



Demolition of the former Sydney Fish Market, Blackwattle Bay

Flora and Fauna Assessment Report

Infrastructure NSW

Document Tracking

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Abbreviations

Abbreviation	Description
BC Act	NSW <i>Biodiversity Conservation Act 2016</i>
BDAR	Biodiversity Development Assessment Report
ELA	Eco Logical Australia Pty Ltd
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
FFA	Fauna and Flora Assessment
INSW	Infrastructure NSW
KTP	Key Threatening Process
LEP	Local Environmental Plan
LGA	Local Government Area
MNES	Matters of National Environmental Significance
NSW	New South Wales
PCT	Plant Community Type
PMST	Protected Matters Search Tool
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policy
SSD	State Significant Development
SVTM	State Vegetation Type Map
TEC	Threatened Ecological Community

Executive Summary

Eco Logical Australia Pty Ltd (ELA) was engaged by Infrastructure NSW (INSW) to prepare a Flora and Fauna Assessment (FFA) for the proposed demolition of the existing buildings at the former Sydney Fish Market. The demolition works will be assessed under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This FFA report will accompany a Review of Environmental Factors (REF) for the proposed demolition works at 56-60 Pyrmont Bridge Road, Pyrmont (the development site).

The demolition of the existing buildings is required prior to future development of the site. The future development will renew Blackwattle Bay with new public open space, improved waterfront access and a mix of housing, community, and commercial uses. The future development will be conducted as part of staged State Significant Development (SSD) and will be assessed separately to this activity.

This report assesses the potential impacts of the proposed activity on flora and fauna species listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environment Protection and Biodiversity Conservation 1999* (EPBC Act).

This assessment draws on information gathered from literature reviews, database searches and field investigations. These investigations were designed to validate and map the presence of native vegetation according to Plant Community Types (PCT), assess the presence of any threatened ecological communities (TECs) listed under the relevant legislation, and identify the presence or potential habitat of threatened species or populations within the development site.

The field survey recorded the presence of a small patch of native vegetation which has established along the foreshores of the development site. This patch of vegetation will not be impacted by the demolition works. The native vegetation contains *Casuarina glauca* (Swamp Oak) which is a key characteristic species of PCT 4028 Estuarine Swamp Oak Twig-rush Forest. This vegetation community is associated with *Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions* listed as endangered under the BC Act. The vegetation did not meet the criteria for listing under the EPBC Act. As the demolition works will not directly or indirectly impact this TEC, no Test of Significance or Assessment of Significance were prepared for the TEC. Mitigation measures have been provided to protect this TEC during demolition works.

The development site also contains exotic vegetation and planted vegetation which do not represent part of a PCT. These patches of vegetation will be retained in the development site during demolition works.

The existing buildings contain potential habitat for threatened microbat species. A literature review of previous microbat surveys of adjacent SSDs were conducted to determine the potential for microbats to occur buildings within the development site. Diurnal surveys identified potential for microbats to occupy the buildings. Targeted emergency surveys were conducted and recorded one non-threatened species, *Chalinolobus gouldii* (Gould's wattled bat), in the development site. Tests of significance were prepared for six microbat species as a precautionary measure. These six microbat species are known to utilise buildings and although they were not recorded, they may occasionally utilise the development site on occasion for foraging or roosting habitat. The following microbat species are all listed as vulnerable under the BC Act:

- *Falsistrellus tasmaniensis* (eastern false pipistrelle)
- *Micronomus norfolkensis* (eastern coastal free-tailed bat)
- *Myotis macropus* (southern myotis)

- *Miniopterus orianae oceanensis* (large bent-winged bat)
- *Miniopterus australis* (little bent-winged bat)
- *Scoteanax rueppellii* (greater broad-nosed bat).

The development site is located adjacent to land mapped as Migratory Shorebird Important Habitats for two species, *Limosa lapponica baueri* (bar-tailed godwit) and *Calidris ferruginea* (curlew sandpiper). The bar-tailed godwit is listed as endangered under the BC Act and vulnerable under the EBPC Act. The curlew sandpiper is listed as critically endangered under the BC Act and EPBC Act. The Migratory Shorebird Important Habitat layer applies to State Significance Development (SSD), and do not apply to REFs. However, the Migratory Shorebird Important Habitats identifies habitat which is considered important to these species.

Therefore, consideration of this layer and migratory shorebirds habitat was including in this FFA. No areas mapped on the Migratory Shorebird Important Habitat will be impacted directly. However, due to the demolition works, Test of Significance and Assessment of Significance were prepared for both species for potential indirect impacts. Indirect impacts in the form of noise/vibration disturbance and sedimentation during demolition works has been assessed for these species.

This FFA establishes the relevant statutory framework, describes the terrestrial biodiversity values present within the development site, assesses the potential impacts on threatened species, populations, and communities, and recommends mitigation measures to reduce potential impacts to flora and fauna resulting from the demolition works.

The report concludes that the proposed demolition works will not have a significant impact on threatened species or endangered ecological communities. The Biodiversity Offset Scheme is not triggered and a Biodiversity Development Assessment Report is not required.

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Appendix C Assessment of Significance (EPBC Act)

C1: *Limosa lapponica baueri* (bar-tailed godwit)

C2: *Calidris ferruginea* (curlew sandpiper)

1. Introduction

1.1. Background

Eco Logical Australia Pty Ltd (ELA) was engaged by Infrastructure NSW (INSW) to prepare a Flora and Fauna Assessment (FFA). The former Sydney Fish Market closed to the public in early 2026 when operations relocated to the new Sydney Fish Market facility located nearby at the head of Blackwattle Bay. The former Sydney Fish Market buildings and structures have since been decommissioned and reached the end of their useful life. Infrastructure NSW therefore needs to proceed with demolition of the buildings as a matter of priority. Demolition of the former Sydney Fish Market buildings support the NSW Government's long-term plan to renew Blackwattle Bay with new public open space, improved waterfront access and a mix of housing, community, and commercial uses. The proposed new development will be assessed as part of staged SSD and do not form part of this assessment.

This FFA report has been prepared to describe and assess potential impacts on native vegetation, threatened species, populations and communities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The impact assessment within this report is based on information gathered from database searches and field investigations. This FFA establishes the relevant statutory framework, describes the terrestrial and aquatic biodiversity values present within the development site, provides an assessment of the potential impact on threatened species, populations and communities, and recommends mitigation measures to reduce potential impacts to flora and fauna resulting from the development.

This FFA report will accompany a Review of Environmental Factors (REF) for the proposed demolition of the former Sydney Fish Market, Blackwattle Bay. The proposed activity as assessed in the REF is anticipated to be undertaken under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), with the relevant authority acting as the determining authority.

1.2. Location context

The proposed activity is to occur at the former Sydney Fish Markets (from herein referred to as the "development site"), located at 56-60 Pyrmont Bridge Road, Pyrmont and comprising of the following lots:

- 1 DP 734622
- 1 DP 74155
- 1 DP 836351
- 1 DP 125720
- 2 DP 125720
- 2 DP 827434
- 1004 DP 1321226

The development site for the purposes of this report is shown in Figure 1.

1.3. Proposed activity

The proposed activity include:

- Demolition of existing buildings at the former Sydney Fish Market to slab level including:
 - Building A;
 - Building B;
 - Building C;
 - Building D; and
 - Two separate buildings located north of Building D, previously occupied by Claudio's Seafood and Musumeci Seafood.
- Demolition of suspended floors, blockwork, and other structural elements above the ground floor slab level.
- Site clearing and establishment works, including installation of temporary site hoarding, scaffolding, and temporary facilities and amenities associated with the demolition works.
- Site infrastructure works including capping all redundant services back to the site perimeter.

The demolition plan and building numbers is provided in Figure 2 and Figure 3.

1.4. Purpose of this report

This FFA report has been prepared for Infrastructure NSW (INSW) to inform the REF for the proposed demolition of the former Sydney Fish Market, Blackwattle Bay. This FFA provides the findings of a database search and literature review, a summary of the relevant statutory considerations, results of field surveys and an assessment of how the proposed activity could impact upon the ecological values of the development site.

This FFA includes an assessment of impacts of the proposed activity on threatened species, populations and ecological communities listed under the BC Act and EPBC Act. The assessment process includes:

- Identification of known or potential habitat for threatened species or ecological communities within and adjacent to the development site.
- Assessment of the likely impacts of the proposed development site on any threatened species or ecological communities with the potential to occur within the development site.
- Identification of any additional controls or mitigation measures to reduce impacts.

1.5. Terms used in this report

The following terms have been defined for the purposes of this assessment:

- *Proposed activity* – as specified Section 1.3
- *Demolition works* - this has the same meaning as the proposed activity. This includes the removal of the existing buildings for this REF.
- *Development site* – defined as a solid red border in Figure 1 and is defined as 56-60 Pyrmont Bridge Road, Pyrmont. It is inclusive any area likely to be affected by the proposed activity, directly or indirectly within the site. This includes the demolition works and the area surveyed but will be retained in the site.
- *Assessment area* – refers to the development site and a 5 km buffer area.



Figure 1: Development site and locality



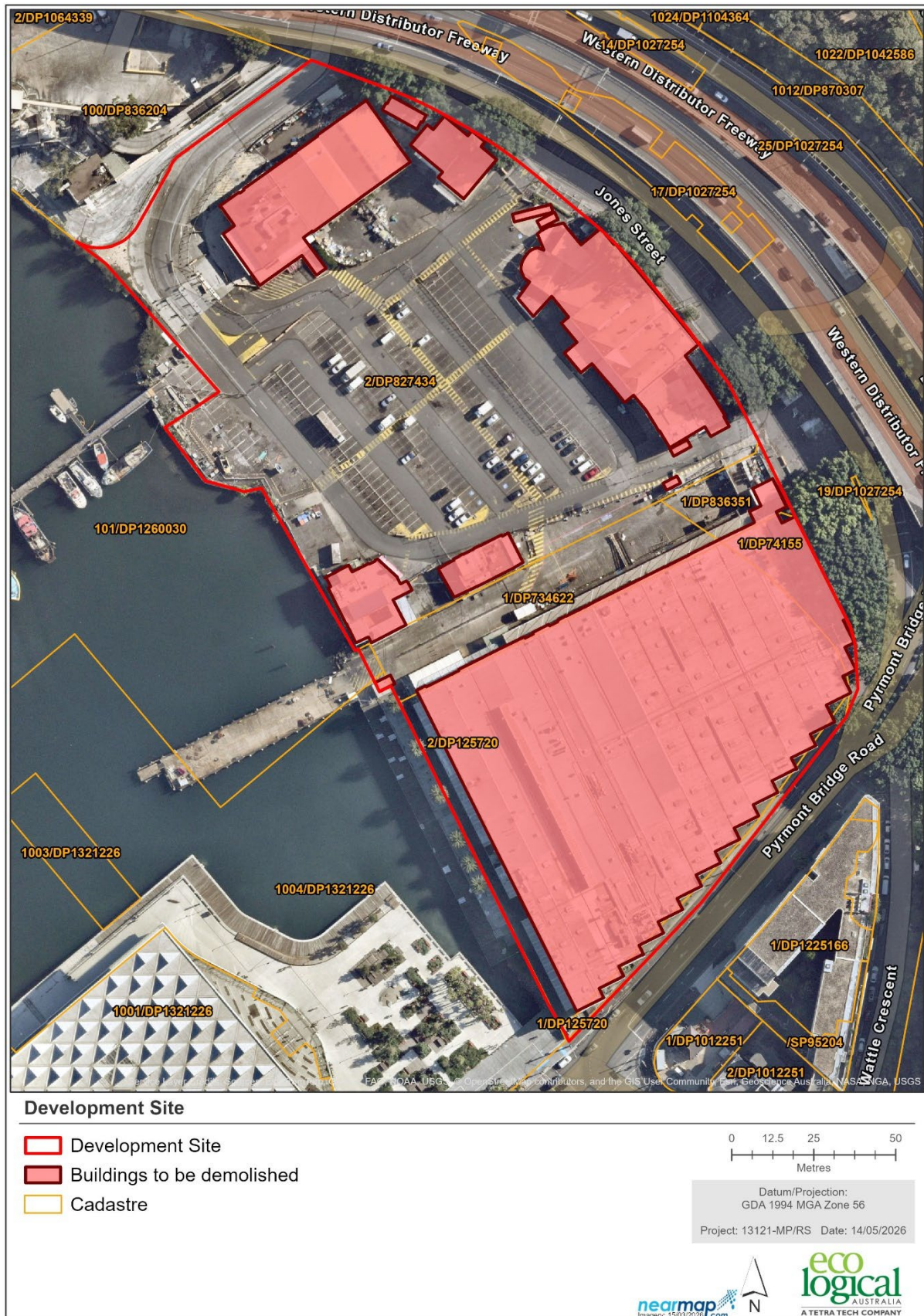


Figure 3: Development site and proposed demolition works

2. Statutory framework

Table 1: Statutory framework

Name	Relevance to the project
Commonwealth	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	The EPBC Act provides protection for Matters of National Environmental Significance (MNES), including vegetation communities and species listed under the EPBC Act. If a development is likely to have a significant impact on MNES, it is likely to be considered a 'Controlled Action' by the Commonwealth and requires assessment and approval by the Commonwealth to proceed. Indirect impacts to two (2) MNES have been assessed. • <i>Limosa lapponica baueri</i> (bar-tailed godwit) • <i>Calidris ferruginea</i> (curlew sandpiper). The DPE Migratory Shorebird Important Habitat areas were located within the development site boundary. Assessments of Significance for bar-tailed godwit and curlew sandpiper were prepared for this activity and concluded that the development is not likely to have a significant impact on MNES.
State	
<i>Environmental Planning and Assessment Act 1979</i> (EP&A Act)	The EP&A Act is the principal planning legislation for NSW. It provides a framework for the overall environmental planning and assessment of development proposals. The EP&A Act places a duty on the determining authority to adequately address a range of environmental matters including maintenance of biodiversity and the likely impact to threatened species, populations, or ecological communities (under the BC Act – refer below). Part 5.1 requires public authorities to assess environmental impacts (using a Review of Environmental Factors or REF) for developments like schools, health facilities and other public infrastructure that are permitted without consent.
<i>Biodiversity Conservation Act 2016</i> (BC Act)	The BC Act outlines the assessment requirements to determine whether future development is likely to significantly affect threatened species or ecological communities, or their habitats under section 7.3 of the BC Act, known as 'test of significance'. The proposed development proceeds as a Review of Environmental Factors (REF) under Part 5 of the EP&A Act. For assessments under Part 5 Division 5.1 of the EP&A Act, the Biodiversity Offsets Scheme (BOS) threshold does not apply, as specified in section 7.2 (2). Declared areas of 'outstanding biodiversity value' under section 7.2(1c) must still be considered. If the conclusion of the test of significance is that there is potential for a significant impact on a threatened species or ecological community, then the proponent has the option of preparing an SIS, or a BDAR. The proposed activity is unlikely to result in a significant impact upon threatened species listed under the BC Act and therefore a SIS or BDAR is not required. The preparation of an FFA report may be required for the REF. The development site is not located within declared areas of outstanding biodiversity value
<i>Local Land Services Amendment Act 2016</i> (LLS Act)	The proposed activity does not involve the clearing of native terrestrial vegetation. Additionally, the activity is to be assessed under Part 5 of the EP&A Act and therefore, the LLS Act does not apply.
<i>Fisheries Management Act 1994</i> (FM Act)	The FM Act is the principal piece of legislation protecting aquatic habitat in NSW. The act aims to conserve fish stocks, key fish habitat, aquatic vegetation, and threatened species, populations and communities. Threatened aquatic species, populations and communities are listed under Schedules 4, 4A and 5 of the FM Act, while key threatening processes are listed under Schedule 6. Permits under Part 7 of the FM Act to harm marine vegetation, obstruct fish passage, dredge or reclaim land do not apply to State Significant

Name	Relevance to the project
	Developments, however, the offset policy applies to ensure there is ‘no net loss’ of key fish habitat (KFH) in NSW. DPI Fisheries has identified the area within Blackwattle Bay as KFH. The proposed activity does not involve works within the KFH. Therefore, no Permit under Part 7 is required.
<i>Sydney Environmental Plan (SREP, Sydney Harbour Catchment) 2005</i>	The proposed activity is located within the Sydney Harbour Catchment and is subject to the SREP (Sydney Harbour Catchment) 2005, in particular, Clause 21: biodiversity, ecology and environment protection. There are no proposed water-based recreation and entertainment facilities proposed for this activity as such the activity will not have a direct impact on marine environment and no additional consideration under the SREP is required.
<i>Water Management Act 2000 (WM Act)</i>	The WM Act aims to provide for the sustainable and integrated management of water sources for NSW. The Act requires developments on waterfront land to be ecologically sustainable, and recognises the benefits of aquatic ecosystems to agriculture, fisheries and recreation. Approvals under Section 91 are required for controlled activities on waterfront land, unless an exemption applies. A controlled activity includes work that builds on, removes, or deposits material or affects water flows in the channel or within 40 m from top of bank. An exemption applies to this proposal, as the works are conducted under Part 5 of the EP&A Act by an exempt authority and the development site is located within Sydney Harbour, under Schedule 4, Part 6 of the <i>Water Management (General) Regulation 2025</i>—Clause 49 (State or Commonwealth bodies)—therefore, a controlled activity approval is not required.
Planning instruments	
State Environmental Planning Policy (Resilience and Hazards) 2021	Chapter 2 of the Resilience and Hazards SEPP 2021 aims to manage development within coastal zones and protect the environmental assets of the coast. In accordance with Section 5 of the <i>Coastal Management Act 2016</i> the term coastal zone is defined as any area of land that is comprised of the following coastal management areas: • Coastal wetlands and littoral rainforests • Coastal vulnerable areas • Coastal environment areas • Coastal use areas. The development site is mapped under the NSW Department of Planning and Environment Coastal Management SEPP. The proposed activity is located within the Coastal Environment Area (Figure 4). Although the development site lies in the ‘coastal environmental areas’, Resilience and Hazards SEPP does not apply to this activity. Under clause 13 (3) of the Coastal Management SEPP, the development objectives for the coastal environment area do not apply to the Foreshores and Waterway Areas within the Sydney Harbour. Clause 2.10(3) of the Resilience and Hazards SEPP states that development controls for ‘coastal environment area’ do not apply to land within the Foreshores and Waterways Area with the meaning of the Biodiversity and Conservation SEPP 2021. Therefore, the Resilience and Hazards SEPP does not apply to this management area.
State Environmental Planning Policy 2021 (Biodiversity and Conservation)	The following Chapters of the SEPP Biodiversity and Conservation are relevant for this project and includes: • Chapter 2 - Vegetation in Non-Rural Areas of the SEPP, which applies to development that does not require consent. As the proposed activity requires consent under the EP&A Act, Chapter 2 does not apply. • Chapter 6 – Water Catchments. The development site is part of the Sydney Harbour Catchment; Clause 6.1(b) identifies the Sydney Harbour Catchment as a regulated catchment. Development controls relevant to the proposal are listed under Part 6.2, Division 2 - Controls on development generally and Part 6.3,

Name	Relevance to the project
	Division 3 - Development in Foreshores and Waterways Area. Clauses related to aquatic ecology do not apply to this activity as works do not involve development within this area.
Greater Sydney Regional Plan (Eastern City)	The Greater Sydney Regional Plan is the regional plan that applies to the broader Sydney region including its future growth centres. It sets out the vision to build a city in which most residents live within thirty minutes of employment, education, health, services, and open spaces. The development site is within the 'Eastern City', one of five districts under the plan. One of the key directions of the plan is to create 'a city of great places', which can be achieved through creating great places that bring people together (Objective 12) and conserving and enhancing environmental heritage (Objective 13). An indicator for the achievement of these goals is increased access to open space. The proposed development is consistent with the aims.
Sydney Environment Plan 2012 (LEP)	The terrestrial component of the development site is zoned RE1 Public Recreation and MU1 Mixed Use under the Sydney Local Environmental Plan 2012 (LEP). As the activity will be assessed as a REF the conditions of the LEP do not form part of the statutory requirements. Therefore, consideration of the LEP has been made, but is not a consent condition. For the purpose of the legislative assessment, the aims of the land zoning have been provided but are not required. The objectives of the RE1 Public Recreation zone are: • To enable land to be used for public open space or recreational purposes. • To provide a range of recreational settings and activities and compatible land uses. • To protect and enhance the natural environment for recreational purposes. • To provide links between open space areas. • To retain and promote public access. • To facilitate public use and enjoyment of waterways and surrounding areas. The objectives of the MU1 Mixed Use zone are: • To encourage a diversity of business, retail, office and light industrial land uses that generate employment opportunities. • To ensure that new development provides diverse and compatible land uses that support a vibrant urban environment. • To promote the efficient use of land and the integration of land uses. • To provide for residential development in appropriate locations. The proposed activity does not require development application approval under Part 4 of the EP&A Act; therefore, these aims do not apply.



Figure 4: SEPP Resilience and Hazards 2021 DO NOT apply as the works are conducted under a Part 5 activity under the EP&A Act

3. Methodology

3.1. Database and literature review

A review of the available databases pertaining to the ecological and environmental features of the development site was conducted to identify known biodiversity values, including records of threatened species, populations and communities. Databases that were reviewed included:

- Biodiversity Values Map (NSW DCCEEW 2026a (Accessed May 2026).
- BioNet (Atlas of NSW Wildlife) database search (5 km) for threatened species and populations listed under the BC Act (NSW DCCEEW 2026b) (Accessed May 2026).
- EPBC Act Protected Matters Search Tool (PMST) (5 km) for threatened and migratory species, populations and threatened ecological communities (TEC) listed under the EPBC Act (DCCEEW 2026) (Accessed May 2026).
- The NSW State Vegetation Type Map (SVTM, NSW DCCEEW 2026c), plus any additional relevant aerial imagery, vegetation mapping and soil mapping to assess the extent of native vegetation, including mapped TECs listed under the BC Act and EPBC Act (Accessed May 2026).
- NSW Planning Portal (Accessed May 2026).
- Review of State Environment Planning Policies (SEPPs), including the Resilience and Hazards SEPP 2021 and the Transport and Infrastructure SEPP 2021, and any other relevant SEPPs applicable to the development site.
- Previous reports and the BOAMs migratory shorebirds habitat mapping.

Threatened species, populations and communities identified from both BioNet and the PMST were combined to produce a Likelihood of Occurrence Table, which assesses the potential of threatened entities to occur in the development site. The likelihood of occurrences for threatened species, populations and communities in the development site were then determined based on the location of database records, the likely presence or absence of suitable habitat in the development site, and knowledge of the species' ecology.

Following field survey, the likelihood of occurrence of each species, population or community was revised. This was based on the additional information gathered about the extent and type of habitats and which species were present on the development site. The likelihood of occurrence of species, populations and communities following the field inspection is presented within the Likelihood of Occurrence Table in Appendix A.

3.2. Literature review of previous field surveys

3.2.1. Previous field survey

ELA conducted a thorough literature review of previous vegetation and microbat surveys completed by ELA on adjacent State Significant Developments (SSD) to determine the likelihood of microbats utilising the development site. The following surveys have been done adjacent to the current development site:

- Blackwattle Bay Precinct (ELA 2020a) – this includes the current development site and adjacent lands
- New Sydney Fish Markets (ELA 2020b) – located directly south-west of the development site

- Harbourside Shopping Centre (ELA 2023) – located approximately 500 m east of the development site
- Bank Street Park (ELA 2024) – located directly north of the development site.

3.2.1.1. Blackwattle Bay Precinct survey

ELA completed an Urban and Marine Ecology Constraints and Opportunities report for INSW in 2021. A site assessment was conducted to include an assessment of the vegetation and existing built structures for microbat habitat. Field surveys were conducted 22 August 2017 and 31 August 2017 for vegetation. A separate microbat survey was conducted 22 September 2020. That survey aimed to class existing built structures as low, medium or high potential of providing suitable microbat habitat (ELA 2020a). The microbat habitat assessment was conducted by microbat specialist ecologist Dr Rodney Armstead.

3.2.1.2. New Sydney Fish Markets survey

ELA also prepared a Biodiversity Development Assessment Report (BDAR) for the approved new Sydney Fish Markets (ELA 2020b) (SSD 8925) which is located adjacent to the current development site. The BDAR involved additional assessment of the vegetation and targeted surveys for microbats.

The microbat surveys included the following:

- diurnal external structure inspection of the buildings on 14 February 2020 for a total of 2 person hours
- 55 nights of acoustic recording across the site in two separate survey periods, between 17 and 20 February and between 27 and 30 March 2020
- diurnal external structure inspection by boat beneath the wharves on 27 March 2020 which categorised the microbat habitat present beneath the structure into high, medium and low value and searched for evidence of microbats or their roosts for a total of 8 person hours
- diurnal inspection from the land (24 April 2020) and water (31 March 2020) of surrounding structures and potential microbat habitat (wharves, jetties, piles, culverts, bridges) within 2 km of the site for a total effort of 4 person hours
- emergence survey of the southern wharf at dusk from the water using three acoustic detectors and three thermal imaging cameras conducted by three ecologists on 8 April 2020 for a total survey effort of 4.5 person hours.

A diurnal site assessment was conducted by Principal Scientific Ecologist, Dr Frank Lemckert on 14 February 2020 to identify whether potential habitat for threatened microbat species exists within the new Sydney Fish Markets.

3.2.1.3. Other microbat surveys

ELA has also been involved in adjacent microbat surveys for the following approved State Significant Development which included microbat surveys:

- Harbourside shopping centre (SSD – 49653211) – habitat assessment 23 November 2020 four anabat recorders (ELA 2023). Four (4) Wildlife Acoustics Song Meter Minis bat Ultrasonic recorders (Song Meter Minis) were deployed under the promenade from 10 February 2023 to 17 February 2023 (ELA 2023).

- Bank Street Park SSD–53386706 – habitat assessment 7 June 2023 and four (4) Wildlife Acoustics devices (three Anabat swifts and one Song Meter Mini) were deployed around the buildings on 4 October 2023 and collected 9 October 2023 (ELA 2024).

These documents were reviewed and the assessments were used to provide an understanding of microbat habitat and use in the broader landscape around the development site.

3.3. Field survey

3.3.1. Recent 2026 survey

The purpose of the field survey was to:

- Validate and update existing vegetation mapping (2017) and assign vegetation across the development site to the most appropriate Plant Community Types (PCTs), including differentiation between native and exotic vegetation.
- Stratify vegetation into zones based on assigned PCTs and vegetation condition to inform survey effort.
- Undertake full floristic vegetation integrity plots, where applicable, to assess the composition, structure and condition of representative native or planted vegetation in accordance with the Biodiversity Assessment Method (BAM), where required.
- Conduct a diurnal field inspection of the development site to identify the presence of threatened flora species, populations, or their potential habitat.
- Identify fauna habitat features within the site, including habitat suitable for threatened species such as hollow-bearing trees (HBTs), and record opportunistic observations of flora and fauna.
- Assess habitat suitability for migratory shorebirds in adjacent foreshores, including mapping and verification of habitats identified within the Migratory Shorebird Important Habitat layer for species such as *Limosa lapponica baueri* (bar-tailed godwit) and *Calidris ferruginea* (curlew sandpiper). This included identification of suitable foraging and roosting habitats such as algal mats, mudflats, tidal zones and rocky shores.
- Undertake a diurnal assessment of existing built structures to identify potential microbat roosting habitat, including entry points to roof cavities, culverts or wharf structures, and evidence of activity (e.g. guano staining or ‘white wash’ on walls).

3.3.2. Microbat surveys

Targeted microbat surveys were conducted on 25 May 2026 by ELA ecologists Hamish Pritchard, Kacey Tada and Cornelia Ersson to determine the presence of microbats within the development site. The surveys involved one night of three ecologists observing potential gaps, cavities and entrances in the buildings to determine whether microbats were utilising the buildings as roosting habitat. Emergence surveys commenced at half an hour before dusk, and ran for one hour and 30 minutes, and utilised echolocation detectors and thermal cameras to confirm microbat activity at the time of survey.

It is noted that from previous agency correspondence on the BDAR (ELA 2024) for Bank Street SSD 53386706 from the Biodiversity Conservation Science Group stated:

“optimal survey season for microbat species is between October to January”. However, this is not the case for the large bent-winged bat (Miniopterus orianae oceanensis) in Sydney, for which

mid-autumn is the optimal time as numbers of this species build up from autumn to winter; warmer nights during winter can also be suitable”

ELA conducted these surveys in late autumn during warm weather for the large bent-winged bat and for southern myotis (another potential threatened microbat species). Conditions on the night were optimal, being after a period of rain, with temperature at the time of the survey being approximately 20°C.

3.4. Survey limitations

This assessment is not intended to provide an inventory of all species across the development site. Instead, it provides an overall assessment of the ecological values of the development site with emphasis on threatened species, populations and communities, and key fauna habitat features such as HBTs. Additionally, there was limited access in parts of the development site, specifically upstairs in some of the smaller buildings and the southern wharf. This was due either to safety concerns regarding structural integrity or potential hazardous materials, or due to these areas being barricaded off.

4. Results

4.1. Literature and database search

4.1.1. Soils, topography and hydrology

The development site is located within Blackwattle Bay which forms part of the wider Sydney Harbour. The underlying soil profile within the development site is predominantly mapped as 'not assessed' (DPHI 2024), reflecting the absence of detailed soil classification due to the highly modified nature of the site. A small area along the eastern portion of the development site is mapped as Tenosols, which are weakly developed soils characterised by minimal horizon differentiation (DPHI 2024). The development site is currently entirely covered by hardstand surfaces, and soils within the mapped extent are therefore likely to be substantially disturbed, truncated or replaced by fill materials.

4.1.2. Historical imagery

The review of historical imagery accessed via the NSW Historical Imagery viewer (Spatial Services 2026) indicates that the development site has undergone some clearing of vegetation over time. The historic aerial imagery shows that clearing of land and construction of numerous buildings and streets had occurred by 1930. The historic aerial photography indicates that the subject land has a long history of disturbance and clearing of vegetation. The subject land is located within a highly urbanised environment which lacks connectivity features. The vegetation within the subject land is disconnected from patches of mapped intact native vegetation. Vegetation in the development site has established from opportunistic colonisation of both native and exotic species and through planting (both native and exotic).

4.1.3. Previously mapped vegetation

Prior to field validation, a review of the SVTM (NSW DCCEEW 2026c) was undertaken to consider which PCTs had been mapped within, and surrounding, the development site. No PCTs have been previously mapped within the development site (NSW DCCEEW 2026c). The nearest PCT mapped to the development site is PCT 4097 Samphire Saltmarsh, which is roughly 1.5 km to the west in Federal Park (NSW DCCEEW 2026c).

4.1.4. Migratory shorebirds habitat mapping

The literature review identified that the development site is located adjacent to land mapped on the Migratory Shorebird Important Habitats (Figure 6). Two species, *Limosa lapponica baueri* (bar-tailed godwit) and *Calidris ferruginea* (curlew sandpiper) were identified as associated with habitat with Port Jackson wetland along the Parramatta River. The Migratory Shorebirds Important Habitats includes all of Parramatta River and extends into Blackwattle Bay.

The Migratory Shorebirds Important Habitat is assessed by SSDs and are not a requirement of REFs. Therefore, no additional assessment of the habitat layer is required, however, due to the presence of the mapped habitat, field surveys were required to assess potential habitat within the development site.



Figure 5: State Vegetation Type Map (NSW DCCEEW 2026)



Figure 6: BOAMs Migratory Shorebirds Important Habitat mapped along the water adjacent to the development site (accessed 14 May 2026)

4.1.5. Threatened species

The BioNet Atlas search identified 78 records (72 fauna species and 6 flora species), and the Protected Matters Search Tool (PMST) identified 134 Matters of National Environmental Significance (MNES) (including 10 threatened ecological communities (TECs), 96 fauna species and 28 flora species). The results of the BioNet and PMST searches were combined, and duplicates and marine megafauna species (whales and sharks) were removed from further analysis. This resulted in 178 threatened entities and/or MNES (including 10 TECs, 140 fauna species and 28 flora species) that were recorded within, or had the potential to occur within, a 5 km radius of the development site.

Threatened species recorded within 5 km of the development site in BioNet are presented in Figure 8. Using this data, and habitat information gathered during the field survey, a Likelihood of Occurrence assessment was developed (Appendix A).

No threatened entities have previously been recorded in the development site, although several have been recorded in proximity including *Myotis macropus* (southern myotis) and *Pteropus poliocephalus* (grey-headed flying-fox).

It should be noted that some species predicted by the PMST do not have previous records within 5 km of the development site and are not shown on Figure 8. This is because the tool is based on habitat modelling rather than previously recorded survey results.

4.1.6. Literature review of previous field survey results

4.1.6.1. Results of the Blackwattle Bay Precinct surveys

The previous vegetation surveys in 2017 did not record the presence of native vegetation which represents part of a Plant Community Type (PCT). Weeds and some planted native vegetation which does not represent part of a PCT was recorded within the development site (ELA 2020a).

The habitat assessment identified that the vegetation supports potential foraging for *Pteropus poliocephalus* (grey headed flying fox) which is listed as vulnerable under the BC Act and EPBC Act. These were identified as planted native fig trees along Bank Street (outside of the current development site) (ELA 2020).

The microbat habitat assessment identified microbat habitat was present in the form of built structures (Figure 7), including:

- Low potential habitat
 - sandstone seawalls with shallow crevices and large intertidal zone
 - jetties with no deep fissures or protection from elements, but may act as an emergency overnight roost
 - buildings with some potential openings but currently occupied
- Medium potential habitat:
 - small pipe or box culverts discharging at a seawall, especially if above the high tide limit
 - buildings with obvious holes in their eaves, allowing access to the roof cavity stacked storage containers and other items providing shelter
 - cavity on the underside of elevated roadway.

The literature review identified that the current development site contains low and medium potential habitat for microbats in the buildings to be demolished (Figure 7).

4.1.6.2. Results of the BDAR for the new Sydney Fish Markets

The BDAR for the new Sydney Fish Market identified *Myotis macropus* (southern myotis) and *Miniopterus orianae oceanensis* (large bent winged bat) occupying the underside of the wharf supporting the now-demolished Hanson cement plant (ELA 2020b). An additional 11 microbat species were also recorded from anabat results at the new Sydney Fish Markets location. Of which the following were considered potential to occur in the buildings prior to the construction of the new Sydney Fish Markets buildings:

- *Myotis macropus* (southern myotis)
- *Scoteanax rueppellii* (greater broad-nosed bat)
- *Falsistrellus tasmaniensis* (eastern false pipistrelle)
- *Micronomus norfolkensis* (eastern coastal free-tailed bat)
- *Miniopterus australis* (little bent-winged bat)
- *Miniopterus orianae oceanensis* (large bent-winged bat).

The remaining species were considered flying over or were not listed as threatened and did not require additional assessments in the BDAR. Of the species recorded during the field work, only southern

myotis was considered a regular species which was roosting under the wharf. The large bent winged bat was recorded in low numbers and no breeding habitat for this species was recorded.

4.1.6.3. Results of other microbat surveys in locality

The microbat surveys for Harbourside Shopping Centre BDAR (ELA 2023) recorded one species:

- *Myotis macropus* (southern myotis) listed as vulnerable under the BC Act.

There were relatively few records of microbats. Ultrasonic detectors were attached to the wharf and occasional activity of microbats was detected. There was no evidence of this species roosting or breeding or regularly foraging under the wharf or in the site.

The microbat surveys for Bank Street BDAR (ELA 2024) recorded three possible species credit species were recorded during targeted surveys including:

- *Miniopterus australis* (little bent-winged bat) - listed as vulnerable under the BC Act
- *Miniopterus orianae oceanensis* (large bent-winged bat) - listed as vulnerable under the BC Act
- *Myotis macropus* (southern myotis) - listed as vulnerable under the BC Act

The recordings were low in numbers and did not indicate these species were utilising the existing buildings as roosting/breeding habitat. A microbat management plan was also prepared for the demolition of the buildings which have now been removed. No microbats were recorded in the buildings during supervision of demolition works.

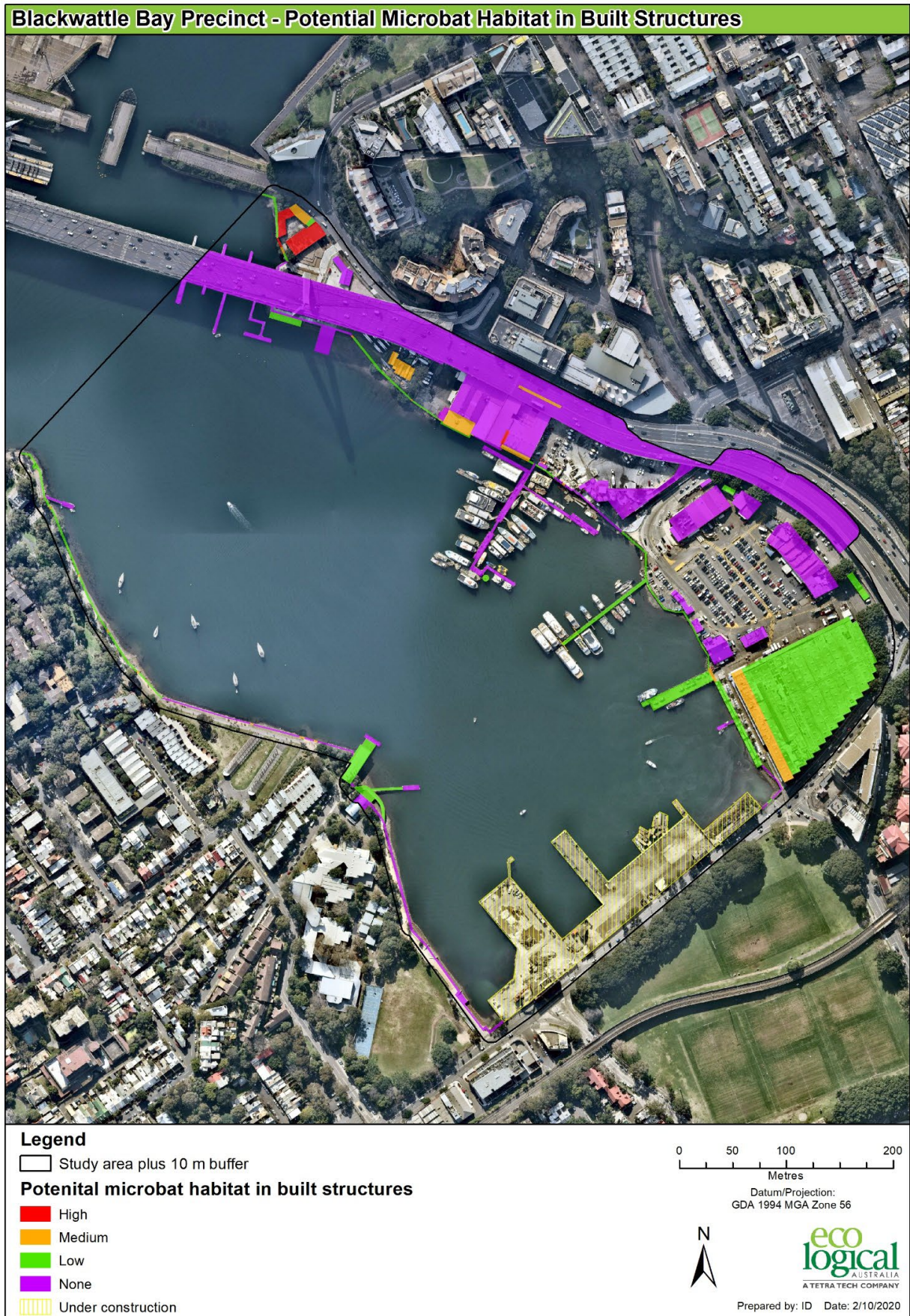


Figure 7: Assessment of microbat habitat assessment (built structures) within the development site and broader landscape (ELA 2020)

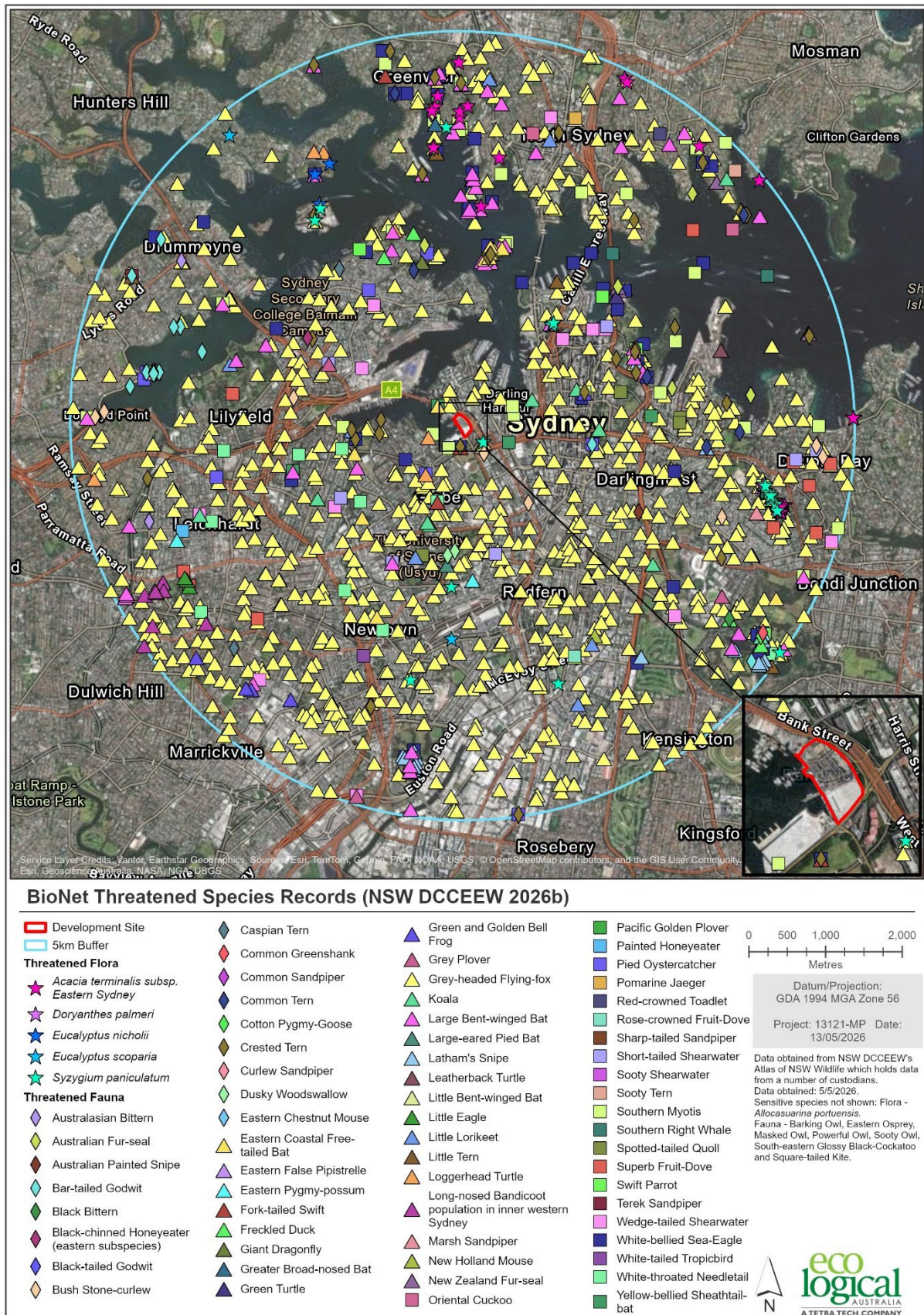


Figure 8: Threatened flora and fauna species BioNet records (NSW DCCEEW 2026)

4.2. Field Survey

A field survey of the development site was undertaken by ELA Ecologists Hamish Pritchard and Hayley Winch on Thursday 23 April 2026. Biodiversity data and information were collected across the entire development site in order to inform this assessment.

A complete list of flora and fauna species recorded during the field survey is provided in Appendix A.

Vegetation within the development site was limited to planted landscaping species, coloniser native species and common cosmopolitan exotic weeds (Figure 9). The native coloniser species were mapped as part of a PCT due to the presence of characteristic species and potential for this species to form part of a TEC. It is noted that the vegetation will not be impacted by the demolition works. More information on the vegetation is provided below.

The field surveys also provided an assessment of the habitat for threatened species. More information is provided in Section 4.2.5 below.

4.2.1. Planted Community Type

The vegetation within the development site is highly modified and structurally simplified. The historic aerial imagery indicate that the entire development site has been previously cleared and there is no remnant vegetation present. The development site is disconnected to patches of intact native vegetation; however Sydney Harbour may transport seed to the development site.

A narrow cluster of *Casuarina glauca* (Swamp Oak) was recorded along the western extent of the development site (Figure 10) (outside of the demolition works area). This species was mapped as part of a PCT due to the presence of *Casuarina glauca* which is a characteristic species of PCT 4028 Estuarine Swamp Oak Twig-rush Forest. Several *Callistemon viminalis*, were noted in the same area but are not representative of PCT 4028. This species is also a commonly planted native species.

The ground layer in this patch of mapped PCT 4028 was dominated by disturbed and weedy species, including *Cenchrus* sp., *Cyperus eragrostis*, *Eleusine indica*, *Conyza bonariensis* and *Geranium* sp., none of which are native or characteristic of PCT 4028. The vegetation within the development site has established from opportunistic coloniser including *Casuarina glauca* which can represent part of an establishing native vegetation community. For this reason, this patch of vegetation was mapped as part of PCT 4028. This vegetation will not be impacted by the demolition works.

4.2.2. Planted vegetation

Planted vegetation within the development site comprises a mixture of native and exotic ornamental species established as part of urban landscaping (Figure 11). The canopy is typically dominated by species such as *Ficus* spp. and ornamental palms including *Archontophoenix* spp. and phoenix palms. The midstorey includes a variety of planted species such as *Cupaniopsis anacardioides*, *Cordyline* spp., *Schefflera* spp. (including *Schefflera actinophylla*), *Philodendron* spp., *Celtis* spp., *Doryanthes* spp. and other ornamental taxa. The ground layer includes planted native species such as *Dianella caerulea* var. *caerulea* and *Dichondra repens*, along with scattered exotic species. While some native species are present, this vegetation is artificial in origin, regularly maintained, and does not represent a naturally occurring PCT.

4.2.3. Exotic vegetation

Exotic vegetation within the development site is dominated by a range of invasive species typical of highly disturbed urban environments (Figure 9, Figure 12). The ground layer is characterised by grasses and herbaceous weeds including *Cenchrus* spp., *Eleusine indica*, *Cynodon dactylon*, *Bromus catharticus* and *Stenotaphrum secundatum*, along with broadleaf weeds such as *Bidens pilosa*, *Conyza bonariensis*, *Sonchus oleraceus*, *Solanum chenopodioides*, *Amaranthus viridis*, *Modiola caroliniana*, *Parietaria* spp., *Rumex brownii* and *Cotula australis*. Additional environmental weeds such as *Asparagus aethiopicus*, *Oxalis* spp. and *Ehrharta erecta* are also present. Vegetation structure is typically low and patchy, with occasional midstorey or canopy elements including species such as *Cupaniopsis anacardioides*, *Ficus* spp. and *Celtis* spp., some of which exhibit weedy or naturalised behaviour. This vegetation reflects extensive past disturbance and ongoing urban influence, and lacks native structure, diversity, or ecological function. The exotic vegetation does not represent part of a native PCT.

4.2.4. Threatened ecological communities

The BioNet VIS lists PCT 4028 as associated with the following TECs under the BC Act and EPBC Act:

- Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions - endangered under the BC Act.
- *Coastal Swamp Oak (Casuarina glauca) Forest of the New South Wales and South East Queensland* listed - endangered under the EPBC Act.

4.2.4.1. BC Act listing

The Scientific Committee (2021) states that this TEC includes vegetation which fits the geographic distribution, landscape position and floristic composition. There are no condition threshold for this TEC under the BC Act. Therefore, highly degraded patches of this TEC may be considered as part of the criteria for listing under the BC Act. The patch of PCT 4028 mapped within the development site was considered part of the TEC for the following reasons:

- The vegetation occurs on saline or subsaline periodically inundated flats and drainage lines.
- Forms an open forest to low woodlands, scrubs or reedlands with scattered trees.
- Occurs in Sydney LGA which is included as part of the known distribution of this TEC.
- Includes characteristic species listed in Paragraph 1 of the final determination (NSW Scientific Committee 2021).
- below 20 m elevation.

As such, PCT 4028 has been considered part of the TEC under the BC Act for the purpose of this assessment.

4.2.4.2. EPBC Act listing

The EPBC Act conservation advice for Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community (DEWA 2018) contains specific condition thresholds that must be met for a patch to be considered part of the EPBC Act community. Section 3.2 of the Conservation Advice (DEWA 2018) lists the criteria for listing under the EPBC Act, including patch size, percentage of native species in the groundcover, foliage cover.

PCT 4028 in the development site was represented as a small, isolated stands of single species (i.e. *Casuarina glauca*), generally less than 0.5 ha. The groundcover did not contain native species and the midstorey was absent. PCT 4028 in the development site did not meet the EPBC definition because:

- The patches of PCT 4028 were generally less than 0.5 ha in size.
- The native understorey comprises less than 20% of total understorey vegetation cover.
- The vegetation patch does not meet the key diagnostics for this TEC.
- The patches were < 2 ha, or where patches were ≥ 0.5 ha, they were not contiguous with a larger area of native vegetation > 5 ha in size.
- < 20% of the total understorey vegetation was comprised of native species (0.1% recorded within the 20 x 20 m plot).

As such, the vegetation mapped within the development site as PCT 4028 did not satisfy the criteria for listing under the EBPC Act for the forementioned reasons.



Figure 9: Validated Vegetation



Figure 10: PCT 4023 Estuarine Swamp Oak Twig-rush Forest (not directly impacted by the activity)



Figure 11: exotic vegetation / weeds which do not represent part of a PCT outside of the demolition area



Figure 12: Exotic garden bed which do not represent part of a PCT and outside of the demolition area

4.2.5. Threatened species and habitat features

4.2.5.1. Flora

No threatened flora species were opportunistically identified during the field survey. A list of potential threatened flora species and their likelihood of occurrence within the development site can be found in Appendix A.

4.2.5.2. Threatened fauna

No threatened fauna species were opportunistically detected during the field survey. There were limited habitat resources present in the development site.

The field surveys identified suitable gaps in the existing buildings within the development site that could provide habitat for microbat species (particularly threatened microbats). The existing buildings (Figure

13) were identified as potential roosting and breeding habitat for microbats including threatened species. The field survey also identified potential habitat for microbat roosting in the southern wharf outside of the development site.

Targeted emergence microbat surveys did not detect the presence of threatened microbats. One non-threatened microbat species was identified audibly during the emergence surveys but was not observed flying from any of the buildings. Call analysis identified this call belonging to non-threatened *Chalinolobus gouldii* (Gould's wattled bat). As this species was recorded during the surveys, it is assumed that this species may be roosting nearby and may forage over the development site on association. A pre-clearance survey is recommended to ensure that the demolition works are conducted in a manner that is consistent with best management practices for microbats. Although the emergence survey did not record the presence of threatened microbats there is potential that some threatened microbats may utilise the development site on occasion, either for occasional foraging or roosting habitat. More information on which microbat species are likely to utilise the habitat in the development site is provided in the following section below. The field survey included an assessment of the foreshore's habitat, located adjacent to the development site. The foreshores was visible for a few hours during the field survey, approximately two hours after low tide. The substrate included loose rocks, debris and silty substrate (Figure 14). Oysters were noted; however, no birds were observed foraging along the foreshores. An assessment of migratory birds is provided below.

An assessment of the fauna habitat features are provided in Table 2.

Table 2: Habitat features recorded in the development site

Habitat feature	Associated species	Presence
Areas of intact native vegetation	Birds, microchiropteran bats (microbats), megachiropteran bats (fruit bats), arboreal mammals and reptiles	No. No remnant native vegetation was recorded within the development site.
Foreshores habitat	Shorebirds	No, the field survey did not record the presence of muddy or sandy substrate which would represent foraging habitat for shorebirds.
Nectar and fruit producing flora, mistletoe	Arboreal mammals / birds and fruit bats	Yes. Both nectar and fruit producing flora were planted in raised garden beds within the development site but will not be removed under the proposed demolition works.
Hollow-bearing trees, stick nests, nest structure	Microbats, birds, mammals, amphibians, reptile	No. No HBTs or nesting structures were recorded in the development site.
Coarse woody debris (fallen logs)	Terrestrial mammals, reptiles, invertebrates	No. No coarse woody debris was recorded within the development site.
Leaf litter	Reptiles, amphibians, invertebrates	No. No leaf litter was recorded within the development site.
Building structures with cavities	Microbats, reptiles	Yes. Building are present in the development site

4.2.5.3. Threatened microbat species and their habitat

The emergence survey did not record threatened microbat species, however there is still potential that threatened species may be impacted by the proposed activity. A precautionary approach was taken to

assess the impacts to the threatened microbat species. The literature reviewed identified the following threatened microbat species which may be impacted by the demolition work:

- *Falsistrellus tasmaniensis* (eastern false pipistrelle)
- *Micronomus norfolkensis* (eastern coastal free-tailed bat)
- *Myotis macropus* (southern myotis)
- *Miniopterus orianae oceanensis* (large bent-winged bat)
- *Miniopterus australis* (little bent-winged bat)
- *Saccolaimus flaviventris* (yellow-bellied sheath-tail bat)
- *Scoteanax rueppellii* (greater broad-nosed bat).

Myotis macropus (southern myotis) is specialist feeder, this species requires waterbodies greater than 3m wide to forage. It is known to roost in tree hollows, human-made structures including buildings, bridges, wharves and culverts (Gonsalves and Law 2017). The development site contains old buildings which were identified as potential breeding or roosting habitat. The adjacent bay, outside the development site may provide foraging habitat for this species.

Miniopterus orianae oceanensis (large bent-winged bat) and *Miniopterus australis* (little bent-winged bat) are both subterranean roosting species. Both species congregate in large numbers at a few known maternity caves outside of the Sydney Basin over spring and summer to breed and raise young and disperse to winter hibernation roosts up to 300 km away from maternity roosts (large bent-winged bat) in autumn (Churchill 2008). These species are both known to inhabit the Sydney Basin throughout the winter months with some non-breeding individuals remaining in the area throughout the year. There are multiple Large and little bent-winged bat records within a 5 km radius of the development site. It should be noted that the human-made structures within the development site do not represent breeding habitat for either the Large, or little bent-winged bat species. Large aggregations (1000s) of Large and Little Bent winged bat s are required to sustain a maternity roost. These species are not known to breed in human made structures (such as buildings) and there is no evidence of large aggregations of these species within a 5 km radius of the development site. However, previous correspondence (for Bank Street BDAR) with the Biodiversity Conservation Science Group (now NSW DCCEEW) indicates that important habitat for these species also includes habitat where individuals mate before females migrate to the maternity caves. Where microbat roosting habitat exists, there is potential for these species to utilise cavities within the existing buildings as over-winter roosting habitat or as non-breeding roosting habitat throughout the year.

Saccolaimus flaviventris (yellow-bellied Sheath-tailed bat), *Micronomus norfolkensis* (eastern coastal free-tailed bat), *Falsistrellus tasmaniensis* (astern false pipistrelle) and *Scoteanax rueppellii* (greater broad-nosed bat) are all known to utilise tree hollows for breeding but have also been known to roost occasionally in buildings (Churchill 2008). There are no tree hollows recorded within the development site, however, the buildings within the development site represents potential non breeding roosting habitat for these species or breeding habitat for the eastern coastal free-tailed bat. These species may also forage over the development site.

None of these species are particularly adapted to the highly urbanised environment present at the development site. A test of significance was prepared to determine if the activity is likely to have a significant impact upon these species. The activity should include a pre-clearance survey by an ecologist

and report which details what to do for unexpected finds and how demolition works should be conducted to reduce impacts to any microbat habitat.

4.2.5.4. Migratory shorebirds

The bar-tailed godwit is listed as vulnerable under the EPBC Act and is not listed under the NSW BC Act. The curlew sandpiper is listed as endangered under the BC Act and critically endangered under the EPBC Act. The development site is located adjacent to land mapped on the Migratory Shorebird Important Habitats for both species.

The development site at the former Sydney Fish Market comprises a highly modified urban environment and does not contain suitable foraging or roosting habitat for these species. A small patch of silty/muddy substrate was noted during low tide outside of the development site and has been mapped on the Migratory Shorebirds Important Areas for these two species. A description of the habitat requirements of these species is provided below.

The bar-tailed godwit is a non-breeding migratory species which migrates to New South Wales in August from Arctic breeding grounds. Foraging habitat includes sandflats, mudflats, estuaries and harbours where it utilises seagrasses and edge of mangroves to forage for crustaceans, worms and insects. Roosting habitat consists of high tide areas on sandy beaches, sandbars, or saltmarsh (DPE 2020). There are 148 BioNet records of this species within a 5 km radius of the development site including three historic records. This BioNet record is located around the intertidal zone along the Drummoyne peninsula (including Rodd Park, Iron Cove and Five Dock Bay), approximately 3.5 km west of the development site.

The curlew sandpiper migrates to Australia from its breeding grounds in Siberia in August and departs in March. It occurs on littoral and estuarine habitats and generally associated with intertidal mudflats of sheltered coastlines but may forage along shallow waters or on beaches with seaweed (DPE 2021). There is one BioNet record for this species within a 5 km radius of the development site (Figure 8), however, these are all historic records from 1959. It should be noted that additional recent BioNet records (from 1998 to 2011) have been located within a 6 km radius of the development site. These records are not displayed in the BioNet maps or database search as it was limited to a 5 km radius for this assessment. However, it was conducted to identify the presence of additional curlew sandpiper records in the broader landscape. It should be further noted that these additional records are from Hen and Chicken Bay which contains fringing foreshore vegetation based on interpretation of aerial photography. The development site does not contain fringing foreshore vegetation which may provide habitat for this species.



Figure 13: Example of the existing buildings which may provide habitat for microbat species



Figure 14: Land mapped on the Migratory Shorebirds Important Habitat adjacent to the development site

5. Impact Assessment

Both direct and indirect impacts during demolition have been considered in this assessment. The proposed activity involves demolition of the existing built structures within a highly modified urban environment and will not result in the removal of native vegetation or natural habitat features.

5.1. Direct Impacts

Direct impacts are those impacts that directly affect habitat and individuals. Direct impacts considered for this assessment includes the demolition of the former Sydney Fish Market buildings. The vegetation within the development site will be retained and not removed under this activity. No works will occur along the foreshores.

The proposed development has the potential to result in the following direct impacts:

- loss of habitat for threatened species
 - potential loss of roosting habitat through the removal of buildings for microbats.

5.2. Indirect Impacts

Indirect impacts are those impacts that do not directly affect habitat and individuals but that have the potential to interfere through indirect action. Indirect impacts considered for this assessment are site noise impacts and downwind impacts (sedimentation, dust, accidental spills and leaks).

During the demolition period, noise, and a small degree of vibration will be generated, which may have an indirect impact on local fauna. These impacts will result from demolition activities, machinery operation, and construction traffic associated with the project. There is potential that this indirect disturbance may impact the migratory shorebirds through noise and vibration disturbance.

There is also potential for dust and sediment generation during rainfall events; however, appropriate erosion and sediment control measures will be implemented. The production of dust and sediments may flow into the adjacent foreshores and aquatic habitat and impact upon the migratory shorebird's habitat. These impacts are expected to be temporary and localised, and will be managed through standard mitigation measures. The overall magnitude of indirect impacts is likely to be minor.

5.3. Impacts to threatened entities

The proposed activity will not result in the removal of native vegetation or natural habitat and is therefore unlikely to directly impact threatened species or threatened ecological communities within the development site. Threatened species may be indirectly impacted through disturbance factors such as noise, vibration, dust, or light spill; however, these impacts will be temporary and are not expected to significantly affect species given the highly modified nature of the site and absence of suitable habitat. Migratory bird species, including bar-tailed godwit and curlew sandpiper, are associated with intertidal environments and are unlikely to utilise the development site for foraging or roosting. Microbat species may utilise built structures opportunistically; however, previous surveys have identified the site as supporting low to moderate habitat potential only. No threatened microbats were identified during emergence surveys. Accordingly, the proposed activity is unlikely to result in a significant impact to threatened entities.

5.4. Biodiversity Conservation Act 2016 (BC Act)

5.4.1. BC Act – Test of Significance

If a species, population or ecological community listed under Schedules 1 or 2 of the BC Act is likely to be impacted by a proposed activity, it must be established whether this constitutes a significant impact on that species, population, habitat or ecological community. Section 7.3 of the BC Act sets out five factors that must be addressed as part of a Test of Significance. This enables a decision to be made as to whether there is likely to be a significant impact on the species, population or ecological community. If, following application of a Test of Significance, a proposed activity that is to be assessed under Part 5 of the EP&A Act is found to be “likely to significantly affect threatened species or ecological communities, or their habitats”, this will require the preparation of a Species Impact Statement (SIS) or Biodiversity Development Assessment Report (BDAR). If the proposed activity is likely to have a significant impact on the environment more broadly an Environmental Impact Statement (EIS) must be prepared.

The proposed activity does not include the removal of any planted or native vegetation or work along the wharf or foreshores. There will be no demolition works near the foreshores or near the TEC. As such, no Test of Significance were prepared for the TEC.

The proposed activity will involve the removal of the existing buildings which may provide habitat for threatened microbats. Targeted surveys did not identify any threatened microbats within the development site but one non-threatened species, *Chalinolobus gouldii* (Gould's wattled bat), was identified flying over the development site and may utilise habitat within it. A literature review of existing surveys was conducted to determine which species is likely to utilise the existing buildings.

Although no threatened microbats were identified during field survey, a precautionary approach has been undertaken in conducting Tests of Significance for threatened microbat species (all listed as vulnerable under the BC Act) which may utilise the existing buildings on occasion:

- *Falsistrellus tasmaniensis* (eastern false pipistrelle)
- *Micronomus norfolkensis* (eastern coastal free-tailed bat)
- *Myotis macropus* (southern myotis)
- *Miniopterus orianae oceanensis* (large bent-winged bat)
- *Miniopterus australis* (little bent-winged bat)
- *Saccolaimus flaviventris* (yellow-bellied sheath-tail bat)
- *Scoteanax rueppellii* (greater broad-nosed bat).

The proposed activity involves demolition works adjacent to land mapped on the Migratory Shorebirds Important Habitat. Two non-breeding migratory species are associated with this mapping, *Limosa lapponica baueri* (bar-tailed godwit) is listed as endangered and *Calidris ferruginea* (curlew sandpiper) listed as critically endangered under the BC Act. No works will occur on the land mapped as Migratory Shorebirds Important Habitat. Although this mapping is used when preparing a BDAR to assess for candidate species, it is noted that the important habitat considers that areas mapped on the Migratory Shorebirds Important Habitat is critical for the survival of these species. Therefore, a Test of Significance was prepared for indirect impacts to this species.

If control measures outlined in Section 6 are followed, the impacts associated with the proposed activity are considered negligible on a local scale and would not result in a significant impact to the above threatened species.

5.5. **Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)**

The EPBC Act establishes a process for assessing the environmental impact of activities and developments where MNES may be affected. Under the Act, any action which 'has, will have, or is likely to have a significant impact on a MNES' is defined as a controlled action and requires approval from the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW).

Considering the results of the PMST along with the habitat features recorded during the field survey, it was determined that the following two MNES have the potential to occur in the vicinity of the development site,

- *Limosa lapponica baueri* (bar-tailed godwit)
- *Calidris ferruginea* (curlew sandpiper)

The project is not located within or adjoining a Wetland of National Importance under the EPBC Act or a wetland of International Importance under the Ramsar convention. Nor is the project within or adjoining a Commonwealth Marine Area.

The project will therefore not have a significant impact on the following MNES:

- Wetlands of international importance
- Any listed threatened species or community
- Any listed migratory species
- A Commonwealth marine area

5.6. **Key Threatening Processes**

There were no Key Threatening Processes (KTPs) listed under the BC Act and / or EPBC Act that are likely to be relevant to the proposed activity.

The proposed activity involve the demolition of the former Fish Market building within a highly modified urban environment and do not include vegetation clearing, land clearance, or modification of natural habitat. As such, the activity is not associated with Key Threatening Processes as defined under the BC Act or EPBC Act and will not result in a significant impact upon threatened species or ecological communities.

6. Recommendations

6.1. Recommended Mitigation Measures

Measures are recommended to mitigate the potential impacts of the proposed activity on surrounding biodiversity values, including habitat for threatened species. The measures provided in Table 3 have been designed in consideration of development site habitat and proposed demolition works.

Table 3: Recommended mitigation measures

Impact	Mitigation Measure
Site specific environmental awareness	A CEMP must be prepared prior to on-ground works. All contractor staff are to be aware of sensitivity of the environment including: - Threatened ecological communities (PCT 4028) retained within the development site - Potential threatened fauna (microbats in buildings and adjacent migratory shorebirds along foreshores). - Waterbodies including adjacent Sydney Harbour.
Protection of microbats in buildings	- Emergence surveys did not detect any threatened microbats but non-threatened <i>Chalinolobus gouldii</i> (Gould's wattle bat) was present. However, threatened microbats may still use habitat within the development site on occasion. - Demolition works must involve a staged removal of the roof and walls to ensure microbats vacate safely. Timing of the works should coincide when microbat activity is lowest. - A pre-clearance survey by an ecologist is required prior to the removal of the buildings. - An ecologist must be present to supervise during the demolition works - Recommended installation of hanging bat box to compensate the loss of roosting habitat
Protection of native vegetation	- There is to be no clearing of native vegetation. A no-go zone should be place along the foreshores and around the vegetation mapped as PCT 4028. No stockpiling of vehicles or equipment or sheds are to occur in this area. - Demolition works must only be conducted within the designated impact area and should be conducted in accordance with the CEMP controls. - Ensure all equipment and footwear is thoroughly cleaned prior to commencement of works and when entering new sites. - Wash down procedure should be established for machinery entering or exiting the site to limit weed spread or disease.
Dust and sediment production	- Implement a sediment and erosion control plan as part of a CEMP. - Install sediment control structures near the harbour waterway. - Ensure sediment stockpile is kept away from drainage and waterway. - Provide a spill kit at each work site. - No stockpiling of rubbish or storage of chemicals to occur near native vegetation or waterways. - The use of fuel, chemicals, herbicides should be limited near waterways and other sensitive areas. - Avoid conducting works after or before any forecasted significant rainfall. - Soil and erosion control measures such as sediment fencing may be required prior to on-ground works. These are to be inspected regularly (weekly), and more frequently during rain periods to ensure structures are in proper working order. - Bare areas should be covered and dust mitigated through use of water hose.

Impact	Mitigation Measure
Sedimentation	<u>Pre-construction:</u> ● Soil and erosion control measures such as sediment fencing must be installed prior to on-ground works. These are to be inspected regularly (weekly), and more frequently during rain periods to ensure structures are in proper working order.
Erosion	● Measures to prevent tracking of soils / sediments from work site to roadways, footpaths and drainage lines as a result of work vehicle / machinery movement.
Runoff into waterbodies within the development site	<u>During Construction:</u> ● No chemicals or rubbish may be allowed to escape the subjects site ● All chemicals must be correctly stored within adequate bunding ● No parking under tree driplines. <u>Post-construction:</u> ● Bare areas should be mulched, using on-site native vegetation if removed, following clearance works to prevent erosion or soil damage. Alternatively, erosion prone areas, when not in use, may be covered with biodegradable weed matting or similar product.

7. Conclusion

Eco Logical Australia Pty Ltd (ELA) was engaged by Infrastructure NSW (INSW) to prepare a Flora and Fauna Assessment (FFA) for the proposed demolition of existing buildings at the former Sydney Fish Market site, Blackwattle Bay, Pyrmont. The demolition works are required to enable future redevelopment of the site and form part of the broader Blackwattle Bay renewal project, a State Significant Development (SSD). This report accompanies the Review of Environmental Factors (REF) for the proposed activity and has been prepared in accordance with the requirements of Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

This report assesses the potential impacts of the proposed activity on biodiversity values protected under the Biodiversity Conservation Act 2016 (BC Act) and the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). The assessment is based on a review of existing literature, database searches and targeted field investigations.

Field surveys confirmed that only a small patch of native vegetation is present within the development site, located along the foreshore. This vegetation is consistent with Swamp Oak Floodplain Forest and contains *Casuarina glauca*, a characteristic species of this endangered ecological community (EEC). Whilst this community is listed as endangered under the BC Act and meets listing criteria under the EPBC Act, the proposed demolition works will not directly or indirectly impact this vegetation. Consequently, no Test of Significance or Assessment of Significance was required for this ecological community.

The remainder of the site is comprised of hardstand, buildings, and exotic or planted vegetation which does not form part of a recognised Plant Community Type (PCT). These elements will be largely retained or do not contribute to biodiversity values protected under legislation.

The existing buildings were identified as providing potential habitat for microchiropteran bats. Six threatened microbat species listed as Vulnerable under the BC Act were identified as having potential to occur:

- *Myotis macropus* (southern myotis)
- *Scoteanax rueppellii* (greater broad-nosed bat)
- *Falsistrellus tasmaniensis* (eastern false pipistrelle)
- *Micronomus norfolkensis* (eastern coastal free-tailed bat)
- *Miniopterus australis* (little bent-winged bat)
- *Miniopterus orianae oceanensis* (large bent-winged bat).

Targeted microbat surveys did not identify the presence of any threatened microbats. One microbat species was identified within the development site, the non-threatened Gould's wattle bat. This species was only observed flying over the development site but may utilise the potential roosting and breeding habitat that is present within it. Therefore, mitigation measures have been included with consideration to this fauna species' presence. Since no threatened microbats were identified, a Microbat Management Plan is not required. Tests of Significance undertaken for these species concluded that the proposed activity are unlikely to result in a significant impact, subject to implementation of recommended mitigation measures.

The site is located adjacent to land identified as important habitat for migratory shorebirds, including *Limosa lapponica baueri* (bar-tailed godwit) and *Calidris ferruginea* (curlew sandpiper), which are listed under the BC Act and EPBC Act. However, no such habitat occurs within the impact area, and demolition

works will not directly impact these species. Assessments of Significance determined that significant impacts are unlikely.

The impact area does not contain areas mapped on the Biodiversity Values (BV) Map under the BC Act, and the extent of native vegetation removal is below the clearing threshold. Accordingly, the Biodiversity Offset Scheme (BOS) is not triggered and submission of a Biodiversity Development Assessment Report (BDAR) is not required.

Overall, the assessment concludes that the proposed demolition works will not have a significant impact on threatened species, populations, or ecological communities, provided standard safeguards and recommended mitigation measures are implemented.

The proposed activity has been assessed under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and is not expected to result in a significant impact on Matters of National Environmental Significance (MNES). Therefore, referral to the Commonwealth Minister for the Environment is not required.

8. References

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Appendix A Likelihood of Occurrence table

An assessment of likelihood of occurrence was made for threatened species, populations, ecological communities and migratory species identified from the database searches. Five terms for the likelihood of occurrence of species are used in this report. This assessment was based on database or other records, presence or absence of suitable habitat, features of the proposal site, results of the site inspection and professional judgement. Some Migratory or Marine species identified from the Commonwealth database search have been excluded from the assessment, due to lack of habitat. The terms for likelihood of occurrence are defined below:

- ‘known’ = the species was or has been observed on the site;
- ‘likely’ = a medium to high probability that a species uses the site;
- ‘potential’ = suitable habitat for a species occurs on the site, but there is insufficient information to categorise the species as likely to occur, or unlikely to occur;
- ‘unlikely’ = a very low to low probability that a species uses the site; and
- ‘no’ = habitat within the development site and in the vicinity is unsuitable for the species.

A test of significance was conducted for threatened species that were recorded within the development site or had a higher likelihood of occurring and were not recorded during the site visit. It is noted that some threatened fauna species that are highly mobile, wide ranging and vagrant may use portions of the development site intermittently for foraging. For these fauna species, the habitat present and likely to be affected is not considered to be important to the threatened species, particularly in relation to the amount of similar habitat remaining in the surrounding landscape.

Information provided in the habitat associations’ column has primarily been extracted (and modified) from the Commonwealth Species Profile and Threats Database and the NSW Threatened Species Profile Database.

Table 4: Likelihood of occurrence for TECs

Name	BC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
<i>Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion</i>	-	E	Sydney Basin Bioregion, mostly in the Cumberland IBRA sub-region, with small occurrences in the Sydney Cataract, Wollemi and Burratorang sub-regions. It occurs primarily in the Castlereagh area in the north-west of the Cumberland Plain with other known occurrences near Holsworthy, Kemps Creek and Longneck Lagoon.	Occurs primarily on Tertiary sands and gravels of the Hawkesbury-Nepean river system. At Agnes Banks it primarily occurs on aeolian (wind-blown) sands overlying Tertiary alluvium. Found on flat or gently undulating terrain in rain shadow areas typically receiving 700–900 mm annual rainfall. The ecological community occurs primarily at low elevations up to 80 m above sea level (ASL), including old ridges, dunes and terraces.	No this community was not identified during field survey.
<i>Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community</i>	-	E	The ecological community occurs in sub-tropical, sub-humid and temperate climatic zones from Curtis Island, north of Gladstone, in Queensland to Bermagui in southern New South Wales.	Typically found where groundwater is saline or brackish but can occur in areas where groundwater is relatively fresh. It is typically found on coastal flats, floodplains, drainage lines, lake margins, wetlands and estuarine fringes where soils are at least occasionally saturated, water-logged or inundated.	Present A small, degraded patch of this threatened community was identified during the field survey. However, it is not within the proposed development footprint. A no-go zone should be place along the foreshores and around the vegetation mapped as PCT 4028
<i>Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland</i>	-	E	The Coastal Swamp Sclerophyll Forest ecological community occurs on the mainland and islands near to the coast (within 20 km) within the following IBRA2 Bioregions: South East Queensland; NSW North Coast; Sydney Basin; and the bat eman subregion of the South East Corner.	Typically occurs in low-lying coastal alluvial areas with minimal relief, such as swamps, floodplain pockets, depressions, alluvial flats, back-barrier flats, fans, terraces, and behind fore-dunes.	No this community was not identified during field survey.

Name	BC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
<i>Coastal Upland Swamps in the Sydney Basin Bioregion</i>	E	-	Endemic to NSW and confined to the Sydney Basin Bioregion. It occurs in the eastern Sydney Basin from the Somersby district in the north (Somersby-Hornsby plateau) to the Robertson district in the south (n the Woronora plateau).	Occur primarily on impermeable sandstone plateau with shallow groundwater aquifers in the headwaters and impeded drainage lines of streams, and on sandstone benches with abundant seepage moisture.	No this community was not identified during field survey.
<i>Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion</i>	-	CE	Occurs in western Sydney, with the most extensive stands occurring in the Castlereagh and Holsworthy areas. Smaller remnants occur in the Kemps Creek area and in the eastern section of the Cumberland Plain.	Mainly occurs on clay soils derived from the deposits of ancient river systems (alluvium), or on shale soils of the Wianamatta Shales.	No this community was not identified during field survey.
<i>Eastern Suburbs Banksia Scrub of the Sydney Region</i>	-	CE	Occurs in Sydney's eastern suburbs. Surviving stands totalling approximately 146 hectares have been recorded from the local government areas of Botany, Randwick, Waverley, and Manly.	Occurs on disjunct patches of nutrient poor aeolian (wind blown) dune sand.	No this community was not identified during field survey.
<i>River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria</i>	-	CE	This encompasses the area from around Sale on the south-east coast of Victoria to around Raymond Terrace, just north of Newcastle on the New South Wales east coast.	Occurs on alluvial landforms related to coastal river floodplains and associated sites where transient water accumulates, including floodplains, river-banks, riparian zones, lake foreshores, creek lines (including the floors of tributary gullies), floodplain pockets, depressions, alluvial flats, fans, terraces, and localised colluvial fans.	No this community was not identified during field survey.
<i>Shale Sandstone Transition Forest of the Sydney Basin Bioregion</i>	-	CE	Occurs at the edges of the Cumberland Plain in western Sydney, most now occurs in the Hawkesbury, Baulkham Hills, Liverpool, Parramatta, Penrith, Campbelltown and Wollondilly local government areas.	Intergrade between clay soils from the shale rock and earthy and sandy soils from sandstone, or where shale caps overlay sandstone.	No this community was not identified during field survey.

Name	BC Act Status	EPBC Act Status	Distribution	Habitat	Likelihood of occurrence
<i>Turpentine-Ironbark Forest of the Sydney Basin Bioregion</i>	-	CE	Limited to the Sydney Basin Bioregion, the TEC is transitional between the Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest occurring on the drier plains, and the Blue Gum High Forest occurring on higher rainfall ridges.	Occurs on relatively fertile clay soil derived from Wianamatta shale, as well as clay lenses of shale in Hawkesbury sandstone. The TEC is less commonly occurring on transitional areas between these soils, or on soils derived from Holocene alluvium or the Mittagong formation.	No this community was not identified during field survey.
<i>Western Sydney Dry Rainforest and Moist Woodland on Shale</i>	-	CE	Cumberland Plain Sub-region of the Sydney Basin Bioregion.	It generally occurs in rugged terrain and other patches may occur on undulating terrain, with dry rainforest patches typically occupying steep lower slopes and gullies, and moist woodland patches typically occupying upper sections of the slope Occurs almost exclusively on clay soils derived from Wianamatta Group shales.	No this community was not identified during field survey.

Table 5: Likelihood of occurrence for threatened flora

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Acacia bynoeana</i>	Bynoe's wattle	E1	V	Heath or dry sclerophyll forest on sandy soils.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Acacia pubescens</i>	downy wattle	V	V	Open woodland and forest, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland. Occurs on alluviums, shales and at the intergrade between shales and sandstones.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Acacia terminalis</i> subsp. <i>terminalis</i>	sunshine wattle	E1	E	Coastal scrub and dry sclerophyll woodland on sandy soils.	55	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Allocasuarina glareicola</i>	-	E1	E	Castlereagh woodland on lateritic soil. Found in open woodland with Eucalyptus parramattensis, Eucalyptus fibrosa, Angophora bakeri, Eucalyptus sclerophylla and Melaleuca decora.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Allocasuarina portuensis</i>	Nielsen Park she-oak	E1	E	The original habitat is tall closed woodland, above a sandstone shelf approximately 20 m above the harbour. Soils are shallow and sandy; plantings have occurred on similar soils.	5	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Asterolasia elegans</i>	-	E1	E	"Hawkesbury sandstone. Found in sheltered forests on mid- to lower slopes and valleys."	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Caladenia tessellata</i>	thick lip spider orchid	E1	V	Grassy sclerophyll woodland on clay loam or sandy soils, or low woodland with stony soil.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Cryptostylis hunteriana</i>	leafless tongue orchid	V	V	"Coastal heathlands, margins of coastal swamps and sedgelands, coastal forest, dry woodland, and lowland forest."	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Darwinia biflora</i>	-	V	V	Woodland, open forest or scrub-heath on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Doryanthes palmeri</i>	giant spear lily	V		"Exposed rocky outcrops, cliff-tops and on steep cliff-faces in montane heath next to subtropical rainforest, warm temperate rainforest or wet eucalypt forest."	1	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Eucalyptus camfieldii</i>	Camfield's stringybark	V	V	"Coastal heath on shallow sandy soils overlying Hawkesbury sandstone, mostly on exposed sandy ridges."	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Eucalyptus nicholii</i>	narrow-leaved black peppermint	V	V	Dry grassy woodland, on shallow soils of slopes and ridges.	4	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Eucalyptus scoparia</i>	Wallangarra white gum	E1	V	"Open eucalypt forest, woodland and heaths on well-drained granite/rhyolite hilltops, slopes and rocky outcrops, typically at high altitudes.	3	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Genoplesium baueri</i>	Bauer's midge orchid	E1	E	Dry sclerophyll forest and moss gardens over sandstone.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Haloragodendron lucasii</i>	-	-	E	Dry sclerophyll forest and low open woodland on sheltered slopes near creeks, in moist sandy loam soils.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Lasiopetalum joyceae</i>	-	V	-	Heath on lateritic to shaley ridgetops over sandstone.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Leucopogon exolasius</i>	Woronora beard	V	V	Grows in upper Georges River on sandstone	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	
<i>Melaleuca biconvexa</i>	biconvex paperbark	V	V	Damp places, often near streams or low-lying areas on alluvial soils.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Melaleuca deanei</i>	Deane's paperbark	V	V	Heath on sandstone.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Persicaria elatior</i>	tall knotweed	V	V	Beside streams and lakes, swamp forest or disturbed areas.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Persoonia hirsuta</i>	hairy geebung	E1	E	Sandy soils in dry sclerophyll open forest, woodland and heath on sandstone.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Pimelea curviflora</i> var. <i>curviflora</i>	-	V	V	Woodland, mostly on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Pimelea spicata</i>	spiked rice-flower	E1	E	"Well-structured clay soils. Eucalyptus moluccana (Grey Box) communities and in areas of ironbark on the Cumberland Plain. Coast Banksia open woodland or coastal grassland in the Illawarra."	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Prostanthera densa</i>	villous mint bush	E	-	Sclerophyll forest and shrubland on coastal headlands and near-coastal ranges, chiefly on sandstone in Jervis Bay and Royal National Park.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Rhizanthella slateri</i>	eastern underground orchid	E	E	Sclerophyll forest in shallow to deep loams.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Rhodamnia rubescens</i>	scrub turpentine	CE	CE	Subtropical Rainforests, Northern Warm Temperate Rainforests, Littoral Rainforest, North Coast Wet	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Rhodomyrtus psidioides</i>	native guava	CE	CE	Subtropical Rainforests, Warm Temperate Rainforests, Littoral Rainforest, and Wet Sclerophyll Forests.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Syzygium paniculatum</i>	magenta lilly pillly	E1	V	"Subtropical and littoral rainforest on gravels, sands, silts and clays.	31	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No
<i>Thesium australe</i>	Austral toadflax	V	V	Grassland on coastal headlands or grassland and grassy woodland away from the coast.	-	No. The development site is located on land which has been cut and filled, and does not contain potential habitat for this species. This species was not identified within the development site during the site inspection.	No

Table 6: Likelihood of Occurrence table for threatened fauna

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
Amphibians							
<i>Heleioporus australiacus</i>	giant burrowing frog	V	V	Heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based.	-	No. No suitable habitat on or near the Development site	No
<i>Litoria aurea</i>	green and golden bell frog	E1	V	Marshes, dams and stream-sides, particularly those containing Typha spp. (bullrushes) or Eleocharis spp. (spikerushes). Some populations occur in highly disturbed areas.	6	No. No suitable habitat on or near the Development site	No
<i>Mixophyes balbus</i>	stuttering frog	E1	V	Rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range.	-	No. No suitable habitat on or near the Development site	No
<i>Pseudophryne australis</i>	red-crowned toadlet	V	-	Open forests, mostly on Hawkesbury and Narrabeen Sandstones.	1	No. No suitable habitat on or near the Development site	No
Birds							
<i>Actitis hypoleucos</i>	common sandpiper	-	M	Coastal wetlands and some inland wetlands, especially muddy margins or rocky shores. Also estuaries and deltas, lakes, pools, billabongs, reservoirs, dams and claypans, mangroves.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Anous stolidus</i>	common noddy	-	-	Offshore marine waters and tropical to subtropical seas, especially around oceanic islands. Breeds colonially on rocky and sandy islands, coral cays and	-	Unlikely. Marginal suitable habitat on	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
				coastal cliffs, nesting in low trees, shrubs or on the ground. Mainly pelagic, foraging over open ocean waters.		or near the Development site	
<i>Anthochaera phrygia</i>	regent honeyeater	E4A	CE	Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of Casuarina cunninghamiana (River Oak).	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Apus pacificus</i>	fork-tailed swift	-	M	Riparian woodland, swamps, low scrub, heathland, saltmarsh, grassland, Spinifex sandplains, open farmland and inland and coastal sand-dunes.	4	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Ardenna carneipes</i>	fleshy-footed shearwater	-	M	Open ocean waters, especially continental shelf and offshore marine environments. Breeds in large colonies on coastal islands, nesting in burrows in sandy or vegetated soils.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Ardenna grisea</i>	sooty shearwater	-	M	Tropical and subtropical offshore marine waters, particularly around oceanic islands. Breeds colonially on islands, nesting in burrows or under vegetation in sandy soils.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Ardenna pacificus</i>	wedge-tailed shearwater	-	M	Pelagic ocean waters, including continental shelf and deep offshore environments. Breeds on subantarctic islands in burrows in soil or dense vegetation.	14	Unlikely. Marginal suitable habitat on or near the Development site.	No
<i>Ardenna tenuirostris</i>	short-tailed shearwater	-	M	Offshore and shelf marine waters, often near coastal upwellings. Breeds on coastal and oceanic islands, nesting in burrows in sandy soils or under low vegetation.	8	Marginal suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Arenaria interpres</i>	ruddy turnstone		M	Tidal reefs and pools; pebbly, shelly and sandy shores; mudflats; inland shallow waters; sewage ponds, saltfields; ploughed ground.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Artamus cyanopterus cyanopterus</i>	dusky woodswallow	V	-	Woodlands and dry open sclerophyll forest, usually eucalypts and mallee associations. Also have recordings in shrub and heathlands and various modified habitats, including regenerating forests. In western NSW, this species is primarily associated with River Red Gum/Black Box/Coolabah open forest/woodland and associated with larger river/creek systems.	2	Unlikely	No
<i>Botaurus poiciloptilus</i>	Australasian bittern	E1	E	Permanent freshwater wetlands with tall, dense vegetation, particularly Typha spp. (bullrushes) and Eleocharis spp. (spikerushes).	2	No	No
<i>Burhinus grallarius</i>	bush stone-curlew	E1		In NSW, it occurs in lowland grassy woodland and open forest.	11	No	No
<i>Calidris acuminata</i>	sharp-tailed sandpiper	-	M	Shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Calidris canutus</i>	red knot	-	E, M	Intertidal mudflats, sandflats sheltered sandy beaches, estuaries, bays, inlets, lagoons, harbours, sandy ocean beaches, rock platforms, coral reefs, terrestrial saline wetlands near the coast, sewage ponds and saltworks. Rarely inland lakes or swamps.	-	Unlikely. Marginal suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Calidris ferruginea</i>	curlew sandpiper	E1	CE, M	"Littoral and estuarine habitats, including intertidal mudflats, non-tidal swamps, lakes and lagoons on the coast and sometimes inland."	1	Unlikely. Marginal suitable habitat on or near the Development site	Important habitat mapped. Yes
<i>Calidris melanotos</i>	pectoral sandpiper	-	M	Freshwater wetlands and damp terrestrial habitats, especially shallow marshes, floodplains and grasslands. Also occurs on muddy margins of lakes, swamps, lagoons and ephemeral wetlands.	-	Unlikely.	No
<i>Calidris pugnax</i>	ruff	-	M	Intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons.	-	Marginal suitable habitat on or near the Development site	No
<i>Calidris ruficollis</i>	red-necked stint	-	M	Intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons.	-	Unlikely.	No
<i>Calidris tenuirostris</i>	great knot	V	CE, M	Intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Calonectris leucomelas</i>	streaked shearwater	-	-	Offshore marine waters and continental shelf areas, often in temperate seas. Breeds colonially on coastal and oceanic islands, nesting in burrows or rocky crevices on cliffs and slopes.	-	Unlikely.	No
<i>Callocephalon fimbriatum</i>	gang-gang cockatoo	E	E	In NSW, distributed from the south-east coast to the Hunter region, and inland to the Central Tablelands and south-west slopes. Isolated records known from as far north as Coffs Harbour and as far west as Mudgee. Tall mountain forests and woodlands in	-	Unlikely.	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
				summer; in winter, may occur at lower altitudes in open eucalypt forests and woodlands, and urban areas.			
<i>Calyptorhynchus lathamii</i>	glossy black-cockatoo	V	-	Open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur.	4	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Charadrius bicinctus</i>	double-banded plover	-	M	Non-breeding season, it is common in eastern and southern Australia. Breeds only in New Zealand,	-	Unlikely	No
<i>Charadrius leschenaultii</i>	greater sand-plover	V	V, M	Almost entirely restricted to coastal areas in NSW, mainly on sheltered sandy, shelly or muddy beaches or estuaries with large intertidal mudflats or sandbanks.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Charadrius mongolus</i>	lesser sand-plover	V	E, M	Almost entirely coastal in NSW, using sheltered bays, harbours and estuaries with large intertidal sandflats or mudflats, sandy beaches, coral reefs and rock platforms.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Climacteris picumnus victoriae</i>	brown tree creeper (south-eastern)	V	V	Endemic to eastern Australia and occurs in eucalypt forests and woodlands of inland plains and slopes of the Great Dividing Range.	-	Unlikely	No
<i>Cuculus saturatus</i>	oriental cuckoo	-	-	Occupies rainforests, monsoon forests and vine thickets with dense vegetation and closed canopies	2	No. No suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Dasyornis brachypterus</i>	eastern bristlebird	E1	E	Central and southern populations inhabit heath and open woodland with a heathy understorey. In northern NSW, habitat comprises open forest with dense tussocky grass understorey.	-	No	No
<i>Diomedea antipodensis</i>	Antipodean albatross	V	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Diomedea antipodensis gibsoni</i>	Antipodean albatross	V	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Diomedea epomophora</i>	southern albatross	royal	Mar	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Diomedea exulans</i>	wandering albatross	E1	V, M	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Diomedea sanfordi</i>	northern albatross	royal	Mar	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Erythrotriorchis radiatus</i>	red goshawk	E4A	V	Open woodland and forest, often along or near watercourses or wetlands. In NSW, preferred habitats include mixed subtropical rainforest, Melaleuca swamp forest and coastal riparian Eucalyptus forest.	-	Unlikely	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Falco hypoleucos</i>	grey falcon		V	Occurs in arid environments including acacia shrublands and near timbered lowland plains and watercourses.	-	Unlikely	No
<i>Fregata ariel</i>	lesser frigatebird		M	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 season it is sedentary, with immature and non breeding individuals dispersing throughout tropical seas, especially of the Indian and Pacific Oceans	-	Unlikely	No
<i>Fregata minor</i>	greater frigatebird		M	Major breeding populations are found in tropical waters of the Pacific and Indian Oceans. The Great Frigatebird breeds on small, remote tropical and sub-tropical islands, in mangroves or bushes and occasionally on bare ground.	-	Unlikely	No
<i>Fregetta grallaria</i>	white-bellied storm-petrel	V	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Gallinago hardwickii</i>	Latham's snipe	-	M	Freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	47	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Grantiella picta</i>	painted honeyeater	V	V	Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests.	1	No	No
<i>Haematopus longirostris</i>	pied oystercatcher	E1	-	Intertidal flats of inlets and bays, open beaches and sandbanks.	10	Unlikely. Marginal suitable habitat on	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required	
						or near the Development site		
<i>Haliaeetus leucogaster</i>	white-bellied eagle	sea-	V	-	Freshwater swamps, rivers, lakes, reservoirs, billabongs, saltmarsh and sewage ponds and coastal waters. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, forest and urban areas.	76	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Hieraaetus morphnoides</i>	little eagle		V	-	Open eucalypt forest, woodland or open woodland, including sheoak or Acacia woodlands and riparian woodlands of interior NSW.	4	Unlikely	No
<i>Hirundapus caudacutus</i>	white-throated needletail		-	M	Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.	18	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Hydroprogne caspia</i>	Caspian tern		-	M	Coastal offshore waters, beaches, mudflats, estuaries, rivers, lakes.	5	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Ixobrychus flavicollis</i>	black bittern		V	-	Terrestrial and estuarine wetlands. Also flooded grassland, forest, woodland, rainforest and mangroves where permanent water is present.	2	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Lathamus discolor</i>	swift parrot		E1	CE	Box-ironbark forests and woodlands.	7	No	No
<i>Limosa lapponica baueri</i>	bar-tailed godwit		E	E	Intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons, bays, seagrass beds, saltmarsh, sewage farms and saltworks, saltlakes and brackish wetlands near coasts, sandy	148	Unlikely. Marginal suitable habitat on or near the Development site	Important habitat mapped. Yes.

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
				ocean beaches, rock platforms, and coral reef-flats. Rarely inland wetlands, paddocks and airstrips.			
<i>Limosa limosa</i>	black-tailed godwit	E	E, M	"Usually sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Further inland, it can also be found around muddy lakes and swamps."	148	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Lophoictinia isura</i>	square-tailed kite	V	-	Timbered habitats including dry woodlands and open forests, particularly timbered watercourses.	2	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Macronectes giganteus</i>	southern giant petrel	E1	E, M	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Macronectes halli</i>	northern giant-petrel	V	V, M	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Melanodryas cucullata</i>	south-eastern hooded robin	E	E	Prefers lightly wooded country, usually open eucalypt woodland, acacia scrub and mallee, often in or near clearings or open areas.	-	No	No
<i>Melithreptus gularis</i>	black-chinned honeyeater	CE	CE	In NSW it inhabits woodlands	1	No	No
<i>Neophema chrysogaster</i>	orange-bellied parrot	E4A	CE	Winter habitat is mostly within 3 km of the coast in sheltered bays, lagoons, estuaries, coastal dunes and saltmarshes. Also small islands and peninsulas, saltworks, golf courses, low samphire herbland and taller coastal shrubland.	-	No	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Neophema chrysostoma</i>	blue-winged parrot	V	V	Range of habitats from coastal, sub-coastal and inland areas, through to semi-arid zones. They tend to favour grasslands and grassy woodlands and are often found near wetlands both near the coast and in semi-arid zones.	-	No	No
<i>Nettapus coromandelianus</i>	cotton pygmy-goose	E1	-	Freshwater lakes, lagoons, swamps and dams.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Ninox connivens</i>	barking owl	V	-	Woodland and open forest, including fragmented remnants and partly cleared farmland, wetland and riverine forest.	3	Unlikely	No
<i>Ninox strenua</i>	powerful owl	V	-	Woodland, open sclerophyll forest, tall open wet forest and rainforest.	908	Unlikely	No
<i>Numenius madagascariensis</i>	eastern curlew	-	CE, M	Estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats or sandflats, ocean beaches, coral reefs, rock platforms, saltmarsh, mangroves, freshwater/brackish lakes, saltworks and sewage farms.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Numenius phaeopus</i>	Eurasian whimbrel	-	M	Often found on the intertidal mudflats of sheltered coasts. It is also found in harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats.	-	No	No
<i>Onychoprion fuscata</i>	sooty tern	V	-	Marine.	1	Unlikely. Marginal suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Pandion cristatus</i>	eastern osprey	V	-	Rocky shorelines, islands, reefs, mouths of large rivers, lagoons and lakes.	9	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Pachyptila turtur subantarctica</i>	fairy prion	-	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Pandion haliaetus</i>	osprey	V	-	Occur in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia and offshore islands.	-	No	No
<i>Parvipsitta pusilla</i>	little lorikeet	V	-	Woodland and open forest	8	No	No
<i>Phaethon lepturus</i>	white-tailed tropicbird	-	M	Marine.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Pluvialis fulva</i>	pacific golden plover	-	M	Estuaries, mudflats, saltmarshes, mangroves, rocky reefs, inland swamps, ocean shores, paddocks, sewage ponds, ploughed land, airfields, playing fields.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Pluvialis squatarola</i>	grey plover	-	M	Mudflats, saltmarsh, tidal reefs and estuaries.	4	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Pterodroma leucoptera leucoptera</i>	Gould's petrel	V	E	"Marine. Nesting habitat is located within steeply sloping rock scree gullies with a canopy of Cabbage Tree Palms."	-	Unlikely. Marginal suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Pterodroma neglecta</i>	Kermadec petrel (west pacific subspecies)	V	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Ptilinopus regina</i>	rose-crowned fruit-dove	V	-	Rainforest and closed forests. May also forage in eucalypt or acacia woodland where there are fruit-bearing trees.	2	No	No
<i>Ptilinopus superbus</i>	superb fruit-dove	V	-	Rainforest and closed forests. May also forage in eucalypt or acacia woodland where there are fruit-bearing trees.	11	No	No
<i>Pycnoptilus floccosus</i>	pilotbird	V	V	Woodland and open forest	-	No	No
<i>Rostratula australis</i>	Australian snipe	E1	E	Swamps, dams and nearby marshy areas.	2	No	No
<i>Stagonopleura guttata</i>	diamond firetail	V	-	"Grassy eucalypt woodlands, open forest, mallee, Natural Temperate Grassland, secondary derived grassland, riparian areas and lightly wooded farmland."	-	No	No
<i>Stercorarius pomarinus</i>	pomarine jaeger	-	M	Marine.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Sterna hirundo</i>	common tern	-	M	Offshore waters, ocean beaches, estuaries, large lakes. Less commonly freshwater swamps, floodwaters, sewage farms and brackish and saline lakes.	18	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Sternula albifrons</i>	little tern	E1	M	Sheltered coastal environments, harbours, inlets and rivers.	5	Unlikely. Marginal suitable habitat on	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
						or near the Development site	
<i>Sternula nereis nereis</i>	Australian fairy tern	-	V	Embayments of a variety of habitats including offshore, estuarine or lake islands, wetlands and mainland coastline. Nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Stagonopleura guttata</i>	diamond firetail	V	V	Grassy woodlands and open forests, particularly with dense grassy understorey. Also occurs in shrublands, farmland and roadside vegetation, typically near water and areas with native grasses. .	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Stictonetta naevosa</i>	freckled duck	V	-	Freshwater swamps and creeks, lakes, reservoirs, farm dams and sewage ponds.	4	No	No
<i>Thalasseus bergii</i>	crested tern	-	M	The species breeds in subtropical coastal parts of the world mainly from the Red Sea across the Indian Ocean to the western Pacific, and Australia, with a significant population on the southern coast of the Mediterranean, on two islands off the coast of Libya.	105	No	No
<i>Thalassarche bulleri</i>	Buller's albatross	-	V	Marine.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Thalassarche carteri</i>	white-capped albatross	-	V	Marine	-	No	No
<i>Thalassarche cauta</i>	shy albatross	V	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Thalassarche eremita</i>	chatham albatross	-	E	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Thalassarche impavida</i>	campbell albatross	-	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Thalassarche melanophris</i>	black-browed albatross	V	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Thalassarche salvini</i>	Salvin's albatross	V	-	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Thalassarche steadi</i>	white-capped albatross	-	V	Marine.	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Thalasseus bergii</i>	crested tern	-	M	Coastal and nearshore marine environments, especially sandy beaches, estuaries, lagoons and reefs. Roosts and breeds on islands, sandbanks and coastal spits, typically foraging over shallow coastal waters..	-	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Tringa brevipes</i>	common sandpiper		M	Rocky shorelines and coastal habitats, including estuaries, tidal mudflats and mangroves. Also occurs along rocky headlands and sheltered bays, often foraging along the water's edge..	-	Unlikely. Marginal suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Tringa nebularia</i>	common greenshank	-	M	Terrestrial wetlands (swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans, saltflats, sewage farms and saltworks dams, inundated rice crops and bores) and sheltered coastal habitats (mudflats, saltmarsh, mangroves, embayments, harbours, river estuaries, deltas, lagoons, tidal pools, rock-flats and rock platforms).	1	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Tringa stagnatilis</i>	marsh sandpiper	-	M	Swamps, lagoons, billabongs, salt pans, saltmarshes, estuaries, pools on inundated floodplains, intertidal mudflats, sewage farms and saltworks, reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes.	2	Unlikely. Marginal suitable habitat on or near the Development site	No
<i>Tyto novaehollandiae</i>	masked owl	V	-	Dry eucalypt forests and woodlands from sea level to 1100 m.	3	No	No
<i>Tyto tenebricosa</i>	sooty owl	V	-	Dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests.	1	No	No
<i>Xenus cinereus</i>	terek sandpiper	V	M	Mudbanks and sandbanks near mangroves, rocky pools and reefs, and occasionally up to 10 km inland around brackish pools.	1	Unlikely. Marginal suitable habitat on or near the Development site	No
Mammals (excluding bats)							
<i>Arctocephalus forsteri</i>	New Zealand fur-seal	V	-	Prefers rocky parts of islands with jumbled terrain and boulders.	26	No. No suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Arctocephalus pusillus doriferus</i>	Australian fur-seal	V	-	Rocky parts of islands with flat, open terrain.	6	No. No suitable habitat on or near the Development site	No
<i>Cercartetus nanus</i>	eastern pygmy-possum	V	-	Rainforest, sclerophyll forest (including Box-Ironbark), woodland and heath.	2	No	No
<i>Dasyurus maculatus</i>	spotted-tailed quoll	V	E	Rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	4	No	No
<i>Isodon obesulus obesulus</i>	southern brown bandicoot (eastern)	E1	E	Heath or open forest with a heathy understorey on sandy or friable soils.	-	No	No
<i>Lagenorhynchus obscurus</i>	dusky dolphin	-	-	Rainforest, sclerophyll forest (including Box-Ironbark), woodland and heath.	-	No	No
<i>Notamacropus parma</i>	parma wallaby	V	V	Rainforest, sclerophyll forest (including Box-Ironbark), woodland and heath.	-	No	No
<i>Perameles nasuta</i>	long-nosed bandicoot, North Head	E2	-	Occupies a variety of habitats on North Head.	12	No	No
<i>Petaurus australis</i>	yellow-bellied glider	V	V	The habitat on the Bago Plateau consists of tall wet sclerophyll forest dominated by Eucalyptus delegatensis (Alpine Ash), E. dalrympleana (Mountain Gum), E. radiata (Narrow-leaved Peppermint), and E. rubida (Candlebark).	-	No	No
<i>Petauroides volans</i>	greater glider population in the Eurobodalla local government area	E2	V	Eucalypt forests and woodlands.	-	No	No

Scientific Name	Common Name		BC Act	EPBC Status	Habitat	Sighting no.	Likelihood Occurrence	of	Impact Assessment Required
<i>Phascolarctos cinereus</i>	koala		V	V	Eucalypt woodlands and forests.	11	No		No
<i>Pseudomys gracilicaudatus</i>	eastern mouse	chestnut	V	-	Eucalypt woodlands and forests.	1			
<i>Pseudomys novaehollandiae</i>	New Holland mouse		-	V	Open heathlands, woodlands and forests with a heathland understorey, vegetated sand dunes.	1	No		No
Microbats and Fruit bats									
<i>Chalinolobus dwyeri</i>	large-eared pied bat		V	V	Wet and dry sclerophyll forests, Cyprus Pine dominated forest, woodland, sub-alpine woodland, edges of rainforests and sandstone outcrop country. Roosts in caves, crevices in cliffs, mines and occasionally disused mud nests of birds	7	Unlikely. roosting present	No habitat on Development site.	No
<i>Falsistrellus tasmaniensis</i>	eastern pipistrelle	false	V	-	Tall (greater than 20m) moist habitats. Generally roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings.	5	Potential		Yes
<i>Miniopterus australis</i>	little bat	bent-winged	V	-	Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Roosts in caves, mines, tunnels, culverts and bridges, occasionally buildings and tree hollows	72	Potential		Yes
<i>Miniopterus orianae oceanensis</i>	large bat	bent-winged	V	-	Rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, paperbark forests and open grassland. Roosts in caves, mines, tunnels, culverts and bridges.	165	Potential		Yes.
<i>Micronomus norfolkensis</i>	eastern coastal free-tailed bat		V	-	Dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roosts in tree hollows and occasionally in buildings.	23	Potential		Yes

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Myotis macropus</i>	southern myotis	V	-	Foraging habitat is waterbodies (including streams, or lakes or reservoirs) and fringing areas of vegetation up to 20m. Roosts in caves, tunnels, culverts, bridges, mines and tree hollows.	500	Potential	Yes.
<i>Pteropus poliocephalus</i>	grey-headed flying-fox	V	V	Subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	6020	Likely. Suitable potential habitat occurs within the Development site	No
<i>Saccolaimus flaviventris</i>	yellow-bellied sheath-tail-bat	V	-	Almost all habitats, including wet and dry sclerophyll forest, open woodland, open country, mallee, rainforests, heathland and waterbodies. Roosts in tree hollows.	7	Unlikely, no roosting habitat present within the Development site	No
<i>Scoteanax rueppellii</i>	greater broad-nosed bat	V	-	Associated with moist gullies in mature coastal forest, or rainforest, east of the Great Dividing Range tending to be more frequently located in more productive forests. Roosts in tree hollows and occasionally in buildings	1	Potential	Yes
Reptiles							
<i>Caretta caretta</i>	loggerhead turtle	E	E	Marine	6	No	No
<i>Chelonia mydas</i>	green turtle	V	V	Marine. Nesting occurs on beaches.	1	Unlikely. Suitable habitat on or near the Development site	No
<i>Dermochelys coriacea</i>	leatherback turtle	E1	M	Marine. Nesting occurs on beaches.	1	Unlikely. Suitable habitat on or near the Development site	No

Scientific Name	Common Name	BC Act	EPBC Status	Habitat	Sighting no.	Likelihood of Occurrence	Impact Assessment Required
<i>Hoplocephalus bungaroides</i>	broad-headed snake	E1	V	Dry and wet sclerophyll forests, riverine forests, coastal heath swamps, rocky outcrops, heaths, grassy woodlands.	-	No. No suitable habitat on or near the Development site	No
Invertebrates							
<i>Meridolum maryae</i>	Maroubra woodland snail	E	E	<i>Meridolum maryae</i> occurs in coastal vegetation communities of the Sydney Basin, typically within a narrow band of habitat close to the coastline. It is most commonly associated with heathland on sandy foredunes and podsolised sandplains, including vegetation such as Eastern Suburbs Banksia Scrub.	-	No	No
<i>Petalura gigantea</i>	giant dragonfly	E	-	<i>Petalura gigantea</i> is strongly associated with groundwater-dependent wetland systems, particularly permanent swamps, peat bogs and seepage areas along the east coast of New South Wales.	-	No	No

Appendix B Test of Significance (BC Act)

The ‘Test of significance’ (5-part test) is applied to species, populations and ecological communities listed on Schedules 1 and 2 of the BC Act and Schedules 4, 4A and 5 of the FM Act. The assessment sets out five factors, which when considered, allow proponents to undertake a qualitative analysis of the likely impacts of an action and to determine whether a significant impact is likely. All factors must be considered, and an overall conclusion made based on all factors in combination.

Tests of Significance have been undertaken for the following threatened entities:

- Microbats
 - *Falsistrellus tasmaniensis* (eastern false pipistrelle)
 - *Micronomus norfolkensis* (eastern coastal free-tailed bat)
 - *Myotis macropus* (southern myotis)
 - *Miniopterus orianae oceanensis* (large bent-winged bat)
 - *Miniopterus australis* (Little bent-winged bat)
 - *Scoteanax rueppellii* (greater broad-nosed bat).
- Migratory shorebirds
 - *Limosa lapponica baueri* (bar-tailed godwit)
 - *Calidris ferruginea* (curlew sandpiper)

B1: Threatened microchiropteran bat

Falsistrellus tasmaniensis (eastern false pipistrelle) is listed as vulnerable under the BC Act. This species is a relatively large microbat, distinguished by its robust body and broad wings adapted for fast, direct flight. The species typically roosts in tree hollows, particularly within mature forests and woodlands, and occasionally in structures. Foraging occurs above the canopy and along forest edges, riparian zones, and open areas where it feeds on flying insects. This species is highly mobile and utilises large areas of the landscape for foraging and commuting.

Micronomus norfolkensis (eastern coastal free-tailed bat) is listed as vulnerable under the BC Act. This species has dark brown to reddish brown fur on the back and has a long bare tail protruding from the tail membrane. This species is found along the east coast from south Queensland to southern NSW

Miniopterus orianae oceanensis (large bent-winged bat) and *Miniopterus australis* (little bent-winged bat) are listed as vulnerable under the BC Act. These species have a short snout, with a high “domed” head and short ears (DCCEEW 2024). These species are known to inhabit manmade structures for roosts including derelict mines, tunnels and some buildings. Caves are also utilised (DCCEEW 2024). *Miniopterus orianae oceanensis* (large bent-wing bat) is distinguished by its long, narrow wings adapted for fast flight and a slightly domed head profile. These species typically roosts in caves, tunnels, and occasionally in built structures, forming large maternity colonies. Foraging generally occurs in a range of habitats including forests, woodlands and riparian corridors, where it feeds on aerial insects. These species is highly mobile and may utilise broad areas of the landscape for foraging and commuting.

Myotis Macropus (southern myotis) is listed as vulnerable under the BC Act. This species of bat has disproportionately large feet and curved claws that has dark-grey to reddish brown fur, with a wingspan

of about 28cm. This species is found in the coastal band from north-west of Australia, across the top-end and south to western Victoria.

Scoteanax rueppellii (greater broad-nosed bat) is listed as vulnerable under the BC Act. This is a large species of bat, measuring up to 95 mm long, with a broad head and a short square muzzle. This species is found mainly in gullies and river systems that drain the Great Dividing Range.

These threatened bats were not recorded from BioNet records or during emergency surveys, however they have potential to utilise the building within the development site. These bats still may use foraging habitat within (such as planted vegetation) and adjacent to the development site (such as the waterbody). Vegetation will not be removed as part of the proposed activity, therefore there will be no impacts to this foraging habitat. Impacts to the water have not been assessed in this report under the proposed activity.

Table 7: BC Act Test of Significance for threatened microbats

BC Act	Question	Response
7.3.1 a)	In the case of a threatened species: Whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	The proposed activity involves demolition of an existing built structure within a highly modified urban environment and will not result in the removal of native vegetation or known significant roosting habitat for eastern coastal free-tailed bat, eastern false pipistrelle, greater broad-nosed bat, large bent-winged bat, little bent-winged bat, or southern myotis. The development site comprises predominantly hardstand and buildings, which provide only low to moderate potential roosting habitat in limited areas (e.g. roof voids and wharf structures). Previous targeted surveys have identified that the majority of the site supports negligible habitat, with only localised areas of moderate potential and no known maternity roosts or important habitat features present. The proposed activity may impact a small area of marginal and temporary roosting and/or foraging habitat within the existing structure; however, these habitats are widely available within the surrounding landscape and are not considered critical to the life cycle of these species. These species are highly mobile and utilise large areas of the landscape for foraging and commuting. Accordingly, the proposed activity is unlikely to adversely affect the life cycle of local populations such that a viable population would be placed at risk of extinction. The implementation of additional targeted surveys and pre-clearance inspections will further minimise potential impacts.
7.3.1 b) i	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed activity or activity: Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	N/A
7.3.1 b) ii	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: Is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.	N/A

BC Act	Question	Response
7.3.1 c) i	In relation to the habitat of a threatened species or ecological community: The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity.	The proposed activity involves demolition of an existing structure within a highly modified urban environment and will not result in the removal of native vegetation or natural habitat. The site comprises hardstand and buildings with only low to moderate potential roosting habitat in limited areas (e.g. roof voids and wharf structures). Previous surveys identified negligible habitat across most of the site, with no known important roosting habitat present. The proposed activity may remove a small amount of non-critical, artificial roosting habitat; however, such habitat is widely available in the surrounding landscape. Accordingly, the proposed activity is unlikely to substantially modify habitat for these species.
7.3.1 c) ii	In relation to the habitat of a threatened species or ecological community: Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay within a highly modified urban environment. The site comprises hardstand and existing built structures, with only low to moderate potential roosting habitat present in limited areas (e.g. roof voids and wharf structures). The proposed activity may remove a small amount of non-critical, artificial roosting habitat; however, these areas are already disturbed and represent marginal habitat for these species. Remaining structures and surrounding harbour-side environments will continue to provide comparable habitat, and highly mobile species will retain access to suitable habitat within the broader landscape.
7.3.1 c) iii	In relation to the habitat of a threatened species or ecological community: The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay within a highly modified urban environment and will not result in the removal of native vegetation or important habitat features. The site provides only low to moderate potential roosting habitat in limited areas (e.g. roof voids and wharf structures). The proposed activity may impact a small extent of non-critical, artificial roosting habitat; however, these habitats are of low quality and not essential to the life cycle of these species. Given the small scale of impact and the availability of similar habitat in the surrounding urban and harbour landscape, the importance of the habitat to be removed is considered low.
7.3.1 d)	Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).	The proposed activity will not impact any declared Area of Outstanding Biodiversity Value.
7.3.1 e)	Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay and is not associated with any key threatening processes listed under the Biodiversity Conservation Act 2016. The works will not involve vegetation clearing, riparian disturbance, or removal of natural habitat features. Impacts are limited to the removal of a small amount of non-critical, artificial roosting habitat within an already highly modified environment. Given the absence of native vegetation and the availability of similar habitat in the surrounding urban and harbour landscape, the proposed activity is unlikely to increase the impact of any key threatening processes for these species.
Conclusion	Is there likely to be a significant impact?	No. The proposed activity is unlikely to have a significant impact on these species for the following reasons: Similar habitat for these highly mobile species is available within the vicinity of the impact area. The species are highly mobile and are able to access vegetation within the broader landscape.

B2: Threatened Migratory shorebirds – bar-tailed godwit and curlew sandpiper

Limosa lapponica baueri (bar-tailed godwit) is listed as endangered under the BC Act. This species is a large migratory shorebird characterised by a long, slightly upturned bill and long-distance migratory behaviour. It typically occupies coastal environments, including estuaries, mudflats and sheltered bays, where it forages on invertebrates within intertidal sediments. Individuals undertake extensive seasonal migrations and are highly mobile, utilising a network of coastal feeding and roosting sites across the landscape.

Calidris ferruginea (curlew sandpiper) is listed as critically endangered under the BC Act. This species is a small to medium-sized migratory shorebird distinguished by its slender down-curved bill and association with intertidal habitats. It commonly occurs in estuaries, mudflats, lagoons and other coastal wetlands, where it forages on small invertebrates. The species is highly mobile and relies on suitable foraging and roosting habitat across a broad geographic range during migration.

These threatened bird species are typically associated with coastal and estuarine environments and are unlikely to utilise highly modified urban environments lacking suitable intertidal habitat. No suitable foraging or roosting habitat for these species has been identified within the development site, which comprises a highly disturbed built environment.

Table 8: BC Act Test of Significance for shorebirds

BC Act	Question	Response
7.3.1 a)	In the case of a threatened species: Whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay and will not impact any suitable foraging or roosting habitat for bar-tailed godwit or curlew sandpiper. These species are typically associated with coastal mudflats, estuaries, and intertidal habitats, which are not present within the development site. The site comprises a highly modified urban environment consisting of buildings and hardstand and would not be utilised by these species for critical life cycle processes. The proposed activity will not remove or degrade any important habitat features and does not form part of a broader network of habitats required by these species. Given the absence of suitable habitat within the site and the availability of extensive foraging and roosting habitat within the surrounding coastal environment, the proposed activity is unlikely to adversely affect the life cycle of these species such that a viable local population would be placed at risk of extinction.
7.3.1 b) i	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed activity or activity: Is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or	N/A
7.3.1 b) ii	In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: Is likely to substantially and adversely modify the composition of the ecological community such	N/A

BC Act	Question	Response
	that its local occurrence is likely to be placed at risk of extinction.	
7.3.1 c) i	In relation to the habitat of a threatened species or ecological community: The extent to which habitat is likely to be removed or modified as a result of the proposed development or activity.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay within a highly modified urban environment and will not result in the removal of any suitable habitat for bar-tailed godwit or curlew sandpiper. These species are associated with coastal mudflats, intertidal areas, and estuarine environments, which are not present within the development site. Accordingly, the proposed activity will not remove or modify habitat for these species, and no impact to key foraging or roosting areas is expected.
7.3.1 c) ii	In relation to the habitat of a threatened species or ecological community: Whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay within a highly modified urban environment. The site comprises buildings and hardstand and does not contain coastal or intertidal habitat utilised by bar-tailed godwit or curlew sandpiper. As such, the proposed activity will not fragment habitat for these species. Suitable foraging and roosting habitat occurs within surrounding estuarine and coastal environments, and these highly mobile species will continue to access these areas without constraint.
7.3.1 c) iii	In relation to the habitat of a threatened species or ecological community: The importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay within a highly modified urban environment and will not result in the removal of any suitable habitat for bar-tailed godwit or curlew sandpiper. The site does not contain intertidal foraging areas or high-tide roosting habitat, which are essential to these species. Accordingly, the proposed activity will not remove habitat important for sustaining local populations. Given the absence of suitable habitat within the development site and the availability of extensive foraging and roosting habitat within the surrounding coastal environment, the importance of the habitat to be removed is considered negligible.
7.3.1 d)	Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).	The proposed activity will not impact any declared Area of Outstanding Biodiversity Value.
7.3.1 e)	Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.	The proposed activity involves demolition of the former Fish Market building at Blackwattle Bay and is not associated with any key threatening processes listed under the Biodiversity Conservation Act 2016. The works will not involve reclamation or modification of intertidal or coastal habitats utilised by bar-tailed godwit or curlew sandpiper. Given the absence of suitable foraging and roosting habitat within the development site, the proposed activity is unlikely to increase the impact of any key threatening processes for these species.
Conclusion	Is there likely to be a significant impact?	No. The proposed activity is unlikely to have a significant impact on these species for the following reasons: Similar habitat for these highly mobile species is available within the vicinity of the impact area. The species are highly mobile and are able to access vegetation within the broader landscape.

Appendix C Assessment of Significance (EPBC Act)

The EPBC Act establishes a process for assessing the environmental impact of activities and developments where Matters of National Environmental Significance (MNES) may be affected. Under the Act, any action which 'has, will have, or is likely to have a significant impact on a matter of MNES' is defined as a controlled action, and requires approval from the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW), which is responsible for administering the EPBC Act. The process includes undertaking an Assessment of Significance for listed threatened species and ecological communities that represent a matter of MNES that will be affected because of the proposed action. Significant impact guidelines that outline criteria have been developed by the Commonwealth of Australia (2013), to provide assistance in conducting the Assessment of Significance and help decide whether or not a referral to the Commonwealth is required.

The following MNES has been assessed for two migratory shorebirds as part of this assessment:

C1: *Limosa lapponica baueri* (bar-tailed godwit)

Table 9: EPBC Act Assessment of Significance for bar-tailed godwit

Criterion	Question	Response
An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:		
Criteria a: lead to a long-term decrease in the size of an important population of a species		The Matters of National Environmental Significance impact guidelines states the following: <i>'An 'important population' is a population that is necessary for a species' long-term survival and recovery. This may include populations identified as such in recovery plans, and/or that are:</i> <i>key source populations either for breeding or dispersal</i> <i>populations that are necessary for maintaining genetic diversity, and/or</i> <i>populations that are near the limit of the species range.'</i> The bar-tailed godwit is a non-breeding migratory species to NSW. The entire population of bar-tailed godwit is considered one population. The field survey and database assessment did not record suitable habitat for this species within the development site. The proposed actions will affect 3.4 ha of human-made structures which do not represent habitat for the bar-tailed godwit. The action involves construction of Public Domain and Waterfront Gardens in existing built environment. The action does not involve direct removal or indirect impacts to foraging or roosting habitat for this species. The action will not result in the long-term decrease of the population size. Given that the action is only minor in nature it is unlikely to lead to a long-term decrease in the size of an important population.
Criteria b: reduce the area of occupancy of an important population		The proposed action would result in the construction of human-made structures within existing built landscape. The development site abuts the boundary of the Migratory Shorebird Important Habitat. The mapped areas includes mapping along the waterbody of Parramatta River and Rozelle Bay where there are 148 BioNet records for this species have been identified. The important habitat also includes the waterbody within Cockle Bay which adjoins the development site. There are no historic (>30 years) or recent BioNet records for this species within Cockle Bay or the development sites. The important habitat mapping has included areas where there are built structures and no suitable intertidal vegetation or shorelines. The eastern portion of the development site is located on suspended promenade and

Criterion	Question	Response
		contains sandstone blocks along the water's edge and no tidal flats. The proposed action will not result in the reduction of the area of occupancy for this species as the development site does not contain suitable habitat for this species.
Criteria c:	fragment an existing important population into two or more populations	As previously mentioned, the population of bar-tailed godwit within Australia is considered one population. The proposed action will not fragment an existing population into two or more populations.
Criteria d:	adversely affect habitat critical to the survival of a species	No habitat critical to the survival of this species has been declared.
Criteria e:	disrupt the breeding cycle of an important population	The proposed action will not disrupt the breeding cycle of the bar-tailed godwit as this is a non-breeding migrant. It is noted that non-breeding foraging habitat in NSW is considered important to the survival of this species. Sufficient foraging resources are required to support the migration of a healthy population to breeding grounds in the Arctic. The proposed action will not impact upon foraging habitat for this species.
Criteria f:	modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	The proposed activity will not result in the modification, destruction, or removal of suitable habitat for bar-tailed godwit. The development site comprises a highly modified urban environment and does not contain intertidal foraging habitat or high-tide roosting habitat. Accordingly, the proposed activity will not reduce habitat availability or quality, and is not likely to result in a decline of the species.
Criteria g:	result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat	The action will not result in invasive species that are harmful to this species becoming established in their habitat because weed control protocols will be implemented to ensure that weeds are not transported by equipment or footwear.
Criteria h:	introduce disease that may cause the species to decline, or	The action is unlikely to result in introducing diseases that may cause the bar-tailed godwit to decline. Equipment and footwear will be cleaned and disinfected before entering the site to reduce the likelihood of introducing the disease to the work site.
Criteria i:	interfere substantially with the recovery of the species.	The proposed project will not substantially interfere with the recovery of this species given the proposed activity are only minor in nature.
Conclusion	Is there likely to be a significant impact?	No. A significant impact is unlikely for the following reasons: • The development site does not contain suitable foraging or roosting habitat for the species. • The proposed activity will not result in the removal or modification of intertidal or coastal habitat, which are required by the species. • The site does not support an important population, nor is it part of a habitat network utilised by the species within the locality. • The bar-tailed godwit is a highly mobile migratory species with access to extensive, higher-quality habitat within the surrounding estuarine environment. • The proposed activity will not affect critical habitat, fragment important habitat at a landscape scale, or reduce important food or roosting resources.

Criterion	Question	Response
		Any potential indirect impacts will be temporary and managed through standard mitigation measures implemented during demolition works. Accordingly, the proposed action is unlikely to result in a significant impact on the bar-tailed godwit under the EPBC Act, and a referral to the Commonwealth is not required.

C2: *Calidris ferruginea* (curlew sandpiper)

Table 10: EPBC Act Assessment of Significance for curlew sandpiper

Criterion	Question	Response
		An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:
	Criteria a: lead to a long-term decrease in the size of an important population of a species	The Matters of National Environmental Significance Significant Impact Guidelines state the following: “An ‘important population’ is a population that is necessary for a species’ long-term survival and recovery. This may include populations identified in recovery plans, and/or that are: - key source populations either for breeding or dispersal, - populations that are necessary for maintaining genetic diversity, and/or - populations that are near the limit of the species’ range.” <i>Calidris ferruginea</i> (curlew sandpiper) is a migratory shorebird that occurs within coastal and estuarine environments, including intertidal mudflats and adjacent high-tide roosting areas. The species does not breed in Australia and utilises the region during the non-breeding season. While one BioNet record occurs within the broader locality of the development site, the site at Blackwattle Bay comprises a highly modified urban environment and does not contain suitable foraging or roosting habitat for the species. No individuals were recorded within or adjacent to the development site during site inspections. The development site is therefore not considered to support an important population for breeding, dispersal, or long-term survival or recovery of the species. The action is not expected to result in a significant impact on this species. The proposed activity involve demolition of an existing structure and will not result in the removal of suitable habitat. Given the absence of intertidal habitat and the availability of extensive foraging and roosting habitat within the surrounding estuarine environment, the proposed activity will not lead to a long-term decrease in the size of an important population.
	Criteria b: reduce the area of occupancy of an important population	The action is not expected to reduce the area of occupancy of an important population. The proposed activity will not remove or modify any intertidal foraging or high-tide roosting habitat utilised by curlew sandpiper. The development site comprises a highly modified urban environment and does not contribute to the area of occupancy of an important population. Suitable habitat occurs within surrounding estuarine environments and will

Criterion	Question	Response
		remain unaffected by the proposed activity. As such, the action is unlikely to reduce the area of occupancy of an important population of this species.
Criteria c: fragment an existing important population into two or more populations		The action will not result in fragmentation of an important population. The development site does not support suitable habitat for curlew sandpiper and is not utilised by the species. The species is highly mobile and occurs across coastal and estuarine environments, with 1 BioNet record within the broader locality. Suitable habitat remains continuous within the surrounding landscape, and the proposed activity will not prevent movement of individuals across the locality.
Criteria d: adversely affect habitat critical to the survival of a species		No habitat critical to the survival of this species has been declared.
Criteria e: disrupt the breeding cycle of an important population		The action does not involve impacts to breeding habitat or a substantial loss of foraging habitat near breeding habitat.
Criteria f: modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline		The proposed activity will not result in the modification, destruction, or removal of suitable habitat for curlew sandpiper. The development site comprises a highly modified urban environment and does not contain intertidal foraging habitat or high-tide roosting habitat utilised by the species. Accordingly, the proposed activity will not reduce habitat availability or quality, and is not likely to result in a decline of the species.
Criteria g: result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat		The action will not result in invasive species that are harmful to this species becoming established in their habitat because weed control protocols will be implemented to ensure that weeds are not transported by equipment or footwear.
Criteria h: introduce disease that may cause the species to decline, or		The action is unlikely to result in introducing diseases that may cause the curlew sandpiper to decline. Equipment and footwear will be cleaned and disinfected before entering the site to reduce the likelihood of introducing the disease to the work site.
Criteria i: interfere substantially with the recovery of the species.		The proposed project will not substantially interfere with the recovery of this species given the proposed activity are only minor in nature.
Conclusion Is there likely to be a significant impact?		No. A significant impact is unlikely for the following reasons: • The development site does not contain suitable foraging or roosting habitat for curlew sandpiper. • The proposed activity will not result in the removal or modification of intertidal or coastal habitat, which are required by the species. • The site does not support an important population, nor does it contribute to habitat connectivity within the broader locality. • curlew sandpiper is a highly mobile migratory species with access to extensive, higher-quality habitat within the surrounding estuarine environment. • The proposed activity will not affect critical habitat, fragment important habitat at a landscape scale, or reduce important foraging or roosting resources.

Criterion	Question	Response
		Any potential indirect impacts will be temporary and managed through standard mitigation measures implemented during demolition works. Accordingly, the proposed action is unlikely to result in a significant impact on the curlew sandpiper under the EPBC Act, and a referral to the Commonwealth is not required.

