Flora and Fauna Assessment

Milton Public School Upgrade - Biodiversity

NSW Department of Education

8 April 2025

School Name	Milton 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
EP&A Act	*Environmental Planning and Assessment Act 1979*
DoE	*NSW Department of Education*
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
DOE	Department of Education
SSD	State Significant Development
TEC	Threatened Ecological Community
WM Act	*Water Management Act 2000*

1 EXECUTIVE SUMMARY

A Flora and Fauna Assessment has been conducted to identify potential constraints that may impede the future school infrastructure upgrades for the Milton Public School. This assessment aims to seek approval for a development without consent application under Part 5 of the EP&A Act, mitigating any risks during the delivery of the school upgrades. The report documents the findings of the biodiversity assessment, identifying potential biodiversity constraints relevant to the proposed activity under the NSW Biodiversity Conservation Act 2016, Commonwealth Environment Protection and Biodiversity Conservation Act 1999, and the NSW Fisheries Management Act 1994.

Three Plant Community Types (PCTs) were mapped as occurring within the subject site. Two of the PCTs found were associated with threatened ecological communities. However, the PCTs will not be affected by the proposed activities.

No biodiversity values were mapped within the study area. One Magenta Lilly Pilly (*Syzygium paniculatum*), a threatened species, was recorded on site. This tree is not proposed for removal. Given its threatened status, appropriate mitigation measures will be implemented to ensure its protection throughout the proposed activity. The Grey-headed Flying-fox (*Pteropus poliocephalus*) had a moderate likelihood of occurrence. The site has no Key Fish habitat.

The Flora and Fauna Assessment concluded that there will be no significant impacts on matters of national environmental significance. As there were no threatened species found or high likelihood of threatened species occurrence, a Test of Significance was not required. Consequently, no referral to the Australian Minister for the Environment under the Environment Protection and Biodiversity Conservation Act 1999 is required.

The proposal would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an Environmental Impact Statement, a Species Impact Statement nor a Biodiversity Assessment Report to be prepared and approval to be sought from the Minister for Planning under the Environment Protection and Biodiversity Conservation Act 1999. 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.

The extent and nature of potential impacts are moderate and will not have significant impact on the locality, community and/or the environment.

Potential impacts can be appropriately mitigated or managed to ensure that there is low impact on the locality, community and/or the environment. Consequently, the project will cause low significant environmental impacts, and no further referral or Environmental Impact Statement is required.

2 INTRODUCTION

This Milton Public School Upgrade Flora and Fauna Assessment (FFA) has been prepared to support a Review of Environmental Factors (REF) for the NSW Department of Education (DoE) for Milton Public School upgrade (the activity).

The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by *State Environmental Planning Policy (Transport and Infrastructure) 2021* (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37 of the T&I SEPP.

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 (DPHI) as well as the Addendum Division 5.1 guidelines for schools. The purpose of this report is to assess the potential biodiversity impacts that could arise from the redevelopment of the Milton Public School at 9 Thomas Street, Milton NSW, 2038 (the site).

This report has been prepared to assess potential biodiversity impacts for the Milton Public School Upgrade.

The proposed activity relates to upgrades to Milton Public School. Specifically, the proposed activity comprises the following:

- Construction of a new two-storey home base building.
- Installation of additional solar panels.
- Relocation of existing cricket nets to the eastern boundary of site.
- Construction of new stairs and covered walkways linking the new building to the existing school.
- Construction of new fencing.
- Construction of new hardstand area.
- Minor alterations to the existing staff car park.
- Disconnection and relocation of existing LPG tank.
- Tree removal.
- External landscape works.

Any works relating to demountables or the water tank will proceed via a separate planning pathway.

Figure 2-1 provides an extract of the proposed site plan.

Refer to the Review of Environmental Factors for a full description of works.

The Milton Public School upgrade will be assessed under Part 5, Division 5.1, the Department of Education serves as both the proponent and the determining authority. The Department of Education must examine all matters likely to affect the environment from this activity.

The construction company will make sure the proposal is carried out as described in this FFA. If the scope of work or work methods, described in this FFA, change significantly following determination, an additional environmental impact assessment, or FFA Addendum, may be required.

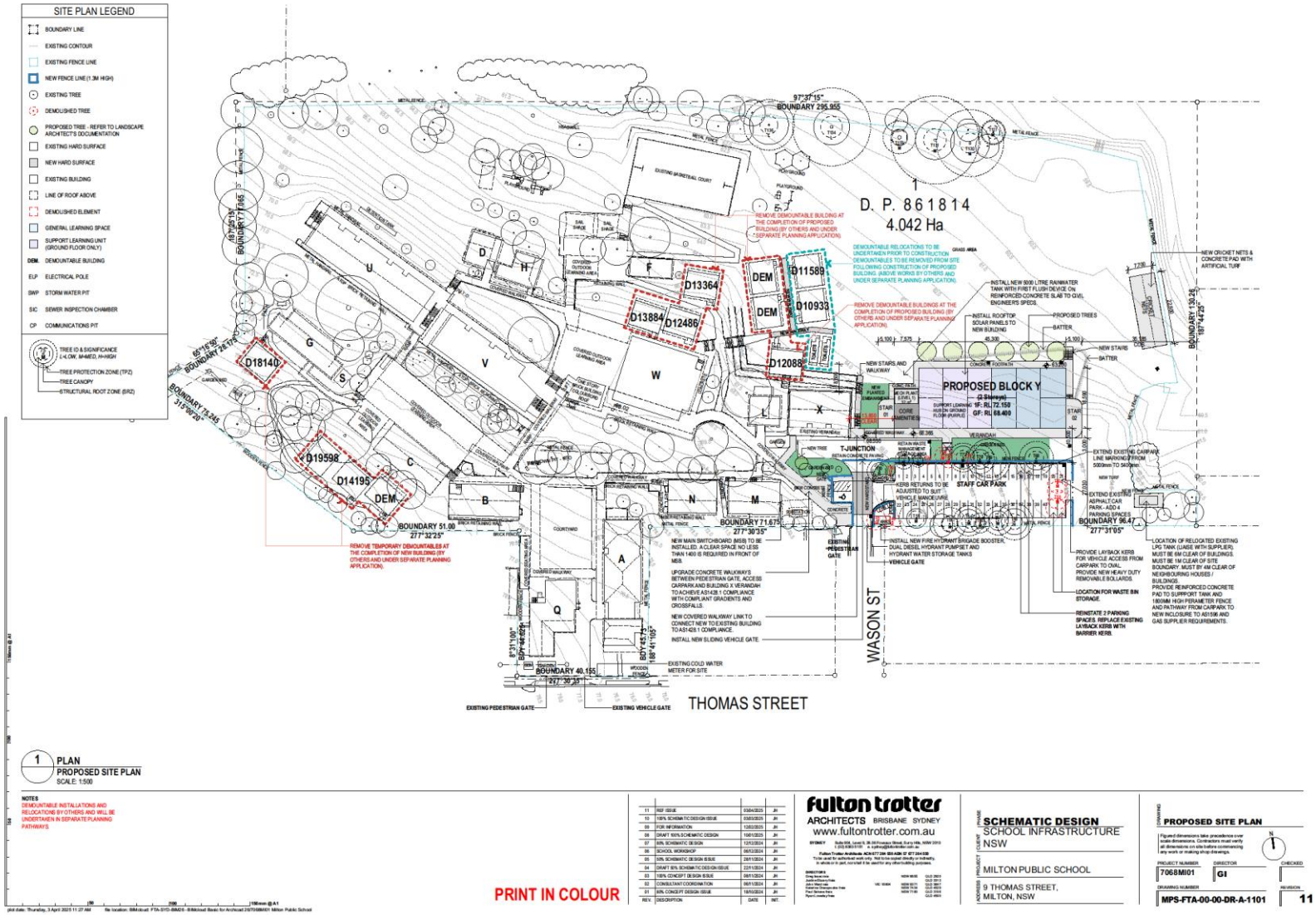

Figure 2-1 Site Plan Source: Fulton Trotter, 2024

2.1 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.

2.2 Statement of Significance

Based on the identification of potential issues, and an assessment of the nature and extent of the impacts of the proposed activity, 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.

3 DELIVERABLE

See below FFA deliverable requirement from Department of Education (DoE) Table 3-1.

Table 3-1 FFA Deliverable

Item	Requirement	Relevant Section of Report
1.0	Address all relevant legislation, environmental planning instruments (EPIs) (including drafts), plans, policies, guidelines and planning circulars.	See Section 6
2.0	Trees and Landscaping	See Section 7.2
	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.	See Section 7.2
3.0	Ecologically Sustainable Development (ESD)	See Section 4.2
4.0	Biodiversity	See Section 7

4 PROJECT JUSTIFICATION

The Milton 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.

4.1 Options

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

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

4.2 Consideration of Ecologically Sustainable Development

The proposal has been considered against the principles of ecologically sustainable development (ESD) (refer to Table 4-1).

Table 4-1 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.

5 SITE DESCRIPTION

The site is located at 9 Thomas Street, Milton, NSW, 2538 (the site). The site is legally referred to as Lot 1 in Deposited Plan 861814 and is within the Shoalhaven Local Government Area (LGA) and has an approximate area of 4 hectares. An aerial photograph of the site is provided at Figure 5-1.

The site is zoned SP2 Educational Establishment and existing development comprises various buildings, sports facilities and play space associated with Milton Public School. Milton Public School currently comprises 24 permanent teaching spaces (PTS) and 12 demountable teaching spaces (DTS). The site contains two locally heritage listed buildings (Building A and Q).

The site is predominantly cleared; however there is existing vegetation interspersed throughout the site and significant trees are present along the northern and western boundary of the site. There is a gradual slope downwards from the south-east to the north-east. of the site.

The site is an irregularly shaped lot with a narrow frontage along Thomas Street. Pedestrian and vehicular access is provided from Thomas Street and from Wason Street. Milton Public School is adjoined by low density residential properties to the south, west and east and Milton Rainforest Reserve is located to the north.

Figure 5-1 Aerial Photograph

Figure 5-1 Site Aerial Source: Urbis, April, 2025

6 RELEVANT LEGISLATION

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

6.1 Environmental Planning, Assessment Act 1979 and Local Government Act 1993

Planning and development within NSW is 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 Government organisation 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 Government body to determine whether the impacts of the activity are 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*.

6.1.1 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.

6.2 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 carried out further than 40 metres so is exempt from requiring a Controlled Activity Approval in accordance with the WM Act.

6.3 Biodiversity Conservation Act 2016

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 9 of this FFA

6.4 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 9 of this FFA report. It is concluded that the proposal is not likely to have a significant impact on any threatened aquatic species, populations or communities, or Key Fish Habitat.

6.5 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 include nationally threatened species or endangered ecological communities. Under the EPBC Act an assessment of the impact of a proposal on a 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 9 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.

6.6 Shoalhaven Local Environmental Plan 2014

This plan aims to make local environmental planning provisions for land in the Shoalhaven LGA in accordance with the relevant standard environmental planning instrument.

The works are to be conducted as per LEP SP2 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.

6.7 Shoalhaven Development Control Plan 2014

The aim of the Shoalhaven Development Control Plan 2014 (DCP) is to allow detailed provisions to be made to control and guide development and subdivision within the Shoalhaven LGA.

7 EXISTING ENVIRONMENT

7.1.1 Desktop search

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

7.1.2 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 7-1, three PCTs were mapped as being present within the project site.

According to the NSW State Vegetation Type Mapping, three Plant Community Types (PCTs) are mapped as occurring within the subject site:

- PCT 3267 – Shoalhaven Foothills Turpentine Forest.
- PCT 3077 – Illawarra Complex Dry Rainforest.
- PCT 4052 – South Coast Low Hills Red Gum Grassy Forest.

PCT 3077 is associated with the following threatened ecological communities:

- Illawarra Subtropical Rainforest in the Sydney Basin Bioregion (Endangered – BC Act)
- Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions (Endangered – BC Act)
- Milton Ulladulla Subtropical Rainforest in the Sydney Basin Bioregion (Endangered – BC Act)
- Illawarra-Shoalhaven Subtropical Rainforest of the Sydney Basin Bioregion (Critically Endangered – EPBC Act).

7.1.3 Threatened Species

A search of the DCCEEW BioNet Atlas revealed 603 records of 61 threatened species previously recorded within 10 km of the site. Analysis of the Protected Matters Search Tool indicated 5 listed threatened ecological communities, 49 listed threatened species, and 13 listed migratory species previously recorded within 1 km of the subject site. No World Heritage Properties, National Heritage Places, Protected Marine Areas, nor Wetlands of international importance occurred within 1 km of the site (Appendix A).

The DCCEEW BioNet Atlas mapping identified one threatened species near the site, including the Grey-headed Flying-fox (*Pteropus poliocephalus*) is listed as Vulnerable under both the BC Act and the EPBC Act

Three species of fauna are considered to have a moderate likelihood of occurrence within the subject site due to previously being recorded near the subject site, and due to having potential suitable habitat within the subject site. Species with a moderate likelihood of occurrence include the Grey-headed Flying-fox (*Pteropus poliocephalus*), Powerful Owl (*Ninox strenua*), and Masked Owl (*Tyto novaehollandiae*) (Appendix B).

Additionally, 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 activity.

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.

The Arboricultural Impact Assessment Draft Report, (Varley, 2025) indicated that no Magenta Lilly Pilly (*Syzygium paniculatum)* trees, are slated for removal. Magenta Lilly Pilly are Endangered under the BC Act and Vulnerable under the EPCB Act. Due to the threatened status of this species, these trees will remain and be mitigated against in the proposed activity.

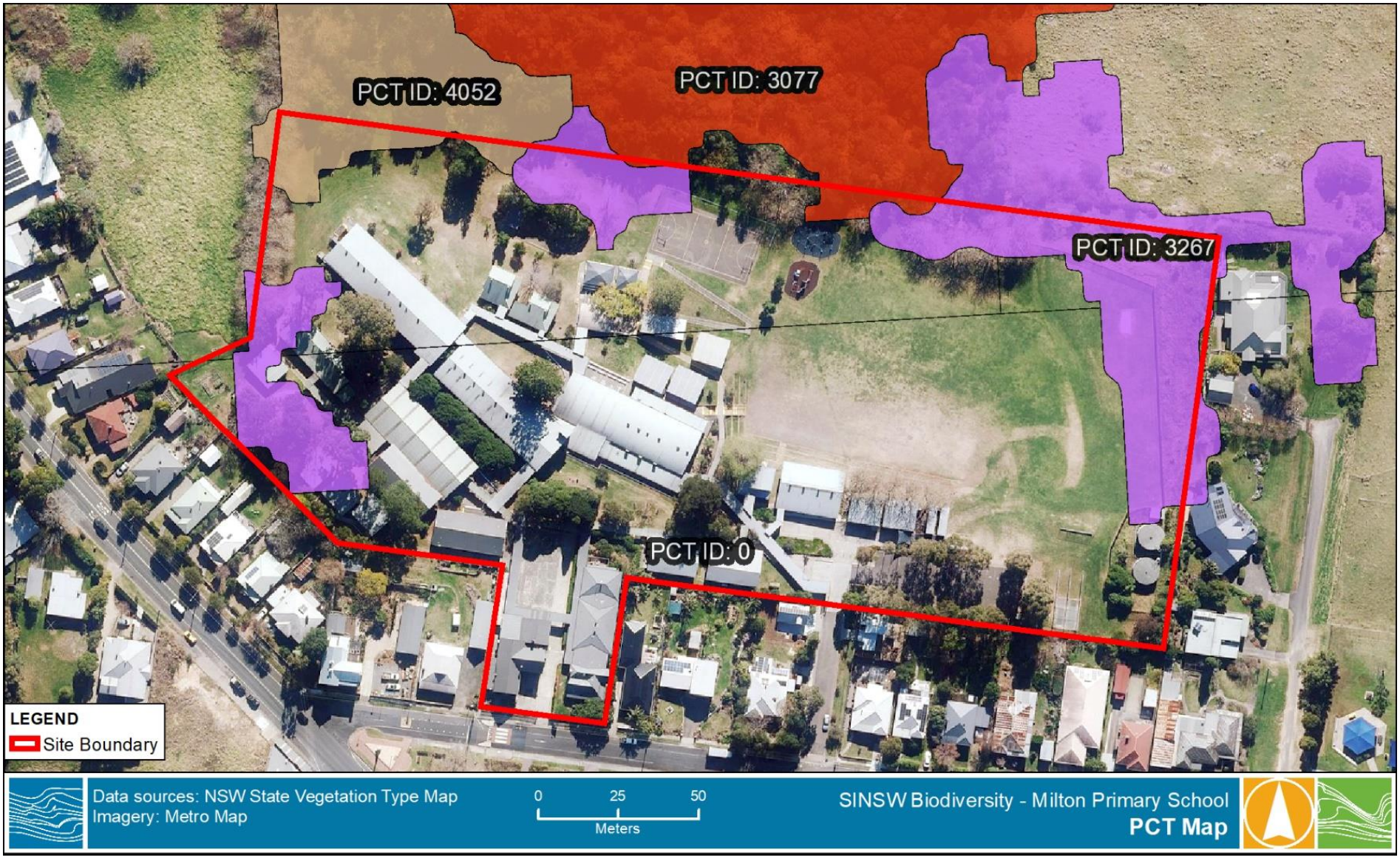

Figure 7-1 Plant Community Types

Figure 7-2 Threatened species

7.2 Site Visit

An assessment of the site was undertaken on 14 January 2025 by ecologist Caroline Weller and previously by ecologist Clayton Woods on 14 September 2023. The survey comprised a walkthrough of all the accessible vegetated areas of the site. Flora species were surveyed by stratum and were identified and recorded. The vegetation communities observed were later cross checked with those already mapped surrounding the property. An assessment of potential habitat features for threatened species, such as tree hollows or crevices in tree bark was also conducted.

An opportunistic fauna survey included searches for proxy evidence of fauna activity such as tree scratches, scat, and bird nests. The fauna assessment is largely an assessment of the potential of the site as habitat for various fauna species. Apart from species recorded from 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 such that it is assumed that any threatened species are likely to occur at the site if suitable habitat exists.

7.2.1 Flora

The site was primarily dominated by scattered, canopy species such as Brush Box (*Lophostemon confertus*), Turpentine (*Syncarpia microcorys*) and Spotted Gum (*Corymbia maculata*). Brush Box is native to the north coast of NSW, however Spotted Gum and Turpentine are associated with the surrounding mapped PCT 3267 (Figure 7-1). There was limited midstorey and understorey presence, typically found in garden areas around the site, indicating they were planted for aesthetic purposes rather than biodiversity. The ground surface was mainly artificial turf or concrete. A detailed native flora list can be found in Table 7-1.

The Floor Plans provided by the client (Figure 2-1) assign numbers or letters to each building and demountable. These are referenced below. Native plantings were observed behind and adjacent to school buildings D15442 and Block E, and the walkways were predominantly planted with native species, though not specifically related to the nearby PCT. The draft Arboriculture Report highlighted that trees along the southwestern boundary fence line on Miller Street are of high landscape significance. This area includes predominantly high and medium-valued trees, with a priority on retaining the high-value trees and removing medium-valued trees only when necessary.

Potential remnant trees are located behind the three demountable buildings (D19356, D14085, and D14395) along Bellevue Street (Figure 2-1). This area is designated as a moderate landscape significance zone, containing a mix of high and moderate-valued trees. Only the demolition of existing demountable buildings will affect this area; no new construction is planned.

A large Turpentine (*Syncarpia microcorys*) tree, near the demountable building D13002 above the sports field, is considered a high priority for retention (Figure 2-1). Special care should be taken during demolition due to the proximity of its Structural Root Zone (SRZ). Additionally, a large Port Jackson Fig (*Ficus rubiginosa*) is located behind demountable building D16376 and is also a high priority for retention, with similar considerations for the SRZ during demolition.

Exotic species dominate the site, including Magnolia (*Magnolia grandiflora*), African Olive (*Olea europaea subsp. cuspidata*), Broad-leaved Privet (*Ligustrum lucidum*), Bamboo (*Bambusa sp.*), and common annuals like Purple-top (*Verbena bonariensis*) and Fleabane (*Conyza bonariensis*). Regrowth was noted for the African Olive and Bamboo, emerging from cut stumps. A comprehensive list of weeds is in Table 7-2.

7.2.2 Fauna Habitat

Scratch marks on a Forest Red Gum (*Eucalyptus tereticornis*) were observed, with small marks likely caused by a possum (Figure 7-3). A nest was found in a Paperbark (*Melaleuca sp.*) tree right next to a demountable near the PCT patch (Figure 7-3). There is also a potential hollow in trees near the building zone adjacent to the top carpark. A family of Magpies (*Cracticus tibicen*) was seen hovering around this area, but no nests were observed.

Figure 7-3 Forest Red Gum with scratch marks

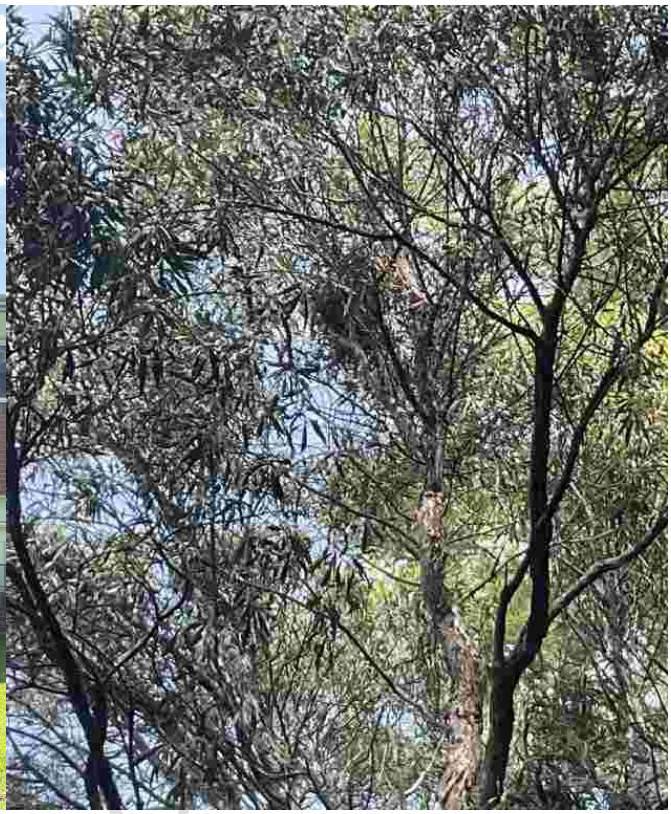

Figure 7-4 Nest in a Paperbark

Potential habitat sites were identified, including two nests near Block E—one within an air conditioning unit and another large nest in trees on the northeastern side of the site. Additional habitat potential includes vegetative debris at the base of a Phoenix Palm (*Phoenix sp.)* in the northwestern corner and beneath a large cut stump on the walkway, which has previously been used by an infant Tawny Frogmouth (*Podargus strigoides*) (pers. communication) by Clayton Woods on 14 September 2023.

Frog calls were also heard from a natural spring on-site. A list of fauna and potential habitat sites is provided in Table 7-3. The school has expressed that these areas are highly valued as important habitat, and it is recommended that an ecologist be present to check for wildlife before, during, and after the removal process.

No large hollows were observed, limiting the site's potential to support breading habitat for threatened species such as the Powerful Owl or Masked Owl. However, the site may serve as a foraging area for small mammals, such as possums, as indicated by the scratch mark, which would then also support foraging habitat for these owls. The Grey-headed Flying-fox (*Pteropus poliocephalus*) may forage on-site, but it is unlikely to roost here due to the absence of preferred waterways. Furthermore, a roost camp was not found on site. The nearest roosting site is also 700 m northeast in Flat Rock Gully. The large Port Jackson Fig would provide good foraging habitat for this species, however this could only be determined during nocturnal surveys.

One Forest Oak (*Allocasuarina torulosa*) and one Black Sheoak (*A. littoralis*) were recorded on site which are both important food trees for South-Eastern Glossy Black-cockatoo (*Calyptorhynchus lathami lathami*).

Table 7-1 Native Species list

Scientific Name	Common Name
Leptospermum petersonii	Lemon-scented Tea Tree
Syzygium paniculatum	Magenta Lilly Pilly (E – BC Act)
Callistemon viminalis	Weeping Red Bottlebrush

Scientific Name	Common Name
Melaleuca linariifolia	Narrow-leafed Paperbark
Grevillea robusta	Silky Oak
Toona ciliata	Red Cedar
Allocasuarina torulosa	Forest Oak
Ficus microcarpa var. hillii	Hill's Fig
Pittosporum undulatum	Sweet Pittosporum
Melaleuca salignus	Willow Bottlebrush
Eucalyptus botryoides	Bangalay
Eucalyptus saligna x botryoides	Wollongong Woollybutt
Melaleuca citrinus	Crimson Bottlebrush
Lophostemon confertus	Brush Box
Melia azedarach	White Cedar
Casuarina glauca	Swamp Sheoak
Callitris glaucophylla	White Cypress Pine
Eucalyptus moluccana	Grey Box
Eucalyptus pilularis	Blackbutt
Melaleuca bracteata	Black Tea-tree
Corymbia maculata	Spotted Gum
Allocasuarina littoralis	Black Sheoak
Hymenosporum flavum	Native Frangipani
Eucalyptus tereticornis	Forest Red Gum
Melaleuca styphelioides	Prickly-leaved Paperbark
Eucalyptus nicholii	Black Peppermint
Elaeocarpus reticulatus	Blue-berry Ash
Syzygium australe	Brush Cherry
Ficus coronata	Sandpaper Fig
Acacia spp.	Wattle

Table 7-2 Exotic species list

Scientific Name	Common Name
Magnolia grandiflora	Bull Bay
Quercus robur	English Oak
Zelkova serrata	Zelkova
Pinus pinaster	Maritime Pine
Cupressus macrocarpa	Monterey Cypress
Lagunaria patersonii	Norfolk Island Hibiscus

Scientific Name	Common Name
Olea europaea subsp. cuspidata	African Olive
Fraxinus angustifolia 'Raywood'	Claret Ash
Araucaria cunninghamii	Hoop Pine
Magnolia × soulangeana	Magnolia
Syzygium smithii	Lilly Pilly
Erythrina x sykesii	Coral Tree
Araucaria heterophylla	Norfolk Island Pine
Harpephyllum caffrum	Kaffir Plum
Fraxinus griffithii	Evergreen Ash
Ulmus glabra 'Lutescens'	Golden Elm
Liquidambar styraciflua	Sweet Gum
Jacaranda mimosifolia	Jacaranda
Platanus × acerifolia	London Plane

Table 7-3 Fauna species list and potential habitat locations.

FAUNA SPECIES	
Scientific Name	**Common Name**
Alectura lathami	Australian Brush-turkey
Gymnorhina tibicen	Australian Magpie
Lampropholis guichenoti	Common Garden Skink
Manorina melanocephala	Noisy Minor
Trichoglossus moluccanus	Rainbow Lorikeet
Unknown	Frog (Heard Call)
Potential habitat found	
Two nests on side of building	-33.820545, 151.211125
Old nest in tree	-33.820421, 151.211882
Potential habitat in base of Phoenix Palm	-33.820499, 151.210921

(*) None of the listed exotic species were identified as Weeds of National Significance (WONS)

8 THE PROPOSED ACTIVITY

The Arboricultural Impact Assessment Report for Milton Public School assessed trees on and near the site that could have been impacted by activity and outlined recommended tree protection measures. It emphasised that construction activities within Tree Protection Zones (TPZ) should have been carefully managed to prevent harm to trees.

Specific activities, including trenching, soil level changes, material storage, and machinery use, were restricted within the TPZ unless approved by a project arborist. Excavation methods had to be designed to preserve root systems, with smaller roots requiring clean cuts and treatment with fungicide, while larger roots had to be assessed by the arborist. Crown pruning was also regulated, with no more than 10-15% of the crown allowed to be removed without prior approval. The report provided individual assessments of specific trees, noting issues such as multiple leaders, crown pruning, and signs of decay, which could have been exacerbated by activity. Some trees were identified for possible removal due to low significance, while others, such as trees of medium significance, might have been removed if they conflicted with the proposed design. Encroachment on TPZs was limited to 10%, and any work within neighbouring TPZs had to have not adversely affected those trees. The report stressed the importance of consulting a project arborist for assessments, reports, and certifications before the proposed activity proceeded.

9 POTENTIAL IMPACTS

During the pre-construction and construction phases, several detailed mitigation measures are essential to prevent adverse impacts on existing trees, vegetation, and local wildlife. The following impacts and corresponding mitigation measures are crucial to ensuring ecological protection and compliance with relevant standards:

9.1 Tree Protection Measures

Construction activities can damage trees through physical injury, soil compaction, and root damage. To mitigate these impacts, 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, in accordance with NSW guidelines and Australian Standard AS 4970–2009. The removal or lopping of trees requires written permission from the Superintendent. These measures ensure that trees are safeguarded from construction-related disturbances.

Identification and Surveying: Incorrect or inadequate identification of trees can lead to unintentional damage or removal. To prevent this, all trees to be protected shall be clearly identified, and all Tree Protection Zones (TPZs) surveyed. This ensures accurate recognition and protection of trees throughout the construction process.

9.2 Protective Fencing

Without proper fencing, trees are susceptible to damage from construction equipment and personnel. 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 is allowed inside the fenced area. This creates a physical barrier protecting trees from accidental harm.

9.3 Use of Mulch

Soil degradation and root damage can occur without adequate ground cover. To address this, AS 4454 leaf mulch with 90% recycled content will be used for tree protection fencing. Trees marked for removal will be chipped, and the mulch will be used to a depth of 100mm, avoiding soil, weeds, sticks, and stones. This practice improves soil health and provides a protective layer for tree roots.

9.4 Signage

Lack of awareness among construction personnel can lead to non-compliance with tree protection measures. Tree protection signage must be attached to tree protection zones before works begin, 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, the developer's contact details, and Site Arborist information. This ensures that all site personnel are informed about the tree protection requirements.

9.5 Inspection for Fauna

Construction activities can harm wildlife inhabiting the trees. The site assessment found potential habitat features within the subject site, which may affect the activity process. These include two birds' nests abutting the air-conditioning units on Block E in the southwest section of the site; a nest in the base of the fronds in an exotic Phoenix Palm (*Phoenix canariensis*); an old nest in a native canopy tree; a nest in a Paperbark (*Melaleuca sp*.) tree near the PCT patch; a potential hollow in trees near the building zone adjacent to the top carpark; and a natural spring producing frog calls.

Prior to the commencement of 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. This measure protects wildlife and complies with ecological regulations..

9.6 Contractor Induction

Uninformed contractors may inadvertently cause ecological damage. To prevent this, 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 must be undertaken. This ensures that all personnel understand the ecological importance of the site and adhere to the necessary protection measures.

9.7 Maintaining Tree Protection Zones

Construction activities within TPZs can cause root damage and stress to trees. To mitigate this, TPZs will be maintained around vegetation to be retained, 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 unless a Level 5 Arborist confirms that the works will not impact the tree. This preserves the health and structural integrity of mature trees.

9.8 Access Restrictions

Unauthorized access to TPZs can lead to soil compaction and root damage. No pedestrian or plant access is permissible to the TPZ. This restriction prevents any damage from foot traffic or machinery.

9.9 Material Storage and Spoil Management

Storing materials near trees can lead to contamination and physical damage. To prevent this, 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 must be stored properly with spill measures in place. These precautions protect trees from physical and chemical damage.

9.10 Trenching Restrictions

Trenching within TPZs can severely damage tree roots. To prevent this, trenching is not allowed in TPZs or tree protection fencing without approval. If trenching is necessary, it must be done by hand with arborist supervision. This minimizes root damage and preserves tree health.

9.11 Watering and Maintenance

Insufficient water during construction can stress or kill trees. Contractors are to ensure that plants are watered appropriately during periods of little or no rainfall. This maintains the health and vitality of trees throughout the construction process.

9.12 Facility and Chemical Management

Improper location of site facilities and storage of chemicals can lead to tree damage. To mitigate this, all site facilities must be located outside of TPZs. Chemicals and contaminants must be stored properly in an enclosed area with a spill bund to prevent runoff in case of accidents. This prevents contamination and ensures safe storage practices.

9.13 Hygiene Protocols

Construction activities can introduce plant pathogens and diseases. To mitigate this risk, basic hygiene protocols will be implemented for construction personnel and machinery to reduce the potential for invasion by plant pathogens, including *Phytophthora cinnamomi*, the fungus myrtle rust (*Uredo rangelli*), and amphibian chytrid fungus. This prevents the spread of harmful pathogens and protects the local ecosystem.

9.14 Operational Impacts

During the operational phase, no significant operational impacts to flora and fauna are anticipated as a result of the proposal. These detailed mitigation measures are essential to minimise the environmental impact of construction activities, protect existing trees, and ensure compliance with relevant ecological and safety standards.

10 EVALUATION OF ENVIRONMENTAL IMPACTS

1. The extent and nature of potential impacts are low and will not have significant impact on the locality, community and/or the environment.

2. Potential impacts can be appropriately mitigated or managed to ensure that there is minimal impact on the locality, community and/or the environment.

11 MITIGATION MEASURES

During the pre-construction phase, a series of mitigation measures will be implemented to ensure the protection and preservation of existing trees. 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.

The removal or lopping of trees requires written permission from the Superintendent. All trees to be protected shall be clearly identified, and all Tree Protection Zones (TPZs) surveyed. 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 is allowed inside the fenced area. AS 4454 leaf mulch with 90% recycled content will be used for tree protection fencing. Trees marked for removal will be chipped, and the mulch will be used to a depth of 100mm, avoiding soil, weeds, sticks.

Measures that will be implemented to address potential pre-construction impacts are listed in Table 11-1 and construction impacts are listed in Table 11-2. Detailed tree mitigation measures during pre-construction and construction should be adhered to, as described in Table 11-1.

- (D) Design
- (C) Construction
- (O) Operation

Table 11-1 Mitigation measures for pre-construction impacts (PI)

Project Stage*	Mitigation Measures	Reason for Mitigation Measure	Section of Report
PI1	Establish exclusion zones around Magenta Lilly Pilly to prevent damage during construction activities.	To ensure the physical protection of trees during construction.	9.1
PI2	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.	To ensure tree protection measures are in place and prevent any damage or unauthorised removal of trees.	9.1
PI3	All trees to be protected shall be clearly identified and all TPZs surveyed.	To ensure proper identification and protection of trees during the construction process.	9.1
PI4	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.	To physically protect trees from damage during construction activities and prevent unauthorised access to protected areas.	9.2

Project Stage*	Mitigation Measures	Reason for Mitigation Measure	Section of Report
PI5	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).	To enhance soil health and tree protection through the use of appropriate mulch and recycling materials from removed trees.	9.3
PI6	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.	To inform and educate all site personnel about tree protection zones and access restrictions, ensuring compliance with protection measures.	9.4
PI7	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.	To ensure the protection and safe relocation of fauna that may inhabit the trees, preventing harm to wildlife during tree removal or vegetation clearing activities.	9.5
PI8	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.	To ensure all personnel are aware of the ecological importance of the site and understand the measures needed to minimise ecological impact during construction activities.	9.6

Table 11-2 Mitigation measures for construction impacts (CI)

Project Stage*	Mitigation Measures	Reason for Mitigation Measure	Section of Report
CI1	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.	To ensure the protection of trees during construction by maintaining Tree Protection Zones (TPZs) and adhering to Australian standards.	9.1
CI2	No pedestrian or plant access is permissible to the TPZ.	To prevent damage to trees by restricting access to Tree Protection Zones.	9.1

Project Stage*	Mitigation Measures	Reason for Mitigation Measure	Section of Report
CI3	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.	To protect trees from contamination and physical damage caused by construction materials and activities.	9.9
CI4	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.	To prevent physical damage to trees from construction equipment and materials.	9.1
CI5	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.	To protect tree roots from soil compaction and other construction-related damage.	9.9
CI6	Trenching, shall avoid the TPZ's. Proposed routes shall be re-routed outside of the TPZ. Underboring required if unable reroute. Any excavation in the area of a TPZ must be authorised and conditioned by the project arborist.	To prevent damage to tree roots by restricting trenching activities within Tree Protection Zones.	9.10
CI7	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.	To ensure the health and survival of trees and plants during construction by providing adequate water.	9.11
CI8	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.	To prevent contamination and damage to trees from construction site facilities and chemicals.	9.12
CI9	Basic hygiene protocols would be implemented for construction personnel and machinery on site to reduce the potential for invasion by plant pathogens including *Phytophthora cinnamomi*, the fungus myrtle rust *Uredo rangelli* and amphibian chytrid fungus.	To prevent the spread of plant pathogens and diseases that could harm vegetation and wildlife on the construction site.	9.13

12 CONCLUSION AND RECOMMENDATIONS

Activities within the Tree Protection Zone (TPZ) 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, with an ecologist relocating any fauna found. 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.

No biodiversity values were mapped within the study area. One Magenta Lilly Pilly (*Syzygium paniculatum*), a threatened species, was recorded on site. This tree is not proposed for removal. Given its threatened status, appropriate mitigation measures will be implemented to ensure its protection throughout the proposed activity.

No operational impacts to flora and 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.

This FFA for the Milton Public School, conducted by Water Technology, found no significant biodiversity areas or threatened species on the site.

The proposal would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an Environmental Impact Statement, a Species Impact Statement nor a Biodiversity Assessment Report to be prepared and approval to be sought from the Minister for Planning under the Environment Protection and Biodiversity Conservation Act (BC Act) 1999. The assessment determined that the proposal is not likely to have a significant impact on the environment, so approval from the Minister for Planning was not required.

This conclusion supports the progression of the redevelopment project under the current planning and environmental regulations, ensuring that the school infrastructure upgrades can proceed with minimal biodiversity disruption.

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APPENDIX A
PROTECTED MATTERS SEARCH

APPENDIX B
LIKELIHOOD OF OCCURRENCE

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: 25-Nov-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:	10
Listed Threatened Species:	102
Listed Migratory Species:	56

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:	4
Commonwealth Heritage Places:	None
Listed Marine Species:	82
Whales and Other Cetaceans:	14
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:	5
Regional Forest Agreements:	1
Nationally Important Wetlands:	2
EPBC Act Referrals:	7
Key Ecological Features (Marine):	1
Biologically Important Areas:	7
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	Buffer Status
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community	Endangered	Community likely to occur within area	In feature area
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered	Community likely to occur within area	In feature area
Illawarra and south coast lowland forest and woodland ecological community	Critically Endangered	Community likely to occur within area	In feature area
Illawarra-Shoalhaven Subtropical Rainforest of the Sydney Basin Bioregion	Critically Endangered	Community likely to occur within area	In feature area
Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	Community likely to occur within area	In buffer area only
Lowland Grassy Woodland in the South East Corner Bioregion	Critically Endangered	Community may occur within area	In buffer area only
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community may occur within area	In buffer area only
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered	Community likely to occur within area	In feature area
Subtropical and Temperate Coastal Saltmarsh	Vulnerable	Community likely to occur within area	In buffer area only
Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion	Endangered	Community may occur within area	In buffer area only

Listed Threatened Species [Resource Information]

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

Scientific Name	Threatened Category	Presence Text	Buffer Status

Scientific Name	Threatened Category	Presence Text	Buffer Status
BIRD			
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Ardenna grisea Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat likely to occur within area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat known to occur within area	In feature area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area	In feature area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Falco hypoleucos Grey Falcon [929]	Vulnerable	Species or species habitat may occur within area	In feature area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Limosa lapponica baueri Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]	Endangered	Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Melanodryas cucullata cucullata South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area	In buffer area only
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area	In buffer area only
Pycnoptilus floccosus Pilotbird [525]	Vulnerable	Species or species habitat known to occur within area	In feature area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area	In feature area
Stagonopleura guttata Diamond Firetail [59398]	Vulnerable	Species or species habitat known to occur within area	In feature area
Sternula nereis nereis Australian Fairy Tern [82950]	Vulnerable	Species or species habitat known to occur within area	In feature area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Thinornis cucullatus cucullatus			
Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area
FISH			
Epinephelus daemelii			
Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Hippocampus whitei			
White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Prototroctes maraena			
Australian Grayling [26179]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Seriolella brama			
Blue Warehou [69374]	Conservation Dependent	Species or species habitat known to occur within area	In buffer area only
FROG			

Scientific Name	Threatened Category	Presence Text	Buffer Status
Heleioporus australiacus			
Giant Burrowing Frog [1973]	Vulnerable	Species or species habitat known to occur within area	In feature area
Litoria aurea			
Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat known to occur within area	In feature area
Litoria watsoni			
Southern Heath Frog, Watson's Tree Frog [91509]	Endangered	Species or species habitat likely to occur within area	In feature area
Mixophyes balbus			
Stuttering Frog, Southern Barred Frog (in Victoria) [1942]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
MAMMAL			
Balaenoptera borealis			
Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera musculus			
Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus			
Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Chalinolobus dwyeri			
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat known to occur within area	In feature area
Dasyurus maculatus maculatus (SE mainland population)			
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat known to occur within area	In feature area
Eubalaena australis			
Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only
Isoodon obesulus obesulus			
Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]	Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Notamacropus parma](#)			
Parma Wallaby [89289]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Petauroides volans](#)			
Greater Glider (southern and central) [254]	Endangered	Species or species habitat known to occur within area	In feature area
[Petaurus australis australis](#)			
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Petrogale penicillata](#)			
Brush-tailed Rock-wallaby [225]	Vulnerable	Species or species habitat may occur within area	In buffer area only
[Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)](#)			
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat likely to occur within area	In feature area
[Potorous tridactylus trisulcatus](#)			
Long-nosed Potoroo (southern mainland) [86367]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
[Pseudomys novaehollandiae](#)			
New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area	In feature area
[Pteropus poliocephalus](#)			
Grey-headed Flying-fox [186]	Vulnerable	Roosting known to occur within area	In feature area
PLANT			
[Caladenia tessellata](#)			
Thick-lipped Spider-orchid, Daddy Long-legs [2119]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calochilus pulchellus](#)			
Pretty Beard Orchid, Pretty Beard-orchid [84677]	Endangered	Species or species habitat known to occur within area	In buffer area only
[Correa baeuerlenii](#)			
Chef's Cap [17007]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Corunastylis vernalis listed as Genoplesium vernale			
East Lynne Midge-orchid [78699]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cryptostylis hunteriana			
Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat known to occur within area	In feature area
Cynanchum elegans			
White-flowered Wax Plant [12533]	Endangered	Species or species habitat may occur within area	In buffer area only
Epacris gnidioides listed as Budawangia gnidioides			
Budawangs Cliff-heath [88291]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Genoplesium baueri			
Yellow Gnat-orchid, Bauer's Midge Orchid, Brittle Midge Orchid [7528]	Endangered	Species or species habitat may occur within area	In buffer area only
Hibbertia acaulothrix			
[87409]	Endangered	Species or species habitat may occur within area	In buffer area only
Melaleuca biconvexa			
Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area	In feature area
Persicaria elatior			
Knotweed, Tall Knotweed [5831]	Vulnerable	Species or species habitat may occur within area	In feature area
Pomaderris cotoneaster			
Cotoneaster Pomaderris [2043]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Prasophyllum affine			
Jervis Bay Leek Orchid, Culburra Leek-orchid, Kinghorn Point Leek-orchid [2210]	Endangered	Species or species habitat likely to occur within area	In feature area
Pterostylis gibbosa			
Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]	Endangered	Species or species habitat may occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Pultenaea baeuerlenii Budawangs Bush-pea [13130]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhizanthella slateri Eastern Underground Orchid [11768]	Endangered	Species or species habitat may occur within area	In buffer area only
Rhodamnia rubescens Scrub Turpentine, Brown Malletwood [15763]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Syzygium paniculatum Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Thesium australe Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Xerochrysum palustre Swamp Everlasting, Swamp Paper Daisy [76215]	Vulnerable	Species or species habitat may occur within area	In buffer area only
REPTILE			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Hoplocephalus bungaroides Broad-headed Snake [1182]	Endangered	Species or species habitat likely to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Natator depressus			
Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
SHARK			
Carcharias taurus (east coast population)			
Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Carcharodon carcharias			
White Shark, Great White Shark [64470]	Vulnerable	Migration route known to occur within area	In buffer area only
Galeorhinus galeus			
School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453]	Conservation Dependent	Species or species habitat may occur within area	In buffer area only
Rhincodon typus			
Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only

Listed Migratory Species			[Resource Information]
Scientific Name	Threatened Category	Presence Text	Buffer Status
Migratory Marine Birds			
Anous stolidus			
Common Noddy [825]		Species or species habitat may occur within area	In buffer area only
Apus pacificus			
Fork-tailed Swift [678]		Species or species habitat likely to occur within area	In feature area
Ardenna carneipes			
Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea			
Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Calonectris leucomelas			
Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Sternula albifrons Little Tern [82849]		Breeding likely to occur within area	In buffer area only
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche cauta Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In buffer area only
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Migratory Marine Species			
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Carcharhinus longimanus Oceanic Whitetip Shark [84108]		Species or species habitat may occur within area	In buffer area only
Carcharias taurus Grey Nurse Shark [64469]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Migration route known to occur within area	In buffer area only
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Eubalaena australis as Balaena glacialis australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
[Megaptera novaeangliae](#) Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
[Mobula birostris as Manta birostris](#) Giant Manta Ray [90034]		Species or species habitat may occur within area	In buffer area only
[Natator depressus](#) Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
[Orcinus orca](#) Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In buffer area only
[Rhincodon typus](#) Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Migratory Terrestrial Species			
[Cuculus optatus](#) Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within area	In feature area
[Hirundapus caudacutus](#) White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area	In feature area
Migratory Wetlands Species			
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris canutus](#) Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area	In feature area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area	In feature area
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Tringa nebularia Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area	In feature area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State	Buffer Status
Commonwealth Trading Bank of Australia		
Commonwealth Land - Commonwealth Trading Bank of Australia [12017]	NSW	In buffer area only
Communications, Information Technology and the Arts - Australian Postal Corporation		
Commonwealth Land - Australian Postal Commission [12016]	NSW	In buffer area only

Commonwealth Land Name	State	Buffer Status
Communications, Information Technology and the Arts - Telstra Corporation Limited		
Commonwealth Land - Australian Telecommunications Commission [12015]	NSW	In buffer area only
Defence - Royal Australian Navy Central Canteens Board		
Commonwealth Land - Royal Australian Navy Central Canteens Board [12018]	NSW	In buffer area only

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text	Buffer Status
Bird			
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat known to occur within area	In feature area
Anous stolidus Common Noddy [825]		Species or species habitat may occur within area	In buffer area only
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area	In feature area
Ardenna carneipes as Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [82404]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Ardenna grisea as Puffinus griseus Sooty Shearwater [82651]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area	In feature area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat known to occur within area	In feature area
Calidris canutus Red Knot, Knot [855]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat likely to occur within area overfly marine area	In feature area
Calonectris leucomelas Streaked Shearwater [1077]		Species or species habitat may occur within area	In buffer area only
Charadrius bicinctus Double-banded Plover [895]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area	In feature area
Charadrius ruficapillus Red-capped Plover [881]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea antipodensis gibsoni as Diomedea gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea epomophora Southern Royal Albatross [89221]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Diomedea exulans Wandering Albatross [89223]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Species or species habitat may occur within area	In buffer area only
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area	In feature area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In feature area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat known to occur within area overfly marine area	In feature area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area	In buffer area only
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area	In buffer area only
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area	In feature area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area	In feature area
Neophema chrysogaster Orange-bellied Parrot [747]	Critically Endangered	Species or species habitat may occur within area overfly marine area	In feature area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat likely to occur within area overfly marine area	In feature area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area	In feature area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area	In buffer area only
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area	In buffer area only
Phaethon lepturus White-tailed Tropicbird [1014]		Species or species habitat may occur within area	In buffer area only
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area	In feature area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area overfly marine area	In feature area

Scientific Name	Threatened Category	Presence Text	Buffer Status
Rostratula australis as Rostratula benghalensis (sensu lato)			
Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Stercorarius antarcticus as Catharacta skua			
Brown Skua [85039]		Species or species habitat may occur within area	In buffer area only
Sterna striata			
White-fronted Tern [799]		Foraging, feeding or related behaviour likely to occur within area	In feature area
Sternula albifrons as Sterna albifrons			
Little Tern [82849]		Breeding likely to occur within area	In buffer area only
Symposiachrus trivirgatus as Monarcha trivirgatus			
Spectacled Monarch [83946]		Species or species habitat may occur within area overfly marine area	In feature area
Thalassarche bulleri			
Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche bulleri platei as Thalassarche sp. nov.			
Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche carteri			
Indian Yellow-nosed Albatross [64464]	Vulnerable	Species or species habitat likely to occur within area	In buffer area only
Thalassarche cauta			
Shy Albatross [89224]	Endangered	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche eremita			
Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Thalassarche impavida			
Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area	In buffer area only
Thalassarche melanophris			
Black-browed Albatross [66472]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche salvini			
Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Thalassarche steadi			
White-capped Albatross [64462]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Thinornis cucullatus as Thinornis rubricollis			
Hooded Plover, Hooded Dotterel [87735]		Species or species habitat known to occur within area overfly marine area	In buffer area only
Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis			
Eastern Hooded Plover, Eastern Hooded Plover [90381]	Vulnerable	Species or species habitat known to occur within area overfly marine area	In buffer area only
Tringa nebularia			
Common Greenshank, Greenshank [832]	Endangered	Species or species habitat likely to occur within area overfly marine area	In feature area
Fish			
Acentronura tentaculata			
Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area	In buffer area only
Cosmocampus howensis			
Lord Howe Pipefish [66208]		Species or species habitat may occur within area	In buffer area only
Heraldia nocturna			
Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area	In buffer area only
Hippocampus breviceps Short-head Seahorse, Short-snouted Seahorse [66235]		Species or species habitat may occur within area	In buffer area only
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]	Endangered	Species or species habitat likely to occur within area	In buffer area only
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area	In buffer area only
Kimblaeus bassensis Trawl Pipefish, Bass Strait Pipefish [66247]		Species or species habitat may occur within area	In buffer area only
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area	In buffer area only
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area	In buffer area only
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area	In buffer area only
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area	In buffer area only
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area	In buffer area only
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area	In buffer area only
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within area	In buffer area only
Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area	In buffer area only
Urocampus carinirostris Hairy Pipefish [66282]		Species or species habitat may occur within area	In buffer area only
Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		Species or species habitat may occur within area	In buffer area only
Vanacampus phillipi Port Phillip Pipefish [66284]		Species or species habitat may occur within area	In buffer area only
Mammal			
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20]		Species or species habitat may occur within area	In buffer area only
Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21]		Species or species habitat may occur within area	In buffer area only
Reptile			
Caretta caretta Loggerhead Turtle [1763]	Endangered	Breeding likely to occur within area	In buffer area only
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area	In buffer area only

Scientific Name	Threatened Category	Presence Text	Buffer Status
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Species or species habitat known to occur within area	In buffer area only
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area	In buffer area only

Whales and Other Cetaceans			[Resource Information]
Current Scientific Name	Status	Type of Presence	Buffer Status
Mammal			
Balaenoptera acutorostrata Minke Whale [33]		Species or species habitat may occur within area	In buffer area only
Balaenoptera borealis Sei Whale [34]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area	In buffer area only
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area	In buffer area only
Balaenoptera physalus Fin Whale [37]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour likely to occur within area	In buffer area only
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area	In buffer area only
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat known to occur within area	In buffer area only

Current Scientific Name	Status	Type of Presence	Buffer Status
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area	In buffer area only
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area	In buffer area only
Megaptera novaeangliae Humpback Whale [38]		Species or species habitat known to occur within area	In buffer area only
Orcinus orca Killer Whale, Orca [46]		Species or species habitat likely to occur within area	In buffer area only
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area	In buffer area only
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area	In buffer area only

Extra Information

State and Territory Reserves [Resource Information]

Protected Area Name	Reserve Type	State	Buffer Status
Conjola	National Park	NSW	In buffer area only
Meroo	National Park	NSW	In buffer area only
Morton	National Park	NSW	In buffer area only
Narrawallee Creek	Nature Reserve	NSW	In buffer area only
Yatteyattah	Nature Reserve	NSW	In buffer area only

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State	Buffer Status
Southern RFA	New South Wales	In feature area

Nationally Important Wetlands [Resource Information]

Wetland Name	State	Buffer Status
Lagoon Head	NSW	In buffer area only
Tabourie Lake	NSW	In buffer area only

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status	Buffer Status
Residential Development, Lot 172 DP 755923 and Lot 823 DP 247285, Manyana, NSW	2020/8704		Post-Approval	In buffer area only
Controlled action				
North Manyana Subdivision, NSW	2021/8948	Controlled Action	Further Information Request	In buffer area only
Not controlled action				
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed	In feature area
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed	In feature area
wastewater collection systems and pumping stations	2001/511	Not Controlled Action	Completed	In buffer area only
Not controlled action (particular manner)				
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval	In feature area
Referral decision				
Breeding program for Grey Nurse Sharks	2007/3245	Referral Decision	Completed	In buffer area only

Key Ecological Features [Resource Information]

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

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

Biologically Important Areas [Resource Information]

Scientific Name	Behaviour	Presence	Buffer Status
Dolphins			
Tursiops aduncus Indo-Pacific/Spotted Bottlenose Dolphin [68418]	Breeding	Likely to occur	In buffer area only
Seabirds			

Scientific Name	Behaviour	Presence	Buffer Status
Ardenna grisea Sooty Shearwater [82651]	Foraging	Likely to occur	In buffer area only
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Likely to occur	In buffer area only
Ardenna tenuirostris Short-tailed Shearwater [82652]	Foraging	Likely to occur	In buffer area only
Pelagodroma marina White-faced Storm-petrel [1016]	Breeding	Known to occur	In buffer area only
Sharks			
Carcharias taurus Grey Nurse Shark [64469]	Foraging	Known to occur	In buffer area only
Whales			
Megaptera novaeangliae Humpback Whale [38]	Migration (north and south)	Known to occur	In buffer area only

Bioregional Assessments			[Resource Information]
SubRegion	BioRegion	Website	Buffer Status
Sydney	Sydney Basin	BA website	In feature area

Caveat

1 PURPOSE

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

The report contains the mapped locations of:

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

2 DISCLAIMER

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

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

3 DATA SOURCES

Threatened ecological communities

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

Threatened, migratory and marine species

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

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

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

4 LIMITATIONS

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

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

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

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

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

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

Acknowledgements

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

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

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

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

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Recorded	The species was observed in the study area during the current survey.
High	It is highly likely that a species 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., for 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 habitat similar to the study area is widely distributed in the local area, meaning that the species is not dependent (i.e., for 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.

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Limnodynastidae	*Heleioporus australiacus*	Giant Burrowing Frog	V,P	V	2	Found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based. Spends more than 95% of its time in non-breeding habitat in areas up to 300 m from breeding sites. Whilst in non-breeding habitat it burrows below the soil surface or in the leaf litter. Individual frogs occupy a series of burrow sites, some of which are used repeatedly. The home ranges of both sexes appear to be non-overlapping suggesting exclusivity of non-breeding habitat. Home ranges are approximately 0.04 ha in size.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Hylidae	*Litoria aurea*	Green and Golden Bell Frog	E1,P	V	4	Inhabits marshes, dams and stream-sides, particularly those containing bullrushes (*Typha spp.*) or spikerushes (*Eleocharis spp*.). Optimum habitat includes water-bodies that are unshaded, free of predatory fish such as Plague Minnow (*Gambusia holbrooki*), have a grassy area nearby and diurnal sheltering sites available. Some sites, particularly in the Greater Sydney region occur in highly disturbed areas. The species is active by day and usually breeds in summer when conditions are warm and wet.	Low
Columbidae	*Ptilinopus superbus*	Superb Fruit-Dove	V,P		2	Inhabits rainforest and similar closed forests where it forages high in the canopy, eating the fruits of many tree species such as figs and palms. It may also forage in eucalypt or acacia woodland where there are fruit-bearing trees. Part of the population is migratory or nomadic. There are records of single birds flying into lighted windows and lighthouses, indicating that birds travel at night. At least some of the population, particularly young birds, moves south through Sydney, especially in autumn.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Apodidae	*Hirundapus caudacutus*	White-throated Needletail	P	V,C,J,K	21	In Australia, the White-throated Needletail is almost exclusively aerial, from heights of less than 1 m up to more than 1000 m above the ground. Because they are aerial, it has been stated that conventional habitat descriptions are inapplicable, but there are, nevertheless, certain preferences exhibited by the species. Although they occur over most types of habitat, they are probably recorded most often above wooded areas, including open forest and rainforest, and may also fly between trees or in clearings, below the canopy, but they are less commonly recorded flying above woodland. 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 sometimes 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
Diomedeidae	*Thalassarche cauta*	Shy Albatross	E1,P	E	1	This pelagic or ocean-going species inhabits subantarctic and subtropical marine waters, spending the majority of its time at sea. While at sea, it soars on strong winds and when calm, individuals may rest on the ocean, in groups during the breeding season or as individuals at other times. Occasionally the species occurs in continental shelf waters, in bays and harbours.	Low
Diomedeidae	*Thalassarche melanophris*	Black-browed Albatross	V,P	V	1	Inhabits antarctic, subantarctic, subtropical marine and coastal waters over upwellings and boundaries of currents. Spends most of its time at sea, breeding on small isolated islands.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Procellariidae	*Ardenna grisea*	Sooty Shearwater	P	J	1	The species nests on islands and headlands in large colonies. Burrows are dug for breeding under tussock grass, low scrub and on the Snares Islands under Olearia forest. Birds typically do not return to their natal colonies until the age of four. The species feeds on fish, crustacea and cephalopods, which are caught while diving.	Low
Procellariidae	*Ardenna pacifica*	Wedge-tailed Shearwater	P	J	10	The Wedge-tailed Shearwater is a pelagic, marine bird known from tropical and subtropical waters. T In tropical zones the species may feed over cool nutrient-rich waters. The species has been recorded in offshore waters of eastern Victoria and southern NSW, mostly over continental slope with sea-surface temperatures of 13.9–24.4 °C	Low
Procellariidae	*Ardenna tenuirostris*	Short-tailed Shearwater	P	C,J,K	20	Colonies can be found in coastal areas from New South Wales through Western Australia, with the majority found through Bass Strait and around Tasmania. The birds begin by renovating old burrows or building new ones that extend one to two metres long in sandy headlands amongst low lying vegetation like bower spinach and tussock grasses. From early April to late September, they will spend all of their time out in the ocean, resting on the surface of the water when needed.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Accipitridae	*Haliaeetus leucogaster*	White-bellied Sea-Eagle	V,P		21	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). Breeding habitat consists of mature tall open forest, open forest, tall woodland, and swamp sclerophyll forest close to foraging habitat. Nest trees are typically large emergent eucalypts and often have emergent dead branches or large dead trees nearby which are used as 'guard roosts'. Nests are large structures built from sticks and lined with leaves or grass.	Low
Accipitridae	*Lophoictinia isura*	Square-tailed Kite	V,P,3		9	Found in a variety of timbered habitats including dry woodlands and open forests. Shows a particular preference for timbered watercourses. In arid north-western NSW, has been observed in stony country with a ground cover of chenopods and grasses, open acacia scrub and patches of low open eucalypt woodland. Is a specialist hunter of passerines, especially honeyeaters, and most particularly nestlings, and insects in the tree canopy, picking most prey items from the outer foliage. Appears to occupy large hunting ranges of more than 100km2. Breeding is from July to February, with nest sites generally located along or near watercourses, in a fork or on large horizontal limbs.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Accipitridae	*Pandion cristatus*	Eastern Osprey	V,P,3		4	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
Burhinidae	*Esacus magnirostris*	Beach Stone-curlew	E4A,P		1	Beach Stone-curlews are found exclusively along the coast, on a wide range of beaches, islands, reefs and in estuaries, and may often be seen at the edges of or near mangroves. They forage in the intertidal zone of beaches and estuaries, on islands, flats, banks and spits of sand, mud, gravel or rock, and among mangroves. Beach Stone-curlews breed above the littoral zone, at the backs of beaches, or on sandbanks and islands, among low vegetation of grass, scattered shrubs or low trees; also among open mangroves.	Low
Haematopodidae	*Haematopus fuliginosus*	Sooty Oystercatcher	V,P		7	Favours rocky headlands, rocky shelves, exposed reefs with rock pools, beaches and muddy estuaries. Forages on exposed rock or coral at low tide for foods such as limpets and mussels.	Low
Haematopodidae	*Haematopus longirostris*	Pied Oystercatcher	E1,P		25	Favours intertidal flats of inlets and bays, open beaches and sandbanks. Forages on exposed sand, mud and rock at low tide, for molluscs, worms, crabs and small fish. The chisel-like bill is used to pry open or break into shells of oysters and other shellfish. Nests mostly on coastal or estuarine beaches although occasionally they use saltmarsh or grassy areas. Nests are shallow scrapes in sand above the high tide mark, often amongst seaweed, shells and small stones.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Charadriidae	*Pluvialis squatarola*	Grey Plover	P	C,J,K	2	In non-breeding grounds in Australia, Grey Plovers occur almost entirely in coastal areas, where they usually inhabit sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes	Low
Charadriidae	*Thinornis cucullatus cucullatus*	Eastern Hooded Dotterel	E4A	V	8	The Hooded Plover is endemic to southern Australia and is nowadays found mainly along the coast from south of Jervis Bay, NSW, south through Victoria and Tasmania to the western side of the Eyre Peninsula (South Australia). Hooded Plovers prefer sandy ocean beaches, especially those that are broad and flat, with a wide wave-wash zone for feeding, much beachcast seaweed, and backed by sparsely vegetated sand-dunes for shelter and nesting. Occasionally Hooded Plovers are found on tidal bays and estuaries, rock platforms and rocky or sand-covered reefs near sandy beaches, and small beaches in lines of cliffs.	Low
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

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Scolopacidae	*Numenius phaeopus*	Whimbrel	P	C,J,K	1	On passage in the autumn and spring the species frequents wetlands, tidal flats, short-sward wet and dry grasslands, farmland and heathland with *Empetrum spp*., generally occupying coastal habitats in the winter such as muddy, rocky or sandy beaches, coral shores, exposed reefs, tidal mudflats, sandflats, mangrove swamps , tidal marshes and lagoons	Low
Laridae	*Hydroprogne caspia*	Caspian Tern	P	J	2	Outside of breeding, the Caspian Tern occurs mostly singly or in small groups. Occasional larger groups of 30 or more birds are seen, often at rich fishing areas or at nightly roost sites, where they may roost with other terns. The species may also aggregate into flocks on passage (migration)	Low
Laridae	*Sternula albifrons*	Little Tern	E1,P	C,J,K	9	Almost exclusively coastal, preferring sheltered environments; however may occur several kilometres from the sea in harbours, inlets and rivers (with occasional offshore islands or coral cay records). Nests in small, scattered colonies in low dunes or on sandy beaches just above high tide mark near estuary mouths or adjacent to coastal lakes and islands. The nest is a scrape in the sand, which may be lined with shell grit, seaweed or small pebbles.	Low
Laridae	*Thalasseus bergii*	Crested Tern	P	J	14	The greater crested tern occurs in tropical and warm temperate coastal parts of the Old World from South Africa around the Indian Ocean to the Pacific and Australia. The nests are located on low-lying sandy, rocky, or coral islands, sometimes amongst stunted shrubs, often without any shelter at all. When not breeding, the greater crested tern will roost or rest on open shores, less often on boats, pilings, harbour buildings and raised salt mounds in lagoons. It is rarely seen on tidal creeks or inland waters.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Cacatuidae	*Callocephalon fimbriatum*	Gang-gang Cockatoo	V,P,3	E	11	In spring and summer, generally found in tall mountain forests and woodlands, particularly in heavily timbered and mature wet sclerophyll forests. In autumn and winter, the species often moves to lower altitudes in drier more open eucalypt forests and woodlands, particularly box-gum and box-ironbark assemblages, or in dry forest in coastal areas and often found in urban areas. May also occur in sub-alpine Snow Gum (*Eucalyptus pauciflora*) woodland and occasionally in temperate rainforests. Favours old growth forest and woodland attributes for nesting and roosting. Nests are located in hollows that are 10 cm in diameter or larger and at least 9 m above the ground in eucalypts.	Low
Cacatuidae	*Calyptorhynchus lathami lathami*	South-eastern Glossy Black-Cockatoo	V,P,2	V	10	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 (*Casuarina cristata*) is also utilised and may be a critical food source for some populations. In the Riverina, birds are associated with hills and rocky rises supporting Drooping Sheoak, but also recorded in open woodlands dominated by Belah. Dependent on large hollow-bearing eucalypts for nest sites. A single egg is laid between March and May.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Psittacidae	*Glossopsitta pusilla*	Little Lorikeet	V,P		6	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
Psittacidae	*Lathamus discolor*	Swift Parrot	E1,P	CE	5	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

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Strigidae	*Ninox strenua*	Powerful Owl	V,P,3		23	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.	Low
Tytonidae	*Tyto novaehollandiae*	Masked Owl	V,P,3		5	Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides.	Low
Tytonidae	*Tyto tenebricosa*	Sooty Owl	V,P,3		8	Occurs in rainforest, including dry rainforest, subtropical and warm temperate rainforest, as well as moist eucalypt forests. Roosts by day in the hollow of a tall forest tree or in heavy vegetation; hunts by night for small ground mammals or tree-dwelling mammals such as the Common Ringtail Possum (*Pseudocheirus peregrinus*) or Sugar Glider (*Petaurus breviceps*). Nests in very large tree-hollows.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Meliphagidae	*Anthochaera phrygia*	Regent Honeyeater	E4A,P, 2	CE	2	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. Every few years non-breeding flocks are seen foraging in flowering coastal Swamp Mahogany and Spotted Gum forests, particularly on the central coast and occasionally on the upper north coast. Birds are occasionally seen on the south coast.	Low
Meliphagidae	*Epthianura albifrons*	White-fronted Chat	V,P		1	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
Neosittidae	*Daphoenositta chrysoptera*	Varied Sittella	V,P		3	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Artamidae	*Artamus cyanopterus cyanopterus*	Dusky Woodswallow	V,P		1	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. Depending on location and local climatic conditions (primarily temperature and rainfall), the dusky woodswallow can be resident year round or migratory. In NSW, after breeding, birds migrate to the north of the state and to southeastern Queensland, while Tasmanian birds migrate to southeastern NSW after breeding. Migrants generally depart between March and May, heading south to breed again in spring. There is some evidence of site fidelity for breeding. Although dusky woodswallows generally breed as solitary pairs or occasionally in small flocks, large flocks may form around abundant food sources in winter. Large flocks may also form before migration, which is often undertaken with other species.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Petroicidae	*Petroica boodang*	Scarlet Robin	V,P		3	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
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
Peramelidae	*Isoodon obesulus obesulus*	Southern Brown Bandicoot (eastern)	E1,P	E	5	Southern Brown Bandicoots are largely crepuscular (active mainly after dusk and/or before dawn). They are generally only found in heath or open forest with a heathy understorey on sandy or friable soils.	Low
Phascolarctidae	*Phascolarctos cinereus*	Koala	E1,P	E	1	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

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Burramyidae	*Cercartetus nanus*	Eastern Pygmy-possum	V,P		1	Found in a broad range of habitats from rainforest through sclerophyll (including Box-Ironbark) forest and woodland to heath, but in most areas woodlands and heath appear to be preferred, except in north-eastern NSW where they are most frequently encountered in rainforest. Feeds largely on nectar and pollen collected from banksias, eucalypts and bottlebrushes; an important pollinator of heathland plants such as banksias; soft fruits are eaten when flowers are unavailable.	Low
Pseudocheiridae	*Petauroides volans*	Southern Greater Glider	E1,P	E	14	Feeds exclusively on eucalypt leaves, buds, flowers and mistletoe. Shelter during the day in tree hollows and will use up to 18 hollows in their home range. Occupy a relatively small home range with an average size of 1 to 3 ha.	Low
Pteropodidae	*Pteropus poliocephalus*	Grey-headed Flying-fox	V,P	V	99	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.	Moderate (may utilise site for foraging)
Molossidae	*Micronomus norfolkensis*	Eastern Coastal Free-tailed Bat	V,P		1	Occur in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Vespertilionidae	*Chalinolobus dwyeri*	Large-eared Pied Bat	V,P	V	1	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		5	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		5	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.	Low
Vespertilionidae	*Phoniscus papuensis*	Golden-tipped Bat	V,P		2	Found in rainforest and adjacent wet and dry sclerophyll forest up to 1000m. Also recorded in tall open forest, Casuarina-dominated riparian forest and coastal Melaleuca forests. Bats will fly up to two kilometres from roosts to forage in rainforest and sclerophyll forest on mid and upper-slopes. Roost mainly in rainforest gullies on small first- and second-order streams in usually abandoned hanging Yellow-throated Scrubwren and Brown Gerygone nests modified with an access hole on the underside. Bats may also roost under thick moss on tree trunks, in tree hollows, dense foliage and epiphytes.	Low

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
Vespertilionidae	*Scoteanax rueppellii*	Greater Broad-nosed Bat	V,P		2	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 orianae oceanensis*	Large Bent-winged Bat	V,P		6	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
Myrtaceae	*Rhodamnia rubescens*	Scrub Turpentine	E4A	CE	10	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

Family	Scientific Name	Common Name	NSW status	Comm. status	Records	Description	Likelihood
	Syzygium paniculatum	Magenta Lilly Pilly	E1	V	4	The Magenta Lilly Pilly is a small to medium sized rainforest tree that grows to 8 m tall. The Magenta Lilly Pilly is found only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. On the south coast the Magenta Lilly Pilly occurs on grey soils over sandstone, restricted mainly to remnant stands of littoral (coastal) rainforest.	Moderate
Orchidaceae	*Genoplesium baueri*	Bauer's Midge Orchid	E1,P,2	E	1	The species has been recorded from locations between Ulladulla and Port Stephens. About half the records were made before 1960 with most of the older records being from Sydney suburbs including Asquith, Cowan, Gladesville, Longueville and Wahroonga. No collections have been made from those sites in recent years. Currently the species is known from just over 200 plants across 13 sites. The species has been recorded at locations now likely to be within the following conservation reserves: Berowra Valley Regional Park, Royal National Park and Lane Cove National Park. May occur in the Woronora, O'Hares, Metropolitan and Warragamba Catchments.	Low
Santalaceae	*Thesium australe*	Austral Toadflax	V	V	1	Confined to a relatively small area south-west of Sydney, from Mt Armour within Blue Mountains National Park south to the Wombeyan area. Known from four locations, three of which occur within Blue Mountains National Park.	Low

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