemans Marine Park. Any short-term, indirect impacts to the adjacent marine areas during construction can be minimised by implementing the relevant mitigation measures as outlined in Section 6.1.16.

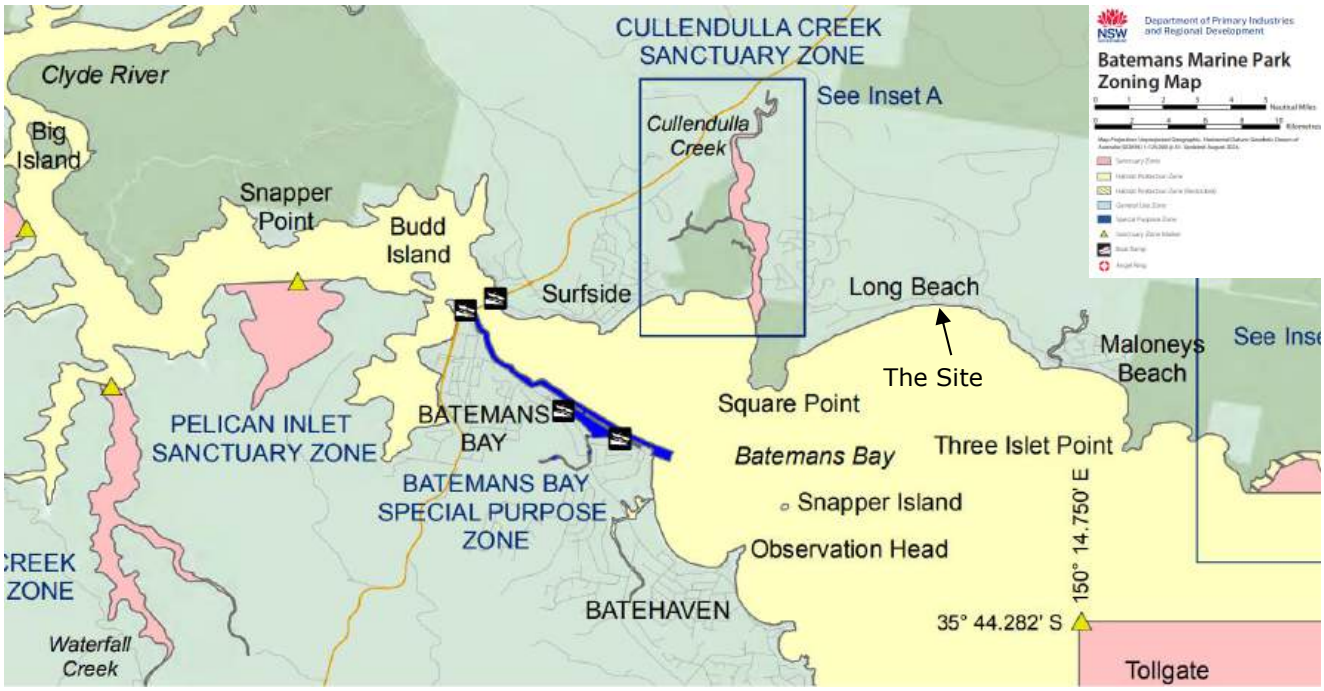


Figure 6-9 Batemans Marine Park Zoning Map (excerpt) (NSW DPIRD, 2025)

6.1.5.2 Aquatic Reserves

There are no aquatic reserves mapped in the vicinity of the proposal. However, there are several National Parks and Nature Reserves in the proposal vicinity, one of which occurs within a marine area of Batemans Bay, as described in the following Section 6.1.6.

6.1.6 National Parks and Nature Reserves

There is one national park and two nature reserves registered near to the project area as shown in Figure 6-10. They are as follows:

Clyde River National Park

This national park is described as a natural playground and is popular as a location for kayaking, canoeing, swimming and fishing. This national park is also used as a camping destination.

Cullendulla Creek Nature Reserve

This nature reserve offers scenic views of the surrounding area and is a popular spot for picnics, bird watching and hiking.

Tollgate Island Nature Reserve

This nature reserve spans 12 ha, it is prohibited to land on the island as it has been declared important for nesting seabirds and shorebirds.

No National parks or nature reserves are likely to be impacted either directly or indirectly by the proposed works.

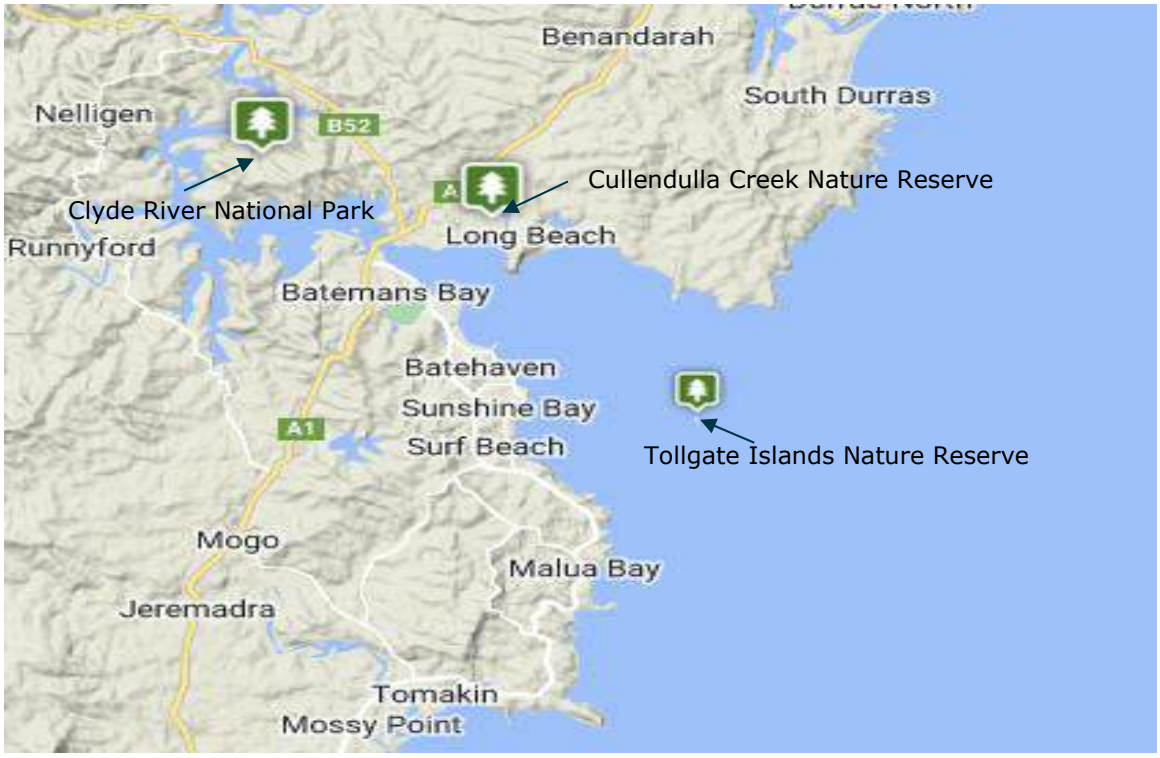


Figure 6-10 Overview of National Parks and Nature Reserves close to the proposal site (NPWS, 2024)

6.1.7 Critical Habitats/Areas of Outstanding Biodiversity Value (AOBVs)

This section identifies land declared as Critical Habitat (under the FM Act and EPBC Act) and Areas of Outstanding Biodiversity Value (AOBSs) (under the BC Act) located within the study area.

6.1.7.1 NSW Fisheries Management Act 1994

Critical Habitat is defined under the FM Act as 'the whole or any part of the habitat of an endangered species, population, or ecological community that is critical to the survival of the species, population, or ecological community'. The Register of Critical Habitat under the FM Act includes:

1. Grey Nurse Shark Critical Habitat – various locations in NSW are listed, with the closest area to Batemans Bay being Tollgate Islands. https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0003/381315/Grey-nurse-shark-critical-habitat.pdf

The Tollgate Islands Critical Habitat includes the waters below, and within a radius of 200 m of, the mean high water mark of the eastern side of the most easterly Island, but

only between a line extending due south from the most southern point of the Island (Figure 6-11). This area is located approximately 6 km from the study site and will not be impacted by the proposal.

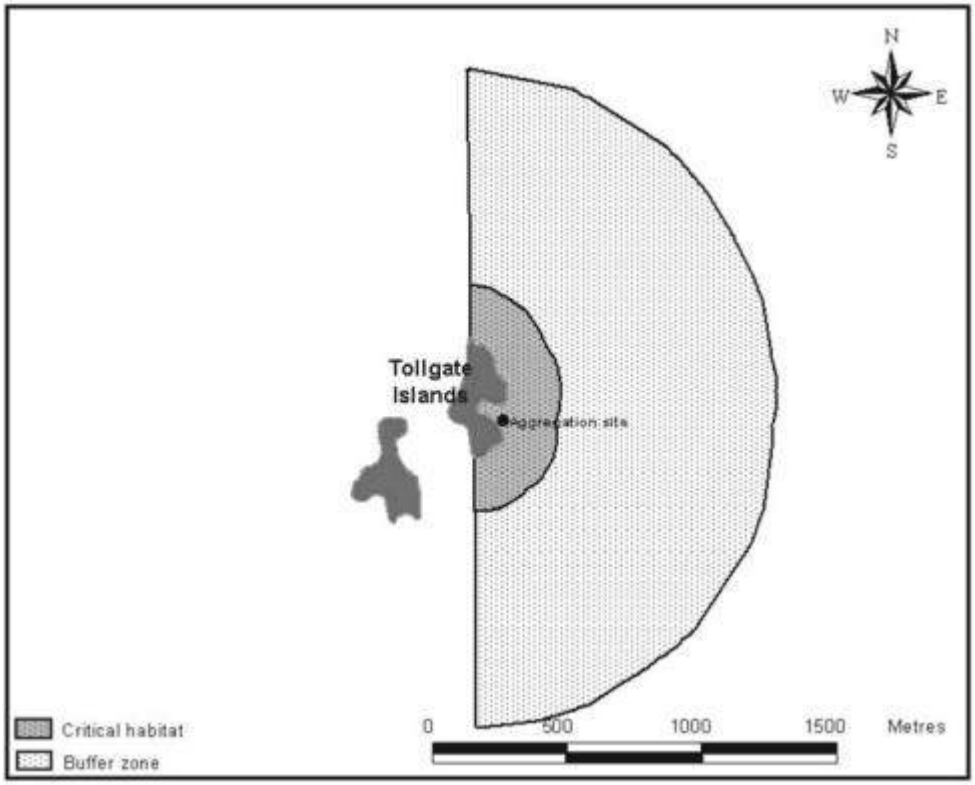


Figure 6-11 Grey Nurse Shark Critical Habitat – Tollgate Islands (NSW DPI, 2002)

6.1.7.2 Environment Protection and Biodiversity Conservation Act 1999

The Register of Critical Habitat for species listed under the EPBC Act indicates that no areas of listed Critical Habitat under this Act occur within the study area (DCCEEW 2024) (https://www.environment.gov.au/cgi-bin/sprat/public/publicregisterofcriticalhabitat.pl).

Areas of Critical Habitat identified under the EPBC Act include:

1. *Diomedea exulans* (Wandering Albatross) – Macquarie Island, TAS
2. *Lepidium ginninderrense* (Ginninderra Peppercress) – Northwest corner Belconnen Naval Transmission Station, ACT
3. *Manorina melanotis* (Black-eared Miner) – Gluepot Reserve, Taylorville Station and Calperum Station, excluding the area of Calperum Station south and east of Main Wentworth Road
4. *Thalassarche cauta* (Shy Albatross) – Albatross Island, The Mewstone, *Pedra Branca*, TAS
5. *Thallassarche chrysostoma* (Grey-headed Albatross) – Macquarie Island, TAS.

6.1.7.3 NSW Biodiversity Conservation Act 2016

The BC Act gives the Minister for the Environment the power to declare Areas of Outstanding Biodiversity Value (AOBVs). AOBVs are special areas that contain irreplaceable biodiversity values that are important to the whole of NSW, Australia or globally. AOBVs in NSW include:

1. Cabbage Tree Islands, Port Stephens, NSW – Critical Habitat for Gould's petrel (*Pterodroma leucoptera*).
2. Manly, Sydney Harbour, NSW – Critical Habitat for Little Penguin (*Eudyptula minor*).
3. Stotts Island Nature Reserve, NSW – Critical Habitat for Mitchell's Rainforest Snail (*Thersites mitchellae*).
4. Wollemi National Park, NSW – Critical Habitat for the Wollemi Pine (*Wollemia nobilis*).

No AOBVs are located within the study area and will not be impacted by the proposal.

Register of AOBVs - https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/areas-of-outstanding-biodiversity-value/area-of-outstanding-biodiversity-value-register

There will be no impact to any listed Critical Habitat under the FM Act or EPBC Act, or AOBVs listed under the BC Act as a result of the proposed works.

6.1.8 Threatened Ecological Communities

Eight threatened ecological communities were identified in the PMST report (see Table 6-1) as potentially occurring within the study area. However, based on both desktop assessment and field survey results, none of these communities are likely to be present within the proposal area. As such, the proposal is unlikely to have any impact on threatened ecological communities.

Table 6-1 Threatened Ecological Communities (MNES, 2024)

Community Name	Threatened Category	Presence Text	Buffer Status
Araluen Scarp Grassy Forest	Endangered	Community may occur within area	In feature area
Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area

Community Name	Threatened Category	Presence Text	Buffer Status
Illawarra and south coast lowland forest and woodland ecological community	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
Lowland Grassy Woodland in the South East Corner Bioregion	Critically Endangered	Community likely to occur within area	In feature area
River-flat eucalypt forest on coastal floodplains of Southern New South Wales and Eastern Victoria	Critically Endangered	Community may occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only

6.1.9 Biologically Important Areas

Biologically Important Areas listed within a 5 km radius of the proposal (refer to the EPBC Act 1999 Protected Matters Search in Appendix B) area listed below:

- Indo-Pacifica/Spotted Bottlenose Dolphin (*Tursiops aduncus*) – breeding behaviour, likely to occur, in feature area.
- Sooty Shearwater (*Ardenna grisea*) – foraging behaviour, likely to occur, in feature area
- Short-tailed Shearwater (*Ardenna tenuirostris*) – foraging behaviour, likely to occur, in feature area.
- Little Penguin (*Eudyptula minor*) – breeding behaviour, likely to occur, in feature area.
- White-faced Storm-petrel (*Pelagodroma m*arina) – breeding behaviour, known to occur, in feature area.
- Grey Nurse Shark (*Carcharias taurus*) – foraging behaviour, known to occur, in feature area.
- Humpback Whale (*Megaptera novaeangliae*) – migration (north and south), known to occur, in feature area.

BIAs for several marine and coastal species are known to occur or likely to occur within area 5 km radius of the proposal site as listed above. However, given the small scale and likely localised nature of the proposed coastal protection works, which will largely be undertaken above the tidal zone, impacts to the BIAs of these species, or any significant impacts to these species are considered highly unlikely. The works are not expected to substantially alter critical habitats such as breeding or foraging grounds, nor interfere with migratory pathways. Standard environmental management measures would further

reduce the potential for disturbance, particularly to sensitive breeding or foraging behaviours.

6.1.10 Key Ecological Features (Marine)

Key Ecological Marine Features (KEFs) are parts of the marine ecosystem that area important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area. KEFs identified to occur within 5 km of the proposal (refer the EPBC Act 1999 Protected Matters Search in Appendix B) are described below.

6.1.10.1 Upwelling East of Eden

The Upwelling East of Eden is an area of regionally high biodiversity and primary productivity, supporting fisheries and aggregations of marine life. When they interact with the continental shelf and headlands, dynamic eddies of the East Australian Current cause episodic productivity events. Episodic mixing and nutrient enrichment events drive phytoplankton blooms which are the basis of productive food chains including zooplankton, copepods, krill and small pelagic fish. The Upwelling East of Eden includes several top order predators, marine mammals and seabirds. It is one of two known feeding aggregation areas for blue and humpback whales. It is also an important area for seals, other cetaceans, sharks and seabirds (DCCEEW, n.d.). The location of upwelling frequency in southeastern Australia, showing persistent upwelling in the region, is shown in Figure 6-12. It is unlikely that the proposal will result in impacts to the Upwelling East of Eden, and this is further minimised by construction mitigation measures.

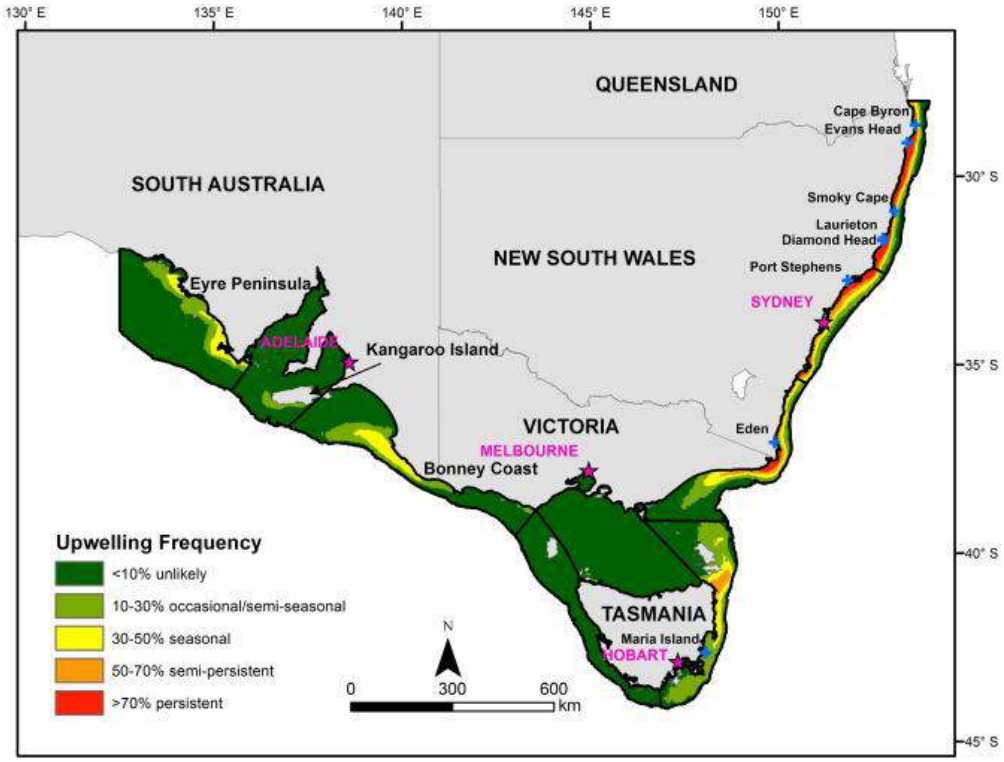


Figure 6-12 Upwelling frequency along Australia's south-east coastline (Huang and Wang, 2019).

6.1.11 Invasive Species (WeedWise)

All pest plants are regulated with a general biosecurity duty to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable (DPIRD, 2024). The inappropriate management of weeds has the potential to result in the introduction and spread of weeds through the environment and penalties to individuals and corporations involved in the works (Transport for NSW, 2019).

A NSW WeedWise Search (https://weeds.dpi.nsw.gov.au/) for the Eurobodalla LGA was undertaken with results provided in Appendix E. This search includes results for the whole south-east region by default.

Council is the local control authority for declared weeds under the *Biosecurity Act 2015*. Serious declared weeds in Eurobodalla LGA include:

- Serrated Tussock
- Coolatai Grass
- Bitou bBush
- Boneseed
- St John's Wort
- African Lovegrass.

Whilst invasive species are not expected to pose a risk to the construction or be exacerbated by the proposed work, proper management of invasive species is paramount, management of weed species during construction should be undertaken in accordance with the South East Regional Strategic Weed Management Plan 2023-2027 and the 'Weed Management and Disposal Guide' by Transport for NSW (2019).

6.1.12 Threatened and Protected Flora and Fauna Searches

6.1.12.1 Fisheries Management Act 1994

Threatened and protected marine species listed under Schedules 4 to 5 of the FM Act (see Appendix C) were reviewed to satisfy requirements of the Fisheries NSW Policy and Guidelines for Fish Habitat Conservation and Management (NSW DPI 2013). Search results are provided in Appendix F.

Marine species, populations and ecological communities listed as endangered, critically endangered and/or vulnerable (i.e. Schedule 4, 4Aa and 5) under the NSW FM Act with the potential to occur within the Clyde River estuary, Batemans Bay and/or adjacent coastal marine areas are listed below.

Schedule 4: Endangered Species, Populations and Ecological Communities:

- Scalloped Hammerhead Shark (*Sphyrna lewini*) – endangered species.
- Southern Bluefin Tuna (*Thunnus maccoyii*) – endanged species.
- Australian Grayling (*Prototroctes maraena*) – endangered species.
- Marine Worm (*Hadrachaeta aspeta*) – species presumed extinct.
- Green Sawfish (*Vancoorstia bennettiana*) – species presumed extinct.
- Bennett's Seaweed (*Vanvoorstia bennettiana*) – species presumed extinct.

Schedule 4A: Critically Endangered Species and Ecological Communities:

- Greynurse Shark (*Carcharius taurus*) – critically endangered species.
- Marine Slug (*Smeagol hilaris*) – critically endangered species.
- Marine Brown Algae (*Nereia lophocladia*) – critically endangered species.

Schedule 5: Vulnerable Species and Ecological Communities:

- Great White Shark (*Carcharondon carcharias*) – vulnerable species.
- Black Cod (*Epinephelus daemelii*) – vulnerable species.
- Great Hammerhead Shark (*Sphyrna mokarran*) – vulnerable species.

Protected Species:

- All species of the families 'Syngnathidae', 'Solenostomidae' and 'Pegasidae' (i.e. seahorses, sea dragons, pipefish, pipehorses).
- Ballina Angelfish, *Chaetodontoplus ballinae*.
- Bluefish, *Girella cyan*ea.
- Eastern Blue Devil Fish, *Paraplesiops bl*eekeri.
- Elegant Wrasse, *Anampses elegans*.
- Estuary Cod, *Ephinephelus coioides*.
- Giant Queensland Groper, *Epinephelus lanceolatus*.
- Herbsts Nurse Shark, *Odontaspis ferox*.

Considering the marine habitat located within and adjacent to the proposed works area, and as the site is largely above the high tide limit, none of these species are expected to occur at the site. There is the potential that some species may utilise marine habitats within greater Batemans Bay of offshore. Considering the proposed activities, potential impacts (Section 6.1.16) and available mitigation measures (Section 6.1.15), the proposed works are not expected to cause any long term or significant impact on any threatened or protected species listed under the FM Act, nor are they expected to impact on the viability of any local populations, or place any of them at the risk of extinction.

Marine Vegetation

All marine vegetation is protected under the FM Act. The Fisheries NSW Spatial Data Portal shows the location of estuarine macrophytes mapped by NSW DPIRD at and near the site.

No estuarine macrophytes are mapped at the site, however, mangroves, saltmarsh and seagrass (*Zostera and Posidonia sp.)* do occur within Batemans Bay and the Clyde River estuary (Figure 6-13). The closest mapped marine vegetation is located over 500 m away. Under the FM Act, Section 205, it is an offense to harm, remove, or damage marine vegetation without approval from relevant authorities. It is highly unlikely that the proposed works will cause any harm to marine vegetation as it does not occur within or adjacent to the proposed works area and proposed safeguards will ensure that impacts outside of this area do not occur.

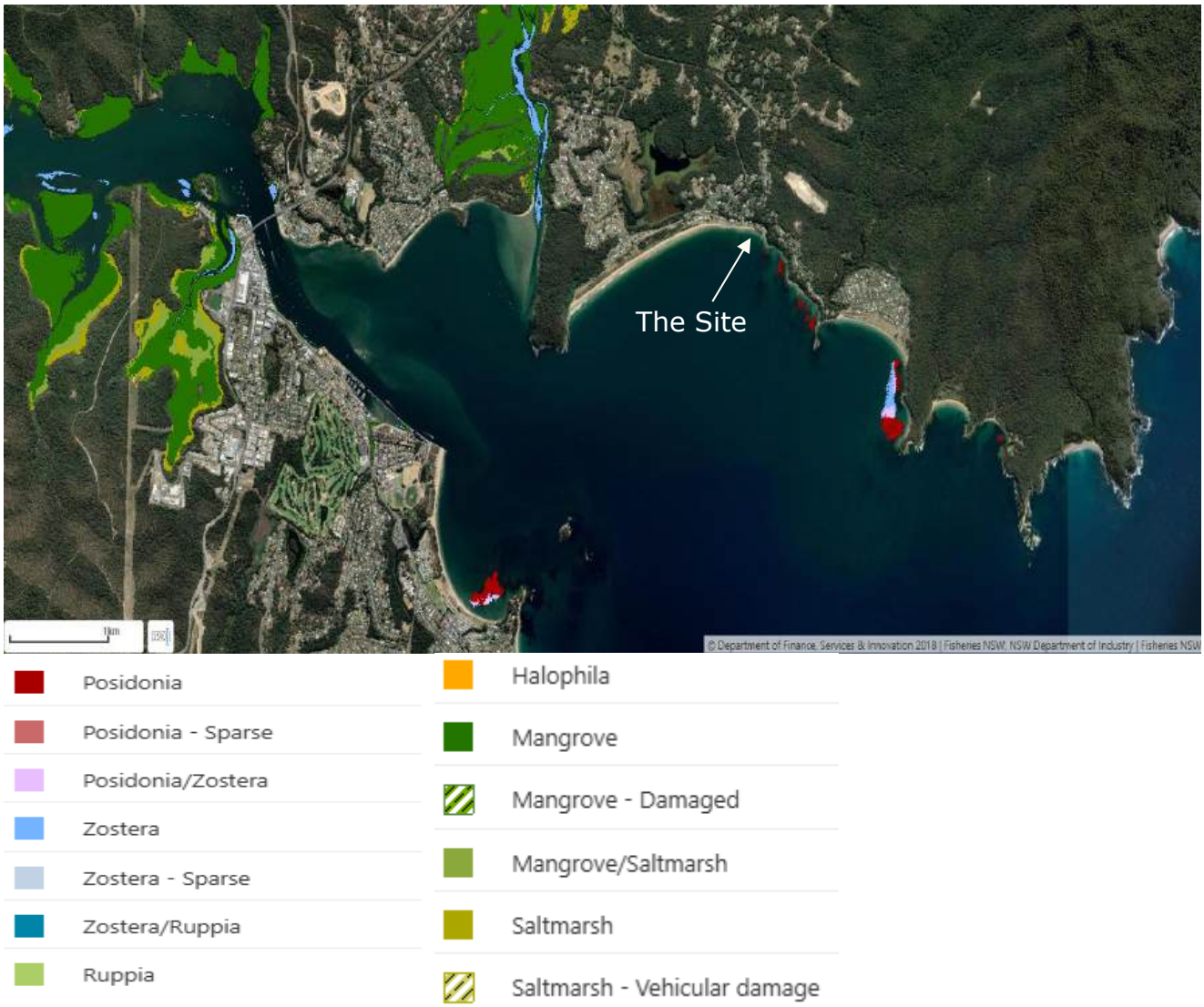


Figure 6-13 NSW Estuarine Macrophytes (NSW DPIRD, 2025)

6.1.12.2 Biodiversity Conservation Act 2016

An online database search for threatened and protected species listed under the NSW BC Act recorded within a 10 km radius of the study site (using the BioNet Atlas of NSW Wildlife) was undertaken. The full Atlas of NSW Wildlife search results are provided in Appendix G. The search listed 10 threatened marine species recorded within the study area, including marine turtles, penguins, sea-snakes, seals, whales and dolphins. Further, nine shorebirds have also been recorded within the study area. Refer to Table 6-2 for the listed species.

Table 6-2 Threatened and protected marine species listed under the BC Act 2016 recorded in the study area

Common Name	Species Name	Status
Loggerhead Turtle	*Caretta caretta*	Endangered Protected
Green Turtle	*Chelonia mydas*	Vulnerable Protected
Leatherback Turtle	*Dermochelys coriacea*	Endangered Protected
Little Penguin	*Eudyptula minor*	Protected
Yellow-bellied Sea Snake	*Hydrophis platurus*	Protected
New Zealand Fur-seal	*Arctocephalus forsteri*	Vulnerable Protected
Australian Fur-seal	*Arctocephalus pusillus doriferus*	Vulnerable Protected
Leopard Seal	*Hydrurga leptonyx*	Protected
Southern Elephant Seal	*Mirounga leonine*	Protected
Southern Right Whale	*Eubalaena australis*	Endangered Protected
Pygmy Right Whale	*Caperea marginata*	Protected
Common Dolphin	*Delphinus delphis*	Protected
Sooty Oystercatcher	*Haematopus fuliginosus*	Vulnerable Protected
Pied Oystercatcher	*Haematopus longirostris*	Endangered Protected
Grey Plover	*Pluvialis squatarola*	Protected
Eastern Hooded Dotterel	*Thinornis cucullatus cucullatus*	Critically Endangered
Masked Lapwing	*Vanellus miles*	Protected
Spur-winged Plover	*Vanellus miles novaehollandiae*	Protected
Bar-tailed Godwit	*Limosa lapponica*	Protected
Eastern Curlew	*Numenius madagascariensis*	Protected
Whimbrel	*Numenius phaeopus*	Protected

6.1.12.3 Environmental Protection and Biodiversity Conservation Act 1999

An online database search for species listed under the EPBC Act with the potential to occur in the study area (within a 5 km radius of the site) was made using the EPBC Act Protected Matters Search Tool. Full search results are provided in Appendix B.

The search listed 85 listed threatened species and 58 migratory species as listed in Table 6-3 to Table 6-9. It should be noted that for birds and terrestrial fauna only species which are considered as marine or shorebirds or those likely to be present on a coastal beach environment have been added into the tables.

In total, 58 migratory species have been identified within the Protected Matters Search. Thirty-seven (37) of these species have no EPBC listed threatened category, this means they are protected for their migratory status under various international migratory agreements. Twenty-one (21) species have an EPBC threatened category and have been listed in their respective tables as additional information in the 'Threatened Category' columns.

Twenty-seven (27) birds from the 'Listed Threatened Species' have been identified and shown below in Table 6-3. Shorebirds typically exhibit ground-nesting behaviour, selecting open coastal habitats such as sandy or shingle beaches, tidal flats, saltmarshes, and dunes for nest placement. Nests are generally simple scrapes in the substrate, often lined with pebbles, shells, or vegetation to aid in insulation and camouflage. Nesting is typically seasonal, aligned with periods of high invertebrate availability. During the site visit, no evidence of nesting was recorded, some shorebirds had been recorded as seen on-site, though they had been exhibiting foraging behaviours. Short-term impacts may include avoidance of the area due to an increase in machinery, noise and people during the construction period. Post-construction impacts may also be seen due to the altered habitat in front of the revetment, however, this may not necessarily be negative as the structure may offer some increased shelter and habitat for foraging.

Table 6-3 Listed Threatened Shorebirds and Seabirds (PMST, 2024)

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Sooty Shearwater	*Ardenna grisea*	Vulnerable Migratory	Species or species habitat likely to occur within area	In feature area
Red Knot, Knot	*Calidris canutus*	Vulnerable	Species or species habitat may occur within area	In feature area
Curlew Sandpiper	*Calidris ferruginea*	Critically Endangered Migratory	Species or species habitat likely to occur within area	In feature area

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Eastern Bristlebird	*Dasyornis brachypterus*	Endangered	Species or species habitat likely to occur within area	In feature area
Antipodean Albatross	*Diomedea antipodensis*	Vulnerable Migratory	Foraging, feeding or related behaviour likely to occur within area	In feature area
Southern Royal Albatross	*Diomedea epomophora*	Vulnerable Migratory	Foraging, feeding or related behaviour likely to occur within area	In feature area
Wandering Albatross	*Diomedea exulans*	Vulnerable Migratory	Foraging, feeding or related behaviour likely to occur within area	In feature area
Northern Royal Albatross	*Diomedea sanfordi*	Endangered Migratory	Species or species habitat may occur within area	In feature area
Brown Treecreeper (south-eastern)	*Climacteris picumnus victoriae*	Vulnerable	Species or species habitat known to occur within area	In feature area
Gibson's Albatross	*Diomedea antipodensis gibsoni*	Vulnerable Migratory	Foraging, feeding or related behaviour likely to occur within area	In feature area
White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian)	*Fregetta grallaria grallaria*	Vulnerable Migratory	Species or species habitat likely to occur within area	In feature area
Shy Albatross	*Thalassarche cauta*	Endangered Migratory	Foraging, feeding or related behaviour likely to occur within area	In feature area
Southern Giant-Petrel, Southern Giant Petrel	*Macronectes giganteus*	Endangered	Species or species habitat may occur within area	In feature area
Northern Giant Petrel	*Macronectes halli*	Vulnerable Migratory	Foraging, feeding or related behaviour	In feature area

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
			likely to occur within area	
South-eastern Hooded Robin, Hooded Robin (south-eastern)	*Melanodryas cucullata cucullata*	Endangered	Species or species habitat may occur within area	In feature area
Eastern Curlew, Far Eastern Curlew	*Numenius Madagascariensis*	Critically Endangered Migratory	Species or species habitat known to occur within area	In feature area
Fairy Prion (southern)	*Pachyptila turtur subantarctica*	Vulnerable Migratory	Species or species habitat known to occur within area	In feature area
Gould's Petrel, Australian Gould's Petrel	*Pterodroma leucoptera leucoptera*	Endangered Migratory	Species or species habitat may occur within area	In feature area
Kermadec Petrel (western)	*Pterodroma neglecta neglecta*	Vulnerable Migratory	Foraging, feeding or related behaviour may occur within area	In feature area
Australian Fairy Tern	*Sternula nereis nereis*	Vulnerable Migratory	Breeding likely to occur within area	In feature area
Buller's Albatross, Pacific Albatross	*Thalassarche bulleri*	Vulnerable Migratory	Species or species habitat may occur within area	In feature area
Northern Buller's Albatross, Pacific Albatross	*Thalassarche bulleri platei*	Vulnerable Migratory	Species or species habitat may occur within area	In feature area
Indian Yellow-nosed Albatross	*Thalassarche carteri*	Vulnerable Migratory	Species or species habitat likely to occur within area	In feature area
Chatham Albatross	*Thalassarche eremita*	Endangered Migratory	Foraging, feeding or related behaviour may occur within area	In feature area
Campbell Albatross, Campbell Black-browed Albatross	*Thalassarche impavida*	Vulnerable Migratory	Species or species habitat may occur within area	In feature area

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Black-browed Albatross	*Thalassarche melanophris*	Vulnerable Migratory	Foraging, feeding or related behaviour likely to occur within area	In feature area
Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit	*Limosa lapponica baueri*	Endangered	Species or species habitat known to occur within area	In feature area

Four listed threatened fish have been identified and shown below in Table 6-4. The typical habitat of these species has been considered in order to determine their likelihood of occurrence and being impacted by the proposed works.

Blue Warehou are a bentho-pelagic species that inhabits continental shelf and slope waters. Adults can be found at depths from 50-300 metres. Blue Warehou are a schooling fish and usually aggregate close to the seabed. Juveniles can sometimes be found schooling close to the surface in estuaries, often in association with jellyfish (Australian Fisheries Management Authority, 2024).

The Black Rockcod is a territorial species that inhabits caves, gutters and crevices. They are usually found in depths up to 50 m, although individuals have been collected from below 100 m. Juveniles are found inshore, often in coastal rockpools and estuaries (DPI, 2025)

Habitat for the Australian Grayling includes the following elements: adult Australian Grayling inhabit and breed in rivers and streams, usually in cool waters often with alternating pool and riffle zones; larvae and juveniles inhabit estuaries and coastal seas, although their precise habitat requirements are poorly known (Threatened Species Section, 2025).

Given the habitat descriptions of the three species, it is unlikely that the species will be impacted by the onshore works being proposed.

Southern Bluefin Tuna are found in oceanic waters normally on the seaward side of the continental shelf. They belong to the family Scombridae which also includes tuna, mackerel, bonito and wahoo. Worldwide the species is considered a single population. Southern Bluefin Tuna spawn at only one location in the tropical waters between Java and north-west Australia (DPIRD, 2025).

Given the habitat descriptions of the three species, it is unlikely that the species will be impacted by the onshore works being proposed.

Table 6-4 Listed Threatened Fish (PMST, 2024)

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Blue Warehou	*Seriolella brama*	Conservation Dependent	Species or species habitat known to occur within area	In feature area
Black Rockcod, Black Cod, Saddled Rockcod	*Epinephelus daemelii*	Vulnerable	Species or species habitat likely to occur within area	In feature area
Australian Grayling	*Prototroctes maraena*	Vulnerable	Species or species habitat known to occur within area	In feature area
Southern Bluefin Tuna	*Thunnus maccoyii*	Conservation Dependent	Species or species habitat known to occur within area	In feature area

Four threatened mammals have been identified and shown below in Table 6-5. Overall, the three mammals listed are unlikely to be impacted by the proposed works. Firstly, the three listed cetaceans are unlikely to be seen close to the shoreline at this site, typically occurring in offshore marine waters, furthermore, the proposed works are being undertaken from land. The grey-headed flying fox is also unlikely to be impacted as the species is arboreal and unlikely to be moving on the ground where the proposed works will take place.

Table 6-5 Listed Threatened Mammals (PMST, 2024)

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Southern Right Whale	*Eubalaena australis*	Endangered Migratory	Species or species habitat known to occur within area	In feature area
Blue Whale	*Balaenoptera musculus*	Endangered Migratory	Species or species habitat may occur within area	In feature area
Pygmy Right Whale	*Capera marginata*	Migratory	Foraging, feeding or related behaviour likely to occur within area	In feature area
Grey-headed Flying-fox	*Pteropus poliocephalus*	Vulnerable	Roosting known to occur within area	In feature area

Three threatened frog species have been identified and shown below in Table 6-6. The typical habitat of these three frog species has been considered in order to determine their likelihood of being impacted by the proposed works.

The Giant Burrowing Frog is found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based (Bionet, 2025).

The Southern Heath Frog species breeds in the upper reaches of permanent streams and in perched swamps. Non-breeding habitat is heath-based forests and woodlands where it shelters under leaf litter and low vegetation, and hunts for invertebrate prey either in shrubs or on the ground (Bionet, 2025).

The Green and Golden Bell Frog inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha spp*.) or spikerushes (*Eleocharis spp*.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available (Bionet, 2025) and they can also be found within urban drainage lines.

Overall, the habitat surrounding the proposal site is not typically suited to the three listed species, there is a potential for the Giant Burrowing Frog to be found in the adjacent bushland to the site, however, no species had been recorded during the site visit. The proposed works located on the beach area are not expected to have significant long term or short-term impacts on the listed frog species, nor will they disturb native terrestrial vegetation areas that may be used by these or other frog species.

Table 6-6 Listed Threatened Frogs (PMST, 2024)

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Giant Burrowing Frog	*Heleioporus australiacus*	Vulnerable	Species or species habitat may occur within area	In feature area
Southern Heath Frog, Watson's Tree Frog	*Litoria watsoni*	Endangered	Species or species habitat may occur within area	In feature area
Green and Golden Bell Frog	*Litoria aurea*	Vulnerable	Species or species habitat likely to occur within area	In feature area

Eleven threatened plant species have been identified within a 5 km radius of the site and are listed in Table 6-7. The typical habitat for these species has been considered based on the published threatened species profile information in order to determine their likelihood of being impacted by the proposed works.

Eastern Underground Orchid is a small flowering plant that is usually found in sclerophyll/ eucalypt forests and has been recorded in ten known locations north of Batemans Bay. The proposal site does not contain suitable habitat for the species.

Scrub Turpentine, Brown Malletwood is a shrub or small tree that grows in a variety of different rainforests from the Batemans Bay region of southeastern NSW to Gympie in southeastern Queensland. The proposal site does not contain suitable habitat for the species.

Jillaga Ash is a small to medium tree that grows only in the catchment areas of the Tuross and Deua Rivers, in steeply sloping dry woodland on relatively infertile soils. The proposal site does not contain suitable habitat for the species.

Austral Toadflax is a small, straggling herb that typically occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast. It is often found in association with Kangaroo Grass (*Themeda australis*) and has been found in very small populations scattered across NSW. The proposal site does not contain suitable habitat for the species.

Thick-lipped Spider-orchid is a small flowering plant that is generally found in grassy sclerophyll woodland on clay loam or sandy soils. The proposal site does not contain suitable habitat for the species.

East Lynne Midge-orchid is a small flowering plant that grows in dry sclerophyll woodland and forest, which occurs primarily on National Park and Forests Corporation NSW estate between Moruya and Ulladulla. The proposal site does not contain suitable habitat for the species.

Leafless Tongue-orchid is a small flowering plant that is known from a range of communities especially on the South Coast of NSW, including swamp-heath and woodland. The proposal site does not contain suitable habitat for the species.

Knotweed is a small herb that normally grows in damp places, especially beside streams and lakes. It occasionally is found in swamp forest or associated with disturbance. The proposal site does not contain suitable habitat for the species.

Wingless Raspwort is a shrub that generally requires protected and shaded damp situations in riparian habitats to grow. The proposal site does not contain suitable habitat for the species.

The Jervis Bay Leek Orchid is a small flowering ground orchid that grows on poorly drained grey clay soils that support low heathland and sedgeland communities. It is currently known to exist in three areas at Kinghorne Point, Wowly Gully near the town of Callala Bay, and near the township of Vincentia. The proposal site does not contain suitable habitat for the species.

Chef's Cap Correa is a shrub that typically occurs in riparian sites within forests of various eucalypts. The proposal site does not contain suitable habitat for the species.

Overall, the habitat of the proposal site is not typically suited to these species as the proposal is limited to the beach and its adjacent dune areas.

Table 6-7 Listed Threatened Plants (PMST, 2024)

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Eastern Underground Orchid	*Rhizanthella slateri*	Endangered	Species or species habitat may occur within area	In feature area
Scrub Turpentine, Brown Malletwood	*Rhodamnia rubescens*	Critically Endangered	Species or species habitat known to occur within area	In feature area
Jillaga Ash	*Eucalyptus jillaga*	Endangered	Species or species habitat may occur within area	In buffer area only
Austral Toadflax, Toadflax	*Thesium australe*	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thick-lipped Spider-orchid, Daddy Long-legs	*Caladenia tessellata*	Vulnerable	Species or species habitat likely to occur within area	In feature area
East Lynne Midge-orchid	*Genoplesium vernale*	Vulnerable	Species or species habitat likely to occur within area	In feature area
Leafless Tongue-orchid	*Cryptostylis hunteriana*	Vulnerable	Species or species habitat known to occur within area	In feature area
Knotweed, Tall Knotweed	*Persicaria elatior*	Vulnerable	Species or species habitat known to occur within area	In feature area
Wingless Raspwort, Square Raspwort	*Gonocarpus salsoloides*	Vulnerable	Species or species habitat likely to occur within area	In feature area
Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid	*Prasophyllum affine*	Endangered	Species or species habitat may occur within area	In buffer area only

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Chef's Cap	*Cheiranthera filifolia*	Vulnerable	Species or species habitat likely to occur within area	In feature area

Five threatened reptile species (all marine turtles) are known to occur within a 5 km radius of the site and are listed in Table 6-8. There are no specific reports of sea turtle sightings or nesting events at Long Beach. However, sea turtles have been observed in the broader Batemans Bay area and New South Wales in general. They are likely to occur on occasion within the Batemans Bay waterway.

Table 6-8 Listed Threatened Reptiles (PMST, 2024)

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
Loggerhead Turtle	*Caretta caretta*	Endangered Migratory	Breeding likely to occur within area	In feature area
Leatherback Turtle, Leathery Turtle, Luth	*Dermochelys coriacea*	Endangered Migratory	Breeding likely to occur within area	In feature area
Hawksbill Turtle	*Eretmochelys imbricata*	Vulnerable Migratory	Breeding likely to occur within area	In feature area
Flatback Turtle	*Natator depressus*	Vulnerable Migratory	Foraging, feeding or related behaviour known to occur within area	In feature area
Green Turtle	*Chelonia mydas*	Vulnerable Migratory	Foraging, feeding or related behaviour known to occur within area	In feature area

Three threatened shark species have been identified and shown below in Table 6-9. Direct impacts to these three species are unlikely to occur as a result of the proposed works as the works are proposed largely above the tidal zone.

Table 6-9 Listed Threatened Sharks (PMST, 2024)

Common Name	Scientific Name	Threatened Category	Presence Text	Buffer Status
White Shark, Great White Shark	*Carcharodon carcharias*	Vulnerable Migratory	Species or species habitat known to occur within area	In feature area
Grey Nurse Shark (east coast population)	*Carcharias taurus*	Critically Endangered	Congregation or aggregation known to occur within area	In feature area
Whale Shark	*Rhincodon typus*	Vulnerable Migratory	Species or species habitat may occur within area	In feature area

Overall, it can be seen that it is unlikely for direct impacts to occur to any of the listed species, particularly when following proper mitigation measures. Indirectly however, species may be impacted by sediment runoff and impacts to water quality, if not managed correctly or as a result of accidental construction related incidents.

Several species listed under Other Matters Protected by the EPBC Act are predicted to occur in the general area, including various marine species. These species are not considered MNES and are not expected to be impacted due to the limited scale and onshore nature of the proposed works.

6.1.13 Groundwater Dependent Ecosystems

Groundwater plays an important role in sustaining aquatic and terrestrial ecosystems, such as springs, wetlands, rivers and vegetation. Understanding these groundwater-dependent ecosystems (GDEs) is essential for groundwater management and planning.

The Groundwater Dependent Ecosystems Atlas (GDE Atlas) (http://www.bom.gov.au/water/groundwater/gde/) was developed as a national dataset of Australian GDEs to inform groundwater planning and management.

The Atlas contains information about three types of ecosystems:

- Aquatic ecosystems that rely on the surface expression of groundwater–this includes surface water ecosystems which may have a groundwater component, such as rivers, wetlands and springs. Marine and estuarine ecosystems can also be groundwater dependent, but these are not mapped in the Atlas
- Terrestrial ecosystems that rely on the subsurface presence of groundwater–this includes all vegetation ecosystems
- Subterranean ecosystems–this includes cave and aquifer ecosystems.

Only aquatic and terrestrial GDEs are shown, and no subterranean GDEs had been found to be present (Figure 6-14).

Impacts to GDEs can include depletion, pollution, and alterations to groundwater flow patterns. The proposed works does not involve changes to groundwater flows and is therefore not expected to have significant impacts to existing GDEs found within the area.

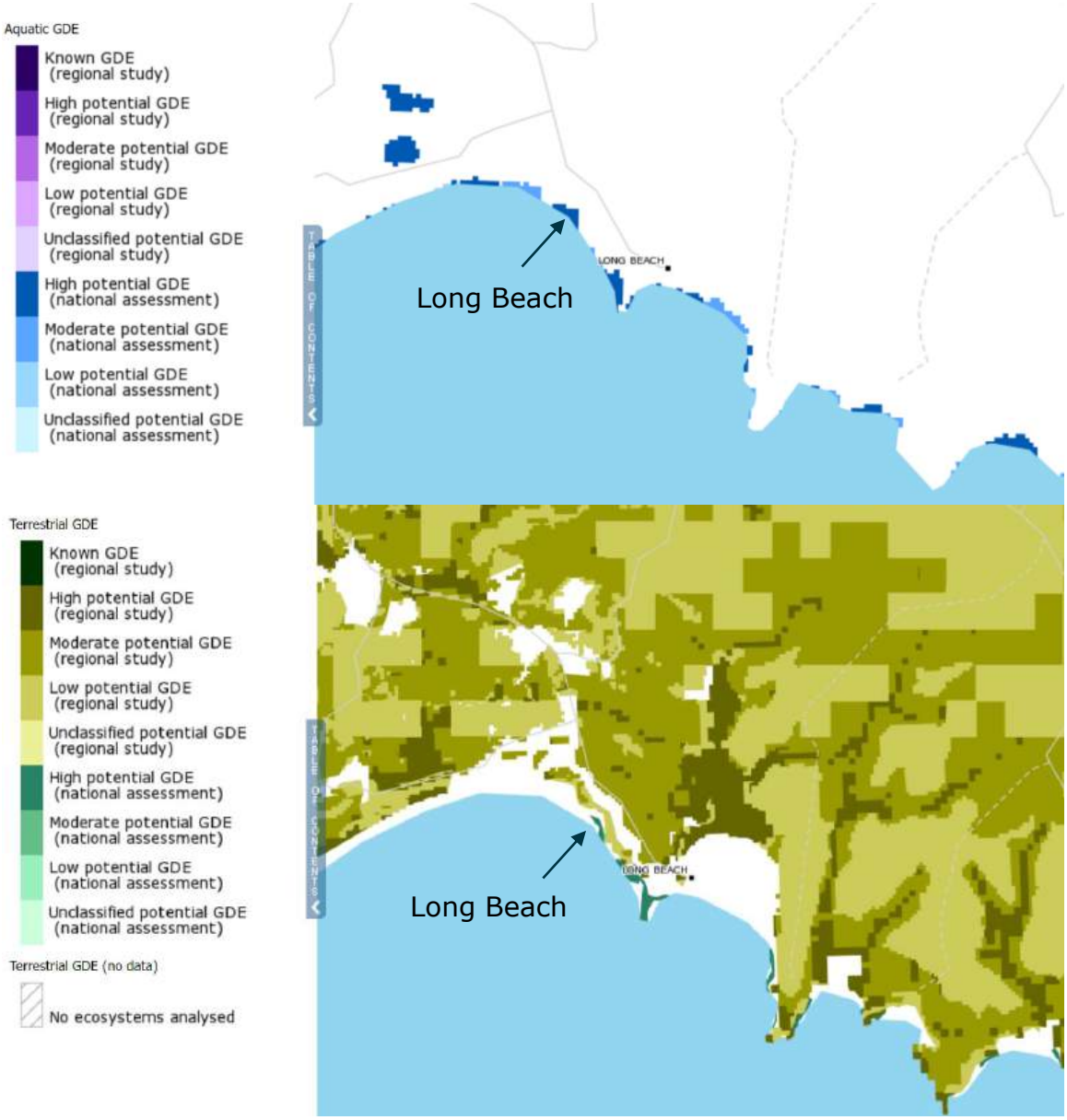


Figure 6-14 Location of GDEs in relation to the study area (aquatic, terrestrial and subterranean) (GDE Atlas, 2024)

6.1.14 Terrestrial Vegetation

The State Vegetation Map as shown from the SEED portal in Figure 6-15 includes unclassified vegetation and part of the foreshore vegetation mapped as plant community type (PCT) 3410 Spinifex Strandline Grassland. In addition, adjacent to the proposal site, there stands of Norfolk Island Pines (*Araucaria heterophylla*). Further considerations to flora have been discussed in Section 6.1.12.3.

Vegetation will be removed within the construction zone (Figure 6-15) this includes planted non-native grass along the road reserve and native vegetation (i.e. Beach Spinifex and Pigface) within the dune areas of the mapped PCT 3410. As the works will be undertaken by the Council, as the determining authority under Part 5 of the EP&A Act (this REF), a permit for vegetation removal is not required.

The Norfolk Island Pines have the highest potential at being impacted from construction activities as these are located in the immediate vicinity of the construction zone. Impacts to these trees will be avoided during construction with the implementation of tree protection measures.

Overall, impacts to terrestrial vegetation is considered minor and localised with vegetation to be installed to cover the completed revetment.

Figure 6-15 Vegetation classification at Long Beach (SEED, 2025)

6.1.15 Biodiversity impacts

Potential impacts to the site as a result of the proposal are minimal and primarily expected during construction. Potential impacts are discussed below.

Key Fish Habitat

- Temporary disturbance to upper intertidal beach habitat and associated infauna during construction
- No impacts to marine vegetation will occur as it does not occur at the site

- Minor sediment mobilisation during excavation and from stockpiled materials, potentially affecting water quality if runoff into the waterway occurs.

Aquaculture and Oyster Reefs

- Low risk of increased turbidity or water quality impacts from accidental events affecting aquaculture leases upstream of the site in the Clyde River.

Wetlands

- Minor risk of indirect runoff or sedimentation impacts to wetland areas
- Possible temporary disturbance to fringe vegetation.

National Parks and Nature Reserves

- No direct impact expected if works remain outside reserve boundaries
- Low risk of indirect effects (e.g., noise, dust) if in close proximity.

Critical Habitats and Areas of Outstanding Biodiversity Value

- Unlikely to be present; if identified nearby, potential indirect disturbance or degradation through sedimentation or altered drainage.

Threatened Ecological Communities

- Potential for localised vegetation clearance if TECs are present within the footprint
- Risk of edge effects or weed incursion if adjacent.

Biologically Important Areas

- Possible short-term disturbance to foraging or movement corridors
- Low risk of impact with timing and spatial controls in place.

Key Ecological Features

- Unlikely to be directly affected; possible indirect impacts such as increased sedimentation or temporary noise disturbance.

Invasive Species (weeds)

- Potential for weed introduction or spread through machinery or material import
- Disturbance to soil and vegetation may promote weed colonisation.

Threatened and Protected Flora and Fauna (FM Act, EPBC Act and BC Act)

- Potential for minor disturbance to habitat if present within or adjacent to the works area
- Risk of incidental harm to individuals during construction activity, though unlikely.

Marine Parks

- No direct impact if works are outside marine park boundaries

- Low risk of indirect water quality impacts if adjacent.

Groundwater Dependent Ecosystems

- Low likelihood of interaction; minimal risk of alteration to groundwater regimes.

Terrestrial Vegetation

- Minor vegetation clearance is required
- Risk of soil compaction, root disturbance, and edge effects in adjacent vegetation.

The proposed small-scale coastal protection works are primarily land-based and are not expected to result in significant or lasting environmental impacts. With appropriate management and mitigation in place (Section 6.1.16), the likelihood of adverse effects across environmental values remains low. Potential impacts are generally limited to temporary construction-related disturbances such as minor vegetation clearance, localised sediment mobilisation, and short-term noise or activity near sensitive habitats. These effects are expected to be minimal, reversible, and confined to the immediate footprint of works. Ongoing environmental safeguards will be implemented to avoid or minimise risks to ecological values including fish habitats, wetlands, threatened species, and protected areas.

6.1.16 Biodiversity safeguards

Table 6-10 found below, lists relevant biodiversity related safeguards.

Table 6-10 Biodiversity safeguards

Category	Mitigation Measure
Aquatic Ecology	• A site-specific Construction Environment Management Plan (CEMP) must include instructions for dealing with orphaned or injured native animals and include the contact details for the NSW Wildlife Information, Rescue and Education Service Inc (WIRES). • Pre-works briefing to be undertaken for all contractors advising staff of sensitive areas and relevant safeguards for these areas. • Wash down equipment and vehicles prior to arrival onsite and after use, to manage the introduction and spread of weed propagules. • Provide contractors with a copy of 'Make 'clean' part of your routine' fact sheet (NSW DPI, 2015) and include it as part of CEMP to ensure correct cleaning protocols are adhered to. • Any suspected new sightings of invasive species are to be reported by calling the 24-hour recorded hotline; 02 4916 3877 or email aquatic.pests@dpi.nsw.gov.au

Category	Mitigation Measure
	• Potential impacts of aquatic debris on fauna to be reduced by ensuring general and construction waste is contained and disposed of correctly onshore. • To limit the potential of a fish-kill incident, regular visual inspection of the waterway for dead or distressed fish (indicated by fish gasping at the water surface, fish crowding at the shoreline) must be conducted. • DPIRD Fisheries (1800 043 536) shall be immediately notified of any observations or reports of dead or distressed marine fauna within the proposal site. In such cases, all works other than emergency response procedures are to cease until the issue is rectified and written approval to proceed is provided by DPI Fisheries.
Terrestrial Ecology	• Minimise construction footprint to the smallest area possible to reduce impact to the terrestrial environment, locate parking and laydown areas in previously disturbed open areas away from trees or extant native vegetation. • Vegetation Protection: Tree protection to existing Pines is to be provided during construction in line with AS 4970-2009 Protection of Trees on Development Sites. • Weed management: Clean all machinery before site entry, monitor for weed outbreaks, and manage infestations in line with a weed management plan. • Noise and light mitigation: Restrict high-noise activities to approved hours. Use acoustic shielding and downward-directed, low-glare lighting to minimise fauna disturbance. • Revegetation and rehabilitation: Replant cleared areas using appropriate native species and monitor revegetation success until establishment. • Groundwater and hydrology management: Design works to avoid altering natural drainage patterns or groundwater flows that support mangroves, swamp forests, or other groundwater-dependent ecosystems.

6.2 Water

Figure 6-16 examines a basic overview of the site and surrounding bodies of water. Tidal planes for Long Beach are best represented by tidal planes for the offshore monitoring station at Batemans Bay (Easting 251726, Northing 6037036). During storms, coastal water levels may be further elevated by the effects of wind setup, barometric setup and wave setup.

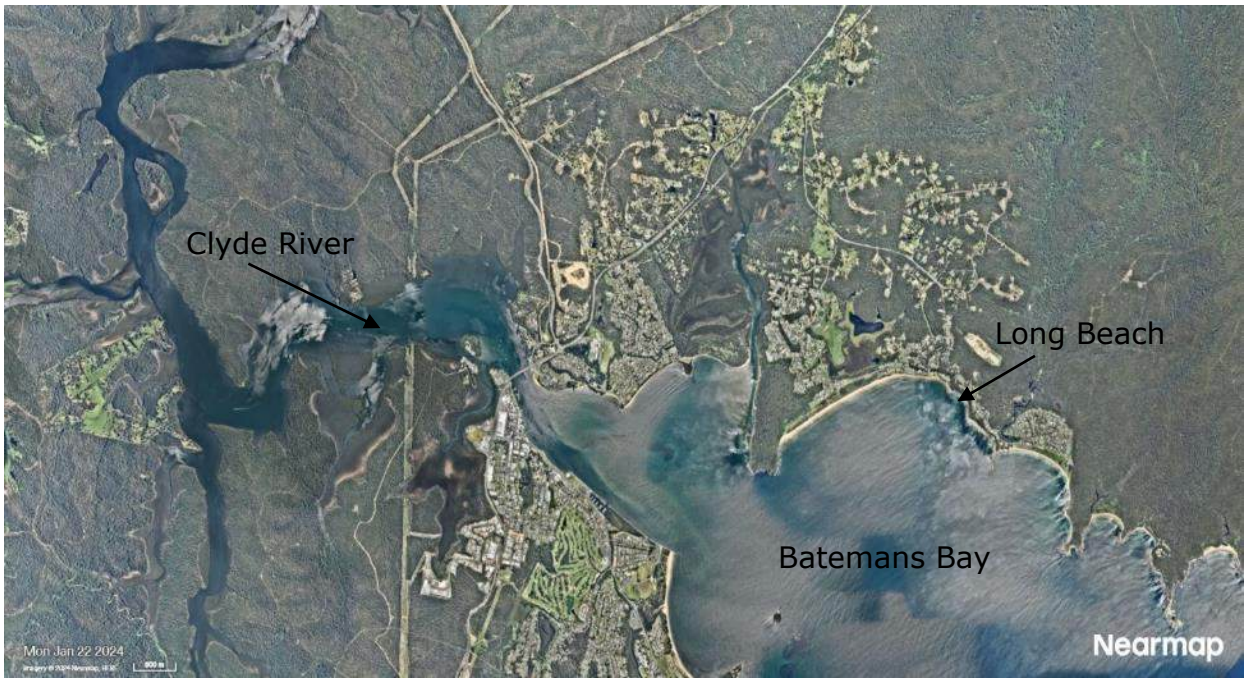


Figure 6-16 Overview of the site and surrounding bodies of water (Nearmap, 2024)

During storms, coastal water levels may be further elevated by the effects of wind setup, barometric setup and wave setup. Elevated water levels offshore, including astronomical tide, wind and barometric setup (collectively referred to as storm surge), but not wave setup, for the NSW Coast in meters AHD, for a range of average recurrence intervals are:

- 25 yr ARI 1.4 m AHD (+SLR)
- 50 yr ARI 1.45 m AHD (+SLR)
- 100 yr ARI 1.5 m AHD (+SLR)
- 500 yr ARI 1.51 m AHD (+SLR).

At Long Beach, (Water Research Laboratory, 2017) derived a present-day static design water level of 2.14 m AHD for a 100 year ARI, which includes the effects of wind setup, wave setup and a contribution from flood flows.

For Long Beach, Rhelm (2022) adopted the following static design water levels (Table 6-11), based on adding the Council sea level rise projections to the static water level derived by WRL (2017).

Table 6-11 Static Water levels adopted for Long Beach in the CMP, m AHD (Rhelm, 2022)

Location	1 year ARI			20 Year ARI			100 Year ARI			500 Year ARI
	2017	2065	2100	2017	2065	2100	2017	2065	2100	50yrs*
Long Beach	0.92	1.25	1.63	2.18	2.17	2.55	2.31	2.64	3.02	2.92

*Value interpolated for 50 year planning period based on sea level rise of 0.6 m. 500-year ARI wave and wind setup was not modelled by WRL (2017), value selected based on 100-year ARI estimate.

Rhelm (2021) undertook the Batemans Bay Urban Creek Flood Study, which examined catchment-derived flooding for the Surfside Creek catchment. The Flood Study found that the impact of the 1% Annual Exceedance Probability (AEP, equivalent to a 1 in 100 year Average Recurrence Interval or ARI) event was limited to some properties to the east of the site experiencing flooding along Timbara Crescent due to elevated ocean levels.

Caseys Beach, situated around 3.5km across the bay from Long Beach and is a part of the Eurobodalla Beachwatch Program. This program looks at sampling and testing waters across the Eurobodalla every year from the start of November to the end of March, star ratings (1-4) for each swim site is generated based on the number of bacteria (enterococci) found in the water samples. Table 6-12 shows the annual grade of Caseys Beach from 2010 - 2023. Long Beach could be considered similar to Caseys Beach due to the proximity of the beaches whilst also belonging in the same bay. Most of the grades sit at 'good' or 'very good' with the exception of a 'poor' score in 2022.

Table 6-12 Annual Grade for Caseys Beach (Eurobodalla, 2023)

Year	Annual Grade
2023	Good
2022	Poor
2021	Good
2020	Good
2019	Good
2018	Good
2017	Very Good
2016	Very Good
2015	Very Good
2014	Very Good
2013	Good
2012	Very Good
2011	Very Good
2010	Very Good

The ratings are broken down below:

- 'Good' – Bacterial levels are safe for bathing according to National Health & Medical Research Council guidelines
- 'Far' – Bacterial levels indicate an increased risk of illness to bathers, particularly those with lower immune function such as the elderly and young children
- 'Poor' – Bacterial levels indicate a substantially increased risk of illness to bathers
- 'Bad' – Bacterial levels indicate a substantially increased risk of illness to bathers.

6.2.1 Water impacts

Alterations to water quality resulting from construction activities have the potential to impact on marine habitats and fauna. Water pollution is known to degrade the quality of aquatic habitats, may alter the distribution and density of species, can increase levels of contaminants in the tissue of some species, and can then have impacts up the food chain and reduce the relative abundance of top-order predators (NSW EPA, 2021). Reproductive physiology, mating systems, and life histories can also be impacted by water pollution and can combine with other factors to reduce population persistence (Dulvey et al., 2003).

Water pollution has the potential to cause harm to a wide variety of marine and coastal fauna including sessile and mobile invertebrates, fish, reptiles, birds, and marine mammals. Marine mammals have been seen swimming and feeding in or near an oil spill and some fish are attracted to oil because it looks like floating food. Birds can then be attracted to schools of fish and inadvertently become covered in or ingest fuels or oils.

Potential impacts on water quality during construction are not considered to be significant in the context of the receiving waterway, following the implementation of mitigation measures.

For this proposal, a 50-year design life sea level rise of approximately 0.6m has been adopted for the design, which is consistent with both Council's sea level rise policy and the most recent advice from IPCC 2022. There is not expected to be a significant impact on the water quality of the waterway during operation.

6.2.2 Water safeguards

Table 6-13 found below, lists relevant water quality related safeguards.

Table 6-13 Water safeguards

Category	Mitigation Measure
Water	• A site-specific emergency spill plan will be developed and include spill management measures in accordance with relevant EPA guidelines. The plan will address measures to be

Category	Mitigation Measure
	implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities. • All fuels, chemicals and hazardous liquids will be stored away within the site compound within an impervious bunded area in accordance with the products Safety Data Sheet (SDS), AS 1940 and EPA Guidelines. • All equipment is to be inspected by qualified personnel prior to the commencement of works to reduce the risk of hydrocarbon spills or leaks. • Vehicles and equipment must be properly maintained and regularly inspected for fluid leaks. • The lowest volume of hydrocarbons (oil, grease, petrol, and diesel) practicable will be stored on-site. • Adequate water quality and hazardous materials procedures (including spill management procedures, use of spill kits and procedures for refueling and maintaining construction vehicles/equipment) will be implemented in accordance with relevant EPA guidelines during the construction phase. • All staff must be made aware of the location of the spill kits and be trained in how to use the kits in case of a spill. • The proponent should note and be aware of its responsibility to notify each relevant authority of any pollution incident, in accordance with Section 148 of the POEO Act 1997. • Visual monitoring of local water quality (i.e., turbidity, hydrocarbon spills/slicks) is to be always undertaken during works to quickly identify any potential spills, deficient silt curtains or erosion.

6.3 Coastal Processes

A coastal hazard assessment undertaken in 2017 (Water Research Laboratory, 2017) identified Long Beach as the highest energy beach inside the bay. The beach faces south-east into the prevailing southeast swell, nonetheless is offered some protection by its eastern headland, reefs, and Tollgate Island. WRL identified that median (50% exceedance) *significant*[1] wave height is around 0.4 m at the eastern end of the beach, increasing west of the creek to about 0.7 m. The 2.15 km long beach is embayed between its eastern headland and Square Head. The beach has a moderate slope

[1] *Significant* wave height refers to the average height of the highest one-third of waves in a given wave record.

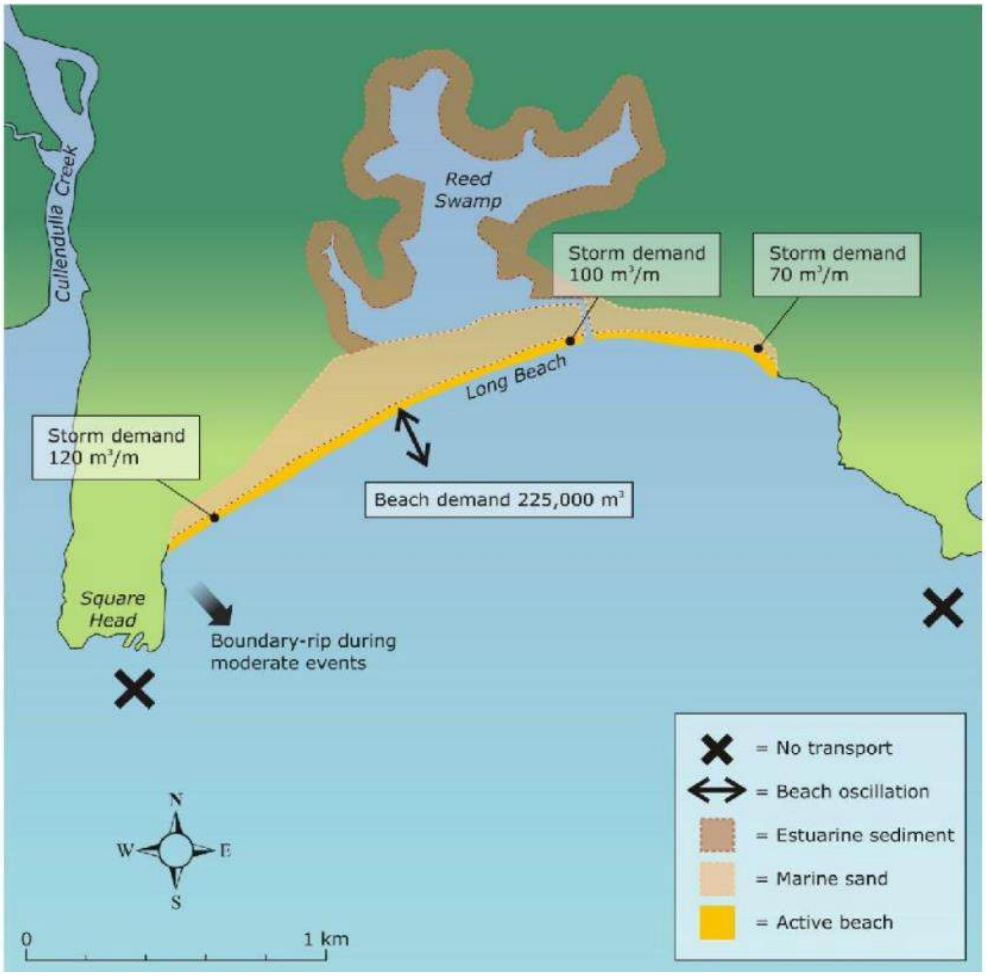
(1V:9H – 1V:18H) and is relatively narrow in the east (~15 m), widening as wave energy increases to ~25 m in the west.

The revetment is designed to protect Bay Road against the coastal hazards of beach erosion and long-term recession, as discussed below. An assessment of the effectiveness of the revetment against coastal inundation is also provided, specifically regarding the impact of the structure on wave overtopping and wave runup.

6.3.1 Coastal processes impacts

6.3.1.1 Coastal erosion and long-term recession

Storm erosion demand for a 1% Annual Exceedance Probability (AEP, equivalent to a 1 in 100 year Average Recurrence Interval or ARI)[2] storm event for Long Beach has been estimated at 70 m^3/m in the east, increasing to 120 m^3/m in the west, which would generate a beach storm demand of ~225,000 m^3 (Figure 6-17). Rhelm/Baird (2022) undertook coastal erosion mapping for Long Beach, which found that parts of Bay Road were at immediate risk from coastal erosion in 2017.



[2] A 1% AEP storm event is an event that has a 1% chance of being exceeded in any given year.

Figure 6-17 Conceptual Model of Sediment Movement and Storm Demand at Long Beach (WRL, 2017)

With predicted long-term recession of the beach (0.2 m per year), and beach recession that would occur during sea level rise, it was predicted that the shoreline may move landward by an average of 14.2 m by 2100 (WRL, 2017), and that most of the length of the road would be at risk by 2100 (Figure 6-18). Further, there is a zone mapped in Figure 6-18 extending landward of the predicted erosion hazard line, known as the *Zone of Reduced Foundation Capacity* (ZRFC), where there is a reduced bearing capacity of the sand adjacent to the storm erosion escarpment. Nielsen et al (1992) recommended that structural loads should only be transmitted to soil foundations outside of this zone (i.e. landward or below), as the factor of safety within the zone is less than 1.5 during extreme scour conditions at the face of the escarpment. In general (without the protection of a terminal structure such as a seawall), dwellings/structures not piled and located within the ZRFC would be considered to have an inadequate factor of safety.

The revetment would provide protection to Bay Road from storm erosion and long-term recession, as well as any impacts from reduced foundation capacity, for storm erosion events up to the 1 in 500 year ARI storm.

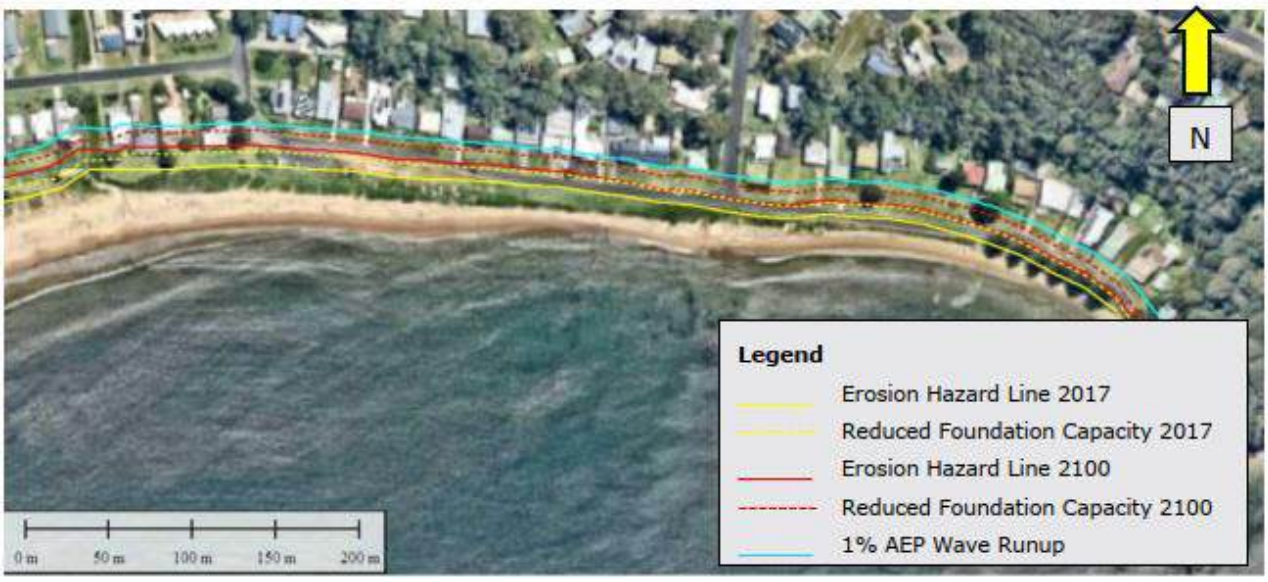


Figure 6-18 Erosion and wave runup hazard lines at Long Beach (Rhelm/Baird 2022). Aerial photo Nearmap 22 January 2024

6.3.1.2 Wave runup and overtopping

Wave runup is the uprush of a breaking wave on the beach. Run-up is defined by the vertical height above still water level to which the rush of water reaches. Wave runup level depends on many factors, including:

- the still water level, which includes the tidal stage, storm surge, wind and wave setup

- wave height and period
- wind strength and direction
- the slope, shape and permeability of the beach
- the roughness of the foreshore area (i.e. whether the foreshore area comprises a smooth sandy beach, a rocky foreshore with boulders or a stepped revetment)
- wave regularity.

Rhelm/Baird (2022) mapped 1% AEP wave runup, as shown in Figure 6-18. Without the revetment, waves are predicted to overtop the embankment and travel landward over Bay Road, reaching the private properties on the landward side of the road.

Wave overtopping refers to the flow of water caused by wave runup reaching the crest of the seawall, measured in cubic metres per unit length of structure. For the seawall upgrade, wave overtopping should be minimised from a public safety and maintenance perspective. Furthermore, structural integrity can be compromised severely should a revetment experience overtopping.

Overtopping has been estimated based on the procedures described in the EurOtop Manual (EurOtop, 2018). Armoured rubble slopes and mounds are characterised by a mound with some porosity or permeability, covered by a sloping porous armour layer consisting of large rock (EurOtop, 2018). Under these conditions, the roughness of the slope means that only large waves will reach the top of the structure and cause overtopping. This type of condition would only tend to occur when the beach is eroded, as waves would typically not reach the proposed structure when the beach is in an accreted state.

The proposed revetment structure has a crest level of 2.9 m AHD. At the eastern end of Long Beach, Water Research Laboratory (2017) derived a present-day static design water level of 2.14 m AHD for a 100 year ARI, which includes the effects of wind setup and wave setup. This increases to 2.31 m AHD at the western end of the beach. With future sea level rise, the Basis of Design report found that the 100 year ARI static water level would be 2.91 m AHD at the end of the 50 year design life, which would be above the crest of the revetment. Therefore, the revetment would not provide protection against wave overtopping for this water level unless the crest is raised in the future.

Under present day conditions, the design overtopping volume when the beach is eroded and the structure is subjected to the 100 year ARI design still water level is around 43 L/s/m. Figure 6-19 (USACE, 2003) indicates that the estimated overtopping volumes would be very dangerous for pedestrians and vehicles, but would be below the level at which damage would occur to the road behind the wall. The overtopping volume has been minimised within the constraints of the existing crest elevation, by incorporating a berm three rocks wide into the revetment crest. Wave overtopping is assessed to be within safe levels for pedestrians (<1 L/s/m) for water levels and storm erosion events below the 1 year ARI event.

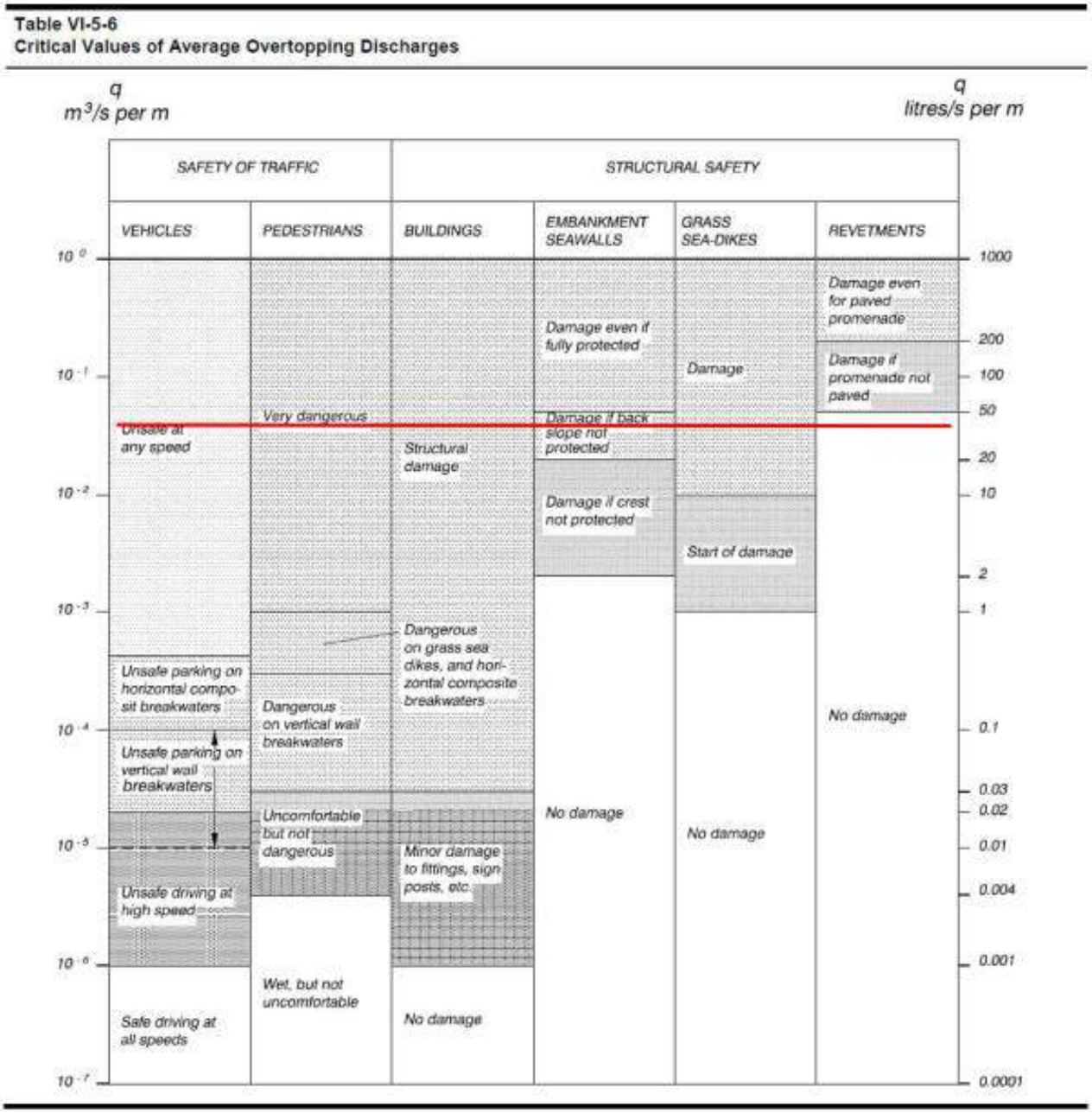


Figure 6-19 Estimated average overtopping rate for design storm under eroded beach conditions (USACE 2003). Red line is crest level 2.9 m AHD under present day conditions (no sea level rise)

It is recommended that Council enact an emergency management plan during a storm, to reduce risk of injury to pedestrians and damage to vehicles from overtopping during a design storm event. Further, it is recommended that Council consider adopting future measures to accommodate the increasing risk of wave overtopping with future sea level rise. Increasing the crest level to 4.5 m AHD would be required to reduce the 1% AEP average overtopping to present-day levels at the end of the 50 year design life. A raised crest level combined with a wider crest berm or a wave return wall could reduce this risk

further, for example, to accommodate increased frequency of wave overtopping with future sea level rise.

6.3.2 Coastal processes safeguards

Table 6-14 found below, lists relevant coastal processes related safeguards.

Table 6-14 Coastal processes safeguards

Category	Mitigation Measure
Coastal processes	• As part of the CEMP, flooding and coastal storm emergency response will be documented that details safeguards to prepare, respond and recover from a possible flooding/coastal storm events during construction. • Monitor coastal process for changes during construction and post construction. • Design with stability in mind. • Use silt curtains and sediment barriers, where needed during construction to prevent sediment dispersion. • Construct a temporary sand bund seaward of the works.

6.4 Noise

Noise sensitive receivers are properties such as residences, schools, churches and hospitals. Figure 6-20 shows the general area in which the proposed works would take place for stage one of the protection works. There are low density residential dwellings located to the north, north-west and north-east of the proposal site. The site is situated in a coastal environment with intermittent noise sources mainly from local traffic, nearby vessel movements and from public recreation and residential areas.

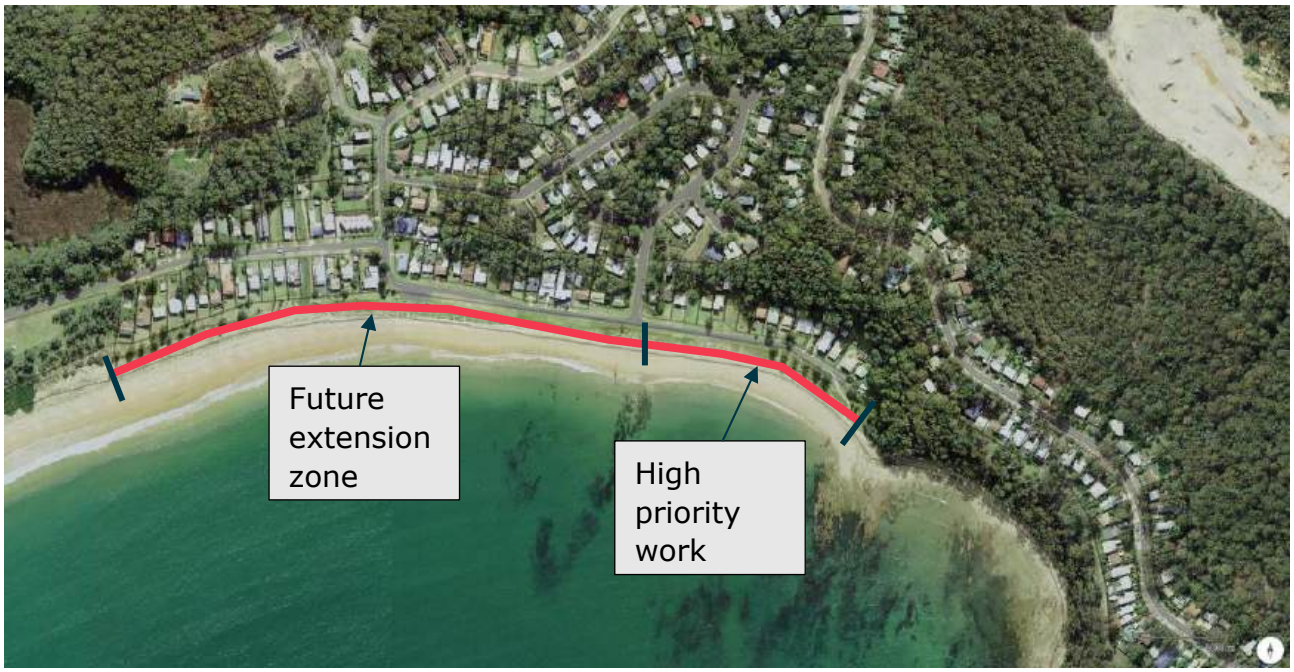


Figure 6-20 General outline of the proposed works area in red (NSW Planning Portal, 2025)

6.4.1 Noise impacts

The NSW Interim Construction Noise Guideline (DECCW, 2009) (ICNG) outlines construction noise management levels which aim to minimise nuisance noise from construction works. The ICNG states that where construction noise levels are above 75 dBA at residential receivers during standard hours, they are considered 'highly noise affected' and require additional considerations to mitigate potential impacts.

Construction plant, equipment and materials would be transported to the site via road. Temporary noise emissions and potential impacts on nearby recreational and residential receivers are expected to be minor during this phase. Construction work in the reserve would generally be associated with moderate to highly noise intensive plant and equipment such as generators and excavators. These activities would likely have more than a minor impact on noise sensitive receivers located along the Bay Road during standard construction hours. There is not expected to be any vibration impacts due to the distance of the works from buildings.

The construction works will operate to 3pm on Saturdays, this is considered to be outside standard working hours. There are 5 categories of work that might be undertaken outside the standard hours, the proposed works is classed as 'Public infrastructure works', the extra time allotted to the work day on Saturdays will allow for the proposed works to be completed in a shorter time frame, this is not expected to cause additional noise impacts to sensitive receivers.

During operation, there is not expected to be any change to the existing acoustic environment.

6.4.2 Noise safeguards

Table 6-15 found below, lists relevant noise related safeguards.

Table 6-15 Noise safeguards

Category	Mitigation Measure
Noise	• Works will only occur during the following times: Monday to Friday 7:00 am to 6:00 pm and 8:00 am – 3:00 pm on Saturdays. • Maximise the distance between noisy items and nearby sensitive receivers including potential fauna habitat. • Orientate equipment such that offensive noise carries away from sensitive receivers and potential fauna habitat. • Avoid simultaneous operation of noisy plant items within a discernible range of sensitive receivers. • Engines and equipment used intermittently are to be throttled or shut down when not required. • Neighbouring residents are to be notified if there are to be any significant noise impacts or noise anticipated outside the proposed work hours.

6.5 Visual

The current visual environment is clear and unobstructed by large buildings and other structures. There are minimal human-made visual objects that are not residential buildings. There is limited obstruction of the beach front from the residential buildings, some visual obstructions include trees. Figure 6-21 shows some on ground photos representing some of the visual amenity experiences by locals and visitors at the time of assessment.

Figure 6-21 Visual amenity as seen on ground at Long Beach (Worley, 2024)

6.5.1 Visual impacts

During construction, only short-term and minor visual impacts would be generated from the increased presence of construction related plant and equipment operating at the site and within the ancillary facilities.

Post-construction, in relation to general design amenity, several design aspects have been considered in the development of the rock revetment design, these include:

- Visual softening of the rock revetment crest and face through incorporation of native "pig face" vegetation as shown in the visualisations
- Visual softening of the rock revetment crest through the use of 100 mm of top cover and primary vegetation at the level of the existing road reserve
- Minimisation where possible of the revetment crest and footprint in order to limit its encroachment on the existing beach width. This has been accomplished by designing footprint of the revetment crest to the existing revetment/road reserve level
- Possibility of softening the rock revetment through sand nourishment. Through implementing sand nourishment the beach level in front of the rock revetment may be increased and as a result less of the revetment would be exposed/visible.

It should be noted that with predicted long-term beach recession due to sea level rise, the shoreline is predicted to translate landward by an average of 14.2 m by 2100 (WRL 2017). In practice, unless the beach width is extended using nourishment to compensate for this loss, the average beach width seaward of the revetment would gradually reduce over time, with more of the revetment being exposed more frequently in the future. Further, the revetment would "lock up" any sand supply from the dunes on the landward side, which is relevant to the design of the western section of the revetment. For this reason, the revetment alignment has been moved as far landward as possible with a 5 m buffer to infrastructure and property boundaries where possible.

During times of exposure to the chosen option, there will be some reduction of visual amenity, this is expected to be short-term and only occurring after larger storms.

6.5.2 Visual safeguards

Table 6-16 found below, lists relevant visual related safeguards.

Table 6-16 Visual safeguards

Category	Mitigation Measure
Visual	• During the work period, the site is to be maintained in a neat and tidy condition.

6.6 Heritage

Searches of the Australian Heritage Database, NSW State Heritage Inventory and the LEP on 13 February 2025 found that the site is not located on or in the vicinity of listed heritage items, heritage conservations areas or archaeological sites.

Apex Archaeology were engaged to undertake an ACHA for proposed coastal erosion works at Surfside West Beach and Long Beach (Appendix C). Basic searches of the study areas were conducted on the AHIMS register on 23 July 2024 by Apex Archaeology using the Lot and DP of the study areas with a 1 km buffer. Following this, an extensive search centred on the study areas with a 1 km buffer was conducted on 24 July 2024. No sites were located within the study areas; however five sites were within 200 m of the Long Beach study area.

A site survey was undertaken on 23 September 2024 by Apex Archaeology along with a representative of Batemans Bay LALC. The survey did not identify any Aboriginal sites within the study areas. Significant coastal erosion and disturbance along the foreshore has reduced any likelihood of intact archaeological deposits within the study areas. It is noted that the Long Beach study area is in close proximity to AHIMS site 58-4-0089, but the works do not extend into the assessed area of this site and would not impact it. No potential for intact or dispersed midden was identified within the works area at Long Beach.

6.6.1 Heritage impacts

Given the location of the proposed works within a sandy coastal context, there is potential for the works to impact on any intact archaeological material which may be present in the area. This could include midden deposits, burials, or artefact sites; or a combination of the above site types. As such, the ACHA has considered the potential for the proposed works to impact on any such sites and the potential for these to be present within the study area.

The assessment of the study areas has not identified any archaeological constraints within either study area. No previously registered sites are located within the study areas themselves, and no previously registered sites are considered likely to extend into the study areas. The works areas contain evidence of significant disturbance in the form of erosion and previous reclamation of land, with fill evident in erosional scours at both study areas, and the works areas themselves are considered unlikely to be intact or to contain evidence of Aboriginal occupation. No further archaeological assessment is required for the site prior to the commencement of proposed development activities. No application for an Aboriginal Heritage Impact Permit (AHIP) is necessary.

The proposed works are unlikely to contribute significantly to cumulative impacts on Aboriginal cultural heritage, as no sites or objects were identified within the study areas. The project design incorporates measures to minimise environmental disturbance, such as localised dune nourishment and targeted vegetation management, ensuring that any unrecorded subsurface deposits remain undisturbed. Additionally, by addressing coastal erosion and inundation risks through sustainable methods, the works mitigate broader

environmental degradation, contributing positively to the resilience of the regional coastal landscape. Overall, it is considered that the cumulative impact of the proposed project on Aboriginal cultural heritage would be minimal, while providing long-term ecological and cultural benefits.

6.6.2 Heritage safeguards

Table 6-17 found below, lists relevant heritage related safeguards.

Table 6-17 Heritage safeguards

Category	Mitigation Measure
Heritage	• A member of the Batemans Bay LALC is to be onsite to monitor all excavation activities within natural material. • The proposed works must be contained within the assessed boundaries. If there is any alteration to the boundaries to include areas not assessed as part of the ACHA, further investigation of those areas is to be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner. • Should unanticipated Aboriginal archaeological material be encountered during site works, the Eurobodalla Shire Council Unexpected Finds Protocol must be followed. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW. • In the unlikely event that suspected human remains are identified during construction works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police and the Coroner's Office must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be required. • In accordance with Section 146 of the Heritage Act 1977, if an archaeological relic (such as a deposit or artefact) is uncovered during works, work must cease in the affected area and a qualified archaeologist contacted to assess the find. Further advice and clarification may be sought from Heritage NSW under delegation regarding assessment and approvals.

6.7 Soil, Erosion and Contamination

The site features a well-used beach front which includes foot traffic and cars, this is particularly heightened during summer. Figure 6-22 shows the Acid Sulfate Soils map and features the following:

- Class 2: Acid sulfate soils in a class 2 area are likely to be found below the natural ground surface
- Class 4: Acid sulfate soils in a class 4 area are likely to be found beyond 2 meters below the natural ground surface.

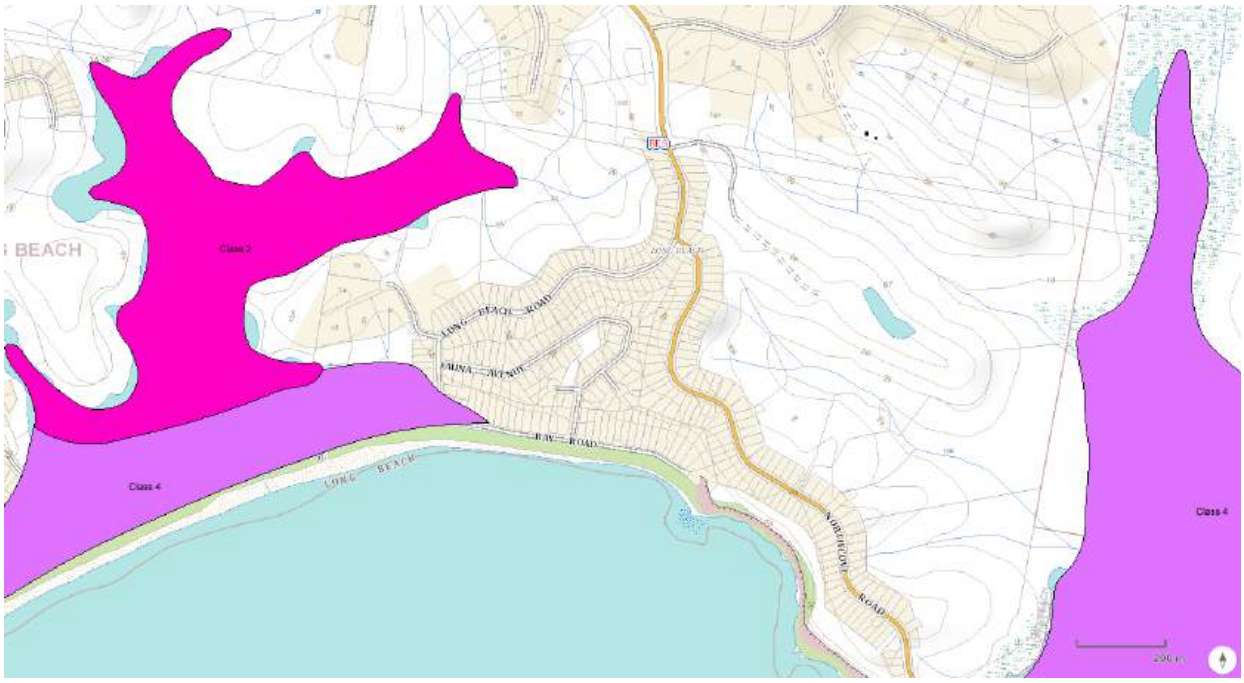


Figure 6-22 Acid Sulfate Soils Map (NSW Planning Portal, 2024)

A search was made using the Geosciences Australian Portal (https://portal.ga.gov.au/) in order to map the local soils of the Long Beach area. In addition, a search was undertaken using the NSW Department of Environment and Heritage eSPADE tool which is a database of available soil information across New South Wales (this is sourced from the NSW Soil and Land information system).

Figure 6-23 shows the basic soil profile found at Long Beach and the surrounding areas. The following was found:

- Hydrosols: Hydrosols are soils that are saturated with water for long periods of time – typically a grey (or greenish-grey) colour
- Rudosols: soils with negligible (rudimentary) pedological development, apart from minimal development of a surface (A) horizon

- Organosols: Organosols are dominated by organic material, commonly referred to as peats. They are likely to exist in coastal environments
- Kurosols: Soils with strong texture contract between A horizons and strongly acid b horizons. Many of these soils have some unusual subsoil chemical features (i.e high magnesium, sodium and aluminium).

Figure 6-23 Soil profile of Long Beach and surrounding areas (NSW Department of Environment and Heritage, 2024)

Geotechnical investigations were undertaken in February 2025 by Macquarie Geotechnical involving two boreholes and three Dynamic Cone Penetration (DCP) tests within the high priority work area (Figure 6-24). In summary for Long Beach, the borehole results are shown in Table 6-18 with a description of subsurface conditions provided below.

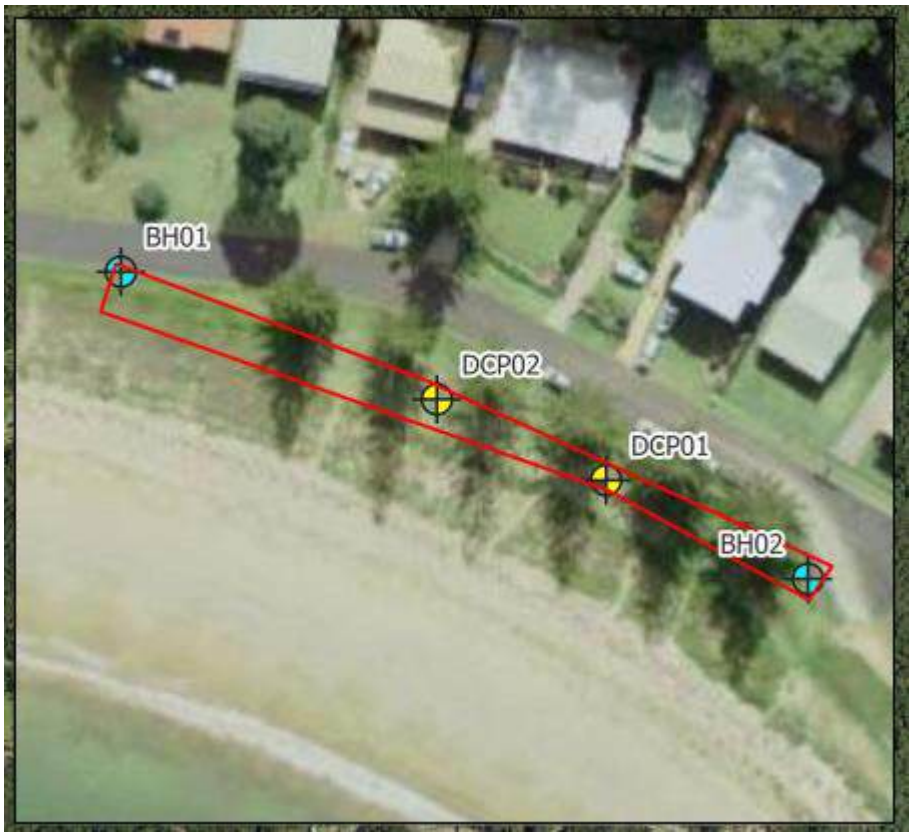


Figure 6-24 Geotechnical investigations site plan (Macquarie Geotechnical, 2025)

Table 6-18 Borehole summary (Macquarie Geotechnical, 2025)

Borehole	Surface Elevation - RL (m AHD)	Depth of Topsoil/Fill		Depth of Top Alluvial Soil		Top of extremely low to low strength Mudstone/Sandstone		Top of medium to high strength Sandstone	
		Depth (m) bgl	RL (m AHD)	Depth (m) bgl	RL (m AHD)	Depth (m) bgl	RL (m AHD)	Depth (m) bgl	RL (m AHD)
BH01	2.63	0.55	2.10	0.55	2.10	10.30	7.70	-	-
BH02	2.36	1.10	1.30	1.10	1.30	5.00	2.60	7.56	5.20

Fill was predominantly comprised of clay with sand and gravel soil due to the location of the fill mound at the beach front. Alluvial soil identified on the beach is sand/sand with clay/trace silt of various densities, with exception of BH01 where gravelly clay with sand is present at a depth of 4.0 m – 8.0 m. Significant soil layers of very soft/very loose material are noted in BH01 from approximately 3 m. The soil strata have been logged as alluvial with sporadic residual soil and extremely weathered material present in BH01 and BH02. The layers including abundant shells and shell fragments with slight organic odour could possibly be classified an estuarine soil. These types of soil generally located

in a partially enclosed body of water locations such as bays, deltas and inlets, which represent transition from fresh water to seawater. Grey mudstone was of very low to low strength with significant clay seams, extremely to highly weathered. This rock formation is only present at Long Beach boreholes BH01 and BH02 with no visible outcrops. Sandstone was of fine to medium grained very low to low strength, with predominantly low strength sandstone visible in BH02. Groundwater was encountered during the investigation. It is possible that seasonal variations and elevated groundwater levels may occur during wet periods.

It is not expected that the works will impact the soil quality of the area, particularly if proper construction management is practiced. Additionally, a search of the contaminated land record was conducted on 9 July 2024, search results are found in Figure 6-25. Four sites with 11 notices had been found during the searches. Nelligen is the closest suburb to the site and has 3 current and 4 former notices which related to the site, The Clyde River runs along parts of Nelligen. However, the sites themselves are situated away from the Clyde River and therefore it is not expected that any impacts from these sites would be seen in Long Beach.

Your search for: LGA: EUROBODALLA SHIRE COUNCIL
Date from: 01 Jan 2000
Date to: 09 Jul 2024

Matched 11 notices relating to 4 sites.

Search Again | Refine Search

Suburb	Address	Site Name	Notices related to this site
NAROOMA	82 Princes HIGHWAY	Former Caltex - Narooma	3 former
NAROOMA	90 Campbell STREET	Narooma BP - 90 Campbell St, Narooma	1 current
NELLIGEN	1398 Kings Highway and adjoining land on Old Bolaro Mountain ROAD	Former Clay Target Shooting Range	2 current
NELLIGEN	Old Bolaro ROAD	Lot 2 Old Bolaro Road	1 current and 4 former

Page 1 of 1

9 July 2024

Figure 6-25 Search results of the contaminated land records (EPA, 2024)

6.7.1 Soil, erosion and contamination impacts

Acid Sulfate Soils are not expected to be disturbed by the works. Acid Sulfate Soils can have the following effects:

- Damaging waterways and killing aquatic life
- Killing plants
- Corrosion
- Impacts to humans (irritation to skin and eyes)

Disturbance to benthic sediment is likely to occur during construction. Unless contained by a silt curtain surrounding the work site, fine sediment would disburse throughout the bay and settle on onto the substrate.

Potential impacts to the aquatic ecology due to exposure and release of contaminated sediment and soils would likely be small-scale and localised, but could include:

- Smothering of benthic habitat and flora, resulting in small-scale but temporary loss of habitat
- Increased risk of spread of contaminated soil/sediment.

If the recommended safeguards are implemented, potential impacts of sedimentation will be minimal and temporary.

Improper construction management can lead to several sediment-related impacts, including increased turbidity, sediment deposition, changes in sediment composition, altered erosion and accretion patterns, and the release of buried contaminants. These disturbances can affect light penetration, disrupt the feeding and respiratory processes of marine animals, smother benthic habitats, and alter local ecosystems. Additionally, construction can change hydrodynamics, leading to localised erosion or sediment accumulation.

6.7.2 Soil, erosion and contamination safeguards

Table 6-19 found below, lists relevant soil, erosion and contamination related safeguards.

Table 6-19 Soil, erosion and contamination safeguards

Category	Mitigation Measure
Soil and Erosion	• Schedule the works outside heavy wind and rain periods to avoid excess sedimentation. • Adopt sediment and erosion controls in accordance with the Blue Book (Landcom 2004) and any additional Council requirements prior the works commencing (e.g. silt fencing and silt curtain). • Regular monitoring of sediment controls as well as inspections after heavy rainfall and follow-up work to repair/install erosion and sedimentation controls. • Inspect erosion controls regularly (daily during workdays) and after rainfall. Fix damaged controls immediately. Remove accumulated sediment and waste material from within land-based sediment controls regularly.

Category	Mitigation Measure
	• Screen all beach sand within the site that has been disturbed by the works and where rock fragments and other foreign objects are present. • Remove all rock fragments and construction debris greater than 20 mm from the beach area adjacent to construction works. • Extend screening along the beach wherever contamination is evident, or as directed by the site superintendent. • Screen to a minimum depth of 1.0 m below natural beach level in the immediate work area seaward of the constructed revetment/seawall.
Contamination	• Soil, water and waste management during construction will be required by the contractor. • Store all chemicals (e.g. fuel, oil) in appropriate bunding/storage systems within the site compound and away from the waterway. • Ensure appropriate spill kits are carried with the equipment. • Prior to use at the site and/or entry into the waterway, machinery is to be appropriately cleaned, degreased and serviced. • Wash down all equipment to prevent the spread of aquatic pests and contamination of waterways. • Weather forecasts must be checked daily to ensure work is nor carried out in high wind or rainfall . • Carry Safety Data Sheets for all chemicals. • Do not use algaecides or chemicals that are labelled 'harmful to marine life' or 'Class 9 Environmentally hazardous' as part of the proposed activities.

6.8 Waste

Waste which is generated at the site is typical of a holiday destination and is largely domestic waste (e.g. food waste, packaging). Some publicly accessible bins are provided, this is shown in Figure 6-26. It should also be noted that following large storms, residents have noticed a larger amount of waste being washed up on Long Beach which also includes biological waste such as farm animals.

Figure 6-26 Publicly available bins (Worley, 2024)

Waste which has the potential to be generated during construction includes:

- General waste
- Demolition waste
- Paper recycling
- Co-mingled recycling
- E-waste and organic waste.

6.8.1 Waste impacts

The potential waste sources include:

- Excess materials not used during construction which may be reused or recycled
- Unrestricted packaging waste which may be recycled (i.e. plastic and paper)
- Potentially restricted waste that would need to be disposed of at an appropriate waste facility (i.e. fuels, oils and lubricants)
- General waste generated by contractors that would be disposed of at an existing rubbish bin (i.e. food scraps).

Waste generation and resource use associated with the operational phase is not expected to generate significant adverse changes to existing conditions at the site.

6.8.2 Waste safeguards

Table 6-20 found below, lists relevant waste related safeguards.

Table 6-20 Waste safeguards

Category	Mitigation Measure
Waste	• If spoil disposal is required, follow the EPA (2014) Waste Classification Guidelines. • All construction waste must be contained onsite and disposed of at an appropriately licenced waste facility. Reuse and recycling is to occur where possible.

6.9 Community

Eurobodalla Shire comprises mostly of privately owned homes (46.7 %) with and roughly equal split between mortgage (22.1 %) and renting (21.5 %). Long beach's population breakdown can be found in Table 6-21. The majority of the population living within Long Beach and its surrounding areas falls between the ages of 35 and 84.

Table 6-21 Age structure of Surfside, Long Beach, Maloneys Beach and Northern Batemans Bay (Australian Bureau of Statistics, 2021)

Service Age Group (years)	Number (%)
Babies and pre-school (0-4)	181 (5.2 %)
Primary Schoolers (5-11)	302 (8.7 %)
Secondary Schoolers (12-17)	250 (7.2 %)
Tertiary education and independence (18-24)	185 (5.3 %)
Young workforce (25-34)	319 (9.2 %)
Parents and homebuilders (35-49)	520 (15 %)
Older workers and pre-retirees (50-59)	430 (12.4 %)
Empty nesters and retirees (60-69)	606 (17.5 %)
Seniors (70-84)	604 (17.4 %)
Elderly aged (85+)	68 (2 %)

The community also shows high levels of interest towards proposed works which will potentially occur within their areas (as seen with the current proposed works) a community consultation session was held on 18 June 2024 which saw a turnout of around 50 community members which can be seen in Figure 6-27.

Overall, the community is also passionate about shared programs such as the community garden and creating people and dog friendly spaces on the beach fronts.

Figure 6-27 Photos from the community consultation session (Worley, 2024)

6.9.1 Community impacts

Potential short-term, minor negative impacts on visitors and residents to Long Beach during construction will include:

- Impacts to the acoustic and visual amenity of the area
- Loss of access to a section of the beach during the construction period
- Loss of appeal to short-term holiday rent beach front properties within Long Beach during construction.

The site will be restored immediately upon completion of the works. The transformation of the area through the works will have a long-term positive impact on community, as it increases the erosion resilience of the area which also increases the stability of surrounding properties.

6.9.2 Community safeguards

Table 6-22 found below, lists relevant community related safeguards.

Table 6-22 Community safeguards

Category	Mitigation Measure
Community	• Regular communication is to be made by Council with Long Beach residents in relation to project timeline including the short-term construction impacts and the long-term positive impacts.

6.10 Air

The current air quality within the site is unknown, however, it is likely to be typical of a coastal residential site with little to no heavy vehicles, lower traffic and no factories or other larger buildings.

6.10.1 Air quality impacts

The potential air quality impacts associated with the proposed works include:

- Increased exhaust emissions due to the use of construction vehicles, and equipment
- Dust impacts from the excavation and stockpiling of beach sediments.

With proper management, air quality impacts to members of the public and the natural environment are considered to be low.

6.10.2 Air quality safeguards

Table 6-23 found below, lists relevant air quality related safeguards.

Table 6-23 Air quality safeguards

Category	Mitigation Measure
Air	• Works must be minimised during high wind periods. • Engines and equipment must be regularly inspected to ascertain that fitted emission controls are operating efficiently. • Engines and equipment must be maintained in accordance with manufacturer's specifications to ensure that it is in a proper and efficient condition. • Do not have engines or equipment running while not in use. • Minimise use of machinery for required activity only. • Adopt sediment and erosion controls in accordance with the Blue Book (Landcom 2004) and any additional Council requirements prior the works commencing (e.g. silt fencing and silt curtain). • All stockpiled materials must be bunded and covered when works are not actively using them to avoid unnecessary dust generation. • Sediment/dust control fencing should be erected around the works, particularly between the works and the residential properties to the west to stop windblown sands and dust from the site.

7. Environmental Management

This section outlines the recommended environmental safeguards and management measures and licensing and approval requirements that will be implemented to minimise and manage potential impacts from the proposed works. It includes recommended safeguards, mitigation strategies, monitoring requirements to ensure compliance with relevant environmental legislation and support environmentally responsible project delivery in line with relevant legislation.

7.1 Summary of Safeguards

It is expected that the contractor is to establish a process for understanding and complying with such safeguards. The timing for these safeguards would occur in both the pre-construction and construction phases of the proposal. The responsibility of the safeguards is to be shared between the Council and their respective contractor for the proposal. Table 7-1 contains a summary of the proposal safeguards.

Table 7-1 Summary of safeguards

Category	Mitigation Measure
Aquatic Ecology	• A site-specific Construction Environment Management Plan (CEMP) must include instructions for dealing with orphaned or injured native animals and include the contact details for the NSW Wildlife Information, Rescue and Education Service Inc (WIRES). • Pre-works briefing to be undertaken for all contractors advising staff of sensitive areas and relevant safeguards for these areas. • Wash down equipment and vehicles prior to arrival onsite and after use, to manage the introduction and spread of weed propagules. • Provide contractors with a copy of 'Make 'clean' part of your routine' fact sheet (NSW DPI, 2015) and include it as part of CEMP to ensure correct cleaning protocols are adhered to. • Any suspected new sightings of invasive species are to be reported by calling the 24-hour recorded hotline; 02 4916 3877 or email aquatic.pests@dpi.nsw.gov.au. • Potential impacts of aquatic debris on fauna to be reduced by ensuring general and construction waste is contained and disposed of correctly onshore. • To limit the potential of a fish-kill incident, regular visual inspection of the waterway for dead or distressed fish

Category	Mitigation Measure
	(indicated by fish gasping at the water surface, fish crowding at the shoreline) must be conducted. • DPIRD Fisheries (1800 043 536) shall be immediately notified of any observations or reports of dead or distressed marine fauna within the proposal site. In such cases, all works other than emergency response procedures are to cease until the issue is rectified and written approval to proceed is provided by DPI Fisheries.
Terrestrial Ecology	• Minimise construction footprint to the smallest area possible to reduce impact to the terrestrial environment, locate parking and laydown areas in previously disturbed open areas away from trees or extant native vegetation. • Vegetation Protection: Tree protection to existing trees is to be provided during construction in line with AS 4970-2009 Protection of Trees on Development Sites. • Weed management: Clean all machinery before site entry, monitor for weed outbreaks, and manage infestations in line with a weed management plan. • Noise and light mitigation: Restrict high-noise activities to approved hours. Use acoustic shielding and downward-directed, low-glare lighting to minimise fauna disturbance. • Revegetation and rehabilitation: Replant cleared areas using appropriate native species and monitor revegetation success until establishment. • Groundwater and hydrology management: Design works to avoid altering natural drainage patterns or groundwater flows that support mangroves, swamp forests, or other groundwater-dependent ecosystems.
Water	• A site-specific emergency spill plan will be developed and include spill management measures in accordance with relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities. • All fuels, chemicals and hazardous liquids will be stored away within the site compound within an impervious bunded area in accordance with the products Safety Data Sheet (SDS), AS 1940 and EPA Guidelines. • All equipment is to be inspected by qualified personnel prior to the commencement of works to reduce the risk of hydrocarbon spills or leaks.

Category	Mitigation Measure
	• Vehicles and equipment must be properly maintained and regularly inspected for fluid leaks. • The lowest volume of hydrocarbons (oil, grease, petrol, and diesel) practicable will be stored on-site. • Adequate water quality and hazardous materials procedures (including spill management procedures, use of spill kits and procedures for refueling and maintaining construction vehicles/equipment) will be implemented in accordance with relevant EPA guidelines during the construction phase. • All staff must be made aware of the location of the spill kits and be trained in how to use the kits in case of a spill. • The proponent should note and be aware of its responsibility to notify each relevant authority of any pollution incident, in accordance with Section 148 of the POEO Act 1997. • Visual monitoring of local water quality (i.e., turbidity, hydrocarbon spills/slicks) is to be always undertaken during works to quickly identify any potential spills, deficient silt curtains or erosion.
Coastal Processes	• As part of the CEMP, flooding and coastal storm emergency response will be documented that details safeguards to prepare, respond and recover from a possible flooding/coastal storm events during construction. • Monitor coastal process for changes during construction and post construction. • Design with stability in mind. • Use silt curtains and sediment barriers, where needed during construction to prevent sediment dispersion. • Construct a temporary sand bund seaward of the works.
Noise	• Works will only occur during the following times: Monday to Friday 7:00 am to 6:00 pm and 8:00 am – 3:00 pm on Saturdays. • Maximise the distance between noisy items and nearby sensitive receivers including potential fauna habitat. • Orientate equipment such that offensive noise carries away from sensitive receivers and potential fauna habitat. • Avoid simultaneous operation of noisy plant items within a discernible range of sensitive receivers. • Engines and equipment used intermittently are to be throttled or shut down when not required.

Category	Mitigation Measure
	• Neighbouring residents are to be notified if there are to be any significant noise impacts or noise anticipated outside the proposed work hours.
Visual	• During the work period, the site is to be maintained in a neat and tidy condition.
Heritage	• A member of the Batemans Bay LALC is to be onsite to monitor all excavation activities within natural material. • The proposed works must be contained within the assessed boundaries. If there is any alteration to the boundaries to include areas not assessed as part of the ACHA, further investigation of those areas is to be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner. • The proposed works must be contained within the assessed boundaries. If there is any alteration to the boundaries to include areas not assessed as part of the ACHA, further investigation of those areas is to be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner. • In the unlikely event that suspected human remains are identified during construction works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police and the Coroner's Office must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be required. • In accordance with Section 146 of the Heritage Act 1977, if an archaeological relic (such as a deposit or artefact) is uncovered during works, work must cease in the affected area and a qualified archaeologist contacted to assess the find. Further advice and clarification may be sought from Heritage NSW under delegation regarding assessment and approvals.
Soil and Erosion	• Schedule the works outside heavy wind and rain periods to avoid excess sedimentation. • Adopt sediment and erosion controls in accordance with the Blue Book (Landcom 2004) and any additional Council requirements prior the works commencing (e.g. silt fencing and silt curtain).

Category	Mitigation Measure
	• Regular monitoring of sediment controls as well as inspections after heavy rainfall and follow-up work to repair/install erosion and sedimentation controls. • Inspect erosion controls regularly (daily during workdays) and after rainfall. Fix damaged controls immediately. Remove accumulated sediment and waste material from within land-based sediment controls regularly. • Screen all beach sand within the site that has been disturbed by the works and where rock fragments and other foreign objects are present. • Remove all rock fragments and construction debris greater than 20 mm from the beach area adjacent to construction works. • Extend screening along the beach wherever contamination is evident, or as directed by the site superintendent. • Screen to a minimum depth of 1.0 m below natural beach level in the immediate work area seaward of the constructed revetment/seawall.
Contamination	• Soil, water and waste management during construction will be required by the contractor. • Store all chemicals (e.g. fuel, oil) in appropriate bunding/storage systems within the site compound and away from the waterway. • Ensure appropriate spill kits are carried with the equipment. • Prior to use at the site and/or entry into the waterway, machinery is to be appropriately cleaned, degreased and serviced. • Wash down all equipment to prevent the spread of aquatic pests and contamination of waterways. • Weather forecasts must be checked daily to ensure work is nor carried out in high wind or rainfall . • Carry Safety Data Sheets for all chemicals. • Do not use algaecides or chemicals that are labelled 'harmful to marine life' or 'Class 9 Environmentally hazardous' as part of the proposed activities.
Waste	• If spoil disposal is required, follow the EPA (2014) Waste Classification Guidelines. • All construction waste must be contained onsite and disposed of at an appropriately licenced waste facility. Reuse and recycling is to occur where possible.

Category	Mitigation Measure
Community	• Regular communication is to be made by Council with Long Beach residents in relation to project timeline including the short-term construction impacts and the long-term positive impacts.
Air	• Works must be minimised during high wind periods. • Engines and equipment must be regularly inspected to ascertain that fitted emission controls are operating efficiently. • Engines and equipment must be maintained in accordance with manufacturer's specifications to ensure that it is in a proper and efficient condition. • Do not have engines or equipment running while not in use. • Minimise use of machinery for required activity only. • Adopt sediment and erosion controls in accordance with the Blue Book (Landcom 2004) and any additional Council requirements prior the works commencing (e.g. silt fencing and silt curtain). • All stockpiled materials must be bunded and covered when works are not actively using them to avoid unnecessary dust generation. • Sediment/dust control fencing should be erected around the works, particularly between the works and the residential properties to the west to stop windblown sands and dust from the site.

7.2 Licensing and Approvals

The relevant licenses, permits, notifications and/or approvals needed to construct and/or operate the proposal are shown in Table 7-2.

Table 7-2 Summary of licensing and approvals required

Instrument	Type	Timing	Notes
Crown Land Management Act 2016 (Division 3.4, 5.5 and 5.6)	Licence to occupy areas of Crown land.	Prior to start of activity.	Required for any works that extend beyond the seaward reserve boundary (i.e. below MHWM).
Fisheries Management Act 1994 (Section 200) *	Permit for any dredging and reclamation work.	Prior to start of activity.	For sites not requiring a licence under the CLM Act.
Marine Estate Management Act 2014 (Sections 55 and 56) *	Permit for activities within the Batemans Marine Park.	Prior to start of activity.	For works within the Habitat Protection Zone.
Roads Act 1993 (Section 138)	Consent would need to be sought from Council for any works proposed to be carried out on public roads.	Prior to start of activity.	For works on public roads.

*https://www.dpi.nsw.gov.au/__data/assets/pdf_file/0010/841078/Fisheries-and-Marine-Protected-Areas-Application-Form.pdf

8. Section 171 of EP&A Regulation Considerations and Factors in Guidelines for Division 5.1 Assessments

Section 171 of the EP&A Regulation and the factors in *Guidelines for Division 5.1 assessments* (Department of Planning and Environment, 2022) require that all potential environmental impacts of a proposed activity are identified, assessed, and appropriately managed. Table 8-1 below, addresses these requirements by considering the relevant environmental factors, the nature and extent of potential impacts, and the proposed mitigation or management measures. The assessment aligns with both the legislative requirements and the practical guidance outlined in the Division 5.1 guidelines.

Table 8-1 Section 171 of EP&A Regulations considerations

Factor	Description of Impact	Duration and extent
(a) the environmental impact on the community,	Community related impacts resulting from the proposed works relate mainly to noise and vibrations and temporary loss of a small segment of the beach. The proposed works would also feature positive impacts which include increased longevity of the area's coastal protection. The proposed works are set as far landward as possible to minimise impact on beach width.	Construction noise and vibration and traffic and access – short-term, negative (low to moderate). Operation environmental protection – long-term, positive (moderate). Long term beach width may further reduce subject to long term beach recession that is not an outcome of the works. Sand nourishment has been discussed to assist beach width and levels (not part of these works).
(b) the transformation of the locality,	The proposed works would see a minor transformation of the locality from land-based construction activities which are varied depending on the selected option (section 2.2) All options not including 'do nothing' would result in a new, permanent land structure within Long Beach which represents a transformation of the locality.	Construction – short-term, negative (minor). Operation – Long term, neutral (low to moderate) (note that this is neutral as the transformation can see more exposed changes following big rain and wind events, these are temporary).

Factor	Description of Impact	Duration and extent
(c) the environmental impact on the ecosystems of the locality,	During construction, potential minor impacts to marine ecosystems include mobilisation of sediments, potential direct impact to macroalgae and indirect impacts on seagrass and macroalgae, increased risk of contaminants, artificial light and noise impacts, marine debris, introduction of marine species and pollution. During construction, potential minor impacts to terrestrial ecosystem include disturbance of sediments, potential direct impact to vegetation	Construction – short-term, negative (minor).
(d) reduction of the aesthetic, recreational, scientific or other environmental quality or value of the locality,	There would be some temporary impacts during construction in relation to noise, traffic and visual amenity which would reduce aesthetic quality of the locality. The operation of the proposal would have a positive impact on the recreational and environmental quality or value of the locality, as the proposed structures would enhance Long Beach's Coastal Protection capabilities.	Construction – short-term, negative (minor to moderate). Operation – long-term, positive (moderate)
(e) the effects on any locality, place or building that has **i) aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance, or** **ii) other special value for present or future generations,**	There would be some temporary impacts during construction in visual amenity of the locality of a small section of Long Beach. The proposal would not significantly affect Aboriginal and non-Aboriginal cultural heritage in the locality during operation The proposed works are set as far landward as possible to minimise impact on beach width.	Construction – short-term, negative Long term beach width may further reduce subject to long term beach recession that is not an outcome of the works. Sand nourishment has been discussed to assist beach width and levels (not part of these works).
(f) the impact on the habitat of	No significant impacts to the habitat of protected aquatic and	Nil

Factor	Description of Impact	Duration and extent
protected animals, within the meaning of the *Biodiversity Conservation Act 2016*,	terrestrial fauna are expected with the implementation of the safeguards.	
(g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air,	Activities have the potential to impact on local marine and terrestrial environments and flora and fauna species that are present. Appropriate safeguards will be implemented to minimise these impacts and support environmental protection during the works.	Nil
(h) long-term effects on the environment,	The proposal is unlikely to have any long-term impact on the environment with impacts mitigated through design development and implementation of the safeguards identified in the REF.	Nil
(i) degradation of the quality of the environment,	There is potential for noise and vibration, water quality, sediment disturbances, weed invasion and spill impacts during construction. Appropriate safeguards would be implemented to minimise these impacts as identified in Section 7. There would be no operational impacts that would degrade the quality of the environment.	Construction - short-term, negative (minor to moderate)
(j) risk to the safety of the environment,	The proposal is unlikely to cause any safety risks to the environment provided the recommended safeguards are implemented.	Nil
(k) reduction in the range of beneficial uses of the environment,	The works would limit the ability for a natural dune system along the foreshore, however, without the works this natural dune system would also erode.	Operation - minor
(l) pollution of the environment,	The proposal is unlikely to cause any significant pollution risks to the environment provided the	Nil

Factor	Description of Impact	Duration and extent
	recommended safeguards are implemented.	
(m) environmental problems associated with the disposal of waste,	The proposal is unlikely to cause any environmental problems associated with the disposal of waste provided the recommended safeguards are implemented.	Nil
(n) increased demands on natural or other resources that are, or are likely to become, in short supply,	The proposal is unlikely to increase demands on resources that are or are likely to become in short supply.	Nil
(o) the cumulative environmental effect with other existing or likely future activities,	Environmental management measures would be co-ordinated to reduce any cumulative construction impacts. The proposal is unlikely to have any significant adverse long-term impacts during operation.	Construction - short-term, negative (minor)
(p) the impact on coastal processes and coastal hazards, including those under projected climate change conditions,	The proposal is not anticipated to have any significant impacts to coastal processes and coastal hazards.	Nil
(q) applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1,	The proposal aligns with the relevant plans discussed in Section 2.	Nil
(r) other relevant environmental factors.	In considering the potential impacts of this proposal all relevant environmental factors have been considered, refer to Section 6.	Refer to Section 6

9. Consideration of Matters of National Environmental Significance

This section assesses the potential impacts of the proposal on Matters of National Environmental Significance (MNES) under the EPBC Act.

The assessment draws on the results of the Protected Matters Search Tool (PMST) report (Appendix B), along with findings from desktop assessments and field investigations outlined in Section 6. While several MNES were identified as potentially occurring within the broader area, no listed threatened ecological communities or critical habitats were recorded within the proposal site, and impacts to listed species and other MNES are not expected to be significant.

Potential impacts on MNES have been assessed and are outlined in Table 9-1.

Table 9-1 Impacts on MNES considerations

Matter of National Environmental Significance	Impacts
Any impact on a World Heritage property? There are no World Heritage properties in the vicinity of the proposal.	Nil
Any impact on a National Heritage place? There are no National Heritage properties in the vicinity of the proposal.	Nil
Any impact on a wetland of international importance? There are no wetlands of international significance in the vicinity of the proposal.	Nil
Any impact on a listed threatened species or communities? The proposal would not significantly affect any listed species or communities.	Nil
Any impacts on listed migratory species? The proposal would not affect any listed migratory species.	Nil
Does the Project involve a nuclear action (including uranium mining)? The proposal does not involve a nuclear action.	Nil
Any impact on a Commonwealth marine area? There are no Commonwealth marine areas in the vicinity of the site.	Nil
Does the Proposal involve development of coal seam gas and/or large coal mine that has the potential to impact on water resources? The proposal is not related to coal seam gas or mining.	Nil
Additionally, any impact (direct or indirect) on Commonwealth land? The proposal would not be undertaken on or near any Commonwealth land.	Nil

10. Conclusion

The extent of Long Beach in North Batemans Bay is at risk of further erosion damage. This threatens access to the adjacent identified residential lots and public infrastructure along Long Beach. It is at continued risk from coastal erosion, with the eastern end of the beach a high priority for works to protect a section of Bay Road from immediate risk.

This REF has been prepared in accordance with Section 5.5 of the EP&A Act, Section 171 of the EP&A Regulation and other relevant State and Commonwealth legislation, taking into account to the fullest extent possible, all matters affecting or likely to affect the environment as a result of the proposal.

The proposal has been designed to protect the existing at risk beachfront infrastructure and properties from coastal erosion and inundation as identified in the CMP. The selection of the preferred option and finalisation of the proposal design is in response to the strategic context and stakeholder and community feedback received during the preparation of the CMP and from targeted consultation activities undertaken for the proposal. Key feedback considered included impact on safety, visual amenity and beach access and impact on the Batemans Marine Park values and coastal processes.

Based on the environmental assessment carried out in Section 6 of this REF, the potential negative impacts of the proposal are considered to be minor during construction (including minimal impacts to terrestrial and aquatic ecology, water quality and to the community from temporary generation of noise and changes to site access) and minor during operation. The potential impacts identified can be effectively mitigated and managed through adoption of best practices and adherence to accepted industry guidelines and standards, as outlined in Section 7.

This REF has considered and assessed these impacts in accordance with Section 171 of the EP&A Regulation and the requirements of the EPBC Act. Based on the assessment contained in this REF, it is considered that the proposal is not likely to have a significant impact upon the environment or any threatened species, populations or communities or their habitats. Accordingly, an Environmental Impact Statement (EIS) and a Biodiversity Development Assessment Report (BDAR) is not required, nor is the approval of the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act.

11. References

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Appendix A. Proposal Drawings

Appendix B. EPBC Act Protected Matters Search Tool

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: 02-Jul-2024

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	85
Listed Migratory Species:	58

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:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	81
Whales and Other Cetaceans:	12
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:	1
Nationally Important Wetlands:	2
EPBC Act Referrals:	7
Key Ecological Features (Marine):	1
Biologically Important Areas:	8
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text	Buffer Status
Araluen Scarp Grassy Forest	Endangered	Community may occur within area	In feature area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area	In feature area
Illawarra and south coast lowland forest and woodland ecological community	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
Lowland Grassy Woodland in the South East Corner Bioregion	Critically Endangered	Community likely to occur within area	In feature area
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
BIRD			
Anthochaera phrygia			
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Aphelocephala leucopsis](#) Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area	In feature area
[Ardenna grisea](#) Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Botaurus poiciloptilus](#) Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely 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 likely to occur within area	In feature area
[Climacteris picumnus victoriae](#) Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Dasyornis brachypterus](#) Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
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 feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat 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 feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In feature area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In feature area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	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 feature area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Thalassarche salvini](#)			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
[Thalassarche steadi](#)			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Thinornis cucullatus cucullatus](#)			
Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat may occur within area	In feature area
[Tringa nebularia](#)			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
[Epinephelus daemelii](#)			
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Prototroctes maraena](#)			
Australian Grayling [26179]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Seriolella brama](#)			
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In feature area
[Thunnus maccoyii](#)			
Southern Bluefin Tuna [69402]	Conservation Dependent	Species or species habitat known to occur within area	In feature area
FROG			
[Heleioporus australiacus](#)			
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat may occur within area	In feature area
[Litoria aurea](#)			
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Litoria watsoni			
Southern Heath Frog, Watson's Tree Frog [91509]	Endangered	Species or species habitat may occur within area	In buffer area only
MAMMAL			
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	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 known to occur within area	In feature area
Isoodon obesulus obesulus			
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat likely to occur within area	In feature area
Petauroides volans			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
Petaurus australis australis			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
Potorous tridactylus trisulcatus			
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Pseudomys novaehollandiae			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
[Caladenia tessellata](#) Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Correa baeuerlenii](#) Chef's Cap [17007]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Corunastylis vernalis listed as Genoplesium vernale](#) East Lynne Midge-orchid [78699]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Cryptostylis hunteriana](#) Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Eucalyptus stenostoma](#) Jillaga Ash [3976]	Endangered	Species or species habitat may occur within area	In buffer area only
[Haloragis exalata subsp. exalata](#) Wingless Raspwort, Square Raspwort [24636]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Persicaria elatior](#) Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Prasophyllum affine](#) Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid [2210]	Endangered	Species or species habitat may occur within area	In buffer area only
[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

Scientific Name	Threatened Category	Presence Text	Buffer Status
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	Breeding likely to occur within area	In feature area
Chelonia mydas			
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea			
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Eretmochelys imbricata			
Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area	In feature area
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
SHARK			
Carcharias taurus (east coast population)			
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Congregation or aggregation known to occur within area	In feature area
Carcharodon carcharias			
White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rhincodon typus			
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may 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 feature area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
Sternula albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Migratory Marine Species			
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In feature area
[Carcharhinus longimanus](#) Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In feature area
[Carcharodon carcharias](#) White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Caretta caretta](#) Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In feature area
[Chelonia mydas](#) Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
[Dermochelys coriacea](#) Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
[Eretmochelys imbricata](#) Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area	In feature area
[Eubalaena australis as Balaena glacialis australis](#) Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat may occur within area	In feature area
[Lamna nasus](#) Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In feature area
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area	In feature area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In feature area
Migratory Terrestrial Species			
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area	In feature area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely to occur within area	In feature area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area	In feature area
[Charadrius bicinctus](#) Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area	In feature area
[Charadrius leschenaultii](#) Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Gallinago megala](#) Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area	In feature area
[Gallinago stenura](#) Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Numenius minutus](#) Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area	In feature area
[Numenius phaeopus](#) Whimbrel [849]		Foraging, feeding or related behaviour known to occur within area	In feature area
[Pandion haliaetus](#) Osprey [952]		Species or species habitat known to occur within area	In buffer area only
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	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 - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [15430]	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 may 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 feature area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat likely 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
Charadrius bicinctus Double-banded Plover [895]		Foraging, feeding or related behaviour known to occur within area overfly marine area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

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 feature area
Diomedea epomophora			
Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea exulans			
Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Diomedea sanfordi			
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In feature area
Gallinago hardwickii			
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Gallinago megala			
Swinhoe's Snipe [864]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In feature area
Gallinago stenura			
Pin-tailed Snipe [841]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster			
White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus			
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Lathamus discolor](#) Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
[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 feature area
[Macronectes halli](#) Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
[Merops ornatus](#) Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
[Monarcha melanopsis](#) Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area
[Myiagra cyanoleuca](#) Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
[Neophema chrysogaster](#) Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
[Neophema chrysostoma](#) Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to 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

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Numenius minutus](#) Little Curlew, Little Whimbrel [848]		Foraging, feeding or related behaviour likely to occur within area overfly marine area	In feature area
[Numenius phaeopus](#) Whimbrel [849]		Foraging, feeding or related behaviour 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
[Pandion haliaetus](#) Osprey [952]		Species or species habitat known to occur within area	In buffer area only
[Phaethon lepturus](#) White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In feature area
[Pterodroma cervicalis](#) White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
[Rhipidura rufifrons](#) Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area
[Rostratula australis as Rostratula benghalensis (sensu lato)](#) Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
[Stercorarius antarcticus as Catharacta skua](#) Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only
[Sterna striata](#) White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Sternula albifrons as Sterna albifrons Little Tern [82849]		Species or species habitat may occur within area	In feature area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat known to occur within area overfly marine area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche bulleri platei as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In feature area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In feature area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In feature area

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 feature area
[Thinornis cucullatus as Thinornis rubricollis](#) Hooded Plover, Hooded Dotterel [87735]		Species or species habitat may occur within area overfly marine area	In feature area
[Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis](#) Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat may occur within area overfly marine area	In feature area
[Tringa nebularia](#) Common Greenshank, Greenshank [832]	Endangered	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 feature area
[Cosmocampus howensis](#) Lord Howe Pipefish [66208]		Species or species habitat may occur within area	In feature area
[Heraldia nocturna](#) Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In feature area
[Hippocampus abdominalis](#) Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In feature area
[Hippocampus breviceps](#) Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In feature area
[Histiogamphelus briggsii](#) Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area	In feature area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In feature area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In feature area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In feature area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In feature area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In feature area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In feature area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In feature area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In feature area
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In feature area
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Vanacampus margaritifer			
Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In feature area
Vanacampus phillipi			
Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In feature area
Mammal			
Arctocephalus forsteri			
Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In feature area
Arctocephalus pusillus			
Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In feature area
Reptile			
Caretta caretta			
Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In feature area
Chelonia mydas			
Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area
Dermochelys coriacea			
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area	In feature area
Eretmochelys imbricata			
Hawksbill Turtle [1766]	Vulnerable	Breeding likely to occur within area	In feature area
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In feature area

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 feature area

Current Scientific Name	Status	Type of Presence	Buffer Status
[Balaenoptera edeni](#) Bryde's Whale [35]		Species or species habitat may occur within area	In feature area
[Balaenoptera musculus](#) Blue Whale [36]	Endangered	Species or species habitat may occur within area	In feature area
[Caperea marginata](#) Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In feature area
[Delphinus delphis](#) Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In feature area
[Eubalaena australis](#) Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In feature area
[Grampus griseus](#) Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In feature area
[Lagenorhynchus obscurus](#) Dusky Dolphin [43]		Species or species habitat may occur within area	In feature area
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat known to occur within area	In feature area
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In feature area
[Tursiops aduncus](#) Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In feature area
[Tursiops truncatus s. str.](#) Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In feature area

Extra Information

State and Territory Reserves			[Resource Information]
Protected Area Name	Reserve Type	State	Buffer Status
Batemans	Marine Park	NSW	In feature area
Clyde River	National Park	NSW	In buffer area only
Cullendulla Creek	Nature Reserve	NSW	In feature area
Murramarang	National Park	NSW	In buffer area only

Regional Forest Agreements		[Resource Information]
Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.		
RFA Name	State	Buffer Status
Southern RFA	New South Wales	In feature area

Nationally Important Wetlands		[Resource Information]
Wetland Name	State	Buffer Status
Clyde River Estuary	NSW	In feature area
Cullendulla Creek and Embayment	NSW	In buffer area only

EPBC Act Referrals				[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
Batemans Bay Marina Redevelopment	2008/4265	Not Controlled Action	Completed	In buffer area only
DOFA weed eradication program at Goorooyaroo NSW	2003/1270	Not Controlled Action	Completed	In buffer area only
George Bass Drive Lilli Pilli Road Realignment	2021/8876	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

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Not controlled action				
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In feature area

Key Ecological Features [Resource Information]

Key Ecological Features are the parts of the marine ecosystem that are considered to be important for the biodiversity or ecosystem functioning and integrity of the Commonwealth Marine Area.

Name	Region	Buffer Status
Upwelling East of Eden	South-east	In feature area

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus			
Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In feature area
Seabirds			
Ardenna grisea			
Sooty Shearwater [82651]	Foraging	Likely to occur	In feature area
Ardenna tenuirostris			
Short-tailed Shearwater [82652]	Foraging	Likely to occur	In feature area
Eudyptula minor			
Little Penguin [1085]	Breeding	Likely to occur	In feature area
Pelagodroma marina			
White-faced Storm-petrel [1016]	Breeding	Known to occur	In feature area
Sharks			
Carcharias taurus			
Grey Nurse Shark [64469]	Foraging	Known to occur	In feature area
Whales			

Scientific Name	Behaviour	Presence	Buffer Status
Megaptera novaeangliae			
Humpback Whale [38]	Migration (north and south)	Known to occur	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 D. Batemans Marine Park Zoning Map

Department of Primary Industries and Regional Development

Batemans Marine Park Zoning Map

0 1 2 3 4 5 Nautical Miles

0 2 4 6 8 10 Kilometres

Map Projection: Unprojected Geographic. Horizontal Datum: Geodetic Datum of Australia (GDA94) 1:125,000 @ A1. Updated August 2024.

- Sanctuary Zone
- Habitat Protection Zone
- Habitat Protection Zone (Restricted)
- General Use Zone
- Special Purpose Zone
- Sanctuary Zone Marker
- Boat Ramp
- Angel Ring

Activity	Sanctuary Zone	Habitat Protection Zone	General Use Zone	Special Purpose Zone Murramarang	Special Purpose Zone Snake Island	Special Purpose Zone Wagonga & Batemans
Recreational fishing						
Line, spear, trap & net	✗	✓*[1]	✓	✗	P	✓[9]
Hand haul prawn net	✗	✓[2]	✓	✗	✗	✗
Commercial fishing						
Trawl, dredge, long line	✗	✗	✗	✗	✗	✗
Purse seine net, lift net	✗	✗	✓	✗	✗	✗
Haul net	✗	✗*[3]	✓	✗	✗	✗
Estuary prawn & haul net	✗	✗	✓	✗	✗	✗
Estuary mesh net	✗	✗	✓	✗	✗	✗
Garfish net	✗	✓*[4]	✓	✗	✗	✗
Abalone	✗	✓*	✓	✓	✗	✓
Turban & urchin	✗	✓*	✓	✗	✗	✓
Trapping	✗	✓*	✓	✗	✗	✓[9]
Set line	✗	✗	✓	✗	✗	✗
Drift line	✗	✗	✓	✗	✗	✗
Fishing and collecting						
Collection of bait weed and sea lettuce by hand	✗	✓*	✓	✗	P	✓
Collection of cunjevoi	✗	✗	✓	✗	✗	✗
Collection of invertebrates	✗	✓*[5]	✓	✗	✗	✓
Collecting dead shells[6]	✗	✓*	✓	✗	✗	✓
Collecting beached seaweed[7]	✗	✓*	✓	✗	✗	✓
Aquarium collection	✗	P	P	✗	✗	✗
Sharks and rays (except school and gummy)	✗	✗	✓	✗	✗	✗
Other activities						
Research	P	P	P	P	P	P
Competition and organised events	P	P	P	P	P	P
Anchoring	✓[8]	✓	✓	✓	✓	✓
Commercial operations	P	P	P	P	P	P
Infrastructure development	P	P	P	P	P	P

This map provides a summary of activities permitted and restrictions that apply. Refer to the Marine Estate Management (Management Rules) Regulation 1999 for full details.

Note: All other relevant legislation continues to apply in addition to the management rules.

✓ Activity is permitted in the zone.

✗ Activity is not permitted in the zone.

P Marine parks permit required.

1 Additional fishing restrictions and/or bait collecting restrictions apply in some zones (see below).

2 Recreational hand haul prawn nets are allowed in recreational fishing havens but not in other habitat protection zones.

3 Haul netting is permitted on specific beaches only - see (e) above.

4 Not in estuaries.

5 Collecting invertebrates prohibited in some habitat protection zones by hand picking and includes commercial abalone collection.

6 Limited to less than 10 kg per person per day.

7 Limited to less than 20 litres per person per day.

8 Not over seagrass.

9 No trapping allowed in Wagonga Inlet (except bait trap). No spearfishing east of bridge in Wagonga Inlet.

* Bait collection is allowed in general use zones and most habitat protection zones in accordance with the *Fisheries Management Act 1994*.

Only species listed in Table 1 of the Batemans Marine Park user guide may be taken in habitat protection zones.

Handpicking of plants and invertebrates (e.g. shellfish, urchins, abalone, lobsters etc) is not permitted in the following habitat protection zones: North Head, Brou Beach, Bullengella Beach - Loader Beach, Congo South Beach, Bingie, Meringo-Mullimburra Point; Black Bream Point; Clarks Bay; Freshwater Bay; Wagonga Head.

Unoccupied shells and shell grit may be collected from habitat protection and general use zones (that are not within national parks, nature reserves and Aboriginal areas) for non-commercial purposes. Collection of more than 10 kg requires a permit.

Collection of more than 20 litres (person/day) of beached seaweed from beaches requires a permit.

Beach haul netting is allowed in general use zones and only at the following beaches within habitat protection zones: Maloneys Beach; Long Beach; Wimbie Beach; Rosedale Beach; Barlings Beach; Shark Bay Beach; beaches between Meringo Lake and Mullimburra Point; Tuross Beach.

No fishing in the Shallow Crossing Habitat Protection Zone (upper Clyde River) between 1 May and 30 November each year.

The Montague Island (Inner) Habitat Protection Zone is restricted between 1 November and 30 April each year to protect greynurse sharks: No fishing with bait: No fishing at anchor; No fishing with wire trace line; No nets (landing nets are allowed).

The Meringo-Mullimburra Point Habitat Protection Zone and Wagonga Head Habitat Protection Zone prohibit the recreational and commercial collection of invertebrates by hand (including lobster and abalone). Recreational line fishing, spearfishing and trapping is permitted in these zones.

Only recreational line fishing from the shore is allowed in the North Head, Brou Beach, Bullengella Beach - Loader Beach, Congo South Beach, and Bingie Habitat Protection Zones, no other harvest methods are permitted.

Domestic animals are not permitted on beaches and rock platforms adjacent to National Parks.

Vehicles are only permitted in the marine park for the purpose of launching and retrieving vessels from designated boat launching facilities or beaches, subject to local government or NPWS requirements.

Commercial set lining is restricted to a maximum of 6 hooks and 10 lines.

All vessels may enter sanctuary zones, but fishing gear must be stowed. Moored or anchored vessels in sanctuary zones must have all fishing lines unrigged. Fish/fishing gear cannot be cleaned in sanctuary zones.

Contact the local DPIRD Fisheries office for any questions regarding commercial fishing activities.

THIS MAP MUST NOT BE USED FOR NAVIGATION

SHALLOW CROSSING HABITAT PROTECTION ZONE (RESTRICTED) No fishing between 1 May and 30 November

NORTH HEAD HABITAT PROTECTION ZONE (RESTRICTED) Shore-based recreational line fishing permitted. No other type of fishing or collecting allowed.

MURRAMARANG COAST SPECIAL PURPOSE ZONE No fishing, except for commercial abalone collecting

BRUSH ISLAND SANCTUARY ZONE

MURRAMARANG SANCTUARY ZONE

UPPER DURRAS LAKE SANCTUARY ZONE

NORTH DURRAS LAKE SANCTUARY ZONE

CULLENDULLA CREEK SANCTUARY ZONE

BUCKENBOWRA RIVER SANCTUARY ZONE

PELICAN INLET SANCTUARY ZONE

BATEMANS BAY SPECIAL PURPOSE ZONE

NORTH HEAD SANCTUARY ZONE

WATERFALL CREEK SANCTUARY ZONE

TOLLGATE ISLANDS SANCTUARY ZONE

MALABAR CREEK SANCTUARY ZONE

RECREATIONAL FISHING HAVEN

CANDLAGAN CREEK SANCTUARY ZONE

BURREWARRA SANCTUARY ZONE See Inset C

BROULEE ISLAND SANCTUARY ZONE

BENGELLO CREEK SANCTUARY ZONE

BROU BEACH HABITAT PROTECTION ZONE (RESTRICTED) Shore-based recreational line fishing is permitted. No other type of fishing or collecting is allowed.

BROU SANCTUARY ZONE

BROU LAKE NORTH SANCTUARY ZONE

BROU LAKE SOUTH SANCTUARY ZONE

LAKE TAROURGA SANCTUARY ZONE

MULLIMBURRA SANCTUARY ZONE See Inset D

COILA LAKE AND CREEK SANCTUARY ZONE

BULLENGELLA LAKE SANCTUARY ZONE

NANGUDGA LAKE SANCTUARY ZONE

BOGOLA SANCTUARY ZONE

MONTAGUE ISLAND EAST SANCTUARY ZONE

MONTAGUE ISLAND SOUTH SANCTUARY ZONE

Montague Island See Inset F

BULLENGELLA BEACH - LOADER BEACH HABITAT PROTECTION ZONE (RESTRICTED) Shore-based recreational line fishing permitted. No other type of fishing or collecting allowed.

MERINGO LAKE SANCTUARY ZONE

MERINGO - MULLIMBURRA POINT HABITAT PROTECTION ZONE (RESTRICTED) No collecting invertebrates by hand (including lobster and abalone) between Meringo Lake and Mullimburra Point. Recreational line fishing, spearfishing and trapping is permitted.

KELLYS LAKE SANCTUARY ZONE

BINGIE HABITAT PROTECTION ZONE (RESTRICTED) Shore-based recreational line fishing permitted. No other type of fishing or collecting is allowed.

CONGO SOUTH BEACH HABITAT PROTECTION ZONE (RESTRICTED) Shore-based recreational line fishing permitted. No other type of fishing or collecting is allowed.

CLARKS BAY - FRESHWATER BAY SANCTUARY ZONE

MILL BAY SPECIAL PURPOSE ZONE

WAGONGA HEAD HABITAT PROTECTION ZONE (RESTRICTED) No collecting plants or invertebrates by hand (including lobster and abalone)

No spearfishing east of bridge

NAROOMA WHARF SPECIAL PURPOSE ZONE

FORSTERS BAY SPECIAL PURPOSE ZONE

FORSTERS BAY SANCTUARY ZONE

PUNKALLA CREEK SANCTUARY ZONE

MONTAGUE ISLAND INNER HABITAT PROTECTION ZONE (RESTRICTED) Between 1 November and 30 April:
* No fishing with bait
* No fishing at anchor
* No fishing with a wire trace
* No nets (other than landing net)

DIGNAMS CREEK SANCTUARY ZONE

COURIA BAY SANCTUARY ZONE

MERRIWINGA CREEK SANCTUARY ZONE

SNAKE ISLAND SPECIAL PURPOSE ZONE No fishing except by permit

MEADS BAY SANCTUARY ZONE

NARIRA CREEK SANCTUARY ZONE

Download the **FishSmart NSW App** for all the essential information you need to fish in NSW.

Appendix E. Weedwise Search Results

Priority weeds for the South East

Note: this region includes the local council areas of Bega Valley, Eurobodalla, Goulburn Mulwaree, Hilltops (eastern), Kiama, Queanbeyan-Palerang Regional, Shellharbour, Shoalhaven, Snowy Monaro Regional, Upper Lachlan, Wingecarribee, Wollongong and Yass Valley.

Select another region

Weed	Duty
All plants	**General Biosecurity Duty** *All pest plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.*
Aaron's beard prickly pear *Opuntia leucotricha*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
African boxthorn *Lycium ferocissimum*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Alligator weed *Alternanthera philoxeroides*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Alligator weed *Alternanthera philoxeroides*	**Biosecurity Zone** The Alligator Weed Biosecurity Zone is established for all land within the state except land in the following regions: Greater Sydney; Hunter (but only in the local government areas of City of Lake Macquarie, City of Maitland, City of Newcastle or Port Stephens). *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*
Anchored water hyacinth *Eichhornia azurea*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Athel pine *Tamarix aphylla*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Bitou bush *Chrysanthemoides monilifera* subsp. *rotundata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Bitou bush *Chrysanthemoides monilifera* subsp. *rotundata*	**Biosecurity Zone** The Bitou Bush Biosecurity Zone is established for all land within the State except land within 10 kilometres of the mean high water mark of the Pacific Ocean between Cape Byron in the north and Point Perpendicular in the south. *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*
Black knapweed *Centaurea* x *moncktonii*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Black willow *Salix nigra*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Blackberry *Rubus fruticosus* species aggregate	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Rubus fruiticosus species aggregate have this requirement, except for the varietals Black Satin, Chehalem, Chester Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smooth Stem, and Thornfree**

Blind cactus *Opuntia rufida*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Boneseed *Chrysanthemoides monilifera* subsp. *monilifera*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Boneseed *Chrysanthemoides monilifera* subsp. *monilifera*	**Control Order** Boneseed Control Zone: Whole of NSW *Boneseed Control Zone (Whole of NSW): Owners and occupiers of land on which there is boneseed must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of boneseed must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.*
Boxing glove cactus *Cylindropuntia fulgida* var. *mamillata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Bridal creeper *Asparagus asparagoides*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* ***this requirement also applies to the Western Cape form of bridal creeper**
Bridal veil creeper *Asparagus declinatus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Broomrapes *Orobanche* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of Orobanche are Prohibited Matter in NSW, except Clover broomrape, Orobanche minor and Australian broomrape, Orobanche cernua var. australiana.**
Bunny ears cactus *Opuntia microdasys*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Cabomba *Cabomba caroliniana*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Cane cactus *Austrocylindropuntia cylindrica*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Austrocylindropuntia genus have this requirement**
Cape broom *Genista monspessulana*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Cat's claw creeper *Dolichandra unguis-cati*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Cat's claw creeper *Dolichandra unguis-cati*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Chicken dance cactus *Opuntia schickendantzii*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Chilean needle grass *Nassella neesiana*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Chinese violet *Asystasia gangetica*	**Control Order** *Owners and occupiers of land on which there is Chinese violet must notify the local control authority for the area if the Chinese violet is part of a new infestation on the land, destroy all Chinese violet on the land ensuring that subsequent generations of Chinese violet are destroyed; and keep the land free of Chinese violet. A person who deals with a carrier of Chinese violet must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.*
Climbing asparagus *Asparagus africanus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Climbing asparagus fern *Asparagus plumosus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Common pear *Opuntia stricta*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Coolatai grass *Hyparrhenia hirta*	**Regional Recommended Measure** Containment zone: Goulburn Mulwaree, Shoalhaven, Snowy Monaro, Wingecarribee, Upper Lachlan, Wollongong and Shellharbour Local Government Areas. Exclusion zone: Whole of region except containment zone. *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. Notify local control authority if found. Within containment zone: Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value. Land managers should mitigate spread of the plant from their land.*
Coral creeper *Barleria repens*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Creeping pear *Opuntia humifusa*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Eurasian water milfoil *Myriophyllum spicatum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Eve's needle cactus *Austrocylindropuntia subulata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Austrocylindropuntia genus have this requirement**
Fireweed *Senecio madagascariensis*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Flax-leaf broom *Genista linifolia*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Foxtail fern *Asparagus densiflorus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Frogbit *Limnobium laevigatum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of Limnobium are Prohibited Matter**

Gamba grass *Andropogon gayanus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Giant devil's fig *Solanum chrysotrichum*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Gorse *Ulex europaeus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Gorse *Ulex europaeus*	**Regional Recommended Measure** Containment zone: Goulburn Mulwaree, Queanbeyan-Palerang, Snowy Monaro, Wingecarribee and Yass Valley Local Government Areas. Exclusion zone: Whole of region except containment zone. *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. Notify local control authority if found. Within containment zone: Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value. Land managers should mitigate spread of the plant from their land.*
Grey sallow *Salix cinerea*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Ground asparagus *Asparagus aethiopicus*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Groundsel bush *Baccharis halimifolia*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Hawkweeds - Hieraciums *Hieracium* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Hieracium* are Prohibited Matter except for *Hieracium murorum* (wall hawkweed).**
Hawkweeds - Pilosellas *Pilosella* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**
Holly leaved senecio *Senecio glastifolius*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Horsetails *Equisetum* species	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Hudson pear *Cylindropuntia pallida*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Hydrocotyl *Hydrocotyle ranunculoides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Hymenachne *Hymenachne amplexicaulis* and hybrids	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Jumping cholla *Cylindropuntia prolifera*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Karoo acacia *Vachellia karroo*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Kei apple *Dovyalis caffra*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Kidney-leaf mud plantain *Heteranthera reniformis*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
King devil hawkweed *Pilosella piloselloides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**
Klein's cholla *Cylindropuntia kleiniae*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Kochia *Bassia scoparia*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **Excluding the subspecies *trichophylla***
Koster's curse *Clidemia hirta*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Kudzu *Pueraria lobata*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Lagarosiphon *Lagarosiphon major*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Lantana *Lantana camara*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Lantana *Lantana camara*	**Regional Recommended Measure** Containment zone: Eurobodalla, Shoalhaven, Wollongong, Shellharbour and Kiama Local Government Areas. Exclusion zone: Whole of region except containment zone. *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. Notify local control authority if found. Within containment zone: Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value. Land managers should mitigate spread of the plant from their land.*
Long-leaf willow primrose *Ludwigia longifolia*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Ludwigia *Ludwigia peruviana*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Madeira vine *Anredera cordifolia*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Mesquite *Prosopis* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the genus *Prosopis* have this requirement**
Mexican feather grass *Nassella tenuissima*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Miconia *Miconia* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Miconia* are Prohibited Matter in NSW**
Mikania vine *Mikania micrantha*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* ***all species in the genus *Mikania* are Prohibited Matter in NSW**
Mimosa *Mimosa pigra*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Ming asparagus fern *Asparagus macowanii*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Mouse-ear hawkweed *Pilosella officinarum*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**

Mysore thorn *Caesalpinia decapetala*	**Regional Recommended Measure** Containment zone: Wollongong Local Government Area. Exclusion zone: Whole of region except containment zone. *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. Notify local control authority if found. Within containment zone: Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value. Land managers should mitigate spread of the plant from their land.*
Orange hawkweed *Pilosella aurantiaca*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the genus *Pilosella* are Prohibited Matter**
Parkinsonia *Parkinsonia aculeata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Parkinsonia *Parkinsonia aculeata*	**Control Order** Parkinsonia Control Zone: Whole of NSW *Parkinsonia Control Zone (Whole of NSW): Owners and occupiers of land on which there is parkinsonia must notify the local control authority of new infestations; immediately destroy the plants; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of parkinsonia must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant.*
Parthenium weed *Parthenium hysterophorus*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Parthenium weed *Parthenium hysterophorus*	**Prohibition on certain dealings** *The following equipment must not be imported into NSW from Queensland: grain harvesters (including the comb or front), comb trailers (including the comb or front), bins used for holding grain during harvest operations, augers or similar for moving grain, vehicles used to transport grain harvesters, support vehicles driven in paddocks during harvest operations, mineral exploration drilling rigs and vehicles used to transport those rigs, unless set out as an exception in Division 5, Part 2 of the Biosecurity Order (Permitted Activities) 2017*
Pencil cactus *Cylindropuntia leptocaulis*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Pond apple *Annona glabra*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Prickly acacia *Vachellia nilotica*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Prickly pears - Austrocylindropuntias *Austrocylindropuntia* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Austrocylindropuntia genus have this requirement**
Prickly pears - Cylindropuntias *Cylindropuntia* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Prickly pears - Opuntias *Opuntia* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **For all Opuntia species except for *Opuntia ficus-indica* (Indian fig).**

Riverina pear *Opuntia elata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Rope pear *Cylindropuntia imbricata*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement.**
Rubber vine *Cryptostegia grandiflora*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Sagittaria *Sagittaria platyphylla*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Salvinia *Salvinia molesta*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Salvinia *Salvinia molesta*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Scotch broom *Cytisus scoparius* subsp. *scoparius*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Sea spurge *Euphorbia paralias*	**Regional Recommended Measure** Exclusion zone: Wollongong, Shellharbour and Kiama Local Government Areas. Containment zone: Whole of region except Exclusion zone. *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. Notify local control authority if found. Within containment zone: Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value. Land managers should mitigate spread of the plant from their land.*
Senegal tea plant *Gymnocoronis spilanthoides*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Serrated tussock *Nassella trichotoma*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Siam weed *Chromolaena odorata*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Sicklethorn *Asparagus falcatus*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Silverleaf nightshade *Solanum elaeagnifolium*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*

Silverleaf nightshade *Solanum elaeagnifolium*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Smooth tree pear *Opuntia monacantha*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Snake cactus *Cylindropuntia spinosior*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the Cylindropuntia genus have this requirement**
Snakefeather *Asparagus scandens*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Spanish heath *Erica lusitanica*	**Regional Recommended Measure** Containment zone: Queanbeyan-Palerang, Snowy Monaro and Wingecarribee Local Government Areas. Exclusion zone: Whole of region except containment zone. *Whole of region: Land managers mitigate the risk of new weeds being introduced to their land. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Within exclusion zone: Land managers should eradicate the plant from the land and keep the land free of the plant. Notify local control authority if found. Within containment zone: Land managers should reduce the impact of the plant on assets of high economic, environmental and/or social value. Land managers should mitigate spread of the plant from their land.*
Spongeplant *Limnobium spongia*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species of *Limnobium* are Prohibited Matter**
Spotted knapweed *Centaurea stoebe* subsp. *micranthos*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Sticky nightshade *Solanum sisymbriifolium* *Regional recommended measure for Central Tablelands from February 2020*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Tiger pear *Opuntia aurantiaca*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Tropical soda apple *Solanum viarum*	**Control Order** Tropical Soda Apple Control Zone: Whole of NSW *Tropical Soda Apple Control Zone (Whole of NSW): Owners and occupiers of land on which there is tropical soda apple must notify the local control authority of new infestations; destroy the plants including the fruit; ensure subsequent generations are destroyed; and ensure the land is kept free of the plant. A person who deals with a carrier of tropical soda apple must ensure the plant (and any seed and propagules) is not moved from the land; and immediately notify the local control authority of the presence of the plant on the land, or on or in a carrier.*
Velvety tree pear *Opuntia tomentosa*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Water caltrop *Trapa* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the *Trapa* genus are Prohibited Matter in NSW**

Water hyacinth *Eichhornia crassipes*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Water hyacinth *Eichhornia crassipes*	**Biosecurity Zone** The Water Hyacinth Biosecurity Zone applies to all land within the State, except for the following regions: Greater Sydney or North Coast, North West (but only the local government area of Moree Plains), Hunter (but only in the local government areas of City of Cessnock, City of Lake Macquarie, MidCoast, City of Maitland, City of Newcastle or Port Stephens), South East (but only in the local government areas of Eurobodalla, Kiama, City of Shellharbour, City of Shoalhaven or City of Wollongong). *Within the Biosecurity Zone this weed must be eradicated where practicable, or as much of the weed destroyed as practicable, and any remaining weed suppressed. The local control authority must be notified of any new infestations of this weed within the Biosecurity Zone*
Water lettuce *Pistia stratiotes*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Water poppy *Hydrocleys nymphoides*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Water soldier *Stratiotes aloides*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*
Water star grass *Heteranthera zosterifolia*	**Regional Recommended Measure** *Land managers should mitigate the risk of the plant being introduced to their land. Land managers should eradicate the plant from the land and keep the land free of the plant. A person should not deal with the plant, where dealings include but are not limited to buying, selling, growing, moving, carrying or releasing the plant. Notify local control authority if found.*
Wheel cactus *Opuntia robusta*	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.*
Willows *Salix* species	**Prohibition on certain dealings** *Must not be imported into the state, sold, bartered, exchanged or offered for sale.* **All species in the *Salix* genus have this requirement, except *Salix babylonica* (weeping willows), *Salix x calodendron* (pussy willow) and *Salix x reichardtii* (sterile pussy willow)**
Witchweeds *Striga* species	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries* **All species in the *Striga* genus are Prohibited Matter in NSW, except the native *Striga parviflora***
Yellow burrhead *Limnocharis flava*	**Prohibited Matter** *A person who deals with prohibited matter or a carrier of prohibited matter is guilty of an offence. A person who becomes aware of or suspects the presence of prohibited matter must immediately notify the Department of Primary Industries*

The content provided here is for information purposes only and is taken from the *Biosecurity Act 2015* and its subordinate legislation, and the Regional Strategic Weed Management Plans (published by each Local Land Services region in NSW). It describes the state and regional priorities for weeds in New South Wales, Australia.

Appendix F. Fisheries Management Act Schedules 4 and 5

NSW legislation

Fisheries Management Act 1994 No 38

Current version for 30 October 2023 to date (accessed 22 July 2024 at 12:14)

Schedule 4

Schedule 4 Endangered species, populations and ecological communities

(Section 220C)

Part 1 Endangered species

Fish

Archaeophya adamsi Fraser, 1959	Adam's Emerald Dragonfly
Austrocordulia leonardi	Sydney Hawk Dragonfly
**Dendronephthya australis* (Kükenthal, 1905)	Cauliflower Soft Coral
Hippocampus whitei (Bleeker, 1855)	White's Seahorse
**Maccullochella ikei* Rowland	Eastern Freshwater Cod
**Maccullochella macquariensis* (Cuvier)	Trout Cod
**Macquaria australasica* (Cuvier, 1830)	Macquarie Perch
Mogurnda adspersa (Castelnau, 1878)	Southern Purplespotted Gudgeon, Purple Spotted Gudgeon
Nannoperca australis Günther, 1861	Southern Pygmy Perch
**Nannoperca oxleyana* Whitley	Oxleyan Pygmy Perch
**Prototroctes maraena* (Günther, 1864)	Australian Grayling
Sphyrna lewini (Griffith & Smith, 1834)	Scalloped Hammerhead Shark
Thunnus maccoyii	Southern Bluefin Tuna

Marine vegetation

Part 2 Endangered populations

Fish

Ambassis agassizii Steindachner, 1866, Agassiz's glassfish, olive perchlet, western New South Wales population

Craterocephalus amniculus (Crowley and Ivanstoff, 1990), Darling River Hardyhead, Hunter River population

Gadopsis marmoratus, river blackfish, Snowy River population

Tandanus tandanus (Mitchell, 1838), freshwater catfish, eel tailed catfish, Murray-Darling Basin population

Marine vegetation

**Posidonia australis* Hook.*f*. (1858), seagrass, Port Hacking, Botany Bay, Sydney Harbour, Pittwater, Brisbane Waters and Lake Macquarie populations

Part 3 Endangered ecological communities

Aquatic ecological community in the natural drainage system of the lower Murray River catchment (as described in the recommendation of the Fisheries Scientific Committee to list the ecological community)

Aquatic ecological community in the natural drainage system of the lowland catchment of the Darling River (described in the recommendation of the Fisheries Scientific Committee to list that aquatic ecological community, as the area covered by that recommendation)

Aquatic ecological community in the natural drainage system of the lowland catchment of the Lachlan River (described in the recommendation of the Fisheries Scientific Committee to list that aquatic ecological community, as the area covered by that recommendation)

Aquatic ecological community in the catchment of the Snowy River in NSW (as described in the final determination of the Fisheries Scientific Committee to list that aquatic ecological community)

Part 4 Species presumed extinct

Fish

Hadrachaeta aspeta Hutchings, 1977	Marine Worm
**Pristis zijsron* Bleeker, 1851	Green Sawfish
Metaprotella haswelliana Mayer, 1882	Haswells Caprellid

Marine vegetation

**Vanvoorstia bennettiana* (Harvey) Papenfuss (1956)	Bennetts Seaweed

NSW legislation

Fisheries Management Act 1994 No 38

Current version for 30 October 2023 to date (accessed 22 July 2024 at 12:14)

Schedule 4A

Schedule 4A Critically endangered species and ecological communities

(Section 220C)

Part 1 Critically endangered species

Fish

**Carcharias taurus* Rafinesque, 1810	Greynurse Shark
**Craterocephalus fluviatilis* (McCulloch, 1913)	Murray Hardyhead
Euastacus dharawalus (Morgan, 1997)	Fitzroy Falls Spiny Crayfish
Euastacus vesper (McCormack & Ahyong, 2017)	Cudgegong Giant Spiny Crayfish
**Galaxias brevissimus* (Raadik, 2014)	Short-tail Galaxias
Galaxias rostratus	Flathead Galaxias
**Galaxias supremus* (Raadik, 2014)	Kosciuszko Galaxias
Galaxias tantangara (Raadik, 2014)	Stocky Galaxias
Notopala hanleyi (Frauenfeld, 1864)	Hanley's River Snail
Notopala sublineata (Conrad, 1850)	Darling River Snail
Smeagol hilaris Tillier & Ponder, 1992	Marine Slug

Marine vegetation

Nereia lophocladia J. Agardh (1897)	Marine Brown Alga

Part 2 Critically endangered ecological communities

NSW legislation

Fisheries Management Act 1994 No 38

Current version for 30 October 2023 to date (accessed 22 July 2024 at 12:14)

Schedule 5

Schedule 5 Vulnerable species and ecological communities

(Section 220C)

Part 1 Vulnerable species

Fish

Austropetalia tonyana (Theischinger, 1995)	Alpine Redspot Dragonfly
Bidyanus bidyanus (Mitchell, 1838)	Silver Perch
Branchinella buchananensis Geddes, 1981	Buchanans Fairy Shrimp
**Carcharodon carcharias* (Linnaeus, 1758)	White Shark, Great White Shark
Epinephelus daemelii (Günther, 1876)	Black Rockcod, Black Cod
Euastacus armatus (von Martens 1866)	Murray Crayfish
Microrchestia bousfieldi Lowry & Peart, 2010	Bousfields Marsh-hopper
Sphyrna mokarran Ruppell, 1837	Great Hammerhead Shark

Marine vegetation

Part 2 Vulnerable ecological communities

Appendix G. Biodiversity Conservation Act Protected and Threatened Searches

Data from the BioNet Atlas website, which holds records from a number of custodians. The data are only indicative and cannot be considered a comprehensive inventory, and may contain errors and omissions. Species listed under the Sensitive Species Data Policy may have their locations denatured (^ rounded to 0.1°C; ^^ rounded to 0.01°C. Copyright the State of NSW through the Department of Planning, Industry and Environment. Search criteria : Public Report of all Valid Records of Entities in selected area [North: -35.65 West: 150.16 East: 150.26 South: -35.75] returned a total of 12,451 records of 1,140 species.

Report generated on 2/07/2024 12:32 PM

Kingdom	Class	Family	Species Code	Scientific Name	Exotic	Common Name	NSW status	Comm. status	Records	Info
Animalia	Amphibia	Myobatrachidae	3134	*Crinia signifera*		Common Eastern Froglet	P		103	
Animalia	Amphibia	Myobatrachidae	3103	*Paracrinia haswelli*		Haswell's Froglet	P		10	
Animalia	Amphibia	Myobatrachidae	3117	*Pseudophryne bibronii*		Bibron's Toadlet	P		15	
Animalia	Amphibia	Myobatrachidae	3302	*Uperoleia tyleri*		Tyler's Toadlet	P		4	
Animalia	Amphibia	Limnodynastidae	3061	*Limnodynastes peronii*		Brown-striped Frog	P		133	
Animalia	Amphibia	Hylidae	3166	*Litoria aurea*		Green and Golden Bell Frog	E1,P	V	1	
Animalia	Amphibia	Hylidae	3180	*Litoria dentata*		Bleating Tree Frog	P		3	
Animalia	Amphibia	Hylidae	3182	*Litoria ewingii*		Brown Tree Frog	P		11	
Animalia	Amphibia	Hylidae	3183	*Litoria fallax*		Eastern Dwarf Tree Frog	P		50	
Animalia	Amphibia	Hylidae	3190	*Litoria jervisiensis*		Jervis Bay Tree Frog	P		9	
Animalia	Amphibia	Hylidae	3309	*Litoria nudidigita*		Leaf Green River Tree Frog	P		2	
Animalia	Amphibia	Hylidae	3204	*Litoria peronii*		Peron's Tree Frog	P		80	
Animalia	Amphibia	Hylidae	3206	*Litoria phyllochroa*		Leaf-green Tree Frog	P		13	
Animalia	Amphibia	Hylidae	3214	*Litoria tyleri*		Tyler's Tree Frog	P		26	
Animalia	Amphibia	Hylidae	3215	*Litoria verreauxii*		Verreaux's Frog	P		35	
Animalia	Amphibia	Hylidae	3906	*Litoria verreauxii verreauxii*		Verreaux's Tree Frog (subsp)	P		1	
Animalia	Reptilia	Cheloniidae	2004	*Caretta caretta*		Loggerhead Turtle	E1,P	E	1	
Animalia	Reptilia	Cheloniidae	2007	*Chelonia mydas*		Green Turtle	V,P	V	2	
Animalia	Reptilia	Dermochelyidae	2013	*Dermochelys coriacea*		Leatherback Turtle	E1,P	E	1	
Animalia	Reptilia	Chelidae	2017	*Chelodina longicollis*		Eastern Snake-necked Turtle	P		44	
Animalia	Reptilia	Scincidae	2559	*Concinnia tenuis*		Barred-sided Skink	P		1	
Animalia	Reptilia	Scincidae	2557	*Eulamprus quoyii*		Eastern Water-skink	P		5	
Animalia	Reptilia	Scincidae	2450	*Lampropholis delicata*		Dark-flecked Garden Sunskink	P		13	
Animalia	Reptilia	Scincidae	2451	*Lampropholis guichenoti*		Pale-flecked Garden Sunskink	P		3	
Animalia	Reptilia	Scincidae	T117	*Lampropholis sp.*		unidentified grass skink	P		1	
Animalia	Reptilia	Scincidae	2452	*Saproscincus mustelinus*		Weasel Skink	P		2	
Animalia	Reptilia	Scincidae	2580	*Tiliqua scincoides*		Eastern Blue-tongue	P		89	
Animalia	Reptilia	Agamidae	2194	*Amphibolurus muricatus*		Jacky Lizard	P		6	
Animalia	Reptilia	Agamidae	2252	*Intellagama lesueurii*		Eastern Water Dragon	P		5	
Animalia	Reptilia	Varanidae	2283	*Varanus varius*		Lace Monitor	P		19	
Animalia	Reptilia	Pythonidae	2625	*Morelia spilota*		Carpet & Diamond Pythons	P		6	
Animalia	Reptilia	Pythonidae	5095	*Morelia spilota mcdowelli*		Eastern Carpet Python	P		1	
Animalia	Reptilia	Pythonidae	5096	*Morelia spilota spilota*		Diamond Python	P		1	
Animalia	Reptilia	Elapidae	5136	*Cryptophis nigrescens*		Eastern Small-eyed Snake	P		16	
Animalia	Reptilia	Elapidae	2805	*Drysdalia rhodogaster*		Mustard-bellied Snake	P		7	
Animalia	Reptilia	Elapidae	2770	*Hydrophis platurus*		Yellow-bellied Seasnake	P		2	
Animalia	Reptilia	Elapidae	2681	*Notechis scutatus*		Tiger Snake	P		4	
Animalia	Reptilia	Elapidae	2693	*Pseudechis porphyriacus*		Red-bellied Black Snake	P		73	
Animalia	Reptilia	Elapidae	2699	*Pseudonaja textilis*		Eastern Brown Snake	P		5	
Animalia	Aves	Phasianidae	9046	*Coturnix sp.*		Unidentified Quail	P		2	
Animalia	Aves	Anatidae	0210	*Anas castanea*		Chestnut Teal	P		12	
Animalia	Aves	Anatidae	0211	*Anas gracilis*		Grey Teal	P		3	
Animalia	Aves	Anatidae	0948	*Anas platyrhynchos*	*	Mallard			1	
Animalia	Aves	Anatidae	0208	*Anas superciliosa*		Pacific Black Duck	P		16	
Animalia	Aves	Anatidae	0202	*Chenonetta jubata*		Australian Wood Duck	P		46	
Animalia	Aves	Anatidae	0203	*Cygnus atratus*		Black Swan	P		21	
Animalia	Aves	Anatidae	0207	*Tadorna tadornoides*		Australian Shelduck	P		1	
Animalia	Aves	Columbidae	0028	*Columba leucomela*		White-headed Pigeon	P		39	
Animalia	Aves	Columbidae	0957	*Columba livia*	*	Rock Dove			19	
Animalia	Aves	Columbidae	9931	*Geopelia striata*		Peaceful Dove	P		1	
Animalia	Aves	Columbidae	0044	*Leucosarcia melanoleuca*		Wonga Pigeon	P		104	
Animalia	Aves	Columbidae	0027	*Lopholaimus antarcticus*		Topknot Pigeon	P		3	
Animalia	Aves	Columbidae	0029	*Macropygia phasianella*		Brown Cuckoo-Dove	P		18	
Animalia	Aves	Columbidae	0043	*Ocyphaps lophotes*		Crested Pigeon	P		18	
Animalia	Aves	Columbidae	0034	*Phaps chalcoptera*		Common Bronzewing	P		18	
Animalia	Aves	Columbidae	0023	*Ptilinopus superbus*		Superb Fruit-Dove	V,P		1	
Animalia	Aves	Columbidae	0989	*Spilopelia chinensis*	*	Spotted Turtle-Dove			10	
Animalia	Aves	Podargidae	0313	*Podargus strigoides*		Tawny Frogmouth	P		40	
Animalia	Aves	Caprimulgidae	0330	*Eurostopodus mystacalis*		White-throated Nightjar	P		10	

Animalia	Aves	Aegothelidae	0317	*Aegotheles cristatus*	Australian Owlet-nightjar	P		7	
Animalia	Aves	Apodidae	0334	*Hirundapus caudacutus*	White-throated Needletail	V,P	V,C,J,K	6	
Animalia	Aves	Oceanitidae	0065	*Pelagodroma marina*	White-faced Storm-Petrel	P		9	
Animalia	Aves	Procellariidae	0072	*Ardenna carneipes*	Flesh-footed Shearwater	V,P	J,K	1	
Animalia	Aves	Procellariidae	0069	*Ardenna pacifica*	Wedge-tailed Shearwater	P	J	32	
Animalia	Aves	Procellariidae	0071	*Ardenna tenuirostris*	Short-tailed Shearwater	P	C,J,K	12	
Animalia	Aves	Procellariidae	0929	*Macronectes giganteus*	Southern Giant Petrel	E1,P	E	1	
Animalia	Aves	Procellariidae	0971	*Pterodroma solandri*	Providence Petrel	V,P		1	
Animalia	Aves	Procellariidae	0067	*Puffinus assimilis*	Little Shearwater	V,P		1	
Animalia	Aves	Procellariidae	0068	*Puffinus gavia*	Fluttering Shearwater	P		1	
Animalia	Aves	Spheniscidae	0005	*Eudyptula minor*	Little Penguin	P		23	
Animalia	Aves	Sulidae	0104	*Morus serrator*	Australasian Gannet	P		2	
Animalia	Aves	Anhingidae	8731	*Anhinga novaehollandiae*	Australasian Darter	P		1	
Animalia	Aves	Phalacrocoracidae	0100	*Microcarbo melanoleucos*	Little Pied Cormorant	P		4	
Animalia	Aves	Phalacrocoracidae	0096	*Phalacrocorax carbo*	Great Cormorant	P		15	
Animalia	Aves	Phalacrocoracidae	T021	*Phalacrocorax sp.*	Unidentified Cormorant	P		5	
Animalia	Aves	Phalacrocoracidae	0097	*Phalacrocorax sulcirostris*	Little Black Cormorant	P		12	
Animalia	Aves	Phalacrocoracidae	0099	*Phalacrocorax varius*	Pied Cormorant	P		10	
Animalia	Aves	Pelecanidae	0106	*Pelecanus conspicillatus*	Australian Pelican	P		36	
Animalia	Aves	Ardeidae	0189	*Ardea pacifica*	White-necked Heron	P		1	
Animalia	Aves	Ardeidae	T179	*Ardea/Egretta sp.*	Unidentified Egret	P		1	
Animalia	Aves	Ardeidae	0193	*Butorides striata*	Striated Heron	P		1	
Animalia	Aves	Ardeidae	8712	*Casmerodius modesta*	Eastern Great Egret	P		4	
Animalia	Aves	Ardeidae	0185	*Egretta garzetta*	Little Egret	P		1	
Animalia	Aves	Ardeidae	0188	*Egretta novaehollandiae*	White-faced Heron	P		8	
Animalia	Aves	Ardeidae	0196	*Ixobrychus flavicollis*	Black Bittern	V,P		2	
Animalia	Aves	Ardeidae	0192	*Nycticorax caledonicus*	Nankeen Night Heron	P		2	
Animalia	Aves	Threskiornithidae	0179	*Threskiornis moluccus*	Australian White Ibis	P		2	
Animalia	Aves	Accipitridae	0222	*Accipiter cirrocephalus*	Collared Sparrowhawk	P		4	
Animalia	Aves	Accipitridae	0221	*Accipiter fasciatus*	Brown Goshawk	P		4	
Animalia	Aves	Accipitridae	0220	*Accipiter novaehollandiae*	Grey Goshawk	P		3	
Animalia	Aves	Accipitridae	0224	*Aquila audax*	Wedge-tailed Eagle	P		1	
Animalia	Aves	Accipitridae	0219	*Circus approximans*	Swamp Harrier	P		2	
Animalia	Aves	Accipitridae	0226	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		12	
Animalia	Aves	Accipitridae	0228	*Haliastur sphenurus*	Whistling Kite	P		3	
Animalia	Aves	Accipitridae	0230	*^^Lophoictinia isura*	Square-tailed Kite	V,P,3		7	
Animalia	Aves	Accipitridae	8739	*^^Pandion cristatus*	Eastern Osprey	V,P,3		3	
Animalia	Aves	Falconidae	0240	*Falco cenchroides cenchroides*	Nankeen Kestrel	P		2	
Animalia	Aves	Falconidae	0235	*Falco longipennis*	Australian Hobby	P		1	
Animalia	Aves	Falconidae	0237	*Falco peregrinus*	Peregrine Falcon	P		1	
Animalia	Aves	Rallidae	0059	*Fulica atra*	Eurasian Coot	P		3	
Animalia	Aves	Rallidae	0056	*Gallinula tenebrosa*	Dusky Moorhen	P		4	
Animalia	Aves	Rallidae	0046	*Hypotaenidia philippensis*	Buff-banded Rail	P		1	
Animalia	Aves	Rallidae	0058	*Porphyrio porphyrio*	Purple Swamphen	P		26	
Animalia	Aves	Rallidae	0049	*Porzana fluminea*	Australian Spotted Crake	P		3	
Animalia	Aves	Haematopodidae	0131	*Haematopus fuliginosus*	Sooty Oystercatcher	V,P		24	
Animalia	Aves	Haematopodidae	0130	*Haematopus longirostris*	Pied Oystercatcher	E1,P		47	
Animalia	Aves	Charadriidae	0136	*Pluvialis squatarola*	Grey Plover	P	C,J,K	1	
Animalia	Aves	Charadriidae	T453	*Thinornis cucullatus cucullatus*	Eastern Hooded Dotterel	E4A	V	7	
Animalia	Aves	Charadriidae	0133	*Vanellus miles*	Masked Lapwing	P		56	
Animalia	Aves	Charadriidae	0134	*Vanellus miles novaehollandiae*	[Spur-winged Plover]	P		1	
Animalia	Aves	Scolopacidae	0153	*Limosa lapponica*	Bar-tailed Godwit	P	C,J,K	1	
Animalia	Aves	Scolopacidae	0149	*Numenius madagascariensis*	Eastern Curlew	P	CE,C,J,K	7	
Animalia	Aves	Scolopacidae	0150	*Numenius phaeopus*	Whimbrel	P	C,J,K	1	
Animalia	Aves	Turnicidae	0014	*Turnix varius*	Painted Button-quail	P		1	
Animalia	Aves	Stercorariidae	0128	*Stercorarius parasiticus*	Arctic Jaeger	P	C,J,K	1	
Animalia	Aves	Laridae	0125	*Chroicocephalus novaehollandiae*	Silver Gull	P		184	
Animalia	Aves	Laridae	0112	*Hydroprogne caspia*	Caspian Tern	P	J	3	
Animalia	Aves	Laridae	0953	*Sterna hirundo*	Common Tern	P	C,J,K	1	
Animalia	Aves	Laridae	0952	*Sterna paradisaea*	Arctic Tern	P		1	
Animalia	Aves	Laridae	0114	*Sterna striata*	White-fronted Tern	P		1	
Animalia	Aves	Laridae	0115	*Thalasseus bergii*	Crested Tern	P	J	16	

Animalia	Aves	Cacatuidae	0269	*Cacatua galerita*	Sulphur-crested Cockatoo	P		116	
Animalia	Aves	Cacatuidae	0271	*Cacatua sanguinea*	Little Corella	P		47	
Animalia	Aves	Cacatuidae	T187	*Cacatua sp.*		P		5	
Animalia	Aves	Cacatuidae	0272	*Cacatua tenuirostris*	Long-billed Corella	P		3	
Animalia	Aves	Cacatuidae	0268	*^^Callocephalon fimbriatum*	Gang-gang Cockatoo	E1,P,3	E	35	
Animalia	Aves	Cacatuidae	8862	*^Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V,P,2	V	97	
Animalia	Aves	Cacatuidae	0273	*Eolophus roseicapilla*	Galah	P		37	
Animalia	Aves	Cacatuidae	0267	*Zanda funerea*	Yellow-tailed Black-Cockatoo	P		13	
Animalia	Aves	Psittacidae	0281	*Alisterus scapularis*	Australian King-Parrot	P		95	
Animalia	Aves	Psittacidae	0258	*Glossopsitta concinna*	Musk Lorikeet	P		15	
Animalia	Aves	Psittacidae	0260	*Glossopsitta pusilla*	Little Lorikeet	V,P		24	
Animalia	Aves	Psittacidae	0309	*Lathamus discolor*	Swift Parrot	E1,P	CE	19	
Animalia	Aves	Psittacidae	0282	*Platycercus elegans*	Crimson Rosella	P		79	
Animalia	Aves	Psittacidae	0288	*Platycercus eximius*	Eastern Rosella	P		7	
Animalia	Aves	Psittacidae	T039	*Platycercus sp.*	Unidentified Rosella	P		2	
Animalia	Aves	Psittacidae	9947	*Trichoglossus haematodus*	Rainbow Lorikeet	P		245	
Animalia	Aves	Cuculidae	0338	*Cacomantis flabelliformis*	Fan-tailed Cuckoo	P		30	
Animalia	Aves	Cuculidae	0339	*Cacomantis variolosus*	Brush Cuckoo	P		3	
Animalia	Aves	Cuculidae	0342	*Chalcites basalis*	Horsfield's Bronze-Cuckoo	P		3	
Animalia	Aves	Cuculidae	0343	*Chalcites lucidus*	Shining Bronze-Cuckoo	P		10	
Animalia	Aves	Cuculidae	0347	*Eudynamys orientalis*	Eastern Koel	P		24	
Animalia	Aves	Cuculidae	0337	*Heteroscenes pallidus*	Pallid Cuckoo	P		3	
Animalia	Aves	Cuculidae	0348	*Scythrops novaehollandiae*	Channel-billed Cuckoo	P		6	
Animalia	Aves	Strigidae	9922	*Ninox novaeseelandiae*	Southern Boobook	P		49	
Animalia	Aves	Strigidae	0248	*^^Ninox strenua*	Powerful Owl	V,P,3		12	
Animalia	Aves	Tytonidae	9923	*Tyto javanica*	Eastern Barn Owl	P		7	
Animalia	Aves	Tytonidae	0250	*^^Tyto novaehollandiae*	Masked Owl	V,P,3		12	
Animalia	Aves	Tytonidae	9924	*^^Tyto tenebricosa*	Sooty Owl	V,P,3		19	
Animalia	Aves	Alcedinidae	0319	*Ceyx azureus*	Azure Kingfisher	P		9	
Animalia	Aves	Alcedinidae	0322	*Dacelo novaeguineae*	Laughing Kookaburra	P		109	
Animalia	Aves	Alcedinidae	0324	*Todiramphus macleayii*	Forest Kingfisher	P		1	
Animalia	Aves	Alcedinidae	0326	*Todiramphus sanctus*	Sacred Kingfisher	P		20	
Animalia	Aves	Coraciidae	0318	*Eurystomus orientalis*	Dollarbird	P		11	
Animalia	Aves	Menuridae	0350	*Menura novaehollandiae*	Superb Lyrebird	P		206	
Animalia	Aves	Climacteridae	8127	*Climacteris picumnus victoriae*	Brown Treecreeper (eastern subspecies)	V,P	V	2	
Animalia	Aves	Climacteridae	0558	*Cormobates leucophaea*	White-throated Treecreeper	P		80	
Animalia	Aves	Ptilonorhynchidae	0676	*Ailuroedus crassirostris*	Green Catbird	P		10	
Animalia	Aves	Ptilonorhynchidae	0679	*Ptilonorhynchus violaceus*	Satin Bowerbird	P		94	
Animalia	Aves	Maluridae	0529	*Malurus cyaneus*	Superb Fairy-wren	P		69	
Animalia	Aves	Maluridae	0536	*Malurus lamberti*	Variegated Fairy-wren	P		6	
Animalia	Aves	Acanthizidae	0486	*Acanthiza chrysorrhoa*	Yellow-rumped Thornbill	P		3	
Animalia	Aves	Acanthizidae	0470	*Acanthiza lineata*	Striated Thornbill	P		58	
Animalia	Aves	Acanthizidae	0471	*Acanthiza nana*	Yellow Thornbill	P		14	
Animalia	Aves	Acanthizidae	0475	*Acanthiza pusilla*	Brown Thornbill	P		92	
Animalia	Aves	Acanthizidae	0484	*Acanthiza reguloides*	Buff-rumped Thornbill	P		1	
Animalia	Aves	Acanthizidae	9042	*Acanthiza sp.*	Unidentified Thornbill	P		1	
Animalia	Aves	Acanthizidae	0454	*Gerygone mouki*	Brown Gerygone	P		14	
Animalia	Aves	Acanthizidae	0453	*Gerygone olivacea*	White-throated Gerygone	P		2	
Animalia	Aves	Acanthizidae	0488	*Sericornis frontalis*	White-browed Scrubwren	P		32	
Animalia	Aves	Pardalotidae	0565	*Pardalotus punctatus*	Spotted Pardalote	P		70	
Animalia	Aves	Pardalotidae	0976	*Pardalotus striatus*	Striated Pardalote	P		10	
Animalia	Aves	Meliphagidae	0591	*Acanthorhynchus tenuirostris*	Eastern Spinebill	P		45	
Animalia	Aves	Meliphagidae	0638	*Anthochaera carunculata*	Red Wattlebird	P		100	
Animalia	Aves	Meliphagidae	0710	*Anthochaera chrysoptera*	Little Wattlebird	P		32	
Animalia	Aves	Meliphagidae	T210	*Anthochaera sp.*	Unidentified Wattlebird	P		11	
Animalia	Aves	Meliphagidae	0614	*Caligavis chrysops*	Yellow-faced Honeyeater	P		79	
Animalia	Aves	Meliphagidae	0633	*Manorina melanophrys*	Bell Miner	P		2	
Animalia	Aves	Meliphagidae	0605	*Meliphaga lewinii*	Lewin's Honeyeater	P		39	
Animalia	Aves	Meliphagidae	0583	*Melithreptus brevirostris*	Brown-headed Honeyeater	P		12	
Animalia	Aves	Meliphagidae	0578	*Melithreptus lunatus*	White-naped Honeyeater	P		25	
Animalia	Aves	Meliphagidae	0586	*Myzomela sanguinolenta*	Scarlet Honeyeater	P		10	
Animalia	Aves	Meliphagidae	0617	*Nesoptilotis leucotis*	White-eared Honeyeater	P		6	
Animalia	Aves	Meliphagidae	0646	*Philemon citreogularis*	Little Friarbird	P		2	
Animalia	Aves	Meliphagidae	0645	*Philemon corniculatus*	Noisy Friarbird	P		29	
Animalia	Aves	Meliphagidae	0632	*Phylidonyris niger*	White-cheeked Honeyeater	P		4	
Animalia	Aves	Meliphagidae	0631	*Phylidonyris novaehollandiae*	New Holland Honeyeater	P		40	

Animalia	Aves	Cinclosomatidae	0436	*Cinclosoma punctatum*		Spotted Quail-thrush	P		1	
Animalia	Aves	Falcunculidae	0416	*Falcunculus frontatus frontatus*		Eastern Shrike-tit	P		3	
Animalia	Aves	Psophodidae	0421	*Psophodes olivaceus*		Eastern Whipbird	P		74	
Animalia	Aves	Neosittidae	0549	*Daphoenositta chrysoptera*		Varied Sittella	V,P		6	
Animalia	Aves	Campephagidae	0424	*Coracina novaehollandiae*		Black-faced Cuckoo-shrike	P		18	
Animalia	Aves	Campephagidae	0425	*Coracina papuensis*		White-bellied Cuckoo-shrike	P		3	
Animalia	Aves	Campephagidae	0429	*Edolisoma tenuirostris*		Cicadabird	P		9	
Animalia	Aves	Pachycephalidae	0408	*Colluricincla harmonica*		Grey Shrike-thrush	P		26	
Animalia	Aves	Pachycephalidae	0405	*Pachycephala olivacea*		Olive Whistler	V,P		2	
Animalia	Aves	Pachycephalidae	0398	*Pachycephala pectoralis*		Golden Whistler	P		34	
Animalia	Aves	Pachycephalidae	0401	*Pachycephala rufiventris*		Rufous Whistler	P		8	
Animalia	Aves	Oriolidae	0671	*Oriolus sagittatus*		Olive-backed Oriole	P		23	
Animalia	Aves	Oriolidae	0432	*Sphecotheres vieilloti*		Australasian Figbird	P		7	
Animalia	Aves	Artamidae	0700	*Cracticus nigrogularis*		Pied Butcherbird	P		2	
Animalia	Aves	Artamidae	T022	*Cracticus sp.*		Unidentified Butcherbird	P		2	
Animalia	Aves	Artamidae	0702	*Cracticus torquatus*		Grey Butcherbird	P		23	
Animalia	Aves	Artamidae	0705	*Gymnorhina tibicen*		Australian Magpie	P		131	
Animalia	Aves	Artamidae	0694	*Strepera graculina*		Pied Currawong	P		64	
Animalia	Aves	Artamidae	0697	*Strepera versicolor*		Grey Currawong	P		4	
Animalia	Aves	Dicruridae	0673	*Dicrurus bracteatus*		Spangled Drongo	P		2	
Animalia	Aves	Rhipiduridae	0361	*Rhipidura albiscapa*		Grey Fantail	P		56	
Animalia	Aves	Rhipiduridae	0364	*Rhipidura leucophrys*		Willie Wagtail	P		8	
Animalia	Aves	Rhipiduridae	0362	*Rhipidura rufifrons*		Rufous Fantail	P		12	
Animalia	Aves	Corvidae	0930	*Corvus coronoides*		Australian Raven	P		49	
Animalia	Aves	Corvidae	0954	*Corvus mellori*		Little Raven	P		7	
Animalia	Aves	Corvidae	9067	*Corvus sp.*		Unidentified Corvid	P		3	
Animalia	Aves	Monarchidae	0415	*Grallina cyanoleuca*		Magpie-lark	P		18	
Animalia	Aves	Monarchidae	0373	*Monarcha melanopsis*		Black-faced Monarch	P		7	
Animalia	Aves	Monarchidae	0366	*Myiagra cyanoleuca*		Satin Flycatcher	P		1	
Animalia	Aves	Monarchidae	9955	*Myiagra inquieta*		Restless Flycatcher	P		1	
Animalia	Aves	Monarchidae	0365	*Myiagra rubecula*		Leaden Flycatcher	P		3	
Animalia	Aves	Corcoracidae	0693	*Corcorax melanorhamphos*		White-winged Chough	P		4	
Animalia	Aves	Petroicidae	0392	*Eopsaltria australis*		Eastern Yellow Robin	P		69	
Animalia	Aves	Petroicidae	0377	*Microeca fascinans*		Jacky Winter	P		2	
Animalia	Aves	Petroicidae	0384	*Petroica rosea*		Rose Robin	P		3	
Animalia	Aves	Hirundinidae	0357	*Hirundo neoxena*		Welcome Swallow	P		43	
Animalia	Aves	Hirundinidae	0359	*Petrochelidon nigricans*		Tree Martin	P		3	
Animalia	Aves	Turdidae	0991	*Turdus merula*	*	Eurasian Blackbird			7	
Animalia	Aves	Turdidae	0779	*Zoothera lunulata*		Bassian Thrush	P		114	
Animalia	Aves	Turdidae	7000	*Zoothera sp.*		unidentified ground thrush	P		1	
Animalia	Aves	Sturnidae	0998	*Acridotheres tristis*	*	Common Myna			2	
Animalia	Aves	Zosteropidae	0574	*Zosterops lateralis*		Silvereye	P		47	
Animalia	Aves	Dicaeidae	0564	*Dicaeum hirundinaceum*		Mistletoebird	P		2	
Animalia	Aves	Estrildidae	0662	*Neochmia temporalis*		Red-browed Finch	P		27	
Animalia	Aves	Estrildidae	0650	*Stagonopleura bella*		Beautiful Firetail	P		1	
Animalia	Aves	Estrildidae	0655	*Stizoptera bichenovii*		Double-barred Finch	P		1	
Animalia	Aves	Passeridae	0995	*Passer domesticus*	*	House Sparrow			14	
Animalia	Mammalia	Ornithorhynchidae	1001	*Ornithorhynchus anatinus*		Platypus	P		3	
Animalia	Mammalia	Tachyglossidae	1003	*Tachyglossus aculeatus*		Short-beaked Echidna	P		116	
Animalia	Mammalia	Dasyuridae	1668	*Antechinus agilis*		Agile Antechinus	P		12	
Animalia	Mammalia	Dasyuridae	1956	*Antechinus mimetes*		Mainland Dusky Antechinus	P		4	
Animalia	Mammalia	Dasyuridae	T093	*Antechinus sp.*		Unidentified Antechinus	P		7	
Animalia	Mammalia	Dasyuridae	T105	*Dasyuridae sp.*		unidentified dasyurid	P		21	
Animalia	Mammalia	Dasyuridae	1008	*Dasyurus maculatus*		Spotted-tailed Quoll	V,P	E	2	
Animalia	Mammalia	Dasyuridae	1017	*Phascogale tapoatafa*		Brush-tailed Phascogale	V,P		1	
Animalia	Mammalia	Peramelidae	1097	*Perameles nasuta*		Long-nosed Bandicoot	P		58	
Animalia	Mammalia	Phascolarctidae	1162	*Phascolarctos cinereus*		Koala	E1,P	E	1	
Animalia	Mammalia	Vombatidae	1165	*Vombatus ursinus*		Bare-nosed Wombat	P		77	
Animalia	Mammalia	Petauridae	1136	*Petaurus australis*		Yellow-bellied Glider	V,P	V	131	
Animalia	Mammalia	Petauridae	1138	*Petaurus breviceps*		Sugar Glider	P		65	
Animalia	Mammalia	Petauridae	1137	*Petaurus norfolcensis*		Squirrel Glider	V,P		2	
Animalia	Mammalia	Pseudocheiridae	1133	*Petauroides volans*		Southern Greater Glider	E1,P	E	47	

Animalia	Mammalia	Pseudocheiridae	1129	*Pseudocheirus peregrinus*		Common Ringtail Possum	P		53	
Animalia	Mammalia	Acrobatidae	1147	*Acrobates pygmaeus*		Feathertail Glider	P		49	
Animalia	Mammalia	Phalangeridae	1736	*Trichosurus cunninghami*		Mountain Brushtail Possum	P		113	
Animalia	Mammalia	Phalangeridae	T082	*Trichosurus sp.*		brushtail possum	P		18	
Animalia	Mammalia	Phalangeridae	1113	*Trichosurus vulpecula*		Common Brushtail Possum	P		196	
Animalia	Mammalia	Macropodidae	1265	*Macropus giganteus*		Eastern Grey Kangaroo	P		708	
Animalia	Mammalia	Macropodidae	T085	*Macropus sp.*		kangaroo / wallaby	P		158	
Animalia	Mammalia	Macropodidae	1261	*Notamacropus rufogriseus*		Red-necked Wallaby	P		14	
Animalia	Mammalia	Macropodidae	1242	*Wallabia bicolor*		Swamp Wallaby	P		617	
Animalia	Mammalia	Pteropodidae	1280	*Pteropus poliocephalus*		Grey-headed Flying-fox	V,P	V	150	
Animalia	Mammalia	Pteropodidae	T087	*Pteropus sp.*		Flying-fox	P		11	
Animalia	Mammalia	Rhinolophidae	1303	*Rhinolophus megaphyllus*		Eastern Horseshoe-bat	P		14	
Animalia	Mammalia	Emballonuridae	1321	*Saccolaimus flaviventris*		Yellow-bellied Sheathtail-bat	V,P		6	
Animalia	Mammalia	Molossidae	1324	*Austronomus australis*		White-striped Freetail-bat	P		44	
Animalia	Mammalia	Molossidae	1329	*Micronomus norfolkensis*		Eastern Coastal Free-tailed Bat	V,P		16	
Animalia	Mammalia	Molossidae	1938	*Ozimops ridei*		Eastern Free-tailed Bat	P		63	
Animalia	Mammalia	Vespertilionidae	1353	*Chalinolobus dwyeri*		Large-eared Pied Bat	V,P	E	3	
Animalia	Mammalia	Vespertilionidae	1349	*Chalinolobus gouldii*		Gould's Wattled Bat	P		37	
Animalia	Mammalia	Vespertilionidae	1351	*Chalinolobus morio*		Chocolate Wattled Bat	P		36	
Animalia	Mammalia	Vespertilionidae	1372	*Falsistrellus tasmaniensis*		Eastern False Pipistrelle	V,P		2	
Animalia	Mammalia	Vespertilionidae	1357	*Myotis macropus*		Southern Myotis	V,P		4	
Animalia	Mammalia	Vespertilionidae	1335	*Nyctophilus geoffroyi*		Lesser Long-eared Bat	P		11	
Animalia	Mammalia	Vespertilionidae	1334	*Nyctophilus gouldi*		Gould's Long-eared Bat	P		14	
Animalia	Mammalia	Vespertilionidae	T092	*Nyctophilus sp.*		long-eared bat	P		1	
Animalia	Mammalia	Vespertilionidae	1361	*Scoteanax rueppellii*		Greater Broad-nosed Bat	V,P		5	
Animalia	Mammalia	Vespertilionidae	1365	*Scotorepens orion*		Eastern Broad-nosed Bat	P		6	
Animalia	Mammalia	Vespertilionidae	1022	*Vespadelus darlingtoni*		Large Forest Bat	P		13	
Animalia	Mammalia	Vespertilionidae	1378	*Vespadelus regulus*		Southern Forest Bat	P		28	
Animalia	Mammalia	Vespertilionidae	1379	*Vespadelus vulturnus*		Little Forest Bat	P		79	
Animalia	Mammalia	Miniopteridae	3330	*Miniopterus orianae oceanensis*		Large Bent-winged Bat	V,P		6	
Animalia	Mammalia	Muridae	T104	*Muridae sp.*		unidentified murid rodent	P		60	
Animalia	Mammalia	Muridae	1412	*Mus musculus*	*	House Mouse			4	
Animalia	Mammalia	Muridae	1395	*Rattus fuscipes*		Bush Rat	P		22	
Animalia	Mammalia	Muridae	1398	*Rattus lutreolus*		Swamp Rat	P		1	
Animalia	Mammalia	Muridae	1408	*Rattus rattus*	*	Black Rat			5	
Animalia	Mammalia	Muridae	T094	*Rattus sp.*		rat	P		3	
Animalia	Mammalia	Otariidae	1543	*Arctocephalus forsteri*		New Zealand Fur-seal	V,P		2	
Animalia	Mammalia	Otariidae	1882	*Arctocephalus pusillus doriferus*		Australian Fur-seal	V,P		4	
Animalia	Mammalia	Otariidae	9040	*Seal sp.*		Unidentified Seal	P		15	
Animalia	Mammalia	Phocidae	1549	*Hydrurga leptonyx*		Leopard Seal	P		3	
Animalia	Mammalia	Phocidae	1546	*Mirounga leonina*		Southern Elephant Seal	P		2	
Animalia	Mammalia	Canidae	1905	*Canis familiaris*	*	Dog			3	
Animalia	Mammalia	Canidae	1531	*Canis lupus*	*	Dingo, domestic dog			1	
Animalia	Mammalia	Canidae	1904	*Canis lupus dingo*	*	Dingo			3	
Animalia	Mammalia	Canidae	1532	*Vulpes vulpes*	*	Fox			154	
Animalia	Mammalia	Felidae	1536	*Felis catus*	*	Cat			28	
Animalia	Mammalia	Leporidae	1929	*Lepus capensis occidentalis*	*	Brown Hare			1	
Animalia	Mammalia	Leporidae	1510	*Oryctolagus cuniculus*	*	Rabbit			4	
Animalia	Mammalia	Equidae	1512	*Equus caballus*	*	Horse			2	
Animalia	Mammalia	Suidae	1514	*Sus scrofa*	*	Pig			6	
Animalia	Mammalia	Bovidae	1521	*Capra hircus*	*	Goat			2	
Animalia	Mammalia	Cervidae	9112	*Cervus sp.*	*	Unidentified Deer			1	
Animalia	Mammalia	Balaenidae	1561	*Eubalaena australis*		Southern Right Whale	E1,P	E	1	
Animalia	Mammalia	Neobalaenidae	1564	*Caperea marginata*		Pygmy Right Whale	P		4	
Animalia	Mammalia	Delphinidae	1616	*Delphinus delphis*		Common Dolphin	P		1	
Animalia	Insecta	Nymphalidae	I075	*Vanessa itea*		Australian admiral			1	
Animalia	Insecta	Pieridae	I105	*Delias nigrina*		common jezabel			1	
Animalia	Unknown	Unknown Fauna	T350	*Fauna sp.*		Unidentified Fauna			36	

Animalia	Unknown	Unknown Fauna	T351	*Mammal sp.*		Unidentified Mammal		1
Plantae	Flora	Acanthaceae	10427	*Avicennia marina subsp. australasica*		Grey Mangrove		7
Plantae	Flora	Acanthaceae	1003	*Brunoniella australis*		Blue Trumpet		3
Plantae	Flora	Acanthaceae	1004	*Brunoniella pumilio*		Dwarf Blue Trumpet		7
Plantae	Flora	Acanthaceae	1010	*Pseuderanthemum variabile*		Pastel Flower		20
Plantae	Flora	Acanthaceae	1012	*Thunbergia alata*	*	Black-eyed Susan		1
Plantae	Flora	Adoxaceae	1953	*Sambucus australasica*		Native Elderberry		1
Plantae	Flora	Adoxaceae	1955	*Sambucus nigra*	*	Common Elder		1
Plantae	Flora	Aizoaceae	1022	*Aptenia cordifolia*	*	Heartleaf Ice Plant		1
Plantae	Flora	Aizoaceae	1025	*Carpobrotus glaucescens*		Pigface		1
Plantae	Flora	Aizoaceae	11185	*Tetragonia tetragonioides*		New Zealand Spinach		4
Plantae	Flora	Alliaceae	10418	*Agapanthus praecox subsp. orientalis*	*			6
Plantae	Flora	Anacardiaceae	1086	*Schinus areira*	*	Pepper Tree		1
Plantae	Flora	Anthericaceae	3535	*Caesia parviflora*		Pale Grass-lily		1
Plantae	Flora	Anthericaceae	7183	*Caesia parviflora var. parviflora*				1
Plantae	Flora	Anthericaceae	7333	*Caesia parviflora var. vittata*				1
Plantae	Flora	Anthericaceae	3538	*Chlorophytum comosum*	*	Spider Plant		1
Plantae	Flora	Anthericaceae	CHLR	*Chlorophytum spp.*	*			1
Plantae	Flora	Anthericaceae	3556	*Laxmannia gracilis*		Slender Wire Lily		1
Plantae	Flora	Anthericaceae	3574	*Thysanotus tuberosus*		Common Fringe-lily		2
Plantae	Flora	Anthericaceae	7355	*Tricoryne elatior*		Yellow Autumn-lily		2
Plantae	Flora	Aphanopetalaceae	2266	*Aphanopetalum resinosum*		Gum Vine		1
Plantae	Flora	Apiaceae	1101	*Apium graveolens*	*	Celery		1
Plantae	Flora	Apiaceae	11824	*Apium prostratum var. prostratum*				1
Plantae	Flora	Apiaceae	1106	*Centella asiatica*		Indian Pennywort		11
Plantae	Flora	Apiaceae	11195	*Cyclospermum leptophyllum*	*	Slender Celery		3
Plantae	Flora	Apiaceae	1108	*Daucus carota*	*	Wild Carrot		1
Plantae	Flora	Apiaceae	1109	*Daucus glochidiatus*		Native Carrot		2
Plantae	Flora	Apiaceae	10109	*Daucus glochidiatus f. A*				1
Plantae	Flora	Apiaceae	1118	*Foeniculum vulgare*	*	Fennel		4
Plantae	Flora	Apiaceae	1123	*Hydrocotyle bonariensis*	*			6
Plantae	Flora	Apiaceae	1126	*Hydrocotyle geraniifolia*		Forest Pennywort		3
Plantae	Flora	Apiaceae	1128	*Hydrocotyle laxiflora*		Stinking Pennywort		6
Plantae	Flora	Apiaceae	7961	*Hydrocotyle sibthorpioides*				7
Plantae	Flora	Apiaceae	HYDR	*Hydrocotyle spp.*				2
Plantae	Flora	Apiaceae	1132	*Hydrocotyle tripartita*		Pennywort		1
Plantae	Flora	Apiaceae	1143	*Platysace ericoides*				1
Plantae	Flora	Apiaceae	1144	*Platysace lanceolata*		Shrubby Platysace		6
Plantae	Flora	Apiaceae	1160	*Xanthosia atkinsoniana*				4
Plantae	Flora	Apiaceae	1162	*Xanthosia pilosa*		Woolly Xanthosia		2
Plantae	Flora	Apiaceae	1163	*Xanthosia tridentata*		Rock Xanthosia		1
Plantae	Flora	Apocynaceae	1165	*Alyxia buxifolia*		Sea Box		1
Plantae	Flora	Apocynaceae	11047	*Araujia sericifera*	*	Moth Vine		5
Plantae	Flora	Apocynaceae	1227	*Gomphocarpus fruticosus*	*	Narrow-leaved Cotton Bush		2
Plantae	Flora	Apocynaceae	1228	*Gomphocarpus physocarpus*	*	Balloon Cotton Bush		1
Plantae	Flora	Apocynaceae	1234	*Marsdenia rostrata*		Milk Vine		9
Plantae	Flora	Apocynaceae	1235	*Marsdenia suaveolens*		Scented Marsdenia		5
Plantae	Flora	Apocynaceae	1177	*Parsonsia brownii*		Mountain Silkpod		2
Plantae	Flora	Apocynaceae	1185	*Parsonsia straminea*		Common Silkpod		39
Plantae	Flora	Apocynaceae	1240	*Tylophora barbata*		Bearded Tylophora		13
Plantae	Flora	Araliaceae	1210	*Polyscias murrayi*		Pencil Cedar		4
Plantae	Flora	Araliaceae	12375	*Polyscias sambucifolia subsp. decomposita*		Ferny Panax		1
Plantae	Flora	Araucariaceae	1214	*Araucaria heterophylla*	*	Norfolk Island Pine		1
Plantae	Flora	Arecaceae	6458	*Archontophoenix cunninghamiana*		Bangalow Palm	P	4
Plantae	Flora	Arecaceae	1221	*Livistona australis*		Cabbage Palm	P	9
Plantae	Flora	Asparagaceae	3517	*Arthropodium milleflorum*		Pale Vanilla-lily		1
Plantae	Flora	Asparagaceae	11784	*Asparagus aethiopicus*	*	Asparagus Fern		24
Plantae	Flora	Asparagaceae	3519	*Asparagus asparagoides*	*	Bridal Creeper		16
Plantae	Flora	Asparagaceae	3521	*Asparagus officinalis*	*	Asparagus		4
Plantae	Flora	Asparagaceae	11785	*Asparagus plumosus*	*	Climbing Asparagus Fern		1
Plantae	Flora	Asparagaceae	3522	*Asparagus scandens*	*	Asparagus Fern		1
Plantae	Flora	Asphodelaceae	3524	*Asphodelus fistulosus*	*	Onion Weed		1
Plantae	Flora	Asphodelaceae	3540	*Dianella caerulea*		Blue Flax-lily		13

Plantae	Flora	Asphodelaceae	6811	*Dianella caerulea var. assera*				1
Plantae	Flora	Asphodelaceae	6700	*Dianella caerulea var. caerulea*				9
Plantae	Flora	Asphodelaceae	7337	*Dianella caerulea var. producta*				3
Plantae	Flora	Asphodelaceae	7783	*Dianella longifolia*		Blueberry Lily		3
Plantae	Flora	Asphodelaceae	6948	*Dianella longifolia var. stenophylla*				1
Plantae	Flora	Asphodelaceae	3542	*Dianella revoluta*		Blueberry Lily		10
Plantae	Flora	Asphodelaceae	7580	*Dianella revoluta var. revoluta*				2
Plantae	Flora	Aspleniaceae	8031	*Asplenium australasicum*		Bird's Nest Fern	P	4
Plantae	Flora	Aspleniaceae	8866	*Asplenium bulbiferum subsp. gracillimum*		Mother Spleenwort		1
Plantae	Flora	Aspleniaceae	8033	*Asplenium flabellifolium*		Necklace Fern		4
Plantae	Flora	Asteraceae	1255	*Ageratina adenophora*	*	Crofton Weed		1
Plantae	Flora	Asteraceae	1259	*Ambrosia artemisiifolia*	*	Annual Ragweed		2
Plantae	Flora	Asteraceae	1273	*Arctotheca calendula*	*	Capeweed		1
Plantae	Flora	Asteraceae	1280	*Aster subulatus*	*	Wild Aster		3
Plantae	Flora	Asteraceae	1283	*Bidens pilosa*	*	Cobbler's Pegs		12
Plantae	Flora	Asteraceae	1360	*Cassinia aculeata*		Dolly Bush		4
Plantae	Flora	Asteraceae	1369	*Cassinia longifolia*				5
Plantae	Flora	Asteraceae	CASI	*Cassinia spp.*				1
Plantae	Flora	Asteraceae	1374	*Cassinia trinerva*				4
Plantae	Flora	Asteraceae	1391	*Chondrilla juncea*	*	Skeleton Weed		1
Plantae	Flora	Asteraceae	1392	*Chrysanthemoides monilifera*	*			3
Plantae	Flora	Asteraceae	8686	*Chrysanthemoides monilifera subsp. rotundata*	*	Bitou Bush		1
Plantae	Flora	Asteraceae	1400	*Cirsium vulgare*	*	Spear Thistle		10
Plantae	Flora	Asteraceae	1404	*Conyza bonariensis*	*	Flaxleaf Fleabane		8
Plantae	Flora	Asteraceae	CONY	*Conyza spp.*	*			3
Plantae	Flora	Asteraceae	10442	*Conyza sumatrensis*	*	Tall fleabane		3
Plantae	Flora	Asteraceae	13745	*Coronidium elatum*				3
Plantae	Flora	Asteraceae	13836	*Coronidium scorpioides*		Button Everlasting		1
Plantae	Flora	Asteraceae	1414	*Cotula coronopifolia*	*	Water Buttons		1
Plantae	Flora	Asteraceae	1423	*Crepis capillaris*	*	Smooth Hawksbeard		1
Plantae	Flora	Asteraceae	13698	*Cyanthillium cinereum*		little ironweed		3
Plantae	Flora	Asteraceae	15365	*Cyanthillium cinereum var. cinereum*	*			3
Plantae	Flora	Asteraceae	14577	*Dimorphotheca ecklonis*	*	Cape Daisy		1
Plantae	Flora	Asteraceae	1432	*Dimorphotheca pluvialis*	*	Cape Marigold		1
Plantae	Flora	Asteraceae	DIMT	*Dimorphotheca spp.*	*			2
Plantae	Flora	Asteraceae	9904	*Euchiton involucratus*		Star Cudweed		3
Plantae	Flora	Asteraceae	11439	*Euchiton japonicus*				2
Plantae	Flora	Asteraceae	9690	*Euchiton sphaericus*		Star Cudweed		3
Plantae	Flora	Asteraceae	EUCH	*Euchiton spp.*				2
Plantae	Flora	Asteraceae	10142	*Gamochaeta calviceps*	*	Cudweed		2
Plantae	Flora	Asteraceae	14493	*Gamochaeta coarctata*	*			2
Plantae	Flora	Asteraceae	12748	*Gamochaeta purpurea*	*	Purple Cudweed		1
Plantae	Flora	Asteraceae	11722	*Gamochaeta spp.*	*			1
Plantae	Flora	Asteraceae	9111	*Gazania rigens*	*			1
Plantae	Flora	Asteraceae	1494	*Helichrysum leucopsideum*		Satin Everlasting		1
Plantae	Flora	Asteraceae	8788	*Hypochaeris radicata*	*	Catsear		15
Plantae	Flora	Asteraceae	1550	*Lactuca serriola*	*	Prickly Lettuce		2
Plantae	Flora	Asteraceae	1551	*Lagenifera stipitata*		Blue Bottle-daisy		5
Plantae	Flora	Asteraceae	11959	*Lagenophora gracilis*		Slender Lagenophora		4
Plantae	Flora	Asteraceae	9203	*Leptinella longipes*				1
Plantae	Flora	Asteraceae	1555	*Leptorhynchos nitidulus*				1
Plantae	Flora	Asteraceae	1591	*Olearia erubescens*		Pink-tip Daisy-bush		3
Plantae	Flora	Asteraceae	1617	*Olearia tomentosa*		Toothed Daisy-bush		1
Plantae	Flora	Asteraceae	OSTO	*Osteospermum spp.*	*	Stinking Roger/South African daisy		1
Plantae	Flora	Asteraceae	9404	*Ozothamnus argophyllus*				3
Plantae	Flora	Asteraceae	8557	*Ozothamnus diosmifolius*		White Dogwood		15
Plantae	Flora	Asteraceae	10684	*Picris angustifolia subsp. angustifolia*				1
Plantae	Flora	Asteraceae	7780	*Pseudognaphalium luteoalbum*		Jersey Cudweed		1
Plantae	Flora	Asteraceae	6614	*Roldana petasitis*	*			1
Plantae	Flora	Asteraceae	11161	*Senecio angulatus*	*			1
Plantae	Flora	Asteraceae	1653	*Senecio bipinnatisectus*				1
Plantae	Flora	Asteraceae	7914	*Senecio diaschides*				1

Plantae	Flora	Asteraceae	1664	*Senecio hispidulus*		Hill Fireweed	1
Plantae	Flora	Asteraceae	1667	*Senecio linearifolius*		Fireweed Groundsel	4
Plantae	Flora	Asteraceae	1671	*Senecio minimus*			6
Plantae	Flora	Asteraceae	8789	*Sigesbeckia orientalis subsp. orientalis*		Indian Weed	4
Plantae	Flora	Asteraceae	7851	*Soliva sessilis*	*	Bindyi	2
Plantae	Flora	Asteraceae	1689	*Sonchus asper*	*	Prickly Sowthistle	2
Plantae	Flora	Asteraceae	1690	*Sonchus oleraceus*	*	Common Sowthistle	2
Plantae	Flora	Asteraceae	1697	*Tanacetum vulgare*	*	Tansy	1
Plantae	Flora	Asteraceae	1698	*Taraxacum officinale*	*	Dandelion	3
Plantae	Flora	Asteraceae	14051	*Tragopogon porrifolius subsp. porrifolius*	*	Salsify	1
Plantae	Flora	Asteraceae	9446	*Vittadinia cuneata var. cuneata f. cuneata*			2
Plantae	Flora	Asteraceae	7354	*Vittadinia hispidula var. hispidula*			1
Plantae	Flora	Asteraceae	7400	*Vittadinia hispidula var. setosa*			1
Plantae	Flora	Asteraceae	1716	*Vittadinia muelleri*			1
Plantae	Flora	Asteraceae	11377	*Xerochrysum bracteatum*		Golden Everlasting	1
Plantae	Flora	Azollaceae	8049	*Azolla pinnata*			1
Plantae	Flora	Bignoniaceae	1740	*Pandorea pandorana*		Wonga Wonga Vine	17
Plantae	Flora	Blechnaceae	8052	*Blechnum cartilagineum*		Gristle Fern	16
Plantae	Flora	Blechnaceae	14900	*Blechnum neohollandicum*			10
Plantae	Flora	Boraginaceae	1751	*Echium plantagineum*	*	Patterson's Curse	1
Plantae	Flora	Boraginaceae	14934	*Hackelia latifolia*			3
Plantae	Flora	Brassicaceae	1791	*Cakile edentula*	*	American Sea Rocket	1
Plantae	Flora	Brassicaceae	1792	*Cakile maritima*	*	Sea Rocket	2
Plantae	Flora	Brassicaceae	1794	*Capsella bursa-pastoris*	*	Shepherd's Purse	1
Plantae	Flora	Brassicaceae	1795	*Cardamine hirsuta*	*	Common Bittercress	2
Plantae	Flora	Brassicaceae	7746	*Cardamine paucijuga*			1
Plantae	Flora	Cabombaceae	1866	*Brasenia schreberi*		Watershield	1
Plantae	Flora	Cactaceae	1875	*Opuntia stricta*	*	Common Prickly Pear	1
Plantae	Flora	Campanulaceae	10465	*Lobelia anceps*			6
Plantae	Flora	Campanulaceae	14415	*Lobelia purpurascens*		whiteroot	17
Plantae	Flora	Campanulaceae	1929	*Wahlenbergia communis*		Tufted Bluebell	5
Plantae	Flora	Campanulaceae	1934	*Wahlenbergia gracilis*		Sprawling Bluebell	5
Plantae	Flora	Cannaceae	1941	*Canna indica*	*	Tous-les-mois Arrowroot	2
Plantae	Flora	Caprifoliaceae	1952	*Lonicera japonica*	*	Japanese Honeysuckle	11
Plantae	Flora	Caryophyllaceae	7584	*Petrorhagia nanteuilii*	*	Proliferous Pink	1
Plantae	Flora	Caryophyllaceae	2004	*Stellaria flaccida*			1
Plantae	Flora	Caryophyllaceae	2006	*Stellaria media*	*	Common Chickweed	2
Plantae	Flora	Casuarinaceae	2012	*Allocasuarina littoralis*		Black She-Oak	30
Plantae	Flora	Casuarinaceae	2017	*Allocasuarina torulosa*		Forest Oak	6
Plantae	Flora	Casuarinaceae	2018	*Allocasuarina verticillata*		Drooping Sheoak	3
Plantae	Flora	Casuarinaceae	9006	*Casuarina cunninghamiana subsp. cunninghamiana*		River Oak	1
Plantae	Flora	Casuarinaceae	2022	*Casuarina glauca*		Swamp Oak	44
Plantae	Flora	Celastraceae	2029	*Elaeodendron australe*			4
Plantae	Flora	Celastraceae	12523	*Elaeodendron australe var. australe*			5
Plantae	Flora	Centrolepidaceae	2038	*Centrolepis fascicularis*			1
Plantae	Flora	Chenopodiaceae	2065	*Atriplex patula*	*		1
Plantae	Flora	Chenopodiaceae	2110	*Einadia hastata*		Berry Saltbush	2
Plantae	Flora	Chenopodiaceae	6482	*Einadia nutans subsp. nutans*		Climbing Saltbush	1
Plantae	Flora	Chenopodiaceae	2114	*Enchylaena tomentosa*		Ruby Saltbush	1
Plantae	Flora	Chenopodiaceae	7808	*Rhagodia candolleana subsp. candolleana*			6
Plantae	Flora	Chenopodiaceae	14594	*Salsola australis*			1
Plantae	Flora	Chenopodiaceae	7923	*Salsola kali var. kali*		Buckbush	2
Plantae	Flora	Chenopodiaceae	11155	*Salsola tragus subsp. pontica*			1
Plantae	Flora	Chenopodiaceae	9423	*Sarcocornia quinqueflora subsp. quinqueflora*			8

Plantae	Flora	Chenopodiaceae	2200	*Suaeda australis*				4
Plantae	Flora	Clusiaceae	7240	*Hypericum gramineum*		Small St John's Wort		7
Plantae	Flora	Clusiaceae	2203	*Hypericum japonicum*				1
Plantae	Flora	Commelinaceae	2207	*Aneilema biflorum*				1
Plantae	Flora	Commelinaceae	2209	*Commelina cyanea*		Native Wandering Jew		9
Plantae	Flora	Commelinaceae	10508	*Tradescantia fluminensis*	*	Wandering Jew		2
Plantae	Flora	Convolvulaceae	2215	*Calystegia marginata*				3
Plantae	Flora	Convolvulaceae	12231	*Calystegia sepium subsp. roseata*				1
Plantae	Flora	Convolvulaceae	2218	*Calystegia soldanella*				2
Plantae	Flora	Convolvulaceae	2220	*Convolvulus erubescens*		Pink Bindweed		2
Plantae	Flora	Convolvulaceae	2222	*Dichondra repens*		Kidney Weed		36
Plantae	Flora	Convolvulaceae	DICN	*Dichondra spp.*				1
Plantae	Flora	Convolvulaceae	2227	*Ipomoea indica*	*	Morning Glory		3
Plantae	Flora	Convolvulaceae	2229	*Ipomoea purpurea*	*	Common Morning Glory		1
Plantae	Flora	Convolvulaceae	2231	*Polymeria calycina*				4
Plantae	Flora	Crassulaceae	6827	*Bryophyllum pinnatum*	*	Resurrection Plant		1
Plantae	Flora	Crassulaceae	2242	*Crassula sieberiana*		Australian Stonecrop		1
Plantae	Flora	Cunoniaceae	2270	*Callicoma serratifolia*		Black Wattle		4
Plantae	Flora	Cyatheaceae	8074	*Cyathea australis*		Rough Treefern	P	9
Plantae	Flora	Cyperaceae	2305	*Bolboschoenus caldwellii*				2
Plantae	Flora	Cyperaceae	2310	*Carex appressa*		Tall Sedge		8
Plantae	Flora	Cyperaceae	2321	*Carex fascicularis*		Tassel Sedge		1
Plantae	Flora	Cyperaceae	2322	*Carex gaudichaudiana*				1
Plantae	Flora	Cyperaceae	2327	*Carex inversa*		Knob Sedge		3
Plantae	Flora	Cyperaceae	2331	*Carex longebrachiata*				16
Plantae	Flora	Cyperaceae	2346	*Cladium procerum*				3
Plantae	Flora	Cyperaceae	2347	*Cyathochaeta diandra*				3
Plantae	Flora	Cyperaceae	2358	*Cyperus congestus*	*			1
Plantae	Flora	Cyperaceae	7143	*Cyperus difformis*		Dirty Dora		1
Plantae	Flora	Cyperaceae	2364	*Cyperus eragrostis*	*	Umbrella Sedge		4
Plantae	Flora	Cyperaceae	2377	*Cyperus imbecillis*				1
Plantae	Flora	Cyperaceae	2383	*Cyperus lucidus*		Leafy Flat Sedge		1
Plantae	Flora	Cyperaceae	2408	*Eleocharis acuta*				2
Plantae	Flora	Cyperaceae	2413	*Eleocharis equisetina*				1
Plantae	Flora	Cyperaceae	2414	*Eleocharis gracilis*				1
Plantae	Flora	Cyperaceae	6988	*Eleocharis sphacelata*		Tall Spike Rush		1
Plantae	Flora	Cyperaceae	12416	*Ficinia nodosa*		Knobby Club-rush		4
Plantae	Flora	Cyperaceae	2431	*Gahnia aspera*		Rough Saw-sedge		3
Plantae	Flora	Cyperaceae	2432	*Gahnia clarkei*		Tall Saw-sedge		12
Plantae	Flora	Cyperaceae	2435	*Gahnia filum*				1
Plantae	Flora	Cyperaceae	2439	*Gahnia melanocarpa*		Black Fruit Saw-sedge		22
Plantae	Flora	Cyperaceae	2441	*Gahnia radula*				3
Plantae	Flora	Cyperaceae	2442	*Gahnia sieberiana*		Red-fruit Saw-sedge	P	5
Plantae	Flora	Cyperaceae	GAHN	*Gahnia spp.*				2
Plantae	Flora	Cyperaceae	2454	*Isolepis inundata*		Club-rush		2
Plantae	Flora	Cyperaceae	14940	*Isolepis levynsiana*	*			1
Plantae	Flora	Cyperaceae	2465	*Lepidosperma filiforme*				2
Plantae	Flora	Cyperaceae	8749	*Lepidosperma gunnii*				1
Plantae	Flora	Cyperaceae	6402	*Lepidosperma laterale*		Variable Sword-sedge		24
Plantae	Flora	Cyperaceae	LEPD	*Lepidosperma spp.*				1
Plantae	Flora	Cyperaceae	2475	*Lepidosperma urophorum*				21
Plantae	Flora	Cyperaceae	15320	*Machaerina articulata*		Jointed Twig-rush		2
Plantae	Flora	Cyperaceae	15323	*Machaerina juncea*		Bare Twig-rush		6
Plantae	Flora	Cyperaceae	2491	*Schoenus apogon*		Fluke Bogrush		1
Plantae	Flora	Cyperaceae	2499	*Schoenus maschalinus*				1
Plantae	Flora	Cyperaceae	2500	*Schoenus melanostachys*				3
Plantae	Flora	Davalliaceae	10647	*Davallia solida var. pyxidata*		Hare's Foot Fern		1
Plantae	Flora	Davalliaceae	8088	*Nephrolepis cordifolia*		Fishbone Fern		4
Plantae	Flora	Dennstaedtiaceae	7749	*Hypolepis muelleri*		Harsh Ground Fern		12
Plantae	Flora	Dennstaedtiaceae	6403	*Pteridium esculentum*		Bracken		31
Plantae	Flora	Dicksoniaceae	8341	*Calochlaena dubia*		Rainbow Fern		14
Plantae	Flora	Dilleniaceae	2527	*Hibbertia aspera*		Rough Guinea Flower		21
Plantae	Flora	Dilleniaceae	10554	*Hibbertia aspera subsp. aspera*				3
Plantae	Flora	Dilleniaceae	2532	*Hibbertia dentata*		Twining Guinea Flower		7
Plantae	Flora	Dilleniaceae	2533	*Hibbertia diffusa*		Wedge Guinea Flower		9
Plantae	Flora	Dilleniaceae	10863	*Hibbertia empetrifolia subsp. empetrifolia*				8
Plantae	Flora	Dilleniaceae	2542	*Hibbertia obtusifolia*		Hoary Guinea Flower		3

Plantae	Flora	Dilleniaceae	2543	*Hibbertia pedunculata*			1
Plantae	Flora	Dilleniaceae	2548	*Hibbertia scandens*		Climbing Guinea Flower	9
Plantae	Flora	Droseraceae	2556	*Drosera auriculata*			1
Plantae	Flora	Dryopteridaceae	8015	*Lastreopsis decomposita*		Trim Shield Fern	1
Plantae	Flora	Dryopteridaceae	11102	*Lastreopsis microsora subsp. microsora*		Creeping Shield Fern	1
Plantae	Flora	Ebenaceae	2562	*Diospyros australis*		Black Plum	5
Plantae	Flora	Elaeocarpaceae	2574	*Elaeocarpus reticulatus*		Blueberry Ash	21
Plantae	Flora	Elaeocarpaceae	TETA	*Tetratheca spp.*			1
Plantae	Flora	Elaeocarpaceae	6214	*Tetratheca thymifolia*		Black-eyed Susan	6
Plantae	Flora	Ericaceae	2585	*Astroloma pinifolium*		Pine Heath	1
Plantae	Flora	Ericaceae	2623	*Leucopogon juniperinus*		Prickly Beard-heath	3
Plantae	Flora	Ericaceae	2624	*Leucopogon lanceolatus*			10
Plantae	Flora	Ericaceae	6425	*Leucopogon lanceolatus var. lanceolatus*			8
Plantae	Flora	Ericaceae	2632	*Leucopogon parviflorus*		Coastal Beard-heath	2
Plantae	Flora	Ericaceae	2642	*Lissanthe strigosa*		Peach Heath	2
Plantae	Flora	Ericaceae	2647	*Monotoca elliptica*		Tree Broom-heath	1
Plantae	Flora	Ericaceae	2664	*Woollsia pungens*			1
Plantae	Flora	Euphorbiaceae	10564	*Adriana tomentosa var. tomentosa*			5
Plantae	Flora	Euphorbiaceae	2677	*Amperea xiphoclada*			1
Plantae	Flora	Euphorbiaceae	9713	*Amperea xiphoclada var. xiphoclada*			3
Plantae	Flora	Euphorbiaceae	2698	*Claoxylon australe*		Brittlewood	12
Plantae	Flora	Euphorbiaceae	2721	*Euphorbia peplus*	*	Petty Spurge	1
Plantae	Flora	Euphorbiaceae	11947	*Homalanthus populifolius*			6
Plantae	Flora	Eupomatiaceae	2768	*Eupomatia laurina*		Bolwarra	2
Plantae	Flora	Fabaceae (Caesalpinioideae)	7377	*Senna pendula var. glabrata*	*		3
Plantae	Flora	Fabaceae (Caesalpinioideae)	10505	*Senna septemtrionalis*	*	Arsenic Bush	5
Plantae	Flora	Fabaceae (Faboideae)	2784	*Bossiaea obcordata*		Spiny Bossiaea	10
Plantae	Flora	Fabaceae (Faboideae)	2787	*Bossiaea rhombifolia*			1
Plantae	Flora	Fabaceae (Faboideae)	2826	*Daviesia squarrosa*			1
Plantae	Flora	Fabaceae (Faboideae)	2827	*Daviesia ulicifolia*		Gorse Bitter Pea	10
Plantae	Flora	Fabaceae (Faboideae)	10830	*Daviesia ulicifolia subsp. stenophylla*			2
Plantae	Flora	Fabaceae (Faboideae)	2847	*Dillwynia parvifolia*			1
Plantae	Flora	Fabaceae (Faboideae)	DILL	*Dillwynia spp.*			1
Plantae	Flora	Fabaceae (Faboideae)	8689	*Erythrina x sykesii*	*	Coral tree	2
Plantae	Flora	Fabaceae (Faboideae)	2860	*Glycine clandestina*		Twining glycine	23
Plantae	Flora	Fabaceae (Faboideae)	7208	*Glycine microphylla*		Small-leaf Glycine	3
Plantae	Flora	Fabaceae (Faboideae)	2861	*Glycine tabacina*		Variable Glycine	9
Plantae	Flora	Fabaceae (Faboideae)	2866	*Gompholobium latifolium*		Golden Glory Pea	2
Plantae	Flora	Fabaceae (Faboideae)	15314	*Grona varians*			11
Plantae	Flora	Fabaceae (Faboideae)	2873	*Hardenbergia violacea*		False Sarsaparilla	24
Plantae	Flora	Fabaceae (Faboideae)	2877	*Hovea longifolia*		Rusty Pods	2
Plantae	Flora	Fabaceae (Faboideae)	2882	*Indigofera australis*		Australian Indigo	11
Plantae	Flora	Fabaceae (Faboideae)	2892	*Jacksonia scoparia*		Dogwood	1
Plantae	Flora	Fabaceae (Faboideae)	2898	*Kennedia rubicunda*		Dusky Coral Pea	10
Plantae	Flora	Fabaceae (Faboideae)	15369	*Maekawaea rhytidophylla*			3
Plantae	Flora	Fabaceae (Faboideae)	2919	*Medicago lupulina*	*	Black Medic	1
Plantae	Flora	Fabaceae (Faboideae)	15128	*Oxytes brachypoda*		Large Tick-trefoil	1
Plantae	Flora	Fabaceae (Faboideae)	2961	*Platylobium formosum*			3
Plantae	Flora	Fabaceae (Faboideae)	14702	*Platylobium parviflorum*		Small-flowered Flat-pea	2

Plantae	Flora	Fabaceae (Faboideae)	10705	*Podolobium aciculiferum*		Needle Shaggy Pea	1
Plantae	Flora	Fabaceae (Faboideae)	9912	*Podolobium ilicifolium*		Prickly Shaggy Pea	5
Plantae	Flora	Fabaceae (Faboideae)	10708	*Podolobium scandens*		Netted Shaggy Pea	5
Plantae	Flora	Fabaceae (Faboideae)	15315	*Pullenia gunnii*			7
Plantae	Flora	Fabaceae (Faboideae)	2985	*Pultenaea daphnoides*		Large-leaf Bush-pea	7
Plantae	Flora	Fabaceae (Faboideae)	2993	*Pultenaea flexilis*			2
Plantae	Flora	Fabaceae (Faboideae)	3002	*Pultenaea linophylla*			4
Plantae	Flora	Fabaceae (Faboideae)	3014	*Pultenaea retusa*			5
Plantae	Flora	Fabaceae (Faboideae)	3023	*Pultenaea villosa*		Hairy Bush-pea	12
Plantae	Flora	Fabaceae (Faboideae)	3041	*Swainsona galegifolia*		Smooth Darling Pea	1
Plantae	Flora	Fabaceae (Faboideae)	3074	*Trifolium campestre*	*	Hop Clover	1
Plantae	Flora	Fabaceae (Faboideae)	3085	*Trifolium repens*	*	White Clover	3
Plantae	Flora	Fabaceae (Faboideae)	3097	*Vicia sativa*	*	Common vetch	1
Plantae	Flora	Fabaceae (Faboideae)	3105	*Viminaria juncea*		Native Broom	1
Plantae	Flora	Fabaceae (Mimosoideae)	3716	*Acacia binervata*		Two-veined Hickory	1
Plantae	Flora	Fabaceae (Mimosoideae)	3717	*Acacia binervia*		Coast Myall	1
Plantae	Flora	Fabaceae (Mimosoideae)	3769	*Acacia elongata*		Swamp Wattle	4
Plantae	Flora	Fabaceae (Mimosoideae)	3771	*Acacia falcata*			8
Plantae	Flora	Fabaceae (Mimosoideae)	3772	*Acacia falciformis*		Broad-leaved Hickory	1
Plantae	Flora	Fabaceae (Mimosoideae)	3773	*Acacia filicifolia*		Fern-leaved Wattle	3
Plantae	Flora	Fabaceae (Mimosoideae)	3774	*Acacia fimbriata*		Fringed Wattle	2
Plantae	Flora	Fabaceae (Mimosoideae)	3777	*Acacia floribunda*		White Sally	1
Plantae	Flora	Fabaceae (Mimosoideae)	3792	*Acacia implexa*		Hickory Wattle	21
Plantae	Flora	Fabaceae (Mimosoideae)	3794	*Acacia irrorata*		Green Wattle	3
Plantae	Flora	Fabaceae (Mimosoideae)	6472	*Acacia irrorata subsp. irrorata*		Green Wattle	10
Plantae	Flora	Fabaceae (Mimosoideae)	3816	*Acacia longifolia*			13
Plantae	Flora	Fabaceae (Mimosoideae)	10790	*Acacia longifolia subsp. longifolia*		Sydney Golden Wattle	7
Plantae	Flora	Fabaceae (Mimosoideae)	10791	*Acacia longifolia subsp. sophorae*		Coastal Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	3817	*Acacia longissima*		Long-leaf Wattle	16
Plantae	Flora	Fabaceae (Mimosoideae)	7028	*Acacia mabellae*		Mabel's Wattle	19
Plantae	Flora	Fabaceae (Mimosoideae)	3821	*Acacia maidenii*		Maiden's Wattle	4
Plantae	Flora	Fabaceae (Mimosoideae)	3823	*Acacia mearnsii*		Black Wattle	34
Plantae	Flora	Fabaceae (Mimosoideae)	3834	*Acacia myrtifolia*		Red-stemmed Wattle	3
Plantae	Flora	Fabaceae (Mimosoideae)	3839	*Acacia obtusifolia*			13
Plantae	Flora	Fabaceae (Mimosoideae)	3844	*Acacia oxycedrus*		Spike Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	3845	*Acacia paradoxa*		Kangaroo Thorn	8
Plantae	Flora	Fabaceae (Mimosoideae)	3846	*Acacia parramattensis*		Parramatta Wattle	2
Plantae	Flora	Fabaceae (Mimosoideae)	3873	*Acacia saligna*	*	Golden Wreath Wattle	4
Plantae	Flora	Fabaceae (Mimosoideae)	3877	*Acacia silvestris*		Bodalla Silver Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	ACAC	*Acacia spp.*		Wattle	2
Plantae	Flora	Fabaceae (Mimosoideae)	3880	*Acacia stricta*		Straight Wattle	8
Plantae	Flora	Fabaceae (Mimosoideae)	3881	*Acacia suaveolens*		Sweet Wattle	1
Plantae	Flora	Fabaceae (Mimosoideae)	3885	*Acacia terminalis*		Sunshine Wattle	5

Plantae	Flora	Fabaceae (Mimosoideae)	10793	*Acacia terminalis subsp. angustifolia*			2
Plantae	Flora	Fabaceae (Mimosoideae)	9984	*Acacia terminalis subsp. longiaxialis*			1
Plantae	Flora	Fabaceae (Mimosoideae)	3889	*Acacia trachyphloia*		Bodalla Wattle	6
Plantae	Flora	Fabaceae (Mimosoideae)	3893	*Acacia ulicifolia*		Prickly Moses	7
Plantae	Flora	Fumariaceae	9367	*Fumaria muralis subsp. muralis*	*	Wall Fumitory	1
Plantae	Flora	Gentianaceae	3131	*Centaurium erythraea*	*	Common Centaury	2
Plantae	Flora	Gentianaceae	3133	*Centaurium tenuiflorum*	*	Branched Centaury, Slender centaury	2
Plantae	Flora	Geraniaceae	3141	*Erodium cicutarium*	*	Common Crowfoot	1
Plantae	Flora	Geraniaceae	3148	*Geranium homeanum*			4
Plantae	Flora	Geraniaceae	10093	*Geranium molle subsp. molle*	*	Cranesbill Geranium	2
Plantae	Flora	Geraniaceae	3156	*Geranium solanderi*		Native Geranium	5
Plantae	Flora	Geraniaceae	8226	*Geranium solanderi var. solanderi*			1
Plantae	Flora	Geraniaceae	13118	*Geranium sp. C*			1
Plantae	Flora	Geraniaceae	GERA	*Geranium spp.*			1
Plantae	Flora	Geraniaceae	3157	*Pelargonium australe*		Native Storksbill	1
Plantae	Flora	Geraniaceae	3161	*Pelargonium inodorum*			2
Plantae	Flora	Goodeniaceae	3166	*Coopernookia barbata*		Purple Goodenia	1
Plantae	Flora	Goodeniaceae	8711	*Goodenia bellidifolia subsp. bellidifolia*			1
Plantae	Flora	Goodeniaceae	3188	*Goodenia hederacea*		Ivy Goodenia	1
Plantae	Flora	Goodeniaceae	3192	*Goodenia ovata*		Hop Goodenia	8
Plantae	Flora	Goodeniaceae	3201	*Scaevola aemula*		Fairy Fan-flower	1
Plantae	Flora	Goodeniaceae	3208	*Scaevola ramosissima*		Purple Fan-flower	4
Plantae	Flora	Goodeniaceae	3210	*Selliera radicans*		Swamp Weed	3
Plantae	Flora	Haloragaceae	3241	*Gonocarpus humilis*			1
Plantae	Flora	Haloragaceae	3247	*Gonocarpus tetragynus*		Poverty Raspwort	1
Plantae	Flora	Haloragaceae	3248	*Gonocarpus teucrioides*		Germander Raspwort	13
Plantae	Flora	Haloragaceae	MYRI	*Myriophyllum spp.*			1
Plantae	Flora	Hydrocharitaceae	3271	*Halophila ovalis*			1
Plantae	Flora	Hydrocharitaceae	10855	*Ottelia ovalifolia subsp. ovalifolia*		Swamp Lily	1
Plantae	Flora	Hymenophyllaceae	8107	*Hymenophyllum cupressiforme*		Common Filmy Fern	1
Plantae	Flora	Hypoxidaceae	7648	*Hypoxis hygrometrica var. hygrometrica*			2
Plantae	Flora	Iridaceae	10271	*Crocosmia x crocosmiiflora*	*	Montbretia	2
Plantae	Flora	Iridaceae	3301	*Patersonia glabrata*		Leafy Purple-flag	8
Plantae	Flora	Iridaceae	3303	*Patersonia sericea*		Silky Purple-Flag	2
Plantae	Flora	Iridaceae	7477	*Romulea rosea var. australis*	*	Onion Grass	2
Plantae	Flora	Iridaceae	9237	*Watsonia meriana*	*		3
Plantae	Flora	Juncaceae	9311	*Juncus acutus subsp. acutus*	*	Sharp Rush	13
Plantae	Flora	Juncaceae	3316	*Juncus articulatus*	*		1
Plantae	Flora	Juncaceae	3326	*Juncus continuus*			2
Plantae	Flora	Juncaceae	3327	*Juncus effusus*	*		2
Plantae	Flora	Juncaceae	7430	*Juncus kraussii subsp. australiensis*		Sea Rush	12
Plantae	Flora	Juncaceae	8998	*Juncus mollis*			1
Plantae	Flora	Juncaceae	3338	*Juncus pallidus*			3
Plantae	Flora	Juncaceae	3340	*Juncus planifolius*			3
Plantae	Flora	Juncaceae	3342	*Juncus prismatocarpus*			1
Plantae	Flora	Juncaceae	JUNC	*Juncus spp.*			3
Plantae	Flora	Juncaceae	3348	*Juncus subsecundus*		Finger Rush	3
Plantae	Flora	Juncaceae	3350	*Juncus usitatus*			7
Plantae	Flora	Juncaginaceae	15152	*Cycnogeton microtuberosum*			1
Plantae	Flora	Juncaginaceae	14979	*Cycnogeton procerum*		Water Ribbons	2
Plantae	Flora	Juncaginaceae	3369	*Triglochin striata*		Streaked Arrowgrass	3
Plantae	Flora	Lamiaceae	3371	*Ajuga australis*		Austral Bugle	2
Plantae	Flora	Lamiaceae	6484	*Clerodendrum tomentosum*		Hairy Clerodendrum	2
Plantae	Flora	Lamiaceae	3380	*Lycopus australis*		Australian Gipsywort	2
Plantae	Flora	Lamiaceae	3381	*Marrubium vulgare*	*	White Horehound	2
Plantae	Flora	Lamiaceae	3397	*Plectranthus parviflorus*			7
Plantae	Flora	Lamiaceae	3412	*Prostanthera incana*		Velvet Mint-bush	1
Plantae	Flora	Lamiaceae	3452	*Teucrium corymbosum*		Forest Germander	1
Plantae	Flora	Lamiaceae	3459	*Westringia fruticosa*		Coastal Rosemary	2

Plantae	Flora	Lauraceae	3467	*Cassytha glabella*			6
Plantae	Flora	Lauraceae	9274	*Cassytha glabella f. glabella*			3
Plantae	Flora	Lauraceae	3469	*Cassytha pubescens*		Downy Dodder-laurel	17
Plantae	Flora	Lauraceae	CASY	*Cassytha spp.*			1
Plantae	Flora	Lauraceae	3479	*Cryptocarya glaucescens*		Jackwood	2
Plantae	Flora	Lauraceae	3483	*Cryptocarya microneura*		Murrogun	2
Plantae	Flora	Lentibulariaceae	3505	*Utricularia australis*		Yellow Bladderwort	1
Plantae	Flora	Liliaceae	3559	*Lilium formosanum*	*	Formosan Lily	8
Plantae	Flora	Linaceae	3583	*Linum marginale*		Native Flax	1
Plantae	Flora	Linaceae	3584	*Linum trigynum*	*	French Flax	1
Plantae	Flora	Lindsaeaceae	6406	*Lindsaea linearis*		Screw Fern	3
Plantae	Flora	Lindsaeaceae	6401	*Lindsaea microphylla*		Lacy Wedge Fern	4
Plantae	Flora	Loganiaceae	15351	*Orianthera pusilla*			2
Plantae	Flora	Lomandraceae	7573	*Lomandra confertifolia subsp. rubiginosa*			4
Plantae	Flora	Lomandraceae	6530	*Lomandra confertifolia subsp. similis*			6
Plantae	Flora	Lomandraceae	6298	*Lomandra cylindrica*			3
Plantae	Flora	Lomandraceae	6302	*Lomandra filiformis*		Wattle Matt-rush	3
Plantae	Flora	Lomandraceae	7931	*Lomandra filiformis subsp. filiformis*			4
Plantae	Flora	Lomandraceae	6304	*Lomandra glauca*		Pale Mat-rush	3
Plantae	Flora	Lomandraceae	6308	*Lomandra longifolia*		Spiny-headed Mat-rush	47
Plantae	Flora	Lomandraceae	8802	*Lomandra multiflora subsp. multiflora*		Many-flowered Mat-rush	14
Plantae	Flora	Lomandraceae	6312	*Lomandra obliqua*			7
Plantae	Flora	Loranthaceae	3599	*Amyema cambagei*		Needle-leaf Mistletoe	1
Plantae	Flora	Loranthaceae	3613	*Dendrophthoe vitellina*			1
Plantae	Flora	Luzuriagaceae	6015	*Eustrephus latifolius*		Wombat Berry	31
Plantae	Flora	Luzuriagaceae	6016	*Geitonoplesium cymosum*		Scrambling Lily	28
Plantae	Flora	Lythraceae	7974	*Lythrum salicaria*		Purple Loosestrife	1
Plantae	Flora	Malaceae	5612	*Cotoneaster glaucophyllus*	*		3
Plantae	Flora	Malaceae	COTO	*Cotoneaster spp.*	*		1
Plantae	Flora	Malvaceae	3632	*Abutilon oxycarpum*		Straggly Lantern-bush	1
Plantae	Flora	Malvaceae	8961	*Brachychiton populneus subsp. populneus*			1
Plantae	Flora	Malvaceae	6130	*Commersonia fraseri*		Brush Kurrajong	3
Plantae	Flora	Malvaceae	3649	*Howittia trilocularis*			1
Plantae	Flora	Malvaceae	3650	*Lagunaria patersonia*		Norfolk Island Hibiscus	1
Plantae	Flora	Malvaceae	3655	*Malva neglecta*	*	Dwarf Mallow	1
Plantae	Flora	Malvaceae	3657	*Malva parviflora*	*	Small-flowered Mallow	1
Plantae	Flora	Malvaceae	3673	*Sida rhombifolia*	*	Paddy's Lucerne	5
Plantae	Flora	Meliaceae	3680	*Melia azedarach*		White Cedar	1
Plantae	Flora	Meliaceae	11178	*Synoum glandulosum subsp. glandulosum*		Scentless Rosewood	12
Plantae	Flora	Menispermaceae	3688	*Sarcopetalum harveyanum*		Pearl Vine	4
Plantae	Flora	Menispermaceae	3690	*Stephania japonica*		Snake vine	10
Plantae	Flora	Menispermaceae	8428	*Stephania japonica var. discolor*		Snake Vine	12
Plantae	Flora	Menyanthaceae	14805	*Ornduffia reniformis*			2
Plantae	Flora	Monimiaceae	3913	*Doryphora sassafras*		Sassafras	4
Plantae	Flora	Monimiaceae	3914	*Hedycarya angustifolia*		Native Mulberry	1
Plantae	Flora	Monimiaceae	3918	*Wilkiea huegeliana*		Veiny Wilkiea	2
Plantae	Flora	Moraceae	7479	*Ficus coronata*		Creek Sandpaper Fig	7
Plantae	Flora	Moraceae	3924	*Ficus rubiginosa*		Port Jackson Fig	6
Plantae	Flora	Myrtaceae	3968	*Acmena smithii*		Lilly Pilly	14
Plantae	Flora	Myrtaceae	3971	*Angophora floribunda*		Rough-barked Apple	9
Plantae	Flora	Myrtaceae	3984	*Backhousia myrtifolia*		Grey Myrtle	8
Plantae	Flora	Myrtaceae	4004	*Callistemon citrinus*		Crimson Bottlebrush	1
Plantae	Flora	Myrtaceae	4015	*Callistemon salignus*		Willow Bottlebrush	2
Plantae	Flora	Myrtaceae	9687	*Corymbia gummifera*		Red Bloodwood	34
Plantae	Flora	Myrtaceae	9692	*Corymbia maculata*		Spotted Gum	97
Plantae	Flora	Myrtaceae	4037	*Eucalyptus agglomerata*		Blue-leaved Stringybark	3
Plantae	Flora	Myrtaceae	4042	*Eucalyptus angophoroides*		Apple-topped Gum	3
Plantae	Flora	Myrtaceae	4059	*Eucalyptus bosistoana*		Coast Grey Box	1
Plantae	Flora	Myrtaceae	4060	*Eucalyptus botryoides*		Bangalay	11
Plantae	Flora	Myrtaceae	9959	*Eucalyptus botryoides <--> saligna*			13
Plantae	Flora	Myrtaceae	4073	*Eucalyptus consideniana*		Yertchuk	13
Plantae	Flora	Myrtaceae	4075	*Eucalyptus cypellocarpa*		Monkey Gum	5

Plantae	Flora	Myrtaceae	4086	*Eucalyptus elata*		River Peppermint			4
Plantae	Flora	Myrtaceae	4087	*Eucalyptus eugenioides*		Thin-leaved Stringybark			2
Plantae	Flora	Myrtaceae	4091	*Eucalyptus fibrosa*		Red Ironbark			9
Plantae	Flora	Myrtaceae	4097	*Eucalyptus globoidea*		White Stringybark			70
Plantae	Flora	Myrtaceae	4118	*Eucalyptus longifolia*		Woollybutt			35
Plantae	Flora	Myrtaceae	4132	*Eucalyptus muelleriana*		Yellow Stringybark			3
Plantae	Flora	Myrtaceae	4149	*Eucalyptus paniculata*		Grey Ironbark			13
Plantae	Flora	Myrtaceae	8831	*Eucalyptus paniculata subsp. paniculata*					36
Plantae	Flora	Myrtaceae	4155	*Eucalyptus pilularis*		Blackbutt			53
Plantae	Flora	Myrtaceae	4156	*Eucalyptus piperita*		Sydney Peppermint			4
Plantae	Flora	Myrtaceae	4171	*Eucalyptus robusta*		Swamp Mahogany			4
Plantae	Flora	Myrtaceae	4177	*Eucalyptus saligna*		Sydney Blue Gum			4
Plantae	Flora	Myrtaceae	9954	*Eucalyptus scias subsp. callimastha*					4
Plantae	Flora	Myrtaceae	4182	*Eucalyptus sieberi*		Silvertop Ash			2
Plantae	Flora	Myrtaceae	4191	*Eucalyptus tereticornis*		Forest Red Gum			32
Plantae	Flora	Myrtaceae	13283	*Eucalyptus tereticornis subsp. tereticornis*					4
Plantae	Flora	Myrtaceae	4204	*Kunzea ambigua*		Tick Bush	P		2
Plantae	Flora	Myrtaceae	4222	*Leptospermum laevigatum*		Coast Teatree			2
Plantae	Flora	Myrtaceae	7245	*Leptospermum polygalifolium*		Tantoon			7
Plantae	Flora	Myrtaceae	8197	*Leptospermum polygalifolium subsp. polygalifolium*					7
Plantae	Flora	Myrtaceae	11117	*Melaleuca armillaris subsp. armillaris*		Bracelet Honey-myrtle			1
Plantae	Flora	Myrtaceae	6391	*Melaleuca ericifolia*		Swamp Paperbark			4
Plantae	Flora	Myrtaceae	MELA	*Melaleuca spp.*					1
Plantae	Flora	Myrtaceae	4283	*Rhodamnia rubescens*		Scrub Turpentine	E4A	CE	8
Plantae	Flora	Myrtaceae	13751	*Sannantha pluriflora*					9
Plantae	Flora	Myrtaceae	SYZY	*Syzygium spp.*					1
Plantae	Flora	Myrtaceae	4296	*Tristaniopsis collina*		Mountain Water Gum			6
Plantae	Flora	Myrtaceae	4297	*Tristaniopsis laurina*		Kanooka			2
Plantae	Flora	Ochnaceae	4306	*Ochna serrulata*	*	Mickey Mouse Plant			1
Plantae	Flora	Oleaceae	4312	*Ligustrum lucidum*	*	Large-leaved Privet			3
Plantae	Flora	Oleaceae	4313	*Ligustrum sinense*	*	Small-leaved Privet			6
Plantae	Flora	Oleaceae	4318	*Notelaea longifolia*		Large Mock-olive			20
Plantae	Flora	Oleaceae	6423	*Notelaea longifolia f. longifolia*					11
Plantae	Flora	Oleaceae	NOTE	*Notelaea spp.*					1
Plantae	Flora	Oleaceae	4322	*Notelaea venosa*		Veined Mock-olive			10
Plantae	Flora	Onagraceae	7952	*Epilobium billardierianum subsp. cinereum*					2
Plantae	Flora	Onagraceae	7375	*Ludwigia peploides subsp. montevidensis*		Water Primrose			1
Plantae	Flora	Onagraceae	7724	*Oenothera glazioviana*	*				1
Plantae	Flora	Orchidaceae	4351	*Acianthus caudatus*		Mayfly Orchid	P		2
Plantae	Flora	Orchidaceae	4352	*Acianthus exsertus*		Mosquito Orchid	P		2
Plantae	Flora	Orchidaceae	4353	*Acianthus fornicatus*		Pixie Caps	P		2
Plantae	Flora	Orchidaceae	ACIA	*Acianthus spp.*		Mosquito Orchid	P		1
Plantae	Flora	Orchidaceae	4373	*Caladenia carnea*		Pink Fingers	P		1
Plantae	Flora	Orchidaceae	4389	*Caleana major*		Large Duck Orchid	P		2
Plantae	Flora	Orchidaceae	4390	*Calochilus campestris*		Copper Beard Orchid	P		2
Plantae	Flora	Orchidaceae	4394	*Calochilus paludosus*		Red Beard Orchid	P		3
Plantae	Flora	Orchidaceae	7814	*Chiloglottis diphylla*			P		1
Plantae	Flora	Orchidaceae	CHIL	*Chiloglottis spp.*			P		1
Plantae	Flora	Orchidaceae	6881	*Chiloglottis sylvestris*			P		1
Plantae	Flora	Orchidaceae	4403	*Chiloglottis trapeziformis*		Thick-lip Bird Orchid	P		1
Plantae	Flora	Orchidaceae	4404	*Corybas aconitiflorus*		Spurred Helmet Orchid	P		1
Plantae	Flora	Orchidaceae	4407	*Corybas fimbriatus*		Fringed Helmet Orchid	P		1
Plantae	Flora	Orchidaceae	4410	*Corybas pruinosus*		Toothed Helmet Orchid	P		1
Plantae	Flora	Orchidaceae	4414	*Cryptostylis erecta*		Tartan Tongue Orchid	P		3
Plantae	Flora	Orchidaceae	4416	*Cryptostylis leptochila*		Small Tongue Orchid	P		9
Plantae	Flora	Orchidaceae	CRYT	*Cryptostylis spp.*			P		3
Plantae	Flora	Orchidaceae	4417	*Cryptostylis subulata*		Large Tongue Orchid	P		3
Plantae	Flora	Orchidaceae	11228	*Cyanicula caerulea*		Blue Caladenia	P		1
Plantae	Flora	Orchidaceae	4419	*Cymbidium suave*		Snake Orchid	P		7
Plantae	Flora	Orchidaceae	6889	*Cyrtostylis reniformis*		Gnat Orchid	P		1
Plantae	Flora	Orchidaceae	4435	*Dendrobium teretifolium*		Rat's Tail Orchid	P		3
Plantae	Flora	Orchidaceae	7887	*Dipodium punctatum*			P		3
Plantae	Flora	Orchidaceae	9155	*Dipodium roseum*			P		1
Plantae	Flora	Orchidaceae	DIPO	*Dipodium spp.*			P		1

Plantae	Flora	Orchidaceae	7888	*Dipodium variegatum*			P	7
Plantae	Flora	Orchidaceae	4447	*Diuris maculata*		Spotted Doubletail	P	4
Plantae	Flora	Orchidaceae	4456	*Diuris sulphurea*		Tiger Orchid	P	3
Plantae	Flora	Orchidaceae	4460	*Eriochilus cucullatus*		Parson's Bands	P	3
Plantae	Flora	Orchidaceae	9783	*Genoplesium apostasioides*			P	1
Plantae	Flora	Orchidaceae	9200	*Genoplesium pumilum*		Green Midge Orchid	P	1
Plantae	Flora	Orchidaceae	9201	*Genoplesium rufum*		Red Midge Orchid	P	1
Plantae	Flora	Orchidaceae	9544	*Genoplesium woollsii*			P	1
Plantae	Flora	Orchidaceae	4465	*Glossodia major*		Waxlip Orchid	P	2
Plantae	Flora	Orchidaceae	4472	*Lyperanthus suaveolens*		Brown Beaks	P	2
Plantae	Flora	Orchidaceae	7622	*Microtis parviflora*		Slender Onion Orchid	P	1
Plantae	Flora	Orchidaceae	7101	*Microtis rara*		Scented Onion Orchid	P	1
Plantae	Flora	Orchidaceae	4473	*Microtis unifolia*		Common Onion Orchid	P	1
Plantae	Flora	Orchidaceae	4476	*Orthoceras strictum*		Bird's-mouth Orchid	P	1
Plantae	Flora	Orchidaceae	4478	*Paracaleana minor*		Small Duck Orchid	P	1
Plantae	Flora	Orchidaceae	4516	*Prasophyllum odoratum*		Rogers Scented Leek Orchid	P	1
Plantae	Flora	Orchidaceae	10281	*Prasophyllum sylvestre*		Forest Leek Orchid	P	1
Plantae	Flora	Orchidaceae	4535	*Pterostylis acuminata*		Pointed Greenhood	P	2
Plantae	Flora	Orchidaceae	4545	*Pterostylis curta*		Blunt Greenhood	P	1
Plantae	Flora	Orchidaceae	4554	*Pterostylis grandiflora*		Cobra Greenhood	P	2
Plantae	Flora	Orchidaceae	4559	*Pterostylis longifolia*		Tall Greenhood	P	2
Plantae	Flora	Orchidaceae	7004	*Pterostylis longipetala*			P	1
Plantae	Flora	Orchidaceae	4562	*Pterostylis nutans*		Nodding Greenhood	P	3
Plantae	Flora	Orchidaceae	4563	*Pterostylis obtusa*		Blue-tongue Greenhood	P	1
Plantae	Flora	Orchidaceae	4566	*Pterostylis parviflora*		Tiny Greenhood	P	1
Plantae	Flora	Orchidaceae	4568	*Pterostylis pedunculata*		Maroonhood	P	1
Plantae	Flora	Orchidaceae	4579	*Sarcochilus australis*		Butterfly Orchid	P	1
Plantae	Flora	Orchidaceae	11877	*Spiranthes australis*		Ladies' Tresses	P	2
Plantae	Flora	Orchidaceae	8968	*Thelymitra ixioides var. ixioides*		Dotted Sun Orchid	P	3
Plantae	Flora	Orchidaceae	10275	*Thelymitra media var. media*		Tall Sun Orchid	P	1
Plantae	Flora	Oxalidaceae	4613	*Oxalis corniculata*	*	Creeping Oxalis		3
Plantae	Flora	Oxalidaceae	4615	*Oxalis exilis*				1
Plantae	Flora	Oxalidaceae	4617	*Oxalis incarnata*	*			1
Plantae	Flora	Oxalidaceae	4621	*Oxalis perennans*				3
Plantae	Flora	Oxalidaceae	4625	*Oxalis rubens*				1
Plantae	Flora	Oxalidaceae	OXAL	*Oxalis spp.*				3
Plantae	Flora	Passifloraceae	8886	*Passiflora herbertiana subsp. herbertiana*		Native Passionfruit		4
Plantae	Flora	Passifloraceae	PASS	*Passiflora spp.*				2
Plantae	Flora	Passifloraceae	12133	*Passiflora tarminiana*	*	Banana Passionfruit		1
Plantae	Flora	Philydraceae	7065	*Philydrum lanuginosum*		Frogsmouth		3
Plantae	Flora	Phormiaceae	3569	*Stypandra glauca*		Nodding Blue Lily		1
Plantae	Flora	Phyllanthaceae	2695	*Breynia oblongifolia*		Coffee Bush		22
Plantae	Flora	Phyllanthaceae	7866	*Glochidion ferdinandi*		Cheese Tree		5
Plantae	Flora	Phyllanthaceae	9360	*Glochidion ferdinandi var. ferdinandi*		Cheese Tree		2
Plantae	Flora	Phyllanthaceae	2746	*Phyllanthus gunnii*				3
Plantae	Flora	Phyllanthaceae	8216	*Phyllanthus hirtellus*		Thyme Spurge		10
Plantae	Flora	Phyllanthaceae	2753	*Poranthera corymbosa*				1
Plantae	Flora	Phyllanthaceae	2754	*Poranthera ericifolia*				1
Plantae	Flora	Phyllanthaceae	7395	*Poranthera microphylla*		Small Poranthera		7
Plantae	Flora	Phytolaccaceae	4658	*Phytolacca octandra*	*	Inkweed		2
Plantae	Flora	Pittosporaceae	12236	*Billardiera heterophylla*	*	Purple Appleberry		1
Plantae	Flora	Pittosporaceae	12179	*Billardiera mutabilis*		Climbing Apple Berry		1
Plantae	Flora	Pittosporaceae	4671	*Billardiera scandens*		Hairy Apple Berry		19
Plantae	Flora	Pittosporaceae	4674	*Bursaria spinosa*		Native Blackthorn		14
Plantae	Flora	Pittosporaceae	11018	*Bursaria spinosa subsp. spinosa*		Native Blackthorn		2
Plantae	Flora	Pittosporaceae	11204	*Pittosporum multiflorum*		Orange Thorn		1
Plantae	Flora	Pittosporaceae	4683	*Pittosporum revolutum*		Rough Fruit Pittosporum		18
Plantae	Flora	Pittosporaceae	4685	*Pittosporum undulatum*		Sweet Pittosporum		31
Plantae	Flora	Pittosporaceae	8623	*Rhytidosporum procumbens*				1
Plantae	Flora	Plantaginaceae	4689	*Plantago coronopus*	*	Buck's-horn Plaintain		1
Plantae	Flora	Plantaginaceae	4691	*Plantago debilis*		Shade Plantain		6
Plantae	Flora	Plantaginaceae	4699	*Plantago lanceolata*	*	Lamb's Tongues		13
Plantae	Flora	Plantaginaceae	4705	*Plantago varia*				1
Plantae	Flora	Plantaginaceae	6008	*Veronica persica*	*	Creeping Speedwell		1
Plantae	Flora	Plantaginaceae	6009	*Veronica plebeia*		Trailing Speedwell		9
Plantae	Flora	Plumbaginaceae	4706	*Limonium australe*		Native Sea Lavender		2
Plantae	Flora	Poaceae	4730	*Aira caryophyllea*	*	Silvery Hairgrass		1

Plantae	Flora	Poaceae	4748	*Andropogon virginicus*	*	Whisky Grass	6
Plantae	Flora	Poaceae	4749	*Anisopogon avenaceus*		Oat Speargrass	3
Plantae	Flora	Poaceae	14896	*Anthosachne scabra*		Wheatgrass, Common Wheatgrass	1
Plantae	Flora	Poaceae	4750	*Anthoxanthum odoratum*	*	Sweet Vernal Grass	1
Plantae	Flora	Poaceae	4770	*Aristida ramosa*		Purple Wiregrass	1
Plantae	Flora	Poaceae	4773	*Aristida vagans*		Threeawn Speargrass	10
Plantae	Flora	Poaceae	9603	*Austrostipa pubescens*			2
Plantae	Flora	Poaceae	9918	*Austrostipa ramosissima*		Stout Bamboo Grass	1
Plantae	Flora	Poaceae	10396	*Austrostipa rudis*			3
Plantae	Flora	Poaceae	10398	*Austrostipa rudis subsp. nervosa*			1
Plantae	Flora	Poaceae	10397	*Austrostipa rudis subsp. rudis*			3
Plantae	Flora	Poaceae	10372	*Austrostipa stipoides*		Coast Spear-grass	1
Plantae	Flora	Poaceae	10371	*Austrostipa verticillata*		Slender Bamboo Grass	3
Plantae	Flora	Poaceae	4780	*Avena fatua*	*	Wild Oats	1
Plantae	Flora	Poaceae	11194	*Axonopus fissifolius*	*	Narrow-leafed Carpet Grass	2
Plantae	Flora	Poaceae	4800	*Briza maxima*	*	Quaking Grass	1
Plantae	Flora	Poaceae	4801	*Briza minor*	*	Shivery Grass	2
Plantae	Flora	Poaceae	7813	*Bromus catharticus*	*	Praire Grass	6
Plantae	Flora	Poaceae	4806	*Bromus diandrus*	*	Great Brome	1
Plantae	Flora	Poaceae	14903	*Cenchrus clandestinus*	*	Kikuyu Grass	16
Plantae	Flora	Poaceae	14952	*Cenchrus purpurascens*			1
Plantae	Flora	Poaceae	4831	*Chloris gayana*	*	Rhodes Grass	4
Plantae	Flora	Poaceae	4839	*Cortaderia selloana*	*	Pampas Grass	1
Plantae	Flora	Poaceae	4841	*Cymbopogon refractus*		Barbed Wire Grass	5
Plantae	Flora	Poaceae	6540	*Cynodon dactylon*		Common Couch	11
Plantae	Flora	Poaceae	4846	*Dactylis glomerata*	*	Cocksfoot	3
Plantae	Flora	Poaceae	4889	*Deyeuxia nudiflora*			2
Plantae	Flora	Poaceae	4891	*Deyeuxia quadriseta*			1
Plantae	Flora	Poaceae	4897	*Dichelachne crinita*		Longhair Plumegrass	2
Plantae	Flora	Poaceae	8748	*Dichelachne inaequiglumis*			3
Plantae	Flora	Poaceae	4898	*Dichelachne micrantha*		Shorthair Plumegrass	7
Plantae	Flora	Poaceae	4899	*Dichelachne rara*			1
Plantae	Flora	Poaceae	4915	*Digitaria ramularis*		Finger Panic Grass	2
Plantae	Flora	Poaceae	4922	*Dryopoa dives*		Giant Mountain Grass	1
Plantae	Flora	Poaceae	4929	*Echinopogon caespitosus*		Bushy Hedgehog-grass	5
Plantae	Flora	Poaceae	7593	*Echinopogon caespitosus var. caespitosus*		Tufted Hedgehog Grass	1
Plantae	Flora	Poaceae	4934	*Echinopogon ovatus*		Forest Hedgehog Grass	4
Plantae	Flora	Poaceae	4937	*Ehrharta erecta*	*	Panic Veldtgrass	11
Plantae	Flora	Poaceae	4946	*Entolasia marginata*		Bordered Panic	17
Plantae	Flora	Poaceae	ENTO	*Entolasia spp.*			1
Plantae	Flora	Poaceae	4947	*Entolasia stricta*		Wiry Panic	35
Plantae	Flora	Poaceae	7578	*Eragrostis benthamii*			1
Plantae	Flora	Poaceae	7921	*Eragrostis brownii*		Brown's Lovegrass	3
Plantae	Flora	Poaceae	4960	*Eragrostis leptostachya*		Paddock Lovegrass	1
Plantae	Flora	Poaceae	4967	*Eragrostis parviflora*		Weeping Lovegrass	1
Plantae	Flora	Poaceae	ERAG	*Eragrostis spp.*			1
Plantae	Flora	Poaceae	4993	*Festuca pratensis*	*	Meadow Fescue	1
Plantae	Flora	Poaceae	5001	*Hemarthria uncinata*		Matgrass	3
Plantae	Flora	Poaceae	5002	*Hierochloe rariflora*		Scented Holygrass	1
Plantae	Flora	Poaceae	5005	*Holcus lanatus*	*	Yorkshire Fog	4
Plantae	Flora	Poaceae	5010	*Hordeum glaucum*	*	Northern Barley Grass	1
Plantae	Flora	Poaceae	6803	*Imperata cylindrica*		Blady Grass	31
Plantae	Flora	Poaceae	5017	*Isachne globosa*		Swamp Millet	2
Plantae	Flora	Poaceae	11387	*Lachnagrostis billardierei subsp. billardierei*			1
Plantae	Flora	Poaceae	11388	*Lachnagrostis filiformis*			2
Plantae	Flora	Poaceae	5022	*Lagurus ovatus*	*	Hare's Tail Grass	1
Plantae	Flora	Poaceae	5032	*Lolium perenne*	*	Perennial Ryegrass	2
Plantae	Flora	Poaceae	5037	*Microlaena stipoides*		Weeping Grass	17
Plantae	Flora	Poaceae	7707	*Microlaena stipoides var. stipoides*		Weeping Grass	8
Plantae	Flora	Poaceae	5044	*Oplismenus aemulus*			11
Plantae	Flora	Poaceae	5045	*Oplismenus imbecillis*			19
Plantae	Flora	Poaceae	OPLI	*Oplismenus spp.*			1
Plantae	Flora	Poaceae	5066	*Panicum simile*		Two-colour Panic	9
Plantae	Flora	Poaceae	PANI	*Panicum spp.*		Panicum	1
Plantae	Flora	Poaceae	7172	*Paspalidium distans*			1
Plantae	Flora	Poaceae	5081	*Paspalidium gracile*		Slender Panic	1
Plantae	Flora	Poaceae	5086	*Paspalum dilatatum*	*	Paspalum	7

Plantae	Flora	Poaceae	5093	*Paspalum urvillei*	*	Vasey Grass			3
Plantae	Flora	Poaceae	PHAA	*Phalaris spp.*	*				1
Plantae	Flora	Poaceae	5113	*Phragmites australis*		Common Reed			4
Plantae	Flora	Poaceae	5121	*Poa annua*	*	Winter Grass			1
Plantae	Flora	Poaceae	5123	*Poa cheelii*					1
Plantae	Flora	Poaceae	5127	*Poa ensiformis*		Purple-sheathed Tussock-grass			3
Plantae	Flora	Poaceae	11196	*Poa labillardierei var. labillardierei*		Tussock			9
Plantae	Flora	Poaceae	5134	*Poa meionectes*					6
Plantae	Flora	Poaceae	11143	*Poa poiformis var. poiformis*					5
Plantae	Flora	Poaceae	5141	*Poa sieberiana*		Snowgrass			2
Plantae	Flora	Poaceae	8742	*Poa sieberiana var. sieberiana*		Snowgrass			1
Plantae	Flora	Poaceae	POA	*Poa spp.*					8
Plantae	Flora	Poaceae	5147	*Pseudoraphis paradoxa*		Slender Mudgrass			1
Plantae	Flora	Poaceae	14304	*Rytidosperma bipartitum*		Wallaby Grass			1
Plantae	Flora	Poaceae	14309	*Rytidosperma fulvum*		Wallaby Grass			1
Plantae	Flora	Poaceae	14312	*Rytidosperma longifolium*		Long-leaved Wallaby Grass			4
Plantae	Flora	Poaceae	14314	*Rytidosperma pallidum*		Redanther Wallaby Grass; Silvertop Wallaby Grass			2
Plantae	Flora	Poaceae	RYTI	*Rytidosperma spp.*					1
Plantae	Flora	Poaceae	14323	*Rytidosperma tenuius*					4
Plantae	Flora	Poaceae	13468	*Setaria parviflora*	*				3
Plantae	Flora	Poaceae	7842	*Setaria pumila*	*	Pale Pigeon Grass			3
Plantae	Flora	Poaceae	SETA	*Setaria spp.*					1
Plantae	Flora	Poaceae	5176	*Sporobolus africanus*	*	Parramatta Grass			3
Plantae	Flora	Poaceae	5181	*Sporobolus elongatus*		Slender Rat's Tail Grass			2
Plantae	Flora	Poaceae	SPOR	*Sporobolus spp.*		Rat's Tail Couch			1
Plantae	Flora	Poaceae	5184	*Sporobolus virginicus*					1
Plantae	Flora	Poaceae	9336	*Sporobolus virginicus var. virginicus*		Sand Couch			1
Plantae	Flora	Poaceae	5185	*Stenotaphrum secundatum*	*	Buffalo Grass			3
Plantae	Flora	Poaceae	5217	*Tetrarrhena juncea*		Wiry Ricegrass			1
Plantae	Flora	Poaceae	7770	*Themeda triandra*					14
Plantae	Flora	Poaceae	5243	*Zoysia macrantha*		Prickly Couch			1
Plantae	Flora	Polygalaceae	5257	*Comesperma volubile*					1
Plantae	Flora	Polygalaceae	5262	*Polygala virgata*	*				2
Plantae	Flora	Polygonaceae	5263	*Acetosa sagittata*	*	Rambling Dock			6
Plantae	Flora	Polygonaceae	7568	*Persicaria decipiens*		Slender Knotweed			5
Plantae	Flora	Polygonaceae	5280	*Persicaria elatior*		Tall Knotweed	V	V	1
Plantae	Flora	Polygonaceae	5281	*Persicaria hydropiper*		Water Pepper			1
Plantae	Flora	Polygonaceae	8887	*Persicaria praetermissa*					2
Plantae	Flora	Polygonaceae	PERC	*Persicaria spp.*		Knotweed			1
Plantae	Flora	Polygonaceae	5296	*Rumex brownii*		Swamp Dock			3
Plantae	Flora	Polygonaceae	5298	*Rumex crispus*	*	Curled Dock			1
Plantae	Flora	Polygonaceae	5303	*Rumex pulcher*	*	Fiddle Dock			1
Plantae	Flora	Polypodiaceae	8158	*Microsorum scandens*		Fragrant Fern			1
Plantae	Flora	Polypodiaceae	8159	*Platycerium bifurcatum*		Elkhorn Fern	P		2
Plantae	Flora	Polypodiaceae	8163	*Pyrrosia rupestris*		Rock Felt Fern			4
Plantae	Flora	Posidoniaceae	5327	*Posidonia australis*		Seagrass			1
Plantae	Flora	Potamogetonaceae	5331	*Potamogeton ochreatus*		Blunt Pondweed			1
Plantae	Flora	Primulaceae	7459	*Aegiceras corniculatum*		River Mangrove			5
Plantae	Flora	Primulaceae	14614	*Lysimachia arvensis*	*	Scarlet Pimpernel			10
Plantae	Flora	Primulaceae	11948	*Myrsine howittiana*		Brush Muttonwood			10
Plantae	Flora	Primulaceae	5337	*Samolus repens*		Creeping Brookweed			7
Plantae	Flora	Primulaceae	5338	*Samolus valerandi*		Common Brookweed			1
Plantae	Flora	Proteaceae	5343	*Banksia integrifolia*		Coast Banksia			8
Plantae	Flora	Proteaceae	6603	*Banksia integrifolia subsp. integrifolia*		Coastal Banksia			2
Plantae	Flora	Proteaceae	5344	*Banksia marginata*		Silver Banksia			1
Plantae	Flora	Proteaceae	5349	*Banksia spinulosa*		Hairpin Banksia	P		1
Plantae	Flora	Proteaceae	7488	*Banksia spinulosa var. spinulosa*			P		2
Plantae	Flora	Proteaceae	5352	*Conospermum taxifolium*		Variable Smoke-bush			1
Plantae	Flora	Proteaceae	5389	*Grevillea parviflora*					1
Plantae	Flora	Proteaceae	5425	*Hakea sericea*		Needlebush			1
Plantae	Flora	Proteaceae	5433	*Isopogon anemonifolius*		Broad-leaf Drumsticks	P		1
Plantae	Flora	Proteaceae	5443	*Lomatia ilicifolia*		Holly Lomatia			3
Plantae	Flora	Proteaceae	5463	*Persoonia linearis*		Narrow-leaved Geebung	P		21
Plantae	Flora	Pteridaceae	7997	*Adiantum aethiopicum*		Common Maidenhair	P		13
Plantae	Flora	Pteridaceae	7999	*Adiantum formosum*		Giant Maidenhair	P		1

Plantae	Flora	Pteridaceae	8000	*Adiantum hispidulum*		Rough Maidenhair	P	1	
Plantae	Flora	Pteridaceae	11226	*Adiantum hispidulum var. hispidulum*		Rough Maidenhair	P	1	
Plantae	Flora	Pteridaceae	8005	*Cheilanthes austrotenuifolia*		Rock Fern		1	
Plantae	Flora	Pteridaceae	10439	*Cheilanthes sieberi*		Rock Fern		2	
Plantae	Flora	Pteridaceae	8444	*Pellaea falcata*		Sickle Fern		15	
Plantae	Flora	Pteridaceae	8175	*Pteris tremula*		Tender Brake		1	
Plantae	Flora	Ranunculaceae	5493	*Clematis aristata*		Old Man's Beard		13	
Plantae	Flora	Ranunculaceae	5495	*Clematis glycinoides*		Headache Vine		9	
Plantae	Flora	Ranunculaceae	6903	*Clematis glycinoides var. glycinoides*				5	
Plantae	Flora	Ranunculaceae	12095	*Ranunculus meristus*				1	
Plantae	Flora	Ranunculaceae	5518	*Ranunculus plebeius*		Forest Buttercup		5	
Plantae	Flora	Ranunculaceae	5521	*Ranunculus repens*	*	Creeping Buttercup		1	
Plantae	Flora	Rhamnaceae	5571	*Pomaderris aspera*		Hazel Pomaderris		1	
Plantae	Flora	Rhamnaceae	9868	*Pomaderris elliptica subsp. elliptica*				1	
Plantae	Flora	Rhamnaceae	5579	*Pomaderris ferruginea*				1	
Plantae	Flora	Rhamnaceae	9867	*Pomaderris ligustrina subsp. ligustrina*				1	
Plantae	Flora	Rosaceae	11733	*Rubus anglocandicans*	*	Blackberry		1	
Plantae	Flora	Rosaceae	11303	*Rubus fruticosus sp. agg.*	*	Blackberry complex		5	
Plantae	Flora	Rosaceae	11236	*Rubus moluccanus var. trilobus*		Molucca Bramble		1	
Plantae	Flora	Rosaceae	9917	*Rubus nebulosus*		Green-leaved Bramble		1	
Plantae	Flora	Rosaceae	5642	*Rubus parvifolius*		Native Raspberry		14	
Plantae	Flora	Rosaceae	5645	*Rubus rosifolius*		Rose-leaf Bramble		1	
Plantae	Flora	Rosaceae	5646	*Rubus ulmifolius*	*	Blackberry		3	
Plantae	Flora	Rosaceae	7445	*Rubus vestitus*	*	Blackberry		1	
Plantae	Flora	Rubiaceae	5675	*Coprosma quadrifida*		Prickly Currant Bush		2	
Plantae	Flora	Rubiaceae	5680	*Galium australe*		Tangled Bedstraw	E1	1	
Plantae	Flora	Rubiaceae	5681	*Galium binifolium*				2	
Plantae	Flora	Rubiaceae	5688	*Galium propinquum*		Maori Bedstraw		2	
Plantae	Flora	Rubiaceae	14922	*Gynochthodes jasminoides*		Sweet Morinda		10	
Plantae	Flora	Rubiaceae	5697	*Opercularia aspera*		Coarse Stinkweed		5	
Plantae	Flora	Rubiaceae	5698	*Opercularia diphylla*		Stinkweed		1	
Plantae	Flora	Rubiaceae	5699	*Opercularia hispida*		Hairy Stinkweed		2	
Plantae	Flora	Rubiaceae	OPER	*Opercularia spp.*				2	
Plantae	Flora	Rubiaceae	5703	*Pomax umbellata*		Pomax		11	
Plantae	Flora	Rubiaceae	5706	*Psychotria loniceroides*		Hairy Psychotria		7	
Plantae	Flora	Rubiaceae	5713	*Richardia stellaris*	*			1	
Plantae	Flora	Rubiaceae	5714	*Sherardia arvensis*	*	Field Madder		2	
Plantae	Flora	Rutaceae	5722	*Acronychia oblongifolia*		White Aspen		1	
Plantae	Flora	Rutaceae	5751	*Boronia polygalifolia*		Dwarf Boronia	P	1	
Plantae	Flora	Rutaceae	5760	*Boronia subulifolia*			P	1	
Plantae	Flora	Rutaceae	10046	*Correa alba var. alba*		White Correa		1	
Plantae	Flora	Rutaceae	11021	*Correa lawrenceana var. cordifolia*				5	
Plantae	Flora	Rutaceae	5774	*Crowea exalata*			P	4	
Plantae	Flora	Rutaceae	11036	*Zieria caducibracteata*				1	
Plantae	Flora	Rutaceae	5847	*Zieria smithii*		Sandfly Zieria		3	
Plantae	Flora	Salicaceae	5851	*Salix babylonica*	*	Weeping Willow		2	
Plantae	Flora	Santalaceae	5858	*Choretrum pauciflorum*		Dwarf Sour Bush		1	
Plantae	Flora	Santalaceae	5860	*Exocarpos cupressiformis*		Cherry Ballart		27	
Plantae	Flora	Santalaceae	5864	*Exocarpos strictus*		Dwarf Cherry		5	
Plantae	Flora	Santalaceae	5870	*Santalum obtusifolium*		Sandalwood		3	
Plantae	Flora	Sapindaceae	5875	*Alectryon subcinereus*		Wild Quince		1	
Plantae	Flora	Sapindaceae	5911	*Dodonaea triquetra*		Large-leaf Hop-bush		8	
Plantae	Flora	Sapindaceae	5917	*Guioa semiglauca*		Guioa		1	
Plantae	Flora	Schizaeaceae	8181	*Schizaea bifida*		Forked Comb Fern		1	
Plantae	Flora	Scrophulariaceae	8718	*Gratiola peruviana*		Australian Brooklime		2	
Plantae	Flora	Scrophulariaceae	7906	*Myoporum acuminatum*		Boobialla		5	
Plantae	Flora	Scrophulariaceae	9043	*Myoporum boninense subsp. australe*				4	
Plantae	Flora	Scrophulariaceae	3954	*Myoporum insulare*		Common Boobialla		1	
Plantae	Flora	Scrophulariaceae	MYOP	*Myoporum spp.*		Boobialla		1	
Plantae	Flora	Scrophulariaceae	5999	*Verbascum virgatum*	*	Twiggy Mullein		1	
Plantae	Flora	Simaroubaceae	6012	*Ailanthus altissima*	*	Tree of Heaven		2	
Plantae	Flora	Smilacaceae	7592	*Smilax australis*		Lawyer Vine		6	

Plantae	Flora	Smilacaceae	6022	*Smilax glyciphylla*		Sweet Sarsparilla		9
Plantae	Flora	Solanaceae	6033	*Datura stramonium*	*	Common Thornapple		2
Plantae	Flora	Solanaceae	6036	*Duboisia myoporoides*		Corkwood		2
Plantae	Flora	Solanaceae	6042	*Nicandra physalodes*	*	Apple-of-Peru		1
Plantae	Flora	Solanaceae	6058	*Physalis peruviana*	*	Cape Gooseberry		2
Plantae	Flora	Solanaceae	6065	*Solanum aviculare*		Kangaroo Apple		1
Plantae	Flora	Solanaceae	6071	*Solanum chenopodioides*	*	Whitetip Nightshade		5
Plantae	Flora	Solanaceae	6076	*Solanum densevestitum*				2
Plantae	Flora	Solanaceae	12294	*Solanum hapalum*				2
Plantae	Flora	Solanaceae	6090	*Solanum mauritianum*	*	Wild Tobacco Bush		5
Plantae	Flora	Solanaceae	6091	*Solanum nigrum*	*	Black-berry Nightshade		2
Plantae	Flora	Solanaceae	6095	*Solanum opacum*		Green-berry Nightshade		3
Plantae	Flora	Solanaceae	6100	*Solanum prinophyllum*		Forest Nightshade		4
Plantae	Flora	Solanaceae	6101	*Solanum pseudocapsicum*	*	Madeira Winter Cherry		5
Plantae	Flora	Solanaceae	6102	*Solanum pungetium*		Eastern Nightshade		9
Plantae	Flora	Solanaceae	11605	*Solanum silvestre*				3
Plantae	Flora	Solanaceae	SOLA	*Solanum spp.*				1
Plantae	Flora	Stackhousiaceae	6120	*Stackhousia monogyna*		Creamy Candles		2
Plantae	Flora	Stackhousiaceae	6125	*Stackhousia viminea*		Slender Stackhousia		1
Plantae	Flora	Stylidiaceae	6157	*Stylidium graminifolium*		Grass Triggerplant		4
Plantae	Flora	Thymelaeaceae	6182	*Pimelea linifolia*		Slender Rice Flower		4
Plantae	Flora	Thymelaeaceae	7679	*Pimelea linifolia subsp. caesia*				1
Plantae	Flora	Thymelaeaceae	6814	*Pimelea linifolia subsp. linifolia*				3
Plantae	Flora	Typhaceae	7224	*Typha domingensis*		Narrow-leaved Cumbungi		1
Plantae	Flora	Typhaceae	6217	*Typha orientalis*		Broad-leaved Cumbungi		3
Plantae	Flora	Ulmaceae	6761	*Trema tomentosa var. aspera*		Native Peach		5
Plantae	Flora	Urticaceae	6237	*Urtica incisa*		Stinging Nettle		3
Plantae	Flora	Uvulariaceae	3566	*Schelhammera undulata*				16
Plantae	Flora	Verbenaceae	6256	*Verbena bonariensis*	*	Purpletop		9
Plantae	Flora	Verbenaceae	10718	*Verbena incompta*	*			1
Plantae	Flora	Verbenaceae	VERE	*Verbena spp.*				1
Plantae	Flora	Violaceae	6266	*Hybanthus monopetalus*		Slender Violet-bush		5
Plantae	Flora	Violaceae	12061	*Melicytus dentatus*		Tree Violet		2
Plantae	Flora	Violaceae	11863	*Viola banksii*				4
Plantae	Flora	Violaceae	6270	*Viola betonicifolia*		Native Violet		1
Plantae	Flora	Violaceae	6272	*Viola hederacea*		Ivy-leaved Violet		19
Plantae	Flora	Vitaceae	6282	*Cissus antarctica*		Water Vine		5
Plantae	Flora	Vitaceae	6283	*Cissus hypoglauca*		Giant Water Vine		18
Plantae	Flora	Winteraceae	6290	*Tasmannia insipida*		Brush Pepperbush		1
Plantae	Flora	Xanthorrhoeaceae	7995	*Xanthorrhoea concava*			P	3
Plantae	Flora	Xanthorrhoeaceae	6321	*Xanthorrhoea resinosa*			P	1
Plantae	Flora	Xanthorrhoeaceae	XANT	*Xanthorrhoea spp.*			P	2
Plantae	Flora	Zamiaceae	6327	*Macrozamia communis*		Burrawang	P	27
Plantae	Flora	Zingiberaceae	6787	*Hedychium gardnerianum*	*	Ginger Lily		1
Plantae	Flora	Zosteraceae	13649	*Zostera muelleri subsp. capricorni*				2
Animalia	Insecta	Culicidae	I607	*Aedes flavifrons*				3
Animalia	Insecta	Culicidae	I606	*Aedes notoscriptus*				2
Animalia	Insecta	Culicidae	I602	*Aedes rubrithorax*				1
Animalia	Insecta	Culicidae	I616	*Anopheles annulipes*				2