



Lord Howe Island Critical Infrastructure Project Scoping Report

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Lord Howe Island Critical Infrastructure Project

Scoping Report

0741543



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ACRONYMS AND ABBREVIATIONS

| Acronym | Description |
|----------|--|
| ABN | Australian Business Number |
| ABS | Australian Bureau of Statistics |
| AILA | Australian Institute of Landscape Architects |
| ANZECC | Australian and New Zealand Environment and Conservation Council |
| ARMCANZ | Agriculture and Resource Management Council of Australia and New Zealand |
| BC Act | <i>Biodiversity Conservation Act 2016 (NSW)</i> |
| BCS | Biodiversity, Conservation and Science (NSW) |
| BDAR | Biodiversity Development Assessment Report |
| BFMC | Bush Fire Management Committee (Lord Howe Island) |
| BOM | Bureau of Meteorology |
| BOS | Biodiversity Offset Scheme |
| CCG | Community Consultation Group |
| CEEC | Critically Endangered Ecological Community |
| CIP | Critical Infrastructure Program |
| CSSI | Critical State Significant Infrastructure |
| DA | Development Application |
| DCCEEW | Department of Climate Change, Energy, the Environment and Water (NSW) |
| DCP | Development Control Plan |
| DEC | Department of Environment and Conservation (NSW) (former) |
| DECC | Department of Environment and Climate Change (NSW) (former) |
| DECCW | Department of Climate Change and Water (NSW) (former) |
| DoE | Department of the Environment (Cwth) (former) |
| DoP | Department of Planning (NSW) (former) |
| DOPW | Department of Public Works (NSW) (former) |
| DPE | Department of Planning and Environment (NSW) (former) |
| DPHI | Department of Planning, Housing and Infrastructure (NSW) |
| DPI | Department of Primary Industries (NSW) |
| DPIE | Department of Planning, Industry and Environment (NSW) (former) |
| DUAP | Department of Urban Affairs and Planning (NSW) (former) |
| EDM | Electronic Direct Mail |
| EIS | Environmental Impact Statement |
| EP&A Act | <i>Environmental Planning and Assessment Act 1979 (NSW)</i> |

| Acronym | Description |
|-----------------|---|
| EP&A Regulation | Environmental Planning Assessment Regulation 2021 (NSW) |
| EPA | Environment Protection Authority (NSW) |
| EPBC Act | <i>Environment Protection and Biodiversity Act 1999</i> (Cwth) |
| EPI | Environmental Planning Instrument |
| EPL | Environment Protection Licence |
| ERM | Environmental Resources Management Pty Ltd |
| ESCP | Erosion and Sediment Control Plan |
| FM Act | <i>Fisheries Management Act 1994</i> (NSW) |
| FTE | Full Time Equivalent |
| GDE | Groundwater Dependent Ecosystem |
| HIPAP | Hazardous Industry Planning Advisory Paper |
| IAIA | International Association for Impact Assessment |
| IBRA | Interim Biogeographic Regionalisation of Australia |
| ICCROM | International Centre for the Study of the Preservation and Restoration of Cultural Property |
| ICOMOS | International Council on Monuments and Sites |
| IEMA | Institute of Environmental Management and Assessment |
| IUCN | International Union for Conservation of Nature |
| km | Kilometres |
| LEP | Local Environmental Plan |
| LHI Board | Lord Howe Island Board |
| LHITA | Lord Howe Island Tourism Association |
| LI | Landscape Institute |
| LLS | Local Land Services |
| m | Metres |
| M | Million |
| MEM Act | <i>Marine Estate Management Act 2014</i> (NSW) |
| MNES | Matters of National Environmental Significance |
| MRF | Materials Recycling Facility |
| NSW | New South Wales |
| PHA | Preliminary Hazard Analysis |
| PMST | Protected Matters Search Tool |
| POEO Act | <i>Protection of the Environment Operations Act 1997</i> (NSW) |
| PSI | Preliminary Site Investigation |

| Acronym | Description |
|----------------|--|
| REP | Rodent Eradication Program |
| RFS | Rural Fire Service (NSW) |
| ROI | Registrations of Interest |
| RTA | Roads and Traffic Authority (NSW) (former) |
| SEARs | Secretary's Environmental Assessment Requirements |
| SEPP | State Environmental Planning Policy |
| SIA | Social Impact Assessment |
| SNV | Significant Native Vegetation |
| SSI | State Significant Infrastructure |
| TEC | Threatened Ecological Community |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| WMF | Waste Management Facility |

1. INTRODUCTION

This section introduces the Project and the Applicant. It provides an overview, relevant background, related development and objectives of the Project. The purpose of this Scoping Report is also described in this section.

1.1 INTRODUCTION

The NSW Department of Climate Change, Energy, the Environment and Water ('DCCEEW' or 'Applicant'), on behalf of the Lord Howe Island Board (LHIB) proposes to construct, operate and maintain new marine infrastructure, biosecurity infrastructure, and waste management facility (the Project) on Lord Howe Island (LHI).

The Applicant seeks development consent for the Project as Critical State Significant Infrastructure (CSSI) and intends to submit the required development application (DA) under Division 5.2, subdivision 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.2 THE APPLICANT

The NSW DCCEEW aims to protect the states environment and heritage. This includes conserving and protecting the state's natural environment, by managing the NSW protected area estate and biodiversity and Aboriginal Cultural Heritage values for future generations. The NSW DCCEEW ensures sustainable management of water resources across the state, to support the environment, communities and industry. The NSW DCCEEW also leads the state's position and response to climate change, and in facilitating a sustainable transition to a net zero economy through affordable, reliable, clean energy.

The NSW DCCEEW Australian Business Number (ABN) and address are listed below:

- **Applicant Name:** Department of Climate Change, Energy, the Environment and Water
- **ABN:** 27 578 976 844; and
- **Address:** 4 Parramatta Square, 12 Darcy Street, Parramatta NSW 2150.

1.3 PROJECT OVERVIEW

The Project is on Lord Howe Island, a 1,455 ha island located about 770 kilometres (km) to the northeast of Sydney, NSW, and about 570 km east from Port Macquarie, NSW. Port Macquarie is the nearest mainland port to Lord Howe Island and is the base for the current marine freight service. Lord Howe island is part of the state of NSW and is regarded legally as an unincorporated area administered by the LHIB. The location of the Project from a regional context is shown in Figure 1-1.

The Project is part of the broader Lord Howe Island Critical Infrastructure Program (CIP; discussed in Section 1.5); however, only comprises the construction, operation and maintenance of the:

- **Marine infrastructure** including new and/or upgraded landing facilities (jetty and boat ramp), cargo loading/offloading areas, new office and commercial buildings (for Transport for NSW, Marine Parks Authority and Marine Rescue NSW), and new public walking tracks, viewing platform, landscaping, amenities and vehicle parking at the northern end of the lagoon;
- **Waste management facility** (WMF) including new storage sheds and materials processing facilities (including for organic material), wastewater treatment plant and waste receival area, hardstand and roads, and selective dune restoration at the existing waste management facility; and
- **Biosecurity** measures and infrastructure including an enhanced quarantine management system with a new receiving station/facility adjacent to the existing jetty, and dedicated kennel to house detection dogs near the WMF.

While the Project accounts for marine freight vessel operations as part of the proposed marine infrastructure components, the procurement of the marine freight vessel and upgrades to mainland port/biosecurity infrastructure **are not included** in the DA.

1.4 PROJECT BACKGROUND

Lord Howe Island is a remote island that is protected under the World Heritage Convention. The Island cannot sustainably produce the food and general goods required to meet the Island's permanent population and tourist needs. As such, Lord Howe Island is almost completely reliant on the mainland for essential goods and services. The transport of essential goods and services to Lord Howe Island is almost exclusively met by the marine freight service. Therefore, the marine freight service is essential to the functioning of the island's population and tourism. It provides the only viable freight option for essential supplies (e.g., fuel) and the only viable avenue for the removal of waste from the Island.

The current marine freight service, the MV Island Trader is due to reach the end of its serviceable life in 2026 and, therefore, requires replacement.

The inscription of Lord Howe Island on the World Heritage list was in recognition of the Islands unique natural and cultural heritage features. This listing as a World Heritage property affords Lord Howe Island additional protection not only under international conventions, but under Australian Government and NSW legislation. The Australian Government is signatory to the World Heritage Convention and, therefore, both the NSW and Australian Governments have a responsibility to protect the 'outstanding universal values' for which Lord Howe Island was inscribed as a World Heritage property. Enhanced biosecurity is a key mitigation against risks to those values.

Lord Howe Island has a history of biosecurity incidents, the most significant of which was a rodent (e.g., rats and mice) infestation. Rodents were believed to be introduced to the Island in the 1910's and have been the focus of a significant eradication program since then. Other known infestations include the African Big-headed Ant (*Pheidole megacephala*), weeds, feral and domestic cats, pigs and goats, and a myrtle-rust inflicting plants from the Myrtaceae family. Such incursions pose a significant risk to the unique biodiversity of Lord Howe Island.

The Project includes the provision of new biosecurity infrastructure to minimise biosecurity risks to Lord Howe Island.

Waste removal is also a critical issue for Lord Howe Island as it cannot process nor adequately store waste produced by the Island's permanent and tourist population and landfill is not permitted. The existing WMF on the Island has been operating in non-compliance with conditions of the facility's Environmental Protection Licence (EPL) and current guidelines, specifically being unable to comply with:

- Securely and safely handling and storing waste;
- Meeting compost resource recovery standards;
- Limiting the generation of dust, odour and litter; and
- Protecting the environment from hazardous liquid wastes.

The Lord Howe Island CIP therefore includes the upgrade of the Island's WMF to meet compliance obligations, minimise risks to the environment and the Work, Health and Safety, and modernise waste management for Island residents and visitors.

1.5 RELATED DEVELOPMENT

The Project is part of the broader Lord Howe Island CIP, which is being funded by the NSW Government. The Lord Howe Island CIP will replace and improve infrastructure that is critical to the functioning of the Island, and comprises:

1. A new **freight transport vessel** including design, construction, and operation of the vessel to be compatible with Lord Howe Island marine infrastructure, and with consideration of biosecurity and operational requirements, to enable to continuation of the marine freight services for Lord Howe Island; and
2. Upgrades to or a **new mainland freight/biosecurity infrastructure**.

1.6 OBJECTIVES

The objectives of the Project are to:

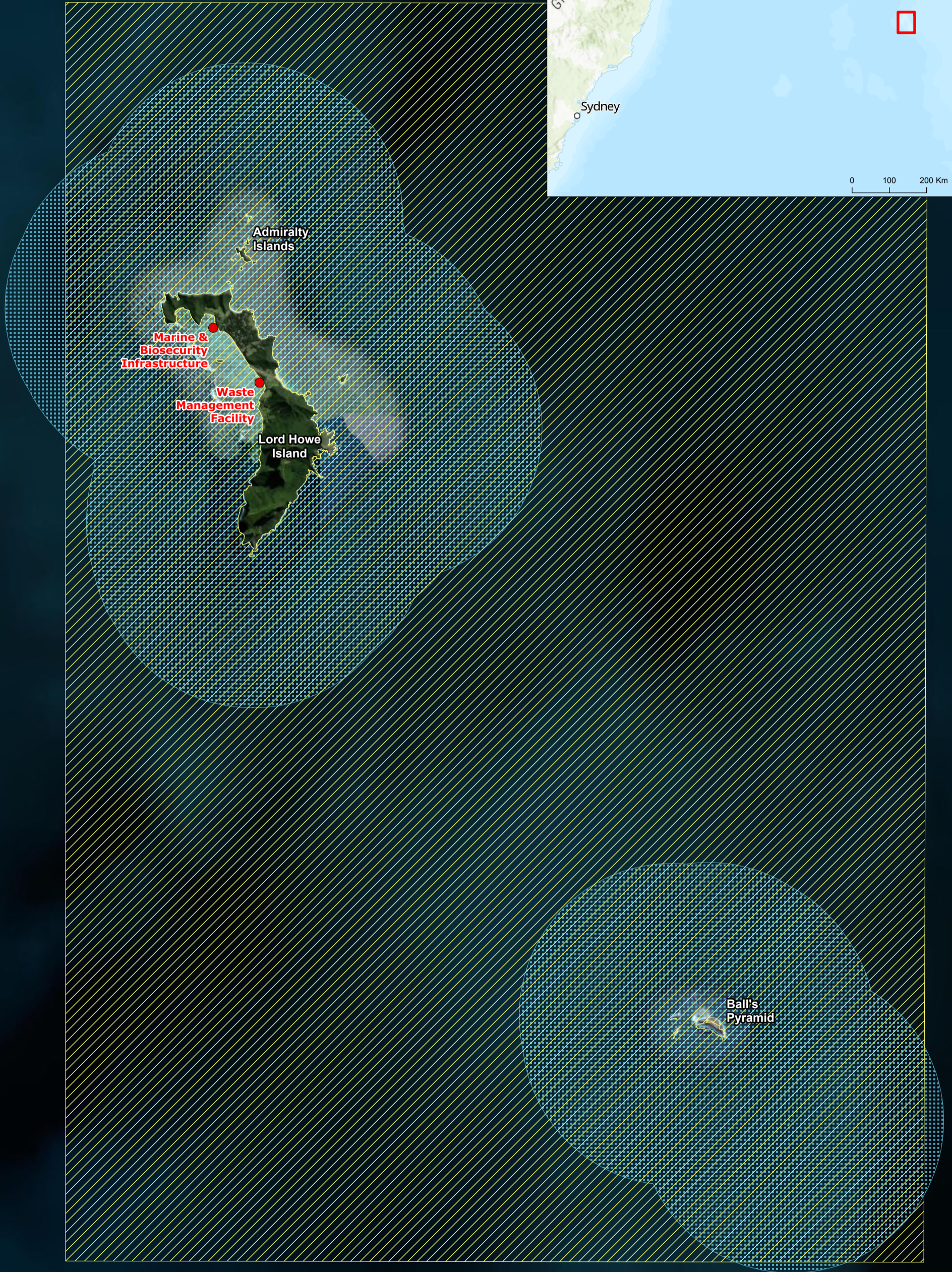
- Maintain the tourism economy of Lord Howe Island and subsequently the NSW Government;
- Maintain access to the World Heritage property and associated marine park;
- Replace the essential Lord Howe Island marine freight service;
- Protect Lord Howe Island marine waters through infrastructure designed to minimise impacts to its unique environmental values from operation of the new marine freight service;
- Protect the unique ecological and cultural values of Lord Howe Island during construction and operation;
- Ensure quality of life for residents and visitors to Lord Howe Island;
- Deliver biosecurity measures to protect the unique values of Lord Howe Island; and
- Deliver a fully functioning waste management facility on the Island to support both day-to-day operations and the Island's tourism-led economy in accordance with EPL conditions and EPA requirements.

1.7 PURPOSE

Environmental Resources Management Australia Pty Ltd (ERM) on behalf of the Applicant has prepared this Scoping Report to support the request for Secretary's Environmental Assessment Requirements (SEARs). The SEARs will guide the preparation of an environmental impact statement (EIS) to be developed to support a CSSI DA under Division 5.2 of the EP&A Act.

The Scoping Report has been prepared in accordance with:

- State Significant Infrastructure Guidelines (DPHI, 2024a);
- State Significant Infrastructure Guidelines – Preparing a Scoping Report: Appendix A to the SSI Guidelines (DPIE, 2022a);
- Social Impact Assessment Guidelines for State Significant Projects (DPIE, 2023);
- Cumulative Impact Assessment Guidelines for State Significant Projects (DPIE, 2022b);
and
- Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024b).




Legend

- Project Area
- World Heritage Area
- Marine Park Area
- World Heritage Area

Coordinate System:
GDA 1994 MGA Zone 57
Date: 28/10/2024
Created By: MB
Drawing Size: A3
0 2.5 5Km
1:140,000

1-1 Project Locality

LHI CIP Scoping Report
Client: DCCEEW (NSW) on behalf of LHIB c/o APP Group



2. STRATEGIC CONTEXT

This section identifies the key strategic issues that are relevant to the assessment of the Project. It also describes the key natural or built features of the site and surrounds, existing land use, and any relevant future developments in the area that may affect or be affected by the Project.

2.1 STRATEGIC JUSTIFICATION

2.1.1 CONVENTION CONCERNING THE PROTECTION OF THE WORLD CULTURAL AND NATURAL HERITAGE

The *Convention Concerning the Protection of the World Cultural and Natural Heritage* (World Heritage Convention) was adopted by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in 1972. Australia was one of the first countries to ratify the World Heritage Convention, doing so in 1974, and the Convention came into force in 1975.

The World Heritage Convention outlines the concepts of nature conservation and the preservation of cultural properties. It recognises how people interact with nature and the need to preserve and balance this relationship. The overarching aim of the Convention is to facilitate cooperation among nations protect heritage across the world that is of such 'outstanding universal value' that its conservation is critical to current and future generations.

Australia, as a signatory to the Convention, has agreed to 'identify, protect and conserve World Heritage Properties in areas under its jurisdiction. To meet Australia's obligations under the convention, management measures must be implemented for each Australian property on the World Heritage List. The key management objectives for World Heritage properties form part of Australia's obligations under the Convention, and include to:

- Protect, conserve and present the World Heritage values of the property
- Integrate the protection of the area into a comprehensive planning program
- Give the property a function in the life of the Australian community
- Strengthen appreciation and respect of the property's World Heritage values, particularly through educational and information programs
- Keep the community broadly informed about the condition of the World Heritage values of the property
- Take appropriate scientific, technical, legal, administrative and financial measures necessary for achieving the foregoing objectives.

Lord Howe Island was inscribed on the World Heritage List in 1982 as a 'remarkable example of isolated oceanic islands, born of volcanic activity more than 2,000 m under the sea, these islands boast a spectacular topography and are home to numerous endemic species, especially birds'. This is discussed further in **Section 6.2**. Article 6 of the Convention obliges signatories to integrate the protection of heritage into developments. The Lord Howe Island CIP aims to protect the values for which Lord Howe Island was inscribed on the World Heritage List.

2.1.2 RELEVANT AUSTRALIAN AND NSW GOVERNMENT STRATEGIC CONTEXT

The Project aligns with relevant global, national, state and local strategies, policies and plans as detailed in Table 2-1.

TABLE 2-1 SUMMARY OF STRATEGIC JUSTIFICATIONS FOR THE PROJECT

| Strategy, Policy or Plan | Description | Project Alignment |
|---|---|---|
| Strategic Plan for the Lord Howe Island Group World Heritage Property (LHI Board, 2010) | <p>The <i>Strategic Plan for the Lord Howe Island Group World Heritage Property</i> was established to guide the coordinated management of LHI's unique environmental and cultural values. The plan provides a framework for maintaining and enhancing the World Heritage status of Lord Howe Island and is implemented by the Lord Howe Island Board along with relevant NSW and Australian government agencies.</p> <p>Key priorities of the plan include:</p> <ul style="list-style-type: none"> • Conservation of biodiversity; • Cultural and environmental heritage management; • Visitor and tourism management; • Marine protection; and • Improving visitor experience. | The Project will contribute to maintaining and enhancing the World Heritage status of LHI for current and future generations through enhancing biosecurity and waste management and providing a new marine freight service and associated infrastructure that will minimise the risk of freight vessel related impacts to the marine environment. |
| Lord Howe Island Biosecurity Strategy 2022-2024 (LHI Board, 2023) | <p>This <i>Lord Howe Island Biosecurity Strategy 2022-2024</i> seeks to protect the unique environment of Lord Howe Island by mitigating the risk of invasive species introduction. Its primary objectives are to reduce the chances of new non-native species being introduced, ensure early detection of any incursions, and minimise the impact of existing invasive species on the biodiversity, community, and economy of LHI.</p> <p>The strategy is implemented through quarantine measures, surveillance, and response activities, focusing on preventing pests and diseases from entering LHI.</p> | <p>The Project includes new, dedicated biosecurity infrastructure on LHI. The facility will have enhanced biosecurity surveillance and detection capabilities to facilitate biosecurity protocols for pre-arrival, transit, and post-arrival quarantine.</p> <p>The aim of this facility is to provide Lord Howe Island with best-practice, modern biosecurity measures that can minimise the risk of incursions.</p> |
| Lord Howe Island Biodiversity Management Plan (DECC, 2007) | <p>This <i>Lord Howe Island Biodiversity Management Plan</i> adopts a multispecies, threat-based approach to address the management of threatened species and ecological communities on LHI.</p> <p>Key threats to the unique biodiversity of LHI include invasive species, habitat loss, and climate change impacts. The plan outlines targeted recovery actions, habitat restoration, and long-term monitoring to maintain the ecological integrity of LHI and support its World Heritage status.</p> | The Project is being designed to avoid or minimise impacts to the Islands biodiversity values and includes new biosecurity infrastructure and procedures to manage invasive species risk. |

| Strategy, Policy or Plan | Description | Project Alignment |
|---|---|--|
| Australian World Heritage Management Principles | <p>Schedule 5 of the <i>Environment Protection and Biodiversity Conservation Regulations 2000</i> (EPBC Regulations) defines the principles in managing World Heritage sites within Australia. The principles emphasise sustainable management and align with articles of the World Heritage Convention.</p> <p>Key elements include:</p> <ul style="list-style-type: none"> • Conservation and management – ensuring the long-term conservation of natural and cultural values of World Heritage properties; • Environmental impact – preventing actions that would adversely affect these properties and considering the impact of any proposed developments; • Community involvement – promoting the involvement of local communities and other stakeholders in the protection and management processes; and • Integration with planning frameworks – aligning World Heritage property management with broader planning and environmental frameworks at local, state, and national levels. | <p>The Project will comply with the EPBC Regulations principles in which Australian World Heritage sites are to be managed. The Project is being designed to avoid and minimise impacts to world heritage values, during both construction and operation. This includes avoiding and minimising impacts to significant native vegetation, minimising risks from waste management, and minimising biosecurity risk.</p> <p>Approval for the Project will need to be obtained from the Australian Government as well as NSW Government. The EIS will be required to assess and demonstrate avoidance of impacts to matters protected under the EPBC Act (see Section 4.3.1).</p> |
| Managing Natural World Heritage (UNESCO, 2012), Managing Cultural World Heritage (UNESCO, 2013) | <p>The <i>Managing Natural/Cultural World Heritage</i> provides a practical resource for jurisdictions that are responsible for the management of World Heritage properties.</p> <p>The guidelines for <i>Managing Natural World Heritage</i> emphasises the integration of World Heritage concepts into World Heritage property management and offers practical recommendations for enhancing conservation efforts.</p> <p>The guidelines for <i>Managing Cultural World Heritage</i> fosters the integration of heritage management with social, economic, and environmental considerations by promoting sustainable practices that respect the unique character and significance of each site.</p> | <p>The Project is being designed to avoid and minimise impacts to world heritage values, natural and cultural. This includes avoiding and minimising impacts to significant native vegetation, minimising risks from waste management, and minimising biosecurity risk.</p> |
| Operational Plan for the Lord Howe Island Marine Park (Marine Parks Authority, 2004) | <p>This <i>Operational Plan for the Lord Howe Island Marine Park</i> outlines key objectives for managing the LHI marine park, including conservation of marine biodiversity, maintaining ecological processes, providing for sustainable use, and promoting public understanding and appreciation.</p> | <p>The Project will contribute to the plan's objectives during construction and operation to minimise impacts to the marine environment while enforcing biosecurity protocols to protect the unique marine</p> |

| Strategy, Policy or Plan | Description | Project Alignment |
|--|---|--|
| | The plan includes zoning regulations that protect important natural and cultural values of the LHI marine environment while allowing recreational activities and research. It also establishes restrictions to control human impact on the marine ecosystem, including visitor limits and activity-specific guidelines. | ecosystem of LHI. The marine infrastructure will be designed to avoid or minimise impacts to the marine environment and to facilitate safer vessel operations that will also minimise risk to the marine environment. |
| Lord Howe Island Local Environmental Plan 2010 (LHI LEP) | The LHI Local Environmental Plan (LEP) 2021 outlines requirements for development restrictions and the development control plan (DCP), dwelling limits and environmental controls such as the Significant Native Vegetation Map and Foreshore Building Line Map. The LHI LEP is unique in that NSW State Environmental Planning Policies (SEPPs) do not apply and development is administered solely by the LHIB. The LHI LEP and associated Development Control Plans (DCPs) ensure that any development on LHI is carefully managed to safeguard its world heritage values and ecological integrity. DCPs do not apply to SSI projects. | The Project will consider the development restrictions specified within the Lord Howe Island LEP; however, as SSI/CSSI project-specific SEARs will be issued to guide the development of the EIS. The SEARs are likely to cover relevant provisions of the Lord Howe Island LEP and DCP but will streamline the development pathway. Notwithstanding, the Project will maintain ongoing consultation with the LHIB during construction and operation. |
| State Outcomes Statement Overview (2022-2023) from the NSW Budget Paper No. 2 (NSW Government, 2022) | The State Outcomes articulate the primary purpose for which public resources are invested. These are goals and priorities that the Government is seeking to achieve across all its activities. | The Project contributes to State Outcome 'Connecting communities to resilient and sustainable local environments and heritage' by providing new infrastructure that will facilitate access to LHI and avoid or minimise impacts to the Islands environment and heritage. |
| NSW Biosecurity and Food Safety Strategy 2022-2030 (DPI, 2022) | The purpose of the <i>NSW Biosecurity and Food Safety Strategy</i> is to set a clear vision for biosecurity and food safety in NSW, map strategic objectives for government, industry, and the community and mark key activities to guide prioritisation, decision-making and actions at the State level. | The Project includes new, state-of-the-art biosecurity infrastructure that will minimise biosecurity risk to LHI. |
| Lord Howe Island Community Strategic Plan 2024-2034 (LHI Board, 2024a) | The LHI Community Strategic Plan 2024-2034 is based on community feedback and provides a long-term vision for LHI over the next 10 years. The Plan will act as our guiding strategic document for LHIB projects and for advocacy, partnerships and delivering services. | The Project supports priority themes 2, 4 and 7 of the plan by providing infrastructure that will protect the island culture, environment and heritage. |

2.2 SITE SETTING AND FEATURES

2.2.1 BIOGEOGRAPHY

Lord Howe Island is part of the Lord Howe Island Group, a collection of several islands, coral reefs and marine waters which cover about 146,300 ha. The Lord Howe Island Group falls within the NSW Pacific Subtropical Islands Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and Lord Howe Island subregion where it represents a unique oceanic and tropical landscape. The Pacific Subtropical Islands IBRA is characterised by a mild subtropical climate that supports biodiversity that is unique to the Lord Howe Island Group.

The unique biodiversity of Lord Howe Island Group is due to its isolation from mainland Australia and its relatively new geological origin, e.g., a shield volcano that was created about 7 million years ago. Lord Howe Island Group supports numerous endemic species such as the Lord Howe Island Phasmid (*Dryococelus australis*) and Lord Howe Island Woodhen (*Gallirallus sylvestris*); both on the brink of extinction and now examples of successful conservation efforts.

On Lord Howe Island, the topography varies greatly between its volcanic peaks, dense tropical forests, sheltered beaches and the lagoon. Lord Howe Island lagoon is semi-enclosed by a coral barrier reef - the southernmost true coral barrier reef in the world – and hosts several endemic species include McCulloch's Anemonefish (*Amphiprion mccullochi*) and the Three-striped Butterflyfish (*Chaetodon tricinctus*).

2.2.2 NATURAL AND CULTURAL HERITAGE

The Lord Howe Island Group was inscribed as a World Heritage property in 1982 due to it being an example of 'isolated oceanic islands, born of volcanic activity more than 2,000 m under the sea, these islands boast a spectacular topography and are home to numerous endemic species, especially birds'. Figure 1-1 shows the boundary of the World Heritage property.

Lord Howe Island has over 240 species of native plants, with over 50% of these being endemic to the Island. Over 200 species of birds and 1,600 insect species are also found on the Island and surrounding islets. This includes the world's rarest insect, the Lord Howe Island Phasmid (*Dryococelus australis*) which are only found on Ball's Pyramid (within the Lord Howe Island Group) and in captivity.

As a World Heritage property, the Lord Howe Island Group is a protected matter under the *Environment Protection and Biodiversity Act 1999* (EPBC Act). The Lord Howe Island Group is also recorded on the National Heritage List (ID 105694) under the EPBC Act; on the State Heritage Register (ID 00970) under the NSW *Heritage Act 1977*, and its 'Maritime Environs' are recorded on the Register of the National Estate (ID 201) which is a non-statutory archive.

There are no records of indigenous settlement of Lord Howe Island prior to its colonisation in 1834 by NSW settlers. As such, the Island also represents a unique global example of an environ that has no evidence of human history prior to European settlement.

2.2.3 MARINE ENVIRONMENT

All waters within three nautical miles of LHI are declared as the 'Lord Howe Island Marine Park', which covers an area of about 465 km² and includes the Lord Howe Island lagoon (refer Figure 1-1). Beyond three nautical miles, about 110,126 km² of ocean is declared as the 'Lord Howe Commonwealth Marine Reserve'.

The Lord Howe Island Marine Park comprises a variety of habitats and biological features and geological process that formed the Lord Howe Island Group also produced diverse and unique geomorphology. These habitats include estuarine ecosystems, lagoon ecosystems including the fringing coral reef, intertidal and shallow subtidal ecosystems, shelf ecosystems and pelagic ecosystems.

The reef within the Lord Howe Island Marine Park is believed to be about 120,000 years old, and through accretion has developed into the active coral reef fringes that exist today. This existing fringing reef and fossil records of coral growth represent the southernmost records of global coral reef distribution. The Lord Howe Island lagoon supports over 100 species of Scleractinian (i.e., hard) corals species, and within the broader Lord Howe Island Marine Park there are mesophotic coral reefs that have the potential to act as deep reef refugia under a changing climate (Geoscience Australia, 2022).

The Lord Howe Island Marine Park also supports myriad fish species, with over 500 species having been identified to date. Tropical species with broad distribution ranges comprise most of these species; however, temperate species dominate the species biomass. Other prominent species groups within the Lord Howe Island Marine Park include macrophytes, including two species of seagrass that form meadows in the lagoon, and non-coral marine invertebrates, many of which are endemic to Lord Howe Island Marine Park (Geoscience Australia, 2022).

Within Lord Howe Island lagoon, water depths are relatively shallow ranging from 1 to 3 metres in most areas (NSW Maritime, 2008). Deeper channels between the reefs are up to 10 metres deep and connect the lagoon with the Tasman Sea via the North Passage, Blackburn Island Passage, Erscotts Passage and Man of War Passage. Beyond these passages and reef structures, water depths quickly drop to over 25 metres deep and are contiguous with the Tasman Sea.

2.2.4 LAND USE AND ACCESS

Lord Howe Island has a permanent population of about 445 (ABS, 2021). The central low-lying lands support most of the population and essential services such as a school, post office, medical clinic and police station. Small-scale agricultural production also occurs in this area and includes fruit and vegetable crops and poultry farming. Figure 2-1 shows the land zoning on Lord Howe Island.

The road network is largely limited to this low-lying area. This road network has a speed limit of 25 km/hr to facilitate use by motorists, cyclists and pedestrians. Marine freight access to Lord Howe Island is facilitated by the jetty on Lagoon Road adjacent to Signal Point. Entry to the Lord Howe Island Lagoon for the MV Island Trader occurs via the North Passage. The Lord Howe Island Airport is located at Old Lagoon Road and comprises a Code 2C runway that is 888 m in length.

Tourism is the main industry on Lord Howe Island with over 16,000 people visiting each year, drawn to the Islands unique natural setting and outdoor activities. The tourism economy generates significant annual revenue for the local and NSW economy. Lord Howe Island is open to visitors year-round but is capped at 400 people at any one time to protect the Island's unique environmental and cultural heritage values.

2.3 PROJECT BENEFITS

The benefits of the Project include providing vital infrastructure and services to:

- Maintain the tourism economy of Lord Howe Island and subsequently the NSW Government;
- Facilitate access to the World Heritage property and associated marine park;
- Reduce biosecurity risk by providing upgrades to the marine infrastructure, a new marine freight vessel, and modern Island biosecurity infrastructure;
- Minimising short- and long-term impacts to the marine environment by providing marine infrastructure that is constructed to avoid sensitive habitats and that can facilitate safe access and unloading of the new marine freight vessel;
- Replace the Lord Howe Island marine freight service, which is essential to the functioning of the Island, including long-term procurement of this service to ensure quality of life for LHI's residents and tourists; and
- Deliver a fully functioning waste management facility on the Island to support both day-to-day operations and the Island's tourism-led economy in accordance with EPL conditions.

2.4 OTHER MATTERS

2.4.1 HAZARDS AND RISKS

The Project will need to consider several risks and hazards including significant weather events, social impact, contamination, coastal hazards and climate change, and biosecurity. These will be addressed, as relevant, in technical assessments prepared to inform the EIS. Relevant findings will be used to inform the design and construction of infrastructure for the Project.

2.4.2 CUMULATIVE IMPACTS



No other state significant developments have been identified as occurring or likely to occur in the vicinity of the Project.

2.4.3 AGREEMENTS



The Applicant has not entered any voluntary planning agreements, negotiated agreements with landowners, nor proposes any benefit-sharing schemes related to the Project.



Legend

-  Lord Howe Island Airport
-  Existing Jetty
-  Existing Waste Management Facility
-  Cadastre (Lot)
-  Project Area

Land Zoning

-  Zone No. 1 - Rural
-  Zone No. 2 - Settlement
-  Zone No. 5 - Special Uses
-  Zone No. 6 - Recreation
-  Zone No. 7 - Environment Protection
-  Zone No. 8 - Permanent Park Reserve
-  Zone No. 9 - Marine Park

Coordinate System:
GDA 1994 MGA Zone 57


Date: 19/11/2024

Created By: MB

Drawing Size: A3

0 250 500m


1:15,000



2-1 Land Zoning

LHI CIP Scoping Report

Client: DCCEW (NSW) on behalf of LHIB c/o APP Group



3. THE PROJECT

This section provides a preliminary description of the Project and its indicative design, layout and features. It also describes the Project's preliminary disturbance footprint and indicative construction schedule.

3.1 PROJECT AREA

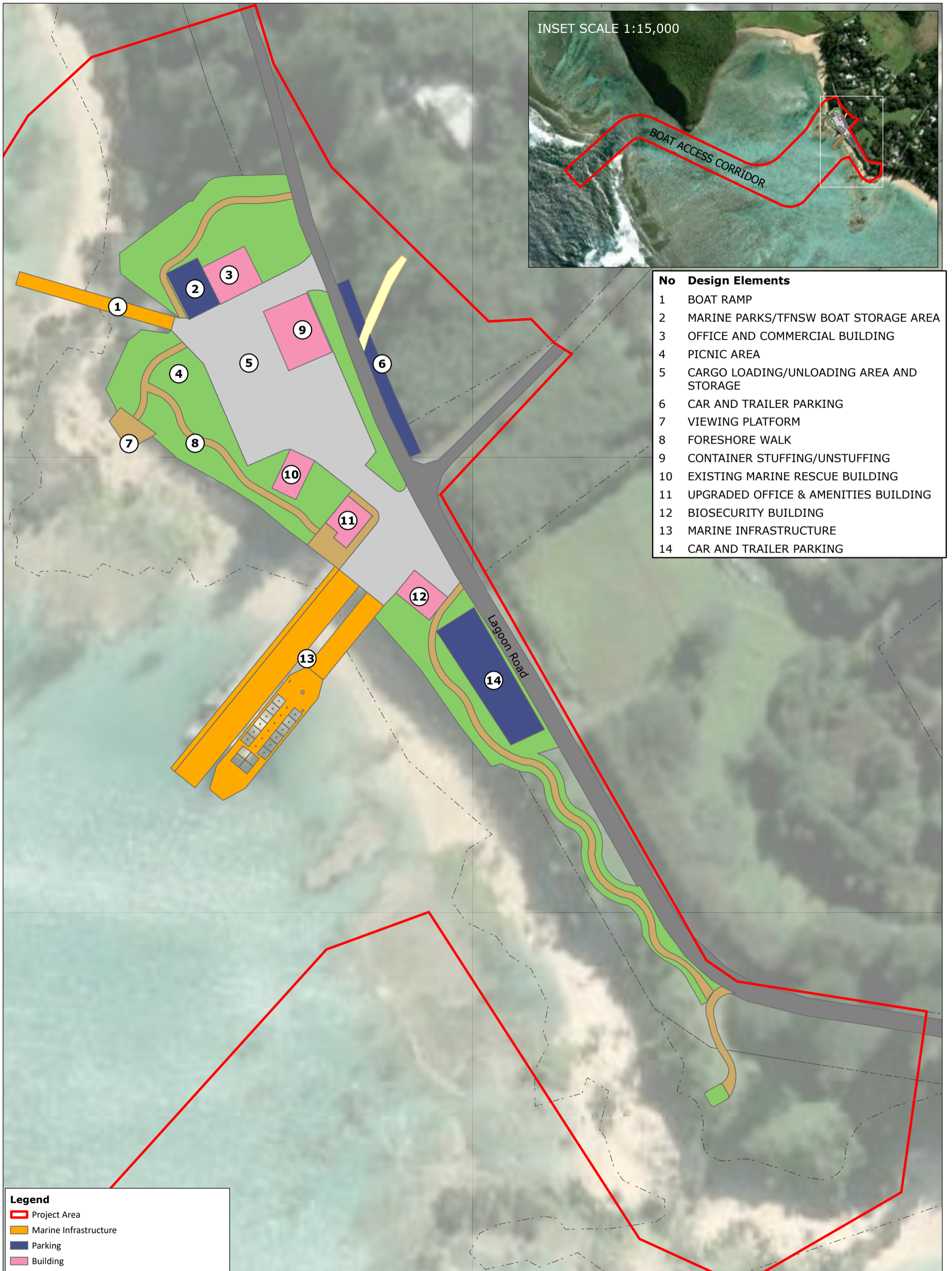
The Project Area comprises two sections – an approximate area of 21.1 ha on the north that will accommodate the marine infrastructure and biosecurity infrastructure, and an approximate area of 15.5 ha in the south comprising the existing waste management facility.

3.2 PROJECT DESCRIPTION

The Project has three core components:

1. Marine infrastructure and freight service operations, including:
 - Operation of a new marine freight service to the Island;
 - New and/or upgraded marine infrastructure (e.g., jetty and landing facilities) and public amenities (e.g. walking tracks, viewing platform and parking) at northern end of Lord Howe Island lagoon;
 - Upgraded and new access roads and staging areas to facilitate safe movement of cargo from the vessel to the new biosecurity infrastructure to be located adjacent to the marine infrastructure;
2. Waste management facility, including:
 - Relocation and reconfiguration of the organics processing infrastructure to the north of the existing site, and provision of a dedicated facility for organics processing;
 - Construction of a waste receival area/shed to facilitate community waste disposal;
 - Construction of a dedicated general waste storage facility, and facilities/areas to adequately store liquid and hazardous wastes;
 - Construction of a new materials recycling facility (MRF) and new working platform to provide secure, safe operating conditions;
 - Perimeter fencing, security and restricted access upgrades;
3. Biosecurity infrastructure, including:
 - Construction of new on-island biosecurity infrastructure with quarantine facility and cargo laydown area for receipt and distribution of cargo; and
 - Dedicated kennel for detection dogs housed near the waste management facility.

Figure 3-1 and Figure 3-2 show the Project Area and layout.



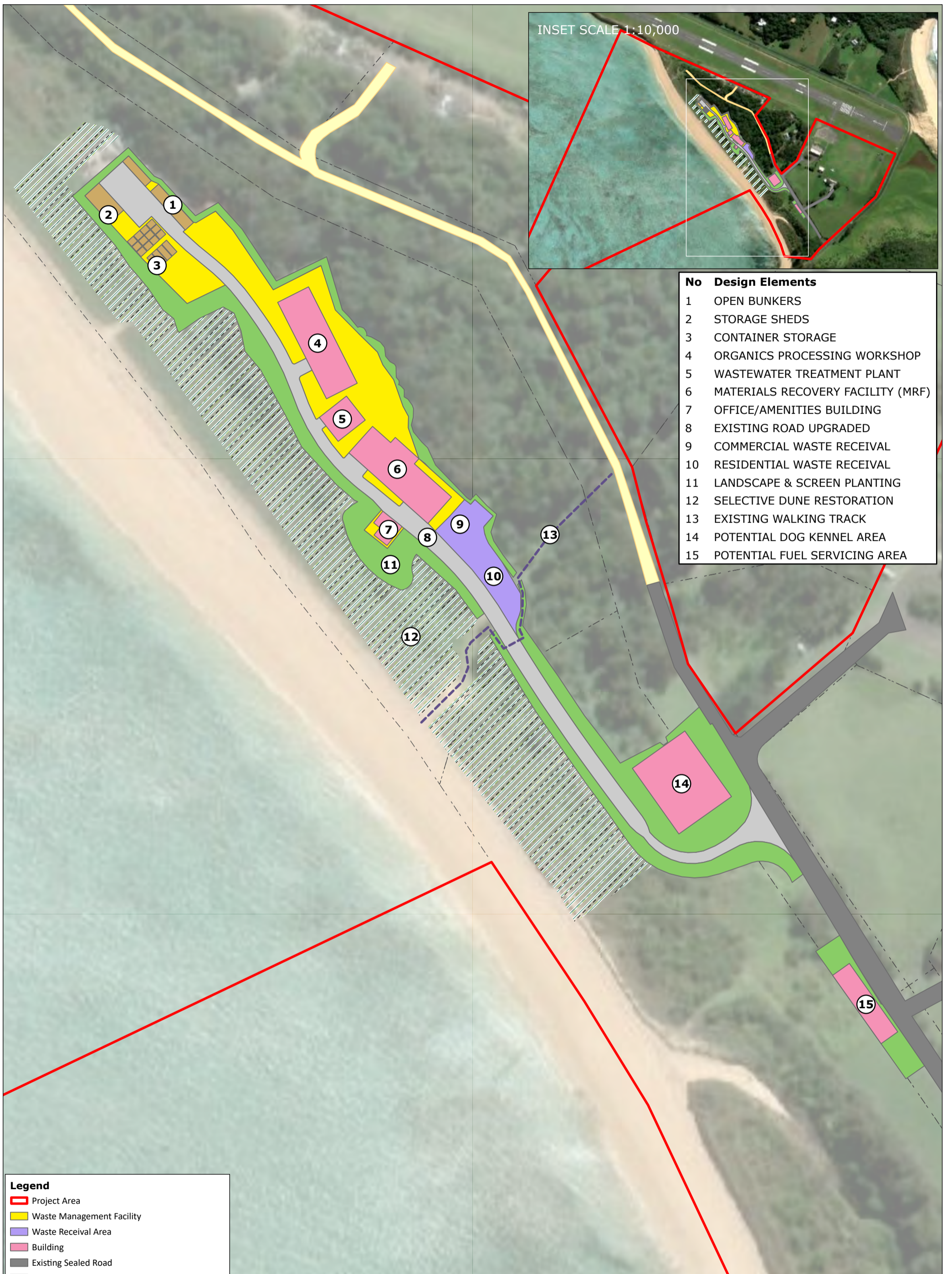
| No | Design Elements |
|----|--|
| 1 | BOAT RAMP |
| 2 | MARINE PARKS/TFNSW BOAT STORAGE AREA |
| 3 | OFFICE AND COMMERCIAL BUILDING |
| 4 | PICNIC AREA |
| 5 | CARGO LOADING/UNLOADING AREA AND STORAGE |
| 6 | CAR AND TRAILER PARKING |
| 7 | VIEWING PLATFORM |
| 8 | FORESHORE WALK |
| 9 | CONTAINER STUFFING/UNSTUFFING |
| 10 | EXISTING MARINE RESCUE BUILDING |
| 11 | UPGRADED OFFICE & AMENITIES BUILDING |
| 12 | BIOSECURITY BUILDING |
| 13 | MARINE INFRASTRUCTURE |
| 14 | CAR AND TRAILER PARKING |

| Legend | |
|--------|--------------------------------------|
| | Project Area |
| | Marine Infrastructure |
| | Parking |
| | Building |
| | Existing Sealed Road |
| | Existing Unsealed Track |
| | Hardstand Area |
| | Proposed Pedestrian Tracks and Decks |
| | Proposed Landscape Area |
| | Cadastre |

Coordinate System:
GDA 1994 MGA Zone 57
Date: 19/11/2024
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0 20 40m 1:1,000

3-1 Project Layout (1 of 2)

LHI CIP Scoping Report
Client: DCCEW (NSW) on behalf of LHIB c/o APP Group



INSET SCALE 1:10,000


| No | Design Elements |
|----|-----------------------------------|
| 1 | OPEN BUNKERS |
| 2 | STORAGE SHEDS |
| 3 | CONTAINER STORAGE |
| 4 | ORGANICS PROCESSING WORKSHOP |
| 5 | WASTEWATER TREATMENT PLANT |
| 6 | MATERIALS RECOVERY FACILITY (MRF) |
| 7 | OFFICE/AMENITIES BUILDING |
| 8 | EXISTING ROAD UPGRADED |
| 9 | COMMERCIAL WASTE RECEIVAL |
| 10 | RESIDENTIAL WASTE RECEIVAL |
| 11 | LANDSCAPE & SCREEN PLANTING |
| 12 | SELECTIVE DUNE RESTORATION |
| 13 | EXISTING WALKING TRACK |
| 14 | POTENTIAL DOG KENNEL AREA |
| 15 | POTENTIAL FUEL SERVICING AREA |

| Legend | |
|--------|--------------------------------|
| | Project Area |
| | Waste Management Facility |
| | Waste Receiving Area |
| | Building |
| | Existing Sealed Road |
| | Proposed Road |
| | Existing Unsealed Track |
| | Open Bunkers and Storage Sheds |
| | Proposed Landscape Area |
| | Selective Dune Restoration |
| | Cadastre |

Coordinate System:
GDA 1994 MGA Zone 57
Date: 19/11/2024
Created By: MB
Drawing Size: A3
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3-2 Project Layout (2 of 2)

LHI CIP Scoping Report
Client: DCCEW (NSW) on behalf of LHIB c/o APP Group



3.2.1 MARINE INFRASTRUCTURE

New or upgraded marine infrastructure would be in the vicinity of the existing jetty at the northern end of the Lord Howe Island lagoon. The marine infrastructure will include either an upgrade to the existing jetty or an upgrade to the existing jetty and new piled marine infrastructure (e.g., barge ramp) and new or upgraded access to facilitate cargo loading and unloading. The access will be integrated with the new biosecurity infrastructure to allow safe transport of cargo from the vessel to the biosecurity infrastructure for inspection prior to cargo being released. Additionally, the marine infrastructure will consider upgrades to the existing Wilsons landing boat ramp and options for small vessel retrieval.

New office and commercial buildings will be constructed in the vicinity of the existing jetty to facilitate marine infrastructure operations. These buildings will headquarter divisions of Transport for NSW, Marine Parks Authority and Marine Rescue NSW on the Island. The existing office and amenities building directly north of the jetty will be maintained and/or upgraded. Public access will be incorporated into the new/upgraded marine infrastructure including for pedestrians and vehicles. Foreshore walking tracks and decks are proposed north and south of the jetty including a viewing platform, picnic area and associated landscaping. The existing boat ramp for smaller vessels north of the jetty will also be refurbished as part of the upgrades where public access will be maintained. Additional parking spaces for cars and trailers will be provided in this area and along Lagoon Road.

The upgraded existing jetty and barge ramp structure (if required) will be constructed on piles, elevating the structure(s) above the beach profile which minimises the impact of the structure(s) on the adjacent shoreline.

The construction of the upgrade to the existing jetty will generally comprise:

- Reuse of the existing piles where reuse can occur;
- Precast concrete headstocks;
- Precast concrete decking;
- Mooring and breasting piles; and
- Associated mooring furniture.

The construction of the piled barge ramp structure (if required) will generally comprise:

- Piles;
- Precast concrete headstocks;
- Precast concrete planks;
- Mooring and breasting piles; and
- An upgraded rock revetment wall

If required to achieved increased operability for cargo loading and unloading efficiency, the piled barge ramp structure may be changed to facilitate a low profile linkspan arrangement.

3.2.2 WASTE MANAGEMENT FACILITY

The Project will include upgrades to the existing WMF to provide a fully functioning waste reception and processing facility that services the needs of the residents of Lord Howe Island. The upgraded WMF will include new facilities for waste storage, materials recovery and recycling, organics processing and wastewater treatment.

The WMF will be fully fenced and secured. Access by the public will be restricted to fixed hours of operation. The design of the facility will facilitate the ordered, secure, covered storage of waste, with hardstands constructed of paved concrete or asphalt. An office/amenities building will be located adjacent to the public limit of the WMF.

The waste-receival shed will comprise a dedicated, one-way, drive-through waste drop-off facility for commercial and residential sources with clearly demarcated areas to segregate waste types (e.g., mixed-recyclables, paper/cardboard/ landfill waste, food waste, etc.). Proposed equipment will include bin-lifters and capture bins. The public will not have access to the WMF beyond the waste-receival shed.

The WMF will include open bunkers and dedicated storage sheds to hold baled waste material and waste containers awaiting shipment. These areas will be bunded to contain any potential spills and located at the north-westernmost end of the WMF furthest from public access.

A MRF will be constructed within the WMF. The MRF will include a new working platform to provide secure, safe operating conditions. This equipment would consist of hoppers, conveyors, picking station, sorting conveyor/trommel and glass crusher. The MRF will also house a baler for steel and aluminum cans.

A new, dedicated wastewater treatment plant will be constructed within the WMF to service the Island. The current service of wastewater collection and treatment is carried out by each individual premises and removed via septic trucks to be disposed at the existing WMF. The new treatment plant will continue to provide this service to the Island and commercial premises will be built with additional capacity. The plant will include dedicated settling and aeration tanks, clarifiers, disinfection equipment and sludge thickening, where samples can be taken for analysis to meet water quality criteria prior to discharge within approved irrigation areas.

A dedicated organics processing workshop will be included in the WMF. This facility will include specialised equipment to mechanically and biologically break down organic materials and include curing and storage areas for final products. The final products will be managed for odours, leachates and quality control in accordance with the EPL.

Between the new WMF components and the Lord Howe Island lagoon foreshore, dune restoration may comprise part of remediation works in selected areas. These areas will be investigated further in the EIS.

3.2.3 BIOSECURITY INFRASTRUCTURE

New, modern biosecurity infrastructure will be constructed near the marine infrastructure to facilitate the Island's biosecurity and quarantine requirements to screen incoming and outgoing materials. The biosecurity infrastructure will include a dedicated biosecurity inspection shed and adjoining quarantine facility, container unstuffing, storage and distribution areas. The facility will be secured as a biosecurity zone, with adequate fencing, bunding and containment measures to minimise biosecurity risk to the Island.

Biosecurity infrastructure will be designed to facilitate the inspection and movement of cargo so that the unloading of the marine freight vessel is not unnecessarily delayed. The biosecurity infrastructure will include multiple inspection capabilities for example, autonomous surveillance, detection dogs, and visual inspections. This should both reduce biosecurity risk and speed up biosecurity inspection times. In addition, dog kennelling for approximately 6 dogs will be constructed adjacent to the WMF.

3.3 CONSTRUCTION

Construction of the Project is expected to occur over a period of approximately 12 months. The construction methodology will be developed as the design matures and materials delivery options are refined; however, it will likely comprise:

- Enabling works including ground investigations and establishing construction site compounds;
- Earthworks and removal of spoil from the Project Area (if required);
- Establishment of hardstand areas, where required;
- Construction of infrastructure;
- Environmental management and pollution control measures; and
- Utilities connections, landscaping and finishing works.

3.4 OPERATION

Upon completion of construction, the new/upgraded marine infrastructure, WMF and biosecurity infrastructure will operate continuously and in tandem to facilitate the Project and broader Lord Howe Island CIP objectives.

Operation of the Project components is likely to involve:

- Cargo unloading with direct access to the adjoining biosecurity infrastructure to facilitate continuous flow of cargo from the vessel, through the biosecurity inspection shed, to the cargo unstuffing facility, and onward for distribution to the Island;
- Biosecurity inspection of incoming cargo, with designated quarantine room and protocols enacted as necessary to contain any identified biosecurity risks; and
- Receiving, processing, and storage of waste in a manner that minimises environmental and human health risk and facilitates the efficient movement of waste to the marine infrastructure for removal from the Island.

The operation of the Project would be governed by environmental safeguards, management plans and protocols as necessary to ensure Project objectives are being met. These plans will be discussed further in the EIS.

3.5 ALTERNATIVES CONSIDERED

Alternatives to the Project have been considered, including a 'Do Nothing' approach, and alternative options to meet the needs of the Lord Howe Island population. These are discussed below.

3.5.1 DO NOTHING

If the Project does not proceed, Lord Howe Island would not be able to receive the goods and services that the Island residents and tourists require as the current marine freight vessel will cease operating in 2026. Fuel for the LHI Airport would not be able to be delivered and waste would not be able to be removed from the island.

If the Project does not proceed the WMF would continue to operate in breach of the facilities EPL, increasing the risk of environmental and/or human health impacts. The biosecurity infrastructure would not be constructed and biosecurity risk to the island would not be minimised.

The do-nothing option is not viable. The Island relies on a marine freight service, and effective waste and biosecurity management.

3.5.2 OTHER OPTIONS CONSIDERED

The Lord Howe Island CIP was informed by a business case prepared for each of the core components, including:

- Lord Howe Island Biosecurity Strategic Business Case (DPE, 2022);
- Lord Howe Island Board: Marine Infrastructure Detailed Business Case (DPE, 2023a); and
- Lord Howe Island Board: Waste Management Facility Detailed Business Case (DPE, 2023b).

Each business case explored the need for change, cost benefit, and financial analysis to determine the preferred option for the three components. Several options were assessed against these criteria to determine the 'preferred option'.

Multi-criteria analysis (MCA) concluded that the proposed CIP is financially viable, and this Project will contribute to its enactment.

3.5.3 SITE ALTERNATIVES

Two key options were considered for the location of the marine infrastructure for the Project:

- An upgraded or replacement jetty and associated staging areas at the existing jetty along Lagoon Road and Ocean View Drive (North Investigation Area); and
- A new jetty and associated staging areas adjacent to the existing WMF along the Prince Henry William Bay foreshore (South Investigation Area).

A summary of the options evaluation of each location is provided in Table 3-1.

TABLE 3-1 OPTIONS ANALYSIS OF THE NORTH AND SOUTH INVESTIGATION AREAS

| Option | Evaluation | |
|---------------------------------|---|--|
| | Pros | Cons |
| North Investigation Area | <ul style="list-style-type: none"> • Upgrading or replacing the existing jetty would have a relatively low environmental impact as it utilises an already-disturbed area. • The existing location offers ease of integration with current logistics and transport operations. • Proximity to the main settlement and existing road network makes | <ul style="list-style-type: none"> • In proximity to residential, recreation and tourism areas which may cause noise and traffic disruptions during construction and operation. • Distance from the WMF and airport, primary users of the freight service. |

| Option | Evaluation | |
|---------------------------------|---|--|
| | Pros | Cons |
| | <p>this option more suitable for maintaining efficient freight movement along Lagoon Road.</p> <ul style="list-style-type: none"> • Impacts to Significant Native Vegetation can be avoided • Improved recreational and tourism facilities including, improvements to the existing cargo laydown area as a multi-use space, foreshore walk, viewing platform, picnic areas and associated carparking. | |
| South Investigation Area | <ul style="list-style-type: none"> • The location offers a potential advantage in terms of proximity to the WMF, allowing for streamlined waste management and biosecurity procedures. • Less disruption to residential areas as it is further from the main settlement area. | <ul style="list-style-type: none"> • A ramp (vessel receiving structure) in this location would likely be cost prohibitive and visually impactful. • Construction in this previously undeveloped area could pose a high risk to the Lord Howe Island lagoon's marine ecosystem including a new shallow-water vessel passage. • The new location would require extensive environmental assessments and potentially higher mitigation costs. • The new location is further from the main settlement, requiring additional infrastructure for road connectivity and staging areas. • The Lord Howe Island community has previously raised concerns about developing a new area and the potential environmental impact. |

Following assessment of each location and consultation with the key stakeholders and Lord Howe Island community, the North Investigation Area was identified as the preferred option. The preferred option provides benefits including:

- Lower expected environmental impact;
- Existing logistical connections; and
- Lower expected development costs.

4. STATUTORY CONTEXT

4.1 NSW ENVIRONMENTAL PLANNING APPROVALS

4.1.1 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979

The principal environmental planning legislation in NSW is the EP&A Act. The EP&A Act provides a system of environmental planning and assessment for the state and is administered by NSW DPHI. The EP&A Act establishes when and how a development or activity is to be assessed and who is the relevant consent authority. The EP&A Act establishes the framework for Environmental Planning Instruments (EPI), including State Environmental Planning Policies (SEPPs) and Local Environmental Plans (LEPs). The EP&A Act guides development and land use planning within NSW through EPIs. The EP&A Act is further supplemented by the Environmental Planning Assessment Regulation 2021 (EP&A Regulation) which contains key operational provisions for the NSW planning system.

Section 5.12(4) of the EP&A Act provides for the declaration of specified development on specified land as State significant infrastructure. The Minister for Planning can declare development to be CSSI if it is considered essential to the State for economic, environmental or social reasons (Section 5.13 of the EP&A Act). For CSSI projects, the applicant submits an EIS to NSW DPHI, and the proposed development is assessed under Division 5.2 of the EP&A Act. The Minister for Planning is the consent authority. The Applicant has sought to have the Project declared as SSI under section 5.12(4), or CSSI under section 5.13 of the EP&A Act.

The Minister for Planning and Public Spaces has requested [letter dated 28-Sept-2024] that the Department of Planning, Housing and Infrastructure (DPHI) commence SSI/CSSI declaration for the Project. The SSI/CSSI declaration process is ongoing and running in parallel with the assessment process. Any decision made by the Minister for Planning on the outcome of the SSI/CSSI declaration would be made before determination of the Project.

4.1.2 LORD HOWE ISLAND LEP 2010

The Lord Howe Island LEP applies to Lord Howe Island as defined in section 3(1) of the *Lord Howe Island Act 1953*. The "Island" includes Lord Howe Island, all adjacent island and coral reefs within one marine league measured from the low water mark on the coast of Lord Howe Island (i.e., the area within which the Project is proposed). The consent authority for Lord Howe Island LEP is the LHI Board (clause 6, LEP 2010) who ensures compliance with the Lord Howe Island LEP regarding land use and zoning, environmental and heritage regulations.

The aims of the Lord Howe Island LEP include the conservation of the World Heritage values of the Island, the conservation and management of the marine environment, and the protection of threatened species, populations and ecological communities and their habitats (clause 2(2), LEP 2010). In addition, subclause (2)(j) aims to ensure that public utility undertakings are carried out on Lord Howe Island in a manner that minimises any environmental impact on the Island of those undertaking.

As the Project is to be declared CSSI, provisions of the Lord Howe Island LEP will not apply and the Project will instead be assessed under Division 5.2 of the EP&A Act.

4.2 OTHER NSW LEGISLATION

4.2.1 BIODIVERSITY CONSERVATION ACT 2016

The purpose of the *Biodiversity Conservation Act 2016* (BC Act) is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The BC Act establishes a framework for assessing and offsetting biodiversity impacts from proposed development including a biodiversity offsets scheme to provide a transparent, consistent and scientifically based approach to biodiversity assessment and offsetting and a biodiversity assessment method which is intended as a single approach to assessing biodiversity impacts from development that is likely to significantly affect threatened species or ecological communities.

Pursuant to Clause 7.1(2) of the *Biodiversity Conservation Regulations 2017*, the clearing of native vegetation on LHI does not exceed the biodiversity scheme threshold. Therefore, the Biodiversity Offset Scheme under s7.4 of the BC Act does not apply to LHI.

4.2.2 FISHERIES MANAGEMENT ACT 1994

The *Fisheries Management Act 1994* (FM Act) requires permits be obtained for the following activities:

- Dredging or reclamation work (section 201);
- Works that could harm marine vegetation such as mangroves, seagrasses, or other marine vegetation declared by the regulations (section 205);
- Works that could block the passage of fish (section 219).

As the Project will be declared CSSI, permits under section 201, 205 or 219 of the FM Act are not required for (refer section 5.23(1)(b) of EP&A Act).

4.2.3 MARINE ESTATE MANAGEMENT ACT 2014

The *Marine Estate Management Act 2014* (MEM Act) provides for the strategic and integrated management of marine waters, coasts and estuaries and the declaration and management of marine parks and aquatic reserves in NSW.

Lord Howe Island Marine Park was established in February 1999 and covers approximately 465 km². The Lord Howe Island Marine Park boundary extends from the mean high-water mark to the three nautical miles limit of NSW waters.

The Project, as CSSI, will be assessed under Division 5.2 of the EP&A Act by the consent authority (the Minister) for which clause 55(2)(a) of the MEM Act applies:

"A Minister who is a determining authority must not carry out, or grant approval to carry out, an activity within a marine park or an aquatic reserve unless the Minister has—

(a) taken 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”

4.2.4 PROTECTION OF THE ENVIRONMENT OPERATIONS ACT 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) is the primary piece of legislation regulating pollution control and waste disposal in NSW. Schedule 1 of the POEO Act defines scheduled activities for which an EPL is required to carry on scheduled activities.

The current WMF is managed under EPL 10446, issued by the Environmental Protection Authority (EPA) under the POEO Act to the Lord Howe Island Board. It is anticipated that the development will require either a new or an amended EPL to be issued under Schedule 48 of the POEO Act. Under Section 5.23 of the EP&A Act, an EPL cannot be refused and is to be substantially consistent with an SSI approval.

4.3 COMMONWEALTH LEGISLATION

4.3.1 ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBC Act establishes the Australian Government’s role in environmental assessment, biodiversity conservation and the management of protected areas. Under the EPBC Act, a referral to the Commonwealth DCCEEW is required for proposed ‘actions’ that have the potential to significantly impact on any Matters of National Environmental Significance (MNES) or the environment of Commonwealth land (including leased land). The following comprise of MNES under the EPBC Act:

- World heritage properties;
- National heritage places;
- Wetlands of international importance (Ramsar wetlands);
- Nationally listed threatened species and ecological communities;
- Listed migratory species;
- Commonwealth marine areas;
- The Great Barrier Reef Marine Park;
- Nuclear actions (including uranium mining); and
- A water resource, in relation to coal seam gas development and large coal mining development.

A referral will be made to the Australian Government DCCEEW under section 67 of the EPBC Act to determine if the Project is a controlled action and requires EPBC Act approval.

The NSW Assessment Bilateral Agreement (‘Bilateral Agreement’) streamlines the assessment process for major projects that require both Commonwealth and NSW environmental approvals. Under the Bilateral Agreement, the Commonwealth minister can use the NSW process to inform the assessment of the impacts of any eligible action. It is intended that the Project will be assessed under the Bilateral Agreement.

5. COMMUNITY AND STAKEHOLDER ENGAGEMENT

The Applicant recognises that the Lord Howe Island community is both diverse and unique. Engagement with the Lord Howe Island community and stakeholders provides a unique opportunity for the Project to benefit from local insights, anticipate unforeseen issues, and build lasting partnerships that are key to forging a social licence to operate.

Stakeholder and community consultation has and will continue to form an integral part of the development of the Lord Howe Island CIP.

5.1 ENGAGEMENT APPROACH

An Engagement Plan has been developed for the Lord Howe Island CIP (WSP, 2024) (Appendix B). The plan provides the framework for robust and meaningful engagement, consistent with the following principles:

- **Coordinated** – to provide a clear and consistent approach to communication and engagement;
- **Inclusive** – to support participation by diverse stakeholders and community members in the engagement program;
- **Informative** – to provide the community and stakeholders with relevant information about the Lord Howe Island CIP and related master plan, while acknowledging the value of local knowledge; and
- **Transparent** - to build trust and confidence in the Program and decision making by National Parks & Wildlife Service and the Lord Howe Island Board, clearly acknowledging the parameters of the engagement process and ensuring that participants are aware of the aspects of the Program that can / cannot be influenced by their feedback.

The Engagement Plan complies with NSW Government consultative requirements under relevant planning instruments and guidelines, including:

- Undertaking Engagement Guidelines for State Significant Projects (DPHI, 2024b);
- State Significant Infrastructure Guidelines (DPHI, 2024a); and
- Social Impact Assessment Guideline (DPIE, 2023).

The *International Association of Public Participation (IAP2) Quality Assurance Standard* has also been considered, being the engagement industry best-practice guideline.

5.2 COMMUNICATION AND ENGAGEMENT OBJECTIVES AND OUTCOMES

The Applicant is committed to robust engagement to enable stakeholders and community members to contribute to the Lord Howe Island CIP effectively and actively, and to inform the master plan and project design. The objectives of the Engagement Plan are to:

- Establish the foundation for genuine engagement and collaboration with community members and stakeholders on the Lord Howe Island CIP;
- Set out a consistent and coordinated approach to stakeholder and community engagement, including identifying key stakeholders, methods of engagement, risks and mitigation measures and opportunities to support successful delivery of the Lord Howe Island CIP;

- Ensure key internal and external project stakeholders and community members have opportunities to participate in the Lord Howe Island CIP engagement, including the Program Partners, governance bodies (including the Community Consultation Group and Government Stakeholder Consultation Group), Lord Howe Island community, transport, cargo, supply and mail providers, government departments and agencies, elected representatives, business and tourism industries, trading corporations and contractors, industry and associations, special interest groups and visitors; and
- Identify and manage potential stakeholder and community issues effectively and promptly.

The outcomes of the engagement process will be used to inform future directions of the Lord Howe Island CIP and will seek to:

- Encourage participation and attract feedback from diverse members of the community and stakeholder groups;
- Explore a series of proposals and concepts to inform the Lord Howe Island CIP and related master plan;
- Respond to questions that community members and stakeholders raise in response to the proposals and concepts; and
- Bring stakeholders and community members on the journey to enable Lord Howe Island to reach its full potential as both a great place to live and a sustainable tourism destination.

5.3 STAKEHOLDERS

The Applicant has identified relevant stakeholders who may be affected by or have interest in the Project (Table 5-1). This list will be updated as necessary as the project progresses.

TABLE 5-1 IDENTIFIED STAKEHOLDER

| Stakeholder Group | Stakeholders | Relevance to LHI CIP | Engagement Level |
|-----------------------------------|---|--|--|
| Program Partners | <ul style="list-style-type: none"> • DEECCW • NPWS • LHIB staff • LHI Board Members | Have direct accountability for the development and implementation of marine infrastructure and environmental management programs on the island. | <ul style="list-style-type: none"> • Collaborate and empower each other. • Collaborate in the development and dissemination of communication and engagement materials and approaches |
| Lord Howe Island Community | <ul style="list-style-type: none"> • Community Consultation Group • Residents • Lord Howe Island Tourism Association (LHITA) • Leaseholders • Local Businesses • Tour Operators • Lodge/Accommodation /Hospitality Operators | <ul style="list-style-type: none"> • Local community members and business owners often participate, or are impacted by, the implementation of biosecurity programs on the island. • Community members also have a general biosecurity duty, as | <ul style="list-style-type: none"> • Inform of legislation • Involve and consult with stakeholders on projects and initiatives where their participation and support is |

| Stakeholder Group | Stakeholders | Relevance to LHI CIP | Engagement Level |
|---|--|--|---|
| | <ul style="list-style-type: none"> Scientific researchers Lord Howe Island Board Staff | <p>outlined in the NSW <i>Biosecurity Act 2015</i>.</p> <ul style="list-style-type: none"> Local community members and business owners are directly impacted by the waste management practices on the island. Local community members and business owners are directly impacted by the Marine Freight Service to LHI. | <p>integral to success</p> |
| Transport, cargo, suppliers and mail providers | <ul style="list-style-type: none"> Eastern Air Services Qantas Skytrans Australia Post Startrack Courier Companies Air Services Australia Aero Refuellers J.R. Richards Local Importers Port Macquarie Hastings Council Port Macquarie district suppliers (Woolworths, IGA, Hastings Coop, Nabiac Butcher, Bunnings, Mitre 10) | <p>These stakeholders support the freight, waste, and supply channels for aligned services. Shipping, by air and sea, presents pathways through which incursions of invasive plants and animals can enter the island. These stakeholders will be integral to the implementation of various biosecurity controls, such as quarantine and capital improvements at port sites. Waste is currently accepted by Port Macquarie Hastings Council, who will need to be involved in improvements to receipt and processing if service remains located in Port Macquarie. Alternative solution required if not.</p> | <ul style="list-style-type: none"> Inform of legislation Involve and consult with stakeholders on projects and initiatives where their participation and support are integral to success. |
| Elected Government | <ul style="list-style-type: none"> Minister for Environment Minister for Planning and Public Spaces State Member for Port Macquarie and Lord Howe Island Federal Member for Sydney Minister for Environment, Water, Energy and Climate Change | <p>Plays a coordination and decision making role between local communities on Lord Howe Island, the NSW North Coast and various stakeholders in the planning, management, and implementation of marine infrastructure, waste management and biosecurity programs.</p> | <ul style="list-style-type: none"> Involve and consult with stakeholders on projects and initiatives where their participation and support are integral to success. |
| NSW Government Departments & Agencies | <ul style="list-style-type: none"> Lord Howe Island Board Department of Planning, Housing and Infrastructure Environmental Protection Authority Department of Primary Industries and Regional Development | <p>Provide funding for programs that support environmental management and biosecurity controls on the Island. Oversee designation of heritage status and marine protection sites. Licensing and compliance.</p> | <ul style="list-style-type: none"> Involve and consult with stakeholders on projects and initiatives where their participation and support are integral to success. Key to this is the |

| Stakeholder Group | Stakeholders | Relevance to LHI CIP | Engagement Level |
|---|--|---|---|
| | <ul style="list-style-type: none"> • NSW Treasury • NSW National Parks and Wildlife Services • NSW Department of Climate Change, Energy, the Environment and Water • Transport for NSW • Infrastructure NSW • NSW Environmental Trust • Heritage NSW • Destination NSW • NSW Government Architect | | <ul style="list-style-type: none"> • establishment of a Government Stakeholder Consultation Group |
| Commonwealth Government Departments & Agencies | <ul style="list-style-type: none"> • Department of Agriculture, Fisheries and Forestry • National Biosecurity Committee | <p>Supports environmental management and biosecurity controls on the Island. Oversee designation of heritage status and marine protection sites. Approval of EIS referral and determination</p> | <ul style="list-style-type: none"> • Involve and consult with stakeholders on projects and initiatives where their participation and support are integral to success. |
| Tourism Industry | <ul style="list-style-type: none"> • All incoming visitors • Lord Howe Island Tourism Operators | <p>Tourism industry is accountable for 90 per cent of visitation to the island, resulting in demand for reliable freight and waste services, and a high risk of biosecurity incursions. Education and extension of biosecurity controls with travellers to the island is essential. https://lordhoweisland.info/</p> | <ul style="list-style-type: none"> • Inform of program plans, legislation. |
| Trading Corporations & Contractors | <ul style="list-style-type: none"> • Major works contractors • Suppliers • Port Operations and Controls | <p>Trading corporations will need to maintain compliance with relevant biosecurity, waste management and maritime legislation. Stakeholders will also need to be made aware of operational changes to infrastructure, such as ports, should biosecurity programs be implemented at these sites.</p> | <ul style="list-style-type: none"> • Inform of legislation and compliance requirements. • Involve and consult with stakeholders on projects and initiatives where their participation and support are integral to success |
| Heritage | <ul style="list-style-type: none"> • National Trust of NSW • NSW Office of Heritage • Australian Heritage Council | <p>Heritage associations and organisations are key stakeholders for ensuring that any relevant heritage aspects of Lord Howe</p> | <ul style="list-style-type: none"> • Involve and consult with stakeholders on projects and initiatives where their |

| Stakeholder Group | Stakeholders | Relevance to LHI CIP | Engagement Level |
|-------------------|---|---|---|
| | | Island are considered in the Program and master plan. | participation and support are integral to success |
| Others | <ul style="list-style-type: none"> • Special Interest Groups • Walking Groups • Lord Howe Island Central School • Researchers and visiting scientists. • Consultants • Marine Rescue NSW - Lord Howe Island • Lord Howe Island SES | Activities conducted by these groups depend on the natural environment of the Lord Howe Island Group. Preservation of the island's ecosystems is critical to the long-term viability of initiatives such as research, education, and extension. | <ul style="list-style-type: none"> • Inform of Program intent • Involve and consult with stakeholders on projects and initiatives where their participation and support are integral to success |

5.4 ENGAGEMENT ACTIVITIES

The Applicant commenced community and stakeholder engagement in 2024 where Phase A was completed in May 2024 and updated in October 2024 as Phase B. Consultation undertaken during these phases is summarised in **Table 5-2**.

TABLE 5-2 ENGAGEMENT ACTIVITIES

| Activity & Purpose | Supporting Information |
|---|--|
| <p>Community update monthly and electronic direct mail (EDM) To provide clear and accurate information about the Program and to generate excitement and participation in the engagement process</p> | Distributed to LHIB stakeholder database and publicly released monthly on the LHIB website |
| <p>Stakeholder interviews/workshop To seek early input to and feedback on the Program and related master plan overall and in relation to specific elements/concepts – from key internal and external stakeholders across diverse areas of interest including business/tourism stakeholders</p> | Targeted invitations, discussion guide, presentation materials, supporting materials |
| <p>Community survey and email submissions To seek input to and feedback on the Program and related master plan overall and in relation to specific elements/concepts – from the community and further stakeholders</p> | Community update/letterbox drop, electronic direct mail (EDM), poster, web page and social media promotions, survey tool (online and print versions) |
| <p>Community forums and information sessions To share more detailed information about the Program and master plan, engage participants in conversation/collect participant feedback, encourage people to complete the survey or lodge a submission, and promote participation in the overall engagement process (including Community Consultation Group)</p> | Community update/letterbox drop, EDM, poster, web page and social media promotions, targeted invitations, run sheet, display boards, presentation materials, supporting materials, work sheets (tbc) |

5.5 ENGAGEMENT FEEDBACK

The Lord Howe Island CIP has been discussed with the Lord Howe Island community since the announcement that the NSW Government committed to its funding in the 2023/24 NSW Budget. Formal consultation has been initiated by the Board since May 2024 with the establishment of a Community Consultation Group (CCG) and invitations to community feedback sessions at the Lord Howe Island Community Hall (LHI Board, 2024a). The purpose of the CCG is to:

- Allow for the exchange of information between the community and the Lord Howe Island CIP team;
- Provide a mechanism for gathering local knowledge and input into planning and delivery of the Lord Howe Island CIP;
- Assist the Lord Howe Island CIP team to identify local issues and discuss appropriate future strategies;
- Brief the CCG on the Lord Howe Island CIP status and works being undertaken;
- Brief the CCG on engagement relating to the Lord Howe Island CIP; and
- Enhance CCG members' understanding of the Lord Howe Island CIP.

Bi-monthly meetings have been held since August 2024, and an online survey was publicly available to all community members until 7 June 2024.

A summary of the Phase A engagement is presented as the Community Engagement Outcomes Report (LHI Board, 2024b) in Appendix C Feedback received during Phase A engagement indicated general support for an upgrade of the existing waste management facility and procurement of a new vessel, with various ideas about the specific design of these elements of the Program. A key issue raised by members of the community was the viability of the South Investigation Area for marine infrastructure. In response to community feedback and other considerations, the marine infrastructure and biosecurity infrastructure has been relocated and is now proposed in the North Investigation Area. Further details on the master plan options will be presented as part of the Phase B engagement in December 2024.

Community and stakeholder feedback received to date for the Lord Howe Island CIP is summarised in Table 5-3.

TABLE 5-3 ENGAGEMENT OUTCOMES

| Project Component | Supporting Information |
|------------------------------|---|
| Marine Infrastructure | <p>Marine infrastructure including a new vessel attracted the greatest level of feedback, with a primary focus on ensuring that a new fit-for-purpose vessel is procured to provide continuation of service. Ensuring new marine infrastructure is established in the most appropriate location was also a focus. There was wide recognition that the existing vessel and jetty have a limited lifespan, and that upgraded infrastructure is critical to secure a sustainable future for the Island. Feedback highlighted the importance of:</p> <ul style="list-style-type: none"> • Ensuring a seamless interface between the new vessel and related marine infrastructure; • Undertaking appropriate technical studies to ensure the South Zone presents a viable approach; • Securing a new vessel that meets specific design requirements, to ensure access to the relevant channel/lagoon in all weather conditions and to provide the desired functional requirements (including biosecurity measures); • Design of the marine infrastructure including jetty/ramp to meet the relevant locational and functional requirements (e.g., to potentially incorporate a boat retrieval function), to minimise environmental impacts, to improve on existing operations and to enhance existing levels of service; • Vessel procurement within the identified program, to avoid service disruptions – with a sound contingency plan in place; • Ensuring the Registrations of Interest (ROI) process for the new vessel is both rigorous and competitive and that governance and contractual arrangements offer ongoing value and security to the Island community; • Considering upgrade of the existing jetty/ramp rather than undertaking new studies and establishing new infrastructure in the South Zone; • Considering opportunities around the existing jetty if new infrastructure is delivered in the South Zone; and • Considering opportunities for innovation – such as use of containers, air freight and future use of drone technology. |
| WMF | <p>There was general recognition that the existing waste management facility requires an upgrade to address current needs and expectations, and to support a compliant approach to waste management and disposal as per Environmental Protection Authority (EPA) standards. Feedback highlighted the importance of appropriate design of the facility, selection of technologies and related training to ensure that existing and future staff can operate the waste management facility to its full potential and to support ongoing maintenance. Noise, odour, visual amenity and vehicle access were identified as key areas for consideration in design of the new facility. Further opportunities to upgrade the waste management facility identified by members of the community and stakeholders focused on:</p> <ul style="list-style-type: none"> • Considering opportunities to expand the capacity of the septic system at the new waste management facility to receive and process a greater amount of septic waste than at present; • Improving the usability and functionality of the waste management facility; • Increasing opportunities to recycle and reuse waste on the Island to improve the 'tip shop'; • Utilising energy efficient technologies and renewable energy within the new facility; and • Maximising community, visitor and supplier education opportunities relating to sustainable waste management practices. |

| Project Component | Supporting Information |
|-----------------------------------|--|
| Biosecurity infrastructure | <ul style="list-style-type: none"> • Feedback suggests that existing biosecurity measures are generally working well, but further improvements to safeguard the Island’s future security from biosecurity risks are critical; • Community members and stakeholders commented that biosecurity initiatives require a prevention approach, with a primary focus on managing potential risks on the mainland, before freight and visitors arrive on Lord Howe Island; • Many expressed a desire for a leading practice approach to design of the new vessel and marine infrastructure to support biosecurity improvements, as well as appropriate systems and processes at the relevant mainland port and on Island; and • Feedback also highlighted the importance of carefully considering the interrelationship of the waste management and biosecurity components of the Program to achieve optimal functionality and outcomes. A simple approach and clear information for the community, visitors and partners was regarded as fundamental to successfully managing biosecurity issues. |

All households and businesses on Lord Howe Island have received a Project flyer, and as many as one-in-four members of the Lord Howe Island community participated in early engagement, including:

- Four submissions received;
- 53 people responded to the community survey;
- 12 people participated in the stakeholder interviews and workshop; and
- 38 people participated in the two community information sessions.

5.6 FUTURE ENGAGEMENT

Community and stakeholder engagement through the EIS phase will foster relationships established through early engagement activities and compliment formal consultation required under relevant planning regulations. Table 5-4 outlines community and stakeholder engagement activities that are planned.

TABLE 5-4 FUTURE ENGAGEMENT

| Task | Description |
|---------------------------|--|
| Engagement updates | <p>Between the first and second rounds of engagement, it will be important to keep the community and stakeholders informed about the project’s progress and next steps for engagement.</p> <p>Where appropriate, notifications would be issued to near neighbours in the case of site investigations being undertaken.</p> <p>These communications will be led by the NPWS/LHIB project team.</p> |
| Webpage updates | <p>Updating the webpage with a high-level overview of ‘what we heard’ during the first round of engagement and demonstrating how early feedback has been used to shape development of the design concepts will be important (suggest this information is also distributed as Community Update/flyer 2). A status update on the project including key site investigations / studies undertaken since Phase A has also been added to the webpage. And monthly community updates on Program and Projects status are provided on the webpage. Project FAQs are being updated prior to commencement of the Phase B engagement</p> |

| Task | Description |
|---|---|
| | <p>activities, to reflect key questions raised by stakeholders and the community.</p> <p>The project email address remains open during the entire engagement period to allow the community and stakeholders to continue providing feedback throughout the engagement period. And into 2025 in the lead-up to the public display of the EIS Report.</p> <p>Notification of the Phase 2 engagement including key activities and dates is proposed approximately four weeks prior to commencement of the second phase of engagement (i.e. early November 2024).</p> |
| <p>Community Consultation Group Meetings</p> | <p>Bi-monthly meetings are scheduled for 2025. This group will provide a valuable forum for detailed consideration of key aspects of the Program/projects and to support promotion of the Phase B engagement activities and ongoing Program and Projects updates within the community. Meetings will cover the following:</p> <ul style="list-style-type: none"> • Briefing on the Program/projects and early engagement • Detailed consideration of the design concepts, prior to broader community engagement • Detailed consideration of the draft master plan, prior to its finalisation, discussion of next steps for the Program/projects. <p>These meetings and related communications are led by the NPWS/LHIB project team.</p> |
| <p>Government Stakeholder Consultation Group</p> | <p>Bi-monthly meetings are scheduled for 2025 This group will provide a valuable forum for detailed consideration of key aspects of the Program and Projects to support the EIS and design development. Meetings will cover the following:</p> <ul style="list-style-type: none"> • Briefing on the Program/projects and early engagement • Detailed consideration of the design concepts • Detailed consideration of the draft master plan, prior to its finalisation, discussion of next steps for the Program/projects. <p>These meetings and related communications are led by the Project team.</p> |
| <p>Interviews with key stakeholders</p> | <p>Key stakeholder and community members who are “key knowledge holders” were interviewed, both via online/phone and in person (up to 60 minutes each). Interviews have been conducted in Phase A and continue in Phase B with key stakeholders as outlined in Section 5.3. The purpose of the interviews will be to seek early inputs to and feedback on the draft design concepts, and to inform key stakeholders about the upcoming engagement activities and project progress. Interviews will be conducted online/phone or in person, depending on participant availability and preferences.</p> |
| <p>In-person engagement Phase B</p> | <p>An in-person engagement is scheduled from 2nd Dec to 4th Dec 2024 to conduct the remaining interviews (as noted above) and hold drop-in community information sessions). It is proposed to conduct the community information sessions in the morning, afternoon and evening to provide opportunities for all members of the community to participate and have the opportunity to directly speak with the Project Team. A debrief with the Project Team and Lord Howe Island Board will be undertaken before leaving the Island. Engagement will be used to present and obtain detailed feedback on the design concepts in a format suited to community feedback / preference.</p> |

5.7 MONITORING AND EVALUATION

Engagement and communication will be monitored and evaluated throughout the EIS phase to ensure the techniques employed are effective, that new stakeholders are being identified, and any new issues or concerns are being addressed. The results of the stakeholder feedback and community consultation will be documented in an Engagement Outcomes Report for Phase B. A summary of enquiries will be incorporated in the evaluation process to ensure continuous improvement of the Project engagement.

The effectiveness of the community and stakeholder engagement strategy will be monitored through:

- Reviewing enquiries and complaints data to identify unresolved or recurring issues and emerging trends;
- Informal discussions with stakeholder and the community;
- Informal discussions with members of the Project team; and
- Media monitoring, including social media.

The Project Engagement Plan is a live document that is adapted as necessary throughout the EIS phase.

6. PROPOSED ASSESSMENT OF IMPACTS

6.1 CATEGORISATION OF ASSESSMENT MATTERS

A preliminary environmental assessment was undertaken to identify the aspects that require consideration regarding potential impacts associated with the Project. This assessment considered the following:

- The scale and nature of the likely impacts of the Project and the sensitivity of the receiving environment;
- Whether the Project is likely to generate cumulative impacts with other developments relevant to the area;
- The ability to avoid, minimise and/or offset the impacts of the Project, to the extent known at this scoping stage; and
- The complexity of the technical assessment of the Project.

Each aspect and its proposed level of assessment (detailed or standard) is identified in Table 6-1. This table has considered Appendix D – Levels of Assessment of the 'SSI Guideline – Preparing a Scoping Report'. Detailed assessments will be undertaken for environmental aspects that have the potential for material impact, or that are of a nature that warrant a detailed assessment. Matters have been categorised according to the aspects identified Appendix A to the in the 'SSI Guidelines – Preparing a Scoping Report'.

TABLE 6-1 LEVEL OF ASSESSMENT FOR ENVIRONMENTAL MATTERS

| Level of Assessment | Aspect | Considerations |
|---------------------|------------------------|--|
| Detailed | • Biodiversity | <ul style="list-style-type: none"> • Conservation areas • Terrestrial flora and fauna • Aquatic flora and fauna |
| | • Transport and access | <ul style="list-style-type: none"> • Access to property • Traffic and parking • Port and airport facilities • Roads |
| | • Heritage | <ul style="list-style-type: none"> • Natural • Historic |
| | • Hazards and risks | <ul style="list-style-type: none"> • Waste • Biosecurity • Groundwater contamination • Coastal hazards • Land contamination |
| | • Amenity | <ul style="list-style-type: none"> • Visual amenity • Odour (to be considered with waste) • Noise and vibration |
| | • Social | <ul style="list-style-type: none"> • Way of life • Health and wellbeing • Community • Surroundings • Accessibility • Livelihoods • Culture • Decision-making systems |

| Level of Assessment | Aspect | Considerations |
|--|---|---|
| | <ul style="list-style-type: none"> Water | <ul style="list-style-type: none"> Hydrology Water availability Water quality |
| Standard | <ul style="list-style-type: none"> Air | <ul style="list-style-type: none"> Atmospheric emissions Particulate matter Gases |
| | <ul style="list-style-type: none"> Hazards and risks | <ul style="list-style-type: none"> Flooding Bushfire Hazardous and offensive development Dangerous goods Environmental hazards |
| | <ul style="list-style-type: none"> Land | <ul style="list-style-type: none"> Stability Land capability Soil chemistry Topography |
| | <ul style="list-style-type: none"> Economic | <ul style="list-style-type: none"> Livelihood Opportunity cost |
| Matters requiring no further assessment in the EIS | <ul style="list-style-type: none"> Built environment | <ul style="list-style-type: none"> Design quality |
| | <ul style="list-style-type: none"> Hazards and risk | <ul style="list-style-type: none"> Dam safety and land movement |
| | <ul style="list-style-type: none"> Heritage | <ul style="list-style-type: none"> Aboriginal |

6.2 BIODIVERSITY

6.2.1 CONSERVATION AREAS

Biodiversity presents a challenge to the Lord Howe Island CIP because the Lord Howe Island Group is inscribed as a World Heritage Property. The inscription of Lord Howe Island on the World Heritage list was in recognition of the Islands unique natural and cultural heritage features and an excellent example of oceanic islands of volcanic origin supporting a unique ecological assemblage of plants and animals. This listing as a World Heritage property affords Lord Howe Island additional protection not only under international conventions, but under Australian Government and NSW legislation. The Australian Government is signatory to the World Heritage Convention and, therefore, both the NSW and Australian Governments have a responsibility to protect the 'outstanding universal values' for which Lord Howe Island was inscribed as a World Heritage property.

Potential impacts to the Lord Howe Island World Heritage Area will, in part be assessed through the terrestrial and aquatic biodiversity assessments detailed below. However, a specific assessment of potential impacts to the 'outstanding universal values' for which Lord Howe Island was inscribed will be undertaken in accordance with:

- Matters of National Environmental Significance, Significant impact guidelines 1.1, *Environment Protection and Biodiversity Conservation Act 1999* (DoE, 2013); and
- Guidance and Toolkit for Impact Assessments in a World Heritage Context (UNESCO, ICCROM, ICOMOS and IUCN, 2022).

6.2.2 TERRESTRIAL BIODIVERSITY

6.2.2.1 EXISTING ENVIRONMENT

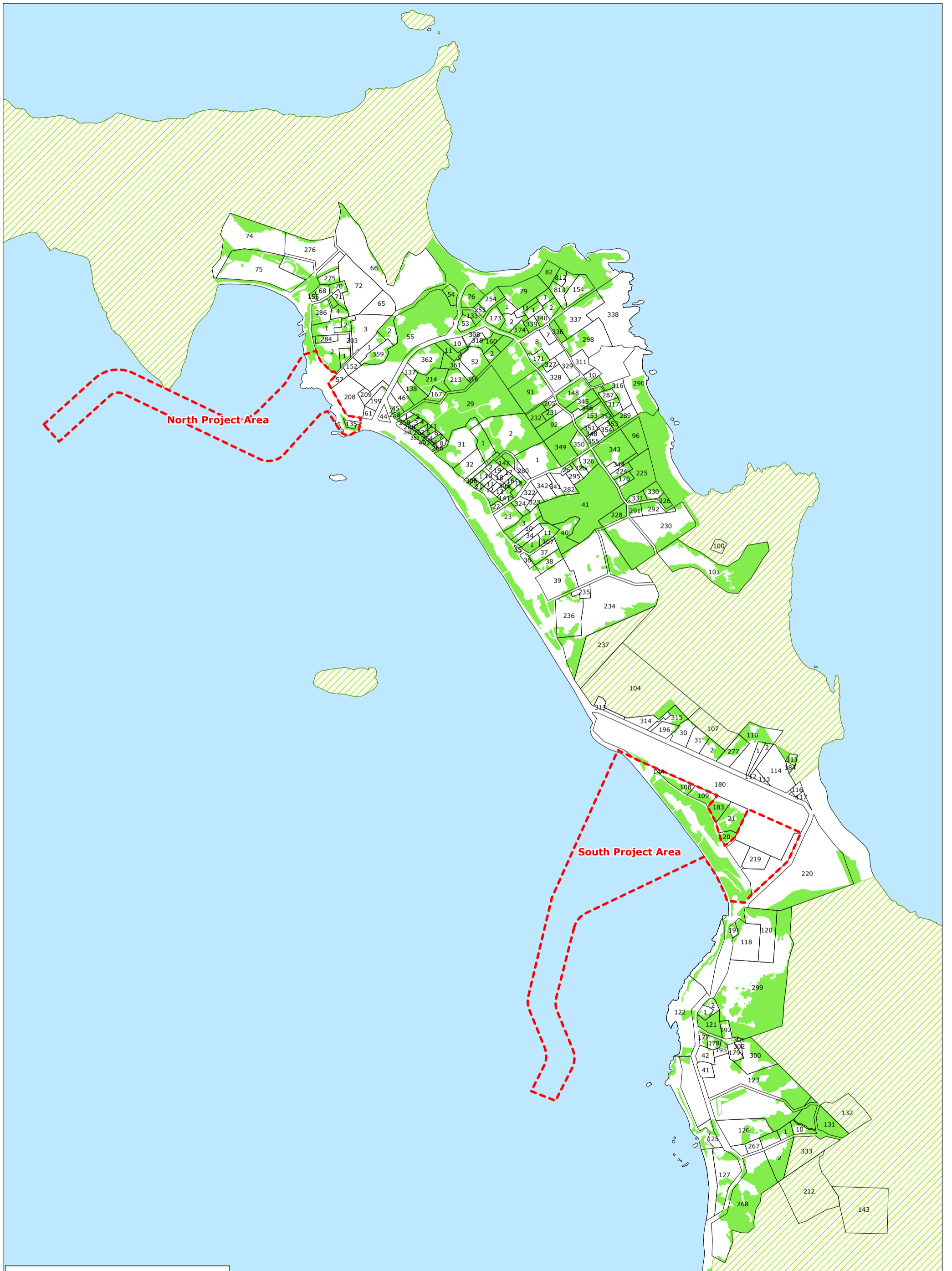
Lord Howe Island's unique biodiversity was a key consideration for its listing as a World Heritage Property and a key feature that draws thousands of tourists to the Island annually. The Lord Howe Island Group provides important breeding grounds for colonies of seabirds and vital natural habitat to facilitate the conservation of threatened species.

The isolation and unique origins of Lord Howe Island promoted a high degree of endemism, many of which are now listed threatened species under the BC Act and/or EPBC Act. This included the endemic, flightless Lord Howe Island Woodhen (*Hypotaenidia sylvestris*), which was once regarded as one of the rarest birds in the world. It also includes the endemic Lord Howe Island Phasmid (*Dryococelus australis*), the world's largest stick insect that was thought extinct until it was rediscovered on Balls Pyramid, within the Lord Howe Island Group. The islands of the Lord Howe Island Group are also one of two known breeding areas for the Providence Petrel (*Pterodroma solandri*), which is listed as vulnerable under the BC Act. This species only breeds on Lord Howe Island and Phillip Island, near Norfolk Island. The Lord Howe Island Group also contains what is probably the largest breeding concentration in the world of the Red-tailed Tropicbird (*Phaethon rubricauda*), and the most southerly breeding colony of the Masked Booby (*Sula dactylatra*).

The Applicant has undertaken a baseline terrestrial biodiversity assessment for the North Investigation Area (Cumberland Ecology, 2024; **Appendix D**) and South Investigation Area ((Cumberland Ecology, 2024; **Appendix E**) to assess how the Project may impact the unique biodiversity values of the Island. The assessment included desktop interrogation of relevant online publications, databases, spatial information sources, and relevant statutory instruments to identify biodiversity values that may be impacted by the Project. The area subject to the assessment is known as the 'study area' which encompasses the Project area.

The specific objectives of the assessment included:

- Assess the extent of "Significant Native Vegetation" (SNV) (Figure 6-1) as identified under the Lord Howe Island LEP 2010 (Lord Howe Island LEP) within the study area;
- Describe the biodiversity values of the study area, including vegetation communities and fauna habitats;
- Identify and map the location of threatened flora and fauna species;
- Assess the likelihood that threatened flora and fauna species listed by the State and Commonwealth occur within the study area;
- Identify potential direct and indirect ecological impacts associated with the future development within the study area;
- Identify potential avoidance and mitigation measures that could be incorporated into the Program; and
- Detail future planning and approval requirements under the BC Act and EPBC Act.



Legend

- - - Project Area
- Cadastre (Lot)
- Significant Native Vegetation
- Permanent Park Reserve
- Marine Park

Coordinate System:
GDA 1994 MGA Zone 57

Date: 19/11/2024

Created By: MB

Drawing Size: A3


0 250 500m

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6-1 Significant Native Vegetation

LHI CIP Scoping Report

Client: DCCEW (NSW) on behalf of LHIB c/o APP Group



The following information sources were used to inform the assessment and identify biodiversity values that require consideration:

- DCCEEW WPBC Act Protected Matters Search Tool (PMST) and NSW BioNet Atlas;
- Lord Howe Island Vegetation Map 2016 (VIS_ID 4450);
- Historical (NSW SEED Portal) and current aerial imagery;
- Lord Howe Island Biodiversity Management Plan (DECC, 2007);
- *A Systematic Flora Survey, Floristic Classification and High-Resolution Vegetation Map of Lord Howe Island* (Sheringham, Richards, Gilmour, & Kemmerer, 2016); and
- Lord Howe Island Weed Management Strategy 2016 – 2025 (LHI Board, 2016).

Initial terrestrial biodiversity field surveys were informed by a Likelihood of Occurrence Assessment to determine the threatened species and communities likely to be present in the study area. The field surveys focussed on the South Investigation Area, where the existing WMF is located. The field surveys included vegetation mapping, floristic plot surveys, targeted threatened species searches and fauna habitat searches.

Vegetation communities of the study area were identified and mapped and included eight vegetation communities in the North Investigation Area and 11 in the South Investigation Area with 15 unique vegetation communities in total. The vegetation community – ‘Sallywood swamp forest on poorly drained, low-lying areas’ conforms to the threatened ecological community (TEC) ‘Lagunaria Swamp Forest on Lord Howe Island. This TEC is listed as a critically endangered ecological community (CEEC) under the BC Act. It was mapped as an isolated 0.03 ha estuarine area along the banks of Cobbys Creek, bordering sand dunes in the southeast of the South Investigation Area about 400 m from the existing WMF. It is anticipated that the Project can avoid this CEEC. No TECs were identified in the North Investigation Area.

Field surveys identified 71 flora species within the study area, including 43 species considered native. No threatened flora species were recorded in the study area. Nine threatened flora species have been recorded in the vicinity of the study area; however, only the Sand Purge (*Chamaesyce psammogeton*) is considered to have the potential to occur in the study area.

Nine weed species identified under the ‘Lord Howe Island Weed Management Strategy’ (LHI Board, 2016) were recorded in the study area. Only one of these species, the Sea Spurge (*Euphorbia paralias*) is identified as a Regional Priority Weed under the North Coast Local Land Services Regional Strategic Weed Management Plan 2023 – 2027 (LLS, 2022) (which covers Lord Howe Island). However, *Euphorbia paralias* is treated as a ‘Category 3: Control (effectively manage)’ weed under the ‘Lord Howe Island Weed Management Strategy’ as it is considered not feasible to eradicate this species on Lord Howe Island. All other weed species identified in the Study Area are categorised as ‘Category 3’ weeds under the ‘Lord Howe Island Weed Management Strategy’.

Field surveys identified 15 fauna species within the study area; however, several more are expected to occur in the study area. Five of the species recorded are considered endemic native, two are considered non-endemic native, and eight are considered non-native according to the ‘Lord Howe Island Biodiversity Management Plan’ (DECC, 2007). Six of the species recorded are listed threatened species under the BC Act and/or EPBC Act, including:

- Lord Howe Woodhen (*Hypotaenidia sylvestris*) listed as endangered under both the BC Act and EPBC Act, and considered endemic native to Lord Howe island;

- Pied Currawong (Lord Howe Is. subsp.) (*Strepera graculina crissalis*) listed as vulnerable under both the BC Act and EPBC Act and considered endemic native to Lord Howe island;
- Masked Booby (*Sula dactylatra*) listed as vulnerable under the BC Act, migratory under the EPBC Act and considered non-endemic native to Lord Howe Island;
- Golden Whistler (Lord Howe Is. subsp.) (*Pachycephala pectoralis contempta*) listed as vulnerable under the BC Act and considered endemic native to Lord Howe Island;
- Silvereye (Lord Howe Is. subsp.) (*Zosterops lateralis tephroleurus*) listed as vulnerable under the BC Act and considered endemic native to Lord Howe Island; and
- Lord Howe Placostylus (*Placostylus bivaricosus*) listed as endangered under both the BC Act and EPBC Act and considered endemic native to Lord Howe Island.

The information provided above details the threatened species and communities identified during field surveys; however, both the Commonwealth PMST and NSW BioNet records identified a significant number of other species that may be present in the locality (see **Appendix D**). Vegetation communities, flora and fauna species within the North Investigation Area have yet to be surveyed and comprised desktop assessment only. Field surveys were only undertaken for a 6-day period in July 2024; therefore, there is the potential that other fauna species, particularly those that are migratory, may occur within the study area.

The PMST identified several matters of national environmental significance (MNES) protected under the EPBC Act (**Table 6-2**).

TABLE 6-2 POTENTIAL MNES

| MNES | Within the Locality |
|--------------------------------------|--|
| World Heritage Properties | Yes – Lord Howe Island is a declared World Heritage Property |
| National Heritage Places | Yes – Lord Howe Island is classed as a National Heritage Place |
| Wetlands of International Importance | None |
| The Great Barrier Reef Marine Park | None |
| Commonwealth Marine Area | None |
| Threatened Ecological Communities | None |
| Threatened Species | 57 |
| Migratory Species | 46 |
| State and Territory Reserves | 2 – Terrestrial and Marine Environments |

6.2.2.2 SUMMARY OF POTENTIAL BIODIVERSITY ISSUES

Construction of the Project will require some land clearing that has the potential to directly and indirectly impact biodiversity values. Similarly, operation of the Project may lead to direct and indirect impacts to biodiversity values. Potential impacts include:

- Removal of vegetation (however, please note that the Project will aim to avoid impacts to SNV, where possible);

- Removal of fauna habitat features such as leaf litter, coarse woody debris and blossom-producing trees and shrubs;
- Modification of microhabitats through edge effects;
- Runoff and sedimentation;
- Contamination;
- Biosecurity risks:
 - Weed invasion;
 - Feral animal invasion;
 - Disease risk; and
- Injury or mortality to fauna species.

6.2.2.3 EIS ASSESSMENT APPROACH

As discussed, Lord Howe Island is unique in that legislative provisions that apply to development on the mainland typically do not apply to development on Lord Howe Island. Under the BC Act SSI/CSSI automatically triggers entry into the Biodiversity Offset Scheme (BOS) and requires the preparation of a BDAR in accordance with the BAM to inform the EIS. However, the BOS does not apply to biodiversity that is endemic to Lord Howe Island. Therefore, it is assumed that project-specific SEARs will specify an assessment tailored specifically for Lord Howe Island.

Based on this assumption, the biodiversity assessment undertaken to inform the EIS will include consideration of the following statutory instruments:

- BC Act and EPBC Act;
- Commonwealth EPBC 1.1 Significant Impact Guidelines – Matters of National Environmental Significance (DoE, 2013);
- Commonwealth Department of the Environment and Energy – Nationally Threatened Ecological Communities and Threatened Species Guidelines (various); and
- Commonwealth Department of the Environment and Energy – Survey Guidelines for Nationally Threatened Species (various).

The assessment of biodiversity values to be undertaken to inform the EIS will consider:

- Matters protected under the EPBC Act, including potential impacts to:
 - World Heritage Properties;
 - National Heritage Places;
 - Threatened species (flora and fauna);
 - State and Territory Reserves;
- Matters protected under the BC Act, including potential impacts to:
 - Threatened species (flora and fauna); and
 - TECs.

The assessment report detailing terrestrial biodiversity will generally include:

- Detailed background/existing environment from relevant databases and available literature to identify and describe declared wilderness areas, flora, fauna species, groundwater dependent ecosystems (GDEs) and vegetation communities with a potential to occur within the Project area;
- Additional field surveys to delineate vegetation communities, terrestrial flora and fauna and habitat condition across the Project area to comply, where possible, with assessment requirements specified within the SEARs by the NSW Biodiversity and Conservation (BCS) Directorate and Commonwealth DCCEEW;
- Mapping the distribution of vegetation communities within the Project area;
- Targeted searches for threatened species, populations and communities (as listed under the BC Act and/or EPBC Act) that have the potential to occur in the Project area;
- Assessment of habitat within the Project area;
- Assessment of impacts on listed matters (e.g., World Heritage, vegetation communities, threatened flora and fauna species); and
- Identification of impact avoidance and mitigation measures necessary for the Project area.

6.2.3 AQUATIC BIODIVERSITY

6.2.3.1 EXISTING ENVIRONMENT

The aquatic biodiversity of Lord Howe Island was one of the key considerations for the Islands listing as a World Heritage Property. The location of Lord Howe Island at the confluence of several large oceanic currents has promoted an unusual mixture of temperate and tropical species. The barrier reef that surrounds Lord Howe Island lagoon is the southern-most coral barrier reef in the world and provides a rare example of the transition between coral and algal reefs.

Such unique features and aquatic biodiversity led to the state of NSW declaring a 460 km² area of marine waters surrounding Lord Howe Island as a marine national park in 1999, one of only 5 marine parks in NSW.

An area surrounding the Lord Howe Island Group was subsequently declared as a Commonwealth Marine Reserve in 2002. This encompassed an area of 110,126 km² including Elizabeth and Middleton Reefs and comprising most of the Lord Howe Island World Heritage Property area.

Geological process that formed the Lord Howe Island Group also produced diverse and unique geomorphology. The Lord Howe Island Marine Park comprises a variety of habitats and biological features. These include estuarine ecosystems, lagoon ecosystems including the fringing coral reef, intertidal and shallow subtidal ecosystems, shelf ecosystems and pelagic ecosystems.

The reef within the Lord Howe Island Marine Park is believed to be about 120,000 years old, and through accretion has developed into the active coral reef fringes that exist today. This existing fringing reef and fossil records of coral growth represent the southernmost records of global coral reef distribution, and supports over 100 species of Scleractinian (i.e., hard) corals species. Within the broader Lord Howe Island Marine Park there are mesophotic coral reefs that have the potential to act as deep reef refugia under a changing climate (Geoscience Australia, 2022).

The Lord Howe Island Marine Park supports over 500 species of fish. Tropical species with broad distribution ranges comprise most of these species; however, temperate species dominate species biomass. Other prominent species groups within the Lord Howe Island Marine Park include macrophytes, including two species of seagrass that form meadows in the lagoon, and non-coral marine invertebrates, many of which are endemic to Lord Howe Island Marine Park (Geoscience Australia, 2022).

Within Lord Howe Island lagoon, water depths are relatively shallow ranging from 1 to 3 metres in most areas (NSW Maritime, 2008). Deeper channels between the reefs are up to 10 metres deep and connect the lagoon with the Tasman Sea via the North Passage, Blackburn Island Passage, Erscotts Passage and Man of War Passage. Beyond these passages and reef structures, water depths exceed 25 metres and are contiguous with the Tasman Sea.

Lord Howe Island has three creeks with flow into the lagoon – Soldiers Creek, Cobbys Creek and Old Settlement Creek. These creeks support two species of mangroves and small saltmarsh stands on the fringes. They also support riparian communities, including the CEEC, Lagunaria Swamp Forest on Lord Howe Island.

6.2.3.2 SUMMARY OF POTENTIAL AQUATIC BIODIVERSITY ISSUES

Construction

Construction of the Project will lead to direct and indirect impacts to aquatic biodiversity. Direct impacts will occur in the area proposed for the new/upgraded marine infrastructure. The marine infrastructure is proposed to comprise a piled jetty/wharf structure, in the location of the existing timber jetty on Lord Howe Island. Piles will need to be inserted deep into the seafloor using a pile driver (or similar), pending the engineering assessment of the existing wharf piles. While this will lead to direct impacts in areas where piles will be placed, these impacts can be contained to a relatively small area previously disturbed by existing infrastructure and operations. Upgrades to the existing boat ramp north of the existing jetty will be limited to minor refurbishments.

Construction of the marine infrastructure will also result in indirect impacts to aquatic biodiversity. These may include temporary displacement of mobile species, water and sediment quality impacts. Underwater noise produced by pile driving may cause temporary behavioural impact in susceptible species (e.g., marine turtles, fish). The process will also liberate sediments that can impact water quality within the locality.

More broadly, all aspects of the Project will be constructed in or adjacent to the aquatic environment. This may lead to impacts to water and sediment quality, which in turn may impact other species. Indirect impacts will likely be temporary and over a small spatial scale. Assessments undertaken to inform the EIS will also inform the placement of marine infrastructure to minimise direct impacts, and management measures to be implemented to avoid or minimise impacts.

Operation

Operation of the Project may impact aquatic biodiversity; however, the Project will provide infrastructure upgrades that should also benefit aquatic biodiversity. Potential impacts to aquatic biodiversity during operation of the Project include water and sediment quality, biosecurity, contaminant and gross pollutant impacts. Benefits of the Project for aquatic biodiversity relate to the provision of marine infrastructure that will enable safer vessel operations, minimising the risk of groundings that can damage benthic habitats. The broader Lord Howe Island CIP also include the procurement and operation of a new marine freight vessel. This vessel will be designed specifically to provide freight services to Lord Howe Island. The bathymetry and metocean conditions of Lord Howe Island lagoon will be used to inform the vessel design, to optimise manoeuvrability of the vessel, and minimise risk.

6.2.3.3 EIS ASSESSMENT APPROACH

An Aquatic Biodiversity Assessment will be undertaken to inform the EIS. The assessment will include:

- A desktop assessment of habitats and features including:
 - Review of existing mapping – e.g., spatial data from the DEWLP CoastKit (especially biotope mapping), Seamap Australia and existing bathymetry data from navigation charts will be collated in GIS and reviewed;
 - Review of relevant publications;
 - Remote sensing of seabed habitats – the waters at and adjacent to the study area are relatively clear, which may enable preliminary mapping of seabed features using remotely sensed data. Multispectral and/or visual imagery will be downloaded and classified to map any distinct seabed forms (e.g., reefs, rocky shores etc.);
 - Preparation of a preliminary habitat map to provide a basis for planning and execution of field work;
- Benthic habitat assessment including:
 - Deploying a drop camera to record seabed features along representative transects;
 - Characterisation of the physical, chemical and biological properties of the benthic environment;
- Water and sediment quality sampling and assessment;
- Opportunistic identification of invasive marine species;
- Preparation of an Aquatic Biodiversity Assessment Report comprising descriptions of:
 - Aquatic and coastal habitats within the study area and the values / condition and resilience of these habitats to change;
 - Aquatic species of conservation significance with the potential to occur with the study area, including consideration of their seasonality (if any) and habitats and habits;

- Known or likely important habitats for species of conservation significance, including important feeding and breeding areas and migratory pathways;
- Water and sediment quality; and
- Assessment of impacts and recommendation of appropriate management measures.

6.3 HERITAGE

6.3.1 NATURAL HERITAGE

The natural heritage of Lord Howe Island was a key consideration (along with the Islands unique biodiversity values) in the Lord Howe Island Group being inscribed on the World Heritage List. This included that Lord Howe Island is an 'outstanding example of oceanic islands of volcanic origin', with 'spectacular and scenic landscapes encapsulated in a small land area'. The Lord Howe Island Group is 'grandiose in its topographical relief and has an exceptional diversity of spectacular and scenic landscapes ... including sheer mountain slopes, a broad arc of hills enclosing a lagoon, and Balls Pyramid rising abruptly from the ocean'. Lord Howe Island is 'considered an outstanding example of an island system developed from submarine volcanic activity and demonstrates the nearly complete stage in the destruction of a large shield volcano.

It is therefore critical to protect the islands natural heritage. This will be assessed in accordance with:

- Matters of National Environmental Significance, Significant impact guidelines 1.1, *Environment Protection and Biodiversity Conservation Act 1999* (DoE, 2013); and
- Guidance and Toolkit for Impact Assessments in a World Heritage Context (UNESCO, ICCROM, ICOMOS and IUCN, 2022).

6.3.2 HISTORIC HERITAGE

6.3.2.1 EXISTING ENVIRONMENT

As discussed, the Lord Howe Island Group was listed as a UNESCO World Heritage Property in 1982 and was subsequently listed on the Australian National Heritage List in 2007 (ID 105694). National Heritage Sites, like World Heritage Properties, are protected under the EPBC Act.

The National Heritage listing for Lord Howe Island provides the following description of place:

Nearly seven million years ago geologic movement of the Lord Howe Rise (an underwater plateau) gave birth to a large shield volcano on its western edge. Over time the sea eroded 90 per cent of the original volcano, leaving the islands that today comprise the Lord Howe Island Group.

Lord Howe Island has a spectacular landscape with the volcanic mountains of Mount Gower (875 m) and Mount Lidgbird (777 m) towering above the sea. The central low-lying area provides a marked contrast to the adjacent mountains and northern hills. There are 241 different species of native plants, of which 105 are endemic to Lord Howe Island. Most of the island is dominated by rainforests and palm forest. Grasslands occur on the more exposed areas of Lord Howe Island and on the offshore islands. Most of the main island and all the offshore islands are included in the Lord Howe Island Permanent Park Preserve.

...

It is believed Europeans discovered Lord Howe Island when it was sighted from the British colonial naval vessel HMS Supply in 1788, en-route from Sydney to the penal colony on Norfolk Island. The first landing was made two months later on the return voyage to Sydney.

By the 1830s there was a small permanent settlement in the lowland area of the main island. The settlers made a living by hunting and fishing, and by growing vegetables, fruit and meat for trade with passing ships. Pigs and goats, which were introduced to Lord Howe Island for food, later went wild and caused extensive vegetation and habitat changes, threatening populations of native species. Rats arrived on the island in 1918 from a wrecked ship and have since been responsible for the extinction of five bird species. Over the last decade there have been intensive efforts to control these feral animals. Wild pigs, cats and goats have been successfully eradicated. The Lord Howe Island Board has also embarked on an ambitious weed eradication strategy.

The Lord Howe Island Group is also listed on the NSW State Heritage Register (ID 00970), which affords protection under the NSW *Heritage Act 1977*. The curtilage of the State Heritage Register listing only encompasses lands, marine waters are not included. The marine environs of the Lord Howe Island Group are on the non-statutory Register of the National Estate (ID 201) archive. The inclusion of the Lord Howe Island Group on both the State Heritage Register and Register of the National Estate was founded on the same considerations as the Lord Howe Island Groups listing as a World Heritage Property and National Heritage Site.

Figure 6-2 shows the extent of heritage curtilages on LHI.

Several other built and natural features on Lord Howe Island are listed on various statutory and non-statutory heritage listings and are therefore protected under relevant legislation. There are 19 items listed in the Lord Howe Island LEP. Two of these have dual listed, including:

- Cargo Shed Group, which is listed on the State Heritage Register and Lord Howe Island LEP; and
- War Memorial, which is listed on the Lord Howe Island LEP and non-statutory Register of the National Estate.

The Cargo Shed Group is in the vicinity of the existing wharf and will likely be adjacent to the new marine infrastructure and biosecurity infrastructure. The State Heritage Register Statement of Significance for the Cargo Shed Group reads:

The Cargo Shed has historical significance as a rare surviving example of its type and is one of only two survivors of the many foreshore sheds that used to be located on that part of the lagoon shore. The building has strong associations with many events and persons significant in the island's history, including the visit to the island in 1931 of Francis Chichester (later Sir Francis) who repaired his damaged floatplane Lady Elijah in the shed with the assistance of islanders. The Cargo Shed demonstrates a number of historical themes important on Lord Howe Island including transport, industry, fishing, leisure. The building is a relatively intact example of a simple interwar cargo shed with aesthetic value at a local level. It retains considerable original fabric in its internal roof structure which exhibits good quality joinery. The building has considerable social significance to past and present generations of islanders and visitors to Lord Howe as a

point of embarkation and disembarkation for ship and flying boat passengers. The community attachment is continued by its use as facilities for workers loading and unloading cargo from the Island Trader on its regular supply trips to the island. The use of part of the building as a community radio station adds to the social significance to the present generation of islanders.

The former Ocean View Boatshed retains much of its original form although it has been altered to suit its new use as a Board storage shed. With the loss of the old Pinetrees Boatshed in a fire, the former Ocean View Boatshed is the last surviving pre-World War II boatshed related to the guest houses on the island. It shares some design similarities with the former Cargo Shed and is considered to have historical, associational and aesthetic significance at a local level.

The Norfolk Island Pine trees between the two sheds enhance their setting and are thought to have been planted by visiting dignitaries Sir John Northcott and Clive Evatt. If plaques were installed at the time to commemorate these visits, they no longer survive, and further research is required to substantiate the association with these official occasions. If they are commemorative trees, they will have historical and associational significance for the island as well as the aesthetic value they contribute to the setting of the two structures.

6.3.2.2 SUMMARY OF POTENTIAL HERITAGE ISSUES

Construction

Construction of the Project will be undertaken within the Lord Howe Island World Heritage Area, which encompasses the curtilage of the other Lord Howe Island Group listings. Construction of the Project has the potential to impact some of the outstanding universal values for which its heritage status was founded. Impacts may result from temporary activities such as the use of construction plant and machinery, ground disturbance and visual and noise related impacts. It is anticipated that these impacts will be temporary in nature and can be adequately managed.

Impacts to the Cargo Shed Group may arise through the construction of the marine infrastructure and biosecurity infrastructure. The current design of these elements of the Lord Howe Island CIP has considered and avoided direct impacts to this heritage item. Potential impacts to the Cargo Shed Group will be assessed in detail during development of the EIS.

Operation

One of the objectives of the Project and broader Lord Howe Island CIP is to undertake critical infrastructure development and upgrades to protect the natural and cultural heritage values of Lord Howe Island. Long-term impacts to Lord Howe Island historic heritage are considered unlikely; however, this will be assessed in detail during the development of the EIS.

6.3.2.3 EIS ASSESSMENT APPROACH

A historic heritage assessment will be carried out as part of the EIS. The following guidelines will be, where relevant, during the preparation of the assessment:

- NSW *Heritage Act 1977*;
- NSW Heritage Manual (DUAP, 1996);

- Australia ICOMOS Charter for Places of Cultural Significance (the Burra Charter) (ICOMOS, 2013);
- Assessing heritage significance (DPE, 2023c);
- Guidelines for preparing a statement of heritage impact (DPE, 2023d); and
- Assessing Significance for Historical Archaeological Sites and 'Relics' (DoP, 2009).




The non-Aboriginal heritage assessment will include:


- Assessment of historic archaeological potential within the Project area;
- Identification of listed items and areas of heritage significance within and near the Project;
- Assessment of potential impacts on the values, setting and integrity of identified heritage items, and determine the significance of those impacts; and
- Identification of appropriate measures to avoid, minimise and/ or mitigate potential impacts to non-Aboriginal heritage.


6.3.3 ABORIGINAL CULTURAL HERITAGE

There is no evidence that Indigenous Australian lived on Lord Howe Island prior to the first settlers in 1834. As such, and Aboriginal Cultural Heritage Assessment is not considered necessary for the Lord Howe Island CIP.



| Legend | |
|--|-----------------------------------|
|  | Project Area |
|  | State Heritage Register Curtilage |
|  | World Heritage Area |

Coordinate System:
 GDA 1994 MGA Zone 57
 Date: 19/11/2024
 Created By: MB
 Drawing Size: A3
 0 250 500m

 1:15,000

| | |
|---|--|
| 6-2 Heritage Curtilage | |
| LHI CIP Scoping Report | |
| Client: DCCEEW (NSW) on behalf of LHIB c/o APP Group | |
|  | |

6.4 ACCESS – ROADS, PORT AND AIRPORT, TRAFFIC

6.4.1 EXISTING INFRASTRUCTURE

The road network on LHI is largely limited to the main settlement within the central low-lying area. Access to other areas of Lord Howe Island is constrained by steep topography. A speed limit of 25 km/hour is enforced for all vehicles on Lord Howe Island owing to the small population, narrow road corridors and wildlife preservation efforts.

Transportation to and from Lord Howe Island is facilitated by marine infrastructure and an airport. Existing marine infrastructure comprises a timber piled jetty topped with planks that is about 60 m length and was constructed in 1982 (DOPW, 1982). This jetty serves as the primary docking point for the existing marine freight service and passenger vessels. The marine freight service vessel enters the lagoon via the North Passage. The existing jetty is shown in Figure 3-1.

The Lord Howe Island Airport (Figure 3-2) is owned and operated by the Lord Howe Island Board. The airport provides a daily passenger service and limited freight services. It was constructed in 1974 by the Australian Army Corps of Engineers. Lord Howe Island airport is a Certified Security Controlled Airport in accordance with Civil Aviation Regulations and Aviation Transport Security Regulations. The airport operates a Code 2C runway that is 888 m in length (LHI Board, 2024b).

6.4.2 SUMMARY OF POTENTIAL ACCESS ISSUES

6.4.2.1 CONSTRUCTION

Construction of the Project may impact the existing marine freight service. Upgraded or new marine infrastructure is proposed to be constructed where the existing jetty is. However, during the estimated 12 month construction period, access to the jetty is required to allow the existing marine freight service to delivery essential goods.

Construction of the Project will require heavy vehicles, equipment and materials to be delivered to the Island. This may lead to a reduction of cargo capacity for essential goods on the existing marine freight service. Construction heavy and light vehicles will also increase traffic volumes on the Lord Howe Island road network. As a contingency to support construction, construction plant, equipment, materials and heavy vehicles may be delivered by landing barge to the beach adjacent to the waste management facility where access to the existing jetty is restricted for delivery. The barge would access the beach via Erscotts passage, as shown in Figure 3-2.

Potential construction access issues include:

- Reduced cargo capacity on the existing marine freight vessel;
- Increased traffic volumes on the Lord Howe Island road network; and
- Reduced traffic performance on Lagoon Road and the surrounding road network due to the imposition of traffic management measures.

6.4.2.2 OPERATION

The Project and broader Lord Howe Island CIP will replace the existing marine freight services and associated infrastructure. This is aimed at enhancing the efficiency of freight delivery to the Island and the processing and movement of freight from the marine infrastructure to Island residents. This is anticipated to lead to a net benefit to Lord Howe Island residents and visitors. No long-term access issues are expected.

6.4.3 EIS ASSESSMENT APPROACH

The EIS will include a traffic and transport impact assessment to identify and assess potential impacts of the Project on access, including port and airport operations, and the performance of the local road network. As necessary, the assessment would propose management measures to avoid, minimise and manage potential impacts. The assessment will consider existing traffic (types and number of movements), peak traffic times and sensitive road users.

The following statutory instruments will inform the traffic and transport impact assessment:

- Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2017); and
- Guide to Traffic Generating Developments Version 2.2 (RTA, 2002).

The assessment of construction traffic and transport impacts will include:

- Identification of:
 - Construction plant, equipment and materials delivery requirements;
 - Construction site access and egress points;
 - Daily and peak traffic movements likely to be generated from construction of the Project;
- Modelling to identify the potential impacts of construction traffic movements on the performance of the surrounding road network;
- Consideration of potential impacts on cyclists and pedestrian safety and infrastructure, where relevant; and
- Consideration of potential impacts on local shuttle services.

Measures to minimise or mitigate any identified construction and/or operational traffic and transport impacts would be included in the traffic and transport assessment report in accordance with relevant best practice guidelines.

Where required, consultation with the Lord Howe Island Board, key stakeholders and local community will be undertaken as part of the assessment.

6.5 HAZARD AND RISK

6.5.1 WASTE

6.5.1.1 EXISTING PRACTICES

Over the history of colonisation of Lord Howe Island, waste management has evolved from informal and unregulated practices, such as on-site burning and burial (Bland & Boase, 2004), to the operation of the existing WMF. This facility has been developed over the years with various upgrades and process inclusions to account for new regulatory requirements, different types of waste and resources recovery requirements.

The functions of the existing WMF include:

- Recycling materials;
- Processing organic waste;
- Treating septic pump-outs;
- Allowing households to drop off their waste; and
- Storage and handling of waste to be transported to the mainland for disposal.

It should be noted that most waste is removed from the Island and there are no official landfill sites.

Despite the history of upgrades and process upgrades, the WMF currently faces significant challenges related to waste reception capabilities, processing capacity, compliance and health and safety concerns. Being on a unique, relatively small island imposes important logistical problems that need consideration. The WMF is the only site on the Island for waste management, which forces it to receive and manage all types of waste that are generated on the island. However, through inspections undertaken by the NSW Environment Protection Authority, the WMF was deemed to not meet several performance criteria required under its EPL, including:

- Properly and securely handling and storing waste;
- Achieving compost resource recovery standards;
- Securely and safely handling and storing waste;
- Controlling the generation of dust, odour, and litter; and
- Ensuring environmental protection and safety from hazardous or liquid wastes.

The construction of a new WMF has been approved as part of the Lord Howe Island CIP. The New WMF will facilitate compliance with the facility's EPL and updated standards under the NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021).

The new WMF is being designed to provide the following services and activities:

- Effective segregation of waste reception and waste processing to control public access to the facility;
- Improve efficiency in waste processing and managing (recyclables, organics, septic waste) by implementing new infrastructure and technology with a high level of automation to reduce dependence on manual labour and personnel;
- Produce recovered product that meet customer requirements (recyclables) and national standards (mulch); and
- Develop effective and safe waste storage for materials to be directly transported to the mainland (especially chemical waste).

6.5.1.2 SUMMARY OF POTENTIAL WASTE ISSUES

Construction

Construction of the new WMF will need to be managed to ensure that the Islands essential waste management can continue; however, there is potential for construction to reduce the capacity and efficiency of current practices. This may necessitate the removal of larger volumes of from the Island for processing on the mainland. The Project will also generate a variety of solid and liquid waste streams that will need to be managed and removed from the Island. The main construction activities that are likely to generate waste are summarised in Table 6-3.

TABLE 6-3 EXPECTED CONSTRUCTION WASTE GENERATION

| Activity | Waste Output |
|---|---|
| General earthworks and excavation activities | Spoil material |
| Dust suppression, washdown of plant and equipment and staff amenities | Sediment laden and/ or potentially contaminated wastewater, sewage and greywater |
| General construction activities and resource use | Concrete waste, formwork, scrap metal, steel, concrete, plasterboard, cable and packaging materials |
| Maintenance of construction plant, vehicles and equipment | Adhesives, lubricants, waste fuels and oils, engine coolant, batteries, hoses and tyres |
| Activities at construction compounds and site office(s) | Putrescibles, paper, cardboard, plastics, glass and printer cartridges |
| Clearing and grubbing of vegetation, landscaped and/or turfed areas | Green waste |

Accurate quantities of waste likely to be generated during construction of the Project would be investigated as part of future design development. The EIS will include a detailed assessment of waste management during construction and propose adequate management measures to avoid or minimise impacts.

Operation

The upgraded WMF will be designed to ensure that waste reception, processing and management on Lord Howe Island is undertaken in compliance with the facility's EPL and minimises the potential for environmental and social impacts. The new WMF will include a MRF and new or upgraded facilities for waste storage, resource recovery, organics processing and wastewater treatment. This should provide a positive benefit to the Lord Howe Island community.

6.5.1.3 EIS ASSESSMENT APPROACH

A waste management and resource use assessment will be carried out as part of the EIS. The assessment will consider relevant statutory instruments, including:

- Hazardous Industry Planning Advisory Paper (HIPAP) No. 4 – Risk Criteria for Land Use Planning;
- HIPAP No. 6 – Guidelines for Hazard Analysis;
- HIPAP No. 10 – Land Use Safety Planning;
- Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014a);
- NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA, 2014b); and
- NSW Waste Reduction and Purchasing Policy (EPA, 1997).

The assessment will include:

- Identification of the waste streams likely to be generated during construction and operation of the Project;
- Identification of the expected resources required to construct the Project;
- Strategies for reducing waste such as the use of recycled materials, bulk delivery of goods to minimise packaging and arrangements with suppliers to return any unused construction materials;
- Assessment of potential odour issues, and measures to mitigate these; and
- Identification of hazardous and dangerous goods, storage and management requirements, including, as required, assessment of 'hazardous and offensive development' in accordance with the State Environmental Planning Policy (Resilience and Hazards) 2021.

A qualitative risk screening would be carried for hazards associated with the Project to determine whether a preliminary hazard analysis (PHA) is required. The assessment would include:

- Identification of potential hazardous materials to be located on the Project area;
- Identification of credible adverse events that may potentially arise from those materials;
- Application of a screening process to determine which materials might lead to an unacceptable level of risk, depending on the quantities of hazardous materials involved;
- An analysis of the risk that results from the combination of estimated consequences and frequencies, including a preliminary hazard analysis, if required by the results of the screening process;
- An evaluation of the estimated risks against relevant criteria; and

Recommendations for management measures to be implemented to reduce the risks to acceptable levels.

6.5.2 BIOSECURITY

6.5.2.1 EXISTING ENVIRONMENT

Biosecurity is a critical consideration for Lord Howe Island. The Islands isolation and unique biodiversity makes it particularly susceptible to invasive species. Freight presents the highest biosecurity risk to Lord Howe Island and therefore must be managed appropriately to minimise this risk.

Lord Howe Island has a long history of biosecurity incursions, including mammalian pests (e.g., rats, mice, pigs, goats, cats), insects, plants and plant diseases. Such incursions present a significant threat to the unique biodiversity of Lord Howe Island. This has necessitated the implementation of several invasive species eradication programs.

Pigs, goats and cats have been removed in past eradication programs. A Rodent Eradication Program (REP) was implemented in 2019 to remove mice and rats from the Island, which have been implicated in the extinction of at least five endemic bird species, 13 endemic invertebrate species and two plant species on Lord Howe Island. Other eradication programs include for the Masked Owl (*Tyto novaehollandiae*), African Big-headed Ant (*Pheidole megacephala*) and Myrtle Rust (*Puccinia psidii*). Additionally, a program to remove invasive plants from Lord Howe Island has been running since 2004.

6.5.2.2 SUMMARY OF POTENTIAL BIOSECURITY ISSUES

Construction

The importation of construction equipment, vehicles, and materials presents an increased biosecurity risk to Lord Howe Island. This process will need to be managed to minimise this risk and avoid invasive species incursions.

Operation

The Project includes the construction of dedicated biosecurity infrastructure, which will include state-of-the-art biosecurity inspection and quarantine facilities, and secure, contained cargo storage and unstuffing areas.

6.5.2.3 EIS ASSESSMENT APPROACH

The EIS will include an assessment of biosecurity risk related to the construction of the Project. This will include identifying the equipment, vessels for transport, vehicles and materials that are required for construction of the Project, and the biosecurity risk that each pose. This information would be used to inform management and mitigation measures to be implemented to avoid or minimise this risk.

6.5.3 CONTAMINATION – LAND AND GROUNDWATER

6.5.3.1 EXISTING ENVIRONMENT

There is potential for legacy land contamination at the site of the existing WMF (and potentially elsewhere on the Island). This is due to the historical burial of wastes including effluent, disused plant, machinery, general household and demolition wastes. Asbestos-containing materials have also been observed at the WMF. However, a review of the NSW EPA Contaminated Land Record and List of Notified Sites did not identify any recorded sites affected by contamination on Lord Howe Island.

Qualitatively, groundwater quality on Lord Howe Island has been influenced by the Islands effluent disposal processes, as well as historical waste management processes. Groundwater depth within the Project area is likely to be shallow and groundwater aquifers may be connected to adjacent marine environments.

6.5.3.2 SUMMARY OF POTENTIAL CONTAMINATION ISSUES

Construction

Construction of the Project has the potential to disturb previously contaminated soils. Construction activities also have the potential to contaminate soils, for e.g., increasing the risk of diesel/oil spills. Areas to be disturbed during construction activities will need to be investigated to understand existing concentrations of contaminant so that risks can be appropriately managed. Construction plant and equipment will need to be operated and maintained to minimise the risk of contamination occurring.

Construction activities will also expose soils that could be transported to adjacent aquatic environments during rainfall events, potentially leading to increased sedimentation nutrient contamination. An erosion and sediment control plan (ESCP) will need to be prepared to minimise off-site contamination risk.

Operation

The new WMF is, in part, being constructed to reduce contamination risk. Therefore, the operation of the Project should provide a benefit to Lord Howe Island. Notwithstanding this, the operation of the WMF must still be undertaken in a manner that minimising risk of contamination to the environment.

6.5.3.3 EIS ASSESSMENT APPROACH

The EIS will be informed by a Preliminary Site Investigation (PSI) to understand contamination risk in areas where ground disturbance will occur. If the PSI identifies significant contamination risk, then a Detailed Site Investigation will be undertaken. A conceptual ESCP would be included with the EIS; however, the detailed ESCP would only be prepared once the design is finalised.

6.5.4 COASTAL HAZARDS

6.5.4.1 EXISTING ENVIRONMENT

Erosion and recession of shorelines is a key coastal management issue at Lord Howe Island, particularly for areas along Lagoon Road and Neds Beach. In many of these areas, infrastructure such as high-voltage telecommunications cabling is collocated with roads (i.e., underground) and has been exposed in previous coastal erosion events erosion.

The area near Windy Point, north of the Lord Howe Island Airport, had a history of erosion until a Seabee revetment was installed in 1999. This includes significant undermining of the road at Windy Point on several occasions. While Windy Point is not within the Project area, coastal hazards require consideration for the Project. The proposed location the Project marine infrastructure and biosecurity infrastructure is to the north of Signal Point, where the existing jetty is located. This area has been subject to coastal erosion and measures to manage this have been employed, particularly around the jetty. Erosion along Lagoon Beach is driven by significant storm events, which happen frequently.

6.5.4.2 SUMMARY OF POTENTIAL COASTAL HAZARD ISSUES

Construction

Construction of the Project may increase coastal erosion risk. Construction activities will occur along the coastline between Signal Point and Old Settlement Beach and within the Lord Howe Island lagoon. If not managed correctly, these activities may undermine existing coastal features, increasing erosion risk.

Conversely, storm events pose a risk to construction activities, particularly those associated with the marine infrastructure.

Coastal erosion potential will be a key consideration in the design of the Project. Appropriate management will be implemented during construction to avoid or minimise erosion risk to coastal areas. Management will also be implemented to ensure the safety of the construction workforce during significant storm events, and to ensure that construction plant and equipment is not damaged during these events.

Operation

The operation of the Project is not anticipated to increase coastal hazards; however, the design of the Project will be informed by a coastal hazards assessment and modelling as necessary. The infrastructure will also be designed to withstand significant storm events, such that damage to infrastructure during these events can be avoided or minimised.

6.5.4.3 EIS ASSESSMENT APPROACH

The EIS will be informed by a coastal hazards assessment, prepared with due consideration of:

- *Coastal Management Act 2016*;
- Resilience and Hazards SEPP;
- Coastal Risk Management Guide (DECCW, 2010).

The assessment will:

- Describe the key coastal features of the Project area, including coastal processes, geomorphology, assets, landform type and existing risks;
- Be informed by modelling (as necessary);
- Consider climate risk; and
- Propose, as necessary, coastal inundation and erosion controls.

6.5.5 BUSHFIRE

6.5.5.1 EXISTING ENVIRONMENT

Bushfires are uncommon on Lord Howe Island; however, they do occur. While there is no formally mapped bushfire prone land on Lord Howe Island, there is vegetation that is conducive to bushfire propagation. The 'Lord Howe Island Bush Fire Risk Management Plan' state that seven bushfires were recorded between 1964 and 2018. Ignition sources include escaped barbecue fires, campfires and pile burns (BFMC, 2018). It is reasonable to conclude that bushfire risk on Lord Howe Island is low, but requires consideration, particularly if 'hot works' are employed during construction of the Project.

6.5.5.2 SUMMARY OF POTENTIAL BUSHFIRE ISSUES

Construction

Construction of the Project is likely to involve 'hot works'. These will need to be managed to minimise the risk of bushfire propagation. Bushfire risk to construction workforce, plant and machinery is considered low.

Operation

Bushfire risk to the operation of the Project is considered low; however, does exist. If warranted, bushfire risk and management will be considered in operational management plans.

6.5.5.3 EIS ASSESSMENT APPROACH

A standard bushfire assessment will be included in the EIS. This will consider bushfire risk, vegetation communities adjacent to Project activities, and management and mitigation measures. The assessment will be prepared in accordance with Planning for Bushfire Protection (RFS, 2019).

6.6 AMENITY

6.6.1 VISUAL

6.6.1.1 EXISTING VISUAL AMENITY

Lord Howe Island is characterised by its natural landscapes. These include sheer mountain slopes and a broad arc of hills enclosing a lagoon. These features are highlighted in the World Heritage listing for the Island and are a primary drawcard for tourists. As such, visual amenity is critical to the main economic activity on the Island – tourism. The Lord Howe Island LEP and DCP (which does not apply to SSI/CSSI) both include significant detail on how development must consider and minimising visual impact.

6.6.1.2 SUMMARY OF POTENTIAL VISUAL ISSUES

Construction

Construction of the Project may cause temporary impacts on landscape and visual amenity resulting from:

- Temporary presence of construction activities including construction fencing and hoarding, temporary infrastructure and machinery;
- Presence of construction vehicles on the local road network;
- Removal of vegetation within the site.

These impacts will be minimised as far as practicable through the implementation of management measures.

Operation

The Project will be constructed in an area that has existing built features; however, new structures and landscaping features will be added to these areas. This is likely to change the landscape character and visual amenity of the surrounding landscape. Potential landscape character and visual amenity impacts associated with the operation of the Project include:

- Introduction of additional infrastructure to the landscape including lighting;
- Presence of dedicated car parking areas on previously grassed areas reducing parkland aspect of the site; and
- Presence of additional road infrastructure, such as accesses and signage.

The Project design will be informed by both built and landscape architects to ensure that, as far as possible, the Project blends in with landscape features and minimises visual impact.

6.6.1.3 EIS ASSESSMENT APPROACH

A landscape and visual impact assessment will be carried out as part of the EIS. The assessment will be guided by the following:

- Guidelines for Landscape and Visual Impact Assessment (LI & IEMA, 2013);
- Guidance Note for Landscape and Visual Assessment (AILA, 2018); and
- Australian Standard AS4282-1997 Control of the obtrusive effects of outdoor lighting.

The assessment will include:

- A description of the existing landscape character and qualities of the Project area and surrounds;
- A description of the key visual conditions of the site and potential visual catchment of the Project;
- Identification of the potential changes in landscape character;
- Assessment of the visual impact of the Project using massing diagrams from key viewpoints; and
- Identification of appropriate measures to avoid, minimise and/ or mitigate potential impacts to landscape character and visual amenity that can be incorporated into the detailed design and implemented during construction and operation.

6.6.2 NOISE AND VIBRATION

6.6.2.1 EXISTING ENVIRONMENT

Existing noise sources on Lord Howe Island include environmental noise, road traffic noise, and noise from the operation of the existing WMF and activities associated with freight and passenger transport. There are no heavy industries on Lord Howe Island. Background noise is therefore considered to be largely influenced by environmental sources.

6.6.2.2 SUMMARY OF POTENTIAL NOISE ISSUES

Construction

The Project area will be limited to the existing infrastructure nodes around the jetty and WMF, with construction activities occurring between these nodes along Lagoon Road. Several residential, recreational and commercial areas are in the vicinity of the jetty and along Lagoon Road. The WMF is generally located away from the main settlement area and there is one residential property with a tourism unit in close proximity to the WMF.

The nearest receptors to the Project area are likely:

- Nearest dwelling approximately 100 m north-east (8 Ocean View Drive);
- Nearest recreational area approximately 180 m south-east (Thompson Memorial Park); and
- Nearest commercial area approximately 160 m north-east (Ocean View Apartments).

Several construction activities will produce noise and/or vibration that may impact nearby receivers. These include:

- Use of heavy plant and equipment;
- Piling for construction of the new marine infrastructure;
- Construction vehicles transporting material or personnel;
- General construction activities; and
- Vessels and barges or other structures used to facilitate the construction of the new marine infrastructure.

Operation

Operational noise associated with the new facilities will depend on the proposed plant and equipment operating on-site, and the frequency and volume of operational traffic movements. It is anticipated that operational noise impacts would be commensurate with those that occur now at the jetty and WMF.

6.6.2.3 EIS ASSESSMENT APPROACH

A noise and vibration impact assessment will be undertaken to inform the EIS. The assessment will identify and assess potential impacts relating to the construction and operation of the Project on nearby receivers.

The following statutory instruments and policies will inform the assessment:

- Interim Construction Noise Guideline (DECC, 2009);
- NSW Road Noise Policy (DECCW, 2011);
- Noise Policy for Industry (EPA, 2017); and
- Assessing Vibration: A Technical Guideline (DEC, 2006a).

If necessary, the noise and vibration impact assessment will include background noise monitoring to measure existing noise levels at receivers near the Project areas (north and south). This will assist in defining project-specific noise assessment criteria. The typical noise levels that are generated by construction activities would be based on existing sound power level data. The construction noise and vibration impact assessment will include:

- Identification of construction activities likely to be carried out within the Project site;
- Development of a construction noise model to predict potential noise levels at nearby noise sensitive receivers;
- The intensity and duration of noise and vibration impacts expected during construction;
- Impacts associated with any work proposed to be undertaken outside standard daytime construction hours; and
- A screening assessment to calculate and assess potential construction vibration impacts.

The operational noise and vibration assessment will include:

- Development of an operational noise model to predict noise levels at nearby noise-sensitive receivers; and
- Assessment of operational road traffic noise impacts.

Measures to minimise or mitigate identified construction and operational noise and vibration impacts will be developed as part of the noise and vibration assessment in accordance with relevant best practice guidelines.

6.7 SOCIAL

6.7.1 SOCIAL BASELINE

Lord Howe Island is part of the state of NSW and is legally referred to as an unincorporated area administered by the Lord Howe Island Board, which reports to the NSW Minister for Environment and Heritage. The Island is characterised by its remoteness and unique natural features. The permanent population of Lord Howe Island is 445 (ABS, 2021); however, the tourist population at any given time can double this number. Annual tourist visitors to Lord Howe Island average about 16,000. This number would likely be significantly higher if the current 400 cap on tourist numbers was not implemented. This cap is to protect the Islands unique natural features and is facilitated by fixing the number of beds available for visitors.

The key demographics of Lord Howe Island are generally like those of the rest of NSW, with some notable exceptions as shown in Table 6-4. Notable exceptions include a lower Aboriginal/Torres Strait Islander population, higher median age, and lower unemployment rate.

TABLE 6-4 LORD HOWE ISLAND 2021 CENSUS STATISTICS (ABS, 2021)

| Category | Sub-category | Lord Howe Island (2021) | | NSW (2021) | |
|-----------------------|----------------------|-------------------------|---------|------------|------|
| | | No. | % | No. | % |
| People | Male | 220 | 48.7 | 3,984,116 | 49.4 |
| | Female | 232 | 51.3 | 4,087,995 | 50.6 |
| Indigenous Status | Aboriginal &/or TSI* | 5 | 1.1 | 278,043 | 3.4 |
| | Non-indigenous | 405 | 91.0 | 7,404,499 | 91.7 |
| | Not stated | 36 | 8.1 | 389,616 | 4.8 |
| Age | Median | 46 | N/A | 38 | N/A |
| | 0-4 years | 24 | 5.4 | 468,056 | 5.8 |
| | 5-9 years | 34 | 7.7 | 500,810 | 6.2 |
| | 10-14 years | 15 | 3.4 | 501,135 | 6.2 |
| | 15-19 years | 4 | 0.9 | 457,896 | 5.7 |
| | 20-24 years | 6 | 1.4 | 496,185 | 6.1 |
| | 25-29 years | 18 | 4.1 | 555,967 | 6.9 |
| | 30-34 years | 44 | 9.9 | 586,057 | 7.3 |
| | 35-39 years | 28 | 6.3 | 580,185 | 7.2 |
| | 40-44 years | 39 | 8.8 | 522,984 | 6.5 |
| | 45-49 years | 24 | 5.4 | 516,915 | 6.4 |
| | 50-54 years | 18 | 4.1 | 500,027 | 6.2 |
| | 55-59 years | 42 | 9.5 | 490,155 | 6.1 |
| | 60-64 years | 43 | 9.7 | 471,628 | 5.8 |
| | 65-69 years | 28 | 6.3 | 416,493 | 5.2 |
| | 70-74 years | 25 | 5.6 | 372,234 | 4.6 |
| | 75-79 years | 19 | 4.3 | 268,110 | 3.3 |
| | 80-84 years | 18 | 4.1 | 183,409 | 2.3 |
| 85 years + | 15 | 3.4 | 183,895 | 2.3 | |
| Social Marital Status | Registered Married | 129 | 45.7 | 2,847,938 | 47.3 |
| | De-facto | 55 | 19.5 | 637,050 | 10.6 |
| | Never Married | 98 | 34.8 | 2,532,544 | 42.1 |
| | Australian | 182 | 40.9 | 2,307,549 | 28.6 |

| Category | Sub-category | Lord Howe Island (2021) | | NSW (2021) | |
|----------------------------|-------------------------|-------------------------|------|------------|------|
| | | No. | % | No. | % |
| Ancestry (top Responses) | English | 151 | 33.9 | 2,404,990 | 29.8 |
| | Irish | 68 | 15.3 | 735,340 | 9.1 |
| | Scottish | 58 | 13.0 | 620,363 | 7.7 |
| | German | 26 | 5.8 | 242,546 | 3.0 |
| Employment Status | Worked full-time | 98 | 40.0 | 2,136,610 | 55.2 |
| | Worked part-time | 108 | 44.4 | 1,151,660 | 29.7 |
| | Away from work | 35 | 14.3 | 395,888 | 10.2 |
| | Unemployed | 6 | 2.4 | 189,852 | 4.9 |
| Occupation (top responses) | Managers | 63 | 26.1 | 536,820 | 14.6 |
| | Labourers | 44 | 18.3 | 300,966 | 8.2 |
| | Technicians/Trades | 37 | 15.4 | 436,589 | 11.9 |
| | Clerical/Administrative | 30 | 12.4 | 480,612 | 13.0 |
| | Professionals | 24 | 10.0 | 952,131 | 25.8 |
| | Sales | 17 | 7.1 | 294,889 | 8.0 |
| | Community/Service | 14 | 5.8 | 390,779 | 10.6 |
| | Operators/Drivers | 4 | 1.7 | 222,186 | 6.0 |
| Industry of Employment | Accommodation | 74 | 30.7 | 30,040 | 0.8 |
| | State Government | 51 | 21.2 | 55,670 | 1.5 |
| | Cafes/Restaurants | 17 | 7.1 | 72,942 | 2.0 |
| | Scenic/Sightseeing | 9 | 3.7 | 1,020 | 0.0 |
| | Primary Education | 6 | 2.5 | 76,275 | 2.1 |
| Median Weekly Income | Personal | \$961 | N/A | \$813 | N/A |
| | Family | \$1,942 | N/A | \$2,185 | N/A |
| | Household | \$1,699 | N/A | \$1,829 | N/A |

For the purposes of the Social Impact Assessment the entire population of Lord Howe Island will be considered in the Projects social locality. The concentration of residents within a narrow, relatively small area means that all Island residents and visitors may be impacted by the Project.

6.7.2 SUMMARY OF POTENTIAL SOCIAL ISSUES

6.7.2.1 CONSTRUCTION

Construction of the Project may lead to social impacts, plus several social benefits. The construction workforce will require accommodation for the construction period.

The Islands visitor population capacity is limited to 400 beds; therefore, if Project construction staff use existing accommodation, visitor numbers will be reduced. While this may not necessarily impact accommodation providers, it will have impacts on other areas, e.g., sightseeing/scenic tours. Construction activities will also impact the way of life of Island residents and visitor. There will be an increase in vehicles on local roads, and social impacts relating to the fly-in-fly-out workforce. Such impacts will need to be understood and appropriately managed.

6.7.2.2 OPERATION

The Project and broader Lord Howe Island CIP is aimed at improving the reliability of the essential marine freight service, minimising biosecurity risk, and optimising public use of the WMF and minimising impacts from that facility. Social benefits of the Project include:

- Increasing the reliability of the essential marine freight service by providing a fit-for-purpose vessel that can cater for local resident and visitor needs;
- Providing upgraded facilities that will help to sustain and protect Lord Howe Islands unique natural and cultural values; and
- Potentially provide additional employment opportunities for residents.

6.7.3 EIS ASSESSMENT APPROACH

The EIS will be informed by a Social Impact Assessment (SIA). This will assess the potential social impacts that may result from the Project. The assessment will include consideration of the following statutory instruments:

- 'Social Impact Assessment Guideline for State Significant Projects' (DPIE, 2023);
- 'Social Impact Assessment: Guidance for assessing and managing the social impacts of projects' (IAIA, 2015); and
- 'SIA principles: International Principles for Social Impact Assessment' (Vanclay, 2003).

The SIA will include:

- Description of the existing social baseline for the communities and businesses surrounding the Project, including population and demography; families and housing; travel behaviour; socio-economic indicators;
- Description of the key stakeholder groups and the values held by these communities, such as population and demographics, community services and facilities, local access and connectivity, amenity and character, and business and industry;
- Assessment of the potential impacts of the Project within the Projects social locality; and
- Identification of appropriate management and mitigation measures including measures to enhance the Project's benefits and to avoid, manage or mitigate its potential impacts.

6.8 ECONOMIC

6.8.1 ECONOMIC BASELINE

Tourism is the largest industry on Lord Howe Island. This industry comprises the Islands tourist accommodation, dining, sightseeing and scenic tours, and associated recreational activities (e.g., scuba diving, snorkeling). The other local industry, and the Islands only real export is the Kentia Palm (*Howea forsteriana*), which are endemic to Lord Howe Island.

Economic activity on Lord Howe Island is largely supported by the tourism industry, and the key industries offering employment on the Island, Government Services, cafes and restaurants and primary education.

6.8.2 SUMMARY OF POTENTIAL ECONOMIC ISSUES

6.8.2.1 CONSTRUCTION

Construction of the Project will impact the Lord Howe Island economy. The construction workforce will need to stay on the island for the duration of construction, providing economic stimulus to local businesses. However, with the cap on visitors to the island, this may be at the expense of tourists and therefore would impact business (aside from accommodation providers) that rely on tourists.

Construction of the Project will offer employment opportunities to local contractors, which should be the primary and first choice for construction workforce. This will lead to economic benefits and be a key mitigation to the accommodation challenge, costs, and vehicle impact.

Economic impacts associated with construction of the Project would include competition for resources which may increase the costs of goods and services.

6.8.2.2 OPERATION

The Project is proposed, in part, to support the tourism industry by providing a reliable marine freight service and updated mainland facilities that will provide indirect benefits to the unique values of Lord Howe Island.

6.8.3 EIA ASSESSMENT APPROACH

An Economic Impact Assessment will be undertaken to inform the EIS. The assessment will

- Describe the economic environment of the Project area with and without the Project;
- Estimate the project's economic impacts and benefits of the Project;
- Identify measures to manage any negative impacts generated by the Project;
- Identify measures to capture the economic opportunities generated by the Project; and
- Propose targeted management measures.

6.9 LAND, WATER AND HYDROLOGY

6.9.1 EXISTING ENVIRONMENT

The geology of Lord Howe Island is derived from its origins as a shield volcano that emerged approximately 7 million years ago on the largely submerged continent of Zealandia. The heavily eroded structures that now comprise Lord Howe Island include various geological units of basalt, calcarenite and alluvial soils with remnants of its volcanic history such as tuff and breccia (Thompson, Bliss, & Priest, 1987). The Project area is limited to the western coast of the Island, adjacent to the lagoon which is mapped as derivations of calcarenite and alluvium typical of low-lying coastal geology.

The small size and topography of Lord Howe Island has limited the development of surface water features; however, there are a few creeks, many of which drain into the lagoon. This includes Old Settlement Creek, Cobbys Creek and Soldiers Creek. Lord Howe Island was not recognised as having a flooding problem until two large flood events in 1996. These flood events are the worst flood on record and caused several significant landslips and led to the Island being declared a Natural Disaster Area.

6.9.2 SUMMARY OF POTENTIAL LAND, WATER AND HYDROLOGY ISSUES

6.9.2.1 CONSTRUCTION

Potential soil and surface water quality impacts during construction of the Project include:

- Soil erosion – construction would result in the exposure of the natural ground surface and subsurface through the removal of vegetation, and excavation and landforming works within the Project area which may increase the potential for soil erosion to occur;
- Surface water quality - construction has the potential to impact surface water quality through the pollution of stormwater runoff with sediments, fuel and other hazardous materials from the construction site; and
- Groundwater quality – surface water runoff containing pollution has the potential to impact groundwater with the generation of turbid, saline or contaminated water, and during earthworks and other excavation activities (such as if drawdown or dewatering is required). This may result in reduced groundwater yields and reduced groundwater quality.

6.9.2.2 OPERATION

During operation of the Project the potential for impacts to water quality would be limited. The objectives of the Project are to improve the functioning of the WMF, which would include minimising the risk of materials leaking from that facility. Project infrastructure would aim to capture stormwater runoff from the site and treat wastewater to an acceptable standard, prior to discharge.

The main potential impact of the operation of the Project on water quality relates to the runoff of pollutant-laden surface water from impervious surfaces, or seepage of pollutant-laden runoff into groundwater. Pollutant sources may include, for e.g., fuel spillage, tyre wear, etc. However, the Project will be designed to minimise the potential surface water runoff from built features.

6.9.3 EIS ASSESSMENT APPROACH

A soils and surface water hydrology assessment will be undertaken as part of the EIS. The following statutory instruments will guide the development of this assessment:

- 'Managing Urban Stormwater: Soils and Construction Volume 1' (Landcom, 2004) and '...Volume 2' (DECC, 2008);
- 'Approved Methods for the Sampling and Analysis of Water Pollutants in NSW' (EPA, 2022);
- 'Australian and New Zealand Guidelines for Fresh and Marine Water Quality' (ANZECC & ARMCANZ, 2000); and
- 'Using the ANZECC Guidelines and Water Quality Objectives in NSW' (DEC, 2006b).

The assessment will include:

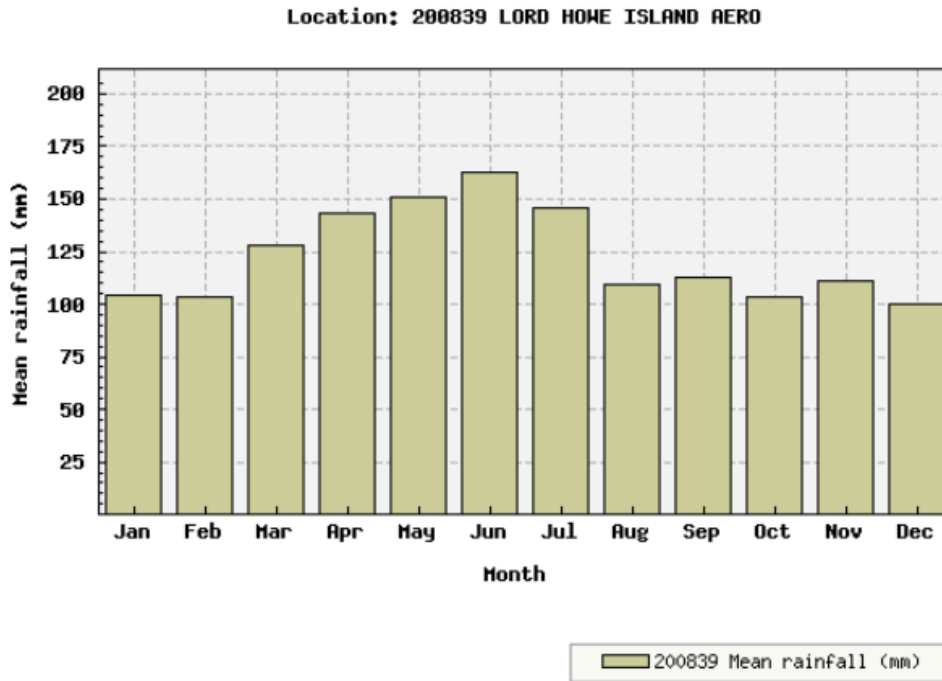
- A review of existing information on the catchment and identification of sensitive receiving environments;
- Identification of relevant NSW Water Quality Objectives for waterbodies within the assessment study area;
- Identification of the potential impacts associated with erosion and sedimentation;
- Identification of potential impacts on water quality and assessment as to whether the relevant water quality objectives are likely to be achieved during construction and operation; and
- Conceptual strategies to mitigate the identified impacts including erosion and sediment control options and water quality management measures.

6.10 AIR QUALITY AND GREENHOUSE GASES

6.10.1 EXISTING ENVIRONMENT

Land use on the Island is constrained by its size and limited population, and large conservation areas. This limits the availability of developable land, with most used for tourism, residential, and special leases for agricultural purposes. A search of the National Pollutant Inventory did not identify any sites on Lord Howe Island that area required to report emissions data, and no heavy industrial processes were found to occur. There is no publicly available ambient air quality monitoring data for Lord Howe Island; however, with no heavy industries and relatively few fugitive emissions sources.

Lord Howe Island Airport has an Australian Bureau of Meteorology (BOM) climate station ('Lord Howe Island Aero'; station ID: 200839). Climatic records from this station from 1988-2024 showed a mean maximum temperature of 25.8°C in February and mean minimum temperature of 19.1°C in July/August. Rainfall records (Figure 6-3) showed a mean annual rainfall of 1476.7 mm with the highest mean rainfall of 162.7 mm in June and lowest mean rainfall of 100.4 mm in December. This indicates a tropical climate with a distinct wet season between March and July.



Australian Government
Bureau of Meteorology

FIGURE 6-3 MEAN RAINFALL RECORDS ON LHI 1988-2024 (BOM, 2024)

6.10.2 SUMMARY OF POTENTIAL AIR QUALITY ISSUES

6.10.2.1 CONSTRUCTION

Construction of the Project may impact local air quality due to particulate (dust) emissions created during vegetation removal, earthworks, handling of spoil, demolition activities and the movement of construction plant and equipment within unsealed areas. The nature of any increase would depend on the scale of activities and quantities of material handled. There is also the potential for localised gaseous emissions generated by the combustion of fuel in construction plant, machinery and equipment. The temporary nature of the emissions is not expected to have a significant, long-term impact on air quality in the region.

6.10.2.2 OPERATION

Operation of the Project is unlikely to lead to material impacts to air quality or an increase in greenhouse gas emissions. The Project will increase the efficiency of operation of the marine infrastructure and WMF which, if anything, may minimise air emissions.

Processing of waste at the WMF is likely to be the main source of operational emissions. This will be investigated in detail during the development of the EIS to quantify emissions and assess potential impacts.

6.10.3 EIS ASSESSMENT APPROACH

An air quality impact assessment will be carried out as part of the EIS for the Project and will include:

- Identification and description of the background air quality environment based on a desktop assessment and review of existing information;
- Identification of sensitive receivers for air quality, and weather conditions and activities that have the potential to impact air quality conditions;
- Identification of sources of air emissions during construction and operation of the Project;
- Estimation of the intensity of the potential emissions to air resulting from construction and operation of the Project, based on guidance in 'Emission Estimation Technique Manual for Mining' (for implications relating to exposed earth), US EPA's 'Compilation of Air Pollutant Emission Factors (AP-42)', and NSW EPA's motor vehicle emissions inventory;
- Prediction of potential changes in air quality conditions using the intensity of emissions identified from guidance as an input to CALPUFF dispersion modelling for construction and operation of the Project, and a comparison of the results of the modelling against criteria established in accordance with the 'Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' (EPA, 2016); and
- Identification of appropriate measures to avoid, minimise and/ or mitigate potential impacts to air quality during construction and operation.

6.11 CUMULATIVE IMPACTS

Cumulative impacts result from successive, incremental, or combined effects of an activity or project when added to other past, current, planned, or reasonably foreseeable future impacts (DPIE, 2022b). The cumulative effects of multiple major projects (such as large residential or commercial developments, major road and rail projects, or other proposed major project developments) can result in a greater extent, magnitude or duration of impacts that would otherwise occur because of an individual project. Cumulative impacts may also arise where multiple or consecutive construction projects impact c/o the same receivers (known as 'construction fatigue').

The extent to which another development or activity could interact with the construction and/or operation of project would be dependent on its scale, location and/or timing of construction. Generally, the largest adverse cumulative impacts would be expected to occur where multiple long-duration construction activities are undertaken close to, and over a similar timescale of, construction activities or where consecutive construction activities occur on an area of receivers, meaning they are exposed to relatively long timescales of construction impacts.

The Applicant is not aware of any other major projects proposed for Lord Howe Island; therefore, cumulative impacts are considered unlikely.

Where projects occur near and at similar timeframes to the Project, the following impacts may arise:

- Temporary traffic disruption and access changes, which could extend across the road networks via Lagoon Road;
- Temporary additive air quality and human health impacts from construction dust;

- Temporary additive noise and vibration impacts;
- Temporary additive socio-economic and amenity impacts from residents, employees, tourists and visitors; and
- Permanent changes to the cultural and amenity heritage across the area due to development.

While cumulative impacts are considered unlikely, owing to the unique nature of Lord Howe Island and the Project, the Applicant will consider whether a cumulative impact assessment is warranted at the time of preparation of the EIS. If required, the assessment will include:

- Identification of any surrounding developments and major projects with the potential to interact with the construction of the Project through:
 - A review of the NSW Major Projects portal and the Lord Howe Island Board DA register;
 - Consultation with the Lord Howe Island Board and NSW National Parks and Wildlife Services;
- Identification of potential cumulative impacts arising from the potential interaction of any identified relevant projects with the Project; and
- Measures to minimise or mitigate identified cumulative impacts.

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APPENDIX A

SCOPING SUMMARY TABLE

| Level of Assessment | Matter | Scale of Impact ¹ | Nature of Impact ² | Sensitivity of Receiving Environment ³ | Mitigation Measures Required | Cumulative Impact Assessment Required | Engagement | Relevant plans, policies and guidelines | Scoping Report Reference |
|---------------------|--------------------|------------------------------|---|---|------------------------------|---------------------------------------|------------|--|--------------------------|
| Detailed | Biodiversity | High | Direct Indirect Cumulative | Sensitive (high ecological values of species / biodiversity present) | Yes | Yes | Specific | Lord Howe Island Biodiversity Management Plan (DECC, 2007) <i>Biodiversity Conservation Act 2016</i> (NSW) Significant Impact Guidelines 1.1, <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwth) Commonwealth Department of the Environment and Energy – Nationally Threatened Ecological Communities and Threatened Species Guidelines (various) Commonwealth Department of the Environment and Energy – Survey Guidelines for Nationally Threatened Species (various) Managing Natural World Heritage (UNESCO, 2012) | Section 6.2 |
| Detailed | Traffic and access | High | Direct Indirect Cumulative | Sensitive (receptors, communities) | Yes | Yes | Specific | Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2017) Guide to Traffic Generating Developments Version 2.2 (RTA, 2002) | Section 6.4 |
| Detailed | Historic heritage | High | Direct Indirect Cumulative Perceived | Sensitive (heritage values) | Yes | Yes | Specific | Significant Impact Guidelines 1.1, <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cwth) <i>Heritage Act 1977</i> (NSW) NSW Heritage Manual (DUAP, 1996); Australia ICOMOS Charter for Places of Cultural Significance (the Burra Charter) (ICOMOS, 2013); | Section 6.3 |

¹ Based on the geographical location, severity and duration of the impact as detailed in Appendix A of the State Significant Infrastructure Guidelines – Preparing a Scoping Report (DPIE, 2022).

² 'Direct', 'indirect', 'cumulative' and/or 'perceived' as detailed in Appendix A of the State Significant Infrastructure Guidelines – Preparing a Scoping Report (DPIE, 2022).

³ Expressed in legislation and guidelines, societal values or vulnerability to change as detailed in Appendix A of the State Significant Infrastructure Guidelines – Preparing a Scoping Report (DPIE, 2022).

| Level of Assessment | Matter | Scale of Impact ¹ | Nature of Impact ² | Sensitivity of Receiving Environment ³ | Mitigation Measures Required | Cumulative Impact Assessment Required | Engagement | Relevant plans, policies and guidelines | Scoping Report Reference |
|---------------------|--|------------------------------|---|---|------------------------------|---------------------------------------|------------|---|--------------------------|
| | | | | | | | | <p>Assessing heritage significance (DPE, 2023c);</p> <p>Guidelines for preparing a statement of heritage impact (DPE, 2023d); and</p> <p>Assessing Significance for Historical Archaeological Sites and 'Relics' (DoP, 2009)</p> <p>Managing Cultural World Heritage (UNESCO, 2013)</p> | |
| Detailed | Hazards and Risks – Waste | High | Direct Indirect Cumulative Perceived | Sensitive (environmental values, safety, receptors [odour]) | Yes | Yes | Specific | <p>Waste Classification Guidelines Part 1: Classifying Waste (EPA, 2014a)</p> <p>NSW Waste Avoidance and Resource Recovery Strategy 2014-21 (EPA, 2014b)</p> <p>NSW Waste Reduction and Purchasing Policy (EPA, 1997)</p> | Section 6.5.1 |
| Detailed | Hazards and Risks – Biosecurity | High | Direct Indirect Cumulative | Sensitive (safety, high ecological values of species / biodiversity present) | Yes | Yes | Specific | <p><i>Biosecurity Act 2015</i> (NSW)</p> <p>Lord Howe Island Biosecurity Strategy 2022-2024 (LHI Board, 2023)</p> | Section 6.5.2 |
| Detailed | Hazards and Risks – Land and Groundwater Contamination | Moderate | Direct Indirect Cumulative | Sensitive (environmental values, safety) | Likely | Yes | General | <p>Managing Urban Stormwater: Soils and Construction Volume 1' (Landcom, 2004) and '...Volume 2' (DECC, 2008)</p> <p>Approved Methods for the Sampling and Analysis of Water Pollutants in NSW' (EPA, 2022)</p> | Section 6.5.3 |
| Detailed | Hazards and Risks – Coastal Hazards | Moderate | Direct Indirect Cumulative | Sensitive (environmental values, safety) | Likely | Yes | General | <p><i>Coastal Management Act 2016</i> (NSW)</p> <p>Resilience and Hazards SEPP</p> <p>Coastal Risk Management Guide (DECCW, 2010)</p> | Section 6.5.4 |

| Level of Assessment | Matter | Scale of Impact ¹ | Nature of Impact ² | Sensitivity of Receiving Environment ³ | Mitigation Measures Required | Cumulative Impact Assessment Required | Engagement | Relevant plans, policies and guidelines | Scoping Report Reference |
|---------------------|---|------------------------------|-----------------------------------|---|------------------------------|---------------------------------------|------------|---|--------------------------|
| | | | | | | | | Australian and New Zealand Guidelines for Fresh and Marine Water Quality' (ANZECC & ARMCANZ, 2000) | |
| Standard | Hazards and Risks - Flooding | Low | Direct Indirect | Sensitive (safety) | Likely | No | General | Resilience and Hazards SEPP | Section 6.9 |
| Standard | Hazards and Risks - Bushfire | Low | Direct Indirect | Sensitive (safety) | Likely | No | General | Planning for Bushfire Protection (RFS, 2019) | Section 6.5.5 |
| Standard | Hazards and Risks - Hazardous and Offensive Development | Low | Direct Indirect | Sensitive (safety) | Likely | No | General | Hazardous Industry Planning Advisory Paper No. 4, No. 6. No. 10 Resilience and Hazards SEPP | Section 6.5.1 |
| Standard | Hazards and Risks - Dangerous Goods | Low | Direct Indirect | Sensitive (safety) | Likely | No | General | Resilience and Hazards SEPP | Section 6.5.1 |
| Detailed | Amenity - Visual | Moderate | Direct Cumulative Perceived | Sensitive (receptors, communities) | Likely | Yes | Specific | Guidelines for Landscape and Visual Impact Assessment (LI & IEMA, 2013) Guidance Note for Landscape and Visual Assessment (AILA, 2018) Australian Standard AS4282-1997 Control of the obtrusive effects of outdoor lighting | Section 6.6.1 |
| Detailed | Amenity - Noise and Vibration | Moderate | Direct Cumulative Perceived | Sensitive (receptors, communities) | Likely | Yes | Specific | Interim Construction Noise Guideline (DECC, 2009) NSW Road Noise Policy (DECCW, 2011) Noise Policy for Industry (EPA, 2017) Assessing Vibration: A Technical Guideline (DEC, 2006a) | Section 6.6.2 |
| Detailed | Social | High | Direct Indirect | Sensitive (social values) | Yes | Yes | Specific | Social Impact Assessment Guideline for State Significant Projects (DPIE, 2023) | Section 6.7 |

| Level of Assessment | Matter | Scale of Impact ¹ | Nature of Impact ² | Sensitivity of Receiving Environment ³ | Mitigation Measures Required | Cumulative Impact Assessment Required | Engagement | Relevant plans, policies and guidelines | Scoping Report Reference |
|---------------------|----------------------------------|------------------------------|----------------------------------|---|------------------------------|---------------------------------------|------------|---|--------------------------|
| | | | Cumulative Perceived | | | | | Social Impact Assessment: Guidance for assessing and managing the social impacts of projects (IAIA, 2015) SIA principles: International Principles for Social Impact Assessment (Vanclay, 2003) | |
| Detailed | Economic | High | Direct Indirect Cumulative | Sensitive (economic values) | Yes | Yes | General | Lord Howe Island Community Strategic Plan 2024-2034 (LHI Board, 2024a) | Section 6.8 |
| Detailed | Water | Moderate | Direct Indirect Cumulative | Sensitive (local hydrology and water quality) | Likely | Yes | General | 'Managing Urban Stormwater: Soils and Construction Volume 1' (Landcom, 2004) and '...Volume 2' (DECC, 2008) 'Approved Methods for the Sampling and Analysis of Water Pollutants in NSW' (EPA, 2022) 'Australian and New Zealand Guidelines for Fresh and Marine Water Quality' (ANZECC & ARMCANZ, 2000) 'Using the ANZECC Guidelines and Water Quality Objectives in NSW' (DEC, 2006b) | Section 6.9 |
| Standard | Air Quality and Greenhouse Gases | Low | Direct Indirect | Sensitive (local air quality) | Likely | No | General | Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales' (EPA, 2016) | Section 6.10 |
| Standard | Land | Low | Direct Indirect | Sensitive (safety, environmental values) | Likely | No | General | 'Managing Urban Stormwater: Soils and Construction Volume 1' (Landcom, 2004) and '...Volume 2' (DECC, 2008) | Section 6.9 |



APPENDIX B ENGAGEMENT PLAN (WSP, 2024)

NPWS AND LHIB

ENGAGEMENT PLAN (REVISED)

LORD HOWE ISLAND CRITICAL
INFRASTRUCTURE PROGRAM

NOVEMBER 2024



Question today Imagine tomorrow Create for the future

Engagement Plan (Revised) Lord Howe Island Critical Infrastructure Program

NPWS and LHIB

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| REV | DATE | DETAILS |
|-----|------------------|---------|
| 2 | 10 October 2024 | Revised |
| 3 | 13 November 2024 | Revised |
| 4 | 19 November 2024 | Revised |

| | NAME | DATE | SIGNATURE |
|--------------|-----------------------------------|--------------------------|---|
| Prepared by: | Sophie Drysdale and Lucy Greig | October/November 2024 |  |
| Approved by: | Lucy Greig | October/November 2024 |  |

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APPENDIX C. PROMOTIONAL MATERIALS

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1 ENGAGEMENT OVERVIEW

1.1 CONTEXT AND SCOPE

Context

Robust engagement is required to support development and delivery of the Lord Howe Island Critical Infrastructure Program being undertaken by NSW National Parks & Wildlife Service and the Lord Howe Island Board, assisted by the Program and Projects Management Team led by APP and including the Project Architect (Lahznimmo Architects) and Landscape Architect (Spackman Mossop Michaels).

The Program will provide the Lord Howe Island Board with resources to implement improvements and upgrades to essential infrastructure and secure the Island's future. It will include infrastructure projects that are critical to everyday life on Lord Howe Island, as well as supporting its long-term future as a sustainable tourism destination. The Program will involve preparation of a master plan that builds on key strategies, including the Marine Strategy and Waste Management Strategy, and that also incorporates further enabling infrastructure.

The Program will also involve:

- Establishing a suitable marine freight service to Lord Howe Island, to replace the existing freight transport vessel which is nearing the end of its service life (in line with the marine infrastructure business case and Marine Freight Service Strategy)
- Building of a new Waste Management Facility on Lord Howe Island to support both day-to-day operations and the Island's tourism-led economy (in line with the design report and business case)
- Design and delivery of biosecurity measures to support the long-term security of the Marine Strategy, plus related capital works on Lord Howe Island and to the primary port that services the Island (with the biosecurity business case to be undertaken).

Scope

This Engagement Plan (the Plan) will guide and support robust engagement on the Program. Specifically, engagement is required to seek community and stakeholder insights on:

- Values and aspirations for the Lord Howe Island Critical Infrastructure Program
- Feedback on a number of concepts, for development of a master plan, to realise the Critical Infrastructure Program.

Given the complex nature of the Critical Infrastructure Program, the engagement approach and activities have been designed to support informed participation by the Island's community and stakeholders. Technical information will be presented clearly, using visual and verbal communication, where possible.

The engagement program will be delivered in two phases. The first phase, which explored values and aspirations, involved communication via a Community Update / letterbox drop and Electronic Direct Mail (EDM). It included an online community survey, stakeholder interviews/workshop, community information sessions, as well as an opportunity for individuals, groups and organisations to make submissions. An Engagement Outcomes Report was prepared that documents community and stakeholder feedback received during this phase. Learnings from this initial phase were presented to the Lord Howe Island Board and used to refine the approach for the second phase of engagement, which will test and refine the Critical Infrastructure Program. The outcomes of the engagement process will be considered by National Parks & Wildlife Service and the Lord Howe Island Board in finalisation of the **Critical Infrastructure Program, related master plan and projects**.

We understand the criticality of timing, to ensure the Program options can be investigated and progressed in accordance with the relevant planning pathway, confirmed as Critical State Significant Infrastructure (CSSI) in mid 2024. The

engagement process commenced in May 2024, with the first phase conducted in May to June, and the second phase scheduled for December 2024.

This Plan outlines the community engagement objectives, methods and schedule, and identifies key stakeholders, the project narrative and FAQs.

What can we learn from the recent Community Strategic Plan process?

The online survey conducted as part of the Lord Howe Island Community Strategic Plan (CSP) process provides important learnings for the Lord Howe Island Critical Infrastructure Program engagement:

Interest and importance of Program related issues

- When asked about community priorities, ‘infrastructure’ was identified as the sixth most important priority. As many as **83.5% of survey respondents identified infrastructure as very important or important**. While only 1.5% identified it as ‘not important’.
- Under the infrastructure theme, **‘maintain critical infrastructure: waste, water, electricity, airport jetty to support community needs and economic activities’ was the priority that attracted the highest level of support**, with 98.5% of respondents agreeing with this initiative.
- Further to this, ‘environment’ and ‘economy and employment’ were identified as the second most important and fifth most important community priorities.
- Under the environment theme, **‘maintain our World Heritage listing’ was the priority that attracted the highest level of support**, with 85.7% of respondents agreeing with this initiative. In eighth position was the priority **‘sustainably strengthen biosecurity measures to prevent the introduction and spread of invasive species’** (75.2%).
- Under the economy and employment theme, **‘minimising negative impacts of tourism, whilst providing quality opportunities for visitors to appreciate Island values’ attracted the highest level of support**, with 87.8% of respondents agreeing with this initiative. In fourth position was the priority **‘promote and support technology and infrastructure that is aligned with community needs’** (84.9%).

Engagement preferences

- Under the governance theme, **‘enhance and implement transparent board governance practices’ was the priority that attracted the highest level of support**, with 93.9% of respondents agreeing with this initiative.
- When asked how they had interacted with the LHIB or had their say over the last 12 months, the top responses were: talked to a LHIB staff member (69.5%), filled out a survey (67.2%), talked to a LHIB Board member (59.5%), emailed the LHIB (55.7%), visited the LHIB office (51.9%), or called the LHIB (51.2%). Around one in four survey respondents had attended a community meeting (40.5%). The survey results demonstrate the importance of including a community survey as part of the CIP engagement, offering in person engagement, as well as ensuring that LHIB staff and board members are equipped with the information they need to respond to questions and queries from members of the community and stakeholders.

1.2 OBJECTIVES AND OUTCOMES

Objectives

Robust engagement will enable stakeholders and community members to contribute to the Critical Infrastructure Program effectively and actively, and to inform finalisation of the related master plan and projects.

The objectives of this Plan are to:

- Establish a foundation for genuine engagement and collaboration with community members and stakeholders on the Critical Infrastructure Program and related master plan.

- Set out a consistent and coordinated approach to stakeholder and community engagement, including identifying key stakeholders, methods of engagement, risks and mitigation measures and opportunities to support successful delivery of the Critical Infrastructure Program.
- Ensure key internal and external project stakeholders and community members have opportunities to participate in the Critical Infrastructure Program engagement, including the Program Partners, governance bodies (including the soon to be established Community Consultation Group), Lord Howe Island community, transport, cargo, supply and mail providers, government departments and agencies, elected representatives, business and tourism industries, trading corporations and contractors, industry and associations, special interest groups and visitors.
- Identify and manage potential stakeholder and community issues effectively and promptly.

Outcomes

Outcomes of the engagement process will be used to inform future directions for the Critical Infrastructure Program and related master plan and will seek to:

- Encourage participation and attract feedback from diverse members of the community and stakeholder groups.
- Explore a series of proposals and concepts to inform the Critical Infrastructure Program and related master plan.
- Respond to questions that community members and stakeholders raise in response to the proposals and concepts.
- Bring stakeholders and community members on the journey to enable Lord Howe Island to reach its full potential as both a great place to live and a sustainable tourism destination.

1.3 ENGAGEMENT PRINCIPLES

This Plan is underpinned by the following principles:

- Coordinated – to provide a clear and consistent approach to communication and engagement
- Inclusive – to support participation by diverse stakeholders and community members in the engagement program
- Informative – to provide the community and stakeholders with relevant information about the Critical Infrastructure Program and related master plan, while acknowledging the value of local knowledge
- Transparent – to build trust and confidence in the Program and decision making by National Parks & Wildlife Service and the Lord Howe Island Board, clearly acknowledging the parameters of the engagement process and ensuring that participants are aware of the aspects of the Program that can / cannot be influenced by their feedback.

1.4 ACTIVITIES AND SUPPORTING MATERIALS

| Activity and purpose | Supporting information |
|---|--|
| <p>Community update monthly and electronic direct mail (EDM) To provide clear and accurate information about the Program and to generate excitement and participation in the engagement process</p> | <p>Distributed to LHIB stakeholder database and publicly released on the Lord Howe Island website.</p> |
| <p>Stakeholder interviews/workshop To seek early input to and feedback on the Program and related master plan overall and in relation to specific elements/concepts – from key internal and external stakeholders across diverse areas of interest including business/tourism stakeholders</p> | <p>Targeted invitations, discussion guide, presentation materials, supporting materials</p> |
| <p>Community survey and email submissions To seek input to and feedback on the Program and related master plan overall and in relation to specific elements/concepts – from the community and further stakeholders</p> | <p>Community update/letterbox drop, EDM, poster, web page and social media promotions, survey tool (online and print versions)</p> |

Community forums and information sessions

To share more detailed information about the Program and master plan, engage participants in conversation/collect participant feedback, encourage people to complete the survey or lodge a submission, and promote participation in the overall engagement process (including Community Consultation Group)

Community update/letterbox drop, EDM, poster, web page and social media promotions, targeted invitations, run sheet, display boards, presentation materials and supporting materials

1.5 WHO AND HOW ARE WE ENGAGING?

NSW National Parks & Wildlife Service and the Lord Howe Island Board are seeking to communicate with and obtain input to and feedback from stakeholders and community members on the Critical Infrastructure Program and related master plan.

Key stakeholder and community groups include:

- Program Partners – Department of Climate Change, Energy, the Environment and Water (DEECCW), NSW National Parks & Wildlife Service (NPWS), the LHIB Board Members and LHIB staff
- Governance bodies including the Program Board, Project Control, Community Consultation Group and Government Stakeholder Consultation Group
- Lord Howe Island community – including key property owners / leaseholders, residents, local community leaders / influencers, and community groups
- Government – Commonwealth, State and Local
- Elected representatives
- Tourism and business industries
- Transport, cargo, supply and mail providers
- Trading corporations and contractors
- Industry and associations
- Special interest groups – including across environment, heritage, education
- Visitors / tourists.

The following table provides an analysis of the stakeholders and their influence and impact level relating to the Program. We will continue to work with the Program Team to identify relevant stakeholders. The analysis draws on the International Association of Public Participation's (IAP2) engagement spectrum which comprises:

- Inform – provide stakeholders and community with balanced and objective information
- Consult – seek feedback from stakeholders and community about key aspects of the Lord Howe Island Critical Infrastructure Program and related master plan
- Involve – work with stakeholders and community throughout the process to ensure issues and opportunities are consistently understood and considered.

| Stakeholder Group | Stakeholders | Relevance to the Critical Infrastructure Program | Engagement Level |
|--|---|---|--|
| Program Partners | <ul style="list-style-type: none"> ▶ NSW Department of Climate Change, Energy, Environment and Water ▶ NSW National Parks Wildlife Services ▶ Lord Howe Island Board ▶ Lord Howe Island Board Members | <p>Have direct accountability for the development and implementation of marine infrastructure and environmental management programs on the island.</p> | <ul style="list-style-type: none"> ▶ Collaborate and empower each other ▶ Collaborate in the development and dissemination of communication and engagement materials and approaches |
| Lord Howe Island Community | <ul style="list-style-type: none"> ▶ Community Consultation Group ▶ Residents ▶ Lord Howe Island Tourism Association (LHITA) ▶ Leaseholders ▶ Local Businesses ▶ Tour Operators ▶ Lodge/Accommodation /Hospitality Operators ▶ Scientific researchers ▶ LHIB Staff | <ul style="list-style-type: none"> ▶ Local community members and business owners often participate, or are impacted by, the implementation of biosecurity programs on the island. ▶ Community members also have a general biosecurity duty, as outlined in the <i>NSW Biosecurity Act 2015</i>. ▶ Local community members and business owners are directly impacted by the Marine Freight Service to LHI. ▶ Local community members, business owners and Waste Management Facility staff members are directly impacted by the proposed upgrade to the facility. | <ul style="list-style-type: none"> ▶ Inform of legislation ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success |
| Transport, Cargo, Supplies and Mail Providers | <ul style="list-style-type: none"> ▶ Eastern Air Services ▶ Qantas / Skytrans ▶ Australia Post ▶ Startrack ▶ Courier Companies ▶ Air Services Australia ▶ Aero Refuellers ▶ J.R. Richards ▶ Local Importers ▶ Port Macquarie Hastings Council ▶ Port Macquarie district suppliers (Woolworths, IGA, Hastings Coop, Nabiac Butcher, Bunnings, Mitre 10) | <p>These stakeholders support the freight, waste, and supply channels for aligned services.</p> <p>Shipping, by air and sea, presents pathways through which incursions of invasive plants and animals can enter the island.</p> <p>These stakeholders will be integral to the implementation of various biosecurity controls, such as quarantine and capital improvements at port sites.</p> <p>Waste is currently accepted by Port Macquarie Hastings Council, who will need to be involved in improvements to receipt and processing if service remains located in Port Macquarie. Alternative solution required if not.</p> | <ul style="list-style-type: none"> ▶ Inform of legislation ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success. |

| Stakeholder Group | Stakeholders | Relevance to the Critical Infrastructure Program | Engagement Level |
|---|---|---|---|
| Elected Government | <ul style="list-style-type: none"> ▶ Minister for Environment ▶ Minister for Planning and Public Spaces ▶ State Member for Port Macquarie and Lord Howe Island ▶ Federal Member for Sydney, Minister for Environment, Water, Energy and Climate Change | Elected members provide decision-making and play a coordination role between local communities on LHI, the NSW North Coast, and various stakeholders in the planning, management, and implementation of marine infrastructure, waste management, and biosecurity programs. Ensure alignment of the Program objectives with the objectives of the Local, State and Federal Strategies. | <ul style="list-style-type: none"> ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success. |
| NSW Government Departments & Agencies | <ul style="list-style-type: none"> ▶ Department of Planning, Housing and Infrastructure ▶ Department of Climate Change, Energy, Environment and Water ▶ Department of Climate Change, Energy, Environment and Water – Water Group ▶ Lord Howe Island Board ▶ Environmental Protection Authority ▶ Department of Primary Industries and Regional Development ▶ NSW Treasury ▶ NSW National Parks and Wildlife Services ▶ Transport for NSW ▶ Infrastructure NSW ▶ NSW Environmental Trust ▶ Heritage NSW ▶ Destination NSW ▶ NSW Government Architect ▶ Government Stakeholder Consultation Group | Provide funding for programs that support environmental management and biosecurity controls on the Island. Oversee designation of heritage status and marine protection sites. Licencing and compliance. | <ul style="list-style-type: none"> ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success |
| Commonwealth Government Departments & Agencies | <ul style="list-style-type: none"> ▶ Department of Agriculture, Fisheries and Forestry ▶ National Biosecurity Committee | Supports environmental management and biosecurity controls on the Island. Oversee designation of heritage status and marine protection sites. Approval of EIS referral and determination | <ul style="list-style-type: none"> ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success. |

| Stakeholder Group | Stakeholders | Relevance to the Critical Infrastructure Program | Engagement Level |
|---|---|--|--|
| Tourism Industry | <ul style="list-style-type: none"> ▶ Tourism operators ▶ All incoming visitors ▶ LHI Tourism Assoc. | <p>Tourism operators include the businesses and accommodation providers that service visitors to the Island.</p> <p>Tourism industry is accountable for 90 per cent of visitation to the Island, resulting in demand for reliable freight and waste services, and a high risk of biosecurity incursions.</p> <p>Education and extension of biosecurity controls with travellers to the island is essential.</p> <p>https://lordhoweisland.info/</p> | <ul style="list-style-type: none"> ▶ Inform of program plans, legislation. |
| Trading Corporations and Contractors | <ul style="list-style-type: none"> ▶ Major works contractors ▶ Suppliers ▶ Port Operations and Controls | <p>Trading corporations will need to maintain compliance with relevant biosecurity, waste management and maritime legislation.</p> <p>Stakeholders will also need to be made aware of operational changes to infrastructure, such as ports, should biosecurity programs be implemented at these sites.</p> | <ul style="list-style-type: none"> ▶ Inform of legislation and compliance requirements. ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success |
| Heritage | <ul style="list-style-type: none"> ▶ National Trust of NSW ▶ NSW Office of Heritage ▶ Australian Heritage Council | <p>Heritage associations and organisations are key stakeholders for ensuring that any relevant heritage aspects of LHI are considered in the Program and master plan.</p> | <ul style="list-style-type: none"> ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success |
| Others | <ul style="list-style-type: none"> ▶ Special Interest Groups ▶ Walking Groups ▶ Lord Howe Island Central School ▶ Researchers and visiting scientists. ▶ Consultants ▶ Marine Rescue NSW Lord Howe Island ▶ Lord Howe Island SES | <p>Activities conducted by these groups depend on the natural environment of the LHIG. Preservation of the island's ecosystems is critical to the long-term viability of initiatives such as research, education, and extension.</p> | <ul style="list-style-type: none"> ▶ Inform of Program intent ▶ Involve and consult with stakeholders on projects and initiatives where their participation and support is integral to success |

First phase engagement

Key local stakeholders identified for the first phase of engagement are shown in the table below.

| Stakeholder Group | Name | Relevance to Critical Infrastructure Program |
|----------------------------|-----------------------|---|
| Lord Howe Island Community | Jessie Owens/ K | Sole private property that would be affected by CIP |
| Lord Howe Island Community | Peter and Judy Riddle | Former owners and operators of ship (before Birdon), Lodge Owner (Leanda Lei) |
| Lord Howe Island Community | Kevin Wilson | Former owners and operators of ship (before Birdon), Former owner Oceanview |
| Lord Howe Island Community | Darren Nobbs | Heavy user, owner All Island Services |
| Lord Howe Island Community | Gower Wilson | Former owners and operators of ship (before Birdon), Aviation, petrol and diesel importer for the island. Extensive boating experience. Influential figure on island. |
| Lord Howe Island Community | Neil De'Russett | Former owners and operators of ship (before Birdon), Boat Builder, Sailor |

| Stakeholder Group | Name | Relevance to Critical Infrastructure Program |
|----------------------------|---|--|
| Lord Howe Island Community | Ben Ohlback | Former LHI Stevedore for Birdon |
| Lord Howe Island Community | Warren O'Brien | Former LHI Stevedore |
| Lord Howe Island Community | Brad Wilson | Experience in boating on lagoon and LHI weather conditions. Has purchased land from Jessi and K. |
| Lord Howe Island Community | Chad Wilson | Experience in boating on lagoon and LHI weather conditions |
| Lord Howe Island Community | Scott Wilson | Experience in boating on lagoon and LHI weather conditions |
| Lord Howe Island Community | Dean Hiscox | Tour operator, mountain guide years of experience in the lagoon |
| Lord Howe Island Community | Craig Wilson | Crane Operator for ship operations/RFS/Boat owner, understanding of marine environment |
| Lord Howe Island Community | Jack Shick | Boat Operator/guided tour walk |
| Lodge Owner/Operator | Gai Wilson (Somerset Lodge) | Lodge Owner and Manager, Heavy ship and WMF users |
| Lodge Owner/Operator | Mark Mckillop and Libby Grant (Capella) | Lodge Managers, Heavy ship and WMF users. Lodge located down south. |
| Lodge Owner/Operator | Keith and Kelly Galloway (Oceanview) | Lodge Owners, Heavy ship and WMF users. Located straight up from the current jetty. |
| Lord Howe Island Community | Jim Fitzgerald | Former Board employee, Boat Builder, Sailing experience in yachts and powerboats |
| Lord Howe Island Community | Stevie Sia | Post Master, Restaurant Owner |
| Lord Howe Island Community | Garth Nichols | Current ship worker |
| Lord Howe Island Community | Peter Ziems | Sailing experience |
| Lord Howe Island Community | Barney Nichols | Former board employee and elected board member |
| Lord Howe Island Community | Des Thompson (Blue Lagoon) | Lodge Owner |
| Lord Howe Island Community | Denis Cochran (Pinetrees) | Heavy User WMF and Ship, Lodge Manager |
| Lord Howe Island Community | Bill Shead (Arajilla) | Lodge Owner, Sailing experience |
| Lord Howe Island Community | Lee Kent | Builder on the island. |
| Lord Howe Island Community | Jessie Mcallion | Builder on the island. |

Second phase engagement

Local stakeholders identified for interview as part of the second phase of engagement are shown below.

| Stakeholder Group | Name | Relevance to CIP |
|--|---|--|
| Lord Howe Island Community / North Zone | Scott Wilson and Chelsea Holden | Residents of Northern part of Island Younger generation Local fisherman / Experience in boating on lagoon and LHI weather conditions LHIB employee |
| Lord Howe Island Community / North Zone | Grant Devine | Resident of Northern part of Island / off Island Older generation |
| Lord Howe Island Community / Heritage | Ian Hutton | Curator at Lord Howe Island Museum Knowledge of local history |
| Lord Howe Island Community | Gower Wilson | Former owners and operators of ship (before Birdon), Aviation, petrol and diesel importer for the Island Extensive boating experience. Influential figure on island. |
| Lord Howe Island Community | Garth Nichols | Current ship worker / Employee of Birdon Knowledge of shipping |
| Lord Howe Island Community | Kevin Wilson | One of the former owners and operators of ship (before Birdon) Former owner Oceanview Resident of Northern part of Island / near existing jetty |
| Lord Howe Island Community | Larry Wilson | Resident of Northern part of Island / near existing jetty |
| Lord Howe Island Community / Business owners | Anthony Riddle (son of Peter Riddle) | Runs boat tours. part of Leanda Lei Lodge, and has a gin distillery on the Island Owns/operates a brewery off Island with product imported to the Island |
| Lord Howe Island Community / Business owners | Dean and Kayla Hiscox | Run lagoon boat tours, mountain guides and are passionate about the environment |
| Lord Howe Island Community | Daniel Young | Likely to have valuable insights / may require prompting |
| Lord Howe Island Community / Business owners | Jen Walker and Dar Nobbs | Heavy user, owner All Island Services Run the stevedore service for Birdon Business owners |
| Lord Howe Island Community | Peter and Julie Riddle (*feedback sought through CCG meeting) | Former owners and operators of ship (before Birdon), Lodge Owner (Leanda Lei) Knowledge of shipping / marine operations |
| Waste management infrastructure | Kate Dignam (*feedback sought through GSCG) | Waste Management Facility design group |

The Community Consultation Group will also be important stakeholders with a key interest in the Critical Infrastructure Program and related engagement.

2 ISSUES, RISKS AND OPPORTUNITIES

2.1 STRATEGIC AND RISK MANAGED APPROACH

Engagement to inform the Critical Infrastructure Program has been designed with consideration for the following issues, risks and opportunities.

Lack of awareness, understanding and participation in the Critical Infrastructure Program engagement process

- Opportunities for engagement will be widely promoted using all available channels.
- In the first phase, participants will be asked to provide feedback on their communications and engagement preferences, to support refinement of the approach to Phase 2.
- Engagement activities will be designed to support participation and understanding among diverse community members and stakeholders.
- Phase 2 engagement opportunities will be promoted through the Community Consultation Group established following Phase 1.

Challenges with clearly communicating the complex Program – including the related master plan and projects – and areas of influence

- Information about the CIP will be presented using graphic and verbal communication wherever possible – including illustrations, diagrams and video content.
- At all in person engagement activities, the project team will clearly articulate to participants upfront – what aspects of the CIP can and cannot be influenced by community and stakeholder input, and how feedback will be considered / used to develop / refine the CIP, related master plan and projects.
- Detailed FAQs will be provided to project team members for use in Phase 2.

Lack of continuity / building on work undertaken to date (eg including outcomes as part of recent engagement on the Community Strategic Plan)

- Existing information will be used to present the case for change and test ‘what we already know’, to avoid consultation fatigue and promote a sense of confidence that the community and stakeholders are being listened to and heard.
- ‘What we heard’ as part of the early engagement and the related response (in terms of work towards the relevant studies and design concepts), will be clearly communicated.

Lack of trust in the process and its credibility / the Critical Infrastructure Program is seen as a ‘fait accompli’

- The engagement will be designed to present the case for change and highlight opportunities to address the critical infrastructure priorities.
- Information about the Program, master plan and projects will be factual / evidence based and clearly presented.
- Key members of the project team will be involved to present information and respond to key questions and areas of interest.

- Key messages and FAQs will be developed to support consistent communication of information as the CIP and engagement progresses.

A particular aspect of the Program attracts concern and creates risk for the overall Program

- Each aspect of the Program will be explored as part of the early engagement to identify key issues upfront. Feedback from the first phase of engagement can be used by the project team and designers to progress project planning and design concepts, with an understanding of key areas of interest / concern. Key messages, FAQs and design responses would be developed accordingly to reflect and respond to areas of interest / concern, with a view to ensuring the overall Program is able to progress in accordance with the relevant timeframes.
- Presentation material and supporting information will be prepared to reflect and respond to key issues / concerns and to highlight benefits and opportunities associated with the proposed CIP.
- ‘What we heard’ as part of the early engagement and the related response (in terms of work towards the relevant studies and design concepts), will be clearly communicated.

Concern about next steps including how to realise the Program, master plan and projects from a funding / delivery perspective

- Information about next steps in the Program will be clearly presented – including those relating to funding / ongoing costs, delivery and benefits associated with the CIP.
- The CIP governance structures will also be highlighted – including the purpose, role and duration of the Community Consultation Group.

3 ACTION PLAN

3.1 ENGAGEMENT ACTIVITIES BY AUDIENCE

The engagement program will target key internal stakeholders, representatives of government, stakeholder groups and members of the community more broadly.

An overview of the **first phase of the engagement program, which presented the case for change and explored challenges / opportunities, key issues and aspirations**, is shown below. This initial phase focused on sharing information and listening to early feedback and queries from the community and stakeholders. **The second phase of engagement, which will test and refine the design concepts to support the Critical Infrastructure Program and related master plan**, will be crafted to reflect the experience and feedback provided during the first phase. An updated approach to the second phase is provided below. *Indicative dates* are shown below, with Phase 2 commencing in October / November 2024.

| Task/Timing | Description |
|--|--|
| FIRST PHASE – Part 1: Process design | |
| Inception meeting and project set up | Meet with NPWS project team to develop a thorough understanding of the project objectives, collaboratively refine the proposed methodology, confirm the program and identify any further relevant contextual issues/document for review, and key stakeholders to engage. Documents to review and be used to inform engagement include the Stakeholder Views Analysis and Change Management Assessment to be prepared by APP and the new Destination Management Plan. |
| Engagement approach and project plan | Work collaboratively with NPWS, LHIB and APP to develop, test and confirm the engagement approach and draft engagement plan (including review background materials and inputs from APP). Our engagement approach will draw on the Lord Howe Island Board Stakeholder Engagement Strategy and will be informed by recent Community Strategic Plan engagement findings. We recognise the importance of engaging with the LHIB in developing the engagement plan, and will ensure they are involved in the process, as well as seeking endorsement from the LHIB via a presentation on Wednesday 8 May. |
| Communications and engagement content | Develop communications and engagement content including engagement plan and collateral including content for community update and webpage, FAQs, etc. |
| FIRST PHASE– Part 2: Engagement on values and aspirations | |
| Promotion of the project and engagement | Launch and promote webpage including project overview, links to further detail on the individual components of the CIP, short videos, details of online survey and upcoming engagement activities and the opportunity to register for the events (we propose to seek early insights through the registration process about which aspects of the CIP registrants would like to find out more about), plus email and social content. |

| | |
|--|--|
| <p>Interviews with key stakeholders</p> | <p>Conduct up to seven interviews, both via online/phone and in person as preferred (up to an hour each) with the LHIB first, to provide an overview of the Engagement Plan, as well as seek their input on the CIP and any other insights on stakeholder and community sentiment towards the project. We propose conducting a further three interviews with other key stakeholders, such as local tourism operators and businesses, key local community members with deep local knowledge, and any other stakeholders identified by the LHIB or project team.</p> <p><i>Target audience: LHIB Board members plus three additional key stakeholders (Peter Riddle re knowledge of ship)</i></p> <p><i>Resources: Interview discussion guide, presentation material</i></p> |
| <p>In person engagement round 1</p> | <p>Throughout the three day in-person engagement period, we will conduct remaining interviews (as noted above) and hold a key stakeholder workshop (90 minutes), two community information sessions/town hall sessions (two hours each), and a project team debrief (90 minutes). We propose conducting remaining interviews on Wednesday 22 May in the afternoon/evening, followed by a key stakeholder workshop on Thursday 23 May (morning), and community information sessions/town halls on Thursday evening (e.g. 6-8pm) and Friday 24 May (morning). We then propose holding a debrief on Friday with the project team and LHIB before leaving the Island in the afternoon.</p> <p>Engagement will be used to develop a clear understanding of what’s most important to key stakeholders and the community to support social license and help to ensure the CIP delivers positive outcomes for the community, stakeholders, visitors and the economy. The Community Strategic Plan engagement material will be used as a baseline to inform these sessions. We will also use the sessions as an opportunity to seek feedback via a short nomination form and or the community survey about individuals who might be interested in joining the Community Consultation Group (which will commence in the second phase of engagement and continue throughout delivery of the CIP), and how they would like to be engaged. NB Suzie Christensen to provide an introduction to the CIP at the community information sessions.</p> <p><i>Target audience: Key stakeholders (eg including workshop with business/tourism stakeholders) and community members</i></p> <p><i>Resources: Interview discussion guide, workshop agenda and run sheet, presentation material, display boards</i></p> |
| <p>Reporting</p> | <p>We will prepare a summary of the first round of engagement, including interviews, in person sessions, online survey and email submissions and will present the findings to NPWS, Lord Howe Island Board, APP and design team. We will also discuss the approach for the second round of engagement.</p> |

| Task | Description |
|--|---|
| <p>SECOND PHASE – Part 1: Engagement on draft master plan</p> | |
| <p>Engagement updates (July/August/September)</p> | <p>Between the first and second rounds of engagement, it will be critically important to keep the community and stakeholders informed about the project’s progress and next steps for engagement.</p> |

| | |
|---|--|
| | <p>Where appropriate, notifications should be issued to near neighbours in the case of site investigations being undertaken.</p> <p><i>These communications will be led by the NPWS/LHIB project team.</i></p> |
| <p>Webpage updates (Late October/early November)</p> | <p>Updating the webpage with a high-level overview of ‘what we heard’ during the first round of engagement and demonstrating how early feedback has been used to shape development of the design concepts will be important (suggest this information is also distributed as Community Update/flyer 2). A status update on the project including key site investigations / studies undertaken since Phase A will also be added to the webpage and monthly community updates on Program and Projects status are provided on the webpage. Project FAQs are being updated prior to commencement of the Phase B engagement activities, to reflect key questions raised by stakeholders and the community.</p> <p>The project email address will remain open during the entire engagement period to allow the community and stakeholders to continue providing feedback throughout the engagement period and into 2025, in the lead-up to the public display of the EIS Report.</p> <p>Notification of the Phase 2 engagement including key activities and dates is proposed approximately four weeks prior to commencement of the second phase of engagement (ie early November 2024).</p> |
| <p><i>We propose that the second phase of engagement will follow a similar program to the first phase, with refinements to build on what worked well in Phase A. As such, the proposed engagement activities are outlined below for discussion and confirmation, ahead of the second phase of engagement.</i></p> | |
| <p>Community Consultation Group meetings (August 2024 onwards)</p> | <p>Establish the CCG and conduct meetings 1 and 2 in August and October 2024. Continued bi-monthly meetings are scheduled for 2025 This group will provide a valuable forum for detailed consideration of key aspects of the Program/projects and to support promotion of the Phase B engagement activities and ongoing Program and Project updates within the community. Meetings will cover the following:</p> <ul style="list-style-type: none"> — Briefing on the Program/projects and early engagement — Detailed consideration of the design concepts, prior to broader community engagement — Detailed consideration of the draft master plan, prior to its finalisation, discussion of next steps for the Program/projects <p><i>These meetings and related communications are led by the NPWS/LHIB project team.</i></p> |
| <p>Government Stakeholder Consultation Group (August 2024 onwards)</p> | <p>Establish the GSCG and conduct meetings 1 and 2 in September and November 2024. Continued bi-monthly meetings are scheduled for 2025 This group will provide a valuable forum for detailed consideration of key aspects of the Program and Projects to support the EIS and design development. Meetings will cover the following:</p> <ul style="list-style-type: none"> — Briefing on the Program/projects and early engagement — Detailed consideration of the design concepts — Detailed consideration of the draft master plan, prior to its finalisation, discussion of next steps for the Program/projects |

| | |
|---|---|
| | <i>These meetings and related communications are led by the Project team.</i> |
| Interviews with key stakeholders (October-December) | Key stakeholder interviews and community member (who are “key knowledge holders”) interview, both via online/phone and in person (up to 45 minutes each). Interviews have been conducted in Phase A and will continue in Phase B with key stakeholders as outlined in Section 1.5 of this document. The purpose of the interviews will be to seek early inputs to and feedback on the draft design concepts, and to inform key stakeholders about the upcoming engagement activities and project progress. Interviews will be conducted online/phone or in person, depending on participant availability and preferences. |
| In-person engagement round 2 (December) | A three day in-person engagement period 2 nd Dec to 4 th Dec 2024 is scheduled to conduct remaining interviews (as noted above) and hold drop-in community information sessions. It is proposed to conduct the community information sessions in the morning, afternoon and evening to provide opportunities for all members of the community to participate and directly speak with the Project Team. A debrief with the Project Team and LHIB will be undertaken before leaving the Island. Engagement will be used to present and obtain detailed feedback on the design concepts in a format suited to community feedback / preference. |
| Reporting (December / January 2025) | We will prepare a summary of the second round of engagement, including interviews, in person sessions, and email submissions and will present the findings to NPWS, LHIB, APP and the design team. |
| SECOND PHASE – Part 2: Refine master plan and close the loop | |
| Engagement updates (early February) | Closing the loop with the community and stakeholders is important to maintain trust and transparency. We propose reporting back to the community and stakeholders on how their feedback has been used to inform the final master plan via a webpage update with engagement outcomes report outlining the findings and next steps. |
| Reporting (December / January) | Following the engagement period, we will document engagement insights in the draft and final Consultation Reports. The final Consultation Report will support finalisation of the draft master plan and support the Environmental Impact Assessment. |
| Presentation (TBC) | We will prepare a presentation and present to the project team and LHIB to share the feedback received during the engagement period. |
| Project management and liaison | |
| Throughout Phase B (October 2024 to February 2025) | Regular project update meetings and project team liaison throughout. |

3.2 ENGAGEMENT PROGRAM

A draft engagement program comprising the key activities for the second phase of engagement is outlined below.

| Task | Start Date | End Date | Duration |
|--|------------|----------|---------------------------------|
| Engagement Plan (to include in Board papers for 10 Oct) | 08.10.24 | 10.10.24 | 2 days |
| Notify community re second phase of engagement | 11.10.24 | 16.10.24 | Milestone |
| <i>Program Board meeting 06. Lahznimmo to present Master Plan & Shortlisted Options (with North Zone Marine Infrastructure Solution to go to Community Consultation)</i> | 17.10.24 | 17.10.24 | Milestone |
| <i>MBMpl Cost Estimate on Master Plan North and South Zone Solutions Complete</i> | Oct/Nov | Oct/Nov | Milestone |
| Draft community engagement collateral (display boards) | 14.10.24 | 01.11.24 | 3 weeks |
| <i>Present Master Plan and North & South Zone Solutions to EBM</i> | 23.10.24 | 23.10.24 | Milestone |
| <i>Present to Community Consultation Group Master Plan, reasons for moving away from the South Zone for Marine Infrastructure and current North Zone Marine Infrastructure Solution</i> | 31.10.24 | 31.10.24 | Milestone |
| Sponsor review of display boards (consolidated feedback) | 04.11.24 | 08.11.24 | 1 week |
| <i>Present to Government Stakeholder Consultation Group Master Plan, reasons for moving away from the South Zone for Marine Infrastructure and current North Zone Marine Infrastructure Solution</i> | 12.11.24 | 12.11.24 | Milestone |
| <i>LHIB & NPWS Endorse Recommended Solution (South WMF & North Zone Marine Infrastructure Solution) to go to Program Board</i> | 12.11.24 | 12.11.24 | Milestone |
| Final community engagement collateral (display boards) | 08.11.24 | 14.11.24 | 1 week |
| Printing and distribution | 21.11.24 | 28.11.24 | 1 week |
| <i>Program Board Meeting 07. Endorse Recommended Solution to go to LHIB Board</i> | 21.11.24 | 21.11.24 | Milestone |
| <i>LHIB Meeting. Endorse Recommended Solution to go to Community Consultation</i> | 27.11.24 | 27.11.24 | Milestone |
| Community engagement sessions (on-Island) | 02.12.24 | 04.12.24 | 3 days |
| Engagement period close (ie submissions) | 02.12.24 | 31.1.25 | Approx 8 week engagement period |

4 KEY MESSAGES

The project narrative and FAQs have been prepared to support successful delivery of the Lord Howe Island Critical Infrastructure Program.

4.1 PROJECT NARRATIVE

An important conversation about critical infrastructure for Lord Howe Island

The future for Lord Howe Island is bright but, like all things that are special to us, this globally recognised and beautiful island requires ongoing consideration and care.

A Critical Infrastructure Program is being set up, in discussion with the community, to deliver improvements and upgrades that are critical to everyday life for Islanders, and to support the Island's long-term future as a sustainable tourism destination.

Some of the most critical considerations to ensure a sustainable future include:

- Servicing the Island with up-to-date marine infrastructure
- Supporting the Island's natural ecosystems and environment with appropriate biosecurity systems
- Sustainably managing and disposing of waste generated on the Island.

The Program is being led by NSW National Parks & Wildlife Service and the Lord Howe Island Board to address each of these important and related issues, in a holistic way.

Since meeting with the community earlier this year, work towards the Program has progressed, including site investigations and studies to inform development of design concepts that illustrate how the infrastructure could be delivered. Find out about the next steps in the Critical Infrastructure Program and have your say on the future of this important place.

Help us ensure the Program and related plans are fit for purpose to successfully sustain Lord Howe Island as an extraordinary place for you and future generations to enjoy.

4.2 FAQs

1. What is the Critical Infrastructure Program?

The Program is being developed and delivered by the Lord Howe Island Board (the Board) and National Parks and Wildlife Service (Department of Climate Change, Energy, the Environment and Water) to address some of the most critical considerations to ensure a sustainable future for the Lord Howe Island community and its visitors. This includes:

- Servicing the Island with up marine infrastructure that's fit for the future
- Supporting the Island's natural ecosystems and environment with appropriate biosecurity systems
- Sustainably managing, re-using and disposing of waste generated on the Island.

The 2023/24 NSW budget included significant funding for:

- Replacement of the waste management facility on Lord Howe Island
- Funding to secure a long-term marine freight service for the Island.

This funding means that plans can be progressed for a replacement vessel and marine infrastructure, to ensure the community has a reliable marine freight service tailored to the needs of Lord Howe. Enhanced biosecurity measures will also be a feature of the new arrangements, to protect the Island and its economy and to minimise the risk of disruption to freight services.

Feedback from the community is being sought on plans for the upgraded waste management facility and design of marine infrastructure.



2. Why do we need the Critical Infrastructure Program?

The Critical Infrastructure Program improvements and upgrades are providing essential infrastructure, to secure the Island's future. The Program will include infrastructure projects that are critical to everyday life for Islanders, as well as to support its long-term future as a sustainable tourism destination.

Lord Howe Island is an internationally renowned tourist destination, notably for its World Heritage status and pristine environment and ecology. This investment ensures the needs of the community and the pristine environments are set up for success into the future.

The Lord Howe Island Board is committed to the Critical Infrastructure Program, the ongoing care, control, and management of the affairs and trade of the Island and the care and welfare of residents. Many businesses and residents of Lord Howe Island rely on the visitor economy. The Critical Infrastructure Program will support a resilient island community and visitor economy into the future.

3. Why is the Critical Infrastructure Program a Critical State Significant Infrastructure (CSSI) project and what is a CSSI?

[Response to be prepared in liaison with team]

4. What is the proposed timeline for planning and delivery of the Critical Infrastructure Program?

Preliminary works and early consultation commenced in the first half of 2024, with further site investigations undertaken since that time. The majority of works will be implemented over the next three years.

The current consultation process focuses on draft concept designs that have been prepared based on work undertaken to date. Following this, the next steps for 2024 will involve further detailed site investigations and studies. We will notify the community ahead of relevant investigations scheduled to be undertaken over the coming months. Main construction works are not planned to commence until early to mid-2026 and will be ongoing for up to 12 months.

5. What is the dollar value of the Program?

The NSW Government has made a significant investment in the Critical Infrastructure Project for Lord Howe Island. The Program is funded to sustain a marine service and waste management facility for the Island into the future.

Funding details are confidential at this important stage to ensure a competitive market-based process. For this reason, the Program figures will not be publicly released. Similarly, the budget for the replacement vessel is confidential and will not be made public in advance of a competitive tender process for the vessel.

6. How have the design concepts been developed? Why is the North Zone now the preferred option for marine infrastructure?

[Response to be prepared in liaison with team]

7. Why does the existing waste management facility need to be replaced?

The existing waste management facility requires urgent upgrades to be compliant with waste management standards and support ongoing needs of the Island. The Board will continue to liaise with the NSW Environment Protection Authority (EPA) and the community to ensure that the new waste management facility meets best practice standards and is fit for purpose.

8. How will environmental and marine impacts be managed through the Program, particularly during construction of the new vessel ramp, waste management facility, and related access roads/upgrades?

The project team has worked closely with the Department of Planning, Housing and Infrastructure to establish the planning pathway for the delivery of the Critical Infrastructure Project as Critical State Significant Infrastructure (CSSI). This process will involve determining and obtaining all relevant planning and environmental approvals, before construction can begin in mid-2025. Projects under the Critical Infrastructure Program will be designed and delivered with a view to minimise any potential impacts to the natural environment including marine life.

9. What are the potential impacts for the community and businesses during the Program's construction phase?

A staged approach will be taken to minimise impacts to the community and businesses. Redevelopment of the waste management facility and development of new marine infrastructure are subject to developing a full understanding of issues and opportunities, undertaking site investigations and confirming constraints, opportunities and community feedback. Community consultation and environmental are important considerations to inform the appropriate approach to delivering the Island's critical infrastructure.

There may be a small increase in traffic periodically due to the importation and transport of building and construction materials. However, the Board will make every effort to minimise disruptions and to notify the community in advance where possible. Environmental approvals will be sought around the new waste management facility and marine facilities, to ensure that this infrastructure does not present a threat to the Island's natural environment or Marine Park.

10. Will there be local employment opportunities resulting from the Program?

Yes. Employment opportunities associated with operation and maintenance of the Island's critical infrastructure will be determined and promoted through liaison with the community and businesses, in the first instance. Local workforce participation is welcomed where the skills and capabilities align with the program.

11. Will there be costs associated with the Program for the community?

No. The NSW Government has provided significant funding to develop and deliver this Program, with a view to securing a sustainable future for Lord Howe Island.

12. Who can bid for the operation and maintenance of a new vessel?

The tender for the operation and maintenance of the new marine vessel and service involves an open market process. The procurement process was advertised via the NSW eTendering website and is subject to all relevant NSW Government approvals.

13. How can I find out more and have my say on the Critical Infrastructure Program, related master plan and projects?

We're keen to hear from you and other members of the community. There will be a range of opportunities to provide input to the Program's development as we progress detailed planning. Thank you to all members of the community who took part in the early engagement activities which commenced in May-June (2024). We encourage all members of the community to find out more and have your say on the Critical Infrastructure Program **later this year**.

Community information sessions: Three drop-in sessions will be held as follows. These sessions will provide you with an opportunity to see the project display and speak with key members of the project team. A 30-minute presentation

will be held at the start of each session, with the rest of the session being an informal opportunity for one on one conversation. Feel free to drop in any time. The sessions will be held as follows:

[All times TBC with project team]

- Monday 2 December 2024
- Tuesday 3 December 2024
- Tuesday 3 December 2024.

All sessions will be held at the Lord Howe Island Community Hall.

Email us: Please provide any further comments by emailing the project team at CIP@lhib.nsw.gov.au

To find out more, please visit [Critical Infrastructure Program | Lord Howe Island Board \(nsw.gov.au\)](#) or contact CIP@lhib.nsw.gov.au.

14. How can I stay in touch with the project team during the first phase of engagement and beyond that, as the Program progresses? Who can we contact if we have questions or concerns about the Program?

To find out more, please visit [Critical Infrastructure Program | Lord Howe Island Board \(nsw.gov.au\)](#) or contact CIP@lhib.nsw.gov.au.

15. When is the community engagement period? How will the community and other stakeholders be involved?

The community engagement process commenced in May 2024 and will continue throughout planning and delivery of the Critical Infrastructure Program. There will be a number of opportunities for members of the community and other stakeholders to share their ideas and feedback. We encourage you to have your say as part of the current phase of consultation in December 2024.

Please keep an eye on the Lord Howe Island webpage and communications to find out more and have your say. To find out more, please visit [Critical Infrastructure Program | Lord Howe Island Board \(nsw.gov.au\)](#) or contact CIP@lhib.nsw.gov.au.

[Appendices to be updated with final content for the Phase 2 engagement activities]

APPENDIX A

COMMUNITY UPDATE AND WEBPAGE

APPENDIX B

DISPLAY MATERIALS

Proposed Display Boards:

1. Lord Howe Island Critical Infrastructure Program

Thanks for your early input [summarise what we heard in Phase A]

Progress since the consultation earlier this year [outline key steps]

2. Detailed Site Investigations

A number of important site investigations were undertaken to determine the most appropriate approach to deliver a fit for purpose Critical Infrastructure Program for Lord Howe Island. The findings of key studies are summarised below. The study findings have been used to shape a number of design concepts which are presented for your feedback. [outline relevant content including text, images and plans for each of the following]

Bathymetric Survey

ADCP Deployment

WMF Site Contamination Assessment

Ecological Survey

3. South Zone – Master Plan Concept (non-viable option)

Originally the preferred option, further detailed exploration of the South Zone was undertaken following the early consultation. This option has since been identified as not viable, due to a number of factors, as summarised here. [outline relevant content]

4. South Zone – Waste Management Facility

Building on what we heard from the community as part of the earlier consultations, the concept design for the upgraded waste management facility has been progressed, as shown here. [outline relevant content including plan and artists impressions]

5. North Zone Master Plan Concepts

The concept design for the upgraded marine infrastructure and biosecurity arrangements has been prepared based on further detailed exploration of the North Zone and what we heard as part of the community consultation process. [outline relevant content including 2 plans and artists impressions]

6. Planning and Environment

The Lord Howe Island Critical Infrastructure Program is being undertaken in accordance with a Critical State Significant Infrastructure (CSSI) planning pathway which requires preparation of an Environmental Impact Statement (EIS). [outline key requirements, benefits and steps relating to this approach]

7. New Vessel, Operations and Maintenance

As discussed in the earlier consultation, securing a vessel to replace the Island Trader is a key priority. [outline progress in terms of the procurement process, key considerations for design/delivery/operations etc, and next steps]

8. Next Steps and “Have your Say”

Thank you for taking the time to share your feedback on the design concepts that have been prepared to support the next phase of the Lord Howe Island Critical Infrastructure Program. We welcome your questions, ideas and suggestions.

Please speak to a member of the team today to find out more and share your feedback.

You can also:

- Find out more about the Critical Infrastructure Program by visiting the Lord Howe Island Board website
- Email us your feedback via the website.

[outline next steps and key dates]

APPENDIX C

PROMOTIONAL MATERIALS

APPENDIX D

INTERVIEW AND SESSION GUIDES



APPENDIX C

COMMUNITY ENGAGEMENT OUTCOMES
REPORT (LHI BOARD, 2024B)

LORD HOWE ISLAND

CRITICAL INFRASTRUCTURE PROGRAM

Community Engagement



'What we heard' Summary

JULY 2024

“

*Let's do something
for the whole Island
that benefits the
whole Island and
our children.*

”

— PARTICIPANT,
COMMUNITY INFORMATION SESSION



LORD HOWE ISLAND CRITICAL INFRASTRUCTURE PROGRAM

The Lord Howe Island Critical Infrastructure Program (the Program) is being established by the Lord Howe Island Board and NSW National Parks and Wildlife Service to deliver upgrades to essential infrastructure that is required to secure the Island’s future.

This summary provides an overview of what we heard from the community and stakeholders as part of the early engagement on the Lord Howe Island Critical Infrastructure Program. Feedback is presented on the three key elements of the Program – marine, biosecurity and waste infrastructure – and in relation to the South Zone and Alternate/Contingency approach. Key actions for the project team are also highlighted that respond to the feedback received.

Feedback indicated general support for an upgrade of the existing waste management facility and procurement of a new vessel, with various ideas about the specific design of these elements of the Program. A key issue raised by members of the community was the viability of the South Zone for locating the marine infrastructure, which will be dependent on relevant technical studies. Further details will be presented as part of the next steps in planning and engagement on the Critical Infrastructure Program.

We thank all those who participated in the early engagement and look forward to meeting with you to further progress work towards the Program later this year.

Beyond the next phase of engagement, members of the community and stakeholders will have a further opportunity to provide feedback on the draft master plan as part of the public exhibition process.

You can stay up to date and get in touch with the project team via the Lord Howe Island Board webpage at

www.lhib.nsw.gov.au/infrastructure/criticalinfrastructure-program.

CRITICAL INFRASTRUCTURE PROGRAM



PRECINCT
PLANNING
SERVICES



NEW WASTE
MANAGEMENT
FACILITY



NEW VESSEL
ACCESS
INFRASTRUCTURE



NEW MARINE
VESSEL &
OPERATIONS



NEW
BIOSECURITY
INFRASTRUCTURE

WE HEARD THAT...

MARINE INFRASTRUCTURE

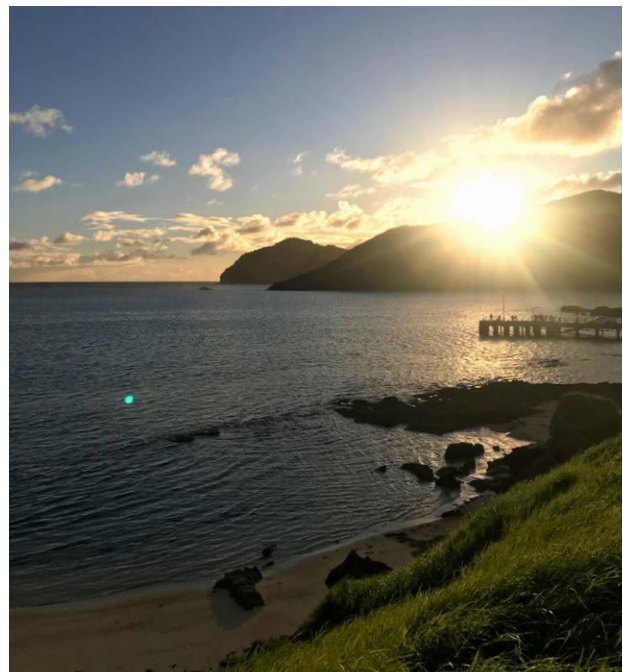
Marine infrastructure including a new vessel attracted the greatest level of feedback, with a primary focus on ensuring that a new fit for purpose vessel is procured to provide continuation of service. Ensuring new marine infrastructure is established in the most appropriate location was also a focus. There was wide recognition that the existing vessel and jetty have a limited lifespan and that upgraded infrastructure is critical to secure a sustainable future for the Island.

Feedback highlighted the importance of:

- Ensuring a seamless interface between the new vessel and related marine infrastructure
- Undertaking appropriate technical studies to ensure the South Zone presents a viable approach
- Securing a new vessel that meets specific design requirements, to ensure access to the relevant channel/lagoon in all weather conditions and to provide the desired functional requirements (including biosecurity measures)
- Design of the marine infrastructure including jetty/ramp to meet the relevant locational and functional requirements (e.g. to potentially incorporate a boat retrieval function), to minimise environmental impacts, to improve on existing operations and to enhance existing levels of service
- Vessel procurement within the identified program, to avoid service disruptions – with a sound contingency plan in place
- Ensuring the Registrations Of Interest (ROI) process for the new vessel is both rigorous and competitive and that governance and contractual arrangements offer ongoing value and security to the Island community
- Considering upgrade of the existing jetty/ramp rather than undertaking new studies and establishing new infrastructure in the South Zone
- Considering opportunities around the existing jetty if new infrastructure is delivered in the South Zone
- Considering opportunities for innovation – such as use of containers, air freight and future use of drone technology

WHAT WE PLAN TO DO

- ✔ A detailed bathymetric study, plus geotechnical and wave studies will be undertaken and used to inform viability/ planning and design of the new marine infrastructure (including the most advantageous location for jetty/ramp)
- ✔ A contingency plan will be in place to ensure continuation of marine freight service to / from the Island
- ✔ The project team will work closely with relevant government agencies to progress all relevant planning and approvals, in accordance with leading practice and legislation constraints
- ✔ Design of the marine infrastructure will be fit for purpose and considering community feedback/inputs
- ✔ The vessel tender documentation and contract will seek to ensure that the mainland port location and supply chain arrangements are suitable and provide value for money, as well as ongoing security of service



WE HEARD THAT...

WASTE MANAGEMENT FACILITY

There was general recognition that the existing waste management facility requires an upgrade to address current needs and expectations, and to support a compliant approach to waste management and disposal as per Environmental Protection Authority (EPA) standards.

Feedback highlighted the importance of appropriate design of the facility, selection of technologies and related training to ensure that existing and future staff can operate the waste management facility to its full potential and to support ongoing maintenance. Noise, odour, visual amenity and vehicle access were identified as key areas for consideration in design of the new facility.

Further opportunities to upgrade the waste management facility identified by members of the community and stakeholders focused on:

- Considering opportunities to expand the capacity of the septic system at the new waste management facility to receive and process a greater amount of septic waste than at present
- Improving the usability and functionality of the waste management facility
- Increasing opportunities to recycle and reuse waste on the Island (for instance, to create usable products such as compost, to improve the 'tip shop')
- Utilising energy efficient technologies and renewable energy within the new facility
- Maximising community, visitor and supplier education opportunities relating to sustainable waste management practices

WHAT WE PLAN TO DO

The new waste management facility will be designed to minimise noise, odour, visual impacts and energy use, and to maximise reuse and repurposing of waste

- ✔ Traffic flow concepts and a traffic movement analysis will be undertaken and used to inform design for the new infrastructure
- ✔ A program of training will be established for delivery to current and future staff of the waste management facility
- ✔ Opportunities will be explored to improve the area to the north of the South Zone currently used for materials / waste storage
- ✔ The new infrastructure will have asset operation and maintenance plans in place to underpin management and maintenance by the Lord Howe Island Board



WE HEARD THAT...

BIOSECURITY

Feedback suggests that existing biosecurity measures are generally working well, but further improvements to safeguard the Island's future security from biosecurity risks are critical.

Community members and stakeholders commented that biosecurity initiatives require a prevention approach, with a primary focus on managing potential risks on the mainland, before freight and visitors arrive on Lord Howe Island.

Many expressed a desire for a leading practice approach to design of the new vessel and marine infrastructure to support biosecurity improvements, as well as appropriate systems and processes at the relevant mainland port and on Island.

Feedback also highlighted the importance of carefully considering the interrelationship of the waste management and biosecurity components of the Program to achieve optimal functionality and outcomes. A simple approach and clear information for the community, visitors and partners was regarded as fundamental to successfully managing biosecurity issues.

WHAT WE PLAN TO DO

- ✔ The new biosecurity infrastructure will be designed and operated to minimise risk and maximise opportunities for the Island's community, businesses and the environment
- ✔ Communications will be developed to support leading practice sustainability among the community, visitors and suppliers



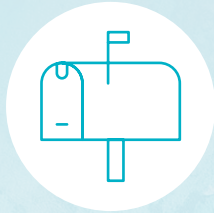
WHAT WE PLAN TO DO - OVERALL

- ✔ The new infrastructure, including biosecurity infrastructure, will be designed to maximise efficiencies and minimise conflicts
- ✔ Consideration will be given to traffic planning and management in relation to peak times for use of the new infrastructure
- ✔ Operational implications for consumers, such as costs, will be key to the tender process and information will be clearly communicated to the Lord Howe Island community and businesses
- ✔ Relevant studies will be undertaken – including geotechnical, marine and terrestrial ecology, bathymetry and lagoon hydrology, and visual amenity studies – to inform decision making
- ✔ The Lord Howe Island Board website will be regularly updated with project information, as well as information about engagement opportunities. A summary of ‘what we heard’ from the recent consultations will be available on the webpage in July 2024
- ✔ Physical copies of the Community Updates will also be distributed throughout the community and posters will be placed around the Island with relevant project and engagement information
- ✔ The Community Consultation Group will be established prior to the next phase of engagement; this group will provide further opportunities for community input to the Program



WHO WE ENGAGED

AS MANY AS ONE IN FOUR MEMBERS OF THE LORD HOWE ISLAND COMMUNITY PARTICIPATED IN THE EARLY ENGAGEMENT*



ALL

households and businesses received the project flyer



4

submissions were received



53

people responded to the community survey



12

people participated in the stakeholder interviews and workshop

including business owners / operators and those with an interest in shipping, weather conditions, the environment and tourism / local business impacts



38

people participated in the two community information sessions

including residents, business owners / operators and those with an interest in community and the environment

* Based on participation by 107 members of the community from a total population of 445

An aerial photograph of a paved road on Lord Howe Island. The road curves through a lush landscape of palm trees and dense greenery. In the background, there is a turquoise bay with a white sandy beach and a small boat. The sky is blue with scattered white clouds. The overall scene is a beautiful tropical coastal environment.

**LORD HOWE ISLAND
CRITICAL INFRASTRUCTURE PROGRAM**
Community Engagement

'What we heard' Summary

JULY 2024



APPENDIX D

BASELINE TERRESTRIAL BIODIVERSITY
ASSESSMENT (NORTH)

Lord Howe Island Critical Infrastructure Program

Northern Zone Baseline Terrestrial Biodiversity Assessment

The APP Group

20 November 2024

Final

cumberland
ecology 

PART OF  SLR


Report No. 23150RP2

The preparation of this report has been in accordance with the brief provided by the Client and has relied upon the data and results collected at or under the times and conditions specified in the report. All findings, conclusions or commendations contained within the report are based only on the aforementioned circumstances. The report has been prepared for use by the Client and no responsibility for its use by other parties is accepted by Cumberland Ecology.

| Version | Date Issued | Amended by | Details |
|---------|-------------|------------|---------|
| 001 | 20/11/2024 | MF, TM | Final |
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Approved by: Matthew Freeman

Position: Senior Project Manager / Ecologist

Signed: 

Date: 20 November, 2024

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Figure 3 Significant Native Vegetation within the Northern Zone

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Figure 5 Threatened fauna recorded within the locality (5km)

Figure 6 Migratory fauna recorded within the locality (5km)

Glossary

| Term / Abbreviation | Definition |
|----------------------|---|
| BAM | Biodiversity Assessment Method |
| BC Act | NSW <i>Biodiversity Conservation Act 2016</i> |
| BC Regulation | NSW <i>Biodiversity Conservation Regulation 2017</i> |
| BDAR | Biodiversity Development Assessment Report |
| Biosecurity Act | NSW <i>Biosecurity Act 2015</i> |
| Bonn Convention | Convention on the Conservation of Migratory Species of Wild Animals |
| BOS | Biodiversity Offset Scheme |
| CAMBA | China–Australia Migratory Bird Agreement |
| DCCEEW (Cth.) | Commonwealth Department Climate Change, Energy, the Environment and Water |
| DCCEEW (NSW) | NSW Department of Climate Change, Energy, the Environment and Water |
| ‘E’ | Endangered |
| EHG | Environment and Heritage Group |
| EP&A Act | NSW <i>Environmental Planning and Assessment Act 1979</i> |
| EPBC Act | Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| ‘EX’ | Extinct |
| ha | Hectares |
| JAMBA | Japan–Australia Migratory Bird Agreement |
| Lord Howe Island DCP | <i>Lord Howe Island Development Control Plan 2010</i> |
| Lord Howe Island LEP | <i>Lord Howe Island Local Environment Plan 2010</i> |
| MNES | Matters of National Environmental Significance |
| NSW | New South Wales |
| PMST | Protected Matters Search Tool |
| ROKAMBA | Republic of Korea–Australia Migratory Bird Agreement |
| SEARs | Secretary’s Environmental Assessment Requirements |
| SNV | Significant Native Vegetation |
| CSSI | Critical State Significant Infrastructure |
| Northern Zone | Northern investigation area (see Figure 1) |
| Southern Zone | Southern investigation area (see Figure 1) |
| TEC | Threatened Ecological Community |
| the ‘client’ | DCCEEW (NSW) |
| the ‘Program’ | Lord Howe Island Critical Infrastructure Program located within the Northern and Southern Zones |
| The ‘Strategy’ | <i>Lord Howe Island Weed Management Strategy 2016-2025</i> |
| ‘V’ | Vulnerable |

1. Introduction

Cumberland Ecology was commissioned by The APP Group, on behalf of the New South Wales (NSW) Department of Climate Change, Energy, the Environment and Water (DCCEE (NSW)) (the 'client') to prepare a baseline terrestrial biodiversity assessment for the Lord Howe Island Critical Infrastructure Program (the Program). The Program will include works within two general areas, referred to hereafter as the Northern Zone and Southern Zone (**Figure 1**). This baseline terrestrial biodiversity assessment has been prepared for the Northern Zone and is based on the results of a desktop assessment. The information presented within this baseline terrestrial biodiversity assessment will be utilised by the client to determine the developmental footprint for the Program and to support a request for Secretary's Environmental Assessment Requirements (SEARs).

1.1. Background

The Program is proposed to comprise the following:

- **Marine infrastructure**, including new and/or upgraded landing facilities, cargo loading/offloading areas, new office and commercial buildings, and new public walking tracks, viewing platform, landscaping, amenities and vehicle parking at the northern end of Lagoon Beach;
- **Waste management facility**, including new storage sheds and materials processing facilities, wastewater treatment plant and waste receival area, and dune restoration at the existing waste management facility; and
- **Biosecurity measures and facilities**, including an enhanced quarantine management system with a new receiving station/facility adjacent to the existing jetty, and dedicated kennel to house detection dogs near the wastewater management facility.

Funding for the Program has been committed by the NSW Government.

The current design for the Program would locate all works associated with the waste management facility within the Southern Zone. All remaining works associated with the marine infrastructure and biosecurity measures and facilities will be located within the Northern Zone shown in **Figure 1**.

The client is seeking Critical State Significant Infrastructure (CSSI) development consent for the Program pursuant to Section 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Confirmation of this planning pathway is pending consideration by the Minister for Planning.

Biodiversity presents a challenge for infrastructure development because the Lord Howe Island Group is listed on the register of World Heritage to a large extent due to its unique biodiversity and high level of endemism.

The Lord Howe Island Group is an excellent example of oceanic islands of volcanic origin supporting a unique ecological assemblage of plants and animals. It provides important breeding grounds for colonies of seabirds as well as providing vital natural habitat for the conservation of threatened species. Examples of such include endemics such as the flightless Lord Howe Woodhen (*Hypotaenidia sylvestris*), once regarded as one of the rarest birds in the world, and the Lord Howe Island Phasmid (*Dryococelus australis*), the world's largest stick insect that was thought extinct until it was relocated on a volcanic sea stack known as Ball's Pyramid.

The island group provides habitat for extensive colonies of nesting seabirds, making them very important over a vast oceanic region. For example the islands are the only major breeding locality for the Providence Petrel (*Pterodroma solandri*), and they include one of the world's greatest breeding occurrences of Red-tailed Tropicbird (*Phaethon rubricauda*).

Lord Howe Island has many endangered endemic species or subspecies of plants and animals, with fauna including vertebrates and invertebrates. A number of species occur within the lowlands where the Northern Zone is located and so there is potential for impacts on such biota.

1.2. Purpose

The purpose of this report is to document the findings of a desktop ecological assessment of the Northern Zone. Biodiversity values of particular relevance include threatened species and communities that are listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The specific objectives of this report are to:

- Identify the extent of "Significant Native Vegetation" (SNV) under the *Lord Howe Island Local Environment Plan 2010* (Lord Howe Island LEP);
- Describe the biodiversity values of the Northern Zone, including vegetation communities;
- Identify and map the location of threatened flora and threatened and/or migratory fauna species;
- Identify potentially occurring threatened flora and threatened and/or migratory fauna species listed by the State and Commonwealth within the Northern Zone;
- Identify potential direct and indirect ecological impacts associated with the future development within the Northern Zone;
- Identify potential avoidance and mitigation measures that could be incorporated into the Program; and
- Detail future planning and approval requirements under the BC Act and EPBC Act.

2. Regulatory Framework

This section describes legislative requirements for ecological assessments that would be required to be addressed as part of the development approval process for the Program.

2.1. Commonwealth Legislation

2.1.1. Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the Australian Government's key piece of environmental legislation and is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW (Cth.)). It is designed to protect national environmental assets, known as Matters of National Environmental Significance (MNES), which include threatened species of flora and fauna, threatened ecological communities (TECs), migratory species as well as other protected matters. Among other things, it defines the categories of threat for threatened flora and fauna, identifies key threatening processes and provides for the preparation of recovery plans for threatened flora, fauna and communities.

Under the EPBC Act, any action (which includes a development, project or activity) that is considered likely to have a significant impact on MNES must be referred to the Commonwealth Minister for the Environment. The referral forms the basis for the minister's decision as to whether the Program needs approval. Following submission of the referral, DCCEEW (Cth.) will then either declare the Program to be a 'controlled action' or 'not a controlled action'. If declared 'not a controlled action' the Program will not require further assessment by DCCEEW (Cth.). If declared a 'controlled action', the Program requires formal approval under the EPBC Act.

Approval from DCCEEW (Cth.) will require the preparation and submission of assessment documentation. DCCEEW (Cth.) have several ways to assess a controlled action and each process involves different levels of detail and community consultation. The assessment pathway and documentation required is advised by DCCEEW after notification of an activity being classed as controlled action. It can include assessment based on existing assessment documentation such as Biodiversity Development Assessment Reports (BDAR) or Ecological Impact Assessments, but DCCEEW (Cth.) may also request the preparation of a separate Environmental Impact Assessments to enable assessment and approval.

2.1.2. International Treaty Obligations on Migratory Species

Australia is signatory to several agreements relating to migratory species. Migratory species listed under the following agreements and conventions are protected in Australia by being listed as MNES (Migratory Controlling Provision) under the EPBC Act:

- China–Australia Migratory Bird Agreement (CAMBA);
- Japan–Australia Migratory Bird Agreement (JAMBA);
- Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA); and
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

The CAMBA and JAMBA agreements list terrestrial, water and shorebird species which migrate between Australia and the respective countries. In both cases, the majority of listed species are shorebirds (DotE 2014).

Both agreements require the parties to protect migratory birds by:

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

The JAMBA agreement also includes provisions for cooperation on the conservation of threatened birds. Australian government and non-government representatives meet every two years with Japanese and Chinese counterparts to review progress in implementing the agreements and to explore new initiatives to conserve migratory birds (DotE 2014).

The ROKAMBA formalises Australia's relationship with the Republic of Korea in respect to migratory bird conservation and provides a basis for collaboration on the protection of migratory shorebirds and their habitat (DotE 2014).

In addition to these bilateral agreements, Australia is also a signatory of the Bonn Convention. This convention aims to conserve terrestrial, aquatic and avian migratory species throughout their range (CMS 2015).

2.2. New South Wales Legislation

2.2.1. NSW Environmental Planning and Assessment Act 1979

The NSW *Environment Planning and Assessment Act 1979* (EP&A Act) is the overarching planning legislation in NSW. This Act provides for the creation of planning instruments that guide land use. The EP&A Act also provides for the consideration of the environment and biodiversity values, which is addressed in Section 1.7 and requires application of Part 7 of the BC Act. This includes threatened species, communities, habitat and processes as listed under the BC Act and *Fisheries Management Act 1994*.

Due to the location of the Program within a sensitive environmental location and an estimated development cost (exceeding \$30 million), the Program comprises a CSSI development and will require the issue of the SEARs by the DPHI. As such, the Program is subject to the environmental impact assessment and planning approval requirements of Division 5.2 of the EP&A Act.

In accordance with Section 5.5 of the EP&A Act, the proponent and determining authority, must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed works.

2.2.2. NSW Biodiversity Conservation Act 2016

The BC Act is the key piece of legislation in NSW relating to the protection and management of biodiversity and threatened species. The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The BC Act is supported by a number of regulations, including the *Biodiversity Conservation Regulation 2017* (BC Regulation).

The BC Act requires consideration of whether a development or an activity is likely to significantly affect threatened species and/or communities. Under the BC Act, CSSI automatically triggers entry into the NSW Biodiversity Offsets Scheme (BOS) and requires the preparation of a Biodiversity Development Assessment Report (BDAR) in accordance with the Biodiversity Assessment Method (BAM) to support an Environmental Impact Statement (EIS).

However Section 1.5 of the BAM states:

2.3. The BAM does not assess biodiversity values for:

- *marine mammals*
- *wandering seabirds*
- *biodiversity that is endemic to Lord Howe Island*
- *native vegetation and loss of habitat on category 1-exempt land (within the meaning of Part 5A of the LLS Act), other than the additional biodiversity impacts under clause 6.1 of the BC Regulation (referred to as prescribed impacts in the BAM).*

The BC Act or the EP&A Act may require a separate assessment of the biodiversity values listed above and the impacts of a proposal on those values.

As such, any biodiversity values that are endemic to Lord Howe Island and impacted by the Program do not need to be assessed under the BOS using the BAM. It is assumed that where the above excerpt lists 'wandering seabirds,' it is referring to migratory birds that are listed as MNES and are required to be assessed under the EPBC Act only and not also under the BOS.

2.3.1. NSW Biosecurity Act 2015

Biosecurity is a vital consideration for Lord Howe Island projects because the island biodiversity is extremely vulnerable to introduced biodiversity in the form of flora (weeds), fauna (pest animals) and pathogens. It has already been impacted by many such entities since the original colonisation by European settlers (some of which have been successfully eradicated).

The objects of the NSW *Biosecurity Act 2015* (Biosecurity Act) are as follows:

1. The primary object of the Biosecurity Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.
2. The other objects of the Biosecurity Act are as follows:
 - a. to promote biosecurity as a shared responsibility between government, industry and communities,
 - b. to provide a framework for the timely and effective management of the following:

- i. pests, diseases, contaminants and other biosecurity matter that are economically significant for primary production industries,
 - ii. threats to terrestrial and aquatic environments arising from pests, diseases, contaminants and other biosecurity matter,
 - iii. public health and safety risks arising from contaminants, non-indigenous animals, bees, weeds and other biosecurity matter known to contribute to human health problems,
 - iv. pests, diseases, contaminants and other biosecurity matter that may have an adverse effect on community activities and infrastructure,
- c. to provide a framework for risk-based decision-making in relation to biosecurity,
 - d. to give effect to intergovernmental biosecurity agreements to which the State is a party,
 - e. to provide the means by which biosecurity requirements in other jurisdictions can be met, so as to maintain market access for industry.

Biosecurity rules on the island are different to those for NSW and the Australian mainland. The Lord Howe Island board along with assistance from the Department of Agriculture, Fisheries and Forestry, as well as other government agencies, is responsible for the biosecurity on Lord Howe Island. The Lord Howe Island Boards have implemented strict biosecurity measures to safe-guard Lord Howe island from pathogens, weeds and introduced pest species. These biosecurity measures are outlined in the Lord Howe Island Biodiversity Management Plan (DECC 2007). Current environmental programs being implemented to maintain and protect the Island's World Heritage values include the African Big-headed Ant Eradication Program, pest animal control programs, the Rodent Eradication Project, weed eradication program and environmental education programs (LHIB 2024).

A number of invasive pests have already been removed from the island including cats, goats, pigs, and more recently Black Rats (*Rattus rattus*). Other invasive pest species that occur on the island such as the Mallard x Pacific Black Duck hybrids (*Anas superciliosa* x *Anas platyrhynchos*), Feral Pigeons (*Columba livia*), Common Starling (*Sturnus vulgaris*), Blackbird (*Turdus merula*) and Masked Owl (*Tyto novaehollandiae*). Control strategies are in place for these species as they have the ability to recolonise the island (LHIB 2024). Biosecurity controls for the introduction of other pests such as the Cane Toad (*Bufo marinus*) are also in place and managed by the Lord Howe Island Board (DECC 2007).

Invasive weeds are identified as one of the most serious threats to Lord Howe Island's biodiversity and World Heritage values. Under the Biosecurity Act all weeds are required to be controlled by all persons under a "General Biosecurity Duty". The General Biosecurity Duty means that all public and private land owners or managers and all other people who deal with weed species (biosecurity matters) must use the most appropriate approach to prevent, eliminate, or minimise the negative impact (biosecurity risk) of those weeds (DPI 2017). Under Division 2 of the Biosecurity Act, the Lord Howe Island Board (Lord Howe Island Board) is the local control authority for land within Lord Howe Island. The Lord Howe Island Board have specific statutory obligations for the management of weeds on Lord Howe Island and in 2016 published the *Lord Howe Island*

Weed Management Strategy 2016-2025 (the 'Strategy') (LHIB 2016). The Strategy provides a strategic framework for the continued reduction and elimination of the threats posed by invasive weeds from 2016 to 2026.

Highly infectious plant pathogens such as Myrtle Rust (*Austropuccinia psidii*) and Phytophthora (*Phytophthora cinnamomi*) have the potential to cause irrevocable damage to the environment. The Lord Howe Island Board is responsible for the control and management of infectious plant pathogens and have implemented monitoring and hygiene protocols across the island, such as the installation of footwear sanitary stations at all walking track heads (LHIB 2024).

2.3.2. Lord Howe Island Local Environment Plan 2010

The Lord Howe Island LEP is established under Part 3 of the *Environmental Planning and Assessment Act 1979*, and alongside the *Lord Howe Island Development Control Plan 2005* (Lord Howe Island DCP), controls planning and development on the Island. The ecological objectives of the Lord Howe Island LEP include:

- to conserve the World Heritage values of Lord Howe Island and to restore or enhance lost or disturbed natural resources of the Island;
- to conserve and facilitate the management of the marine environment of the Island and the resources of that environment;
- to protect threatened species, populations and ecological communities, and their habitats;
- to encourage the ecologically sustainable use of resources;
- to encourage community appreciation of the World Heritage values of the Island; and
- to identify suitable land for the provision of housing and community services for the Island's population while acknowledging suitable land for these purposes is limited.

2.3.3. Lord Howe Island Development Control Plan 2005

The Lord Howe Island DCP is the primary local planning instrument applicable to the Northern Zone. The key objective of the DCP is to provide controls for all development to encourage environmental sustainability and biodiversity. The DCP also provides controls to reflect best practice in the design of proposals to have a minimal impact on the World Heritage values, ecological values and amenity of the Island and its community.

3. Methodology

This assessment has been prepared based on a desktop assessment of the Northern Zone and includes a database analysis and literature review. Each of these components are outlined below.

3.1. Desktop Assessment

3.1.1. Database Analysis

A database analysis was conducted through consultation of the DCCEEW (Cth.) EPBC Protected Matters Search Tool (PMST) (DCCEEW 2024) and the NSW BioNet Atlas (EHG 2024). The EPBC PMST generated a list of potentially occurring MNES including World Heritage Properties, National Heritage Places, TECs, threatened species and migratory species listed under the EPBC Act within a 5 km radius of the Northern Zone (i.e. the locality), which fully encompassed the Northern Zone (see **Appendix A**). The BioNet Atlas search facility was used to generate records of flora and fauna, (including threatened species), known to occur across Lord Howe Island. This information was used for the purposes of confirming the abundance, distribution and age of threatened flora and fauna records within the locality. This was used as supplementary information to assess the likelihood of those threatened species to occur within the Northern Zone.

The latest map of vegetation communities from the *Lord Howe Island Vegetation Map 2016* (VIS_ID 4450) published by the Lord Howe Island Board and accessed from the NSW SEED Portal (NSW Government 2024) was also consulted to review the distribution of vegetation communities within the Northern Zone including the potential presence of TEC's.

3.1.2. Literature Review

Literature on the ecology of Lord Howe Island was reviewed, including data and reports published by the Lord Howe Island Board and other ecological studies. Key documents reviewed included:

- Department of Environment and Climate Change (NSW) 2007, *Lord Howe Island Biodiversity Management Plan*, Department of Environment and Climate Change (NSW), Sydney (DECC 2007);
- Sheringham P., Richards P., Gilmour P., & Kemmerer E., 2016, *A Systematic Flora Survey, Floristic Classification and High-Resolution Vegetation Map of Lord Howe Island*. Lord Howe Island Board, Lord Howe Island, NSW (Sheringham et al. 2016); and
- Lord How Island Board 2016, *Lord Howe Island Weed Management Strategy 2016 – 2025*, Lord Howe Island Board, Lord Howe Island (LHIB 2016).

3.1.3. Aerial Imagery

The most recent aerial photography sourced from Google Earth in 2024 was used for this assessment.

3.2. Likelihood of Occurrence Assessment

The likelihood of threatened species occurring within the Northern Zone was assessed based on the results of the database analysis and literature review using the criteria presented in **Table 1**. The assessment was based on the species known ranges, number and age of records, and habitat preferences which were considered when undertaking the desktop assessment.

Table 1 Criteria to assess potential for threatened species to occur within the Northern Zone

| Likelihood to Occur | Definition |
|---------------------|---|
| High | Previous records are held within the Northern Zone, there are a high number of records from the locality and suitable habitat is present. |
| Moderate | A high number of records of the species occur within the locality and/or habitat may be available within the Northern Zone however it is marginal, fragmented and/or small in size, or degraded. |
| Low | The species is unlikely to occur due to a lack of, or limited, habitat within the Northern Zone, or extremely poor-quality habitat within the Northern Zone, or no or very few recent records of the species occurring in the wider locality. |

4. Results

This chapter provides an overview of the flora and fauna known and potentially occurring within the Northern Zone, including information on vegetation communities, general flora and fauna species and threatened and/or migratory species.

4.1. Vegetation Communities

Existing vegetation mapping published by the Lord Howe Island (Sheringham et al. 2016) for the Northern Zone is shown in **Figure 2**. According to the mapping there are eight mapping units mapped within the Northern Zone which include five native vegetation communities, one non-native vegetation community and two communities mapped based on their physiographic features. None of these communities are listed as TECs under the BC Act or EPBC Act. The vegetation communities mapped within the Northern Zone are summarised in **Table 2**. The descriptions of the native vegetation communities present within the Northern Zone taken from the Lord Howe Island 2016 floristic study (Sheringham et al. 2016) are provided in subsequent sections. Only descriptions for the three vegetation communities (Community 2, 8 and 12a) as described by Sheringham et al. (2016) are provided below. The common names listed are those used by Sheringham et al. (2016).

Table 2 Vegetation communities within the Northern Zone

| Community # | Vegetation Community | BC Act Status | EPBC Act Status | Northern Zone (ha) |
|---------------|--|---------------|-----------------|--------------------|
| 2 | <i>Melanthera biflora</i> - Saltwater Couch herbland/grassland on coral boulder beaches and rocky headlands | - | - | 0.29 |
| 8 | Bully Bush - Hopwood shrubland on shallow rocky soils | - | - | 0.04 |
| 12a | Kentia Palm Forest on coral sand and calcarenite | - | - | 0.15 |
| Ep | Environmental plantings | - | - | 0.11 |
| Np | Plantation | - | - | 0.22 |
| Ex | Exotic | - | - | 0.44 |
| Boulder Beach | Beach | - | - | 0.99 |
| Sand Beach | Beach | - | - | 0.12 |
| Total | | | | 2.34 |

Note that totals may not add up due to rounding

4.1.1. Community 2 - *Melanthera biflora* - Saltwater Couch herbland/grassland on coral boulder beaches and rocky headlands

Community 2 is a variable coastal community with the ground layer dominated by *Melanthera biflora* or Saltwater Couch (*Sporobolus virginicus* var. *virginicus*). Other common species include Chaff Flower (*Achyranthes aspera*), Coastal Jack Bean (*Canavalia rosea*), Beach Bean (*Ipomoea brasiliensis*), Club Rush (*Ficinia nodosa*), *Tylophora biglandulosa* and Crinum Lily (*Crinum asiaticum* var. *pedunculatum*). A sparse upper layer of emergent shrubs or small trees of Sallywood (*Lagunaria patersonia* subsp. *patersonia*), Kentia Palm (*Howea forsteriana*) and Bully Bush (*Cassinia tenuifolia*) may be present.

4.1.2. Community 8 – Bully Bush - Hopwood shrubland on shallow rocky soils

Community 8 is a shrubland community with a sparse, emergent upper layer of Greybark (*Drypetes deplanchei*) and Sallywood (*Lagunaria patersonia* subsp. *patersonia*) often present. There is an open to dense shrub layer dominated by Bully Bush (*Cassinia tenuifolia*) or Hopwood (*Dodonaea viscosa* subsp. *burmanniana*), or both, with occasional Tea Tree (*Melaleuca howeana*). The vines *Muehlenbeckia complexa* and Boat Vine (*Pandorea pandorana* subsp. *austrocaledonica*) are common in the mid- and ground layers, the latter including Saltwater Couch (*Sporobolus virginicus* var. *virginicus*), *Poa poiformis*, Leafy Flat Sedge (*Cyperus lucidus*) and Club Rush (*Ficinia nodosa*).

4.1.3. Community 12a – Kentia Palm Forest on coral sand and calcarenite

Community 12a is a floristically simple tall forest dominated by Kentia Palm (*Howea forsteriana*) and Banyan (*Ficus macrophylla* subsp. *columnaris*). The ground is densely covered by fallen palm fronds and other tree species are sometimes present as scattered trees and seedlings. The upper, mid- and lower layers are represented by different aged cohorts of Kentia Palm. In both variants, trees and seedlings of other rainforest trees, such as Cotton-wood (*Celtis conferta* subsp. *amblyphylla*), Blackbutt (*Cryptocarya triplinervis* var. *triplinervis*) and Sallywood (*Lagunaria patersonia* subsp. *patersonia*), are uncommon to rare. In some sites there is a sparse ground cover of combinations of *Asplenium milnei*, *Carex brunnea* and *Oplismenus imbecillus*.

Within this variant stands are dominated by Kentia Palm with rare emergent Banyan. The mid and lower layers are also dominated by Kentia Palm.

4.2. Significant Native Vegetation

Significant Native Vegetation (SNV) mapping under the Lord Howe Island LEP includes two small areas of SNV within the Northern Zone as shown in **Figure 3**. This overlaps with the mapping of native vegetation communities within the Northern Zone, however does not perfectly align with the vegetation mapping.

Under the Lord Howe Island LEP development consent cannot be granted for local developments if the proposed development will result in any damage, or removal of SNV.

4.3. Threatened Ecological Communities

No TECs listed under the BC Act or EPBC Act are mapped within the Northern Zone. The closest TEC, Lagunaria Swamp Forest on Lord Howe Island, listed as a Critically Endangered Ecological Community is located north of Old Settlement Beach, more than 250m from the Northern Zone

4.4. Threatened Flora

A total of seven (7) threatened flora species have been recorded within the locality of the Northern Zone, however no records occur within the Northern Zone (see **Figure 4**). Furthermore, the EPBC PMST identified habitat within the locality for an additional three threatened flora species. One record of *Caesalpinia bonduc* (Knicker Nut) is located approximately 80m north-east of the Northern Zone within a residential property. This record does not appear to be located in the correct location, with the description identifying the record as being 200m south of the creek at Old Settlement Beach, on a calcarenite rock shelf 3m above the high tide line

and 6m from the shore. The description of this location still does not fall within the Northern Zone however is in close proximity.

Table 3 below lists the threatened flora species recorded within the locality as well as their likelihood of occurrence within the Northern Zone based on the location of previous records and potential habitat within the Northern Zone.

Table 3 Threatened flora recorded within the locality with the potential to occur within the Northern Zone

| Scientific Name | Common Name | BC Act Status | EPBC Act Status | BioNet Records | Likelihood of Occurrence |
|--|--------------------------------|---------------|-----------------|----------------|--------------------------|
| <i>Caesalpinia bonduc</i> | Knicker Nut | E | - | 5 | Moderate |
| <i>Calystegia affinis</i> | Lord Howe Island Morning Glory | CE | CE | 7 | Moderate |
| <i>Carmichaelia exsul</i> | Lord Howe Island Broom | CE | - | 2 | Low |
| <i>Chamaesyce psammogeton</i> | Sand Spurge | E | - | 72 | Low |
| <i>Geniostoma huttonii</i> | Hutton's Geniostoma | CE | E | 9 | Low |
| <i>Hypolepis elegans</i> | - | EX | - | 2 | Low |
| <i>Lepidorrhachis mooreana</i> | Little Mountain Palm | CE | CE | 1 | Low |
| <i>Polystichum moorei</i> | Rock Shield Fern | E | E | - | Low |
| <i>Xylosma parvifolia</i> | Mountain Xylosma | E | E | - | Low |
| <i>Anthosachne kingiana</i> subsp. <i>kingiana</i> | Philip Island Wheat Grass | CE | CE | - | Low |

CE = Critically Endangered, E = Endangered, EX = Extinct

4.5. Threatened and Migratory Fauna

The NSW BioNet holds records for 40 threatened fauna species listed under the BC Act and/or EPBC Act within the locality, including six (6) species that have been recorded within the Northern Zone. (see **Figure 5**). Furthermore, the EPBC PMST identified habitat within the locality for an additional 17 threatened fauna species.

The NSW BioNet holds records for 42 migratory fauna species listed under the EPBC Act within the locality, including five (5) migratory species that have been recorded within the Northern Zone (see **Figure 6**). Furthermore, the EPBC PMST identified habitat within the locality for an additional 15 migratory fauna species.

Table 4 below lists the threatened and/or migratory fauna species recorded within the locality as well as their likelihood of occurrence within the Northern Zone based on the location of previous records and potential habitat within the Northern Zone. It is noted that while the likelihood of occurrence for several threatened and migratory birds is considered to be low, there is potential for these species to be seen flying overhead but are not reliant on the habitat within the Northern Zone. As the locality includes some ocean areas, the search

yielded numerous marine species including fish, turtles and marine mammals. These are not relevant to an assessment of terrestrial ecology within the Northern Zone and are not considered further in this report.

Table 4 Threatened fauna recorded within the locality with the potential to occur within the Northern Zone

| Scientific Name | Common Name | BC Act | EPBC Act | ¹ BioNet Records | Northern Zone | Likelihood of Occurrence |
|--------------------------------------|-------------------------|--------|----------|-----------------------------|---------------|--------------------------|
| Birds | | | | | | |
| <i>Actitis hypoleucos</i> | Common Sandpiper | - | M | 6 | Yes | High |
| <i>Anous stolidus</i> | Common Noddy | - | M | 250 | Yes | High |
| <i>Apus pacificus</i> | Fork-tailed Swift | - | M | 1 | - | Low |
| <i>Ardenna carneipes</i> | Flesh-footed Shearwater | V | M | 1133 | - | High |
| <i>Ardenna grisea</i> | Sooty Shearwater | - | M | 2 | - | Low |
| <i>Ardenna pacifica</i> | Wedge-tailed Shearwater | - | M | 217 | Yes | High |
| <i>Ardenna tenuirostris</i> | Short-tailed Shearwater | - | M | 1 | - | Low |
| <i>Arenaria interpres</i> | Ruddy Turnstone | - | M | 423 | Yes | High |
| <i>Botaurus poiciloptilus</i> | Australasian Bittern | E | E | 1 | - | Low |
| <i>Calidris acuminata</i> | Sharp-tailed Sandpiper | - | M | 12 | - | Moderate |
| <i>Calidris canutus</i> | Red Knot | - | E, M | 3 | - | Moderate |
| <i>Calidris ferruginea</i> | Curlew Sandpiper | E | CE, M | 13 | - | Moderate |
| <i>Calidris melanotos</i> | Pectoral Sandpiper | - | M | 19 | - | Moderate |
| <i>Calidris ruficollis</i> | Red-necked Stint | - | M | 57 | - | Moderate |
| <i>Calidris subminuta</i> | Long-toed Stint | - | M | 1 | - | Low |
| <i>Calidris tenuirostris</i> | Great Knot | V | CE, M | 1 | - | Low |
| <i>Charadrius leschenaultii</i> | Greater Sand-plover | V | V, M | 2 | - | Low |
| <i>Charadrius mongolus</i> | Lesser Sand-plover | V | E, M | 12 | - | Low |
| <i>Charadrius veredus</i> | Oriental Plover | - | M | 9 | - | Low |
| <i>Chlidonias leucopterus</i> | White-winged Black Tern | - | M | 7 | - | Low |
| <i>Diomedea antipodensis</i> | Antipodean Albatross | - | V, M | - | - | Low |
| <i>Diomedea antipodensis gibsoni</i> | Gibson's Albatross | - | V, M | - | - | Low |

| Scientific Name | Common Name | BC Act | EPBC Act | ¹ BioNet Records | Northern Zone | Likelihood of Occurrence |
|--|--|--------|----------|-----------------------------|---------------|--------------------------|
| <i>Diomedea epomophora</i> | Southern Royal Albatross | - | V, M | - | - | Low |
| <i>Diomedea exulans</i> | Wandering Albatross | E | E | 1 | - | Low |
| <i>Fregata ariel</i> | Lesser Frigatebird | - | M | - | - | Low |
| <i>Fregata minor</i> | Great Frigatebird | - | M | - | - | Low |
| <i>Fregatta grallaria</i> | White-bellied Storm-Petrel | V | V | 11 | - | Low |
| <i>Gallinago hardwickii</i> | Latham's Snipe | - | M | 14 | - | Low |
| <i>Glareola maldivarum</i> | Oriental Pratincole | - | M | 2 | - | Low |
| <i>Gygis alba</i> | White Tern | V | - | 256 | Yes | High |
| <i>Haematopus fuliginosus</i> | Sooty Oystercatcher | V | - | 1 | - | Low |
| <i>Haematopus longirostris</i> | Pied Oystercatcher | E | - | 1 | - | Low |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | - | V, M | 2 | - | Low |
| <i>Hydroprogne caspia</i> | Caspian Tern | - | M | 5 | - | Low |
| <i>Hypotaenidia sylvestris</i> | Lord Howe Woodhen | E | E | 1,830 | Yes | High |
| <i>Limosa lapponica</i> | Bar-tailed Godwit | - | M | 321 | - | High |
| <i>Limosa limosa</i> | Black-tailed Godwit | V | M | 2 | - | Low |
| <i>Macronectes giganteus</i> | Southern Giant-Petrel | - | E, M | - | - | Low |
| <i>Macronectes halli</i> | Northern Giant Petrel | - | V, M | - | - | Low |
| <i>Motacilla flava</i> | Yellow Wagtail | - | M | 1 | - | Low |
| <i>Numenius madagascariensis</i> | Eastern Curlew | - | CE, M | 5 | - | Low |
| <i>Numenius minutus</i> | Little Curlew | - | M | 9 | - | Low |
| <i>Numenius phaeopus</i> | Whimbrel | - | M | 262 | Yes | High |
| <i>Onychoprion fuscata</i> | Sooty Tern | V | - | 592 | - | High |
| <i>Pachycephala pectoralis contempta</i> | Golden Whistler (Lord Howe Is. subsp.) | V | - | 32 | Yes | High |
| <i>Pachyptila turtur subantarctica</i> | Fairy Prion (southern) | - | V | - | - | Low |

| Scientific Name | Common Name | BC Act | EPBC Act | ¹ BioNet Records | Northern Zone | Likelihood of Occurrence |
|---|---|--------|----------|-----------------------------|---------------|--------------------------|
| <i>Phaethon lepturus</i> | White-tailed Tropicbird | - | M | 5 | - | Low |
| <i>Phaethon rubricauda</i> | Red-tailed Tropicbird | V | M | 266 | - | Moderate |
| <i>Pluvialis fulva</i> | Pacific Golden Plover | - | M | 530 | - | High |
| <i>Pluvialis squatarola</i> | Grey Plover | - | M | 1 | - | Low |
| <i>Procelsterna cerulea</i> | Grey Ternlet | V | - | 9 | - | Low |
| <i>Pterodroma heraldica</i> | Herald Petrel | - | CE | - | - | Low |
| <i>Pterodroma leucoptera leucoptera</i> | Gould's Petrel | V | E | 1 | - | Low |
| <i>Pterodroma neglecta neglecta</i> | Kermadec Petrel (west Pacific subspecies) | V | V | 8 | - | Low |
| <i>Pterodroma nigripennis</i> | Black-winged Petrel | V | - | 353 | Yes | High |
| <i>Pterodroma solandri</i> | Providence Petrel | V | - | 50 | - | High |
| <i>Puffinus assimilis</i> | Little Shearwater | V | - | 14 | - | Low |
| <i>Rostratula australis</i> | Australian Painted Snipe | E | E | 1 | - | Low |
| <i>Sterna hirundo</i> | Common Tern | - | M | 7 | - | Low |
| <i>Sternula albifrons</i> | Little Tern | E | M | 2 | - | Low |
| <i>Strepera graculina crissalis</i> | Pied Currawong (Lord Howe Is. subsp.) | V | V | 53 | - | High |
| <i>Sula dactylatra</i> | Masked Booby | V | M | 637 | - | High |
| <i>Thalassarche bulleri</i> | Buller's Albatross | - | V, M | - | - | Low |
| <i>Thalassarche bulleri platei</i> | Northern Buller's Albatross | - | V, M | - | - | Low |
| <i>Thalassarche carteri</i> | Indian Yellow-nosed Albatross | - | V, M | - | - | Low |
| <i>Thalassarche cauta</i> | Shy Albatross | - | E, M | - | - | Low |
| <i>Thalassarche impavida</i> | Campbell Albatross | - | V, M | - | - | Low |
| <i>Thalassarche melanophris</i> | Black-browed Albatross | - | V, M | - | - | Low |
| <i>Thalassarche salvini</i> | Salvin's Albatross | - | V, M | - | - | Low |
| <i>Thalassarche steadi</i> | White-capped Albatross | - | V, M | - | - | Low |

| Scientific Name | Common Name | BC Act | EPBC Act | ¹ BioNet Records | Northern Zone | Likelihood of Occurrence |
|--|-------------------------------------|--------|----------|-----------------------------|---------------|--------------------------|
| <i>Tringa brevipes</i> | Grey-tailed Tattler | - | M | 39 | - | Moderate |
| <i>Tringa glareola</i> | Wood Sandpiper | - | M | 4 | - | Low |
| <i>Tringa incana</i> | Wandering Tattler | - | M | 32 | - | Moderate |
| <i>Tringa nebularia</i> | Common Greenshank | - | M | 14 | - | Moderate |
| <i>Tringa stagnatilis</i> | Marsh Sandpiper | - | M | 7 | - | Low |
| <i>Tyto novaehollandiae</i> | Masked Owl | V | - | 91 | - | High |
| <i>Xenus cinereus</i> | Terek Sandpiper | V | M | 3 | - | Low |
| <i>Zosterops lateralis tephropleurus</i> | Silvereye (Lord Howe Is. subsp.) | V | - | 16 | Yes | High |
| Reptiles | | | | | | |
| <i>Christinus guentheri</i> | Lord Howe Island Southern Gecko | V | V | 133 | - | Moderate |
| <i>Oligosoma lichenigera</i> | Lord Howe Island Skink | V | V | 176 | - | Moderate |
| Invertebrates | | | | | | |
| <i>Gudeoconcha sophiae magnifica</i> | Magnificent Helicarionid Land Snail | CE | CE | - | - | Low |
| <i>Mystivagor mastersi</i> | Masters Charopid Land Snail | CE | CE | 1 | - | Low |
| <i>Pericryptodrilus nanus</i> | Lord Howe Earthworm | CE | CE | - | - | Low |
| <i>Placostylus bivaricosus</i> | Lord Howe Placostylus | E | E | 41 | Yes | High |
| <i>Pseudocharopa ledgbirdi</i> | Mount Lidgbird Charopid Land Snail | CE | CE | 4 | - | Low |
| <i>Pseudocharopa whiteleggei</i> | Whitelegge's Land Snail | CE | CE | 1 | - | Low |

¹Records are only provided for species identified in the BioNet atlas search and not for species that were only identified in the PMST.

4.6. Matters of National Environmental Significance

The EPBC Act provides protection of the environment from actions proposed to have the potential to significantly impact on MNES or the environment of Commonwealth land. MNES protected under the EPBC Act include:

- World Heritage Properties.
- National Heritage Places.
- Ramsar Wetlands.
- Threatened species or ecological communities listed in the EPBC Act.
- Migratory species listed in the EPBC Act.
- Commonwealth marine environment.
- Nuclear actions.
- Great Barrier Reef Marine Park.
- A water resource, in relation to coal seam gas development and large coal mining development.

A search of the Commonwealth PMST was undertaken on 18 November 2024. The search included a 5 km buffer around the Northern Zone. The search results, which include marine species and species frequenting higher altitudes on the island, are summarised below in **Table 5** and a record of the report is provided in **Appendix A**.

Table 5 Matters of National Significance (MNES)

| MNES | Within the Locality |
|--------------------------------------|--|
| World Heritage Properties | Yes – Lord Howe Island is a declared World Heritage Property |
| National Heritage Places | Yes – Lord Howe Island is classed as Natural Heritage Place |
| Wetlands of international importance | None |
| The Great Barrier Reef Marine Park | None |
| Commonwealth marine area | None |
| Threatened ecological communities | None |
| Threatened species | 59 |
| Migratory species | 47 |
| State and territory reserves | 2 – Terrestrial and Marine Environments |

Assessments of threatened flora, threatened fauna and migratory species likely to occur in the Northern Zone have been presented previously in **Section 4.4** and **Section 4.5**.

If the Program has the potential to result in significant impacts on MNES, a referral to DCCEEW (Cth.) will be required. The purpose of the referral is to determine whether the proposed action (i.e. the Program) comprises a Controlled Action, which would require formal assessment and approval under the EPBC Act. In the event of the proposed action being declared a Controlled Action, it is likely that the assessments for Commonwealth

purposes will be conducted via the Preliminary Documentation pathway. Further discussion regarding the requirements for a referral are provided in **Section 5.4.1**.

5. Discussion

This chapter provides a discussion of the ecological constraints to future development present within the Northern Zone, summarises the potential impacts associated with future development, and identifies potential avoidance and mitigation measures. This chapter also discusses the future ecological impact assessment requirements.

5.1. Constraints

Key ecological constraints identified within the Northern Zone include:

- It is listed as a World Heritage Property and National Heritage Place;
- Presence of native vegetation; and
- Known and potential habitat for threatened and/or migratory species.

These constraints are discussed in detail below.

5.1.1. World Heritage Property and National Heritage Place

Lord Howe Island as part of the Lord Howe Island Group is listed as a World Heritage Property. To be included on the World Heritage List, sites must be of outstanding universal value and meet at least one out of ten selection criteria identified by the UNESCO World Heritage Convention (UNESCO 2024b). Lord Howe Island is listed as a World Heritage Property as it meets two key criteria:

- **Criterion (vii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance:**

The Lord Howe Island Group is grandiose in its topographic relief and has an exceptional diversity of spectacular and scenic landscapes within a small area, including sheer mountain slopes, a broad arc of hills enclosing the lagoon and Balls Pyramid rising abruptly from the ocean. It is considered to be an outstanding example of an island system developed from submarine volcanic activity and demonstrates the nearly complete stage in the destruction of a large shield volcano. Having the most southerly coral reef in the world, it demonstrates a rare example of a zone of transition between algal and coral reefs. Many species are at their ecological limits, endemism is high, and unique assemblages of temperate and tropical forms cohabit (UNESCO 2024a).

The islands support extensive colonies of nesting seabirds, making them significant over a wide oceanic region. They are the only major breeding locality for the Providence Petrel (*Pterodroma solandri*), and contain one of the world's largest breeding concentrations of Red-tailed Tropicbird (*Phaethon rubricauda*) (UNESCO 2024a).

- **Criterion (x) contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation:**

The Lord Howe Island Group is an outstanding example of the development of a characteristic insular biota that has adapted to the island environment through speciation. A significant number of endemic species

or subspecies of plants and animals have evolved in a very limited area. The diversity of landscapes and biota and the high number of threatened and endemic species make these islands an outstanding example of independent evolutionary processes.

Lord Howe Island supports a number of endangered endemic species or subspecies of plants and animals, for example the Lord Howe Woodhen (*Hypotaenidia sylvestris*), which at time of inscription was considered one of the world's rarest birds. While sadly a number of endemic species disappeared with the arrival of people and their accompanying species, the Lord Howe Island Phasmid, the largest stick insect in the world, still exists on Balls Pyramid. The islands are an outstanding example of an oceanic island group with a diverse range of ecosystems and species that have been subject to human influences for a relatively limited period .

The Lord Howe Island Group is also listed as a National Heritage Place and was added to the National Heritage List in 2007 in recognition of its national heritage significance (UNESCO 2024a).

The Northern Zone is located within a World Heritage and National Heritage Place and contains native vegetation that has been over cleared in other parts of the island and which has the potential to support threatened species such as the Lord Howe Placostylus (*Placostylus bivaricosus*) (a snail) and the Lord Howe Woodhen (*Hypotaenidia sylvestris*). Therefore all natural habitats should be regarded as having substantial constraints due to this context.

5.1.2. Native Vegetation

Significant Native Vegetation (SNV) mapping under the LHI LEP includes two small areas of SNV within the Northern Zone. This overlaps with the mapping of native vegetation communities within the Northern Zone, however, does not perfectly align with the mapping. Therefore, mapping of SNV will require ground-truthing surveys to confirm the full extent of SNV within the Northern Zone.

Under the Lord Howe Island LEP, development consent cannot be granted if the proposed development will result in any damage, or removal of SNV. However, given the Program will be assessed as a CSSI development, requirements under the Lord Howe Island LEP are not required to be strictly adhered to.

The areas of native vegetation within the Northern Zone are considered to comprise high ecological constraint and where possible the application of avoid and minimise should be applied. The vegetation communities mapped within the Northern Zone are well represented on Lord Howe Island, and minor impacts associated with the Program are not considered to significantly alter the composition and distribution of these communities on Lord Howe Island.

The vegetation within the Northern Zone has been subject to historical disturbance, hence the presence of native vegetation communities that comprise a mix of non-specific native vegetation which have been assigned to the mapping units Ep – Environmental plantings and Np – Plantation.

In summary, the native vegetation within the Northern Zone is of high ecological value, despite previous disturbance in some areas. Any clearing of native vegetation should demonstrate the principals of avoid and minimise impacts on native vegetation. Furthermore, direct offsets and compensatory measures are likely to be required to account for the loss of native vegetation and associated habitat. Compensatory measures may

include revegetation and rehabilitation within landscaped areas and areas of exotic vegetation within the Northern Zone. Depending on the extent of impacts to native vegetation, additional offsetting measures may be required. This may include additional opportunities to rehabilitate native vegetation elsewhere on Lord Howe Island as well as opportunities to fund environmental research projects or education programs on Lord Howe Island. The offsetting measures should be identified within a Biodiversity Offsets Strategy that specifies the nature and extent of offsets required for the Program. The Biodiversity Offsets Strategy should be developed in consultation with the Lord Howe Island Board.

5.1.3. Threatened Species

5.1.3.1. Threatened Flora

No threatened flora species have been recorded within the Northern Zone, however two species are considered to have the potential to occur due to the proximity of previous records and potential habitat suitability, including *Caesalpinia bonduc* (Knicker Nut) and *Calystegia affinis* (Lord Howe Island Morning Glory).

5.1.3.2. Threatened Fauna

The NSW BioNet Atlas holds records of six threatened fauna species within the Northern Zone. It is expected that the Northern Zone would comprise suitable habitat for a number of other threatened fauna species known from the locality. Of the threatened fauna previously recorded within the Northern Zone, ten are birds of which are highly mobile species capable of accessing habitat throughout the Northern Zone and adjoining habitats. These species are commonly recorded across Lord Howe Island and the Program is considered unlikely to result in a significant impact on these species. In particular, the Lord Howe Island Woodhen (*Hypotaenidia sylvestris*), listed as endangered under the BC Act and EPBC Act, was in significant decline across the island, however the population has grown significantly following the eradication of the Black Rat (*Rattus rattus*) in 2023. The species has since been recorded in high abundances around the island, particularly in accessible areas.

The Lord Howe Placostylus (*Placostylus bivaricosus*), listed as an Endangered under the BC Act and EPBC Act, is not highly mobile and the Program poses a greater risk to the species. The NSW BioNet Atlas holds one record of the species from 1999. This species was formerly widespread on Lord Howe Island however has declined significantly in range due to predation from exotic vertebrate fauna (predominantly the Black Rat (*Rattus rattus*)). The species has however become more abundant on the island since the eradication of rats in 2023 and further surveys will be required to determine the presence of the species within the Northern Zone. Mitigation measures including a translocation plan should be developed for the species that can be implemented during the construction phases of the Program in the event that individuals are identified.

Several other threatened fauna species have the potential to occur within the Northern Zone. Therefore, future assessment would need to consider the significance of impacts to threatened species known and potentially occurring within the Northern Zone. The type of assessment to be prepared would need to be prepared in accordance with the SEAR's issued by DCCEEW (NSW).

5.1.4. Migratory Species

The NSW BioNet atlas and the EPBC PMST identify records and/or habitat for 57 EPBC Act listed migratory species within the Northern Zone. Most of the species would likely only be seen aurally over the Northern Zone when in transit between breeding/roosting and foraging sites, given that they are predominantly marine species that forage in the open ocean.

Of the species records held within the NSW BioNet atlas for the locality, records for five migratory species are located within the Northern Zone. The habitat within the Northern Zone is expected to comprise predominantly foraging habitat for these species. Breeding sites for migratory birds are relatively well known on Lord Hie Island and the Northern Zone has not been identified as a known breeding or roosting site for any of the potentially occurring migratory species. Further surveys would be required to confirm the presence of migratory species during summer months when these species are known to migrate to Lord Howe Island.

Future assessment for the Program would need to consider the significance of the Program on migratory species and where required, demonstrate efforts to avoid and minimise impacts on migratory species and their habitats.

5.2. Potential Ecological Impacts

Future development within the Northern Zone for the Program will require some land clearance that has the potential to directly and indirectly impact biodiversity values within the Northern Zone and surrounds. Potential impacts include:

- Removal of native vegetation;
- Removal of fauna habitat features such as leaf litter, coarse woody debris and blossom-producing trees and shrubs;
- Removal of known and potential habitat for threatened and migratory species;
- Modification of microhabitats through edge effects;
- Runoff and sedimentation;
- Biosecurity risks:
 - Weed invasion;
 - Feral animal invasion;
 - Disease risk; and
- Injury or mortality to fauna species

Such impacts would need to be assessed as part of the CSSI development process. Future assessment requirements are detailed within **Section 5.4**.

5.3. Avoidance and Mitigation

Suitable avoidance, mitigation and offset measures will need to be an integral part of the Program. Due to the Program occurring on a World Heritage area, such measures should be exemplary.

Impacts must be avoided and minimised before offsets are proposed to compensate for any residual impacts. Justification for residual impacts must be provided in the biodiversity assessment prepared to support the EIS.

In consideration of the ecological constraints listed in **Section 5.1**, suitable avoidance and mitigation measures include:

- Avoidance:
 - Locating the development predominantly in cleared areas or areas within areas mapped as exotic vegetation or non-specific native vegetation;
 - Designing the Program to ensure hydrological changes are avoided or minimised; and
 - Including provision for ecological restoration within landscaped areas and within retained areas of the Northern Zone.
- Potential Mitigation:
 - Demarcating clearing areas to prevent damage beyond the disturbance footprint;
 - Installation of sediment control fencing;
 - Timing clearing works to minimise harm to fauna species (i.e. outside of key migration periods and breeding periods);
 - Undertake pre-clearing surveys and clearance supervision to manage impacts to fauna species;
 - Translocation plan for the Lord Howe Placostylus (*Placostylus bivaricosus*);
 - Biosecurity protocols and monitoring; and
 - Preparation of a site-specific Biodiversity Management Plan for the Program to identify the management measures for flora and fauna.

5.4. Future Assessment Requirements

5.4.1. EPBC Act Requirements

World Heritage properties, threatened species, populations and ecological communities listed under the EPBC Act that are considered to be directly or indirectly impacted by the Program should be assessed in accordance with the *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (DotE 2013). If a development is considered to significantly impact any MNES, then a referral would be required to be submitted.

The Program will require a referral to the Commonwealth, and has considerable potential to be declared a controlled action, for reasons set out below.

The *Significant Impact Guidelines 1.1* for the EPBC Act provide guidance to determine whether or not a significant impact is likely to occur (DotE 2013). The guidelines are specific to different entities. Those for endangered and critically endangered species as well as World Heritage and National Heritage Properties are provided in the following sections:

5.4.1.1. Endangered and Critically Endangered Species

The Lord Howe Woodhen (*Hypotaenidia sylvestris*), an endangered species listed under the EPBC Act has been recorded within the Northern Zone and therefore the following significant impact criteria applies.

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of a population*
- *reduce the area of occupancy of the species*
- *fragment an existing population into two or more populations*
- *adversely affect habitat critical to the survival of a species*
- *disrupt the breeding cycle of a population*
- *modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*
- *result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat*
- *introduce disease that may cause the species to decline, or*
- *interfere with the recovery of the species.*

As there is a large number of records of the Lord Howe Woodhen (*Hypotaenidia sylvestris*) within the Northern Zone, any reductions or fragmentations of habitat would trigger the requirement for the preparation of a referral under the EPBC Act.

Of particular note to the Program are:

- *result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat; and*
- *introduce disease that may cause the species to decline.*

As the Program would involve changes to a shipping location, which would bring in cargoes from overseas, there is an ongoing and permanent risk that such imports could introduce invasive species or disease that would threaten the existence of the endangered fauna.

5.4.1.2. World Heritage Properties

As Lord Howe Island is a World Heritage Property the following significant impact criteria also apply.

An action is likely to have a significant impact on the World Heritage values of a declared World Heritage property if there is a real chance or possibility that it will cause:

- one or more of the World Heritage values to be lost
- one or more of the World Heritage values to be degraded or damaged, or
- one or more of the World Heritage values to be notably altered, modified, obscured or diminished.

5.4.1.3. National Heritage Places

As Lord Howe Island is a World Heritage Property the following significant impact criteria also apply.

An action is likely to have a significant impact on the World Heritage values of a declared World Heritage property if there is a real chance or possibility that it will cause:

- one or more of the World Heritage values to be lost
- one or more of the World Heritage values to be degraded or damaged, or
- one or more of the World Heritage values to be notably altered, modified, obscured or diminished.

Therefore, impacts on the aforementioned endangered species, which is also part of the reasons for World Heritage Property and National Heritage Place listing as endemic species, could be construed as requiring a referral.

5.4.2. BC Act Requirements

As outlined in **Section 2.2.2**, the BC Act requires consideration of whether a development or an activity is likely to significantly affect threatened species and/or communities. Under the BC Act, CSSI automatically triggers entry into the BOS and requires the preparation of a BDAR in accordance with the BAM to support an Environmental Impact Statement (EIS). However, the BOS does not apply to biodiversity that is endemic to Lord Howe Island. Therefore it is assumed that the type of biodiversity impact assessment required for the Program will be specifically tailored to the site in the SEARs. Where required, additional consultation with the DCCEE (NSW) will be undertaken to confirm the assessment requirements.

6. References

- CMS. 2015. Convention on the Conservation of Migratory Species of Wild Animals. United Nations Environment Program, Germany.
- DCCEEW. 2024. EPBC Protected Matters Search Tool. Department of Climate Change, Energy, the Environment and Water, Canberra.
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- EHG. 2024. BioNet Atlas. Environment and Heritage Group.
- LHIB. 2016. Lord Howe Island Weed Management Strategy 2016 - 2025. Lord Howe Island.
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- UNESCO. 2024b. World Heritage Convention - The Criteria for Selection. UNESCO World Heritage Convention.

APPENDIX A :

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: 18-Nov-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

| | |
|---|------|
| World Heritage Properties: | 1 |
| National Heritage Places: | 1 |
| Wetlands of International Importance (Ramsar) | None |
| Great Barrier Reef Marine Park: | None |
| Commonwealth Marine Area: | None |
| Listed Threatened Ecological Communities: | None |
| Listed Threatened Species: | 59 |
| Listed Migratory Species: | 47 |

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: | None |
| Commonwealth Heritage Places: | None |
| Listed Marine Species: | 48 |
| Whales and Other Cetaceans: | 29 |
| 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: | 2 |
| Regional Forest Agreements: | None |
| Nationally Important Wetlands: | None |
| EPBC Act Referrals: | 9 |
| Key Ecological Features (Marine): | None |
| Biologically Important Areas: | 22 |
| Bioregional Assessments: | None |
| Geological and Bioregional Assessments: | None |

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

| Name | State | Legal Status | Buffer Status |
|--|-------|-------------------|-----------------|
| Lord Howe Island Group | NSW | Declared property | In feature area |

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

| Name | State | Legal Status | Buffer Status |
|--|-------|--------------|-----------------|
| Natural | | | |
| Lord Howe Island Group | NSW | Listed place | In feature area |

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

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|-----------------|
| BIRD | | | |
| Ardenna grisea Sooty Shearwater [82651] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Calidris acuminata Sharp-tailed Sandpiper [874] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris canutus Red Knot, Knot [855] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| 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 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 |
| Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438] | Vulnerable | Breeding known to occur within area | In feature area |
| Hypotaenidia sylvestris Lord Howe Woodhen [87732] | Endangered | Breeding likely 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 |
| 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 heraldica Herald Petrel [66973] | Critically Endangered | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|---------------------|
| 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 |
| Strepera graculina crissalis Lord Howe Island Currawong, Pied Currawong (Lord Howe Island) [25994] | Vulnerable | Species or species habitat known 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 | Species or species habitat may occur within area | In buffer area only |
| Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable | Species or species habitat may occur within area | In 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 | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|------------------------|--|---------------------|
| Tringa nebularia Common Greenshank, Greenshank [832] | Endangered | Species or species habitat may occur within area | In feature area |
| FISH | | | |
| Amphiprion mccullochi Whitesnout Anemonefish, McCulloch's Anemonefish [76925] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Hoplostethus atlanticus Orange Roughy, Deep-sea Perch, Red Roughy [68455] | Conservation Dependent | Species or species habitat likely to occur within area | In feature area |
| INSECT | | | |
| Cormodes darwini a beetle [92235] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Promethis sterrha a beetle [92260] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| MAMMAL | | | |
| Balaenoptera borealis Sei Whale [34] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera physalus Fin Whale [37] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Eubalaena australis Southern Right Whale [40] | Endangered | Species or species habitat may occur within area | In feature area |
| OTHER | | | |
| Pericryptodrilus nanus Lord Howe Earthworm [84736] | Critically Endangered | Species or species habitat may occur within area | In buffer area only |
| PLANT | | | |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|-----------------------|--|---------------------|
| Anthosachne kingiana subsp. kingiana Phillip Island Wheat Grass [87946] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Calystegia affinis [48909] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Geniostoma huttonii [56368] | Endangered | Species or species habitat known to occur within area | In buffer area only |
| Lepidorrhachis mooreana Little Mountain Palm, Moorei Palm [6388] | Critically Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Polystichum moorei Rock Shield Fern [40755] | Endangered | Species or species habitat likely to occur within area | In buffer area only |
| Xylosma parvifolia [48040] | Endangered | Species or species habitat known to occur within area | In buffer area only |
| REPTILE | | | |
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Christinus guentheri Lord Howe Island Gecko, Lord Howe Island Southern Gecko [59250] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Species or species habitat likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|-----------------|
| Natator depressus Flatback Turtle [59257] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Oligosoma lichenigerum Lord Howe Island Skink [91467] | Vulnerable | Species or species habitat known to occur within area | In feature area |

SHARK

| | | | |
|--|------------------------|--|-----------------|
| Carcharodon carcharias White Shark, Great White Shark [64470] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453] | Conservation Dependent | Species or species habitat may occur within area | In feature area |
| Sphyrna lewini Scalloped Hammerhead [85267] | Conservation Dependent | Species or species habitat likely to occur within area | In feature area |

SNAIL

| | | | |
|--|-----------------------|--|---------------------|
| Gudeoconcha sophiae magnifica Magnificent Helicarionid Land Snail [82864] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |
| Mystivagor mastersi Masters' Charopid Land Snail [81247] | Critically Endangered | Species or species habitat known to occur within area | In buffer area only |
| Placostylus bivaricosus Lord Howe Flax Snail, Lord Howe Placostylus [66769] | Endangered | Species or species habitat known to occur within area | In feature area |
| Pseudocharopa ledgbirdi Mount Lidgbird Charopid Land Snail [85279] | Critically Endangered | Species or species habitat may occur within area | In buffer area only |
| Pseudocharopa whiteleggei Whitelegge's Land Snail [81249] | Critically Endangered | Species or species habitat may occur within area | In buffer area only |

Listed Migratory Species

[[Resource Information](#)]

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|------------------------|---------------------|---------------|---------------|
| Migratory Marine Birds | | | |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|-----------------|
| Anous stolidus Common Noddy [825] | | Breeding known to occur within area | In feature area |
| Ardenna carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] | | Breeding known to occur within area | In feature area |
| Ardenna grisea Sooty Shearwater [82651] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Ardenna pacifica Wedge-tailed Shearwater [84292] | | Breeding known to occur within area | In feature area |
| Diomedea antipodensis Antipodean Albatross [64458] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In 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 |
| Fregata ariel Lesser Frigatebird, Least Frigatebird [1012] | | Species or species habitat likely to occur within area | In feature area |
| Fregata minor Great Frigatebird, Greater Frigatebird [1013] | | 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 |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|---------------------|
| Phaethon lepturus White-tailed Tropicbird [1014] | | Species or species habitat known to occur within area | In feature area |
| Phaethon rubricauda Red-tailed Tropicbird [994] | | Breeding known to occur within area | In feature area |
| Sula dactylatra Masked Booby [1021] | | Breeding known 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 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 | Species or species habitat may occur within area | In buffer area only |
| Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable | Species or species habitat may occur within area | In 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 | Species or species habitat may occur within area | In feature area |
| Migratory Marine Species | | | |
| Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812] | | Species or species habitat likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|-----------------|
| Balaenoptera borealis Sei Whale [34] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera edeni Bryde's Whale [35] | | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera physalus Fin Whale [37] | Vulnerable | Species or species habitat 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 likely to occur within area | In feature area |
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Eubalaena australis as Balaena glacialis australis Southern Right Whale [40] | Endangered | Species or species habitat may occur within area | In feature area |
| Lamna nasus Porbeagle, Mackerel Shark [83288] | | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|---------------------|
| Megaptera novaeangliae Humpback Whale [38] | | Species or species habitat may occur within area | In feature area |
| Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033] | | Species or species habitat likely to occur within area | In buffer area only |
| Mobula birostris as Manta birostris Giant Manta Ray [90034] | | Species or species habitat likely to occur within area | In feature area |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Physeter macrocephalus Sperm Whale [59] | | Species or species habitat may occur within area | In feature area |
| Migratory Wetlands Species | | | |
| Actitis hypoleucos Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area |
| Calidris acuminata Sharp-tailed Sandpiper [874] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris canutus Red Knot, Knot [855] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Calidris melanotos Pectoral Sandpiper [858] | | Species or species habitat known to occur within area | In feature area |
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|-----------------------|---|-----------------|
| Limosa lapponica Bar-tailed Godwit [844] | | Species or species habitat known to occur within area | In feature area |
| Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Tringa nebularia Common Greenshank, Greenshank [832] | Endangered | Species or species habitat may occur within area | In feature area |

Other Matters Protected by the EPBC Act

| Listed Marine Species | | | [Resource Information] |
|---|---------------------|---|--------------------------|
| Scientific Name | Threatened Category | Presence Text | Buffer Status |
| Bird | | | |
| Actitis hypoleucos Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area |
| Anous albivitta as Procelsterna cerulea Grey Noddy, Grey Ternlet [91286] | | Breeding known to occur within area | In feature area |
| Anous stolidus Common Noddy [825] | | Breeding known to occur within area | In feature area |
| Ardena carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] | | Breeding known to occur within area | In feature area |
| Ardena grisea as Puffinus griseus Sooty Shearwater [82651] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Ardena pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292] | | Breeding known to occur within area | In feature area |
| Calidris acuminata Sharp-tailed Sandpiper [874] | Vulnerable | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|-----------------------|--|-----------------|
| Calidris canutus Red Knot, Knot [855] | Vulnerable | Species or species habitat known to occur within area overfly marine area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area overfly marine area | In feature area |
| Calidris melanotos Pectoral Sandpiper [858] | | Species or species habitat 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 known to occur within area | In feature area |
| Diomedea antipodensis Antipodean Albatross [64458] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| 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 |
| Fregata ariel Lesser Frigatebird, Least Frigatebird [1012] | | Species or species habitat likely to occur within area | In feature area |
| Fregata minor Great Frigatebird, Greater Frigatebird [1013] | | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|-----------------|
| Limosa lapponica Bar-tailed Godwit [844] | | Species or species habitat known to occur within area | In feature area |
| Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered | Species or species habitat may occur within area | In feature area |
| Macronectes halli Northern Giant Petrel [1061] | Vulnerable | Foraging, feeding or related behaviour 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 Fairy Prion [1066] | | Species or species habitat known to occur within area | In feature area |
| Phaethon lepturus White-tailed Tropicbird [1014] | | Species or species habitat known to occur within area | In feature area |
| Phaethon rubricauda Red-tailed Tropicbird [994] | | Breeding known to occur within area | In feature area |
| Pterodroma cervicalis White-necked Petrel [59642] | | Breeding likely to occur within area | In feature area |
| Pterodroma nigripennis Black-winged Petrel [1038] | | Breeding known to occur within area | In feature area |
| Pterodroma solandri Providence Petrel [1040] | | Breeding known to occur within area | In feature area |
| Puffinus assimilis Little Shearwater [59363] | | Breeding known to occur within area | In feature area |
| 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 |
|--|---------------------|--|---------------------|
| Sula dactylatra Masked Booby [1021] | | Breeding known 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 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 | Species or species habitat may occur within area | In buffer area only |
| Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable | Species or species habitat may occur within area | In 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 | Species or species habitat may occur within area | In feature area |
| Tringa nebularia Common Greenshank, Greenshank [832] | Endangered | Species or species habitat may occur within area overfly marine area | In feature area |
| Fish | | | |
| Cosmocampus howensis Lord Howe Pipefish [66208] | | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|-----------------|
| Halicampus boothae Booth's Pipefish [66218] | | Species or species habitat may occur within area | In feature area |
| Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723] | | Species or species habitat may occur within area | In feature area |
| Solegnathus dunckeri Duncker's Pipehorse [66271] | | Species or species habitat may occur within area | In feature area |

Reptile

| | | | |
|--|------------|--|-----------------|
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Species or species habitat likely 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 |
| Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812] | | Species or species habitat likely to occur within area | In feature area |

| Current Scientific Name | Status | Type of Presence | Buffer Status |
|--|------------|--|-----------------|
| Balaenoptera borealis Sei Whale [34] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera edeni Bryde's Whale [35] | | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera physalus Fin Whale [37] | Vulnerable | Species or species habitat 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 may occur within area | In feature area |
| Feresa attenuata Pygmy Killer Whale [61] | | Species or species habitat may occur within area | In feature area |
| Globicephala macrorhynchus Short-finned Pilot Whale [62] | | Species or species habitat may occur within area | In feature area |
| Globicephala melas Long-finned Pilot Whale [59282] | | Species or species habitat may occur within area | In feature area |
| Grampus griseus Risso's Dolphin, Grampus [64] | | Species or species habitat may occur within area | In feature area |
| Kogia breviceps Pygmy Sperm Whale [57] | | Species or species habitat may occur within area | In feature area |
| Kogia sima Dwarf Sperm Whale [85043] | | Species or species habitat may occur within area | In feature area |

| Current Scientific Name | Status | Type of Presence | Buffer Status |
|---|--------|--|-----------------|
| Lissodelphis peronii Southern Right Whale Dolphin [44] | | Species or species habitat may occur within area | In feature area |
| Megaptera novaeangliae Humpback Whale [38] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon bowdoini Andrew's Beaked Whale [73] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon mirus True's Beaked Whale [54] | | Species or species habitat may occur within area | In feature area |
| Peponocephala electra Melon-headed Whale [47] | | Species or species habitat may occur within area | In feature area |
| Physeter macrocephalus Sperm Whale [59] | | Species or species habitat may occur within area | In feature area |
| Pseudorca crassidens False Killer Whale [48] | | Species or species habitat likely to occur within area | In feature area |
| Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51] | | Species or species habitat may occur within area | In feature area |

| Current Scientific Name | Status | Type of Presence | Buffer Status |
|---|--------|--|-----------------|
| Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52] | | Species or species habitat may occur within area | In feature area |
| Stenella longirostris Long-snouted Spinner Dolphin [29] | | Species or species habitat may occur within area | In feature area |
| Steno bredanensis Rough-toothed Dolphin [30] | | Species or species habitat may occur within area | In feature area |
| Tursiops truncatus s. str. Bottlenose Dolphin [68417] | | Species or species habitat may occur within area | In feature area |
| Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56] | | 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 |
|---------------------|-------------------------|-------|-----------------|
| Lord Howe Island | Permanent Park Preserve | NSW | In feature area |
| Lord Howe Island | Marine Park | NSW | In feature area |

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

| Title of referral | Reference | Referral Outcome | Assessment Status | Buffer Status |
|---|-----------|-----------------------------|-------------------|---------------------|
| Action clearly unacceptable | | | | |
| Lord Howe Island Renewable Energy Project - Stage 2 Wind Turbines | 2016/7790 | Action Clearly Unacceptable | Completed | In buffer area only |

Controlled action

| | | | | |
|--|-----------|-------------------|---------------|-----------------|
| Lord Howe Island Rodent Eradication Project, NSW | 2016/7703 | Controlled Action | Post-Approval | In feature area |
|--|-----------|-------------------|---------------|-----------------|

Not controlled action

| | | | | |
|---|-----------|-----------------------|-----------|---------------------|
| Air Traffic Control Infrastructure Facility | 2007/3872 | Not Controlled Action | Completed | In buffer area only |
| Lord Howe Island Solar Photovoltaic Project | 2015/7544 | Not Controlled Action | Completed | In buffer area only |

| Title of referral | Reference | Referral Outcome | Assessment Status | Buffer Status |
|---|-----------|---|-------------------|---------------------|
| Not controlled action | | | | |
| Pilot study - Short term captive holding of 22 LHI Woodhen & 10 LHI Currawong, Lord Howe Island | 2013/6847 | Not Controlled Action | Completed | In feature area |
| Seismic Station | 2007/3301 | Not Controlled Action | Completed | In buffer area only |
| Not controlled action (particular manner) | | | | |
| Lowering Blinky Beach Sand Dune to Comply with CASA Regulations for Runway 28, Lord Howe Island | 2012/6599 | Not Controlled Action (Particular Manner) | Post-Approval | In buffer area only |
| Survey and Sampling of Lord Howe Island Reef | 2008/3986 | Not Controlled Action (Particular Manner) | Post-Approval | In feature area |
| Referral decision | | | | |
| Hybrid Renewable Energy (Solar & Wind Turbine), Lord Howe Island, NSW | 2014/7231 | Referral Decision | Completed | In buffer area only |

| Biologically Important Areas | | | [Resource Information] | |
|--|-----------|-----------------|--------------------------|--|
| Scientific Name | Behaviour | Presence | Buffer Status | |
| Seabirds | | | | |
| Anous minutus Black Noddy [824] | Breeding | Known to occur | In feature area | |
| Anous stolidus Common Noddy [825] | Breeding | Known to occur | In feature area | |
| Anous stolidus Common Noddy [825] | Foraging | Likely to occur | In feature area | |
| Ardena carneipes Flesh-footed Shearwater [82404] | Breeding | Known to occur | In feature area | |
| Ardena pacifica Wedge-tailed Shearwater [84292] | Breeding | Known to occur | In feature area | |
| Ardena tenuirostris Short-tailed Shearwater [82652] | Foraging | Likely to occur | In feature area | |
| Fregetta grallaria grallaria White-bellied Storm Petrel [64438] | Breeding | Known to occur | In feature area | |

| Scientific Name | Behaviour | Presence | Buffer Status |
|--|-----------|-----------------|-----------------|
| Fregetta grallaria grallaria White-bellied Storm Petrel [64438] | Foraging | Likely to occur | In feature area |
| Gygis alba White Tern [807] | Breeding | Known to occur | In feature area |
| Gygis alba White Tern [807] | Foraging | Likely to occur | In feature area |
| Onychoprion fuscata Sooty Tern [82847] | Breeding | Known to occur | In feature area |
| Onychoprion fuscata Sooty Tern [82847] | Foraging | Likely to occur | In feature area |
| Phaethon rubricauda Red-tailed Tropicbird [994] | Breeding | Known to occur | In feature area |
| Procelsterna cerulea Grey Ternlet [64378] | Breeding | Known to occur | In feature area |
| Pterodroma macroptera Great-winged Petrel [1035] | Foraging | Likely to occur | In feature area |
| Pterodroma neglecta neglecta Kermadec Petrel [64450] | Foraging | Likely to occur | In feature area |
| Pterodroma nigripennis Black-winged Petrel [1038] | Breeding | Known to occur | In feature area |
| Pterodroma nigripennis Black-winged Petrel [1038] | Foraging | Likely to occur | In feature area |
| Pterodroma solandri Providence Petrel [1040] | Breeding | Known to occur | In feature area |
| Puffinus assimilis Little Shearwater [59363] | Breeding | Known to occur | In feature area |
| Sula dactylatra Masked Booby [1021] | Breeding | Known to occur | In feature area |
| Whales | | | |
| Megaptera novaeangliae Humpback Whale [38] | Migration | 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 is 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 on the contents of this report.

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 point locations and environmental data layers.

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 when time permits.

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 breeding sites; and
- 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.

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FIGURES



Figure 1. Location of the Program

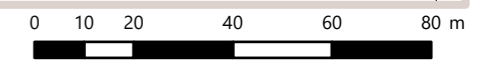


- Legend**
- Northern Zone
 - Vegetation Community (Sheringham et al. 2016)**
 - 2 - Melanthera biflora - Saltwater Couch herbland/grassland on coral boulder beaches and rocky headlands
 - 8 - Bully Bush - Hopwood shrubland on shallow rocky soils
 - 12a - Kentia Palm Forest on coral sand and calcarenite
 - Ep - Environmental plantings
 - Ex - Exotic
 - Np - Plantation
 - Boulder beach
 - Sand beach

Data Source: Sixmaps Clip & Ship, DCS Spatial Services
NSW Department of Customer Services



Spatial Reference: GDA 1994 MGA Zone 57



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Figure 2. Vegetation communities within the Northern Zone

H:\Local Resources\EPG\Cumberland\Projects\Years\2023\23150\GIS Files\ArcGIS\Projects\Report_Figures\RP2\RP2_Figures\20241118\RP2_Figures_20241118.aprx



Figure 3. Significant Native Vegetation within the Northern Zone

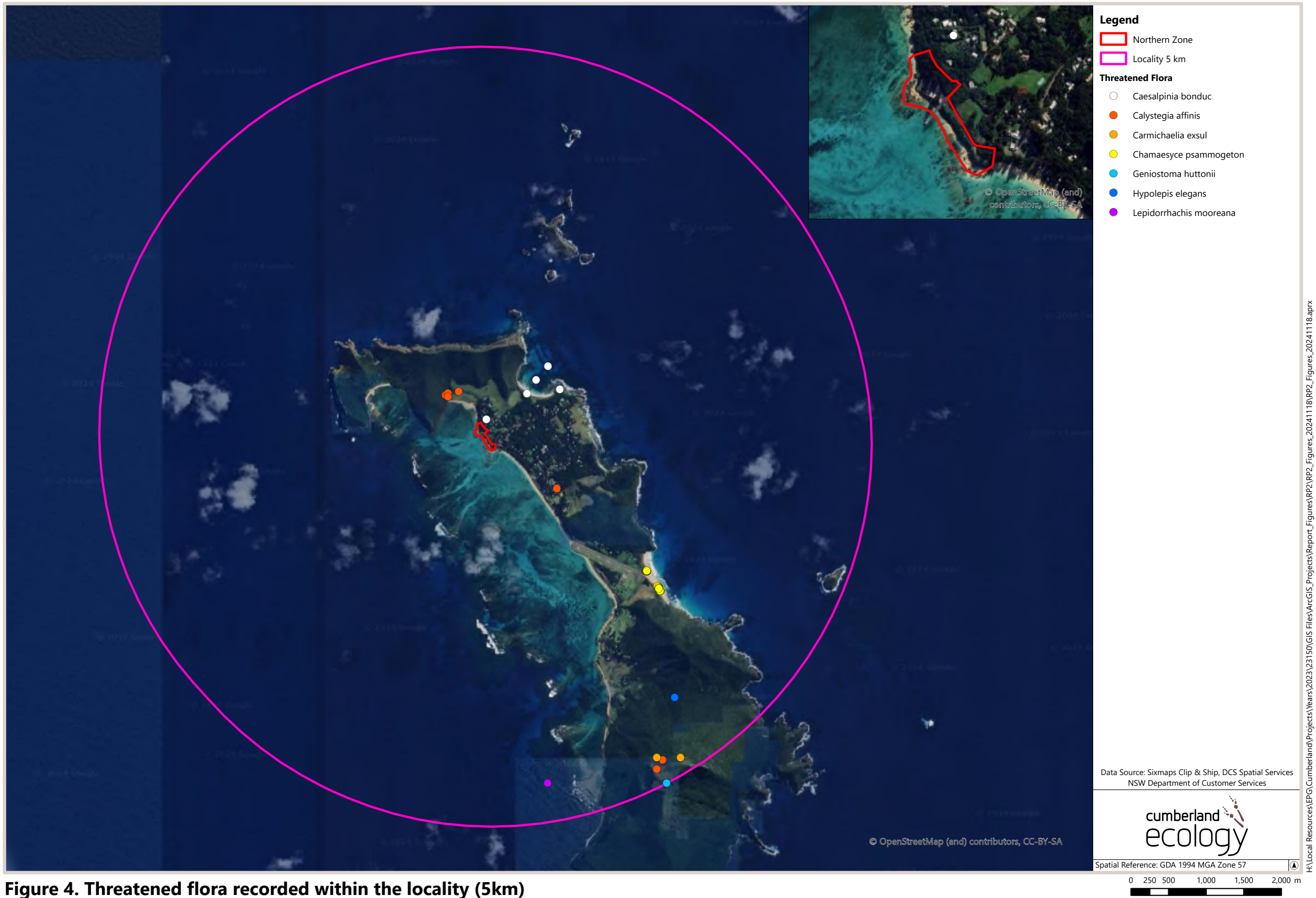


Figure 4. Threatened flora recorded within the locality (5km)

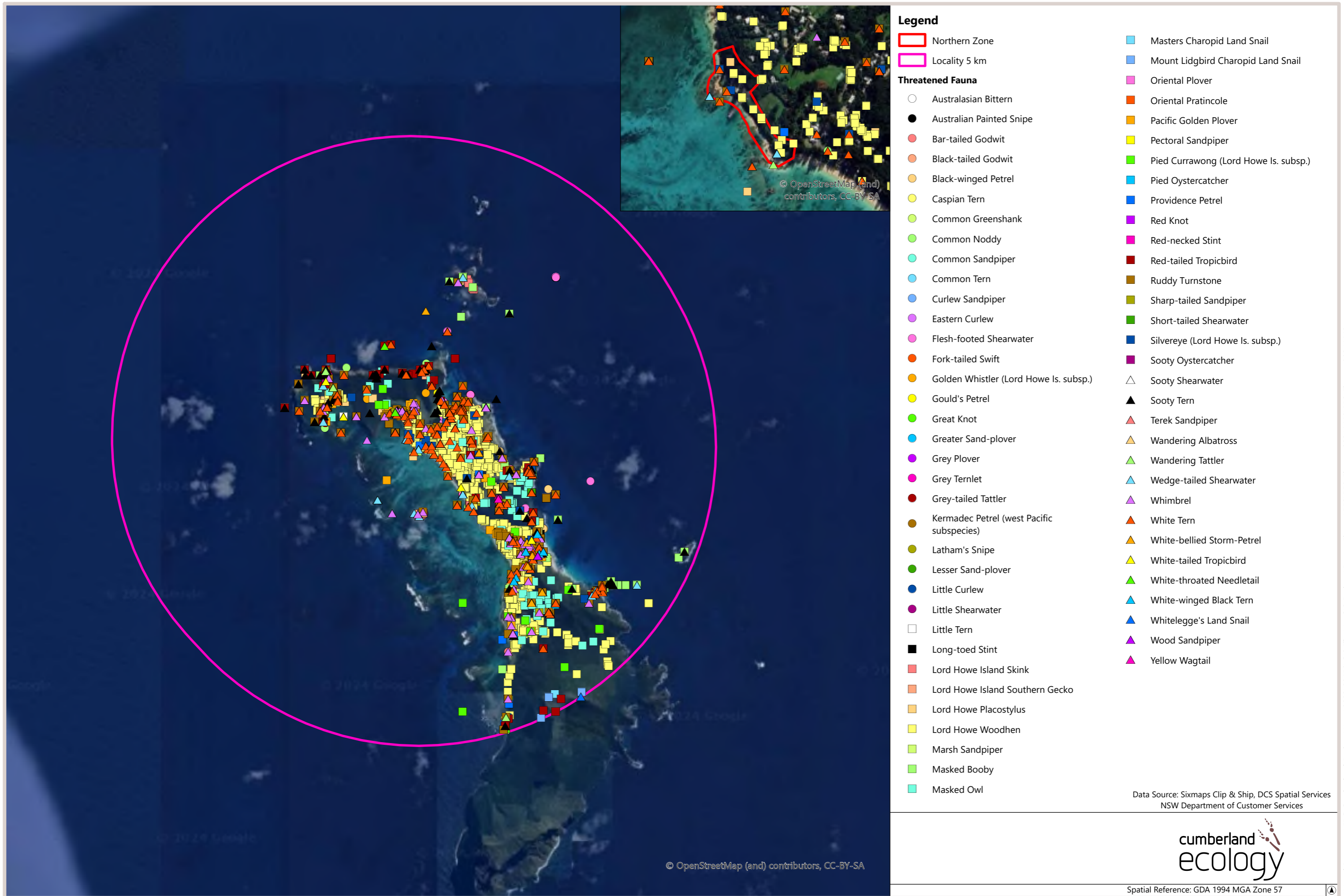


Figure 5. Threatened fauna recorded within the locality (5km)

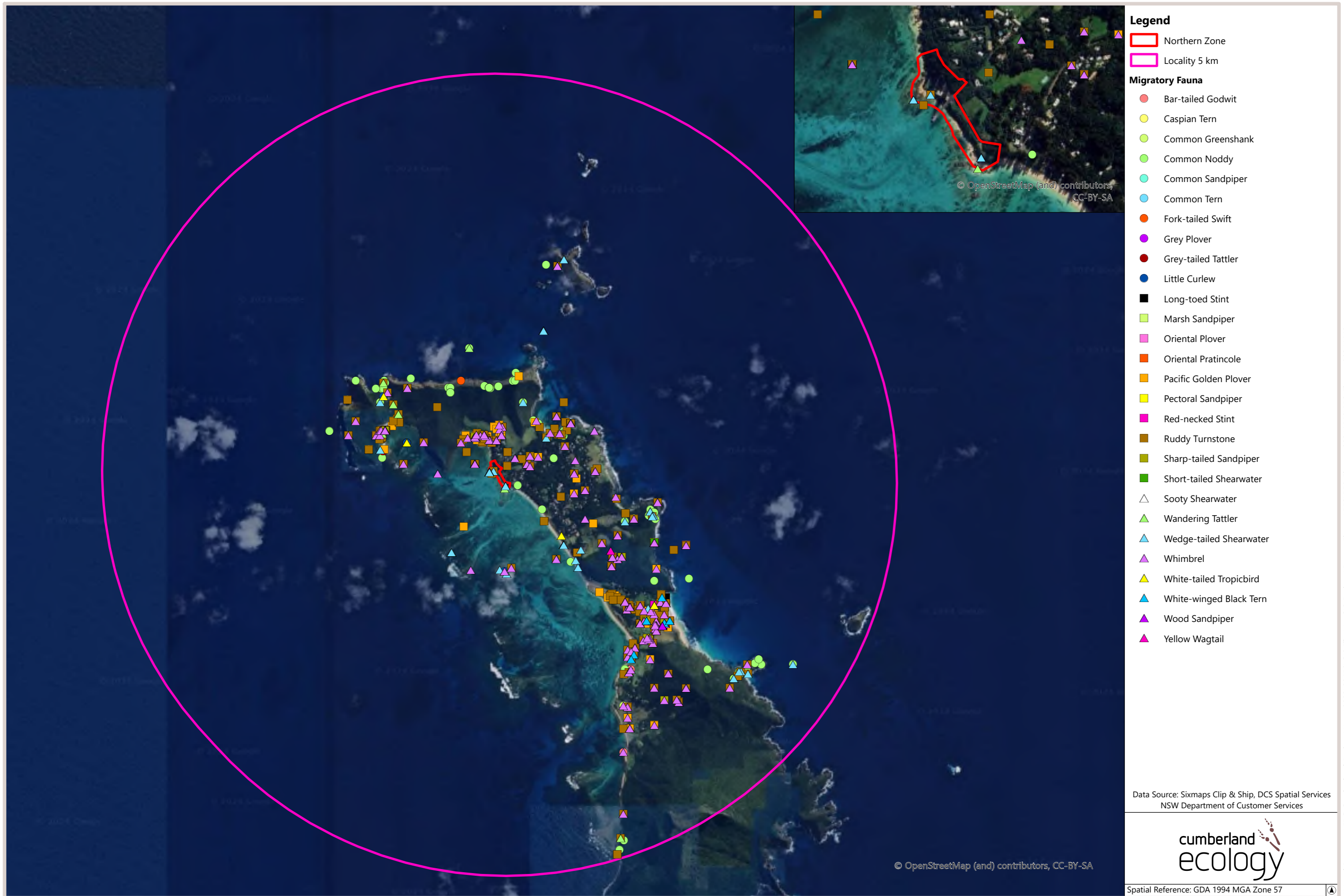


Figure 6. Migratory fauna recorded within the locality (5km)



APPENDIX E

BASELINE TERRESTRIAL BIODIVERSITY
ASSESSMENT (South)

Lord Howe Island Critical Infrastructure Program

Southern Zone Baseline Terrestrial Biodiversity Assessment

The APP Group

20 November 2024

Final

cumberland
ecology 

PART OF  SLR


Report No. 23150RP1

The preparation of this report has been in accordance with the brief provided by the Client and has relied upon the data and results collected at or under the times and conditions specified in the report. All findings, conclusions or commendations contained within the report are based only on the aforementioned circumstances. The report has been prepared for use by the Client and no responsibility for its use by other parties is accepted by Cumberland Ecology.

| Version | Date Issued | Amended by | Details |
|---------|-------------|------------|---------|
| 001 | 20/11/2024 | MF, DR | Final |
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Approved by: Matthew Freeman

Position: Senior Project Manager / Ecologist

Signed: 

Date: 20 November, 2024

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Glossary

| Term / Abbreviation | Definition |
|----------------------|---|
| BAM | Biodiversity Assessment Method |
| BC Act | NSW <i>Biodiversity Conservation Act 2016</i> |
| BC Regulation | NSW <i>Biodiversity Conservation Regulation 2017</i> |
| BDAR | Biodiversity Development Assessment Report |
| Biosecurity Act | NSW <i>Biosecurity Act 2015</i> |
| Bonn Convention | Convention on the Conservation of Migratory Species of Wild Animals |
| BOS | Biodiversity Offset Scheme |
| CAMBA | China–Australia Migratory Bird Agreement |
| CEEC | Critically Endangered Ecological Community |
| DCCEEW (Cth.) | Commonwealth Department Climate Change, Energy, the Environment and Water |
| DCCEEW (NSW) | NSW Department of Climate Change, Energy, the Environment and Water |
| ‘E’ | Endangered |
| EHG | Environment and Heritage Group |
| EP&A Act | NSW <i>Environmental Planning and Assessment Act 1979</i> |
| EPBC Act | Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| ha | Hectares |
| JAMBA | Japan–Australia Migratory Bird Agreement |
| Lord Howe Island DCP | <i>Lord Howe Island Development Control Plan 2010</i> |
| Lord Howe Island LEP | <i>Lord Howe Island Local Environment Plan 2010</i> |
| MNES | Matters of National Environmental Significance |
| NSW | New South Wales |
| PMST | Protected Matters Search Tool |
| ROKAMBA | Republic of Korea–Australia Migratory Bird Agreement |
| SEARs | Secretary’s Environmental Assessment Requirements |
| SNV | Significant Native Vegetation |
| CSSI | Critical State Significant Infrastructure |
| Study area | Northern and Southern Zone investigation areas |
| TEC | Threatened Ecological Community |
| the ‘client’ | DCCEEW (NSW) |
| the ‘Program’ | Lord Howe Island Critical Infrastructure Program |
| The ‘Strategy’ | <i>Lord Howe Island Weed Management Strategy 2016-2025</i> |
| ‘V’ | Vulnerable |

1. Introduction

Cumberland Ecology was commissioned by The APP Group, on behalf of the New South Wales (NSW) Department of Climate Change, Energy, the Environment and Water (DCCEEW (NSW)) (the 'client') to prepare a baseline terrestrial biodiversity assessment for the Lord Howe Island Critical Infrastructure Program (the Program). This baseline terrestrial biodiversity assessment has been prepared for the Southern Zone, referred to hereafter as the study area (**Figure 1**). The information presented within this baseline terrestrial biodiversity assessment will be utilised by the client to determine the developmental footprint for the Program and to support a request for Secretary's Environmental Assessment Requirements (SEARs).

1.1. Background

The Program is proposed to comprise the following:

- **Marine infrastructure**, including new and/or upgraded landing facilities, cargo loading/offloading areas, new office and commercial buildings, and new public walking tracks, viewing platform, landscaping, amenities and vehicle parking at the northern end of Lagoon Beach;
- **Waste management facility**, including new storage sheds and materials processing facilities, wastewater treatment plant and waste receival area, and dune restoration at the existing waste management facility; and
- **Biosecurity measures and facilities**, including an enhanced quarantine management system with a new receiving station/facility adjacent to the existing jetty, and dedicated kennel to house detection dogs near the wastewater management facility.

Funding for the Program has been committed by the NSW Government.

The current design for the Program would locate all works associated with the waste management facility within the study area. All remaining works associated with the Marine infrastructure and Biosecurity measures and facilities will be located within the Northern Zone shown in **Figure 1**.

The client is seeking Critical State Significant Infrastructure (CSSI) development consent for the Program pursuant to Section 5.13 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Confirmation of this planning pathway is pending consideration by the Minister for Planning.

Biodiversity presents a challenge for infrastructure development because the Lord Howe Island Group is listed on the register of World Heritage to a large extent due to its unique biodiversity and high level of endemism.

The Lord Howe Island Group is an excellent example of oceanic islands of volcanic origin supporting a unique ecological assemblage of plants and animals. It provides important breeding grounds for colonies of seabirds as well as providing vital natural habitat for the conservation of threatened species. Examples of such include endemics such as the flightless Lord Howe Woodhen (*Hypotaenidia sylvestris*), once regarded as one of the rarest birds in the world, and the Lord Howe Island Phasmid (*Dryococelus australis*), the world's largest stick insect that was thought extinct until it was relocated on a volcanic sea stack known as Balls Pyramid.

The island group provides habitat for extensive colonies of nesting seabirds, making them very important over a vast oceanic region. For example the islands are the only major breeding locality for the Providence Petrel

(*Pterodroma solandri*), and they include one of the world's greatest breeding occurrences of Red-tailed Tropicbird (*Phaethon rubricauda*).

Lord Howe Island has many endangered endemic species or subspecies of plants and animals, with fauna including vertebrates and invertebrates. A number of species occur within the lowlands where the study area is located and so there is potential for impacts on such biota.

1.2. Purpose

The purpose of this report is to document the findings of a preliminary ecological assessment of the study area. Biodiversity values of particular relevance include threatened species and communities that are listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The specific objectives of this report are to:

- Present the findings of ecological surveys undertaken within the study area;
- Assess the extent of "Significant Native Vegetation" (SNV) as identified under the *Lord Howe Island Local Environment Plan 2010* (Lord Howe Island LEP);
- Describe the biodiversity values of the study area, including vegetation communities and fauna habitats;
- Identify and map the location of threatened flora and fauna species;
- Assess the likelihood that threatened flora and fauna species listed by the State and Commonwealth occur within the study area;
- Identify potential direct and indirect ecological impacts associated with the future development within the study area;
- Identify potential avoidance and mitigation measures that could be incorporated into the Program; and
- Detail future planning and approval requirements under the BC Act and EPBC Act.

2. Regulatory Framework

This section describes legislative requirements for ecological assessments that would be required to be addressed as part of the development approval process for the Program.

2.1. Commonwealth Legislation

2.1.1. Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the Australian Government's key piece of environmental legislation and is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW (Cth.)). It is designed to protect national environmental assets, known as Matters of National Environmental Significance (MNES), which include threatened species of flora and fauna, threatened ecological communities (TECs), migratory species as well as other protected matters. Among other things, it defines the categories of threat for threatened flora and fauna, identifies key threatening processes and provides for the preparation of recovery plans for threatened flora, fauna and communities.

Under the EPBC Act, any action (which includes a development, project or activity) that is considered likely to have a significant impact on MNES must be referred to the Commonwealth Minister for the Environment. The referral forms the basis for the minister's decision as to whether the Program needs approval. Following submission of the referral, DCCEEW (Cth.) will then either declare the Program to be a 'controlled action' or 'not a controlled action'. If declared 'not a controlled action' the Program will not require further assessment by DCCEEW (Cth.). If declared a 'controlled action', the Program requires formal approval under the EPBC Act.

Approval from DCCEEW (Cth.) will require the preparation and submission of assessment documentation. DCCEEW (Cth.) have several ways to assess a controlled action and each process involves different levels of detail and community consultation. The assessment pathway and documentation required is advised by DCCEEW after notification of an activity being classed as controlled action. It can include assessment based on existing assessment documentation such as Biodiversity Development Assessment Reports (BDAR) or Ecological Impact Assessments, but DCCEEW (Cth.) may also request the preparation of a separate Environmental Impact Assessments to enable assessment and approval.

2.1.2. International Treaty Obligations on Migratory Species

Australia is signatory to several agreements relating to migratory species. Migratory species listed under the following agreements and conventions are protected in Australia by being listed as MNES (Migratory Controlling Provision) under the EPBC Act:

- China–Australia Migratory Bird Agreement (CAMBA);
- Japan–Australia Migratory Bird Agreement (JAMBA);
- Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA); and
- Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention).

The CAMBA and JAMBA agreements list terrestrial, water and shorebird species which migrate between Australia and the respective countries. In both cases, the majority of listed species are shorebirds (DotE 2014).

Both agreements require the parties to protect migratory birds by:

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

The JAMBA agreement also includes provisions for cooperation on the conservation of threatened birds. Australian government and non-government representatives meet every two years with Japanese and Chinese counterparts to review progress in implementing the agreements and to explore new initiatives to conserve migratory birds (DotE 2014).

The ROKAMBA formalises Australia's relationship with the Republic of Korea in respect to migratory bird conservation and provides a basis for collaboration on the protection of migratory shorebirds and their habitat (DotE 2014).

In addition to these bilateral agreements, Australia is also a signatory of the Bonn Convention. This convention aims to conserve terrestrial, aquatic and avian migratory species throughout their range (CMS 2015).

2.2. New South Wales Legislation

2.2.1. NSW Environmental Planning and Assessment Act 1979

The NSW *Environment Planning and Assessment Act 1979* (EP&A Act) is the overarching planning legislation in NSW. This Act provides for the creation of planning instruments that guide land use. The EP&A Act also provides for the consideration of the environment and biodiversity values, which is addressed in Section 1.7 and requires application of Part 7 of the BC Act. This includes threatened species, communities, habitat and processes as listed under the BC Act and *Fisheries Management Act 1994*.

Due to the location of the Program within a sensitive environmental location and an estimated development cost (exceeding \$30 million), the Program comprises a CSSI development and will require the issue of the SEARs by the DPHI. As such, the Program is subject to the environmental impact assessment and planning approval requirements of Division 5.2 of the EP&A Act.

In accordance with Section 5.5 of the EP&A Act, the proponent and determining authority, must examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed works.

2.2.2. NSW Biodiversity Conservation Act 2016

The BC Act is the key piece of legislation in NSW relating to the protection and management of biodiversity and threatened species. The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development. The BC Act is supported by a number of regulations, including the *Biodiversity Conservation Regulation 2017* (BC Regulation).

The BC Act requires consideration of whether a development or an activity is likely to significantly affect threatened species and/or communities. Under the BC Act, CSSI automatically triggers entry into the NSW Biodiversity Offsets Scheme (BOS) and requires the preparation of a Biodiversity Development Assessment Report (BDAR) in accordance with the Biodiversity Assessment Method (BAM) to support an Environmental Impact Statement (EIS).

However Section 1.5 of the BAM states:

2.3. The BAM does not assess biodiversity values for:

- *marine mammals*
- *wandering seabirds*
- *biodiversity that is endemic to Lord Howe Island*
- *native vegetation and loss of habitat on category 1-exempt land (within the meaning of Part 5A of the LLS Act), other than the additional biodiversity impacts under clause 6.1 of the BC Regulation (referred to as prescribed impacts in the BAM).*

The BC Act or the EP&A Act may require a separate assessment of the biodiversity values listed above and the impacts of a proposal on those values.

As such, any biodiversity values that are endemic to Lord Howe Island and impacted by the Program do not need to be assessed under the BOS using the BAM. It is assumed that where the above excerpt lists 'wandering seabirds,' it is referring to migratory birds that are listed as MNES and are required to be assessed under the EPBC Act only and not also under the BOS.

2.3.1. NSW Biosecurity Act 2015

Biosecurity is a vital consideration for Lord Howe Island projects because the island biodiversity is extremely vulnerable to introduced biodiversity in the form of flora (weeds), fauna (pest animals) and pathogens. It has already been impacted by many such entities since the original colonisation by European settlers (some of which have been successfully eradicated).

The objects of the NSW *Biosecurity Act 2015* (Biosecurity Act) are as follows:

1. The primary object of the Biosecurity Act is to provide a framework for the prevention, elimination and minimisation of biosecurity risks posed by biosecurity matter, dealing with biosecurity matter, carriers and potential carriers, and other activities that involve biosecurity matter, carriers or potential carriers.
2. The other objects of the Biosecurity Act are as follows:
 - a. to promote biosecurity as a shared responsibility between government, industry and communities,
 - b. to provide a framework for the timely and effective management of the following:

- i. pests, diseases, contaminants and other biosecurity matter that are economically significant for primary production industries,
 - ii. threats to terrestrial and aquatic environments arising from pests, diseases, contaminants and other biosecurity matter,
 - iii. public health and safety risks arising from contaminants, non-indigenous animals, bees, weeds and other biosecurity matter known to contribute to human health problems,
 - iv. pests, diseases, contaminants and other biosecurity matter that may have an adverse effect on community activities and infrastructure,
- c. to provide a framework for risk-based decision-making in relation to biosecurity,
 - d. to give effect to intergovernmental biosecurity agreements to which the State is a party,
 - e. to provide the means by which biosecurity requirements in other jurisdictions can be met, so as to maintain market access for industry.

Biosecurity rules on the island are different to those for NSW and the Australian mainland. The Lord Howe Island board along with assistance from the Department of Agriculture, Fisheries and Forestry, as well as other government agencies, is responsible for the biosecurity on Lord Howe Island. The Lord Howe Island Boards have implemented strict biosecurity measures to safe-guard Lord Howe island from pathogens, weeds and introduced pest species. These biosecurity measures are outlined in the Lord Howe Island Biodiversity Management Plan (DECC 2007). Current environmental programs being implemented to maintain and protect the Island's World Heritage values include the African Big-headed Ant Eradication Program, pest animal control programs, the Rodent Eradication Project, weed eradication program and environmental education programs (LHIB 2024).

A number of invasive pests have already been removed from the island including cats, goats, pigs, and more recently Black Rats (*Rattus rattus*). Other invasive pest species that occur on the island such as the Mallard x Pacific Black Duck hybrids (*Anas superciliosa* x *Anas platyrhynchos*), Feral Pigeons (*Columba livia*), Common Starling (*Sturnus vulgaris*), Blackbird (*Turdus merula*) and Masked Owl (*Tyto novaehollandiae*). Control strategies are in place for these species as they have the ability to recolonise the island (LHIB 2024). Biosecurity controls for the introduction of other pests such as the Cane Toad (*Bufo marinus*) are also in place and managed by the Lord Howe Island Board (DECC 2007).

Invasive weeds are identified as one of the most serious threats to Lord Howe Island's biodiversity and World Heritage values. Under the Biosecurity Act all weeds are required to be controlled by all persons under a "General Biosecurity Duty". The General Biosecurity Duty means that all public and private land owners or managers and all other people who deal with weed species (biosecurity matters) must use the most appropriate approach to prevent, eliminate, or minimise the negative impact (biosecurity risk) of those weeds (DPI 2017). Under Division 2 of the Biosecurity Act, the Lord Howe Island Board (Lord Howe Island Board) is the local control authority for land within Lord Howe Island. The Lord Howe Island Board have specific statutory obligations for the management of weeds on Lord Howe Island and in 2016 published the *Lord Howe Island*

Weed Management Strategy 2016-2025 (the 'Strategy') (LHIB 2016). The Strategy provides a strategic framework for the continued reduction and elimination of the threats posed by invasive weeds from 2016 to 2026.

Highly infectious plant pathogens such as Myrtle Rust (*Austropuccinia psidii*) and Phytophthora (*Phytophthora cinnamomi*) have the potential to cause irrevocable damage to the environment. The Lord Howe Island Board is responsible for the control and management of infectious plant pathogens and have implemented monitoring and hygiene protocols across the island, such as the installation of footwear sanitary stations at all walking track heads (LHIB 2024).

2.3.2. Lord Howe Island Local Environment Plan 2010

The Lord Howe Island LEP is established under Part 3 of the *Environmental Planning and Assessment Act 1979*, and alongside the *Lord Howe Island Development Control Plan 2005* (Lord Howe Island DCP), controls planning and development on the Island. The ecological objectives of the Lord Howe Island LEP include:

- to conserve the World Heritage values of Lord Howe Island and to restore or enhance lost or disturbed natural resources of the Island;
- to conserve and facilitate the management of the marine environment of the Island and the resources of that environment;
- to protect threatened species, populations and ecological communities, and their habitats;
- to encourage the ecologically sustainable use of resources;
- to encourage community appreciation of the World Heritage values of the Island; and
- to identify suitable land for the provision of housing and community services for the Island's population while acknowledging suitable land for these purposes is limited.

2.3.3. Lord Howe Island Development Control Plan 2005

The Lord Howe Island DCP is the primary local planning instrument applicable to the study area. The key objective of the DCP is to provide controls for all development to encourage environmental sustainability and biodiversity. The DCP also provides controls to reflect best practice in the design of proposals to have a minimal impact on the World Heritage values, ecological values and amenity of the Island and its community.

3. Methodology

This section describes the methodology adopted for the baseline terrestrial biodiversity assessment. Investigations for the assessment entailed a literature review and database assessment followed by field surveys within the study area. The methods used for each component are explained below.

3.1. Desktop Assessment

3.1.1. Database Analysis

A database analysis was conducted through consultation of the DCCEEW (Cth.) EPBC Protected Matters Search Tool (PMST) (DCCEEW 2024x) and the NSW BioNet Atlas (EHG 2024a). The EPBC PMST generated a list of potentially occurring MNES including World Heritage Properties, National Heritage Places, threatened ecological communities, threatened species and migratory species listed under the EPBC Act within a 5 km radius of the study area (i.e. the locality), which fully encompassed the study area (see **Appendix A**). The BioNet Atlas search facility was used to generate records of flora and fauna, (including threatened species), known to occur across Lord Howe Island. This information was used for the purposes of confirming the abundance, distribution and age of threatened flora and fauna records within the locality. This was used as supplementary information to assess the likelihood of those threatened species to occur within the study area.

The latest map of vegetation communities from the *Lord Howe Island Vegetation Map 2016* (VIS_ID 4450) published by the Lord Howe Island Board and accessed from the NSW SEED Portal (NSW Government 2024) was also consulted to review the distribution of vegetation communities within the study area including the potential presence of TEC's. Additionally, the Historical Imagery Viewer was accessed to review historical aerial imagery of the study area.

3.1.2. Literature Review

Literature on the ecology of Lord Howe Island was reviewed, including data and reports published by the Lord Howe Island Board and other ecological studies. Key documents reviewed included:

- Department of Environment and Climate Change (NSW) 2007, *Lord Howe Island Biodiversity Management Plan*, Department of Environment and Climate Change (NSW), Sydney (DECC 2007);
- Sheringham P., Richards P., Gilmour P., & Kemmerer E., 2016, *A Systematic Flora Survey, Floristic Classification and High-Resolution Vegetation Map of Lord Howe Island*. Lord Howe Island Board, Lord Howe Island, NSW (Sheringham et al. 2016); and
- Lord How Island Board 2016, *Lord Howe Island Weed Management Strategy 2016 – 2025*, Lord Howe Island Board, Lord Howe Island (LHIB 2016).

3.1.3. Aerial Imagery

The most recent aerial photography sourced from Google Earth in 2024 was used for this assessment.

3.2. Likelihood of Occurrence Assessment

The likelihood of threatened species occurring within the study area was assessed based on the results of the database analysis, literature review and field surveys using the criteria presented in **Table 1**. The assessment

was based on the species known ranges, number and age of records, and habitat preferences which were evaluated considering site characteristics observed during the field surveys.

Table 1 Criteria to assess potential for threatened species to occur within the study area

| Likelihood to Occur | Definition |
|---------------------|---|
| Present | The species was recorded within the study area during field surveys in July 2024. |
| High | The species was not recorded within the study area during field surveys in July 2024, but previous records occur within the study area and/or the species is known to occur within the surrounding area. Habitat of a similar and suitable quality is known to exist within the study area and it is deemed likely that the species will occur. |
| Moderate | The species was not recorded within the study area during field surveys in July 2024, although it is known to occur in the wider locality. Habitat was identified for the species within the study area during field surveys; however it is marginal, fragmented and/or small in size, or degraded. |
| Low | The species was not recorded within the study area during field surveys in July 2024. The species is unlikely to occur due to a lack of, or limited, habitat within the study area, or extremely poor quality habitat within the study area, or no or very few recent records of the species occurring in the wider locality. |

3.3. Field Surveys

3.3.1. Flora

A flora survey was conducted by a botanist and an ecologist from Cumberland Ecology between 8 - 13 July 2024. The flora survey included vegetation mapping, floristic plot surveys and targeted threatened species searches. These survey methods are described below and survey locations are shown in **Figure 2**. Note that field surveys were not undertaken within the south-eastern portion of the study area and therefore existing data has been utilised for this area.

3.3.1.1. Vegetation Mapping

The vegetation within the study area was ground-truthed to examine and verify the mapping of the condition and extent of the different vegetation communities. Mapping of vegetation communities within the study area was undertaken by traversing each patch of vegetation, noting key characteristics of areas in similar broad condition states such as similar tree cover, shrub cover, ground cover, weediness or a combination of these.

Records of vegetation community boundaries were made using a hand-held Global Positioning System unit and mark-up of aerial photographs. Following the completion of the surveys, the resultant information was synthesised using Geographical Information Systems to create a spatial database that was used to interpret and interpolate the data to produce a vegetation map of the study area. Vegetation communities were aligned to the communities defined in the 2016 floristic study (Sheringham et al. 2016). Photographs were taken of the vegetation present to provide a visual documentation of types and condition of vegetation communities occurring within the study area, which is discussed further in **Section 4.1**.

The vegetation communities identified within the 2016 floristic study (Sheringham et al. 2016) have not currently been incorporated into the NSW Vegetation Classification System and subsequently have not been assigned to plant community types.

3.3.1.2. Floristic Plots

Eleven floristic plots were undertaken within the study area and immediately adjacent areas in accordance with the BAM (**Figure 2**). The floristic plot sampling included the establishment of a 20 x 50 m plot, within which the following data was collected:

- Composition for each growth form group by counting the number of native plant species recorded for each growth form group within a 20 x 20 m plot;
- Structure of each growth form group as the sum of all the individual projected foliage cover estimates of all native plant species recorded within each growth form group within a 20 x 20 m plot;
- Cover of High Threat Exotic weed species within a 20 x 20 m plot;
- Assessment of function attributes within a 20 x 50 m plot, including:
 - Count of number of large trees;
 - Tree stem size classes, measured as 'diameter at breast height over bark' (DBH);
 - Regeneration based on the presence of living trees with stems <5cm DBH; and
 - The total length in metres of fallen logs over 10 cm in diameter.
- Assessment of litter cover within five 1 m x 1 m plots evenly spread within the 20 x 50 m plot; and
- Number of trees with hollows that are visible from the ground within the 20 x 50 m plot.

3.3.1.3. Threatened Flora Species Searches

Searches for threatened flora species previously recorded within the locality of the study area and/or determined to have potential to occur based on the mapped vegetation communities were undertaken via parallel traverses and random meander searches within the study area between 8 – 13 July 2024 (**Figure 2**).

3.3.1.4. Significant Native Vegetation Mapping

Significant Native Vegetation as defined under the Lord Howe Island LEP, means vegetation that is native to Lord Howe Island on land that is identified as having significant native vegetation on the Lord Howe Island LEP SNV Map. A review was undertaken of the SNV Map prior to field surveys which suggested that areas of the study area that had previously been cleared or comprised exotic vegetation had been mapped as SNV. Furthermore, the last update to the SNV Map in the Lord Howe Island LEP was published in February 2022. As such, it was determined that a ground-truthing survey was required to determine the true distribution of SNV within the study area.

Vegetation mapping and ground-truthing of SNV was undertaken concurrently, with all native vegetation communities identified within the study area classified as SNV. The boundaries of the SNV were recorded by the surveyors from SMEC under the guidance from a botanist from Cumberland Ecology.

3.3.2. Fauna Habitat Assessment

A fauna habitat assessment was conducted by an ecologist between the 8 – 13 July 2024. The nature and extent of fauna habitats in the study area were assessed and areas where fauna species could reside, or forage were identified. Habitat features including but not limited to hollow-bearing trees, nests, logs and woody debris, and artificial structures throughout the study area were recorded.

During this habitat assessment any fauna seen, heard or otherwise determined to be present from signs of fauna use were recorded.

3.4. Limitations

3.4.1. Flora

Mapping of vegetation communities and assessment of SNV could not be completed across the entire study area due to access restrictions. A small area of land within the eastern portion of the study area was not accessible during the field surveys and therefore the mapping has not been ground truthed within this area. Notes and observations were made from the perimeter of this area and some minor realignments have been made to the vegetation mapping and SNV mapping, however ground-truthing surveys would be required to accurately update the mapping within this area.

3.4.2. Fauna

Data obtained from the field surveys are generally considered a “snapshot” in time and illustrate the fauna that were active during the time of the surveys. The data produced by the surveys is intended to be indicative of the types of species that could occur and are not an absolute census of all fauna species (vertebrate or invertebrate) occurring within the study area. Additional targeted fauna surveys are proposed to be undertaken for the Program in accordance with the seasonal requirements of species that have the potential to occur with the study area to increase the detectability of fauna species.

3.4.3. Weather Conditions

Surveys were undertaken in winter during relatively cold conditions. Although weather conditions were suitable to complete the vegetation mapping and undertake surveys for targeted threatened flora species and selected threatened fauna species, the cold conditions could limit the detectability of flora and fauna species. A monthly summary of weather conditions in the wider locality of the study area (Bureau of Meteorology Weather Station 200839 – Lord Howe Island, NSW) leading to and during the field survey is provided in **Table 2** (BOM 2024).

Table 2 Weather conditions during field surveys

| Date | Temperature Minimum (°C) | Temperature Maximum (°C) | Rainfall (mm) |
|---------------------------|--------------------------|--------------------------|---------------|
| Proceeding Months* | | | |
| April 2024 | 18.4 | 24.2 | 254.4 |

| Date | Temperature Minimum (°C) | Temperature Maximum (°C) | Rainfall (mm) |
|-----------------------|--------------------------|--------------------------|---------------|
| May 2024 | 16.1 | 21.6 | 104.4 |
| June 2024 | 15.1 | 21.0 | 166.0 |
| During Surveys | | | |
| 08/07/2024 | 14.9 | 19.5 | 6.4 |
| 09/07/2024 | 16.1 | 20.3 | 0.2 |
| 10/07/2024 | 18.6 | 20.9 | 0 |
| 11/07/2024 | 17.3 | 20.1 | 9.8 |
| 12/07/2024 | 16.9 | 20.5 | 17.2 |
| 13/07/2024 | 17.0 | 21.4 | 53.6 |

* For preceding months values, temperatures are provided as a mean value, and rainfall is provided as a total.

4. Results

This chapter provides an overview of the flora of the study area and surrounds, including information on vegetation communities, general flora and fauna species and threatened species.

4.1. Vegetation Communities

Previous vegetation mapping published by the Lord Howe Island (Sheringham et al. 2016) was ground-truthed to confirm the presence of the vegetation communities and condition. Several areas within the study area have shown evidence of recent regeneration which has resulted in redefining the boundaries of the vegetation communities present. The vegetation communities and their conditions within the subject land are summarised in **Table 1**.

The distribution of vegetation within the study area is provided in **Figure 3**. Descriptions of the vegetation communities present within the study area including their formation and class in accordance with the 2016 floristic study (Sheringham et al. 2016) are provided in subsequent sections.

Table 3 Vegetation communities within the study area

| Community # | Vegetation Community | BC Act Status | Study Area (ha) |
|--------------|--|---------------|-----------------|
| 1 | Coastal Spinifex - Dune Bean - Club Rush - Melanthera biflora - Saltwater Couch beach strandline grassland | - | 1.48 |
| 6 | Sallywood swamp forest of poorly drained, low-lying areas | CEEC | 0.03 |
| 8 | Bully Bush - Hopwood shrubland on shallow rocky soils | - | 0.75 |
| 12a | Kentia Palm Forest on coral sand and calcarenite | - | 1.41 |
| 17a | Greybark - Blackbutt rainforest | - | 2.65 |
| 17b | Greybark - Blackbutt low closed forest on exposed basalt slopes | - | 0.01 |
| 18 | Kentia Palm - Greybark rainforest of low to mid altitude slopes | - | 0.12 |
| 21 | River Mangrove tall shrubland of brackish creeks | - | 0.07 |
| Ep | Environmental plantings | - | 0.18 |
| Ex | Exotic | - | 2.34 |
| Cl | Cleared land | - | 1.37 |
| Total | | | 10.42 |

CEEC = Critically Endangered Ecological Community

4.1.1. Coastal Spinifex - Dune Bean - Club Rush - Melanthera biflora - Saltwater Couch beach strandline grassland

Community #: 1

Scientific Name: *Spinifex sericeus* – *Vigna marina* – *Ficinia nodosa* – *Melanthera biflora* – *Sporobolus virginicus* var. *virginicus*.

Vegetation Formation: Grasslands

Vegetation Class: Maritime Grasslands

Status: Not listed

This community is known to occur on unconsolidated calcareous beach dunes, such as those at North Bay, Old Settlement, Neds, Blinky and Lagoon beaches (Sheringham et al. 2016). Within the study area this community occurs as a low, dense grassland or sedgeland running parallel to Lagoon Beach. There are gradual transitions in weed abundance across the community. Common ground layer species are *Spinifex sericeus* (Hairy Spinifex), *Vigna marina* (Dune Bean), *Ficinia nodosa* (Knobby Club-rush), *Melanthera biflora*, *Sporobolus virginicus* (Sand Couch) and *Tylophora biglandulosa*. Scattered emergent shrubs of *Cassinia tenuifolia* (Bully Bush) are also present. Exotic species are dominant within more disturbed areas of the community and include the grasses *Stenotaphrum secundatum* (Buffalo Grass), *Cenchrus clandestinus* (Kikuyu), *Ehrharta erecta* (Panic Veldtgrass) and *Bromus catharticus* (Prairie Grass) as well as herbs *Euphorbia cyathophora* (Painted Spurge), *Euphorbia paralias* (Sea Spurge), *Hydrocotyle bonariensis* and *Cakile edentula* (American Sea Rocket).

One threatened flora species, *Chamaesyce psammogeton* (Sand Purge), known to occur on Lord Howe Island is associated with this community however was not recorded within the study area.

Examples of the community within the study area are shown in **Photograph 1** and **2**.

Photograph 1 Coastal Spinifex – Dune Bean – Club Rush – Melanthera biflora – Saltwater Couch beach strandline grassland within the study area with low cover of introduced grasses



Photograph 2 Low condition Coastal Spinifex – Dune Bean – Club Rush – Melanthera biflora – Saltwater Couch beach strandline grassland within the study area with high cover of introduced grasses



4.1.2. Sallywood swamp forest of poorly drained, low-lying areas

Community #: 6

Scientific Name: *Lagunaria patersonia* subsp. *patersonia* / *Aegiceras corniculata* – *Hibiscus tiliaceus* – *Myoporum insulare* / *Commelina cyanea*

Vegetation Formation: Forested Wetlands

Vegetation Class: Coastal Swamp Forests

Status: CEEC BC Act.

This community is restricted to a small estuarine area of moist alluvium along the banks of Cobbys Creek bordering sand dunes in the southern portion of the study area. This community has been mapped as a minor extension of the community previously mapped on Cobbys Creek to the east of Lagoon Road (Sheringham et al. 2016). It occurs on the creek bank adjacent to mangroves (Community 21) and to Kentia Palm Greybark Rainforest (Community 18) in adjacent areas.

Within the study area this community occurs as a closed forest. The dominant trees include *Lagunaria patersonia* (Norfolk Island Hibiscus) with occasional *Hibiscus tiliaceus* (Cottonwood Hibiscus) and *Ficus macrophylla* subsp. *columnaris* (Banyan). A sparse mid-layer of *Aegiceras corniculata* (River Mangrove) and *Myoporum insulare* (Common Boobialla) is present. The ground layer is sparse and comprises *Commelina cyanea* (Blue Wandering Jew) and *Oplismenus imbecillis*.

An example of the community within the study area is shown in **Photograph 3**.

Photograph 3 Sallywood swamp forest within the study area



4.1.3. Bully Bush – Hopwood shrubland on shallow rocky soils

Community #: 8

Scientific Name: *Lagunaria patersonia* subsp. *patersonia* – *Drypetes deplanchei* / *Cassinia tenuifolia* – *Dodonaea viscosa* subsp. *burmanniana* – *Melaleuca howeana* / *Muehlenbeckia complexa* / *Ficinia nodosa* – *Sporobolus virginicus* var. *virginicus* – *Poa poiformis*

Vegetation Formation: Heathlands

Vegetation Class: Coastal Headland Heaths

Status: Not listed

On Lord Howe Island, this community is typically located on Steep slopes below cliffs, rocky ridges and regenerating landslips with shallow soils derived from basalt and breccia.

Within the study area this community occurs as a low-mid closed shrubland with a sparse, emergent upper layer of *Drypetes deplanchei* (Greybark), *Lagunaria patersonia* subsp. *patersonia* (Sallywood), *Hibiscus tiliaceus* (Cottonwood Hibiscus) and *Cryptocarya triplinervis* var. *triplinervis* (Blackbutt) with the occasional *Howea forsteriana* (Kentia Palm). It occurs on coastal sand dunes in exposed areas adjacent to Community 1. There is an open to dense shrub layer dominated by *Cassinia tenuifolia* (Bully Bush), *Dodonaea viscosa* subsp. *burmanniana* (Hopwood) and *Melaleuca howeana* (Tea Tree). Other scattered shrubs within the community include *Alyxia ruscifolia* (Prickly Alyxia), *Leucopogon parviflorus* (Coastal Beard-heath) and *Ochrosia elliptica* (Red Berrywood). The vine *Jasminum didymum* subsp. *didymum* is also present scrambling through shrubs.

Within the ground layer, the dominant species include *Vigna marina* (Dune Bean), *Ficinia nodosa* (Knobby Club-rush), *Euchiton involucratus* (Star Cudweed) and *Melanthera biflora*.

There is some variation in shrub density, with sparser shrubland located in more exposed areas where gaps between shrubs are dominated by ground layer species of Community 1 in transitional areas. In more protected areas dense shrubs are dominant. Areas with a more open shrubland, particularly to the south of Cobbys Creek also comprise a higher density of exotic species compared to other areas of the community within the northern portion of the study area.

Several exotic ground layer species are also present within the study area, including *Stenotaphrum secundatum* (Buffalo Grass), *Cenchrus clandestinus* (Kikuyu), *Ehrharta erecta* (Panic Veldtgrass), *Conyza parva* (Fleabane), *Solanum nigrum* (Black-berry Nightshade), *Sonchus oleraceus* (Common Sowthistle) and *Hydrocotyle bonariensis* (Large-leaved Pennywort).

Examples of the community within the study area are shown in **Photograph 4** and **5**.

Photograph 4 Open shrubland of Bully Bush – Hopwood shrubland



Photograph 5 Dense shrubland of Bully Bush – Hopwood shrubland



4.1.4. Kentia Palm – Banyan forest on sand or calcarenite of coastal lowlands

Community #: 12a

Scientific Name: *Ficus macrophylla* subsp. *columnaris* / *Howea forsteriana* / *Asplenium milnei*

Vegetation Formation: Rainforests

Vegetation Class: Oceanic Rainforests

Status: Not listed

On Lord Howe Island this community has been divided into two variants, including 12a – Kentia Palm Forest on coral sand and calcarenite, and 12b – Banyan - Kentia Palm forest on coral sand and calcarenite. Within the study area, only variant 12a is present.

Within the study area, this community occurs as a mid-high closed forest dominated by *Howea forsteriana* (Kentia Palm) with rare emergent *Ficus macrophylla* subsp. *columnaris* (Banyan). Other tree species sparsely scattered within the community include *Drypetes deplanchei* (Greybark), *Cryptocarya triplinervis* var. *triplinervis* (Blackbutt), *Celtis conferta* subsp. *amblyphylla* (Cotton-wood), *Elaeodendron curtispendulum* (Tamana) and *Lagunaria patersonia* (Norfolk Island Hibiscus).

The mid- and lower layers of the community are predominantly represented by different aged cohorts of Kentia Palm. The ground is densely covered by fallen palm fronds however, shrubs species such as *Cassinia tenuifolia* (Bully Bush), *Myoporum insulare* (Common Boobialla) and *Ochrosia elliptica* (Red Berrywood) are present,

although typically in low abundance. Other species scattered within the understory include *Ficinia nodosa* (Knobby Club-rush), *Commelina cyanea* (Native Wandering Jew), *Jasminum didymum* subsp. *didymum*, *Crinum pedunculatum* (Swamp Lily), *Geitonoplesium cymosum* (Scrambling Lily) and *Smilax australis* (Lawyer Vine).

Several exotic species are also present within the community, although typically adjacent to exotic vegetation and cleared areas around the periphery of the community. Dominant exotic species include *Ehrharta erecta* (Panic Veldtgrass), *Sporobolus africanus* (Parramatta Grass), *Hydrocotyle bonariensis*, *Hypochaeris radicata* (Catsear), *Conyza parva* (Fleabane) and *Euphorbia peplus* (Petty Spurge). In places this community is regenerating following the removal of introduced *Araucaria heterophylla* (Norfolk Island Pine) trees, and these regrowth areas are generally more open, and have a greater abundance of exotic weeds.

An example of the community within the study area is shown in **Photograph 6**.

Photograph 6 Kentia Palm – Banyan forest within the study area



4.1.5. Greybark – Blackbutt rainforest at low to intermediate altitudes

Community #: 17a, 17b

Scientific Name: *Drypetes deplanchei* – *Cryptocarya triplinervis* var. *triplinervis* – *Olea paniculata* – *Celtis conferta* subsp. *amblyphylla* / *Myrsine platystigma* – *Alyxia ruscifolia* / *Smilax australis* – *Parsonsia howeana* – *Jasminum didymum* subsp. *didymum* / *Oplismenus imbecillis* – *Asplenium milnei* – *Carex brunnea*

Vegetation Formation: Rainforests

Vegetation Class: Oceanic Rainforests

Status: Not listed

On Lord Howe Island this community has been divided into three variants, including 17a – Greybark - Blackbutt low closed forest on exposed basalt slopes, 17b – Greybark - Blackbutt low closed forest on exposed basalt slopes, and 17c Greybark - Blackbutt low closed forest on exposed calcarenite. These variants differ structurally depending on the substrate and degree of exposure. Two of these variants have been mapped within the study area including variant 17a and 17b.

i. Variant 17a – Greybark – Blackbutt Rainforest

This variant is taller and more species rich, occurring on sheltered to intermediate aspects on deeper soils derived from basalt, breccia and calcarenite. Within the study area, the dominant tree species include *Celtis conferta* subsp. *amblyphylla* (Cottonwood), *Drypetes deplanchei* (Greybark), *Cryptocarya triplinervis* var. *triplinervis* (Blackbutt) and *Planchonella howeana* (Axe-handle Wood). Dominant shrub species within the community include *Alyxia ruscifolia* (Prickly Alyxia), *Myrsine platystigma* and *Ochrosia elliptica* (Red Berrywood). Other species occurring within the understorey include the vines *Howea forsteriana* (Kentia Palm), *Flagellaria indica* (Whip Vine), *Jasminum didymum* subsp. *didymum*, *Geitonoplesium cymosum* (Scrambling Lily), *Parsonsia howeana*, *Smilax australis* (Snake Vine), *Trophis scandens* subsp. *megacarpa* and the forb *Commelina cyanea* (Native Wandering Jew). The palm *Howea forsteriana* (Kentia Palm) forms only a minor component of the understorey. The native grass *Oplismenus imbecillis* was also recorded within the community.

This variant was comprised of few exotic species, with the most abundant species including *Ehrharta erecta* (Panic Veldtgrass), *Ipomoea cairica*, *Physalis peruviana* (Cape Gooseberry), *Solanum nigrum* (Black-berry Nightshade) and *Stenotaphrum secundatum* (Buffalo Grass).

An example of the 17a variant within the study area is shown in **Photograph 7**.

Photograph 7 Variant 17a Greybark – Blackbutt rainforest within the study area



ii. Variant 17b – Greybark – Blackbutt low closed forest on exposed basalt slopes

This variant occupies exposed sites on ridges and areas exposed to the ocean. It is often a low, viney, near-impenetrable scrub of Greybark and Hopwood. This variant is most common in the northern hills, less common in the central lowlands and southern mountains.

Within the study area, this community occurred as a single small patch on the corner of Old Lagoon Road and Lagoon Road. The community consists of a low closed forest of *Dodonaea viscosa* subsp. *burmanniana* (Hopwood). Other native species sparsely scattered within the community included seedlings or saplings of the trees *Cryptocarya triplinervis* var. *triplinervis* (Blackbutt), *Lagunaria patersonia* (Norfolk Island Hibiscus) and *Drypetes deplanchei* (Greybark), the shrubs *Ochrosia elliptica* (Red Berrywood) and *Coprosma prisca* (Goatwood) and the vine *Stephania japonica* (Snake Vine). The exotic species *Ipomoea cairica* (Coastal Morning Glory) was also present within the community.

An example of the 17b variant within the study area is shown in **Photograph 8**.

Photograph 8 Variant 17b Greybark – Blackbutt low closed forest on exposed basalt slopes



4.1.6. Kentia Palm – Greybark rainforest of low to mid-altitude slopes

Community #: 18

Scientific Name: *Howea forsteriana* – *Drypetes deplanchei* / *Howea forsteriana* – *Homalanthus populifolius* – *Alyxia ruscifolia* / *Parsonsia howeana* – *Smilax australis* / *Oplismenus imbecillis* – *Psilotum nudum* – *Microsorium pustulatum* subsp. *howense*

Vegetation Formation: Rainforests

Vegetation Class: Oceanic Rainforests

Status: Not listed

On Lord Howe Island, this community occurs on a range of habitats at low to mid-altitudes, often on sheltered lower to mid slopes in the northern and central hills, and lower slopes in the southern mountains. It occurs on both basalt and calcarenite/coral derived soils (Sheringham et al. 2016).

Within the study area this community occurs in what is likely to be a *Howea forsteriana* (Kentia Palm) plantation. Evidence of irrigation and tree stakes are still visible within the community. The canopy is comprised almost entirely of Kentia Palms that are of the same age and are relatively evenly spaced, with scattered occurrences of *Cryptocarya triplinervis* var. *triplinervis* (Blackbutt), *Hibiscus tiliaceus* (Cottonwood Hibiscus) and *Lagunaria patersonia* (Norfolk Island Hibiscus). The mid layer is largely absent, with the exception of *Howea forsteriana* (Kentia Palm) as well as scattered occurrences of *Dodonaea viscosa* subsp. *burmanniana* (Hopwood) and *Alyxia ruscifolia* (Prickly Alyxia). Other native species recorded within the community include *Jasminum didymum*

subsp. *didymum*, *Parsonsia howeana* and *Stephania japonica* (Snake Vine). The exotic species *Ehrharta erecta* (Panic Veldtgrass), *Ipomoea cairica* (Coastal Morning Glory) and *Oxalis corniculata* (Creeping Oxalis) were also present.

An example of the community within the study area is shown in **Photograph 9**.

Photograph 9 Kentia Plam – Greybark rainforest within the study area



4.1.7. River Mangrove tall shrubland of brackish creeks

Community #: 21

Scientific Name: *Aegiceras corniculatum*

Vegetation Formation: Saline Wetlands

Vegetation Class: Mangrove Swamps

Status: Not listed

Within the study area this community occurs along Cobby's Creek. The community is characterised by the presence of *Aegiceras corniculatum* (River Mangrove), with scattered occurrences of *Hibiscus tiliaceus* (Cottonwood Hibiscus). The native grass *Sporobolus virginicus* is present along the fringes of the community.

An example of the community within the study area is shown in **Photograph 10**.

Photograph 10 River Mangrove tall shrubland within the study area



4.1.8. Exotic Vegetation

Exotic vegetation is present within the study area and consists predominantly of managed grasslands. These areas are dominated by exotic grasses including, *Cenchrus clandestinus* (Kikuyu Grass), *Poa annua* (Winter Grass), *Stenotaphrum secundatum* (Buffalo Grass), *Sporobolus africanus* (Parramatta Grass) and *Chloris gayana* (Rhodes Grass). Other exotic species recorded in high abundances included *Trifolium repens* (White Clover), *Hydrocotyle bonariensis*, *Hypochaeris radicata* (Catsear), *Oxalis corniculata* (Creeping Oxalis) and *Taraxacum officinale* (Dandelion).

The exotic tree, *Araucaria heterophylla* (Norfolk Island Pine) is also present within the southern portion of the study area and along the access road at the entrance to the airport. In both locations, these trees occur as a canopy over managed exotic grassland. There is also minor area of exotic plantings consisting of *Hibiscus rosa-sinensis*, and other ornamental plantings.

In places these grasslands are managed by mowing, but unmown areas are also present.

An example of the community within the study area is shown in **Photograph 11**.

Photograph 11 Exotic vegetation within the study area comprised of managed grassland beneath Norfolk Island Pines



4.1.9. Environmental Plantings

Environmental plantings within the study area are located along existing fences adjacent to the Lord Howe Island airport runway and along the northern side of Old Lagoon Road and eastern side of Airport Road. Environmental plantings comprise a mixture of different native species, which have been planted in rows along the fence lines. Species planted within this community include *Howea forsteriana* (Kentia Palm) and *Melaleuca howeana* (Tea Tree).

An example of environmental plantings within the study area is provided in **Photograph 12**.

Photograph 12 Environmental plantings along the Lord Howe Island airport runway



4.2. Significant Native Vegetation

The native vegetation communities identified within the study area all constitutes SNV in accordance with the Lord Howe Island LEP. The revised mapping of SNV within the study area is shown in **Figure 4**. Under the Lord Howe Island LEP development consent cannot be granted for local developments if the proposed development will result in any damage, or removal of the SNV.

4.3. Threatened Ecological Communities

One vegetation community identified within the study area, Sallywood Swamp Forest, occurs on poorly drained, low-lying areas conforms to the TEC Lagunaria Swamp Forest on Lord Howe Island, which is listed as a Critically Endangered Ecological Community (CEEC) under the BC Act. This community occupies 0.06 ha at within the southern portion of the study area adjacent to Cobbys Creek.

The distribution of the community is restricted on Lord Howe Island to low-lying swampy areas at altitudes below 20 m. This distribution was mapped by Pickard (1983), who estimated that its original distribution may have covered as little as 6 ha distributed across five restricted locations on the island (NSW Scientific Committee 2010). None of these locations are protected within the Lord Howe Island Permanent Park Preserve, but Lagunaria Swamp Forest on Lord Howe Island falls entirely within the jurisdiction of the Lord Howe Island Board. Individual plants of *Lagunaria patersonia* may be scattered through the forests from sea level to about 600m elevation on Lord Howe Island, but such locations do not form a part of the Lagunaria Swamp Forest community (NSW Scientific Committee 2010).

Lagunaria Swamp Forest on Lord Howe Island has been seriously depleted by land clearing at all sites of its occurrence. The remaining fragments are only a few square metres in area, are degraded by edge effects, weed invasion and alteration to water regimes, and all but one site continue to be grazed by cattle. The community has been completely eliminated from some of its original locations, including an area behind Blinkys Beach, which was cleared in 1975 during construction of the airstrip. The destruction of habitat and degradation of remnants has been so comprehensive that Lagunaria Swamp Forest might already be extinct in NSW. The remnants are likely to include only a sample of the original flora and at least some appear to be transitional assemblages with other vegetation communities, although restoration might be possible.

Lagunaria Swamp Forest is only listed as a TEC under the BC Act. It is not listed as a TEC under the EPBC Act. Furthermore, no other native vegetation communities within the study area or on Lord Howe Island conform to a TEC under the EPBC Act. The location of the Lagunaria Swamp Forest within the study area is shown in **Figure 5**.

4.4. Flora

4.4.1. General Species

Seventy-one flora species were recorded within the study area during surveys undertaken by Cumberland Ecology. This assemblage of species reflects the agricultural and silvicultural history of the study area as it includes 43 (61%) native species and 28 exotic species (39%). The dominant plant families encountered within the study area are represented by the Poaceae, Asteraceae and Apocynaceae families.

A list of the flora species recorded within the study area during field surveys is included in **Appendix A**. This is not an exhaustive list of species, and therefore a suite of other flora species are expected to occur within the study area, particularly if surveys are done at different times of the year.

4.4.2. Threatened Species

No threatened flora species were recorded within the study area during surveys conducted by Cumberland Ecology. The BioNet Atlas does not hold any records of threatened flora species within the study area.

A total of nine (9) threatened flora species have been recorded within the locality of the study area, however only one species, *Chamaesyce psammogeton* (Sand Purge) is considered to have the potential to occur. An assessment of the likelihood of occurrence of threatened flora species is provided in **Appendix B**. Previous records of threatened flora within the locality are shown in **Figure 6**.

4.4.3. Exotic Species

Twenty-eight exotic species were recorded within the study area during surveys undertaken by Cumberland Ecology. On Lord Howe Island, weeds are prioritised and categorised as part of the North Coast Local Land Services Regional Strategic Weed Management Plan 2017 – 2020, however management priorities to demonstrate compliance with the general biosecurity duty are identified in the Lord Howe Island Weed Management Strategy (LHIB 2016).

The Lord Howe Island Weed Management Strategy (LHIB 2016) categorises weeds into three management categories based on their level of threat (invasiveness and impact), weed risk assessment and the feasibility of eradication. These categories are:

1. Category 1: Eradicate (immediate or suppression leading to eradication);
2. Category 2: Alert (sleeper weeds – watch and act as necessary); and
3. Category 3: Control (effectively manage).

One species, *Euphorbia paralias* (Sea Spurge), recorded within the study area is listed as a Regional Priority Weed under the North Coast Local Land Services Regional Strategic Weed Management Plan 2017 – 2020. On Lord Howe Island, the species is treated as a Category 3 control target, as it is not a declared weed and it is not considered feasible to eradicate as the species will likely continue to be dispersed to Lord Howe Island through sea-drift. The species is mostly restricted to the dunal system on the lagoon foreshore and considering the ease of access, the species is considered for containment.

An additional nine weeds recorded within the study area are identified under the Lord Howe Island Weed Management Strategy (LHIB 2016). None of these are listed as priority weeds under the North Coast Local Land Services Regional Strategic Weed Management Plan. **Table 4** identifies the weed species recorded within the study area and their management category under the Lord Howe Island Weed Management Strategy (LHIB 2016). None of the weed identified within the study area are listed as Weeds of National Significance under the NSW *Biosecurity Act 2015*.

Table 4 Category of weed species recorded within the study area in accordance with the Lord Howe Island Weed management Strategy 2016

| Scientific Name | Common Name | Management Category | Status |
|--------------------------------|-----------------------|---------------------|------------------------------|
| <i>Araucaria heterophylla</i> | Norfolk Island Pine | Category 3 | Control (effectively manage) |
| <i>Bidens pilosa</i> | Cobbler's Pegs | Category 3 | Control (effectively manage) |
| <i>Ehrharta erecta</i> | Panic Veldtgrass | Category 3 | Control (effectively manage) |
| <i>Euphorbia cyathophora</i> | Painted Spurge | Category 3 | Control (effectively manage) |
| <i>Euphorbia paralias</i> | Sea Spurge | Category 3 | Control (effectively manage) |
| <i>Ipomoea cairica</i> | Coastal Morning Glory | Category 3 | Control (effectively manage) |
| <i>Lilium formosanum</i> | Formosan Lily | Category 3 | Control (effectively manage) |
| <i>Stenotaphrum secundatum</i> | Buffalo Grass | Category 3 | Control (effectively manage) |
| <i>Chloris gayana</i> | Rhodes Grass | Category 3 | Control (effectively manage) |

4.5. Fauna

4.5.1. Fauna Habitat

Fauna habitat within the study area is comprised predominantly of rainforest vegetation with woody debris, leaf litter and rubbish which provide shelter habitat for threatened ground dwelling fauna such as the Lord Howe Island Skink (*Oligosoma lichenigera*), the Lord Howe Island Gecko (*Christinus guentheri*) and the Lord Howe Island Placostylus (*Placostylus bivaricosus*). Rainforest vegetation within the study area provides potential nesting and foraging habitat for a range of endemic, migratory and introduced birds. Furthermore, the western side of the study area bordering the Lagoon, comprises coastal dune habitats that are mostly grasses and sedges on sand dunes, which provide shelter and nesting habitat for bird, reptiles and invertebrates.

4.5.2. General Species

Fifteen fauna species were recorded within the study area during surveys undertaken by Cumberland Ecology. A list of fauna species recorded within the study area is provided in **Table 5**. This is not an exhaustive list of species, and therefore a suite of other fauna species are expected to occur within the study area.

The dominant species recorded were birds with 13 species recorded within the study area, followed by reptiles and gastropods each with one species. The origin listed for each species in **Table 5** aligns with that origin within the Lord Howe Island BMP (DECC 2007).

Table 5 Fauna species recorded within the study area

| Common Name | Scientific Name | BC Act Status | EPBC Act Status | Origin |
|--|--|---------------|-----------------|--------------------|
| Birds | | | | |
| Purple Swamphen | <i>Porphyrio porphyrio</i> | - | - | Non-native |
| Lord Howe Woodhen | <i>Hypotaenidia sylvestris</i> | E | E | Endemic Native |
| Buff-banded Rail | <i>Hypotaenidia philippensis</i> | - | - | Non-native |
| Magpie-lark | <i>Grallina cyanoleuca</i> | - | - | Non-native |
| Eurasian Blackbird | <i>Turdus merula</i> | - | - | Non-native |
| Sacred Kingfisher | <i>Todiramphus sanctus</i> | - | - | Non-native |
| Pied Currawong (Lord Howe Is. subsp.) | <i>Strepera graculina crissalis</i> | V | V | Endemic Native |
| Emerald Ground Dove | <i>Chalcophaps indica</i> | - | - | Non-endemic Native |
| Masked Lapwing | <i>Vanellus miles</i> | - | - | Non-native |
| Masked Booby | <i>Sula dactylatra</i> | V | M | Non-endemic Native |
| Golden Whistler (Lord Howe Is. subsp.) | <i>Pachycephala pectoralis contempta</i> | V | - | Endemic Native |
| Welcome Swallow | <i>Hirundo neoxena</i> | - | - | Non-native |

| Common Name | Scientific Name | BC Act Status | EPBC Act Status | Origin |
|----------------------------------|---|---------------|-----------------|----------------|
| Silvereye (Lord Howe Is. subsp.) | <i>Zosterops lateralis tephroleurus</i> | V | - | Endemic Native |
| Reptiles | | | | |
| Dark-flecked Sunskink | Garden <i>Lampropholis delicata</i> | - | - | Non-native |
| Gastropods | | | | |
| Lord Howe Placostylus | <i>Placostylus bivaricosus</i> | E | E | Endemic Native |

E = Endangered, V = Vulnerable, M = Migratory

4.5.3. Non-Endemic and Non-Native Species

Of the 15 species recorded within the study area, only five are classified as endemic native species under the Lord Howe Island BMP (DECC 2007). The remainder are classified as either non-endemic native species or non-native species (see **Table 2**). A total of two species are listed as non-endemic native species, being residents or regular visitors on Lord Howe Island at the time of European settlement. The remaining eight species classified in the Lord Howe Island BMP as non-native species, being residents or regular visitors on Lord Howe Island, present through either intentional/accidental introduction or by colonisation since European settlement.

4.5.4. Threatened Species

As listed in **Table 2**, six fauna species recorded within the study area are listed as threatened species under the BC Act and/or EPBC Act. Of these, the threatened birds were commonly recorded within the study area, with the exception of the Masked Booby (*Sula dactylatra*) which was only recorded flying across the study area. This species is known to roost all year round on Lord Howe Island, with breeding colonies on Balls Pyramid, Muttonbird Island, the Admiralty Islands and at King and Muttonbird Points on the main island (DECC 2007). As such, this bird would only flyover the study area in transit between foraging and breeding sites.

The Lord Howe Placostylus (*Placostylus bivaricosus*) was recorded within the study area by Cumberland Ecology during field surveys. A total of 26 individual snails were recorded, including 12 individuals within the Kentia Palm – Banyan forest (12a) vegetation community and 14 individuals within the Greybark – Blackbutt Rainforest (17a) vegetation community (**Photograph 11**). Furthermore, very large numbers of Lord Howe Placostylus (*Placostylus bivaricosus*) empty shells were also recorded throughout these two vegetation communities, as shown in **Photograph 12**.

The location of threatened species recorded within the study area is shown in **Figure 7**.

The NSW BioNet holds records for 67 threatened fauna species listed under the BC Act and/or EPBC Act. Furthermore, the EPBC PMST identified habitat within the locality for an additional 13 threatened fauna species. An assessment of the likelihood of occurrence of potentially occurring threatened fauna species is provided in **Appendix C**. As the locality includes some ocean areas, the search yielded numerous marine species including fish, turtles and marine mammals. These are not relevant to an assessment of terrestrial ecology within the

study area and are not considered further in this report. Previous records of threatened fauna within the locality are shown in **Figure 8**.

Photograph 13 Lord Howe Placostylus (*Placostylus bivaricosus*) within the study area



4.5.5. Migratory Species

One migratory species, namely the Masked Booby (*Sula dactylatra*), listed under the EPBC Act was recorded aurally flying across the study area. As outlined in **Section 4.5.4**, this species is known to roost all year round on Lord Howe Island but does not roost within the study area and would likely only flyover the study area in transit between foraging and breeding sites.

The NSW BioNet and EPBC PMST search identified a combined 53 migratory species with potential to occur within a 5 km radius of the study area. An assessment of the likelihood of occurrence for these species based on habitat requirements and known records is provided in **Appendix B**. The locations of previous records of migratory fauna within the locality are shown in **Figure 9**.

Of the 53 potentially occurring migratory species, 28 species are considered to have a low potential to occur, 18 species with a moderate potential to occur, eight species with a high potential to occur and one species, the Masked Booby, identified as present within the study area. The majority of these potentially occurring species are considered likely to occur aurally in transit across the study area similar to that of the Masked Booby, rather than utilising the foraging and roosting/breeding habitat available within the study area.

4.6. Matters of National Environmental Significance

The EPBC Act provides protection of the environment from actions proposed to have the potential to significantly impact on MNES or the environment of Commonwealth land. MNES protected under the EPBC Act include:

- World Heritage Properties.
- National Heritage Places.
- Ramsar Wetlands.
- Threatened species or ecological communities listed in the EPBC Act.
- Migratory species listed in the EPBC Act.
- Commonwealth marine environment.
- Nuclear actions.
- Great Barrier Reef Marine Park.
- A water resource, in relation to coal seam gas development and large coal mining development.

A search of the Commonwealth PMST was undertaken on 29 August 2024. The search included a 5 km buffer around the study area. The search results, which include marine species and species frequenting higher altitudes on the island, are summarised below in **Table 6** and a record of the report is provided in **Appendix A**.

Table 6 Matters of National Significance (MNES)

| MNES | Within the Locality |
|--------------------------------------|--|
| World Heritage Properties | Yes – Lord Howe Island is a declared World Heritage Property |
| National Heritage Places | Yes – Lord Howe Island is classed as Natural Heritage Place |
| Wetlands of international importance | None |
| The Great Barrier Reef Marine Park | None |
| Commonwealth marine area | None |
| Threatened ecological communities | None |
| Threatened species | 57 |
| Migratory species | 46 |
| State and territory reserves | 2 – Terrestrial and Marine Environments |

Assessments of threatened flora, threatened fauna and migratory species likely to occur in the study area have been presented previously in **Section 4.4.2**, **Section 4.5.4** and **Section 4.5.5**.

If the Program has the potential to result in significant impacts on MNES, a referral to DCCEEW (Cth.) will be required. The purpose of the referral is to determine whether the proposed action (i.e. the Program) comprises a Controlled Action, which would require formal assessment and approval under the EPBC Act. In the event of the proposed action being declared a Controlled Action, it is likely that the assessments for Commonwealth

purposes will be conducted via the Preliminary Documentation pathway. Further discussion regarding the requirements for a referral are provided in **Section 5.4.1**.

5. Discussion

This chapter provides a discussion of the ecological constraints to future development present within the study area, summarises the potential impacts associated with future development, and identifies potential avoidance and mitigation measures. This chapter also discusses the future ecological impact assessment requirements.

5.1. Constraints

Key ecological constraints identified within the study area include:

- It is listed as a World Heritage Property and National Heritage Place;
- Presence of native vegetation;
- Presence of TEC vegetation; and
- Known and potential habitat for threatened and/or migratory species.

These constraints are discussed in detail below.

5.1.1. World Heritage Property and National Heritage Place

Lord Howe Island as part of the Lord Howe Island Group is listed as a World Heritage Property. To be included on the World Heritage List, sites must be of outstanding universal value and meet at least one out of ten selection criteria identified by the UNESCO World Heritage Convention (UNESCO 2024b). Lord Howe Island is listed as a World Heritage Property as it meets two key criteria:

- **Criterion (vii) contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance:**

The Lord Howe Island Group is grandiose in its topographic relief and has an exceptional diversity of spectacular and scenic landscapes within a small area, including sheer mountain slopes, a broad arc of hills enclosing the lagoon and Balls Pyramid rising abruptly from the ocean. It is considered to be an outstanding example of an island system developed from submarine volcanic activity and demonstrates the nearly complete stage in the destruction of a large shield volcano. Having the most southerly coral reef in the world, it demonstrates a rare example of a zone of transition between algal and coral reefs. Many species are at their ecological limits, endemism is high, and unique assemblages of temperate and tropical forms cohabit (UNESCO 2024a).

The islands support extensive colonies of nesting seabirds, making them significant over a wide oceanic region. They are the only major breeding locality for the Providence Petrel (*Pterodroma solandri*), and contain one of the world's largest breeding concentrations of Red-tailed Tropicbird (*Phaethon rubricauda*) (UNESCO 2024a).

- **Criterion (x) contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of Outstanding Universal Value from the point of view of science or conservation:**

The Lord Howe Island Group is an outstanding example of the development of a characteristic insular biota that has adapted to the island environment through speciation. A significant number of endemic species

or subspecies of plants and animals have evolved in a very limited area. The diversity of landscapes and biota and the high number of threatened and endemic species make these islands an outstanding example of independent evolutionary processes.

Lord Howe Island supports a number of endangered endemic species or subspecies of plants and animals, for example the Lord Howe Woodhen (*Hypotaenidia sylvestris*), which at time of inscription was considered one of the world's rarest birds. While sadly a number of endemic species disappeared with the arrival of people and their accompanying species, the Lord Howe Island Phasmid, the largest stick insect in the world, still exists on Balls Pyramid. The islands are an outstanding example of an oceanic island group with a diverse range of ecosystems and species that have been subject to human influences for a relatively limited period .

The Lord Howe Island Group is also listed as a National Heritage Place and was added to the National Heritage List in 2007 in recognition of its national heritage significance (UNESCO 2024a).

The study area is located within a World Heritage and National Heritage Place and contains native vegetation that has been over cleared in other parts of the island and which supports threatened species such as the Lord Howe Placostylus (*Placostylus bivaricosus*) and the Lord Howe Woodhen (*Hypotaenidia sylvestris*). Therefore all natural habitats should be regarded as having substantial constraints due to this context.

5.1.2. Native Vegetation

The native vegetation communities on site are all endemic to Lord Howe Island and align with mapping of SNV within the study area. Under the Lord Howe Island LEP, development consent cannot be granted if the proposed development will result in any damage, or removal of SNV. However, given the Program will be assessed as a CSSI development, requirements under the Lord Howe Island LEP are not required to be strictly adhered to.

The areas of native vegetation within the study area are considered to comprise high ecological constraint and where possible the application of avoid and minimise should be applied. With the exception of Community 6, the vegetation communities within the study area are well represented on Lord Howe Island, and minor impacts associated with the proposed development are not considered to significantly alter the composition and distribution of these communities on Lord Howe Island.

The vegetation within the study area has been subject to historical disturbance. Access tracks including Old Lagoon Road have been maintained across the study area as well as access into the waste management facility and several tracks down onto Lagoon Beach. Aerial imagery from 2006 shows the extent of previous disturbance within and around the waste management facility, particularly along the coast between Cobbys Creek to the south and the boundary of the airport in the north. It is expected that native grasslands (Community 1) along the beach strandline have persisted despite historical disturbance, although the invasion of exotic grasses as a result of disturbance is evident today. The large patches of rainforest vegetation within the study area have remained relatively consistent in distribution. Smaller patches of rainforest vegetation on the southern side of the waste management facility and in the south near Lagoon Road, which appear to have existed as predominantly shrubby vegetation in 2006, have regenerated into intact rainforest vegetation today,

although these small patches are small and linear, and are degraded as a result of edge effects and continued disturbance from the operation of the waste management facility.

In the 2006 aerial imagery, previously disturbed areas along the coast appear to be comprised predominantly of grassland vegetation with scattered shrubs. Today, these areas have naturally regenerated into dense shrubland vegetation that conforms to Bully Bush – Hopwood shrubland (Community 8).

In summary, the native vegetation within the study area is of high ecological value, despite previous disturbance in some areas. Any clearing of native vegetation should demonstrate the principals of avoid and minimise impacts on native vegetation. Furthermore, direct offsets and compensatory measures are likely to be required to account for the loss of native vegetation and associated habitat. Compensatory measures may include revegetation and rehabilitation within landscaped areas and areas of exotic vegetation both within and adjacent to the study area. Depending on the extent of impacts to native vegetation, additional offsetting measures may be required. This may include additional opportunities to rehabilitate native vegetation elsewhere on Lord Howe Island as well as opportunities to fund environmental research projects or education programs on Lord Howe Island. The offsetting measures should be identified within a Biodiversity Offsets Strategy that specifies the nature and extent of offsets required for the Program. The Biodiversity Offsets Strategy should be developed in consultation with the Lord Howe Island Board.

5.1.3. Threatened Ecological Community

One TEC, Lagunaria Swamp Forest on Lord Howe Island, which is listed as a CEEC under the BC Act has been identified as occurring within the study area. This community is located at the southern end of the study area along Cobbys Creek directly adjacent to Lagoon Road. A higher level of conservation significance is attributed to this vegetation community and impacts, both direct and indirect should be avoided and mitigated where possible.

5.1.4. Threatened Species

No threatened flora species have been recorded within the study area and only one species, *Chamaesyce psammogeton* (Sand Spurge), is considered to have potential to occur, within the Coastal Spinifex – Dune Bean – Club Rush *Melanthera biflora* Saltwater Couch strandline grassland.

Six threatened fauna species have been recorded within the study area by Cumberland Ecology during surveys for this assessment. The habitat and key habitat features within the study area comprise suitable habitat for a number of other threatened fauna species known from the locality.

Of the threatened fauna recorded within the study area, five are birds of which are highly mobile species capable of accessing habitat throughout the study area and adjoining habitats. These species are commonly recorded across Lord Howe Island and the Program is considered unlikely to result in a significant impact on these species. In particular, the Lord Howe Island Woodhen (*Hypotaenidia sylvestris*), listed as endangered under the BC Act and EPBC Act, was in significant decline across the island, however the population has grown significantly following the eradication of the Black Rat (*Rattus rattus*) in 2023. During the July 2024 surveys, the species was encountered within all habitat types within the study area and also regularly around the airport and settlement areas such as road sides, parks, residential properties and resorts.

The Lord Howe Placostylus (*Placostylus bivaricosus*), listed as an Endangered under the BC Act and EPBC Act, is not highly mobile and the Program poses greater risk to the species. A total of 26 individuals were encountered during the surveys in July 2024 and it is expected that this is only a small portion of the population within the study area. This species was formerly widespread on Lord Howe Island however has declined significantly in range due to predation from exotic vertebrate fauna (predominantly the Black Rat (*Rattus rattus*)). The species has however become more abundant on the island since the eradication of rats in 2023. Mitigation measures including a translocation plan should be developed for the species that can be implemented during the construction phases of the Program.

Several other threatened fauna species have the potential to occur within the study area. Therefore, future assessment would need to consider the significance of impacts to threatened species known and potentially occurring within the study area. The type of assessment to be prepared would need to be prepared in accordance with the SEAR's issued by the DCCEEW (NSW).

5.1.5. Migratory Species

The NSW BioNet atlas and the EPBC PMST identify records and/or habitat for 53 migratory species within the study area. Most of the species would likely only be seen aerially over the study area when in transit between breeding/roosting and foraging sites, as was the case with the Masked Booby (*Sula dactylatra*) which was recorded during the July 2024 surveys.

No migratory birds were identified breeding or roosting within the study area during surveys in July 2024, however suitable roosting/breeding habitat is present. Nevertheless, breeding sites for migratory birds are relatively well known and the study area has not been identified as a known breeding or roosting site for any of the potentially occurring migratory species. Further surveys would be required to confirm the presence of migratory species during summer months when these species are known to migrate to Lord Howe Island.

Future assessment for the Program would need to consider the significance of the Program on migratory species and where required, demonstrate efforts to avoid and minimise impacts on migratory species and their habitats.

5.2. Potential Ecological Impacts

Future development within the study area for the Program will require some land clearance that has the potential to directly and indirectly impact biodiversity values within the study area and surrounds. Potential impacts include:

- Removal of native vegetation;
- Removal of fauna habitat features such as leaf litter, coarse woody debris and blossom-producing trees and shrubs;
- Removal of known and potential habitat for threatened and migratory species;
- Modification of microhabitats through edge effects;
- Runoff and sedimentation;

- Biosecurity risks:
 - Weed invasion;
 - Feral animal invasion;
 - Disease risk; and
- Injury or mortality to fauna species

Such impacts would need to be assessed as part of the SSDA process. Future assessment requirements are detailed within **Section 5.4**.

5.3. Avoidance and Mitigation

Suitable avoidance, mitigation and offset measures will need to be an integral part of the Program. Due to the Program occurring on a World Heritage area, such measures should be exemplary.

Impacts must be avoided and minimised before offsets are proposed to compensate for any residual impacts. Justification for residual impacts must be provided in the biodiversity assessment prepared to support the EIS.

In consideration of the ecological constraints listed in **Section 5.1**, suitable avoidance and mitigation measures include:

- Avoidance:
 - Locating the development predominantly in cleared areas or areas within areas mapped as exotic vegetation areas;
 - Avoiding locating the development in areas containing TECs (i.e. Lagunaria Swamp Forest on Lord Howe Island);
 - Designing the Program to ensure hydrological changes are avoided or minimised; and
 - Including provision for ecological restoration within landscaped areas and within retained areas of the study area.
- Potential Mitigation:
 - Demarcating clearing areas to prevent damage beyond the disturbance footprint;
 - Installation of sediment control fencing;
 - Timing clearing works to minimise harm to fauna species (i.e. outside of key migration periods and breeding periods);
 - Undertake pre-clearing surveys and clearance supervision to manage impacts to fauna species;
 - Translocation plan for the Lord Howe Placostylus (*Placostylus bivarricosus*);

- Biosecurity protocols and monitoring; and
- Preparation of a site-specific Biodiversity Management Plan for the Program to identify the management measures for flora and fauna.

5.4. Future Assessment Requirements

5.4.1. EPBC Act Requirements

World Heritage properties, threatened species, populations and ecological communities listed under the EPBC Act that are considered to be directly or indirectly impacted by the Program should be assessed in accordance with the *Matters of National Environmental Significance Significant Impact Guidelines 1.1* (DotE 2013). If a development is considered to significantly impact any MNES, then a referral would be required to be submitted.

The Program will require a referral to the Commonwealth, and has considerable potential to be declared a controlled action, for reasons set out below.

The *Significant Impact Guidelines 1.1* for the EPBC Act provide guidance to determine whether or not a significant impact is likely to occur (DotE 2013). The guidelines are specific to different entities. Those for endangered and critically endangered species as well as World Heritage and National Heritage Properties are provided in the following sections:

5.4.1.1. Endangered and Critically Endangered Species

Endangered species including Lord Howe Placostylus (*Placostylus bivaricosus*) and the Lord Howe Woodhen (*Hypotaenidia sylvestris*) have been recorded within the study area and therefore the following significant impact criteria applies.

An action is likely to have a significant impact on a critically endangered or endangered species if there is a real chance or possibility that it will:

- *lead to a long-term decrease in the size of a population*
- *reduce the area of occupancy of the species*
- *fragment an existing population into two or more populations*
- *adversely affect habitat critical to the survival of a species*
- *disrupt the breeding cycle of a population*
- *modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline*
- *result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat*
- *introduce disease that may cause the species to decline, or*

- *interfere with the recovery of the species.*

As the Lord Howe Placostylus (*Placostylus bivaricosus*) and the Lord Howe Woodhen (*Hypotaenidia sylvestris*) both occur in the study area and are both listed as endangered, any reductions or fragmentations of habitat would trigger the requirement for the preparation of a referral under the EPBC Act.

Of particular note to the Program are:

- *result in invasive species that are harmful to a critically endangered or endangered species becoming established in the endangered or critically endangered species' habitat; and*
- *introduce disease that may cause the species to decline.*

As the Program would involve changes to a shipping location, which would bring in cargoes from overseas, there is an ongoing and permanent risk that such imports could introduce invasive species or disease that would threaten the existence of the endangered fauna.

5.4.1.2. World Heritage Properties

As Lord Howe Island is a World Heritage Property the following significant impact criteria also apply.

An action is likely to have a significant impact on the World Heritage values of a declared World Heritage property if there is a real chance or possibility that it will cause:

- one or more of the World Heritage values to be lost
- one or more of the World Heritage values to be degraded or damaged, or
- one or more of the World Heritage values to be notably altered, modified, obscured or diminished.

5.4.1.3. National Heritage Places

As Lord Howe Island is a World Heritage Property the following significant impact criteria also apply.

An action is likely to have a significant impact on the World Heritage values of a declared World Heritage property if there is a real chance or possibility that it will cause:

- one or more of the World Heritage values to be lost
- one or more of the World Heritage values to be degraded or damaged, or
- one or more of the World Heritage values to be notably altered, modified, obscured or diminished.

Therefore, impacts on the aforementioned endangered species, which are also part of the reasons for World Heritage Property and National Heritage Place listing as endemic species, could be construed as requiring a referral.

5.4.2. BC Act Requirements

As outlined in **Section 2.2.2**, the BC Act requires consideration of whether a development or an activity is likely to significantly affect threatened species and/or communities. Under the BC Act, CSSI automatically triggers

entry into the BOS and requires the preparation of a BDAR in accordance with the BAM to support an Environmental Impact Statement (EIS). However, the BOS does not apply to biodiversity that is endemic to Lord Howe Island. Therefore it is assumed that the type of biodiversity impact assessment required for the Program will be specifically tailored to the site in the SEARs. Where required, additional consultation with the DCCEEW (NSW) will be undertaken to confirm the assessment requirements.

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- DCCEEW. 2024z. *Gallinago hardwickii* — Latham's Snipe, Japanese Snipe. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024aa. *Glareola maldivarum* — Oriental Pratincole. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ab. *Hirundapus caudacutus* - White-throated Needletail. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ac. *Hydroprogne caspia* — Caspian Tern. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.

- DCCEEW. 2024ad. *Hypotaenidia sylvestris* - Lord Howe Woodhen. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ae. *Limosa lapponica* - Bar-tailed Godwit. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024af. *Limosa limosa* - Black-tailed Godwit. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ag. *Macronectes giganteus* - Southern Giant-Petrel, Southern Giant Petrel. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ah. *Macronectes halli* - Northern Giant Petrel. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ai. *Motacilla flava* - Yellow Wagtail. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024aj. *Mystivagor mastersi* - Masters' Charopid Land Snail. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ak. *Numenius madagascariensis* - Eastern Curlew, Far Eastern Curlew. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024al. *Numenius minutus* - Little Curlew, Little Whimbrel. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024am. *Numenius phaeopus* - Whimbrel. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024an. *Oligosoma lichenigerum* — Lord Howe Island Skink. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ao. *Onychoprion fuscatus* - Sooty Tern. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ap. *Placostylus bivaricosus* - Lord Howe Flax Snail, Lord Howe Placostylus. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024aq. *Pluvialis fulva* - Pacific Golden Plover. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ar. *Pluvialis squatarola* - Grey Plover. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024as. *Pseudocharopa ledgirdi* - Mount Lidgbird Charopid Land Snail. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024at. *Pseudocharopa whiteleggei* - Whitelegge's Land Snail. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024au. *Pterodroma heraldica* - Herald Petrel. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024av. *Pterodroma neglecta* - Kermadec Petrel. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024aw. *Rostratula australis* - Australian Painted Snipe. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ax. *Sterna hirundo* - Common Tern. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ay. *Sternula albifrons* - Little Tern. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024az. *Sula dactylatra* - Masked Booby. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024ba. *Thalassarche bulleri* - Buller's Albatross, Pacific Albatross. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bb. *Thalassarche bulleri platei* - Northern Buller's Albatross, Pacific Albatross. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bc. *Thalassarche carteri* - Indian Yellow-nosed Albatross. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bd. *Thalassarche impavida* - Campbell Albatross, Campbell Black-browed Albatross. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024be. *Thalassarche melanophris* - Black-browed Albatross. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bf. *Thalassarche salvini* - Salvin's Albatross. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bg. *Thalassarche steadi* - White-capped Albatross. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.

- DCCEEW. 2024bh. *Tringa brevipes* - Grey-tailed Tattler. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bi. *Tringa glareola* - Wood Sandpiper. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bj. *Tringa incana* - Wandering Tattler. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bk. *Tringa nebularia* - Common Greenshank, Greenshank. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bl. *Tringa stagnatilis* - Marsh Sandpiper, Little Greenshank. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bm. *Tyto novaehollandiae castanops* (Tasmanian population) — Masked Owl (Tasmanian). Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
- DCCEEW. 2024bn. *Xenus cinereus* - Terek Sandpiper. Species Profile and Threats Database. Commonwealth Department of Climate Change, Energy, the Environment and Water, Canberra.
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- EHG. 2017b. Gould's Petrel - TBDC Profile.
- EHG. 2018a. Masked Booby - TBDC Profile.
- EHG. 2018b. Providence Petrel - TBDC Profile.
- EHG. 2018c. White Tern - TBDC Profile.
- EHG. 2019a. Golden Whistler (Lord Howe Is. subsp.) - TBDC Profile.
- EHG. 2019b. Lord Howe Island Skink - TBDC Profile.
- EHG. 2019c. Lord Howe Island Southern Gecko - TBDC Profile.
- EHG. 2019d. Lord Howe Woodhen - TBDC Profile.
- EHG. 2019e. Magnificent Helicarionid Land Snail - TBDC Profile.
- EHG. 2019f. Masters Charopid Land Snail - TBDC Profile.
- EHG. 2019g. Mount Lidgbird Charopid Land Snail - TBDC Profile.
- EHG. 2019h. Pied Currawong (Lord Howe Is. subsp.) - TBDC Profile.
- EHG. 2019i. Silveryeye (Lord Howe Is. subsp.) - TBDC Profile.
- EHG. 2019j. Whitelegge's Land Snail - TBDC Profile.
- EHG. 2020. Lord Howe Placostylus - TBDC Profile.
- EHG. 2021. Pied Oystercatcher - TBDC Profile.
- EHG. 2022a. Kermadec Petrel (west Pacific subspecies) - TBDC Profile.
- EHG. 2022b. Little Shearwater - TBDC Profile.
- EHG. 2023. Sooty Oystercatcher - TBDC Profile.
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- EHG. 2024b. Hutton's Geniostoma - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024c. *Hypolepis elegans* - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024d. Knicker Nut - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024e. Little Mountain Palm - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024f. Lord Howe Island Broom - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024g. Lord Howe Island Morning Glory - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024h. Mountain Xylosma - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024i. Philip Island Wheat Grass - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024j. Rock Shield Fern - TBDC Profile. NSW Environment and Heritage Group.
- EHG. 2024k. Sand Spurge - TBDC Profile. NSW Environment and Heritage Group.
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APPENDIX A :

Protected Matters Search Tool Results



Australian Government

Department of Climate Change, Energy,
the Environment and Water

EPBC Act Protected Matters Report

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

Report created: 28-Aug-2024

[Summary](#)

[Details](#)

[Matters of NES](#)

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

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

Summary

Matters of National Environment Significance

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

| | |
|---|------|
| World Heritage Properties: | 1 |
| National Heritage Places: | 1 |
| Wetlands of International Importance (Ramsar) | None |
| Great Barrier Reef Marine Park: | None |
| Commonwealth Marine Area: | None |
| Listed Threatened Ecological Communities: | None |
| Listed Threatened Species: | 57 |
| Listed Migratory Species: | 46 |

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: | None |
| Commonwealth Heritage Places: | None |
| Listed Marine Species: | 47 |
| Whales and Other Cetaceans: | 29 |
| 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: | 2 |
| Regional Forest Agreements: | None |
| Nationally Important Wetlands: | None |
| EPBC Act Referrals: | 9 |
| Key Ecological Features (Marine): | None |
| Biologically Important Areas: | 22 |
| Bioregional Assessments: | None |
| Geological and Bioregional Assessments: | None |

Details

Matters of National Environmental Significance

World Heritage Properties [\[Resource Information \]](#)

| Name | State | Legal Status | Buffer Status |
|--|-------|-------------------|-----------------|
| Lord Howe Island Group | NSW | Declared property | In feature area |

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

| Name | State | Legal Status | Buffer Status |
|--|-------|--------------|-----------------|
| Natural | | | |
| Lord Howe Island Group | NSW | Listed place | In feature area |

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

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|-----------------|
| BIRD | | | |
| Ardenna grisea Sooty Shearwater [82651] | Vulnerable | Species or species habitat may occur within area | In feature area |
| Calidris acuminata Sharp-tailed Sandpiper [874] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris canutus Red Knot, Knot [855] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| 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 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 |
| Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438] | Vulnerable | Breeding known to occur within area | In feature area |
| Hypotaenidia sylvestris Lord Howe Woodhen [87732] | Endangered | Breeding likely 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 |
| 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 heraldica Herald Petrel [66973] | Critically Endangered | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|-----------------|
| 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 |
| Strepera graculina crissalis Lord Howe Island Currawong, Pied Currawong (Lord Howe Island) [25994] | Vulnerable | Species or species habitat known 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 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 | Species or species habitat may occur within area | In feature area |
| Tringa nebularia Common Greenshank, Greenshank [832] | Endangered | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|------------------------|--|---------------------|
| FISH | | | |
| Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Hoplostethus atlanticus Orange Roughy, Deep-sea Perch, Red Roughy [68455] | Conservation Dependent | Species or species habitat likely to occur within area | In feature area |
| INSECT | | | |
| Cormodes darwini a beetle [92235] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Promethis sterrha a beetle [92260] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| MAMMAL | | | |
| Balaenoptera borealis Sei Whale [34] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera physalus Fin Whale [37] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Eubalaena australis Southern Right Whale [40] | Endangered | Species or species habitat may occur within area | In feature area |
| OTHER | | | |
| Pericryptodrilus nanus Lord Howe Earthworm [84736] | Critically Endangered | Species or species habitat known to occur within area | In buffer area only |
| PLANT | | | |
| Anthosachne kingiana subsp. kingiana Phillip Island Wheat Grass [87946] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Calystegia affinis [48909] | Critically Endangered | Species or species habitat known to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|-----------------------|--|---------------------|
| Geniostoma huttonii [56368] | Endangered | Species or species habitat known to occur within area | In buffer area only |
| Lepidorrhachis mooreana Little Mountain Palm, Moorei Palm [6388] | Critically Endangered | Species or species habitat known to occur within area | In buffer area only |
| Polystichum moorei Rock Shield Fern [40755] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Xylosma parvifolia [48040] | Endangered | Species or species habitat known to occur within area | In buffer area only |
| REPTILE | | | |
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Christinus guentheri Lord Howe Island Gecko, Lord Howe Island Southern Gecko [59250] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Oligosoma lichenigerum Lord Howe Island Skink [91467] | Vulnerable | Species or species habitat known to occur within area | In feature area |

SHARK

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|------------------------|--|-----------------|
| Carcharodon carcharias White Shark, Great White Shark [64470] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Galeorhinus galeus School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453] | Conservation Dependent | Species or species habitat may occur within area | In feature area |
| Sphyrna lewini Scalloped Hammerhead [85267] | Conservation Dependent | Species or species habitat likely to occur within area | In feature area |

SNAIL

| | | | |
|--|-----------------------|--|-----------------|
| Gudeoconcha sophiae magnifica Magnificent Helicarionid Land Snail [82864] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |
| Mystivagor mastersi Masters' Charopid Land Snail [81247] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Placostylus bivaricosus Lord Howe Flax Snail, Lord Howe Placostylus [66769] | Endangered | Species or species habitat known to occur within area | In feature area |
| Pseudocharopa ledgbirdi Mount Lidgbird Charopid Land Snail [85279] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |
| Pseudocharopa whiteleggei Whitelegge's Land Snail [81249] | Critically Endangered | Species or species habitat likely to occur within area | In feature area |

Listed Migratory Species

[[Resource Information](#)]

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|-----------------|
| Migratory Marine Birds | | | |
| Anous stolidus Common Noddy [825] | | Breeding known to occur within area | In feature area |
| Ardena carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] | | Breeding known to occur within area | In feature area |
| Ardena grisea Sooty Shearwater [82651] | Vulnerable | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|-----------------|
| Ardenna pacifica Wedge-tailed Shearwater [84292] | | Breeding known to occur within area | In feature area |
| Diomedea antipodensis Antipodean Albatross [64458] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In 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 |
| Fregata ariel Lesser Frigatebird, Least Frigatebird [1012] | | Species or species habitat likely to occur within area | In feature area |
| Fregata minor Great Frigatebird, Greater Frigatebird [1013] | | 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 |
| Phaethon lepturus White-tailed Tropicbird [1014] | | Species or species habitat known to occur within area | In feature area |
| Phaethon rubricauda Red-tailed Tropicbird [994] | | Breeding known to occur within area | In feature area |
| Sula dactylatra Masked Booby [1021] | | Breeding known to 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 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 | Species or species habitat may occur within area | In feature area |
| Migratory Marine Species | | | |
| Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812] | | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera borealis Sei Whale [34] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera edeni Bryde's Whale [35] | | Species or species habitat may occur within area | In feature area |
| Balaenoptera physalus Fin Whale [37] | Vulnerable | Species or species habitat 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 |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|---------------------|
| Carcharodon carcharias White Shark, Great White Shark [64470] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Eubalaena australis as Balaena glacialis australis Southern Right Whale [40] | Endangered | Species or species habitat may occur within area | In feature area |
| Lamna nasus Porbeagle, Mackerel Shark [83288] | | Species or species habitat may occur within area | In feature area |
| Megaptera novaeangliae Humpback Whale [38] | | Species or species habitat may occur within area | In feature area |
| Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033] | | Species or species habitat likely to occur within area | In buffer area only |
| Mobula birostris as Manta birostris Giant Manta Ray [90034] | | Species or species habitat likely to occur within area | In feature area |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Species or species habitat likely to occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|---|-----------------|
| Physeter macrocephalus Sperm Whale [59] | | Species or species habitat may occur within area | In feature area |
| Migratory Wetlands Species | | | |
| Actitis hypoleucos Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area |
| Calidris acuminata Sharp-tailed Sandpiper [874] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris canutus Red Knot, Knot [855] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Calidris melanotos Pectoral Sandpiper [858] | | Species or species habitat known to occur within area | In feature area |
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| 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 |
| Tringa nebularia Common Greenshank, Greenshank [832] | Endangered | Species or species habitat may occur within area | In feature area |

Other Matters Protected by the EPBC Act

| Listed Marine Species | | | [Resource Information] | |
|--|-----------------------|---|--------------------------|--|
| Scientific Name | Threatened Category | Presence Text | Buffer Status | |
| Bird | | | | |
| Actitis hypoleucos Common Sandpiper [59309] | | Species or species habitat known to occur within area | In feature area | |
| Anous albivitta as Procelsterna cerulea Grey Noddy, Grey Ternlet [91286] | | Breeding known to occur within area | In feature area | |
| Anous stolidus Common Noddy [825] | | Breeding known to occur within area | In feature area | |
| Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] | | Breeding known to occur within area | In feature area | |
| Ardenna grisea as Puffinus griseus Sooty Shearwater [82651] | Vulnerable | Species or species habitat may occur within area | In feature area | |
| Ardenna pacifica as Puffinus pacificus Wedge-tailed Shearwater [84292] | | Breeding known to occur within area | In feature area | |
| Calidris acuminata Sharp-tailed Sandpiper [874] | Vulnerable | Species or species habitat known to occur within area | In feature area | |
| Calidris canutus Red Knot, Knot [855] | Vulnerable | Species or species habitat known to occur within area overfly marine area | In feature area | |
| Calidris ferruginea Curlew Sandpiper [856] | Critically Endangered | Species or species habitat known to occur within area overfly marine area | In feature area | |
| Calidris melanotos Pectoral Sandpiper [858] | | Species or species habitat known to occur within area overfly marine area | In feature area | |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|---|---------------------|--|-----------------|
| Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877] | Vulnerable | Species or species habitat known to occur within area | In feature area |
| Diomedea antipodensis Antipodean Albatross [64458] | Vulnerable | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| 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 |
| Fregata ariel Lesser Frigatebird, Least Frigatebird [1012] | | Species or species habitat likely to occur within area | In feature area |
| Fregata minor Great Frigatebird, Greater Frigatebird [1013] | | Species or species habitat known to occur within area | In feature area |
| Limosa lapponica Bar-tailed Godwit [844] | | Species or species habitat known to occur within area | In feature area |
| 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 |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|-----------------------|--|-----------------|
| Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat known to occur within area | In feature area |
| Pachyptila turtur Fairy Prion [1066] | | Species or species habitat known to occur within area | In feature area |
| Phaethon lepturus White-tailed Tropicbird [1014] | | Species or species habitat known to occur within area | In feature area |
| Phaethon rubricauda Red-tailed Tropicbird [994] | | Breeding known to occur within area | In feature area |
| Pterodroma cervicalis White-necked Petrel [59642] | | Breeding likely to occur within area | In feature area |
| Pterodroma nigripennis Black-winged Petrel [1038] | | Breeding known to occur within area | In feature area |
| Pterodroma solandri Providence Petrel [1040] | | Breeding known to occur within area | In feature area |
| Puffinus assimilis Little Shearwater [59363] | | Breeding known to occur within area | In feature area |
| Sterna striata White-fronted Tern [799] | | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| Sula dactylatra Masked Booby [1021] | | Breeding known 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 as Thalassarche sp. nov. Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable | Species or species habitat may occur within area | In feature area |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|-----------------|
| Thalassarche carteri Indian Yellow-nosed Albatross [64464] | Vulnerable | Species or species habitat likely to occur within area | In 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 | Species or species habitat may occur within area | In feature area |
| Tringa nebularia Common Greenshank, Greenshank [832] | Endangered | Species or species habitat may occur within area overfly marine area | In feature area |
| Fish | | | |
| Cosmocampus howensis Lord Howe Pipefish [66208] | | Species or species habitat may occur within area | In feature area |
| Halicampus boothae Booth's Pipefish [66218] | | Species or species habitat may occur within area | In feature area |
| Hippocampus kelloggi Kellogg's Seahorse, Great Seahorse [66723] | | Species or species habitat may occur within area | In feature area |
| Solegnathus dunckeri Duncker's Pipehorse [66271] | | Species or species habitat may occur within area | In feature area |
| Reptile | | | |

| Scientific Name | Threatened Category | Presence Text | Buffer Status |
|--|---------------------|--|-----------------|
| Caretta caretta Loggerhead Turtle [1763] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Chelonia mydas Green Turtle [1765] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat likely to occur within area | In feature area |
| Eretmochelys imbricata Hawksbill Turtle [1766] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Natator depressus Flatback Turtle [59257] | Vulnerable | Species or species habitat likely 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 |
| Balaenoptera bonaerensis Antarctic Minke Whale, Dark-shoulder Minke Whale [67812] | | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera borealis Sei Whale [34] | Vulnerable | Species or species habitat likely to occur within area | In feature area |
| Balaenoptera edeni Bryde's Whale [35] | | Species or species habitat may occur within area | In feature area |
| Balaenoptera physalus Fin Whale [37] | Vulnerable | Species or species habitat likely to occur within area | In feature area |

| Current Scientific Name | Status | Type of Presence | Buffer Status |
|--|------------|--|-----------------|
| 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 may occur within area | In feature area |
| Feresa attenuata Pygmy Killer Whale [61] | | Species or species habitat may occur within area | In feature area |
| Globicephala macrorhynchus Short-finned Pilot Whale [62] | | Species or species habitat may occur within area | In feature area |
| Globicephala melas Long-finned Pilot Whale [59282] | | Species or species habitat may occur within area | In feature area |
| Grampus griseus Risso's Dolphin, Grampus [64] | | Species or species habitat may occur within area | In feature area |
| Kogia breviceps Pygmy Sperm Whale [57] | | Species or species habitat may occur within area | In feature area |
| Kogia sima Dwarf Sperm Whale [85043] | | Species or species habitat may occur within area | In feature area |
| Lissodelphis peronii Southern Right Whale Dolphin [44] | | Species or species habitat may occur within area | In feature area |
| Megaptera novaeangliae Humpback Whale [38] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon bowdoini Andrew's Beaked Whale [73] | | Species or species habitat may occur within area | In feature area |

| Current Scientific Name | Status | Type of Presence | Buffer Status |
|---|--------|--|-----------------|
| Mesoplodon densirostris Blainville's Beaked Whale, Dense-beaked Whale [74] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon grayi Gray's Beaked Whale, Scamperdown Whale [75] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon layardii Strap-toothed Beaked Whale, Strap-toothed Whale, Layard's Beaked Whale [25556] | | Species or species habitat may occur within area | In feature area |
| Mesoplodon mirus True's Beaked Whale [54] | | Species or species habitat may occur within area | In feature area |
| Peponocephala electra Melon-headed Whale [47] | | Species or species habitat may occur within area | In feature area |
| Physeter macrocephalus Sperm Whale [59] | | Species or species habitat may occur within area | In feature area |
| Pseudorca crassidens False Killer Whale [48] | | Species or species habitat likely to occur within area | In feature area |
| Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51] | | Species or species habitat may occur within area | In feature area |
| Stenella coeruleoalba Striped Dolphin, Euphrosyne Dolphin [52] | | Species or species habitat may occur within area | In feature area |
| Stenella longirostris Long-snouted Spinner Dolphin [29] | | Species or species habitat may occur within area | In feature area |
| Steno bredanensis Rough-toothed Dolphin [30] | | Species or species habitat may occur within area | In feature area |

| Current Scientific Name | Status | Type of Presence | Buffer Status |
|---|--------|--|-----------------|
| Tursiops truncatus s. str. Bottlenose Dolphin [68417] | | Species or species habitat may occur within area | In feature area |
| Ziphius cavirostris Cuvier's Beaked Whale, Goose-beaked Whale [56] | | 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 |
|---------------------|-------------------------|-------|-----------------|
| Lord Howe Island | Permanent Park Preserve | NSW | In feature area |
| Lord Howe Island | Marine Park | NSW | In feature area |

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

| Title of referral | Reference | Referral Outcome | Assessment Status | Buffer Status |
|---|-----------|-----------------------------|-------------------|-----------------|
| Action clearly unacceptable | | | | |
| Lord Howe Island Renewable Energy Project - Stage 2 Wind Turbines | 2016/7790 | Action Clearly Unacceptable | Completed | In feature area |

Controlled action

| | | | | |
|--|-----------|-------------------|---------------|-----------------|
| Lord Howe Island Rodent Eradication Project, NSW | 2016/7703 | Controlled Action | Post-Approval | In feature area |
|--|-----------|-------------------|---------------|-----------------|

Not controlled action

| | | | | |
|---|-----------|-----------------------|-----------|---------------------|
| Air Traffic Control Infrastructure Facility | 2007/3872 | Not Controlled Action | Completed | In buffer area only |
| Lord Howe Island Solar Photovoltaic Project | 2015/7544 | Not Controlled Action | Completed | In feature area |
| Pilot study - Short term captive holding of 22 LHI Woodhen & 10 LHI Currawong, Lord Howe Island | 2013/6847 | Not Controlled Action | Completed | In buffer area only |
| Seismic Station | 2007/3301 | Not Controlled Action | Completed | In buffer area only |

Not controlled action (particular manner)

| | | | | |
|---|-----------|---|---------------|-----------------|
| Lowering Blinky Beach Sand Dune to Comply with CASA Regulations for Runway 28, Lord Howe Island | 2012/6599 | Not Controlled Action (Particular Manner) | Post-Approval | In feature area |
| Survey and Sampling of Lord Howe Island Reef | 2008/3986 | Not Controlled Action (Particular | Post-Approval | In feature area |

| Title of referral | Reference | Referral Outcome | Assessment Status | Buffer Status |
|---|-----------|------------------|-------------------|---------------|
| Not controlled action (particular manner) | | | | |
| Manner) | | | | |

Referral decision

| | | | | |
|---|-----------|-------------------|-----------|-----------------|
| Hybrid Renewable Energy (Solar & Wind Turbine), Lord Howe Island, NSW | 2014/7231 | Referral Decision | Completed | In feature area |
|---|-----------|-------------------|-----------|-----------------|

Biologically Important Areas

[[Resource Information](#)]

| Scientific Name | Behaviour | Presence | Buffer Status |
|--|-----------|-----------------|-----------------|
| Seabirds | | | |
| Anous minutus Black Noddy [824] | Breeding | Known to occur | In feature area |
| Anous stolidus Common Noddy [825] | Breeding | Known to occur | In feature area |
| Anous stolidus Common Noddy [825] | Foraging | Likely to occur | In feature area |
| Ardena carneipes Flesh-footed Shearwater [82404] | Breeding | Known to occur | In feature area |
| Ardena pacifica Wedge-tailed Shearwater [84292] | Breeding | Known to occur | In feature area |
| Ardena tenuirostris Short-tailed Shearwater [82652] | Foraging | Likely to occur | In feature area |
| Fregetta grallaria grallaria White-bellied Storm Petrel [64438] | Breeding | Known to occur | In feature area |
| Fregetta grallaria grallaria White-bellied Storm Petrel [64438] | Foraging | Likely to occur | In feature area |
| Gygis alba White Tern [807] | Breeding | Known to occur | In feature area |
| Gygis alba White Tern [807] | Foraging | Likely to occur | In feature area |
| Onychoprion fuscata Sooty Tern [82847] | Breeding | Known to occur | In feature area |
| Onychoprion fuscata Sooty Tern [82847] | Foraging | Likely to occur | In feature area |

| Scientific Name | Behaviour | Presence | Buffer Status |
|---|-----------|-----------------|-----------------|
| Phaethon rubricauda Red-tailed Tropicbird [994] | Breeding | Known to occur | In feature area |
| Procelsterna cerulea Grey Ternlet [64378] | Breeding | Known to occur | In feature area |
| Pterodroma macroptera Great-winged Petrel [1035] | Foraging | Likely to occur | In feature area |
| Pterodroma neglecta neglecta Kermadec Petrel [64450] | Foraging | Likely to occur | In feature area |
| Pterodroma nigripennis Black-winged Petrel [1038] | Breeding | Known to occur | In feature area |
| Pterodroma nigripennis Black-winged Petrel [1038] | Foraging | Likely to occur | In feature area |
| Pterodroma solandri Providence Petrel [1040] | Breeding | Known to occur | In feature area |
| Puffinus assimilis Little Shearwater [59363] | Breeding | Known to occur | In feature area |
| Sula dactylatra Masked Booby [1021] | Breeding | Known to occur | In feature area |
| Whales | | | |
| Megaptera novaeangliae Humpback Whale [38] | Migration | 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 B :

Flora Likelihood of Occurrence

Table 7 Flora likelihood of occurrence assessment

| Scientific Name | Common Name | Conservation Status ¹ | | Database Records | | Summary of Previous Records | Habitat Requirements and Previous Records | Likelihood of Occurrence |
|---------------------------|--------------------------------|----------------------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Caesalpinia bonduc</i> | Knicker Nut | E | - | X | - | The NSW BioNet Atlas holds five records of the species within the locality, all of which are in the northern portion of the island. | The species is only found in the northern part of Lord Howe Island, in the vicinity of Ned's Beach and near Old Settlement Beach. This species grows on sandy, coral-derived soil close to the shoreline, in coastal scrub vegetation, in full sun or light shade (EHG 2024d). | Low likelihood of occurrence. The study area is not within the known distribution of the species on Lord Howe Island with all previous records within the northern part of the island. Furthermore, targeted threatened species surveys were undertaken within areas of potential habitat and the species was not detected. |
| <i>Calystegia affinis</i> | Lord Howe Island Morning Glory | CE | CE | X | X | The NSW BioNet Atlas holds seven records of the species within the locality, with five records in the northern portion of the island and two records on Mt Lidgbird in the south. | On Lord Howe Island the species occurs in two different habitats, in lowland areas of Dawsons Ridge in the northern part of the island and high in the southern mountains on Mt Lidgbird. Both habitats are on basalt- | Low likelihood of occurrence. The study area is not within the known distribution of the species on Lord Howe Island. Furthermore, targeted threatened species surveys were undertaken within the study area and the species was not detected. |

| Scientific Name | Common Name | Conservation Status ¹ | | Database Records | | Summary of Previous Records | Habitat Requirements and Previous Records | Likelihood of Occurrence |
|-------------------------------|------------------------|----------------------------------|-----------------|------------------|------|---|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Carmichaelia exsul</i> | Lord Howe Island Broom | CE | - | X | - | The NSW BioNet Atlas holds 19 records of the species within the locality, with all records located on Mt Lidgbird and Mt Gower within the Permanent Park Reserve. | derived soils (EHG 2024g). The species occurs between 300 - 500 m altitude. It is often found at the base of cliffs and grows in Mountain Rose - Fitzgeraldii forest, Mountain Palm forest and mixed fern and herb vegetation (EHG 2024f). | Low likelihood of occurrence. The study area is located at elevations well below 100m and outside of the range which the species occurs. Furthermore, the study area does not comprise vegetation communities associated with the species. Targeted surveys within the study area did not detect the species. |
| <i>Chamaesyce psammogeton</i> | Sand Spurge | E | - | X | - | The NSW BioNet Atlas holds 72 records of the species within the locality, with all records located on coastal dunes along Blinky Beach. | Grows on fore-dunes, pebbly strandlines and exposed headlands, often with Spinifex (<i>Spinifex sericeus</i>) and Prickly Couch (<i>Zoysia macrantha</i>) (EHG 2024k). | Moderate likelihood of occurrence. The species was not recorded during targeted surveys within the study area. However potential habitat is present within the vegetation community Coastal Spinifex – Dune Bean – Club Rush – Melanthera biflora – Saltwater Couch beach strandline grassland. Previous records of |

| Scientific Name | Common Name | Conservation Status ¹ | | Database Records | | Summary of Previous Records | Habitat Requirements and Previous Records | Likelihood of Occurrence |
|----------------------------|---------------------------|----------------------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Coprosma inopinata</i> | Small-leaved Currant Bush | E | - | X | - | The NSW BioNet Atlas holds seven records of the species within the locality, all located at high elevations on Mt Lidgbird and Mt Gower within the Permanent Park Reserve. | The species is only found in the southern mountains of Lord Howe Island. It is restricted to the narrow, exposed south-westerly or south-easterly ridges of Mount Lidgbird and Mount Gower, and nearby more sheltered pockets (EHG 2024). | the species have recorded within the same vegetation community at Blinky Beach to the east of the study area. Low likelihood of occurrence. The study area is not within the known distribution of the species on Lord Howe Island with all previous records within the southern mountains. The study area does not comprise suitable habitat for the species. Furthermore, targeted threatened species surveys were undertaken within the study area and the species was not detected. |
| <i>Geniostoma huttonii</i> | Hutton's Geniostoma | E | E | X | X | The NSW BioNet Atlas holds 37 records of the species within the locality, all located at high elevations on Mt Lidgbird and Mt Gower within the | This species only occurs on Lord Howe Island where it is mainly found on remote ridges of Mount Gower and Mount Lidgbird in the southern mountains. The | Low likelihood of occurrence. The study area is not within the known distribution of the species on Lord Howe Island with all previous records within the southern mountains. The study area does not comprise suitable |

| Scientific Name | Common Name | Conservation Status ¹ | | Database Records | | Summary of Previous Records | Habitat Requirements and Previous Records | Likelihood of Occurrence |
|--------------------------|-------------|----------------------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | Permanent Reserve. | Park species occurs in rainforest, Curly Palm forest and scrub on the south and east-facing shaded cliffs in amongst open, stunted shrubs, or in shade. Dominant species within the habitat include Blue Plum (<i>Chionanthus quadristamineus</i>), Mountain Rose (<i>Metrosideros nervulosa</i>) and Fitzgeraldii (<i>Dracophyllum fitzgeraldii</i>) (EHG 2024b). | habitat for the species. Furthermore, targeted threatened species surveys were undertaken within the study area and the species was not detected. |
| <i>Hypolepis elegans</i> | - | EX | - | X | - | The NSW BioNet Atlas holds five records of the species within the locality, all located at high elevations on Mt Lidgbird and Mt Gower within the | <i>Hypolepis elegans</i> occurs in open spaces on forest margins (EHG 2024c). | Low likelihood of occurrence. The study area is not within the known distribution of the species on Lord Howe Island with all previous records within the southern mountains. Furthermore, targeted threatened species surveys were |

| Scientific Name | Common Name | Conservation Status ¹ | | Database Records | | Summary of Previous Records | Habitat Requirements and Previous Records | Likelihood of Occurrence |
|--------------------------------|----------------------|----------------------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | Permanent Reserve. | Park | undertaken within the study area and the species was not detected. |
| <i>Lepidorrhachis mooreana</i> | Little Mountain Palm | CE | CE | X | X | The NSW BioNet Atlas holds 21 records of the species within the locality, all located at high elevations on Mt Lidgbird and Mt Gower within the Permanent Park Reserve. | The species is restricted to the cloud forest vegetation at the summits of Mt Gower and Mt Lidgbird above an elevation of approximately 740 m (EHG 2024e). | Low likelihood of occurrence. The study area is located at elevations well below 100m and outside of the range which the species occurs. Furthermore, the study area does not comprise vegetation communities associated with the species. Targeted surveys within the study area did not detect the species. |
| <i>Polystichum moorei</i> | Rock Shield Fern | E | E | X | X | The NSW BioNet Atlas holds six records of the species within the locality, all located on Mt Gower and Mt Lidgbird within the Permanent Park Reserve. | Rock Shield Fern is only found in the southern part of Lord Howe Island, mostly in the mountains, with one population close to the beach. Rock Shield Fern grows on rocks in overhanging caves on basalt cliffs and on coral-derived | Low likelihood of occurrence. The study area does not contain suitable habitat in the form of rocks and caves on basalt cliffs. Furthermore, targeted surveys within the study area did not detect the species. |

| Scientific Name | Common Name | Conservation Status ¹ | | Database Records | | Summary of Previous Records | Habitat Requirements and Previous Records | Likelihood of Occurrence |
|--|---------------------------|----------------------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | sedimentary rock (EHG 2024j). | |
| <i>Xylosma parvifolia</i> | Mountain Xylosma | E | E | X | X | The NSW BioNet Atlas holds six records of the species within the locality, with all records located on Mt Gower and Mt Lidgbird within the Permanent Park Reserve. | This plant is only found on exposed, remote parts of the southern mountains of Lord Howe Island. It grows mostly amongst dense, stunted vegetation on cliffs and ridges, and in low numbers in Cloud Forest on Mt Lidgbird and Mt Gower. The species habitat is very steep and exposed (EHG 2024h). | Low likelihood of occurrence. The study area is not within the known distribution of the species on Lord Howe Island with all previous records on Mt Lidgbird and Mt Gower. The study area does not comprise suitable steep and exposed habitats favoured by the species. Furthermore, targeted threatened species surveys were undertaken within the study area and the species was not detected. |
| <i>Anthosachne kingiana</i> subsp. <i>kingiana</i> | Philip Island Wheat Grass | CE | CE | - | X | No records held within the NSW BioNet Atlas however the NSW Threatened Biodiversity Data Collection states that there is an estimated population size of less | On Lord Howe Island the species occurs at the intergrade between exposed basalt-derived rocky cliffs and a shrub zone that merges into littoral rainforest. The species occurs in association with several | Low likelihood of occurrence. Targeted searches were undertaken within the study area and the species was not detected. Suitable habitat is present within Community 8 in the Study area. Previous records of the species are described as being located in the north of the |

| Scientific Name | Common Name | Conservation Status ¹ | | Database Records | | Summary of Previous Records | Habitat Requirements and Previous Records | Likelihood of Occurrence |
|-----------------|-------------|----------------------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>than 400 plants in the north of the island.</p> <p>grasses and herbs including <i>Dichelachne crinita</i> (Longhair Plumegrass), <i>Poa poiformis</i>, <i>Senecio howeanus</i>, <i>Sporobolus virginicus</i> (Sand Couch) and <i>Tetragonia tetragonioides</i> (New Zealand Spinach) along with several shrub species, including <i>Cassinia tenuifolia</i> (Bully Bush), <i>Dodonaea viscosa</i> (Hopwood), <i>Leucopogon parviflorus</i>, <i>Melaleuca howeana</i> (Tea Tree) and <i>Melanthera biflora</i> (EHG 2024i).</p> | | <p>island; however the NSW BioNet atlas holds no records of the species within the locality.</p> |

APPENDIX C :

Fauna Likelihood of Occurrence

Table 8 Fauna likelihood of occurrence assessment

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---------------------------|------------------|---------------------|-----------------|------------------|------|--|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Actitis hypoleucos</i> | Common Sandpiper | - | M | X | X | <p>The NSW BioNet Atlas holds six records of the species within the locality, none of which are located within the study area. The nearest record is located to the northern side of the airport adjacent to Blinky Beach</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>This species utilises a wide range of coastal wetlands and some inland wetlands, with varying levels of salinity, and is mostly found around muddy margins or rocky shores and rarely on mudflats. The species feeds for extensive periods in grasslands consuming terrestrial prey, though riverine areas are also utilised. The species eats molluscs such as bivalves, crustaceans such as amphipods and crabs and a variety of insects. Roost sites are typically on rocks or in roots or branches of vegetation, especially mangroves. The species does not breed in Australia (DCCEEW 2024a).</p> | <p>Moderate likelihood of occurrence. The species may utilise the study area for foraging however it does not provide suitable roosting habitat. The low number of records suggests the species is a rare visitor to Lord Howe Island.</p> |
| <i>Anous stolidus</i> | Common Noddy | - | M | X | X | <p>The NSW BioNet Atlas holds 253</p> | <p>The species occurs on or near islands, on rocky islets and</p> | <p>High likelihood of occurrence. The</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------------|-------------------|---------------------|-----------------|------------------|------|--|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>records of the species within the locality. The majority of records are located from within the northern portion of the island with a few scattered records along the southern coastlines.</p> <p>The EPBC PMST identifies that the breeding is known to occur within the 5km locality.</p> | <p>stacks with precipitous cliffs, or on shoals or cays of coral or sand. The species feeds mainly on fish, although they are known to also take squid, pelagic molluscs, medusae, aquatic insects and even Pandanus fruit. During the non-breeding period, the species occurs in groups throughout the pelagic zone. The species is known to breed on Lord Howe Island with many nests built on cliff ledges (DCCEE 2024c).</p> | <p>species is likely to utilise the study area for foraging and roosting, however it does not provide preferred breeding habitat.</p> |
| <i>Apus pacificus</i> | Fork-tailed Swift | - | M | 1 | - | <p>The NSW BioNet Atlas holds one records of the species within the locality. The EPBC PMST does not identify</p> | <p>The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. The species mostly occurs over inland plains, open habitats, riparian</p> | <p>Low likelihood of occurrence. Although potential overfly habitat is available within the study area, the species is a rare</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|--------------------------|-------------------------|---------------------|-----------------|------------------|------|--|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | habitat within the 5km locality | woodland, tea-tree swamps, and occasionally above foothills or in coastal areas. They also occur over settled areas, including towns, urban areas and cities. The species forages aerially, often in updraughts, near cliffs. This species prefers foraging above dry and open habitats. The species is likely to roost aerially, but are occasionally observed to land. The species does not breed in Australia (DCCEEW 2024d). | visitor to Lord Howe Island and would not utilise the habitat within the study area. |
| <i>Ardenna carneipes</i> | Flesh-footed Shearwater | V | M | X | X | The NSW BioNet Atlas holds 1135 records of the species within the locality. The majority of records are located from within the northern portion of the island around Neds | The Flesh-footed Shearwater mainly occurs in the subtropics over continental shelves and slopes and occasionally inshore waters. Individuals also pass through the tropics and over deeper waters when on migration (DCCEEW 2024e). This is a marine species that nest on Lord Howe Island in forests | Moderate likelihood of occurrence. Breeding sites for the species on Lord Howe Island are known and are not located within the study area. However, the species is likely to utilise habitat within |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------------|------------------|---------------------|-----------------|------------------|------|--|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>Beach and Transit Hill and south to Intermediate Hill.</p> <p>The EPBC PMST identifies that the breeding is known to occur within the 5km locality.</p> | <p>on sandy soils from Ned's Beach to Clear Place, with smaller colonies below Transit Hill and at Old Settlement Beach (DCCEEW 2024e).</p> | <p>the study area on occasion although most likely just in transit aerially across the study area.</p> |
| <i>Ardenna grisea</i> | Sooty Shearwater | - | V, M | X | X | <p>The NSW BioNet Atlas holds two records of the species within the locality, both of which are located to the east of the study area.</p> <p>The EPBC PMST identifies that the species or species habitat is known to</p> | <p>The Sooty Shearwater forages in pelagic (open ocean) sub-tropical, sub-Antarctic and Antarctic waters. The species moves to the southern hemisphere during the breeding season. . The species often nests in very dense colonies in a diverse range of habitats, from forested coastal islands to open tussock grasslands and fellfield on subantarctic islands (DCCEEW 2024f).</p> | <p>Low likelihood of occurrence. Lord Howe Island is well surveyed and only two previous records occur within the locality. Furthermore, no known breeding colonies occur on the island. As the species is known to nest in dense colonies, the absence of records indicates species does not rely on the</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-------------------------|-------------------------|---------------------|-----------------|------------------|------|--|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | occur within the 5km locality. | | habitat available within the study area or wider locality. The species forages in open pelagic waters of which are not present within the study area. As such, the study area does not provide suitable foraging habitat for the species. |
| <i>Ardenna pacifica</i> | Wedge-tailed Shearwater | - | M | X | X | The NSW BioNet Atlas holds 218 records of the species within the locality. Previous records are predominantly within the northern portion of the island and as far south as Intermediate Hill. | The Wedge-tailed Shearwater is a pelagic, marine bird known from tropical and subtropical waters. The species tolerates a range of surface-temperatures and salinities, but is most abundant where temperatures are greater than 21 °C and salinity is greater than 34.6 ‰ (DCCEEW 2024g). The Wedge-tailed Shearwater breeds colonially and is rarely | High likelihood of occurrence. Breeding sites for the species on Lord Howe Island are known and are not located within the study area. No suitable roosting or foraging habitat is available within the study area, however the species is likely to |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------------------|-------------------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>seen alone during this period. The species breeds throughout its known range, mainly on vegetated islands, atolls and cays, but one colony is known on the Australian mainland. The species is known to breed on Lord Howe Island, specifically on Mutton Bird Island (DCCEEW 2024g).</p> | <p>transit aerially across the study area.</p> |
| <i>Ardenna tenuirostris</i> | Short-tailed Shearwater | - | M | X | - | <p>The NSW BioNet Atlas holds one record of the species within the locality along the coast to the east of Transit Hill.</p> <p>The EPBC PMST does not identify habitat for the species within the 5km locality.</p> | <p>This species breeds on Tasmanian offshore islands and off the coast of southern Australia, with the bulk of the population in the south-east. Breeding occurs mainly on coastal islands, typically in areas of grassland or other vegetation, but sometimes cliffs or bare ground. Its diet includes fish, crustaceans and squid. Feeding occurs in very large flocks and it regularly feeds in association with other</p> | <p>Low likelihood of occurrence. Lord Howe Island is well surveyed and only one previous record occurs within the locality. Furthermore, no known breeding colonies occur on the island. The species breeds and forages in dense flocks and the absence of records indicates</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---------------------------|-----------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | shearwaters, petrels, gannets and terns (Commonwealth of Australia 2020). | that the species does not rely on the habitat available within the study area or wider locality. As such, the study area is not considered to comprise breeding or foraging habitat for the species. |
| <i>Arenaria interpres</i> | Ruddy Turnstone | - | M | X | - | The NSW BioNet Atlas holds 423 records of the species within the locality, including three records within the study area. Previous records are located predominantly within the northern portion of the island along with a high number of | The species is mainly found on coastal regions with exposed rock coast lines or coral reefs. It also lives near platforms and shelves, often with shallow tidal pools and rocky, shingle or gravel beaches. The species forages between lower supralittoral and lower littoral zones of foreshores, from strand-line to wave-zone. The Ruddy Turnstone roosts on beaches, above the tideline, among rocks, shells, beach cast | High likelihood of occurrence. The species is unlikely to utilise the study area for roosting and the species does not breed in Australia. The species has the potential to utilise the foreshore areas within the study area for foraging, however only a small area of potential |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-------------------------------|----------------------|---------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>records at the Lord Howe Island Airport.</p> <p>The EPBC PMST does not identify habitat for the species within the 5km locality.</p> | <p>seaweed or other debris. The Ruddy Turnstone does not breed in Australia (DCCEEW 2024h).</p> | <p>habitat is available. Given the high number of records within the locality including more than 90 records at the Lord Howe Island Airport, the species is considered likely to occur on occasion within the study area.</p> |
| <i>Botaurus poiciloptilus</i> | Australasian Bittern | E | E | X | - | <p>The NSW BioNet Atlas holds one record of the species within the locality from 1987. This record is located to the north-east of the Lord Howe Island Airport.</p> <p>The EPBC PMST does not identify</p> | <p>The Australasian Bittern occurs mainly in freshwater wetlands and, rarely, in estuaries or tidal wetlands. It favours wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by</p> | <p>Low likelihood of occurrence. Lord Howe Island is well surveyed and only one previous record occurs within the locality. The species is typically found in association with freshwater wetlands which are not present within the study area. The small</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---------------------------|------------------------|---------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>habitat for the species within the 5km locality.</p> <p>sedges, rushes and reeds or cutting grass (<i>Gahnia</i>) growing over a muddy or peaty substrate (Threatened Species Scientific Community 2019).</p> <p>The species nests adjacent to relatively deep, densely vegetated freshwater swamps and pools, building its nests under dense cover over shallow water. The nest is a shallow structure of dry or green reeds, within a clump of reeds in water or a swamp and is built on a platform of bent-over reeds (Threatened Species Scientific Community 2019).</p> | <p>section of Cobbys Creek provides a potential tidal watercourse, however, does not contain dense vegetation for foraging or nesting. As such, the study area is not considered to comprise potential habitat for the species.</p> | |
| <i>Calidris acuminata</i> | Sharp-tailed Sandpiper | - | M | X | X | <p>The NSW BioNet Atlas holds 12 records of the species within the locality. The majority of records are located to the</p> | <p>This species prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. They forage at the edge of the water of wetlands or</p> | <p>Moderate likelihood of occurrence. The species has not been recorded within the study area, however has been recorded in surrounding areas.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-------------------------|-------------|---------------------|-----------------|------------------|------|--|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>east of the Lord Howe Island Airport, as well as sole records at North Beach, Old Settlement Beach and Transit Hill.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>intertidal mudflats, either on bare wet mud or sand, or in shallow water. Roosting occurs at the edges of wetlands, on wet open mud or sand, in shallow water, or in short sparse vegetation, such as grass or saltmarsh. The Sharp-tailed Sandpiper does not breed in Australia (DCCEEW 2024i).</p> | <p>Only marginal habitat is available for the species. Given Lord Howe Island has been well surveyed and only 12 records occur within the locality, the study area is not considered to be relied upon by the species.</p> |
| <i>Calidris canutus</i> | Red Knot | - | V, M | X | X | <p>The NSW BioNet Atlas holds three records of the species within the locality. One record is located within the Lord Howe Island Airport, one record on Blinky Beach,</p> | <p>The Red Knot mainly inhabits intertidal mudflats, sandflats and sandy beaches of sheltered coasts and sometimes on sandy ocean beaches or shallow pools on exposed rock platforms. They have also been recorded on terrestrial saline wetlands near the coast. The species is known to forage near the edge</p> | <p>Moderate likelihood of occurrence. The species has not been recorded within the study area, however has been recorded in surrounding areas. Only marginal habitat is available for the species,</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|----------------------------|------------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>and one off the east coast.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>of water on intertidal mudflats and sand flats, as well as sewage ponds, and nearby lakes. The species roosts on sandy beaches, spits and islets, and mudflats. The species prefer to roost in open areas far away from potential cover for predators, but close to feeding grounds. The species does not breed in Australia (DCCEEW 2024j).</p> | <p>predominantly in the form of foraging habitat along the shoreline. Given Lord Howe Island has been well surveyed and only three records occur within the locality, the study area is not considered to be relied upon by the species.</p> |
| <i>Calidris ferruginea</i> | Curlew Sandpiper | E | CE, M | X | X | <p>The NSW BioNet Atlas holds 13 records of the species within the locality. This includes two records at North Beach, four at Old Settlement Beach, three at Transit Hill and the remaining</p> | <p>The Curlew Sandpiper mainly occurs on intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and also around non-tidal swamps, lakes and lagoons near the coast, and ponds in saltworks and sewage farms. Main requirements for feeding habitats are the presence of mudflats or shallow water up to</p> | <p>High likelihood of occurrence. The species has not been recorded within the study area, however has been recorded in surrounding areas. Suitable foraging and roosting habitat is available within the</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---------------------------|--------------------|---------------------|-----------------|------------------|------|--|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>records around the Lord Howe Island Airport.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>60 mm. The Curlew Sandpiper may also forage in low sparse emergent vegetation, such as saltmarsh, and sometimes forage in flooded paddocks or inundated saltflats. Roosting occurs in open situations with damp substrate, especially on bare shingle, shell or sand beaches, sandspits and islets in or around coastal or near-coastal lagoons and other wetlands. The species does not breed in Australia (DCCEEW 2024j).</p> | <p>study area along the coastal fringe.</p> |
| <i>Calidris melanotos</i> | Pectoral Sandpiper | - | M | X | - | <p>The NSW BioNet Atlas holds 19 records of the species within the locality. The majority of records are located on Blinky Beach, with the exception of</p> | <p>The species prefers shallow fresh to saline wetlands. It is also found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. The species forages in shallow water or soft mud at the</p> | <p>Moderate likelihood of occurrence. The species has not been recorded within the study area, however has been recorded in surrounding areas. The study area does not comprise</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|----------------------------|------------------|---------------------|-----------------|------------------|------|---|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>one record within the Lord Howe Island airport, one record on Transit Hill and one record within the main settlement to the north.</p> <p>The EPBC PMST does not identify habitat for the species within the 5km locality.</p> | <p>edge of wetlands. Roosting habitat occurs in proximity to foraging habitat. The Pectoral Sandpiper does not breed in Australia (DCCEEW 2024k)</p> | <p>preferred wetland habitats for roosting or foraging habitat, however the coastal habitats within the study area provide some potential habitat for the species.</p> |
| <i>Calidris ruficollis</i> | Red-necked Stint | - | M | X | - | <p>The NSW BioNet Atlas holds 57 records of the species within the locality. The majority of records are located within the Lord Howe Island airport and Blinky Beach, but</p> | <p>The species is mostly found in coastal areas, including in sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores. The species mostly forages on bare wet mud on intertidal mudflats or sandflats,</p> | <p>High likelihood of occurrence. The species has not been recorded within the study area but has been recorded in surrounding areas. Suitable foraging and roosting habitat is available within the</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---------------------------|-----------------|---------------------|-----------------|------------------|------|--|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>extending north to North Beach.</p> <p>The EPBC PMST does not identify habitat for the species within the 5km locality.</p> | <p>or in very shallow water; mostly in areas with a film of surface water and mostly close to edge of water. The species roosts on sheltered beaches, spits, banks or islets, of sand, mud, coral or shingle, sometimes in saltmarsh or other vegetation. The Red-necked Stint does not breed in Australia (DCCEEW 2024I).</p> | <p>study area along the coastal fringe.</p> |
| <i>Calidris subminuta</i> | Long-toed Stint | - | M | X | - | <p>The NSW BioNet Atlas holds one record of the species within the locality. This record is at the northern end of Blinky Beach.</p> <p>The EPBC PMST does not identify habitat for the species within the 5km locality.</p> | <p>the Long-toed Stint occurs in a variety of terrestrial wetlands. They prefer shallow freshwater or brackish wetlands including lakes, swamps, river floodplains, streams, lagoons and sewage ponds. The species is also fond of areas of muddy shoreline, growths of short grass, weeds, sedges, low or floating aquatic vegetation, reeds, rushes and occasionally stunted samphire. It has also been observed at open, less vegetated shores of</p> | <p>Low likelihood of occurrence. Lord Howe Island is well surveyed and only one previous record occurs within the locality. The species prefers wetland which are not present within the study area, however is also known to occur at tidal estuaries. Given the</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|------------------------------|-------------|---------------------|-----------------|------------------|------|---|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Calidris tenuirostris</i> | Great Knot | V | CE, M | X | - | <p>The NSW BioNet Atlas holds one record of the species within the locality. This record is at North Beach.</p> <p>The EPBC PMST does not identify habitat for the species within the 5km locality.</p> | <p>The Great Knot inhabits sheltered coastal habitats, including inlets, harbours and estuaries. The species prefers habitats with large intertidal mudflats or sand flats. It has also been recorded on rock platforms, ponds in salt works, swamps near the coast, and salt lakes. The species is known to forage in areas of mud for invertebrates. Roosting habitat</p> | <p>larger lakes and ponds and is common on muddy fringes of drying ephemeral lakes and swamps. The Long-toed Stint also frequents permanent wetlands such as reservoirs and artificial lakes. They are uncommon, but not unknown, at tidal estuaries, saline lakes, salt ponds and bore swamps. The species does not breed in Australia (DCCEE 2024m).</p> <p>low number of records, the species is not considered likely to occur within the small area of marginal foraging habitat available.</p> <p>Low likelihood of occurrence. Lord Howe Island is well surveyed and only one previous record occurs within the locality. Suitable habitat in the form of sand-flats and mudflats are not available within the study area.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Charadrius leschenaultii</i> | Greater plover | Sand- | V | V, M | X | X | <p>for the Great Knot is mainly shallow water in close proximity to feeding grounds. The species does not breed in Australia (DCCEEW 2024n).</p> <p>The Greater Sand Plover inhabits coastal littoral and estuarine environments, and is mainly found on sandy or muddy beaches with intertidal mudflats or sandbanks, rock platforms, inshore reefs or sand cays on coral reefs. The species forages visually over the surface of the substrate or just below the surface. It prefers to forage in areas that have low densities of other foraging shorebirds. The Greater Sand Plover usually roosts on banks, sand-spits, beaches, or in tidal lagoons. They are also known to roost on rocky points and in salt marshes. This species does not</p> | <p>Moderate likelihood of occurrence. Suitable habitat for the species is available within the study area along the coastal fringe. However, Lord Howe Island has been well surveyed and only a low number of records occur within the locality, both within the northern portion of the island.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence | |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | | |
| | | | | | | | breed in Australia (DCCEEW 2024o). | | |
| <i>Charadrius mongolus</i> | Lesser plover | Sand- | V | E, M | X | - | <p>The NSW BioNet Atlas holds 12 records of the species within the locality. The majority of records are located around the Lord Howe Island Airport, and near North Beach.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>In non-breeding grounds in Australia, this species usually occurs in coastal littoral and estuarine environments. It inhabits large intertidal sandflats or mudflats in sheltered bays, harbours and estuaries, and occasionally sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops. It also sometime occurs in short saltmarsh or among mangroves. The species also inhabits saltworks and near-coastal saltpans, brackish swamps and sandy or silt islands in river beds. It is not known to breed in Australia (DCCEEW 2024p).</p> | <p>Low likelihood of occurrence. Despite some potential foraging and roosting habitat within the study area along the coastal fringe, the species is considered to have a low likelihood of occurrence. Lord Howe Island is well surveyed, and there are no records of the species in BioNet since 2003.</p> |
| <i>Charadrius veredus</i> | Oriental Plover | | - | M | X | - | <p>The NSW BioNet Atlas holds nine records of the</p> | <p>The Oriental Plover is known to spend several weeks in coastal areas when first arriving in</p> | <p>Moderate likelihood of occurrence. The species has not been</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>species within the locality, with all records located east of the study area at the Lord Howe Island Airport and Blinky Beach.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>northern Australia, and then eventually moves further inland. The species prefers flat, open, grasslands with areas of bare ground or areas recently burnt, including dry paddocks or clay pans. The species has also been sighted near terrestrial wetlands and in salt marshes. The species is usually found foraging in short grass or on stony bare ground. It is also known to feed on mudflats and on beaches with beach cast seaweed. Oriental Plovers roost on wet mud, near the shallow water of beaches, and in salt marshes or paddocks. The species does not breed in Australia (DCCEEW 2024q).</p> | <p>recorded within the study area however has been recorded in surrounding areas to the east. Despite the nearby records, the study area provides very marginal habitat for the species.</p> |
| <i>Chlidonias leucopterus</i> | White-winged Black Tern | - | M | X | - | The NSW BioNet Atlas holds seven records of the species within the | In Australia, and elsewhere in their non-breeding range, the species mostly inhabits fresh, brackish or saline, and coastal or | Moderate likelihood of occurrence. The species has not been recorded within the |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>locality. This includes five records to the east of the study area and two records immediately south of the study area.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>subcoastal wetlands. The species frequent tidal wetlands, such as harbours, bays, estuaries and lagoons, and their associated tidal sandflats and mudflats. Terrestrial wetlands, including swamps, lakes, billabongs, rivers, floodplains, reservoirs, saltworks, sewage ponds and outfalls are also inhabited. Wetlands may be open, or with floating emergent or marginal vegetation. The White-winged Black Tern is an opportunistic forager, feeding mainly on aquatic insects (especially Diptera, Odonata and Coleoptera), and less often on terrestrial insects, spiders, small fish, tadpoles, frogs and skinks. In non-breeding areas, they mainly forage over coastal estuaries and freshwater wetlands, and</p> | <p>study area however has been recorded in surrounding areas to the east. All records are from pre 2007. Despite the nearby records, the study area provides very marginal habitat for the species.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | occasionally over terrestrial vegetation (DCCEEW 2024r). | |
| <i>Diomedea antipodensis</i> | Antipodean Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality.</p> | The Antipodean Albatross is marine, pelagic and aerial. The Antipodean Albatross nests in open patchy vegetation, such as among tussock grassland or shrubs on ridges, slopes and plateaus. The species does not breed in Australia (DCCEEW 2024t). | Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur. |
| <i>Diomedea antipodensis gibsoni</i> | Gibson's Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species</p> | Gibson's Albatross is marine, pelagic and aerial. On breeding islands, the Gibson's Albatross nests on coastal or inland ridges, slopes, plateaux and plains, often on marshy ground. In Australian territory, Gibson's Albatross has been recorded foraging between Coffs Harbour, NSW, and Wilson's | Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | habitat is likely to occur within the 5km locality. | Promontory, Victoria. Gibson's Albatrosses are rarely observed in the Pacific Ocean or Indian Ocean. The only Australian record of this species is from a recapture off Wollongong, NSW, in September 1997. There are no breeding colonies of Gibson's Albatross in Australian territory (DCCEEW 2024u). | |
| <i>Diomedea epomophora</i> | Southern Royal Albatross | | V, M | - | X | The NSW BioNet Atlas does not hold any records of the species within the locality. The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality. | The species is marine, pelagic and aerial. It breeds in New Zealand; however Australia is within the foraging range of the Southern Royal Albatross (DCCEEW 2024v). | Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Diomedea exulans</i> | Wandering Albatross | E | V, M | X | X | <p>The NSW BioNet Atlas holds one record of the species within the locality. The only record is at the northern end of Blinky Beach.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality.</p> | <p>The Wandering Albatross is marine, pelagic and aerial. On breeding islands, the Wandering Albatross nests on coastal or inland ridges, slopes, plateaux and plains, often on marshy ground. The Wandering Albatross eats mainly squid and fish, but also crustaceans and carrion (DCCEEW 2024w).</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. The species may cross aerially over the study area on occasion but would not utilise habitat within the study area.</p> |
| <i>Fregata ariel</i> | Lesser Frigatebird | - | M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the</p> | <p>Lesser Frigatebirds are found throughout tropical waters in the Indian, west and central Pacific Oceans. The Lesser Frigatebird breeds on small, remote tropical and sub-tropical islands, in mangroves or bushes, and even on bare ground. Outside the breeding</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | species or species habitat is likely to occur within the 5km locality. | season it is sedentary, with immature and non-breeding individuals dispersing throughout tropical seas, especially of the Indian and Pacific Oceans. It feeds mainly on fish (especially flying-fish) and squid, but also on seabird eggs and chicks, carrion and fish scraps (Commonwealth of Australia 2020). | |
| <i>Fregata minor</i> | Great Frigatebird | - | M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>The Great Frigatebird breeds on small, remote tropical and sub-tropical islands, in mangroves or bushes and occasionally on bare ground. Fish, squid and chicks of other bird species (e.g. Sooty Terns) have all been identified as prey (Commonwealth of Australia 2020).</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| <i>Fregetta grallaria</i> | White-bellied Storm-Petrel | V | V | X | X | <p>The NSW BioNet Atlas holds 11 records of the species within the locality. The majority of records are located around the Lord Howe Island Airport, as well as records within the main settlement, at Transit Hill, and Intermediate Hill.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality.</p> | <p>The White-bellied Storm-Petrel occurs across sub-tropical and tropical waters in the Tasman Sea, Coral Sea and, possibly, the central Pacific Ocean. In the non-breeding season, it reaches and forages over near-shore waters along the continental shelf of mainland Australia. It breeds, in Australian territory, on offshore islets and rocks in the Lord Howe Island group. It nests in crevices between large volcanic rocks, and in burrows excavated in banks. Marine, pelagic, feeds well out to sea and only at nest on offshore islands at night (DCCEEW 2024y).</p> | <p>Moderate likelihood of occurrence. The species has not been recorded within the study area, however has been recorded in surrounding areas. Breeding sites for the species on Lord Howe Island are known and are not located within the study area. No suitable nesting or foraging habitat is available within the study area, however the species may transit aerially across the study area.</p> |
| <i>Gallinago hardwickii</i> | Latham's Snipe | - | M | X | - | <p>The NSW BioNet Atlas holds 14 records of the</p> | <p>In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000</p> | <p>Moderate likelihood of occurrence. The species has not been</p> |

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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>species within the locality, including three records within the Lord Howe Island Airport to the east of the study area. Other records are scattered through the main settlement up to Old Settlement Beach.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>m above sea-level. They usually inhabit open, freshwater wetlands with low, dense vegetation. However, they can also occur in habitats with saline or brackish water, in modified or artificial habitats, and in habitats located close to humans or human activity. Latham's Snipe sometimes occur in habitats that have saline or brackish water, such as saltmarsh, mangrove creeks, around bays and beaches, and at tidal rivers. Latham's Snipe is an omnivorous species that feeds on seeds and other plant material and on invertebrates including insects (mainly flies and beetles), earthworms and spiders and occasionally molluscs, isopods and centipedes. The species does</p> | <p>recorded within the study area however has been recorded within surrounding areas. The study area does not comprise preferred habitat for the species, however the coastal fringe may provide marginal foraging habitat for the species.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | not breed in Australia (DCCEEW 2024z). | |
| <i>Glareola maldivarum</i> | Oriental Pratincole | - | M | X | - | <p>The NSW BioNet Atlas holds two records of the species within the locality, with both records to the east of the study area.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>The Oriental Pratincole is found in short grassland or on floodplains in close proximity to wetlands and lakes, as well as on beaches and mudflats along the coast. It prefers habitats with extensive bare areas. The species usually forages aerially in large flocks, from just above the ground to 300 m. They are seen near cyclonic storms or fires to catch prey. They are also seen foraging on the ground. The Oriental Pratincole usually roosts in bare areas that have low vegetation, such as salt marshes, airfields or clay pans. The species does not breed in Australia (DCCEEW 2024aa).</p> | <p>Low likelihood of occurrence. Although the species has been recorded to the east of the study area, both records are from 1987, and given Lord Howe Island is well surveyed, it is considered unlikely that the species would occur. Furthermore, the study area does not comprise preferred habitat for the species.</p> |
| <i>Gygis alba</i> | White Tern | V | - | X | - | <p>The NSW BioNet Atlas holds 259 records of the</p> | <p>The species is found on isolated tropical islands, in nearshore waters within a few kilometres</p> | <p>High likelihood of occurrence. The species has</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>species within the locality, distributed from Intermediate Hill in the south to the northern portion of the island. One previous record from 1999 occurs within the southern corner of the study area.</p> | <p>of shore, and often in lagoons or over reefs; in sheltered wooded valleys during breeding season. It is occasionally recorded in pelagic zone, especially off mainland Australia. Its breeding season varies locally. It nests on coral islands, usually with vegetation, nesting in trees and bushes, on rocky slopes and cliffs, and also on artificial substrates. It lays a single egg on a bare branch, usually within a slight depression at a fork or on the midrib of a palm frond or banana leaf. Most breeding sites on Lord Howe Island are close to the lagoon in the settlement area. Preferred species vary but on Lord Howe Island it usually nests in Norfolk Island Pines (<i>Araucaria heterophylla</i>) or Sallywood (<i>Lagunaria patersonia</i>). It is</p> | <p>previously been recorded within the study area and there have been a large volume of records in the locality. Suitable nesting and breeding habitat is available within the study area given the species unique nesting requirements, with favoured species present.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| <i>Haematopus fuliginosus</i> | Sooty Oystercatcher | V | - | X | - | The NSW BioNet Atlas holds one records of the species from 1987 in the northern portion of the island. | resident year-round on some islands but is a seasonal visitor on others where its non-breeding movements are not known. This species feeds mainly upon small fish but will also take squid and crustaceans (DECC 2007, EHG 2018c). The species favours rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries. It forages on exposed rock or coral at low tide for foods such as limpets and mussels. The Sooty Oystercatcher breeds in spring and summer, almost exclusively on offshore islands, and occasionally on isolated promontories. The nest is a shallow scrape on the ground, or small mounds of pebbles, shells or seaweed when nesting among rocks (EHG 2023). | Low likelihood of occurrence. Lord Howe Island is well surveyed and only one previous record occur within the locality. The previous record is not located in proximity to the study area. Some potential habitat is present along the coastal fringe of the study area. |

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| <i>Haematopus longirostris</i> | Pied Oystercatcher | E | - | X | - | The NSW BioNet Atlas holds one records of the species from 1998 in the northern portion of the island. | The species favours intertidal flats of inlets and bays, open beaches and sandbanks. Forages on exposed sand, mud and rock at low tide, for molluscs, worms, crabs and small fish. The chisel-like bill is used to pry open or break into shells of oysters and other shellfish. The species nest mostly on coastal or estuarine beaches although occasionally they use saltmarsh or grassy areas. Nests are shallow scrapes in sand above the high tide mark, often amongst seaweed, shells and small stones (EHG 2021). | Low likelihood of occurrence. Lord Howe Island is well surveyed and only one previous record occur within the locality. The previous record is not located in proximity to the study area. Some potential habitat is present along the coastal fringe of the study area. |
| <i>Hirundapus caudacutus</i> | White-throated Needletail | V | V, M | X | - | The NSW BioNet Atlas holds two records of the species from 2002 in the northern | In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. The species has been recorded roosting in | Low likelihood of occurrence. Only two previous records have been identified within the locality, both in the northern |

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| | | | | | | <p>portion of the island.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>trees in forests and woodlands, both among dense foliage in the canopy or in hollows. It has been suggested that they also sometimes roost aerially. The species breeds in wooded lowlands and sparsely vegetated hills, as well as mountains covered with coniferous forests (DCCEEW 2024ab).</p> | <p>portion of the locality. The species is almost exclusively aerial and the study area does not provide suitable habitat. If the species was to occur, it would only be to pass aerially over the study area.</p> |
| <i>Hydroprogne caspia</i> | Caspian Tern | - | M | X | - | <p>The NSW BioNet Atlas holds five records of the species from to the east of the study area, including three records within the Lord Howe Island Airport.</p> <p>The EPBC PMST does not identify</p> | <p>The species is mostly found in sheltered coastal embayments and those with sandy or muddy margins are preferred. The species usually forages in open wetlands, including lakes and rivers. Generally roosting occurs on bare exposed sand or shell spits, banks or shores of coasts, lakes, estuaries, coastal lagoons and inlets. The species breeds on variable types of sites including low islands, cays, spits,</p> | <p>Moderate likelihood of occurrence. The species has not been recorded within the study area however has been recorded in surrounding areas to the east. Despite few records, the study area provides potential habitat along the coastal fringe.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | habitat within the 5km locality. | banks, ridges, beaches of sand or shell, terrestrial wetlands and stony or rocky islets or banks (DCCEEW 2024ac). | |
| <i>Hypotaenidia sylvestris</i> | Lord Howe Woodhen | E | E | X | X | <p>The NSW BioNet Atlas holds 5,846 records of the species within the locality, including numerous records within the study area.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality.</p> | Lord Howe Woodhens occupy the subtropical forests of the oceanic Lord Howe Island. Woodhens occur in closed forest on boulder covered slopes, steep scree, valleys, plateaus and near cliffs. This species is rarely found in rainforest, the most widespread habitat on the island, but prefers palm dominated lowland closed forest on igneous soils, possibly because this vegetation type has more available food (EHG 2019d, DCCEEW 2024ad). They also occur in forest bordering pasture and gardens, paddocks and small reedy swamps. At lower altitudes, woodhens are | Present. The species was recorded throughout the study area during July 2024 surveys. |

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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | largely confined to megaphyllous broad sclerophyll forest, especially stands of Kentia Palm (<i>Howea forsteriana</i>) that grow on igneous soils, but also Banyan (<i>Ficus macrophylla</i> subsp. <i>columnaris</i>), Yellow Tulipwood (<i>Drypetes australasica</i>) and Three-veined Laurel (<i>Cryptocarya triplinervis</i>). Lord Howe Woodhens have been known to nest on the ground in thick vegetation, under tree roots and fallen logs, and even in a 10–65 cm deep petrel (<i>Pterodroma</i>) burrow (DECC 2007, EHG 2019d, DCCEEW 2024ad). | |
| <i>Limosa lapponica</i> | Bar-tailed Godwit | - | M | X | X | The NSW BioNet Atlas holds 321 records of the species within the locality, including one record in the | The Bar-tailed Godwit is mainly a coastal species, and inhabits intertidal sand flats, mudflats, estuaries, harbours and coastal lagoons. The species has been recorded in coastal sewage | High likelihood of occurrence. The species is likely to utilise the coastal fringe within the study area for |

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| | | | | | | <p>southern corner of the study area. Numerous other records are present within the Lord Howe Island Airport.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>farms and salt lakes and brackish wetlands, sandy ocean beaches, rock platforms, and around beds of seagrass. Preferred feeding habitats include shallow water or the edge of water in tidal estuaries, harbours, or soft mud with seagrass beds. Main habitat requirements for roosting include sandy beaches and near-coastal salt marshes. The Bar-tailed Godwit does not breed in Australia (DCCEEW 2024ae).</p> | <p>foraging and roosting, however it does not provide suitable breeding habitat.</p> |
| <i>Limosa limosa</i> | Black-tailed Godwit | V | M | X | - | <p>The NSW BioNet Atlas holds two records of the species within the locality, with one record within the Lord Howe Island Airport and one within a wetland</p> | <p>The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit. The species forages on wide intertidal mudflats or sandflats, in soft mud or shallow water and occasionally in</p> | <p>Low likelihood of occurrence. No previous records within the study area and no recent records within the locality. Some marginal habitat is available along the</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>east of the airport behind the dunes of Blinky Beach. The latest record is from 1995.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>shallow estuaries. The claypan may be an important roost site for this species at least during the non-breeding season. The Black-tailed Godwit does not breed in Australia (DCCEEW 2024af).</p> | <p>coastal fringe for foraging however no suitable roosting or breeding habitat is present.</p> |
| <i>Macronectes giganteus</i> | Southern Giant-Petrel | - | E, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat may occur within the 5km locality.</p> | <p>Southern Giant Petrel forage at sea, and also scavenge on land. The species does not breed in Australia. Nesting sites for the species in Australia include Southern Giant Petrel nests on Heard Island, McDonald Islands and Macquarie Island. During breeding periods Southern Giant Petrel prey mainly on cephalopods and fish at sea, and also prey on penguin chicks on land and scavenge seal or</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | penguin carrion (DCCEEW 2024ag). | |
| <i>Macronectes halli</i> | Northern Giant Petrel | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat may occur within the 5km locality.</p> | <p>The species breeds on Macquarie Island in Australia. The species are diurnal feeders at sea that also scavenge on land during the day and at night (DCCEEW 2024ah).</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |
| <i>Motacilla flava</i> | Yellow Wagtail | - | M | X | - | <p>The NSW BioNet Atlas holds one record of the species within the locality, within vegetation to the north-west of Transit Hill.</p> | <p>Habitat requirements for the Yellow Wagtail are highly variable, but typically include open grassy flats near water. Habitats include open areas with low vegetation such as grasslands, airstrips, pastures, sports fields; damp open areas such as muddy or grassy edges of wetlands, rivers, irrigated</p> | <p>Low likelihood of occurrence. Lord Howe Island is well surveyed and only one previous record occurs within the locality. Potential roosting habitat in the form of dense vegetation is present</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|----------------------------------|----------------|---------------------|-----------------|------------------|------|--|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | The EPBC PMST does not identify habitat within the 5km locality. | farmland, dams, waterholes; sewage farms, sometimes utilise tidal mudflats and edges of mangroves. Little information on the foraging requirements of this species in Australia is currently known. This species roosts in mangroves and other dense vegetation. The species does not breed in Australia (DCCEEW 2024ai). | however the study area is not considered to provide preferred roosting habitat for the species. |
| <i>Numenius madagascariensis</i> | Eastern Curlew | - | CE, M | X | X | The NSW BioNet Atlas holds five records of the species within the locality, including records within the Lord Howe Island Airport. The EPBC PMST identifies that the species or species habitat is known to | During the non-breeding season in Australia, the Eastern Curlew is most commonly associated with sheltered coasts, especially estuaries, bays, harbours, inlets and coastal lagoons, with large intertidal mudflats or sandflats, often with beds of seagrass. The species mainly forages during the non-breeding season on soft sheltered intertidal sandflats or mudflats, open and | Moderate likelihood of occurrence. Potential roosting and foraging habitat is available within the study area, predominantly along the coastal fringe. Only a low number of records from the locality with the most recent records from 2009. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-------------------------|---------------|---------------------|-----------------|------------------|------|---|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | occur within the 5km locality. | without vegetation or covered with seagrass, often near mangroves, on saltflats and in saltmarsh, rockpools and among rubble on coral reefs, and on ocean beaches near the tideline. The species roosts during high tide periods on sandy spits, sandbars and islets, especially on beach sand near the high-water mark, and among coastal vegetation including low saltmarsh or mangroves. The species does not breed in Australia (DCCEEW 2024ak). | |
| <i>Numenius minutus</i> | Little Curlew | - | M | X | - | The NSW BioNet Atlas holds nine records of the species within the locality, include records immediately east of the study area. | The Little Curlew is most often found feeding in short, dry grassland and sedgeland, including dry floodplains and black soil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. Open woodlands | Moderate likelihood of occurrence. Potential roosting and foraging habitat is available within the study area, predominantly along the coastal fringe. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------|-------------|---------------------|-----------------|------------------|------|---|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>with a grassy or burnt understorey, dry saltmarshes, coastal swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads and airstrips are also used. When resting during the heat of day, the Little Curlew congregates around pools, river beds and water-filled tidal channels, and shallow water at edges of billabongs. The species prefers pools with bare dry mud (including mudbanks in shallow water) and they do not use pools if they are totally dry, flooded or heavily vegetated. The Little Curlew is gregarious, and can be seen in dense flocks of several hundred, sometimes thousands, on coastal and inland grasslands and black soil</p> | <p>Only a low number of records from the locality with the most recent records from 2003.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|--------------------------|-------------|---------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Numenius phaeopus</i> | Whimbrel | - | M | X | - | <p>The NSW BioNet Atlas holds 265 records of the species within the locality, including numerous other records within the Lord Howe Island Airport. One record is present within the southern corner of the study area.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>plains of northern Australia, most often near freshwater swamps and pools or flooded ground. The species does not breed in Australia (DCCEEW 2024al).</p> <p>The species is often found on the intertidal mudflats of sheltered coasts. The species generally forages on intertidal mudflats, along the muddy banks of estuaries and in coastal lagoons, either in open unvegetated areas or among mangroves. The species often roosts in the branches of mangroves around mudflats and in estuaries and occasionally in tall coastal trees. The Whimbrel does not breed in Australia (DCCEEW 2024am).</p> | <p>High likelihood of occurrence. The species is likely to utilise the study area for foraging however roosting habitat is marginal. No breeding habitat is present.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|--|--|---------------------|-----------------|------------------|------|---|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Onychoprion fuscata</i> | Sooty Tern | V | - | X | - | <p>The NSW BioNet Atlas holds 596 records of the species within the locality, including numerous other records within the Lord Howe Island Airport. One record is present within the southern corner of the study area.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | The Sooty Tern breeds on flat, open, sparsely or heavily vegetated, oceanic or barrier islands of sand, coral or rock in productive tropical and subtropical offshore waters rich in plankton, fish and squid. The species breeds in large colonies in sand or coral scrapes on offshore islands and cays including Lord Howe and Norfolk Islands (DCCEEW 2024ao). | High likelihood of occurrence. The species may to utilise the study area for foraging and would regularly transit aerially across the study area. However the species is not considered to roost or breed within the study area, given that the species roosts in large colonies and the species was not recorded surveys. |
| <i>Pachycephala pectoralis contempta</i> | Golden Whistler (Lord Howe Is. subsp.) | V | - | X | - | <p>The NSW BioNet Atlas holds 34 records of the species within the locality, with records predominantly</p> | The species is widely distributed in the forests of the main island. It is often seen feeding around houses throughout the settlement area. These birds hop from branch to branch looking for | Present. The species was recorded within the study area during July 2024 surveys. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|--------------------------|-------------------------|---------------------|-----------------|------------------|------|--|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | around the main settlement area. | insects, spiders and insect larvae. They also forage in the leaf litter. The species construct an open cup-shaped nest made up of palm fibre, vines and leaves and lined with grass (EHG 2019a). | |
| <i>Phaethon lepturus</i> | White-tailed Tropicbird | - | M | X | - | The NSW BioNet Atlas holds five records of the species within the locality. Two records are located between the study area and Blinkys beach to the east of the airport, with both records from 1989 and 1997 respectively. The most recent record on the island is from 2003. | The White-tailed Tropicbird (Indian Ocean) breeds at three locations within Australian territory: in the Cocos-Keeling Islands; at Ashmore Reef, Western Australia; and at Rowley Shoals, Western Australia. The White-tailed Tropicbird occupies marine habitats in tropical waters with sea-surface temperatures of more than 22°C. The tropicbird breeds on islands and atolls, where it nests in a variety of habitats including on bare sandy ground, in closed-canopy | Low likelihood of occurrence. The study area does not comprise suitable habitat for the species. Although the species may, on occasion, transit aerially across the study area, it would not utilise the habitat available within the study area. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>rainforest, on rocky cliffs and in quarries. The only variation in habitat used by the White-tailed Tropicbird throughout its range is its occurrence in subtropical waters off New South Wales or, on rare occasions, Victoria. The White-tailed Tropicbird feeds on fish (mostly flying-fish) and cephalopods.</p> | |
| <i>Phaethon rubricauda</i> | Red-tailed Tropicbird | V | M | X | - | <p>The NSW BioNet Atlas holds 284 records of the species within the locality, with records disbursed across the whole island.</p> <p>The EPBC PMST identifies that the species or species habitat is known to</p> | <p>At sea, the species is solitary, flying mostly well above the waves with regular, mechanical wing-beats alternating with horizontal glides. The species breeds in tropical and subtropical zones on volcanic and other islands, stacks, atolls, cays away from mainland areas. Nests are located in rugged terrain, on coastal cliffs and slopes but also on cays, at the base of trees with dense leaf canopy that reaches the</p> | <p>Moderate likelihood of occurrence. The study area does not comprise suitable habitat for the species. Although the species may, on occasion, transit aerially across the study area, it would not utilise the habitat available within the study area.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|------------------------|-----------------------|---------------------|-----------------|------------------|------|--|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | occur within the 5km locality. | ground, and coral atolls. Most food is captured by deep plunging vertically into the water. Their diet mainly consists of fish and cephalopods (Commonwealth of Australia 2020). | |
| <i>Pluvialis fulva</i> | Pacific Golden Plover | - | M | X | - | <p>The NSW BioNet Atlas holds 532 records of the species within the locality, including a large number of records at the Lord Howe Island airport. Furthermore, there is one record of the species in the southern corner of the study area.</p> <p>The EPBC PMST identifies that the species or species</p> | <p>In Australia this species usually inhabits coastal habitats, though it occasionally occurs around inland wetlands. This species usually forages on sandy or muddy shores (including mudflats and sandflats) or margins of sheltered areas such as estuaries and lagoons, though it also feeds on rocky shores, islands or reefs. The species usually roost near foraging areas, on sandy beaches and spits or rocky points, islets or exposed reefs, occasionally among or beneath vegetation</p> | High likelihood of occurrence. Within the study area the species may utilise the foreshore for foraging or roosting, however the lack of records along the foreshore suggest the species does not rely on habitat within the study area. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------------------|-------------|---------------------|-----------------|------------------|------|---|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | habitat is known to occur within the 5km locality. | including mangroves or low saltmarsh, or among beachcast seaweed. The species does not breed in Australia (DCCEEW 2024aq). | |
| <i>Pluvialis squatarola</i> | Grey Plover | - | M | X | - | <p>The NSW BioNet Atlas holds one records of the species within the locality, located off Neds Beach.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>The species occurs almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. The species usually forages on large areas of exposed mudflats and beaches of sheltered coastal shores such as inlets, estuaries and lagoons. The species usually roosts in sandy areas, such as on unvegetated sandbanks or sand-spits on sheltered beaches or other sheltered environments such as</p> | <p>Low likelihood of occurrence. Despite seemingly suitable habitat along the foreshore within the study area, the species has not been recorded within the study area and appear to be a very rare visitor to Lord Howe Island. As such it is considered to have a very low likelihood of occurrence.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|------------------------------------|---------------|---------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | estuaries or lagoons. This species does not breed in Australia (DCCEEW 2024ar). | |
| <i>Anous albivitta</i> | Grey Ternlet | V | - | X | - | <p>The NSW BioNet Atlas holds nine records of the species within the locality, in the northern portion of the island around North Beach and Old Gulch and in the south-east at Mutton bird Point.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | Grey Noddy breeds on Lord Howe and Norfolk Islands and on Kermadec Island, New Zealand. The species is distributed across the Pacific Ocean and breeds on isolated tropical and subtropical islands, islets or rock stacks. Breeding can be continual in places and occurs in loose colonies. This species takes very small fish (average length 17 mm), squid, crustaceans and pelagic sea striders with proportions varying seasonally and geographically (Commonwealth of Australia 2020, DCCEEW 2024b). | Low likelihood of occurrence. The study area does not comprise suitable roost or breeding habitat for the species. A small area of foraging habitat would be available along the front of the lagoon. The species would most likely only transit aerially across the study area. |
| <i>Pterodroma heraldica</i> | Herald Petrel | - | CE | - | X | The NSW BioNet Atlas does not hold any records of the | The Herald Petrel is a marine, pelagic species of tropical and subtropical waters. The species | Low likelihood of occurrence. Suitable habitat is not |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---|----------------|---------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat may occur within the 5km locality.</p> | <p>nests on tropical and subtropical islands, atolls, cays and rocky islets. In the Australasian region, breeding is only known from Raine Island, Queensland, where the birds nest on the ground on a low sand ridge, under a mat of dense shrubs (<i>Achyranthes aspera</i>, <i>Abutilon indicum</i>, <i>Amaranthus leptostachys</i>, <i>Sesbania cannabina</i>), creepers (<i>Tribulus cistoides</i>) and grass (<i>Lepturus repens</i>) (DCCEEW 2024au).</p> | <p>available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |
| <i>Pterodroma leucoptera leucoptera</i> | Gould's Petrel | V | E | X | X | <p>The NSW BioNet Atlas holds one record of the species within the locality, located off Neds Beach.</p> <p>The EPBC PMST identifies that the</p> | <p>The species breeds on both Cabbage Tree Island, 1.4 km offshore from Port Stephens and on nearby Boondelbah island. The range and feeding areas of non-breeding petrels are unknown. Principal nesting habitat is located within two gullies which are characterised</p> | <p>Low likelihood of occurrence. The study area does not provide suitable habitat for the species. Rare occurrences of the species may be recorded aerially</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-------------------------------------|---|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | species or species habitat may occur within the 5km locality. | by steeply, sloping rock scree with a canopy of Cabbage Tree Palms. They nest predominantly in natural rock crevices among the rock scree and also in hollow fallen palm trunks, under mats of fallen palm fronds and in cavities among the buttresses of fig trees. They breed colonially and the nests are clumped and often less than 1 m apart (EHG 2017b). | above the study area however this would only be records of the species in transit. |
| <i>Pterodroma neglecta neglecta</i> | Kermadec Petrel (west Pacific subspecies) | V | V | X | X | The NSW BioNet Atlas holds eight records of the species within the locality, several of which occur within the main settlement area. These records are considered likely to be of the species transiting aerially across the | The Kermadec Petrel (western) is a pelagic seabird that occurs in tropical, subtropical and temperate waters of the Pacific Ocean. Breeding habitat in Australia includes Balls Pyramid, a tall rock stack where it occurs above an altitude of 400 metres, and nests on sheltered tussock ledges on steep cliff faces, and may be seen flying at high altitudes around the cliffs; and | Low likelihood of occurrence. The study area does not provide suitable habitat for the species. Rare occurrences of the species may be recorded aerially above the study area however this would |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>island given the species known breeding requirements.</p> <p>The EPBC PMST identifies that the species or species habitat may occur within the 5km locality.</p> | <p>on Phillip Island, where pairs nest beneath Olive (<i>Olea europaea</i>) shrubs in elevated regions around the centre of the island. The species formerly nested on almost inaccessible ledges at Mount Gower and Mount Lidgbird on Lord Howe Island and, although this breeding colony is now extinct, it is thought that some birds continue to fly about the cliffs of Mount Gower (EHG 2022a, DCCEEW 2024av).</p> | <p>only be records of the species in transit.</p> |
| <i>Pterodroma nigripennis</i> | Black-winged Petrel | V | - | X | - | <p>The NSW BioNet Atlas holds 357 records of the species within the locality, including numerous other records within the Lord Howe Island Airport. One record is present within the</p> | <p>It breeds in colonies, usually making burrows on high ground inland amongst scrub or tussock grass. Outside the breeding season it migrates to the north and east Pacific, being common in the north-west Pacific in July–November. Little is known about its diet, but it is known to include cephalopods</p> | <p>High likelihood of occurrence. Breeding sites for the species on Lord Howe Island are known and are not located within the study area. No suitable roosting or foraging habitat is available within the</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|----------------------------|-------------------|---------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | southern corner of the study area. | and prawns which it catches mainly by surface-seizing and dipping, but also pattering. It has often been recorded feeding in association with other shearwaters and petrels. | study area, however the species is likely to transit aerially across the study area. |
| <i>Pterodroma solandri</i> | Providence Petrel | V | - | X | - | The NSW BioNet Atlas holds 226 records of the species within the locality, including several other records within the Lord Howe Island Airport. One record is present within the northern boundary of the study area. | Breeding is restricted to Lord Howe Island and Phillip Island. It nests in burrows or under rock cavities and occasionally between tree buttresses from sea level to 900 m. On Lord Howe, it breeds in forest. The adults feed predominantly on squid and fish with crustaceans less important (EHG 2018b). | High likelihood of occurrence. Breeding sites for the species on Lord Howe Island are known and are not located within the study area. No suitable roosting or foraging habitat is available within the study area, however the species is likely to transit aerially across the study area. |
| <i>Puffinus assimilis</i> | Little Shearwater | V | - | X | - | The NSW BioNet Atlas holds 14 records of the species within the | The Little Shearwater is a marine, pelagic species, occurring in subantarctic, subtropical and occasionally | Low likelihood of occurrence. No previous records within the study area |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | locality, all of which are within the central portion of the island. | tropical waters. They breed on rocky or forested islands, or on those with tussock grasslands. In the Lord Howe and Norfolk groups, they nest amongst short vegetation, below bushes or forest, in cliff tops or among rocks. In the Lord Howe and Norfolk Island groups, they nest in burrows dug into the sand, in holes beneath overhanging rocks or in crevices between rocks. On Lord Howe Island itself they are nesting under bushes of <i>Melaleuca howeana</i> and amongst the vine <i>Parsonsia howeana</i> , often sharing burrows with Black-winged petrels (EHG 2022b). | and although previous records are located within the locality, the study area does not provide preferred roosting or foraging habitat for the species. |
| <i>Rostratula australis</i> | Australian Painted Snipe | E | E | X | - | The NSW BioNet Atlas holds one record of the species within the locality, The record | It is most common in eastern Australia, where it has been recorded at scattered locations throughout much of Queensland, NSW, Victoria and | Low likelihood of occurrence. The study area does not comprise freshwater wetland habitat |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>is from 1990 and is located within a small dam/wetland behind Blinkys Beach.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>south-eastern Australia. It has also been recorded on single occasions in south-eastern Tasmania and at Lord Howe Island. The Australian Painted Snipe generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. Australian Painted Snipe breeding habitat requirements may be quite specific: shallow wetlands with areas of bare wet mud and both upper and canopy cover nearby. Nest records are all, or nearly all, from or near small islands in freshwater wetlands (EHG 2017a, DCCEEW 2024aw).</p> | <p>required by the species. The single record from the locality in 1990 suggest the species has a very low likelihood of occurrence within the study area.</p> |
| <i>Sterna hirundo</i> | Common Tern | - | M | X | - | <p>The NSW BioNet Atlas holds seven records of the</p> | <p>The species is marine, pelagic and coastal. The species forages in marine environments, often</p> | <p>Low likelihood of occurrence. The species has only</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>species within the locality, All records are from a single location at North Beach. One record is from 2013, while the other six records are from consecutive days on 2014.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>close to the shore, including sheltered embayments and in the surf-zone, but also well out to sea. The species roosts on unvegetated, intertidal sandy ocean beaches, sandy islands, shores of estuaries or lagoons, and sandbars, as well as on rocky shores, rock platforms or rocks protruding above the surface of the water. The species does not breed in Australia (DCCEEW 2024ax).</p> | <p>been recorded from Noth Beach with the latest records from 2014. Some suitable roosting habitat is available along the foreshore, however previous records suggest the species is unlikely to utilise the habitat within the study area.</p> |
| <i>Sternula albifrons</i> | Little Tern | E | M | X | - | <p>The NSW BioNet Atlas holds two records of the species within the locality, One record is from North Beach in 1986 and the other is from a site</p> | <p>The species inhabits sheltered coastal environments, including lagoons, estuaries, river mouths and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches. The species</p> | <p>Low likelihood of occurrence. The study area provides some suitable foraging and roosting habitat along the foreshore, however the species</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>behind Blinkys Beach from 1999.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>forages in shallow waters of estuaries, coastal lagoons and lakes, frequently over channels next to spits and banks or entrances, and often close to breeding colonies. The species roosts on sand-spits, banks and bars within sheltered estuarine or coastal environments, or on the sandy shores of lakes and ocean beaches. The species nest on sand-spits, banks, ridges or islets in sheltered coastal environments, such as coastal lakes, estuaries and inlets, and also on wide and flat or gently sloping sandy ocean beaches, and also, occasionally, in sand-dunes (DCCEEW 2024ay).</p> | <p>has not been recorded within the study area and there have been no recent records in the locality.</p> |
| <i>Strepera graculina crissalis</i> | Pied Currawong (Lord Howe Is. subsp.) | V | V | X | X | <p>The NSW BioNet Atlas holds 56 records of the species within the locality, with</p> | <p>The Pied Currawong (Lord Howe Island) occurs in lowland, hill and mountain regions, including the summit of Mount Gower (866 m above sea level).</p> | <p>Present. The species was recorded within the study area during July 2024 surveys.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
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| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>records scattered across the entire island.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>It mainly inhabits tall rainforests and palm forests, especially beside creeks or in gullies, but it also occurs in settled areas, and forages amongst colonies of seabirds on offshore islets. The Pied Currawong occurs in areas inhabited by the Lord Howe Woodhen (<i>Gallirallus sylvestris</i>), which is listed under the <i>EPBC Act 1999</i>. The chicks of the Lord Howe Woodhen provide a source of food for the Pied Currawong. The Pied Currawong is omnivorous (DECC 2007, EHG 2019h).</p> | |
| <i>Sula dactylatra</i> | Masked Booby | V | M | X | X | <p>The NSW BioNet Atlas holds 639 records of the species within the locality, including records within the study area and the</p> | <p>The Masked Booby is a pelagic marine bird using tropical and subtropical waters. The Masked Booby breeds on tropical oceanic islands, atolls and cays, usually far from mainland areas. Proximity to clear, deep water is important in choice of nesting</p> | <p>Present. Breeding sites for the species on Lord Howe Island are known and are not located within the study area. No suitable roosting or foraging habitat is</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------|-------------|---------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>Lord Howe Island Airport.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>grounds. Areas of level open ground are preferred for nest sites and colonies extend from central areas to water's edge, just above high-water marks, on bare surfaces of sand, guano, coral fragments or lava, or among low cover of grasses, herbs or shrubs. Where vegetation encroaches, colonies may become restricted to smaller and smaller areas of bare ground. On Lord Howe Island, the Masked Booby is said to breed on high open areas where they can take off directly into the wind. The Masked Booby roosts on the ground beside their nests when breeding, although sometimes breeding birds roost on beaches near colonies (EHG 2018a, DCCEEW 2024az).</p> | <p>available within the study area, however the species was recorded in transit aerially across the study area.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|------------------------------------|-----------------------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Thalassarche bulleri</i> | Buller's Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat may occur within the 5km locality.</p> | <p>Buller's Albatross are marine and pelagic, inhabiting subtropical and subantarctic waters of the southern Pacific Ocean. Buller's Albatross feeds mostly on squid, supplemented by fish, krill and tunicates. The species does not breed in Australia (DCCEEW 2024ba).</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |
| <i>Thalassarche bulleri platei</i> | Northern Buller's Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat may occur</p> | <p>The species is a marine, pelagic species. In Australia, the species occurs over inshore, offshore and pelagic waters and off the coast of south-east Tasmania. The species does not breed in Australia (DCCEEW 2024bb).</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|------------------------------|-------------------------------|---------------------|-----------------|------------------|------|---|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | within the 5km locality. | | |
| <i>Thalassarche carteri</i> | Indian Yellow-nosed Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality.</p> | The Indian Yellow-nosed Albatross is a marine bird, located in subtropical and warmer subantarctic waters. In the Australasian region, the species occupies inshore and offshore waters, particularly where there are calm seas and light winds. The Indian Yellow-nosed Albatross takes cephalopods (squid) and fish. The species does not breed in Australia (DCCEEW 2024bc). | Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur. |
| <i>Thalassarche impavida</i> | Campbell Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species</p> | The Campbell Albatross is a marine sea bird inhabiting sub-Antarctic and subtropical waters from pelagic to shelf-break water habitats. n breeding and non-breeding seasons, the Campbell Albatross are specialised shelf feeders, concentrating around breeding | Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---------------------------------|------------------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | habitat may occur within the 5km locality. | islands or over adjacent submarine banks. The Campbell Albatross breed on Campbell Island (Marchant & Higgins 1990). They make their nests on tussock-covered ledges and terraces of cliffs, slopes and hills, overlooking the sea or valleys, and on the summits of rocky islets. The Campbell Albatross is a non-breeding visitor to Australian waters (DCCEEW 2024bd). | |
| <i>Thalassarche melanophris</i> | Black-browed Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to</p> | <p>The Black-browed Albatross breeds on subantarctic and peri-antarctic islands in colonies located on terraces of coastal cliffs, slopes of nearby hills, summits of rocky islets or on flat or gently-sloping ground. The terrain in such areas is rocky, but usually supports a moderately-dense cover of tussock grasses. The Black-browed Albatross is a</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------------------|--------------------|---------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | occur within the 5km locality. | marine species that inhabits Antarctic, subantarctic and temperate waters and occasionally enters the tropics. The Black-browed Albatross breeds within Australian jurisdiction on Heard Island, McDonald Islands, Macquarie Island and Bishop and Clerk Islets. The diet of the Black-browed Albatross primarily consists of a combination of fish, molluscs (mostly cephalopods) and crustaceans (mostly krill) (DCCEEW 2024be). | |
| <i>Thalassarche salvini</i> | Salvin's Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species</p> | Salvin's Albatross is a non-breeding visitor to Australian waters. Salvin's Albatross is a marine species occurring in subantarctic and subtropical waters, reaching the tropics in the cool Humboldt Current, off South America. During the non-breeding season, the species | Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|----------------------------|------------------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | habitat is likely to occur within the 5km locality. | occurs over continental shelves around continents. It occurs both inshore and offshore and enters harbours and bays. It is scarce in pelagic waters. Salvin's Albatross probably takes inshore cephalopods (squid) and fish (DCCEEW 2024bf). | |
| <i>Thalassarche steadi</i> | White-capped Albatross | - | V, M | - | X | <p>The NSW BioNet Atlas does not hold any records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat may occur within the 5km locality.</p> | <p>The White-capped Albatross is common off the coast of south-east Australia throughout the year. The species does not breed in Australia. It is a marine species and occurs in subantarctic and subtropical waters. It reaches tropical areas associated with the cool Humboldt Current off South America. Birds nest on slopes vegetated with tussock and succulents on Auckland Island. The White-capped Albatross probably has a diet of inshore</p> | <p>Low likelihood of occurrence. Suitable habitat is not available within the study area. No previous records in the locality suggest the species is unlikely occur.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|------------------------|---------------------|---------------------|-----------------|------------------|------|---|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | cephalopods (squid) and fish (DCCEEW 2024bg). | |
| <i>Tringa brevipes</i> | Grey-tailed Tattler | - | M | X | - | <p>The NSW BioNet Atlas holds 40 records of the species within the locality, including records within the Lord Howe Island airport.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>The species is often found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. The species usually forages in shallow water, on hard intertidal substrates, such as reefs and rock platforms, in rock pools and among rocks and coral rubble, over which water may surge. The species usually roosts in the branches of mangroves or, rarely, in dense stands of other shrubs, or on snags or driftwood. This species does not breed in Australia (DCCEEW 2024bh).</p> | <p>Moderate likelihood of occurrence. The study area provides some roosting habitat, albeit marginal along Cobbys Creek, while the foreshore may be utilised for foraging. Although the species has not been recorded in the study area, it has been recorded in adjacent areas around the airport.</p> |
| <i>Tringa glareola</i> | Wood Sandpiper | - | M | X | - | <p>The NSW BioNet Atlas holds four records of the species within the locality, with all records from</p> | <p>The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. They are typically associated with emergent,</p> | <p>Low likelihood of occurrence. The study area does not contain freshwater wetland, inundated grasslands or</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------|-------------|---------------------|-----------------|------------------|------|---|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | <p>consecutive days in 2018. Records were all located within the small dam/wetland behind Blinks beach.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>aquatic plants or grass, and dominated by taller fringing vegetation, such as dense stands of rushes or reeds, shrubs, or dead or live trees, especially Melaleuca and River Red Gums Eucalyptus camaldulensis and often with fallen timber. They also frequent inundated grasslands, short herbage or wooded floodplains, where floodwaters are temporary or receding, and irrigated crops. They are also found at some small wetlands only when they are drying. Typically they do not use coastal flats, but are occasionally recorded in stony wetlands. The Wood Sandpiper forages on moist or dry mud at the edges of wetlands, either along shores, among open scattered aquatic vegetation, or in clear shallow water. The species does not</p> | <p>wooded floodplains. Furthermore, the species does not breed in Australia.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|----------------------|-------------------|---------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | breed in Australia (DCCEEW 2024bi). | |
| <i>Tringa incana</i> | Wandering Tattler | - | M | X | - | <p>The NSW BioNet Atlas holds 32 records of the species within the locality. Most records are located in the north around North Beach, however a few records occur around the Lord Howe Island airport.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>The Wandering Tattler is generally found on rocky coasts with reefs and platforms, points, spits, piers, offshore islands and shingle beaches or beds. It is occasionally seen on coral reefs or beaches, and tends to avoid mudflats. Foraging habitat is among rocks or shingle, or in shallow pools at edges of reefs or beaches, mainly along the tideline. Wandering Tattlers have been recorded roosting or perching on top of boulders surrounded by or close to water. Wandering Tattlers feed on Polychaete worms, molluscs and crustaceans mainly on rocky coasts, reefs, and, less often, on beaches and mudflats. The species does not breed in Australia (DCCEEW 2024bj).</p> | Moderate Likelihood of occurrence. The study area provides potential foraging habitat along the foreshore. No suitable roosting habitat. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-------------------------|-------------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Tringa nebularia</i> | Common Greenshank | - | M | X | X | <p>The NSW BioNet Atlas holds 14 records of the species within the locality, including one record within the study area from 1999.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality.</p> | <p>Found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity. It occurs in sheltered coastal habitats, typically with large mudflats and saltmarsh, mangroves or seagrass. The species is known to forage at edges of wetlands, in soft mud on mudflats, in channels, or in shallows around the edges of water often among pneumatophores of mangroves or other sparse, emergent or fringing vegetation, such as sedges or saltmarsh. Roosts and loaf around wetlands, in shallow pools and puddles, or slightly elevated on rocks, sandbanks or small muddy islets. The species does not breed in Australia (DCCEEW 2024bk).</p> | <p>Moderate likelihood of occurrence. The species has been recorded within the southern corner of the study area as well as around Blinky Beach to the east. Although the species has been recorded within the study area, this record was from 1999, and very few records of the species have been recorded despite the island being well surveyed.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---------------------------------------|------------------------|---------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Tringa stagnatilis</i> | Marsh Sandpiper | - | M | X | - | <p>The NSW BioNet Atlas holds seven records of the species within the locality, including one record at Neds Beach and six records to the east of the study area.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>The species lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, salt pans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. The species usually forages in shallow water at the edge of wetlands. The species has been recorded roosting or loafing on tidal mudflats, near low saltmarsh, and around inland swamps. The species does not breed in Australia (DCCEE 2024bl).</p> | <p>Moderate likelihood of occurrence. The species has not been recorded within the study area however has been recorded in surrounding areas to the east. Despite the nearby records, the study area provides marginal habitat along the coastal fringe.</p> |
| <i>Tyto novaehollandiae castanops</i> | Masked Owl (Tasmanian) | V | - | X | - | <p>The NSW BioNet Atlas holds 107 records of the species within the locality, distributed across the entire island.</p> | <p>The species is considered a pest on Lord Howe Island on several threatened and/or migratory bird and reptile species. The species inhabits the whole of the main island within forests inside and outside of the</p> | <p>High likelihood of occurrence. The species is considered a pest on Lord Howe Island however is likely to utilise the study area for</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------------|-----------------|---------------------|-----------------|------------------|------|---|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | settlement (DECC 2007, DCCEEW 2024bm). | foraging and roosting. The study area does not contain trees with suitable hollows for breeding. |
| <i>Xenus cinereus</i> | Terek Sandpiper | V | M | X | - | <p>The NSW BioNet Atlas holds three records of the species within the locality, including one record near Blinky Beach and two at Old Settlement Beach.</p> <p>The EPBC PMST does not identify habitat within the 5km locality.</p> | <p>The species occurs on mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species has also been recorded on islets, mudbanks, sandbanks and spits, and near mangroves and occasionally in samphire. This species mostly forages in the open, on soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species prefers to roost in or among mangroves. This species does not breed in Australia (DCCEEW 2024bn, EHG 2024m).</p> | Moderate likelihood of occurrence. The species has not been recorded within the study area however has been recorded on one occasion near Blinky Beach. Despite the low number of records in the locality, potential habitat is present within the study area along the coastal fringe. |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|---|-------------------------------------|---------------------|-----------------|------------------|------|--|--|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Zosterops lateralis tephroleurus</i> | Silvereye (Lord Howe Is. subsp.) | V | - | X | - | The NSW BioNet Atlas holds 19 records of the species within the locality, the majority located within the main settlement. | Widely distributed in the forests of the main island. It is often seen feeding around island homes throughout the settlement area. They glean leaves and flowers for insects, visit flowers for nectar, and eat small seeds and fruits, including the exotic Cherry Guava (DECC 2007, EHG 2019i) | Present. The species was recorded within the study area during July 2024 surveys. |
| <i>Gudeoconcha sophiae magnifica</i> | Magnificent Helicarionid Land Snail | CE | CE | - | X | The NSW BioNet Atlas does not hold any records of the species within the locality. The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality. | The species is associated with the Gnarled Mossy Cloud Forest communities at high altitudes of Mt Gower and Mt Lidgbird. It is typically found on the rainforest floor and living under palm litter (EHG 2019e). | |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|--------------------------------|-----------------------------|---------------------|-----------------|------------------|------|---|--|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Mystivagor mastersi</i> | Masters Charopid Land Snail | CE | CE | X | X | <p>The NSW BioNet Atlas holds one record of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>Little is known about the biology and ecology of this very rare species. The species is suggested to be arboreal, but actual habitat requirements are unclear. The species distribution is expected to be confined to Mt Lidgbird and Mount Gower (DEWHA 2008a, EHG 2019f, DCCEEW 2024aj).</p> | <p>Low likelihood of occurrence. The study area does not located on Mt Lidgbird or Mt Gower.</p> |
| <i>Placostylus bivaricosus</i> | Lord Howe Placostylus | E | E | X | X | <p>The NSW BioNet Atlas holds 41 records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is known to</p> | <p>The species favours damp shaded locations provided by closed canopy. Drypetes/Cryptocarya lowland forest on calcarenite soil is their main habitat. The vegetation at all sites where recent observations have been made is either Kentia Palm (<i>Howea forsteriana</i>) closed-forest or Greybark (<i>Drypetes australasica</i>) - Blackbutt (<i>Cryptocarya</i>)</p> | <p>Present. A total of 26 live individuals were recorded within the study area during the July 2024 surveys.</p> |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|----------------------------------|------------------------------------|---------------------|-----------------|------------------|------|---|---|---|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | occur within the 5km locality. | <i>triplinervis</i>) closed-forest or a combination of the two (DECC 2007, EHG 2020, DCCEEW 2024ap). | |
| <i>Pseudocharopa ledgbirdi</i> | Mount Lidgbird Charopid Land Snail | CE | CE | X | X | <p>The NSW BioNet Atlas holds seven records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality.</p> | Little is known about the biology and ecology of this species. It was once common on the summit of Mount Lidgbird where it lived on wet rock surfaces (EHG 2019g, DCCEEW 2024as). | Low likelihood of occurrence. The study area does not comprise suitable habitat for the species. |
| <i>Pseudocharopa whiteleggei</i> | Whitelegge's Land Snail | CE | CE | X | X | The NSW BioNet Atlas holds four records of the species within the locality. | Little is known about the biology and ecology of this species. It has been recorded living under and inside logs and in moss. The geographic distribution of Whitelegge's Land Snail previously included both Mount Gower and Mount | Low likelihood of occurrence. Previous records of the species are only located at the summit of Mt Gower and Mt Lidgbird, particularly within |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-----------------------------|---------------------------------|---------------------|-----------------|------------------|------|---|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | The EPBC PMST identifies that the species or species habitat is likely to occur within the 5km locality. | Lidgbird, on Lord Howe Island. However recent survey work suggests the species' geographic distribution has declined so that it is now confined only to Mount Gower (DEWHA 2008b, EHG 2019j, DCCEEW 2024at). | the Hotbark-Fitzgerald gnarled mossy cloud forests. |
| <i>Christinus guentheri</i> | Lord Howe Island Southern Gecko | V | V | X | X | <p>The NSW BioNet Atlas holds 133 records of the species within the locality, including three records within the study area.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | The species occurs in a wide range of forest types including lowland rainforest, montane rainforest and <i>Poa poiiformis</i> islets. The species prefers rocky areas that offer protection, with crevices, rock slabs or boulders embedded in the soil. On the Lord Howe Island mainland they appear restricted to a single, rare habitat type behind Lagoon Beach at the base of Signal Point, and at the base of Malabar. The habitat consists of honeycombed beach rock partially embedded in the soil, | Moderate likelihood of occurrence. The NSW BioNet Atlas holds records of the species within the study area from 2010. Suitable habitat in form Kenita Palm forest with a thick layer of humus formed by palm and other leaf litter is available. However previous records were made prior to the |

| Scientific Name | Common Name | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|------------------------------|------------------------|---------------------|-----------------|------------------|------|--|---|--|
| | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| | | | | | | | surrounded by <i>Howea</i> palm forest in which there is a thick layer of humus formed by palm and other leaf litter (DECC 2007, EHG 2019c, DCCEE 2024s). | eradication of rats on the island which were a key predator for the species. As such, the likelihood of occurrence within the study area has been reduced. |
| <i>Oligosoma lichenigera</i> | Lord Howe Island Skink | V | V | X | X | <p>The NSW BioNet Atlas holds 176 records of the species within the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>The species occurs in a wide range of forest types including lowland rainforest, montane rainforest and <i>Poa poiiformis</i> islets. On the Lord Howe Island mainland they appear restricted to a single, rare habitat type behind Lagoon Beach at the base of Signal Point, and at the base of Malabar. The habitat consists of honeycombed beach rock partially embedded in the soil, surrounded by <i>Howea</i> palm forest in which there is a thick layer of humus formed by palm and other leaf</p> | Moderate likelihood of occurrence. Marginal habitat in the form Kenita Palm forest with a thick layer of humus formed by palm and other leaf litter is available, however the study area does not comprise honeycombed beach rock. The species has been recorded in habitats like that within the study area |

| Scientific Name | Common Name | | Conservation Status | | Database Records | | Summary of Previous Records | Habitat Requirements | Likelihood of Occurrence |
|-------------------------------|---------------------|--|---------------------|-----------------|------------------|------|--|--|--|
| | | | BC Act Status | EPBC Act Status | BioNet Atlas | PMST | | | |
| <i>Pericryptodrilus nanus</i> | Lord Howe Earthworm | | CE | CE | - | X | <p>The NSW BioNet Atlas does not hold any records of the species in the locality.</p> <p>The EPBC PMST identifies that the species or species habitat is known to occur within the 5km locality.</p> | <p>litter (DECC 2007, EHG 2019b, DCCEEW 2024an).</p> <p>The species appears to be entirely confined to, and dependant on Gnarled Mossy Cloud Forest, a CEEC under the BC Act. Gnarled Mossy Cloud Forest occurs only on the summit and ridgelines of Lord Howe Island's two southern peaks, Mount Gower and Mount Lidgbird. The species has only been found on the peak of Mount Gower, where Gnarled Mossy Cloud Forest covers approximately 27 hectares.</p> | <p>along Lagoon Beach to the north.</p> <p>Low likelihood of occurrence. The study area is not located within known habitat for the species.</p> |

FIGURES



Figure 1. Location of the study area



Figure 2. Survey locations within and adjacent to the study area

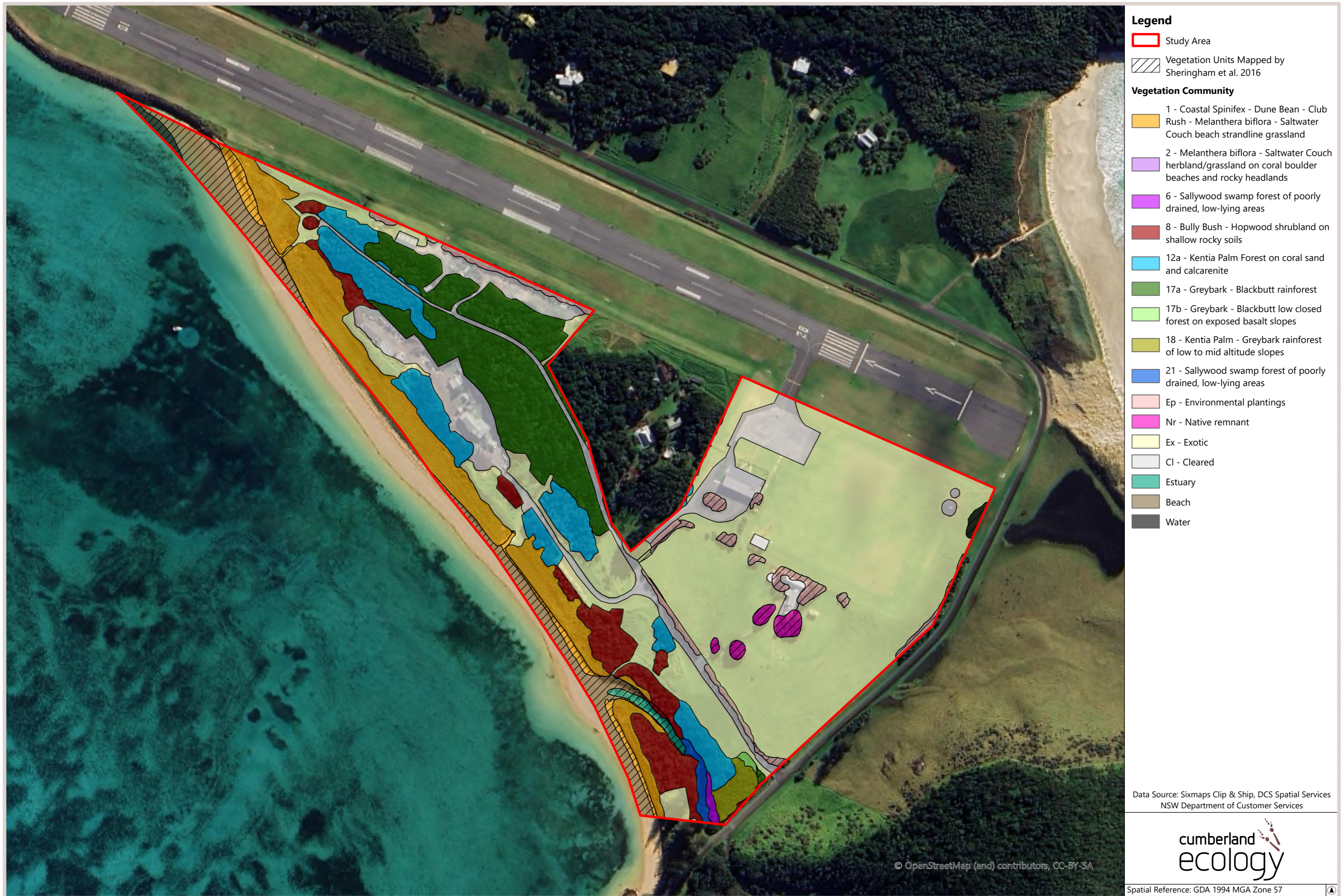


Figure 3. Vegetation communities within the study area

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Figure 4. Significant Native Vegetation within the study area



Figure 5. Threatened ecological communities within the study area

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- Legend**
- Study Area
 - Locality 5 km
- Threatened Flora**
- Caesalpinia bonduc
 - Calystegia affinis
 - Carmichaelia exsul
 - Chamaesyce psammogeton
 - Coprosma inopinata
 - Geniostoma huttonii
 - Hypolepis elegans
 - Lepidorrhachis mooreana
 - Polystichum moorei
 - Xylosma parvifolia

Data Source: Sixmaps Clip & Ship, DCS Spatial Services
NSW Department of Customer Services



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Spatial Reference: GDA 1994 MGA Zone 57

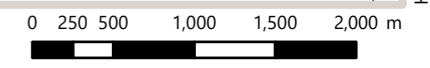


Figure 6. Threatened flora recorded within the locality (5km)

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Legend

Study Area

Threatened Fauna

- △ Golden Whistler (Lord Howe Is. subsp.)
- ▲ Lord Howe Placostylus
- ▲ Masked Booby
- ▲ Pied Currawong (Lord Howe Is. subsp.)
- ▲ Silvereve (Lord Howe Is. subsp.)

Data Source: Sixmaps Clip & Ship, DCS Spatial Services
NSW Department of Customer Services



Spatial Reference: GDA 1994 MGA Zone 57

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Figure 7. Threatened and migratory fauna recorded within the study area

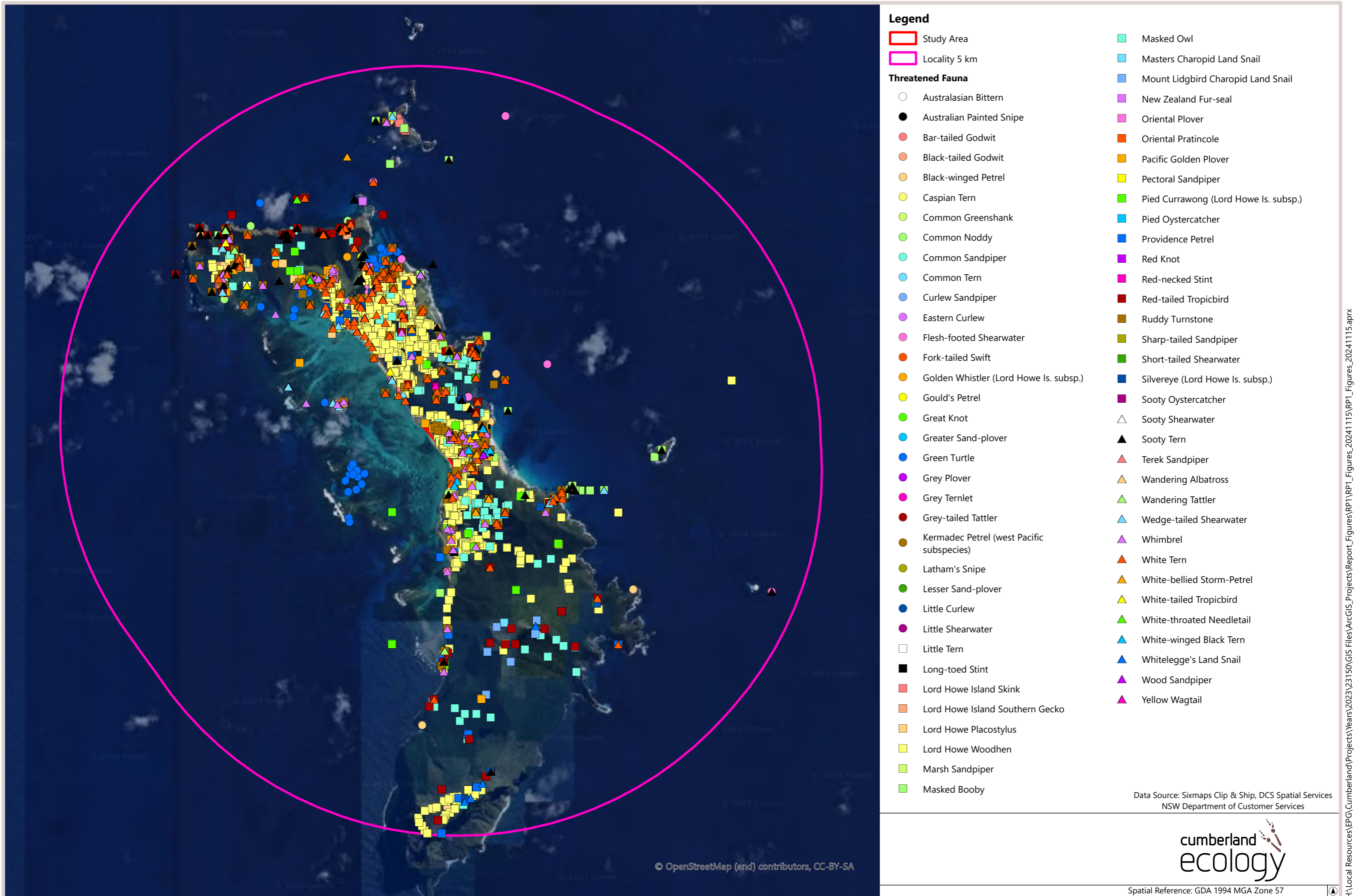


Figure 8. Threatened fauna recorded within the locality (5km)

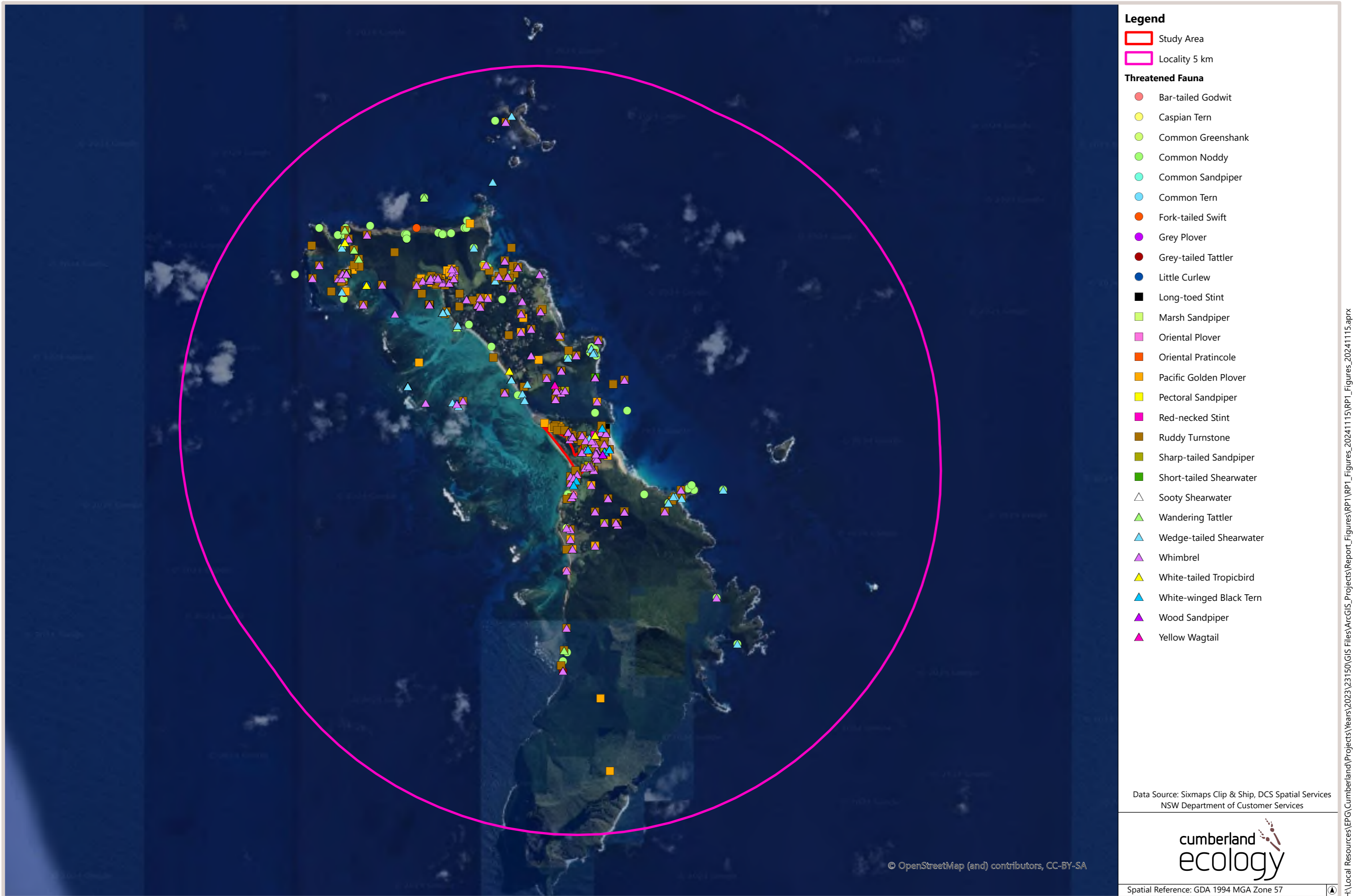



Figure 9. Threatened fauna recorded within the locality (5km)

2006

2024



Legend

 Study Area

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Data Source: Sixmaps Clip & Ship, DCS Spatial Services
NSW Department of Customer Services



Spatial Reference: GDA 1994 MGA Zone 57

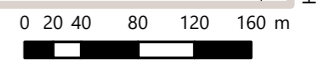


Figure 10. Historical imagery for the South Project Area

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