Flora and Fauna Assessment

Upgrades to Melrose Park Public School Biodiversity

Department of Education NSW

16 April 2025

School Name	Melrose Park Public School	**Consultancy Name**	Water Technology
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ACKNOWLEDGEMENT OF COUNTRY

The Board and employees of Water Technology acknowledge and respect the Aboriginal and Torres Strait Islander Peoples as the Traditional Custodians of Country throughout Australia. We specifically acknowledge the Traditional Custodians of the land on which our offices reside and where we undertake our work.

We respect the knowledge, skills and lived experiences of Aboriginal and Torres Strait Islander Peoples, who we continue to learn from and collaborate with. We also extend our respect to all First Nations Peoples, their cultures and to their Elders, past and present.

Artwork by Maurice Goolagong 2023. This piece was commissioned by Water Technology and visualises the important connections we have to water, and the cultural significance of journeys taken by traditional custodians of our land to meeting places, where communities connect with each other around waterways.

The symbolism in the artwork includes:

- *Seven circles representing each of the States and Territories in Australia where we do our work*
- *Blue dots between each circle representing the waterways that connect us*
- *The animals that rely on healthy waterways for their home*
- *Black and white dots representing all the different communities that we visit in our work*
- *Hands that are for the people we help on our journey*

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ACRONYMS AND DEFINITIONS

Acronym	Definition
BC Act	*Biodiversity Conservation Act 2016*
BV	Biodiversity Values
DCP	Development Control Plan
DD	Due Diligence
DoE	Department of Education
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
FM Act	*Fisheries Management Act 1994*
LEP	Local Environment Plan
LGA	Local Government Area
MNES	Matter of National Environmental Significance
PCT	Plant Community Type
FFA	Flora and Fauna Assessment
SEARS	Secretary's Environmental Assessment Requirements
SSD	State Significant Development
TEC	Threatened Ecological Community
WM Act	*Water Management Act 2000*

EXECUTIVE SUMMARY

A Flora and Fauna Assessment has been conducted to identify potential impacts that may impede the future upgrades for the Melrose Park Public School. This is to support a Review of Environmental Factors (REF) for a development without consent application under Part 5 of the EP&A Act, mitigating any risks during the school upgrades. This report documents the findings of the biodiversity assessment, identifying potential biodiversity impacts relevant to the proposed development under the NSW Biodiversity Conservation Act 2016, Commonwealth Environment Protection and Biodiversity Conservation Act 1999, and the NSW Fisheries Management Act 1994.

Melrose Park Public School comprises several interconnected classroom buildings, paved courtyard areas with shading, a large managed cricket pitch, several planted garden areas, and mature canopy trees around the site fence.

Three out of the six planted trees of Magenta Lilly Pilly (*Syzygium paniculatum*), a threatened species, were recorded within the study area and are proposed for removal. .The Magenta Lilly Pilly tree removal will not trigger the matters of national environmental significance as the trees are located outside the species' known natural range or habitat and have planted as ornamentals. Appropriate plantings onsite to offset these losses have been recommended.

No significant biodiversity areas were mapped, and no Plant Community Types were found on site. The Grey-headed Flying-fox has a high likelihood of occurrence. No suitable habitat for the White-bellied Sea-Eagle was found within the subject site so this species is considered to have a moderate likelihood of occurrence. The site has no Key Fish habitat.

A Test of Significance was necessary to assess the potential environmental impacts on Magenta Lilly Pilly (*Syzygium paniculatum*) of the proposed upgrades. The assessment determined that the proposal is not likely to have a significant impact on the environment, so a Species Impact Statement (SIS) nor approval from the Minister for Planning was required.

1 INTRODUCTION

This Upgrades to Melrose Park Public School report has been prepared to accompany a Review of Environmental Factors (REF) for an activity proposed by the Department of Education under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act) and State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP TI).

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure.

This report examines and takes into account the relevant environmental factors in the Guidelines and Environmental Planning and Assessment Regulations 2021 under Section 170, Section 171 and Section 171A of the EP&A Regulation as outlined in Table 1-1.

Table 1-1 Summary of Relevant Section of the Part 5 Guidelines and EP&A Regulation

Regulation / Guideline Section	Requirement	Response	Relevant Section of Report
(c) the environmental impact on the ecosystems of the locality	(c1) impact on the existing and future ecosystem (flora, fauna, habitats, biodiversity, ecological integrity, biological diversity, connectivity/fragmentation, air, water including hydrology, soil) (c2) long- and short-term impact of: (i) loss or harm to trees or other vegetation (ii) removed canopy cover	(c1) will impact flora and fauna habitats (c2)(i) will cause loss and harm to trees and other vegetation (ii) canopy cover will be removed	See Section 7.1, Appendix C
(f) the impact on the habitat of protected animals, within the meaning of the Biodiversity Conservation Act 2016	(f1) impacts on listed protected fauna at and in the vicinity of the site, and their habitat.	(f1) will not impact on protected fauna Will impact on protected flora	See Section 7.1, Appendix C
(g) the endangering of a species of animal, plant or other form of life, whether living on land, in water or in the air	(g1) potential endangering of any species or vegetation (g2) protected and threatened flora, terrestrial, fauna species, populations, ecological communities and their habitats	(g1) will not endanger any species or vegetation (g2) will impact threatened flora	See Section 7.1, Appendix C
(h) long-term effects on the environment	(h1) Long-term effects on: (ii) natural environment, flora and fauna species and their habitats	(h1)(ii) will not have long term effects on the natural environment, flora and fauna species and their habitats	See Section 7.1, Appendix C

Regulation / Guideline Section	Requirement	Response	Relevant Section of Report
Address all relevant legislation, environmental planning instruments (EPIs) (including drafts), plans, policies, guidelines, and planning circulars.	The proposed works are assessed under the Environmental Planning and Assessment Act 1979 (EP&A Act) and relevant State Environmental Planning Policies (SEPPs).	The proposed works are permitted without consent under the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) and assessed as an activity under Part 5 of the EP&A Act. A Flora and Fauna Assessment (FFA) has been prepared to meet Clause 171 of the Environmental Planning and Assessment Regulation 2023.	See Section 4
Part 5 of the EP&A Act Trees and vegetation	Assess the number, location, condition, and significance of trees to be removed and retained and note any existing canopy coverage to be retained on-site.	Refer to the latest Arborist report for tree removal and retention. Tree Protection Zones (TPZs) will be implemented for retained trees. A qualified arborist will oversee tree removals and mitigation measures to prevent environmental impact.	See Section 7.1.1
Biodiversity Conservation Act 2016 (BC Act)	Consideration of impacts on threatened species, populations, and ecological communities listed under Schedules 1 and 2 of the BC Act.	Magenta Lilly Pilly (*Syzygium paniculatum*), listed as Endangered under the BC Act, was recorded within the study area. However, the trees are located outside the species' known natural range or habitat.	See Section 5.2.1 & 7.2.1
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	Determine whether the proposal has the potential to significantly impact matters of national environmental significance (MNES).	The proposal is not expected to have an impact on matters of national environmental significance.	See Section 5.2.1
Ecologically Sustainable Development (ESD)	Consider the principles of ecologically sustainable development, including precautionary principles, intergenerational equity, conservation of biological diversity, and improved valuation of natural resources.	The proposal is consistent with ESD principles. It does not result in serious or irreversible environmental damage and aligns with sustainable development goals by providing long-term educational infrastructure.	See Section 7.1.1
Biodiversity	Assess any biodiversity impacts associated with the development in accordance with the Biodiversity Conservation Act 2016 and the Biodiversity Assessment Method 2020.	The site contains no significant biodiversity areas. While the Grey-headed Flying Fox has a high likelihood of occurrence, mitigation measures, including habitat preservation and buffer zones, will be implemented. No significant impact on threatened species is anticipated.	See Section 2.2

1.1 Determination

- The proposed activity can proceed subject to mitigation measures and/or conditions relayed in this FFA.

- The activity is unlikely to be classed as a controlled action under the Commonwealth Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act), so no referral is required.

1.2 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed development, it was determined that:

- The extent and nature of potential impacts are low and will not have significant adverse effects on the locality, community and the environment.
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

1.3 Activity Description

The activity is for upgrades to Melrose Park Public School within a one to three-storey built form, including:

- Demolition of existing school buildings;
- Site preparation works including tree removal;
- Construction of the following buildings:
  - **Block A**: One (1) storey building comprising:
    - universal pre-school;
    - outdoor play area for the UPS; and
    - detached storeroom;
  - **Block B1: Two (2) storey building comprising:**
    - staff and administration areas;
    - library;
    - 4 special programs rooms;
    - Pedestrian bridge to Block B2;
  - **Block B2: Three (3) storey building comprising:**
    - 23 classrooms;
    - amenities/services cores; and
    - pedestrian bridge to Block B3;
  - **Block B3: Three (3) storey building comprising:**
    - 12 classrooms; and
    - amenities/services cores;
  - **Block C: One (1) storey building comprising:**
    - hall;
    - amenities;
    - canteen;
    - OSHC; and

  - COLA;
- Construction of two (2) car parking areas; and
- Landscaping works.

1.4 Activity Site

Melrose Park Public School is located at 110 Wharf Road, Melrose Park and is legally known as Lot 3 in DP 535298 with an approximate site area of 2.5 hectares. The site has a frontage to Wharf Road (east), Mary Street (south), and Waratah Street (west). The site is adjoined by 2-3 storey light industrial development to the north, 1-2 storey industrial and commercial developments to the south, residential dwellings to the east and industrial and commercial development to the west.

An aerial photograph of the site is provided in Figure 1-1.

Figure 1-1 Aerial Photograph

2 PROJECT JUSTIFICATION

The Melrose Park Public School Upgrade is part of the NSW Government's plan to rebuild public education in 2024-25. This upgrade will ensure growing communities get access to public education.

2.1 Options

Option 1 – Do Nothing: The current schools will continue to become dilapidated and outdated.

Option 2 – Implement Project Proposal: (Preferred option) Melrose Park Public School Upgrade enhanced by providing more educational facilities for the local community. By providing enhanced services and spaces, the new proposed Melrose Park Public School Upgrade aims to meet the current and future needs of the community.

2.2 Consideration of Ecologically Sustainable Development

The proposal has been considered against the principles of ecologically sustainable development (ESD) (refer to Table 2-1).

Table 2-1 Consideration of principles of ecologically sustainable development (ESD)

ESD Principle	Consideration in FFA
Precautionary principle	The proposal will not result in serious or irreversible environmental damage and there is no scientific uncertainty relating to the proposal.
Intergenerational equity	The proposal will help to meet the needs of future generations by providing education facilities, which can be used for future generations.
Conservation of biological diversity and ecological integrity	The proposal will not significantly impact on biological diversity or impact ecological integrity.
Improved valuation, pricing and incentive mechanisms	The proposal will provide cost efficient use of resources and provide optimum outcomes for the community, environment and with respect to financial cost.

3 SITE DESCRIPTION

3.1 Site Location and Background

The site is located at 110 Wharf Rd, Melrose Park NSW 2114 in the City of Paramatta (LGA). The site is legally described as Lot 3, DP535298.

Melrose Park Public School comprises several interconnected classroom buildings, paved courtyard areas with shading, a large managed cricket pitch, several planted garden areas, and mature canopy trees around the site fence.

An aerial image of the site is shown in Figure 3-1 below.

Figure 3-1 Site Aerial

4 RELEVANT LEGISLATION

Legislation and policy relevant to the biodiversity component of works within the subject site are outlined below:

4.1 Environmental Planning, Assessment Act 1979

Planning and development within NSW are regulated by the Environmental Planning & Assessment Act 1979 (EP&A Act).

The proposed works are permitted without consent under the State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP). Where works do not require development consent but require approval of a public authority under any legislation, then they are defined as an activity under Part 5 of the EP&A Act. Division 5.1 and Section 5.7 of the EP&A Act requires any such public authority to determine whether the impact of the activity is likely to be significant. A FFA contributes to that determination.

A FFA is prepared, to inform a Review of Environmental Factors, to meet the requirements of Clause 171 of the *Environmental Planning and Assessment Regulation 2023*.

4.1.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The State Environmental Planning Policy (Transport and Infrastructure) 2021 (TISEPP) provides for the efficient provision of public infrastructure in NSW. The aim of this Policy is to facilitate the effective delivery of infrastructure across the State.

4.2 Water Management Act 2000

The Water Management Act 2000 (WM Act) provides for the sustainable and integrated management of the water sources of the State for the benefit of both present and future generations. The WM Act defines principles of water management, sets out water licensing laws and environmental water provisions.

Section 91 (2) states that: waterfront land means—…where the prescribed distance is 40 metres or (if the regulations prescribe a lesser distance, either generally or in relation to a particular location or class of locations) that lesser distance.

This project is being conducted further than 40 metres from a waterway so is exempt from requiring a Controlled Activity Approval in accordance with the WM Act.

4.3 Biodiversity Conservation Act 2016 and Biodiversity Conservation Regulation 2017

The Biodiversity Conservation Act 2016 (BC Act) includes the Biodiversity Offsets Scheme (BOS) that governs how biodiversity offsets will be used to ensure they offset the loss due to development and deliver conservation outcomes. The Act and Regulations also govern the Biodiversity Assessment Method (BAM) as a scientific method that assesses biodiversity losses from impacts at development sites and gains from conserving land at stewardship sites.

Public authorities seeking to undertake an activity under Part 5 of the EP&A Act can voluntarily opt-in to the BOS and BAM scheme or alternatively can elect to undertake an Assessment of Significance and proceed with a Part 5 approval. It will be required to:

- take serious and irreversible impacts into consideration.
- determine if there are any additional and appropriate measures that will minimise the impact if the activity is to be carried out or approved.
- The potential ecological impacts of the proposal are discussed in Section 7 of this FFA.

4.4 Fisheries Management Act 1994

The provisions of the Fisheries Management Act 1994 relating to project development and approval processes operate similarly to the BC Act. The Act identifies threatened aquatic species, populations, and ecological communities, as well as Key Fish Habitat.

Significant impacts trigger the need for a species impact statement for Part 4 and Part 5 projects. The potential ecological impacts of the proposal are discussed in Section 7 of this FFA report. It is concluded that the proposal will not have a significant impact on any threatened aquatic species, populations or communities, or Key Fish Habitat.

4.5 Environment Protection and Biodiversity Conservation Act 1999

Under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), Commonwealth approval is required for certain actions. Actions which have or may have or are likely to have a significant impact on Matters of National Environmental Significance (MNES). MNES includes nationally threatened species or endangered ecological communities. Under the EPBC Act an assessment of the impact of a proposal on an MNES must be undertaken to determine whether there is likely to be a significant impact. If the assessment concludes there is a significant impact, then it will become a controlled action under the EPBC Act and the proposal must be referred to the Commonwealth. Approval from the relevant Federal Minister is also required for any actions that may have a significant impact on matters of National Environmental Significance, except in circumstances which are set out in the EPBC Act.

Approval from the Commonwealth is in addition to any approvals under NSW legislation.

The potential ecological impacts of the proposal are discussed in Section 7 of this FFA. It is concluded that the proposal is not likely to have a significant impact on any EPBC listed threatened species, populations or communities nor is it likely to impact on any MNES and so does not require referral to the Commonwealth under the EPBC Act.

Parramatta Local Environmental Plan 2023

The *Parramatta Local Environmental Plan 2023* (LEP) current version came into effect on 2nd March 2023. This plan aims to make local environmental planning provisions for land in the Parramatta LGA in accordance with the relevant standard environmental planning instrument.

The works are to be conducted as per LEP zoned land. The objectives of this zone include:

- To provide for infrastructure and related uses.
- To prevent development that is not compatible with or that may detract from the provision of infrastructure.

The proposed works are compliant with the objectives of this zoning, as it will provide new school infrastructure at the site.

Parramatta Development Control Plan 2023

The aim of the *Parramatta Development Control Plan 2011* (DCP) is to allow detailed provisions to be made to control and guide development and subdivision within the Parramatta LGA.

Several additional Development Control Plans may apply to the subject, including:

- Auburn DCP 2010 - Amendment 6
- Auburn DCP 2014 - Wentworth Point Precinct.pdf
- Auburn DCP 2016 - Carter Street Precinct
- Holroyd DCP 2013 - as amended 22 Jul 2015

- Hornsby DCP 2013 - as amended 18 Dec 2014
- Melrose Park North Site-Specific Development Control Plan
- The Hills DCP 2012 - as amended 21 Oct 2016

5 EXISTING ENVIRONMENT

5.1 Existing Environment

The subject site encompasses an area of approximately 2.5 hectares, comprising several interconnected classroom buildings, paved courtyard areas with shading, a large managed cricket pitch, several planted garden areas, and mature canopy trees around the site boundary fencing (Figure 3-1).

5.1.1 Desktop search

Prior to undertaking the ecological field survey, desktop searches were conducted to provide a context of the surrounding environment.

5.1.2 Vegetation communities

A review of the vegetation mapping databases using the SEED portal (NSW Government's central resource for Sharing and Enabling Environmental Data in NSW) was undertaken to identify Plant Community Types (PCTs) present within the area. As indicated in Figure 5-1, no PCTs were mapped as being present within the project site.

Analysis of high-resolution satellite imagery suggested that native vegetation is present within the subject site, and occurs as sporadic canopy trees within garden patches, or within continuous strips along the site boundary fencing. Historic imagery from 1970 indicated that the subject site was previously cleared so the canopy trees present, within the subject site, are likely planted or native regrowth (Figure 5-2).

5.1.3 Threatened Species

A search of the DCCEEW BioNet Atlas revealed 4,320 records of 68 listed species were previously recorded within 10 km of the site. Analysis of the Protected Matters Search Tool indicated 8 listed threatened ecological communities, 85 listed threatened species, and 48 listed migratory species previously recorded within 10 km of the subject site. No World Heritage Properties, National Heritage Places, Protected Marine Areas, nor Wetlands of international importance occurred within 10 km of the site (Appendix A).

The DCCEEW BioNet Atlas mapping identified two endangered or threatened species near the site, including Grey-headed Flying-fox (*Pteropus poliocephalus*), and the White-bellied Sea Eagle (*Haliaeetus leucogaster*). The Likelihood of Occurrence analysis indicated the Grey-headed Flying-fox was highly likely to occur within the site (this species may utilise vegetation for foraging), and the White-bellied Sea Eagle had a moderate likelihood to occur within the site (Appendix B).

The subject site was not mapped as containing any Key Fish Habitat, nor is it in proximity to significant waterways or waterfront land, thus no further provisions within the FM Act and WM Act are not required for the proposed development.

Due to the cryptic and nocturnal nature of many species, the fauna assessment primarily evaluated the site's potential as habitat. The precautionary principle was adopted, assuming the presence of threatened species if suitable habitat exists.

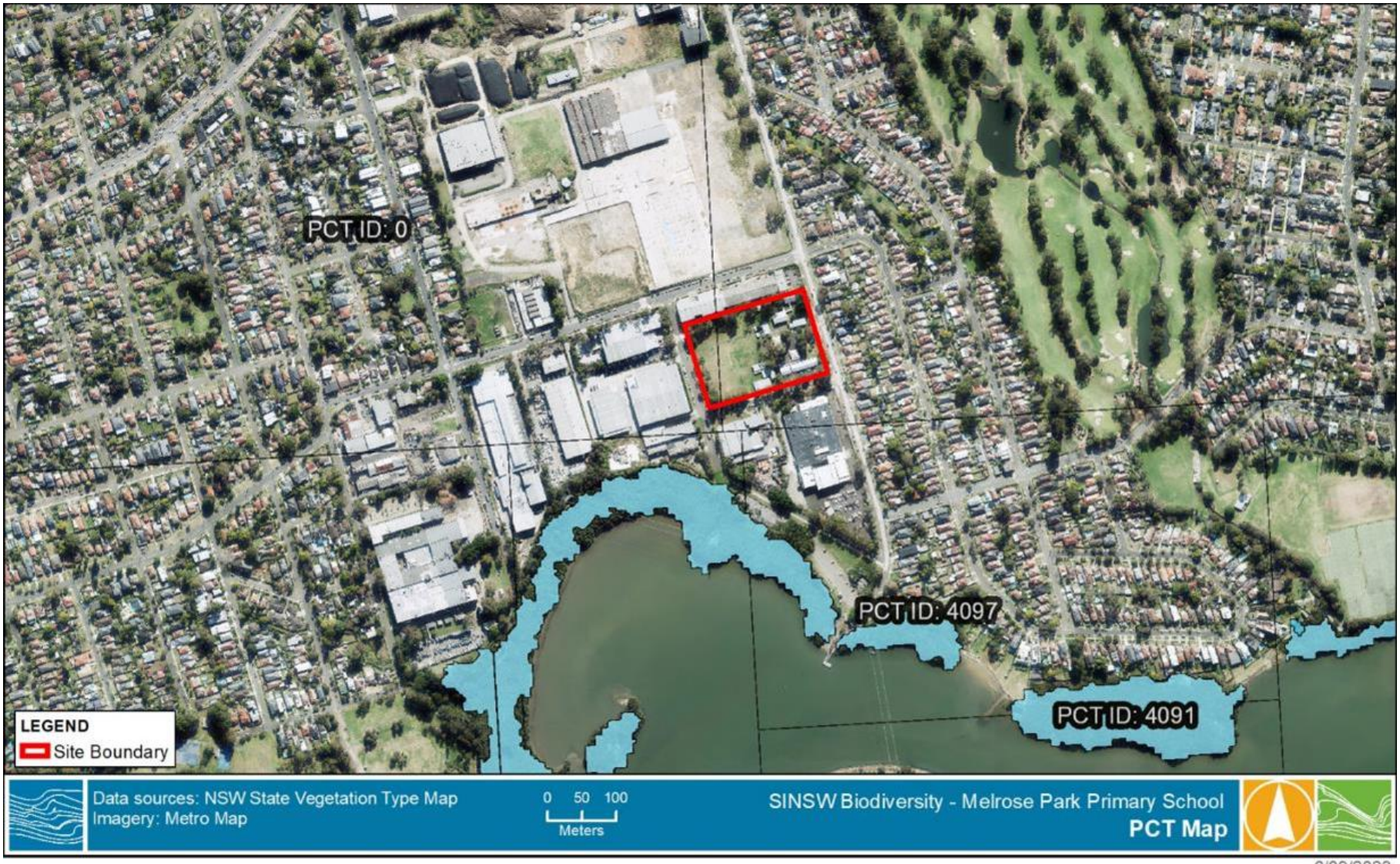

Figure 5-1 Plant Community Types

Figure 5-2 Historic Photograph 1970

Figure 5-3 Threatened species

5.2 Site Visit

Ecologist Petra Arola and botanist Caroline Weller conducted site assessments for Melrose Park Public School, with Arola assessing the site on 6 November 2024 and Weller on 25 February 2025, both involving walkthroughs of all accessible vegetated areas.

An opportunistic fauna survey included searches for proxy evidence of fauna activity such as tree scratches, scats, and bird nests. As many faunal species are cryptic and/or nocturnal, they are unlikely to be detected during a short survey. The fauna assessment is largely an assessment of the potential of the site as habitat for various fauna species. Apart from species recorded at the site there is no certainty as to the presence or absence of the species discussed. Therefore, it is important to adopt the precautionary principle, it is assumed that any threatened species are likely to occur at the site if suitable habitat exists.

An assessment of potential habitat features for threatened species, such as tree hollows or crevices in tree bark was also conducted.

5.2.1 Flora

The vegetation on site did not align with any nearby Plant Community Type (PCT), such as PCT 4091 – Grey Mangrove-River Mangrove Forest. The existing canopy consisted of a planted mix of species endemic to NSW, occurring as isolated trees, small patches, or thin strips along boundary fence lines. No large, continuous woodland patches were present.

Magenta Lilly Pilly (*Syzygium paniculatum*), a threatened species listed as Endangered under the NSW Biodiversity Conservation Act 2016 and Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999, was found on site. Previous aerial imagery shows that these trees have been planted, they are often planted as ornamental species.

Several trees and vegetation areas were identified for retention or removal (Figure 5-6). A fig tree was among those to be retained, while species including Magenta Lilly Pilly*, Callistemon spp., Melaleuca spp*., and palms were scheduled for removal. Some of these trees provided valuable flowering resources. The site featured a mix of native and exotic vegetation, with some trees supporting dense foliage while others formed open canopies. Lilly Pilly (*Syzygium spp*.), among those marked for removal, were observed flowering at the time of assessment, contributing to the site's structural complexity.

A building scheduled for demolition featured artwork of aesthetic value. The removal of vegetation would alter the site's landscape character, particularly where trees contributed to visual screening and shade. However, most of the larger trees and structural vegetation features remained in adjacent areas.

Analysis of historic images from 1951-61 (Figure 5-4 & Figure 5-5) and 1970 (Figure 5-2) suggested that the trees were most likely planted, a conclusion supported by their neat arrangement along the boundary fence line. Canopy trees were generally isolated by paved ground or managed grassland. Surrounded by industrial and residential areas, the site's vegetation had very low connectivity with other significant patches.

5.2.2 Native Flora

The site included several native canopy species such as Tallowwood (*Eucalyptus microcorys*), Swamp Sheoak (*Casuarina glauca*), Forest Red Gum (*Eucalyptus tereticornis*), and Spotted Gum (*Corymbia maculata*). Other native species, including Broad-leaved Paperbark (*Melaleuca quinquenervia*), Willow Bottlebrush (*Callistemon salignus*), and Basket Grass (*Lomandra lsisongifolia*), contributed to structural diversity.

Flowering species such as Magenta Lilly Pilly, a threatened species listed as Endangered under the NSW Biodiversity Conservation (BC) Act 2016 and Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

Figure 5-4 1951Historical imagery

Figure 5-5 1961 Historical Imagery

While smaller shrubs and groundcovers like Blue Flax Lily (*Dianella caerulea*) and Pink Wax Flower (*Eriostemon australasius*) added to the understorey complexity.

5.2.3 Exotic Flora

Exotic species included canopy trees such as Jacaranda (*Jacaranda sp.),* Monterey Pine (*Pinus radiata*), and Firewheel Tree (*Stenocarpus sinuatus*). The midstorey featured ornamental and fruit-bearing species like Golden Cane Palm (*Dypsis lutescens*), Japanese Camellia (*Camellia japonica***),** Olive Tree (*Olea europaea*), and Plum (*Prunus domestica*). Groundcover species included Peacock Flower (*Dietes bicolor*), Kikuyu (*Pennisetum clandestinum*), and Prairie Grass (*Bromus catharticus*), while scramblers and vines such as Inchplant (*Tradescantia sp.)* were present in some areas.

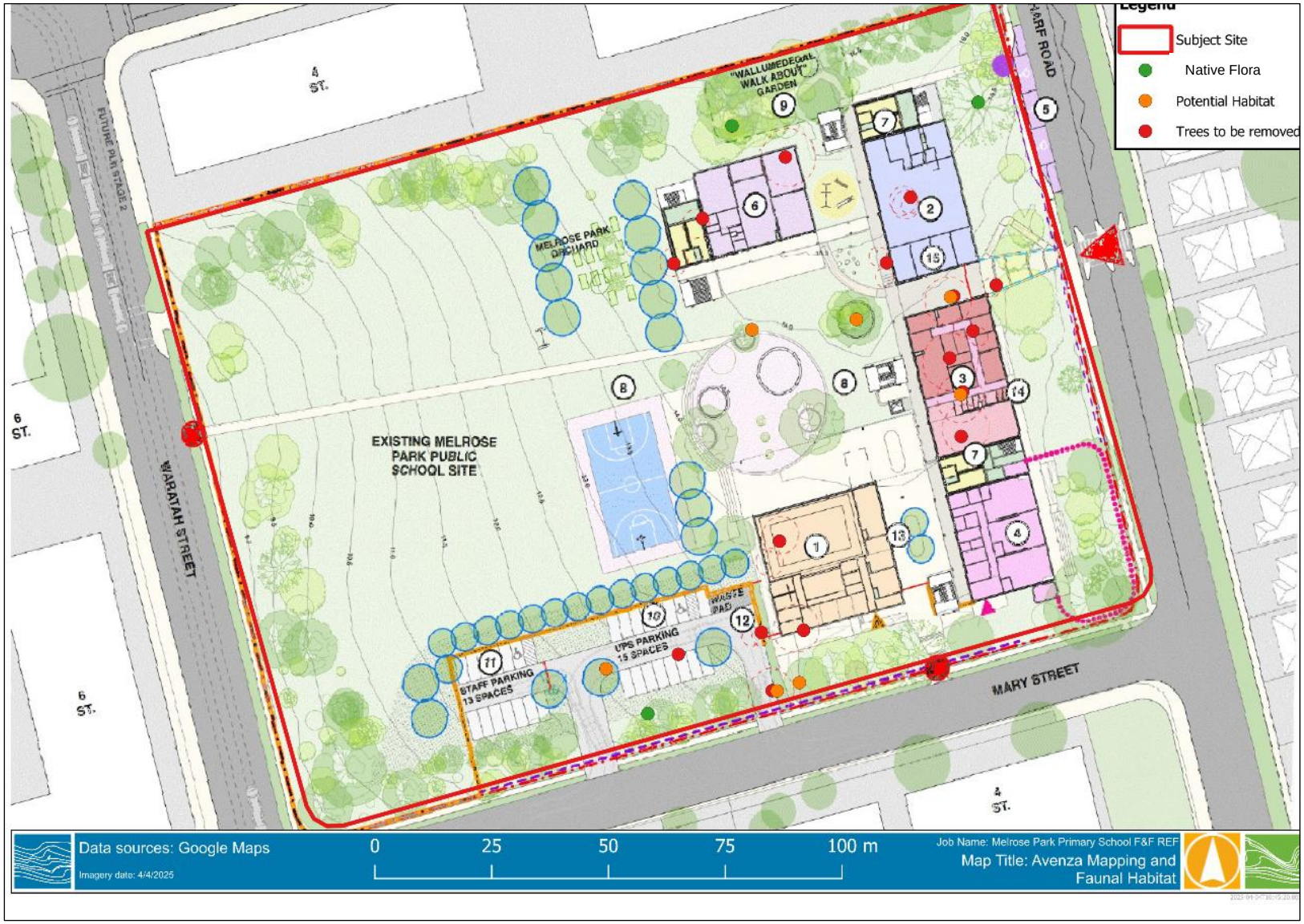

Figure 5-6 Avenza Mapping and Fauna habitat

The planned vegetation removal, according to the latest Landscape Plans, will be 62 trees (Figure 7-2) These removals altered the site's landscape character, particularly in areas where trees contributed to shade and visual screening.

Trees were primarily located along boundary fence lines or within small, planted garden areas scattered throughout the site. Native flora species are listed in Table 5-1.

Table 5-1 Native Flora Species List

NATIVE SPECIES	
Scientific Name	**Common Name**
Canopy Species	
Eucalyptus microcorys	Tallowood
Casuarina glauca	Swamp Sheoak
Eucalyptus tereticornis	Forest Red Gum
Eucalyptus robusta	Swamp Mahogany
Corymbia maculata	Spotted Gum
Grevillea robusta	Silky Oak
Eucalyptus paniculata	Grey Ironbark
Syncarpia glomulifera	Turpentine
Angophora costata	Sydney Red Gum
Eucalyptus saligna	Sydney Blue Gum
Casuarina cunninghamiana	River Sheoak
Eucalyptus sideroxylon	Red Ironbark
Angophora floribunda	Rough Barked Apple
Eucalyptus scoparia	Wallangarra White Gum
Ficus microcarpa hillii	Hills Weeping Fig
Eucalyptus radiata	Narrow-leaved Peppermint
Syzygium paniculatum	Magenta Lilly Pilly*
Acacia decurrens	Green Wattle
Callistemon salignus	Willow Bottlebrush
Callistemon sp.	Bottlebrush
Melaleuca quinquenervia	Broad-leaved Paperbark
Melaleuca armillaris	Bracelet Honeymyrtle
Lomandra longifolia	Basket grass
Dianella caerulea	Blue Flax Lily
Eriostemon australasius	Pink Wax Flower
Melaleuca hypericifolia	Hillock Bush
Melaleuca sp.	Paperbark
Midstory species	
Pittosporum undulatum	Native Daphne

Callistemon viminalis	Weeping Bottlebrush
Leptospermum petersonii	Lemon-scented Teatree
Leptospermum scoparium	Manuka
Acacia retinoides	Swamp Wattle
Melaleuca thymifolia	Thyme Honey-myrtle
Grevillea sp.	Grevillea (garden varieties)
Callistemon sp.	Bottlebrush (various)
Westringia fruticosa	Coastal Rosemary
Banksia spinulosa	Hairpin Banksia
Melaleuca alternifolia	Teatree
Syzygium sp.	Lilly Pilly
Groundcover species	
Lomandra sp.	Mat Rush
Dianella sp.	Flax Lily
Dichondra repens	Kidney Weed
Scramblers/vines	
Hardenbergia violacea	Purple Coral Pea

* Endangered BC Act and Vulnerable under the EPBC Act.

A number of planted exotics were present within the site. Exotic flora are listed in Table 5-2.

Table 5-2 Exotic Flora Species Table

EXOTIC SPECIES	
Scientific Name	**Common Name**
Canopy Species	
Jacaranda sp.	Jacaranda
Pinus radiata	Monterey Pine
Pinus sp.	Pine Tree
Stenocarpus sinuatus	Firewheel Tree
Midstory Species	
Dypsis lutescens	Golden Cane Palm
Nerium oleander	Oleander
Rosa sp.	Rose
Cotoneaster sp.	Cotoneaster
Beaucarnea recurvata	Ponytail Palm
Nandina domestica	Sacred Bamboo
Syzygium jambos	Jambos
Camellia japonica	Japanese Camellia

EXOTIC SPECIES	
Malus domestica	Apple
Cydonia oblonga	Quince
Musa paradisiaca	Banana
Olea europaea	Olive Tree
Citrus sp.	Citrus (various)
Punica granatum	Pomegranate
Prunus persica	Nectarine
Prunus domestica	Plum
Crassula ovata	Jade Tree
Harpephyllum caffrum	Kaffir Plum
Livistona sinensis	Fan Palm
Groundcover Species	
Clivia sp.	Clivia
Conyza sp.	Fleabane
Dietes bicolor	Peacock Flower
Ehrharta erecta	Panic Veldtgrass
Hypochoeris radicata	Flatweed
Pelargonium sp.	Pelargonium
Plantago lanceolata	Plantain Ribwort
Trifolium repens	White Clover
Ctenanthe setosa	Never Never Plant
Pennisetum clandestinum	Kikuyu
Rosmarinus officinalis	Rosemary
Pennisetum sp.	Fountaingrass
Lolium perenne	Perennial Ryegrass
Bromus catharticus	Prairie Grass
Alpinia sp.	Ornamental Ginger
Asplenium australasicum	Birds Nest Fern
Plumbago auriculata	Cape Plumbago
Romulea rosea	Onion Grass
Taraxacum sp.	Dandelion
Medicago lupulina	Black Medic
Cerastium glomeratum	Sticky Mouse Ear
Modiola caroliniana	Red-flowered Mallow
Scramblers/Vines	
Tradescantia sp.	Inchplant

5.2.4 Fauna

The fauna habitat assessment survey did not find potential nesting or roosting habitat, such as stick nests or tree hollows within the subject site. Scratch marks were found on tree 73, listed in Figure 7-1.

Several trees and vegetation areas have been identified for retention or removal within the project site. A Fig tree, noted for signs of possum and Grey-headed Flying-fox activity, is among those to be retained. In contrast, a range of species, including Callistemons, Melaleucas, and palms, are scheduled for removal, some of which provide valuable foraging resources for birds such as honeyeaters. Some trees support bird nests, including Tree 85, where an Australian Raven and an Australian Magpie were observed, and staff reported Australian Kookaburras nesting in the vicinity, however no tree hollows suitable for this species were recorded.

A pine tree (Tree 15) has a potential hollow near the ground and a drey in its canopy, while another tree (Tree 83) does contain a drey. Additionally, a very old possum box was observed near the works area, with a possum using it during the site visit. A frog pond was observed within the site, and Rainbow Lorikeets were heard calling nearby. A Masked Lapwing nest was identified in the area designated for the new car park.

Several trees identified for removal contained dreys and nests. However, most potential habitat features were present in trees adjacent to the site. Three of the flowering Magenta Lilly Pilly and *Callistemon spp*. to be removed were also observed being used for foraging during the site visit. Additionally, a possum was observed using an old possum box located near, but not within, the trees designated for removal, in an area close to the proposed works.

The large number of flowering native trees, as well as the planted citrus trees, may provide potential feeding habitat for Grey-headed Flying-fox. Given the previous recordings of this species near the subject site and the presence of suitable feeding habitat, it is highly likely that the Grey-headed Flying-fox will utilise the site for foraging.

The existing Outside school Hour's care (OSHC) building which features artwork of aesthetic value is scheduled for demolition to be replaced by a new carpark.

Fauna observed on site are listed below Table **5-3**.

Table 5-3 Fauna Observed Species Table

Scientific Name	Common Name
Manorina melanocephala	Noisy Miner
Lampropholis guichenoti	Garden Skink
Threskiornis molucca	Australian White Ibis
Trichoglossus moluccanus	Rainbow Lorikeet
Vanellus miles	Masked Lapwing
Pteropus poliocephalus	Grey-headed Flying-fox
Gymnorhina tibicen	Australian Magpie
Corvus spp.	Australian Raven
Dacelo novaeguineae	Laughing Kookaburra
Pseudocheirus peregrinus	Common Ringtail Possum
Trichosurus vulpecula	Common Brushtail Possum
Anura spp.	Frog (species not identified)

6 ENVIRONMENTAL DETERMINATION

Magenta Lilly Pilly was observed and is classified as "Endangered" under the New South Wales BC Act 2016 and "Vulnerable" under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999. The terrestrial flora and fauna survey was limited to less than one hour. The field survey was restricted to the area of impact of the proposed works.

A Test of Significance was required for Magenta Lilly Pilly (Appendix C). It was found that the removal of Magenta Lilly Pilly will not have an impact on this species and the habitat it provides for fauna.

As many faunal species likely to occur within the project area are cryptic and/or nocturnal, or may only visit the site on occasion, they are unlikely to be detected even during seasonal surveys. The fauna assessment is, accordingly, largely an assessment of the potential of the project site as habitat for various fauna species. Therefore, it is important to adopt the precautionary principle such that it is assumed that threatened species may be at the site if suitable habitat exists.

7 POTENTIAL IMPACTS

7.1 Construction Impacts

The following is a summary of the direct and indirect impacts to the biodiversity potentially persisting onsite.

7.1.1 Vegetation

The most recent landscape plans shows approximately 62 trees are proposed for removal (Bluegum Tree Care and Consultancy March 2025). This report outlines the tree species, condition and recommended actions. Refer to extracts from Bluegum Tree Care and Consultancy below in Figure 7-1.

Figure 7-1 presents an assessment of trees, detailing the potential hazards and defects observed in various species, along with the associated risk ratings and recommended actions. For each tree, the likelihood of failure (ranging from improbable to probable), the likelihood of impact (low to high), and the consequence of impact (negligible to significant) are noted. Based on these factors, a risk rating is assigned, and specific actions are recommended to mitigate potential hazards. Most trees in the assessment show low to moderate risk, with common issues including dead branches, canopy thinning, and decay. For trees with significant issues, such as the *Eucalyptus sp.* (Tree 80), whole tree removal is recommended. In cases where damage is minor, such as with the *Corymbia maculata* (Tree 75), removal of dead branches is suggested. Overall, the table within Bluegum Tree Care and Consultancy (March 2025) outlines a proactive approach to managing tree health and minimising risks to the surrounding environment.

The proposed vegetation to be cleared includes two vegetated clusters in the western and southern sides of the site. Numerous trees of significance are shown in Figure 7-2. Retain remaining native trees, particularly those along the site boundaries, and establish buffer zones to minimise disturbance. Some tree removals are proposed within the Constraints area (refer to Figure 7-2 and Appendix D for the Constraints map); however, red-designated ‘no go’ zones should be avoided wherever possible. Activities are scheduled to occur within the Constraints area and the Tree Protection Zones (TPZs) of trees designated for retention, so care must be taken to prevent damage. Regular monitoring should be undertaken to ensure tree protection measures are effective and adjusted as needed.

Sixty-two trees are identified for removal as part of the proposed works due to significant encroachments into their Tree Protection Zone TPZs or Structural Root Zones SRZs, which could compromise their stability and health. Trees designated for extraction should be clearly marked prior to the commencement of construction activities. The removal and pruning operations must be conducted by qualified arborists, adhering to relevant codes of practice. It is crucial to take all necessary precautions to avoid damaging trees designated for retention during the extraction process.

A qualified arborist is to attend to the pruning and the removal of any trees. Also, if roots greater than 50mm are encountered or if any trees are to be removed or significantly pruned, an arborist will monitor and evaluate the remaining trees. An arborist will be engaged prior to construction to provide a Tree Protection Plan.

To ensure the effective management and protection of trees during the proposed works, a comprehensive Tree Management Plan (TMP) must be developed and implemented. This plan should be prepared by a Consulting Arborist with a minimum qualification of AQF Level 5. Replacement planting, of approximately 122 trees, will be carried out to compensate for the removed trees, following the specific tree management plan. Although not specifically required, it is recommended that Magenta Lilly Pilly trees be planted as a proportion of the 122 trees so that this species continues to survive on the site.

7.1.2 Magenta Lilly Pilly (*Syzygium paniculatum*)

Three out of six trees of Magenta Lilly Pilly (*Syzygium paniculatum*), a threatened species, were recorded within the study area and are proposed for removal. As the trees are located outside the species known natural range or habitat and they are likely to have been planted (as indicated by historic aerial imagery in Figures 5-

4 and 5-5), their removal will not trigger a significant impact. The Magenta Lilly Pilly occurs naturally on sandy soil or stabilised sand dunes in coastal areas or in littoral rainforest on sand or subtropical rainforest on sandy soil derived from sandstone. The species occurs naturally in the Jervis, Sydney Cataract, Pittwater and Wyong subregions of the Sydney Basin Bioregion (OEH, 2012) so is not naturally found in West Central Sydney Subregion. However, mitigation measures including a TMP must be developed and implemented.

7.1.3 Grey-headed Flying-fox

The noise, light, and increased human presence from construction activities may disrupt the foraging behaviour of the Grey-headed Flying-fox and deter them from using the site. Additionally, any removal of flowering native trees and planted citrus trees, which serve as important feeding habitats, could reduce the availability of food resources, thereby affecting their feeding patterns and overall health. Retain remaining native trees, particularly along the site boundaries, to preserve key feeding habitat for Grey-headed Flying Foxes and birds. Some trees are proposed for removal within the Constraints area (refer Appendix D for the Constraints map); where possible, red-designated 'no go' zones should be placed so unnecessary removal of vegetation is avoided. Although some activities are scheduled within these constraint areas and Tree Protection Zones (TPZs) of retained trees, protective measures must be in place to avoid damage. Establish buffer zones around trees to be retained and conduct regular site monitoring to ensure the effectiveness of mitigation measures, adjusting them as necessary.

If construction occurs during the Grey-headed Flying-fox's breeding season, it could further stress the population by impacting pregnant females and juvenile bats if located nearby within roosting camps along Paramatta River (none were known at the survey time). Ensuring that key habitat features are preserved and implementing measures to minimise disturbance will be crucial in mitigating these potential impacts.

Figure 7-1 Tree Risk Assessment

7.1.4 Nests and Hollows

Prior to the commencement of the construction, all trees and vegetation should be inspected for hollows and nests. If fauna is discovered inhabiting hollows or nests, an ecologist may be required to remove and relocate any fauna if the tree or vegetation is to be removed.

7.1.5 Contractors and Staff Inductions

Induction of all contractors and staff outlining the ecological sensitivity of the site, the need to minimise ecological impact, and all other required mitigation measures is to be undertaken.

7.1.6 Hygiene

Basic hygiene protocols would be implemented for construction personnel and machinery on site to reduce the potential for invasion by plant pathogens including *Phytopthora cinnamomi*, the fungus myrtle rust *Uredo rangelli* and amphibian chytrid fungus.

7.2 Operational Impacts

No operational impacts to fauna are anticipated as a result of the proposal.

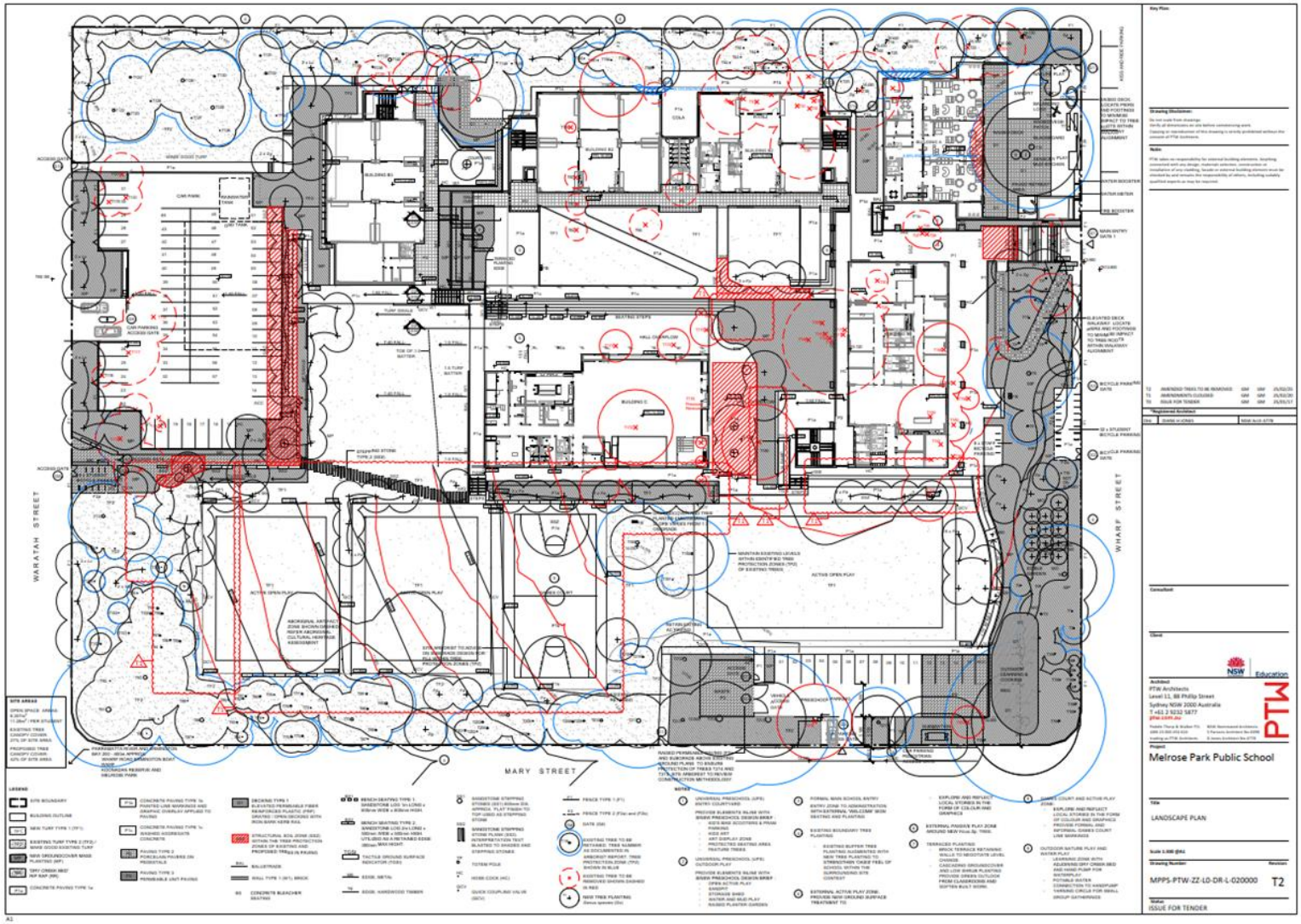

Figure 7-2 Tree removal Plan courtesy of PTW Architects

7.2.1 Mitigation Measures

Measures that will be implemented to address potential pre-construction impacts are listed in Table 7-1 and construction impacts are listed in Table 7-2. Detailed tree mitigation measures during pre-construction and construction should be adhered to.

Table 7-1 Mitigation measures for pre-construction impacts (PI)

FFA	Mitigation Measure	Timing
PI1	Retain and protect the existing Magenta Lilly Pilly (*Syzygium paniculatum*) individuals where possible (three to be retained, three removed). If removal is unavoidable, minimise habitat disturbance, maintain connectivity with surrounding vegetation, and restore habitat through revegetation with native species. Implement protective measures during construction to reduce impacts from dust, noise, and hydrological changes.	Pre-construction
PI2	Retain native trees, especially along site boundaries, to preserve key feeding habitat for Grey-headed Flying Foxes and birds (Appendix D). Implement buffer zones around retained trees and conduct regular monitoring to ensure the effectiveness of mitigation measures and allow for adjustments as needed.	Pre-construction
PI3	A Tree Management Plan (TMP) must be developed and implemented. This plan should be prepared by a Consulting Arborist with a minimum qualification of AQF Level 5.	Pre-construction
PI4	Outline protocols for any necessary pruning or removal of trees. All tree works must be performed by qualified tree workers (minimum AQF Level 2) under the supervision of the Consulting Arborist, adhering to the NSW Workcover Code of Practice for the Amenity Tree Industry (1998).	Pre-construction
PI5	Tree protection must be approved by a Consulting Arborist AQF Level 5. No materials, mixing, parking, disposal, repairs, refuelling, fires, stockpiling, or backfilling is allowed near remaining trees. Removal or lopping of trees needs written permission from the Superintendent.	Pre-construction
PI6	All trees to be protected shall be clearly identified and all TPZs and SPZ surveyed.	Pre-construction
PI7	Protective fencing around existing trees and within TPZs must be installed before any site work begins. The fence must be 1800mm high chain wire mesh fixed to Galvanised steel posts, enclosing an area to prevent damage as defined in the Tree Protection Plan. No storage inside fenced area.	Pre-construction
PI8	Use AS 4454 leaf mulch with 90% recycled content for tree protection fencing. Chip trees marked for removal and use mulch 100mm deep. Avoid soil, weeds, sticks, and stones. Comply with AS 4454 (1999) and AS 4419 (1998).	Pre-construction
PI9	Tree protection signage must be attached to tree protection zones before works begin. Signs should be displayed prominently and repeated at 10m intervals or closer when the fence changes direction. Signs must include information about the tree protection zone, access restrictions, developer's contact details, and Site Arborist information.	Pre-construction
PI10	Inspect all trees for hollows and nests. If fauna is discovered an ecologist may be required to remove and relocate any fauna if the tree or vegetation is to be removed.	Pre-construction

FFA	Mitigation Measure	Timing
PI11	Outline protocols for any necessary pruning or removal of trees. All tree works must be performed by qualified tree workers (minimum AQF Level 2) under the supervision of the Consulting Arborist, adhering to the NSW Workcover Code of Practice for the Amenity Tree Industry (1998).	Pre-construction
PI3	Induction of all contractors and staff outlining the ecological sensitivity of the site, no-go areas, the need to minimise ecological impact , and all other required mitigation measures is to be undertaken.	Pre-construction
PI4	The Consulting Arborist will conduct regular site inspections to monitor the health and stability of retained trees, ensuring compliance with the TMP. Any signs of stress or damage will be promptly addressed with appropriate remedial actions.	Pre-construction

Table 7-2 Mitigation measures for construction impacts (CI)

FFA	Mitigation Measure	Timing
CI1	Retain and protect the existing Magenta Lilly Pilly (*Syzygium paniculatum*) individuals where possible by protecting the area surrounding these plants and avoiding root zones. Minimise habitat disturbance, maintain connectivity with surrounding vegetation, and restore habitat through revegetation with native species. Implement protective measures during construction to reduce impacts from dust, noise, and hydrological changes.	Construction
CI2	Tree Protection Zones (TPZs) will be maintained around vegetation to be retained. TPZs will be maintained in accordance with Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970). No activities are to take place within the Structural Root Zones (SRZs) of mature trees. No works, stockpiling of materials, excavation, parking or any other potentially harmful activities will be undertaken within TPZs unless a Level 5 Arborist has provided confirmation that the works will not impact the tree.	Construction
CI3	No pedestrian or plant access is permissible to the TPZ.	Construction
CI4	Avoid storing bulk or harmful materials near trees. Keep spoil from excavations away from TPZs. Ensure wind-blown materials like cement don't harm trees. Contaminants stored properly with spill measures.	Construction
CI5	Protect the tree from harm. Avoid tying ropes, cables, or similar items to trees. No staff members. No plant, machinery, or materials can enter the tree protection fencing.	Construction
CI6	Do not fill or compact soil above tree roots enclosed by protection fencing during construction near trees. Guidelines must be followed to prevent soil compaction in these areas. Protection includes using elevated planks attached to scaffolding to prevent ground compression.	Construction
CI7	Trenching is not allowed in TPZs or tree protection fencing. Approval needed for trenching, must be done by hand with arborist supervision.	Construction
CI8	Contractors are to maintain plants are watered. Apply water at an appropriate rate suitable for the plant species during periods of little or no rainfall.	Construction
CI9	All site facilities must be located outside of TPZ. Chemicals and contaminants must be stored properly in an enclosed area with a spill bund to prevent runoff in case of accidents.	Construction

FFA	Mitigation Measure	Timing
CI10	Basic hygiene protocols would be implemented for construction personnel and machinery on site to reduce the potential for invasion by plant pathogens including *Phytopthora cinnamomi*, the fungus myrtle rust *Uredo rangelli* and amphibian chytrid fungus.	Construction
C11	The Consulting Arborist will conduct regular site inspections to monitor the health and stability of retained trees, ensuring compliance with the TMP. Any signs of stress or damage will be promptly addressed with appropriate remedial actions.	Construction
CI2	Upon completion of the construction activities, conduct a final health assessment of all retained trees to document any changes in condition. The Consulting Arborist will provide a detailed report with recommendations for any ongoing care or additional mitigation measures needed to support the long-term health of the trees.	Construction
CI2	Planting of approximately 122 trees are to be implemented to mitigate the removal of approximately 62 established trees. A proportion of these should be planted with Lilly Pilly to replace the removal of this species.	Construction

8 CONCLUSION AND RECOMMENDATIONS

The construction project will be clearing approximately 62 trees. Activities within the TPZs will require precautions to avoid damage, with a qualified arborist overseeing the process and providing a Tree Protection Plan. Trees and vegetation will be inspected for hollows and nests in preclearance assessments, with an ecologist relocating any fauna found prior to and during tree removal. Contractors and staff will be inducted on the site's ecological sensitivity, and basic hygiene protocols will be implemented to prevent plant pathogens and fungi.

Construction impacts to Magenta Lilly Pilly are anticipated. Protection of Magenta Lilly Pilly mitigation measure must be complied with prior to development, throughout construction, and during post-construction rehabilitation. The measure requires the retention and protection of the existing Magenta Lilly Pilly individuals where possible, this is expected to be three out of the six individuals found on site. Also, implement replacement of the removed Lilly Pillys in revegetation areas.

Additionally, habitat disturbance should be minimised by maintaining connectivity with surrounding vegetation and restoring habitat through revegetation with native species. Protective measures must also be in place during construction to mitigate impacts from dust, noise, and hydrological changes. These actions are necessary to prevent the loss of this threatened species, maintain local biodiversity, and minimise habitat disturbance and degradation.

Construction impacts to Grey-headed Flying-fox are anticipated. No construction impact to other fauna are anticipated, and mitigation measures will include maintaining TPZs, inspecting trees for fauna, and implementing hygiene protocols. If these mitigation measures are followed, the ecological impact of the construction can be minimised, ensuring the protection of the remaining trees and local wildlife.

No significant biodiversity areas or ecological communities were found on-site that cannot be mitigated.

This FFA for the Melrose Park Public School Upgrade has evaluated the potential environmental impacts of the proposed redevelopment. The assessment, conducted by Water Technology, has identified that the proposed redevelopment will not have a significant impact on the threatened species, Magenta Lilly Pilly (*Syzygium paniculatum*) or existing habitat.

Please refer below to the mitigation measures, Table 8-1.

Table 8-1 Mitigation Measures Table

Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Protection of Magenta Lilly Pilly (*Syzygium paniculatum*)	Prior to development, ongoing during construction, and post-construction rehabilitation	Retain and protect the existing three Magenta Lilly Pilly individual where possible. If removal is unavoidable, implement the minimising of habitat disturbance, maintain connectivity with surrounding vegetation, and restore habitat through revegetation with native species. Implement protective measures during construction to reduce impacts from dust, noise, and hydrological changes.	To prevent the loss of a threatened species, maintain local biodiversity, and minimise habitat disturbance and degradation.
Tree Protection Fencing	Prior to commencement of any construction works	Trees identified for retention are to be protected in accordance with Australian Standard AS 4970-2009 (Protection of Trees on Development Sites).	To prevent damage to retained trees and preserve existing canopy cover.

Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Replacement Planting	During and post-construction	New trees will be planted to replace the removed trees, following approved landscape plans.	To compensate for tree loss and maintain site biodiversity.
Arborist Supervision	Prior to and during tree removal	A qualified arborist will oversee the removal of identified trees and assess impacts on retained trees.	To ensure safe and environmentally responsible tree removal.
Erosion and Sediment Control	Prior to and during construction	Sediment fences and erosion control measures will be installed as per best management practices.	To prevent soil erosion and protect water quality.
Construction Site Management	Throughout construction period	All site activities will comply with environmental regulations, including waste management and pollution controls.	To minimize environmental impact and ensure regulatory compliance.

9 EVALUATION OF ENVIRONMENTAL IMPACTS

This REF prepared by Water Technology confirmed that the activity will not have a '*significant affect on the environment'* (refer to Section 5.7 of the EP&A Act).

The activity can be:

- adequately mitigated through recommended measures; and
- is not considered to be a significant impact.

10 REFERENCES

Bluegum Tree Care and Consultancy (March 2025). Arboricultural Impact Assessment: Upgrades to Melrose Park Public School. Prepared for The Department of Education. By Anderson, Alexis.

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NSW Office of Environment and Heritage (OEH) (2023). Threatened Biodiversity Profile Search. Accessed 21 October 2024. Available at: https://www.environment.nsw.gov.au/threatenedspeciesapp/

NSW Sixmaps (2022 & 2023). Spatial Area Tool. Accessed 21 October 2024. Available at: https://maps.six.nsw.gov.au/

APPENDIX A
PROTECTED MATTERS SEARCH

EPBC Act Protected Matters Report

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

Report created: 21-Oct-2024

Summary

Matters of National Environment Significance

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

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	8
Listed Threatened Species:	85
Listed Migratory Species:	48

Other Matters Protected by the EPBC Act

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

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

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

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	62
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

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

State and Territory Reserves:	None
Regional Forest Agreements:	None
Nationally Important Wetlands:	None
EPBC Act Referrals:	7
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	1
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Listed Threatened Ecological Communities [Resource Information]

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

Community Name	Threatened Category	Presence Text
Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion	Endangered	Community may occur within area
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community may occur within area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community may occur within area
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered	Community may occur within area
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area
Shale Sandstone Transition Forest of the Sydney Basin Bioregion	Critically Endangered	Community may occur within area
Western Sydney Dry Rainforest and Moist Woodland on Shale	Critically Endangered	Community may occur within area

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text
BIRD		
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat likely to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Endangered	Species or species habitat may occur within area
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area
FISH		
Epinephelus daemelii Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Macquaria australasica](#)		
Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
FROG		
[Heleioporus australiacus](#)		
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat likely to occur within area
[Litoria aurea](#)		
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
[Mixophyes balbus](#)		
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat may occur within area
MAMMAL		
[Chalinolobus dwyeri](#)		
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat likely to occur within area
[Dasyurus maculatus maculatus (SE mainland population)](#)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
[Isoodon obesulus obesulus](#)		
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat may occur within area
[Notamacropus parma](#)		
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area
[Petauroides volans](#)		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat likely to occur within area
[Petaurus australis australis](#)		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area
[Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)](#)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
[Pseudomys novaehollandiae](#) New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
[Pteropus poliocephalus](#) Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
PLANT		
[Acacia bynoeana](#) Bynoe's Wattle, Tiny Wattle [8575]	Vulnerable	Species or species habitat may occur within area
[Acacia pubescens](#) Downy Wattle, Hairy Stemmed Wattle [18800]	Vulnerable	Species or species habitat likely to occur within area
[Allocasuarina glareicola](#) [21932]	Endangered	Species or species habitat may occur within area
[Caladenia tessellata](#) Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat may occur within area
[Cryptostylis hunteriana](#) Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
[Darwinia biflora](#) [14619]	Vulnerable	Species or species habitat likely to occur within area
[Eucalyptus camfieldii](#) Camfield's Stringybark [15460]	Vulnerable	Species or species habitat may occur within area
[Genoplesium baueri](#) Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat likely to occur within area
[Leucopogon exolasius](#) Woronora Beard-heath [14251]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area
Melaleuca deanei Deane's Melaleuca [5818]	Vulnerable	Species or species habitat likely to occur within area
Persicaria elatior Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat likely to occur within area
Pimelea curviflora var. curviflora [4182]	Vulnerable	Species or species habitat may occur within area
Pimelea spicata Spiked Rice-flower [20834]	Endangered	Species or species habitat may occur within area
Pomaderris brunnea Rufous Pomaderris, Brown Pomaderris [16845]	Vulnerable	Species or species habitat may occur within area
Pterostylis saxicola Sydney Plains Greenhood [64537]	Endangered	Species or species habitat may occur within area
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat likely to occur within area
Rhodomyrtus psidioides Native Guava [19162]	Critically Endangered	Species or species habitat may occur within area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat may occur within area
REPTILE		

Scientific Name	Threatened Category	Presence Text
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Hoplocephalus bungaroides Broad-headed Snake [1182]	Endangered	Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
SHARK		
Sphyrna lewini Scalloped Hammerhead [85267]	Conservation Dependent	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat likely to occur within area
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
Migratory Marine Species		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area
Mobula alfredi as Manta alfredi Reef Manta Ray, Coastal Manta Ray [90033]		Species or species habitat may occur within area
Mobula birostris as Manta birostris Giant Manta Ray [90034]		Species or species habitat may occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Species or species habitat known to occur within area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area
Tringa brevipes Grey-tailed Tattler [851]		Species or species habitat known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Bird		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area
Arenaria interpres Ruddy Turnstone [872]	Vulnerable	Species or species habitat known to occur within area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat known to occur within area overfly marine area
Calidris pugnax as Philomachus pugnax Ruff [91256]		Species or species habitat known to occur within area overfly marine area
Calidris ruficollis Red-necked Stint [860]		Species or species habitat known to occur within area overfly marine area
Calidris tenuirostris Great Knot [862]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area overfly marine area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat may occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Diomedea antipodensis gibsoni as Diomedea gibsoni		
Gibson's Albatross [82270]	Vulnerable	Species or species habitat likely to occur within area
Diomedea epomophora		
Southern Royal Albatross [89221]	Vulnerable	Species or species habitat likely to occur within area
Diomedea exulans		
Wandering Albatross [89223]	Vulnerable	Species or species habitat likely to occur within area
Diomedea sanfordi		
Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Haliaeetus leucogaster		
White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Himantopus himantopus		
Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area overfly marine area
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area
Lathamus discolor		
Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area
Limosa lapponica		
Bar-tailed Godwit [844]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Limosa limosa Black-tailed Godwit [845]	Endangered	Species or species habitat known to occur within area overfly marine area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
Numenius phaeopus Whimbrel [849]		Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat likely to occur within area
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat known to occur within area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]		Species or species habitat known to occur within area overfly marine area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat known to occur within area overfly marine area
Sterna striata White-fronted Tern [799]		Migration route may occur within area
Symposiachrus trivirgatus as Monarcha trivirgatus Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Thalassarche bulleri platei as Thalassarche sp. nov.		
Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche eremita		
Chatham Albatross [64457]	Endangered	Species or species habitat may occur within area
Thalassarche impavida		
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris		
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche salvini		
Salvin's Albatross [64463]	Vulnerable	Species or species habitat likely to occur within area
Thalassarche steadi		
White-capped Albatross [64462]	Vulnerable	Species or species habitat likely to occur within area
Tringa brevipes as Heteroscelus brevipes		
Grey-tailed Tattler [851]		Species or species habitat known to occur within area
Tringa nebularia		
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat known to occur within area overfly marine area
Tringa stagnatilis		
Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area overfly marine area
Reptile		
Caretta caretta		
Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area

Scientific Name	Threatened Category	Presence Text
Chelonia mydas		
Green Turtle [1765]	Vulnerable	Species or species habitat known to occur within area
Dermochelys coriacea		
Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata		
Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area
Natator depressus		
Flatback Turtle [59257]	Vulnerable	Species or species habitat known to occur within area

Extra Information

EPBC Act Referrals			[Resource Information]
Title of referral	Reference	Referral Outcome	Assessment Status
Parramatta Light Rail Stage 2	2022/09300		Post-Approval
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Residential subdivision, cnr Doris Hirst Place and Highs Road	2005/2392	Not Controlled Action	Completed
Residential subdivision works, Spurway St, Ermington	2003/1130	Not Controlled Action	Completed
subdivision and development on the Rhodes Peninsula for residential and commerci	2003/1249	Not Controlled Action	Completed
Subdivision and sale of Commonwealth land in Pymble to Ku-ring-gai City Council	2004/1368	Not Controlled Action	Completed

Bioregional Assessments		[Resource Information]
SubRegion	BioRegion	Website
Sydney	Sydney Basin	BA website

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

Please feel free to provide feedback via the Contact us page.

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APPENDIX B
LIKELIHOOD OF OCCURRENCE

Recorded	The species was observed in the study area during the current survey.
High	It is highly likely that a species that inhabits the study area and is dependent on identified suitable habitat (i.e., for breeding or important life cycle periods such as winter flowering resources), has been recorded recently in the locality (10km) and is known or likely to maintain resident populations in the study area. Also includes species known or likely to visit the study area during regular seasonal movements or migration.
Moderate	Potential habitat is present in the study area. Species unlikely to maintain sedentary populations, however, may seasonally use resources within the study area opportunistically or during migration. The species is unlikely to be dependent (i.e., on breeding or important life cycle periods such as winter flowering resources) on habitat within the study area, or habitat is in a modified or degraded state. Includes cryptic flowering flora species that were not seasonally targeted by surveys and that have not been recorded.
Low	It is unlikely that the species inhabits the study area and has not been recorded recently in the locality (10km). It may be an occasional visitor, but habitats similar to the study area are widely distributed in the local area, meaning that the species is not dependent (i.e., on breeding or important life cycle periods such as winter flowering resources) on available habitat. Specific habitat is not present in the study area, or the species are a non-cryptic perennial flora species that were specifically targeted by surveys and not recorded.
None	Suitable habitat is absent from the study area.

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Amphibia	Myobatrachidae	*Pseudophryne australis*	Red-crowned Toadlet	V,P		7	Occurs in open forests, mostly on Hawkesbury and Narrabeen Sandstones. Inhabits periodically wet drainage lines below sandstone ridges that often have shale lenses or cappings. Shelters under rocks and amongst masses of dense vegetation or thick piles of leaf litter.	Low
	Hylidae	*Litoria aurea*	Green and Golden Bell Frog	E1,P	V	2646	Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha spp*.) or spikerushes (*Eleocharis spp.*). Optimum habitat includes waterbodies that are unshaded, free of predatory fish such as Plague Minnow (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available. Some sites, particularly in the Greater Sydney region occur in highly disturbed areas.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Aves	Anatidae	*Stictonetta naevosa*	Freckled Duck	V,P		1	The Freckled Duck is found primarily in south-eastern and south-western Australia, occurring as a vagrant elsewhere.Prefer permanent freshwater swamps and creeks with heavy growth of Cumbungi, Lignum or Tea-tree. During drier times they move from ephemeral breeding swamps to more permanent waters such as lakes, reservoirs, farm dams and sewage ponds.	Low
	Apodidae	*Apus pacificus*	Fork-tailed Swift	P	C,J,K	2	They mostly occur over inland plains but sometimes above foothills or in coastal areas. They often occur over cliffs and beaches and also over islands and sometimes well out to sea. They also occur over settled areas, including towns, urban areas and cities. They mostly occur over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh. They are also found at treeless grassland and sandplains covered with spinifex, open farmland and inland and coastal sand-dunes. The sometimes occur above rainforests, wet sclerophyll forest or open forest or plantations of pines.	Low
	Apodidae	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	22	They are recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy. They also commonly occur over heathland, but less often over treeless areas, such as grassland or swamps. When flying above farmland, they are more often recorded above partly cleared pasture, plantations or remnant vegetation at the edge of paddocks. In coastal areas, they are seen flying over sandy beaches or mudflats, and often around coastal cliffs and other areas with prominent updraughts, such as ridges and sand-dunes. They are sometimes recorded above islands well out to sea.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Ardeidae	*Botaurus poiciloptilus*	Australasian Bittern	E1,P	E	3	Favours permanent freshwater wetlands with tall, dense vegetation, particularly bullrushes (*Typha spp.*) and spikerushes (*Eleocharis spp.*). Hides during the day amongst dense reeds or rushes and feed mainly at night on frogs, fish, yabbies, spiders, insects and snails.	Low
	Ardeidae	*Ixobrychus flavicollis*	Black Bittern	V,P		2	Inhabits both terrestrial and estuarine wetlands, generally in areas of permanent water and dense vegetation. Where permanent water is present, the species may occur in flooded grassland, forest, woodland, rainforest and mangroves.	Low
	Accipitridae	*Circus assimilis*	Spotted Harrier	V,P		1	Occurs in grassy open woodland including Acacia and mallee remnants, inland riparian woodland, grassland and shrub steppe. It is found most commonly in native grassland, but also occurs in agricultural land, foraging over open habitats including edges of inland wetlands. Builds a stick nest in a tree and lays eggs in spring (or sometimes autumn), with young remaining in the nest for several months.	Low
	Accipitridae	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		99	Habitats are characterised by the presence of large areas of open water including larger rivers, swamps, lakes, and the sea. Occurs at sites near the sea or sea-shore, such as around bays and inlets, beaches, reefs, lagoons, estuaries and mangroves; and at, or in the vicinity of freshwater swamps, lakes, reservoirs, billabongs and saltmarsh. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, and forest (including rainforest).	Moderate
	Accipitridae	*Hieraaetus morphnoides*	Little Eagle	V,P		4	Occupies open eucalypt forest, woodland or open woodland. Sheoak or Acacia woodlands and riparian woodlands of interior NSW are also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Accipitridae	*Pandion cristatus*	Eastern Osprey	V,P,3		5	Favour coastal areas, especially the mouths of large rivers, lagoons and lakes. Feed on fish over clear, open water. Breed from July to September in NSW. Nests are made high up in dead trees or in dead crowns of live trees, usually within one kilometre of the sea.	Low
	Charadriidae	*Pluvialis fulva*	Pacific Golden Plover	P	C,J,K	6	Within Australia, the Pacific Golden Plover is widespread in coastal regions, though there are also a number of inland records (in all states), sometimes far inland and usually along major river systems, especially the Murray and Darling Rivers and their tributaries. Most Pacific Golden Plovers occur along the east coast and are especially widespread along the Queensland and NSW coastlines. In non-breeding grounds in Australia this species usually inhabits coastal habitats, though it occasionally occurs around inland wetlands	Low
	Rostratulidae	*Rostratula australis*	Australian Painted Snipe	E1,P	E	1	Prefers fringes of swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber. Nests on the ground amongst tall vegetation, such as grasses, tussocks or reeds.	Low
	Scolopacidae	*Actitis hypoleucos*	Common Sandpiper	P	C,J,K	3	Found along all coastlines of Australia and in many areas inland, the Common Sandpiper is widespread in small numbers. The population when in Australia is concentrated in northern and western Australia	Low
	Scolopacidae	*Calidris acuminata*	Sharp-tailed Sandpiper	P	C,J,K	146	The Sharp-tailed Sandpiper spends the non-breeding season in Australia with small numbers occurring regularly in New Zealand. Most of the population migrates to Australia, mostly to the south-east and are widespread in both inland and coastal locations and in both freshwater and saline habitats.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Scolopacidae	*Calidris canutus*	Red Knot	P	E,C,J,K	1	In NSW the Red Knot mainly occurs in small numbers on intertidal mudflats, estuaries, bays, inlets, lagoons, harbours and sandflats and sandy beaches of sheltered coasts. It is occasionally found on sandy ocean beaches or shallow pools on exposed wave-cut rock platforms and is a rare visitor to terrestrial saline wetlands and freshwater swamps. It usually forages near the water's edge, with feeding activity regulated by the tide as birds closely follow the tide-edge.	Low
	Scolopacidae	*Calidris ferruginea*	Curlew Sandpiper	E1,P	CE,C,J,K	3	It generally occupies littoral and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats of sheltered coasts. It also occurs in non-tidal swamps, lakes and lagoons on the coast and sometimes inland. It forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed.	Low
	Scolopacidae	*Calidris ruficollis*	Red-necked Stint	P	C,J,K	1	It is distributed along most of the Australian coastline with large densities on the Victorian and Tasmanian coasts. The Red-necked Stint has been recorded in all coastal regions and found inland in all states when conditions are suitable.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Scolopacidae	*Calidris tenuirostris*	Great Knot	V,P	CE,C,J,K	1	Occurs within sheltered, coastal habitats containing large, intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons. Often recorded on sandy beaches with mudflats nearby, sandy spits and islets and sometimes on exposed reefs or rock platforms. Migrates to Australia from late August to early September, although juveniles may not arrive until October-November. Most birds return north in March and April; however, some individuals may stay over winter in Australia.	Low
	Scolopacidae	*Gallinago hardwickii*	Latham's Snipe	P	J,K	435	In Australia, Latham's Snipe occurs in permanent and ephemeral wetlands up to 2000 m above sea-level (Chapman 1969; Naarding 1981). They usually inhabit open, freshwater wetlands with low, dense vegetation (e.g. swamps, flooded grasslands or heathlands, around bogs and other water bodies)	Low
	Scolopacidae	*Limicola falcinellus*	Broad-billed Sandpiper	V,P	C,J,K	1	Broad-billed Sandpipers favour sheltered parts of the coast such as estuarine sandflats and mudflats, harbours, embayments, lagoons, saltmarshes and reefs as feeding and roosting habitat. Occasionally, individuals may be recorded in sewage farms or within shallow freshwater lagoons. Broad-billed Sandpipers roost on banks on sheltered sand, shell or shingle beaches.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Scolopacidae	*Limosa lapponica*	Bar-tailed Godwit	P	C,J,K	71	It is found mainly in coastal habitats such as large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays. Less frequently it occurs in salt lakes and brackish wetlands, sandy ocean beaches and rock platforms. It often occurs around beds of seagrass, and sometimes in nearby saltmarsh or the outer margins of mangrove areas. In NSW its high tide roost areas on sandy beaches, sandbars, spits and near-coastal saltmarsh are frequently shared with other shorebirds. It is rarely found on inland wetlands or in areas of short grass such as farmland, paddocks and airstrips.	Low
	Scolopacidae	*Limosa limosa*	Black-tailed Godwit	V,P	C,J,K	1	Primarily a coastal species. Usually found in sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Further inland, it can also be found on mudflats and in water less than 10 cm deep, around muddy lakes and swamps. Individuals have been recorded in wet fields and sewerage treatment works.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Scolopacidae	*Numenius madagascariensis*	Eastern Curlew	P	CE,C,J,K	2	It generally occupies coastal lakes, inlets, bays and estuarine habitats, and in New South Wales is mainly found in intertidal mudflats and sometimes saltmarsh of sheltered coasts. Occasionally, the species occurs on ocean beaches (often near estuaries), and coral reefs, rock platforms, or rocky islets It forages in or at the edge of shallow water, occasionally on exposed algal mats or waterweed, or on banks of beach-cast seagrass or seaweed. It roosts on sandy spits and islets, especially on dry beach sand near the high-water mark, and among coastal vegetation including low saltmarsh or mangroves. May also roost on wooden oyster leases or other similar structures	Low
	Scolopacidae	*Tringa brevipes*	Grey-tailed Tattler	P	C,J,K	1	In NSW the Grey-tailed Tattler is distributed along most of the coast from the Queensland border, south to Tilba Lake. It is more heavily distributed along coastal regions north of Sydney.	Low
	Scolopacidae	*Tringa stagnatilis*	Marsh Sandpiper	P	C,J,K	1	The Marsh Sandpiper is found on coastal and inland wetlands throughout Australia. It is recorded in all regions of NSW but especially the central and south coasts and (inland) on the western slopes of Great Divide and western plains.	Low
	Laridae	*Hydroprogne caspia*	Caspian Tern	P	J	42	Widespread east of the Great Divide, mainly in coastal regions, and also in the Riverina and Lower and Upper Western Regions, with occasional records elsewhere. Breeding is recorded from the Menindee Lakes.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Laridae	*Sterna hirundo*	Common Tern	P	C,J,K	1	In Australia, Common Terns are mainly found along the eastern coast, where they are widespread and common from south-eastern Queensland to eastern Victoria. They are recorded in all marine zones, but are commonly observed in near-coastal waters, both on ocean beaches, platforms and headlands and in sheltered waters, such as bays, harbours and estuaries with muddy, sandy or rocky shores.	Low
	Cacatuidae	^*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V,P,2	V	1	Inhabits open forest and woodlands of the coast and the Great Dividing Range where stands of sheoak occur. Black Sheoak (*Allocasuarina littoralis*) and Forest Sheoak (*A. torulosa*) are important foods. Inland populations feed on a wide range of sheoaks, including Drooping Sheoak, *Allocasuarina diminuta*, and *A. gymnanthera*. Belah is also utilised and may be a critical food source for some populations. Feeds almost exclusively on the seeds of several species of she-oak (*Casuarina* and *Allocasuarina* species), shredding the cones with the massive bill. Dependent on large hollow-bearing eucalypts for nest sites. A single egg is laid between March and May.	Low
	Psittacidae	*Glossopsitta pusilla*	Little Lorikeet	V,P		10	Forages primarily in the canopy of open Eucalyptus forest and woodland, yet also finds food in Angophora, Melaleuca and other tree species. Riparian habitats are particularly used, due to higher soil fertility and hence greater productivity. Isolated flowering trees in open country, e.g. paddocks, roadside remnants and urban trees also help sustain viable populations of the species. Feeds mostly on nectar and pollen, occasionally on native fruits such as mistletoe, and only rarely in orchards	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Psittacidae	*Lathamus discolor*	Swift Parrot	E1,P	CE	7	Migrates to the Australian south-east mainland between February and October. On the mainland they occur in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations. Favoured feed trees include winter flowering species such as Swamp Mahogany *Eucalyptus robusta*, Spotted Gum *Corymbia maculata*, Red Bloodwood *C. gummifera*, Forest Red Gum *E. tereticornis*, Mugga Ironbark *E. sideroxylon*, and White Box *E. albens*. Commonly used lerp infested trees include Inland Grey Box *E. microcarpa*, Grey Box *E. moluccana*, Blackbutt *E. pilularis*, and Yellow Box *E. melliodora*. Return to some foraging sites on a cyclic basis depending on food availability.	Low
	Strigidae	^^*Ninox strenua*	Powerful Owl	V,P,3		230	The Powerful Owl inhabits a range of vegetation types, from woodland and open sclerophyll forest to tall open wet forest and rainforest. The Powerful Owl requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. The species breeds and hunts in open or closed sclerophyll forest or woodlands and occasionally hunts in open habitats. It roosts by day in dense vegetation comprising species such as Turpentine *Syncarpia glomulifera*, Black She-oak *Allocasuarina littoralis*, Blackwood *Acacia melanoxylon*, Rough-barked Apple *Angophora floribunda*, Cherry Ballart *Exocarpos cupressiformis* and a number of eucalypt species.	Moderate

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Tytonidae	^^*Tyto longimembris*	Eastern Grass Owl	V,P,3		1	Eastern Grass Owls are found in areas of tall grass, including grass tussocks, in swampy areas, grassy plains, swampy heath, and in cane grass or sedges on flood plains. They rest by day in a 'form' - a trampled platform in a large tussock or other heavy vegetative growth.	Low
	Meliphagidae	^*Anthochaera phrygia*	Regent Honeyeater	E4A,P,2	CE	1	The species inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. Regent Honeyeaters inhabit woodlands that support a significantly high abundance and species richness of bird species. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes.	Low
	Meliphagidae	*Epthianura albifrons*	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	E2,V,P		14	Gregarious species usually found foraging on bare or grassy ground in wetland areas, singly or in pairs. They are insectivorous, feeding mainly on flies and beetles caught from or close to the ground. Have been observed breeding from late July through to early March, with 'open-cup' nests built in low vegetation. Nests in the Sydney region have also been seen in low isolated mangroves. Nests are usually built about 23 cm above the ground (but have been found up to 2.5 m above the ground).	Low
	Artamidae	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		5	Primarily inhabit dry, open eucalypt forests and woodlands, including mallee associations, with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and ground-cover of grasses or sedges and fallen woody debris. It has also been recorded in shrublands, heathlands and very occasionally in moist forest or rainforest. Also found in farmland, usually at the edges of forest or woodland.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Petroicidae	*Petroica boodang*	Scarlet Robin	V,P		1	The Scarlet Robin lives in dry eucalypt forests and woodlands. The understorey is usually open and grassy with few scattered shrubs. This species lives in both mature and regrowth vegetation. It occasionally occurs in mallee or wet forest communities, or in wetlands and tea-tree swamps. The Scarlet Robin breeds on ridges, hills and foothills of the western slopes, the Great Dividing Range and eastern coastal regions; this species is occasionally found up to 1000 metres in altitude. The Scarlet Robin is primarily a resident in forests and woodlands, but some adults and young birds disperse to more open habitats after breeding. In autumn and winter many Scarlet Robins live in open grassy woodlands, and grasslands or grazed paddocks with scattered trees.	Low
	Petroicidae	*Petroica phoenicea*	Flame Robin	V,P		1	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. The groundlayer of the breeding habitat is dominated by native grasses and the shrub layer may be either sparse or dense. Occasionally occurs in temperate rainforest, and also in herbfields, heathlands, shrublands and sedgelands at high altitudes. In winter, occasionally seen in heathland or other shrublands in coastal areas.	Low
	Motacillidae	*Motacilla flava*	Yellow Wagtail	P	C,J,K	1	Yellow Wagtails are migrants from the Northern Hemisphere to Australia. There are few sightings in southern Australia although in recent years, the wetlands of the Hunter River estuary in NSW have proved to be a reliable area to see them.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Mammalia	Dasyuridae	*Dasyurus maculatus*	Spotted-tailed Quoll	V,P	E	1	Recorded across a range of habitat types, including rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline. Individual animals use hollow-bearing trees, fallen logs, small caves, rock outcrops and rocky-cliff faces as den sites.	Low
	Phascolarctidae	*Phascolarctos cinereus*	Koala	E1,P	E	3	Inhabit eucalypt woodlands and forests. Feed on the foliage of more than 70 eucalypt species and 30 non-eucalypt species, but in any one area will select preferred browse species.	Low
	Pseudocheiridae	*Petauroides volans*	Southern Greater Glider	E1,P	E	1	The greater glider is an arboreal nocturnal marsupial, largely restricted to eucalypt forests and woodlands. It is primarily folivorous, with a diet mostly comprising eucalypt leaves, and occasionally flowers. It is typically found in highest abundance in taller, montane, moist eucalypt forests with relatively old trees and abundant hollows. The distribution may be patchy even in suitable habitat. The greater glider favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species.	Low
	Pteropodidae	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	226	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 km of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy.	High (potential feeding habitat present)

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Emballonuridae	*Saccolaimus flaviventris*	Yellow-bellied Sheathtail-bat	V,P		12	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	Low
	Molossidae	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V,P		4	Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range. Roost mainly in tree hollows but will also roost under bark or in man-made structures.	Low
	Vespertilionidae	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	4	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin (*Petrochelidon ariel*), frequenting low to mid-elevation dry open forest and woodland close to these features. Females have been recorded raising young in maternity roosts (c. 20-40 females) from November through to January in roof domes in sandstone caves and overhangs. They remain loyal to the same cave over many years. Found in well-timbered areas containing gullies.	Low
	Vespertilionidae	*Falsistrellus tasmaniensis*	Eastern False Pipistrelle	V,P		3	Prefers moist habitats, with trees taller than 20 m. Generally, roosts in eucalypt hollows, but has also been found under loose bark on trees or in buildings.	Low
	Vespertilionidae	*Myotis macropus*	Southern Myotis	V,P		50	Generally, roost in groups of 10 - 15 close to water in caves, mine shafts, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage.	Moderate

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Vespertilionidae	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		3	Utilises a variety of habitats from woodland through to moist and dry eucalypt forest and rainforest, though it is most commonly found in tall wet forest. Although this species usually roosts in tree hollows, it has also been found in buildings. Open woodland habitat and dry open forest suits the direct flight of this species as it searches for beetles and other large, slow-flying insects; this species has been known to eat other bat species.	Low
	Miniopteridae	*Miniopterus australis*	Little Bent-winged Bat	V,P		14	Moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Little Bentwing-bats roost in caves, tunnels, tree hollows, abandoned mines, stormwater drains, culverts, bridges and sometimes buildings during the day, and at night forage for small insects beneath the canopy of densely vegetated habitats. They often share roosting sites with the Common Bentwing-bat, and, in winter, the two species may form mixed clusters. In NSW the largest maternity colony is in close association with a large maternity colony of Eastern Bentwing-bats (*Miniopterus schreibersii*) and appears to depend on the large colony to provide the high temperatures needed to rear its young. Only five nursery sites /maternity colonies are known in Australia.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Miniopteridae	*Miniopterus orianae oceanensis*	Large Bent-winged Bat	V,P		92	Caves are the primary roosting habitat, but also use derelict mines, storm-water tunnels, buildings and other man-made structures. Form discrete populations centred on a maternity cave that is used annually in spring and summer for the birth and rearing of young. Maternity caves have very specific temperature and humidity regimes. At other times of the year, populations disperse within about 300 km range of maternity caves. Cold caves are used for hibernation in southern Australia. Breeding or roosting colonies can number from 100 to 150,000 individuals. Hunt in forested areas, catching moths and other flying insects above the tree tops.	Low
Gastropoda	Camaenidae	*Pommerhelix duralensis*	Dural Land Snail	E1	E	15	The species has a strong affinity for communities in the interface region between shale-derived and sandstone-derived soils, with forested habitats that have good native cover and woody debris. It favours sheltering under rocks or inside curled-up bark. It does not burrow nor climb. The species has also been observed resting in exposed areas, such as on exposed rock or leaf litter, however it will also shelter beneath leaves, rocks and light woody debris.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Flora	Campanulaceae	*Wahlenbergia multicaulis*	Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield	E2		1	In Western Sydney most sites are closely aligned with the Villawood Soil Series, which is a poorly drained, yellow podsolic extensively permeated with fine, concretionary ironstone (laterite). However, the sites in Hornsby LGA are on the 'Hawkesbury' soil landscape. Found in disturbed sites and grows in a variety of habitats including forest, woodland, scrub, grassland and the edges of watercourses and wetlands. Typically occurs in damp, disturbed sites (with natural or human disturbance of various forms), typically amongst other herbs rather than in the open. In Hornsby LGA it occurs in or adjacent to sandstone gully forest. In Western Sydney it is found in remnants of Cooks River/ Castlereagh Ironbark Forest.	Low
	Convolvulaceae	*Wilsonia backhousei*	Narrow-leafed Wilsonia	V		36	This is a species of the margins of salt marshes and lakes.	
	Ericaceae	*Epacris purpurascens var. purpurascens*		V		20	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Found in a range of habitat types, most of which have a strong shale soil influence.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Fabaceae (Faboideae)	*Dillwynia tenuifolia*		V		1	In western Sydney, may be locally abundant particularly within scrubby/dry heath areas within Castlereagh Ironbark Forest and Shale Gravel Transition Forest on tertiary alluvium or laterised clays. May also be common in transitional areas where these communities adjoin Castlereagh Scribbly Gum Woodland. At Yengo, is reported to occur in disturbed escarpment woodland on Narrabeen sandstone. Eucalyptus fibrosa is usually the dominant canopy species. *Eucalyptus globoidea*, *E. longifolia*, *E. parramattensis*, *E. sclerophylla* and *E. sideroxylon* may also be present or codominant, with Melaleuca decora frequently forming a secondary canopy layer. Associated species may include *Allocasuarina littoralis*, *Angophora bakeri*, *Aristida spp*. *Banksia spinulosa*, *Cryptandra spp*. *Daviesia ulicifolia*, *Entolasia stricta*, *Hakea sericea*, *Lissanthe strigosa*, *Melaleuca nodosa*, *Ozothamnus diosmifolius* and *Themeda australis*.	Low
	Fabaceae (Mimosoideae)	*Acacia pubescens*	Downy Wattle	V	V	3	Occurs on alluviums, shales and at the intergrade between shales and sandstones. The soils are characteristically gravely soils, often with ironstone. Occurs in open woodland and forest, in a variety of plant communities, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland.	Low
	Malvaceae	*Lasiopetalum joyceae*		V	V	1	Has a restricted range occurring on lateritic to shaley ridgetops on the Hornsby Plateau south of the Hawkesbury River. It is currently known from 34 sites between Berrilee and Duffys Forest. Seventeen of these are reserved.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Myrtaceae	^^*Callistemon linearifolius*	Netted Bottle Brush	V,3		5	Recorded from the Georges River to Hawkesbury River in the Sydney area, and north to the Nelson Bay area of NSW. Recorded in 2000 at Coalcliff in the northern Illawarra. For the Sydney area, recent records are limited to the Hornsby Plateau area near the Hawkesbury River. The species was more widespread in the past, and there are currently only 5-6 populations remaining from the 22 populations historically recorded in the Sydney area. Three of the remaining populations are reserved in Ku-ring-gai Chase National Park, Lion Island Nature Reserve and Spectacle Island Nature Reserve. The species has also been recorded from Yengo National Park.	Low
	Myrtaceae	*Darwinia biflora*		V	V	9	Occurs on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone. Associated overstorey species include *Eucalyptus haemastoma*, *Corymbia gummifera* and/or *E. squamosa*. The vegetation structure is usually woodland, open forest or scrub-heath.	Low
	Myrtaceae	*Melaleuca deanei*	Deane's Paperbark	V	V	1	Deane's Paperbark occurs in two distinct areas, in the Ku-ring-gai/Berowra and Holsworthy/Wedderburn areas respectively. There are also more isolated occurrences at Springwood (in the Blue Mountains), Wollemi National Park, Yalwal (west of Nowra) and Central Coast (Hawkesbury River) areas.	Low
	Myrtaceae	*Rhodamnia rubescens*	Scrub Turpentine	E4A	CE	1	Occurs in coastal districts north from Batemans Bay in New South Wales, approximately 280 km south of Sydney, to areas inland of Bundaberg in Queensland. Populations of R. rubescens typically occur in coastal regions and occasionally extend inland onto escarpments up to 600 m a.s.l. in areas with rainfall of 1,000-1,600 mm.	Low

Class	Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Myrtaceae	*Syzygium paniculatum*	Magenta Lilly Pilly	E1	V	7	On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest. On the central coast Magenta Lilly Pilly occurs on gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	High
	Potamogetonaceae	*Zannichellia palustris*		E1		2	Occurring in NSW, from the lower Hunter to the Sydney Olympic Park. It prefers to grow in fresh or slightly saline stationary or slowly flowing water.	Low
	Rhamnaceae	*Pomaderris prunifolia*	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	E2		2	At Rydalmere it occurs along a road reserve near a creek, among grass species on sandstone. At Rookwood Cemetery it occurs in a small gully of degraded Cooks River / Castlereagh Ironbark Forest on shale soils.	Low

APPENDIX C
TEST OF SIGNIFICANCE

11 TEST OF SIGNIFICANCE

The following section assesses whether the proposal (as discussed and reviewed in this assessment) is likely to have a significant effect on threatened biodiversity by addressing the Parts (a), (b) and (c) of the test of significance applied to species and ecological communities listed in Schedules 1 and 2 to the BC Act and under s.111 of the EP&A Act.

It is important to note that under Section 7.3 Biodiversity Conservation Act 2016 and the Environmental Planning and Assessment Act 1979 no 203; the factors to be considered when determining whether an action, development or activity is likely to significantly affect threatened species, populations or ecological communities, or their habitats (known previously as the '7-part test'), have been revised under the BC Act. The revised factors maintain the same intent under the new ('5-part test) but better focus consideration of likely impacts in the context of the local rather than the regional environment as the long-term loss of biodiversity at all levels arises primarily from the accumulation of losses and depletions of populations at a local level. It also requires the identification on the potential impacts to/or on any areas declared to be of outstanding biodiversity value under Part 3 of the BC Act. When applying each factor, the following sections have considered all perceived likely direct and indirect impacts of the Proposal as outlined by previous sections of this document.

Direct impacts are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat. When applying each factor, consideration must be given to all the likely direct impacts of the proposed activity or development. When applying each factor, both long-term and short-term impacts are to be considered.

Indirect impacts occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. Indirect impacts can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas. As with direct impacts, consideration must be given, when applying each factor, to all of the likely indirect impacts of the proposed activity or development. When applying each factor, both long-term and short-term impacts are to be considered.

(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.

No. In the case of a threatened species, the proposed development or activity will not have an adverse effect on its life cycle, potentially placing a viable local population at risk of extinction.

No. The proposed development or activity will not adversely affect the life cycle of threatened species, including Magenta Lilly Pilly (*Syzygium paniculatum*), which is listed as Endangered under the NSW Biodiversity Conservation Act 2016 and Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999.

Three Magenta Lilly Pilly individuals were proposed for removal. This does not represent a viable population on its own, its presence indicated that the habitat does not support the species. The removal or disturbance of these individuals, or changes to the surrounding environment, will not impact its survival by altering microhabitat conditions, reducing reproductive potential, or disrupting pollination. Given the species' conservation status, any loss of naturally occurring individuals contributes to its overall vulnerability. However, implementation of replanting of the same species as part of the revegetation is recommended.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity: (i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or (ii) is likely to modify the composition of the ecological community substantially and adversely such that its local occurrence is likely to be placed at risk of extinction,

No, the proposed development is not likely to have an adverse effect on a threatened ecological community, either directly or indirectly. The site is located near to a mapped area of PCT 4097 which is considered to be a TEC, highlighting the ecological significance of this location.

(c) In relation to the habitat of a threatened species or ecological community: (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species or ecological community in the locality

The proposed upgrade will result in the removal or modification of habitat of three planted Magenta Lilly Pilly (*Syzygium paniculatum*).

The Magenta Lilly Pilly trees were not part of a wild population or critical habitat. As the Magenta Lilly Pilly were not part of a viable population, the removal of three individuals will not fragment or isolate the long-term survival of the species or ecological community in the locality.

To mitigate impacts, efforts should focus on minimising disturbance, retaining vegetation, and implementing conservation measures such as revegetation, translocation, and habitat restoration. Ongoing monitoring is recommended to assess population trends and the effectiveness of mitigation strategies.

(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) No. The development will not impact 'Declared Area of Outstanding Biodiversity Value' or 'Biodiversity Value' mapped area.

No, the proposed development is not likely to have an adverse effect on a declared area of outstanding biodiversity value, either directly or indirectly. The site is adjacent to a mapped and formally recognised area of outstanding biodiversity value, highlighting the ecological significance of this location.

(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

A threatening process is something that adversely affects threatened species, populations of a species, ecological communities or could cause species, populations of a species or ecological communities to become threatened. A threat can be listed under Schedule 4 of the BC Act as a 'Key Threatening Process' if it adversely affects threatened species, populations or ecological communities or if it could cause species, populations or ecological communities that are not threatened to become threatened. There are currently 38 listed threatening process recognised by the BC Act and a further 19 by the EPBC Act. No key threatening processes from the EPBC Act (Federal) are considered to be relevant to the proposal. However, the following key threatening processes from the BC Act (NSW) are considered relevant.

Key threatening processes from the EPBC Act (Federal) and the BC Act (NSW) are considered relevant.

Key Threatening Process	Is the proposal of a class of activity that is recognised as a threatening process?		
	Likely	Possible	Unlikely
Clearing of native vegetation	**X**		
Demolition of habitat		**X**	

The development will not significantly impact a 'Declared Area of Outstanding Biodiversity Value' or 'Biodiversity Value' mapped area.

11.1 Conclusion

We are of the opinion that the activities as proposed will not have a significant impact on the identified threatened species and their conservation as noted within this report.

WATER TECHNOLOGY
WATER, COASTAL & ENVIRONMENTAL CONSULTANTS

APPENDIX D
CONSTRAINTS MAP


Legend
Constraints
Subject Site
Imagery date: 12/09/2023
0
25
50 m
SINSW Biodiversity - Melrose Park Primary School
Constraints Map

Melbourne

15 Business Park Drive
Notting Hill VIC 3168
Telephone (03) 8526 0800

Sydney

Suite 3, Level 1, 20 Wentworth Street
Parramatta NSW 2150
Telephone (02) 9354 0300

Brisbane

Level 5, 43 Peel Street
South Brisbane QLD 4101
Telephone (07) 3105 1460

Adelaide

1/198 Greenhill Road
Eastwood SA 5063
Telephone (08) 8378 8000

Perth

Level 1, 21 Adelaide Street
Fremantle WA 6160
Telephone (08) 6555 0105

New Zealand

7/3 Empire Street
Cambridge New Zealand 3434
Telephone +64 27 777 0989

Wangaratta

First Floor, 40 Rowan Street
Wangaratta VIC 3677
Telephone (03) 5721 2650

Geelong

51 Little Fyans Street
Geelong VIC 3220
Telephone (03) 8526 0800

Wimmera

597 Joel South Road
Stawell VIC 3380
Telephone 0438 510 240

Gold Coast

Suite 37, Level 4, 194 Varsity Parade
Varsity Lakes QLD 4227
Telephone (07) 5676 7602

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