



# Flora and Fauna Assessment Report

## Shoalhaven Anglican School

Shoalhaven Anglican School – DDWO05306/23

16 December 2025



## Document Status

| Version                 | Doc type                     | Reviewed by             | Approved by      | Date issued |
|-------------------------|------------------------------|-------------------------|------------------|-------------|
| <b>School Name</b>      | Shoalhaven Anglican School   | <b>Consultancy Name</b> | Water Technology |             |
| <b>School ID Number</b> | 23115                        | <b>Report Status</b>    | Final            |             |
| <b>School Address</b>   | 17 Croobyar Road Milton 2538 | <b>Report Date</b>      | 16 December 2025 |             |
| <b>School Region</b>    | Shoalhaven City Council      | <b>Contract Number</b>  | DDWO05306-23     |             |

## Project Details

|                                          |                                           |
|------------------------------------------|-------------------------------------------|
| <b>Project Name</b>                      | Shoalhaven Anglican School                |
| <b>Client</b>                            | Shoalhaven Anglican School – DDWO05306/23 |
| <b>Client Project Manager</b>            | Mitch Easterby                            |
| <b>Water Technology Project Manager</b>  | Marion Huxley                             |
| <b>Water Technology Project Director</b> | Michael Aberton                           |
| <b>Authors</b>                           | Marion Huxley, Eliza Middleton            |
| <b>Document Number</b>                   | 26050048_R01v04.docx                      |



**Education**

## COPYRIGHT

Water Technology Pty Ltd has produced this document in accordance with instructions from Shoalhaven Anglican School – DDWO05306/23 for their use only. The concepts and information contained in this document are the copyright of Water Technology Pty Ltd. Use or copying of this document in whole or in part without written permission of Water Technology Pty Ltd constitutes an infringement of copyright.

Water Technology Pty Ltd does not warrant this document is definitive nor free from error and does not accept liability for any loss caused, or arising from, reliance upon the information provided herein.

Suite 3, Level 1, 20 Wentworth Street  
Parramatta NSW 2150  
Telephone (02) 9354 0300  
ACN 093 377 283  
ABN 60 093 377 283





## 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



## ACRONYMS AND DEFINITIONS

| Acronym             | Definition                                                           |
|---------------------|----------------------------------------------------------------------|
| <b>BC Act</b>       | <i>Biodiversity Conservation Act 2016</i>                            |
| <b>BV</b>           | Biodiversity Values                                                  |
| <b>EP&amp;A Act</b> | <i>Environmental Planning and Assessment Act 1979</i>                |
| <b>BAM</b>          | Biodiversity Assessment Method                                       |
| <b>BDAR</b>         | Biodiversity Development Assessment Report                           |
| <b>EPBC Act</b>     | <i>Environment Protection and Biodiversity Conservation Act 1999</i> |
| <b>FM Act</b>       | <i>Fisheries Management Act 1994</i>                                 |
| <b>LEP</b>          | Local Environment Plan                                               |
| <b>LGA</b>          | Local Government Area                                                |
| <b>MNES</b>         | Matter of National Environmental Significance                        |
| <b>PCT</b>          | Plant Community Type                                                 |
| <b>SEARS</b>        | Secretary's Environmental Assessment Requirements                    |
| <b>TEC</b>          | Threatened Ecological Community                                      |
| <b>WM Act</b>       | <i>Water Management Act 2000</i>                                     |



## EXECUTIVE SUMMARY

This Flora and Fauna Assessment Report has been prepared by Water Technology for the proposed expansion of an education facility at 17 Croobyar Road, Milton NSW 2538.

It includes administration, subject land and project details as required in Table 2-1. In line with section 7.9 of the *Biodiversity Conservation Act 2016* and associated regulations it explains whether relevant biodiversity values are present or likely to be impacted and provides evidence that any impacts on native vegetation or threatened biodiversity values are negligible, thereby demonstrating that a Biodiversity Development Assessment Report (BDAR) is not required.

*Table 2-1 - Legal Description of the Subject land.*

| Category                 | Detail                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Proponent                | Department of Education Shoalhaven Anglican School, c/o Mitch Easterby (Project Manager)                                                                                                                                                                                                                                                                                                                                                            |
| Preparer                 | Marion Huxley, B.C. Science, 15 years of environmental assessment experience                                                                                                                                                                                                                                                                                                                                                                        |
| Approver                 | Dr Michael Aberton, BAM-Accredited Assessor (BAAS 18181)                                                                                                                                                                                                                                                                                                                                                                                            |
| Street Address           | 17 Croobyar Road, Milton NSW 2538                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Lot / DP                 | Lot 200 DP 1192140                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| LGA                      | Shoalhaven City Council                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Subject land Description | The 55,437 m <sup>2</sup> subject land comprises mainly planted shrubs, trees, and lawn with scattered buildings proposed for refurbishment, demolition, or replacement. The new development includes new courts, carpark, landscape and access upgrades.                                                                                                                                                                                           |
| Location Maps            | Figure 3-2                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Project Description      | Redevelopment of Shoalhaven Anglican School, including refurbishment and improvement of existing buildings (gymnasium, kitchen, library, and others), removal of some lower-significance planted trees, construction of new playing courts, new carpark and access road, playing field upgrades, and landscaping works. Works are confined to previously cleared areas, with no impacts to remnant vegetation or threatened ecological communities. |
| Proposed Plans           | Figure 3-1                                                                                                                                                                                                                                                                                                                                                                                                                                          |

### 1.1 Key findings:

- No areas mapped on the Biodiversity Values Map are present within the subject land.
- Three Plant Community Types (Illawarra Complex Dry Rainforest, South Coast Low Hills Red Gum Grassy Forest and Shoalhaven Foothills Bloodwood Heathy Forest) occur along riparian boundaries, but these areas are not to be impacted.
- No threatened fauna species are considered highly likely to occur within the subject land.
- Development within already-cleared areas and existing buildings avoids significant biodiversity impacts.

### 1.2 Mitigation Measures recommended:

- Compensatory replanting
- Tree protection zones



- Fauna protection (pre-clearance checks)
- Weed management
- Erosion and sediment control

### 1.3 Conclusion:

The subject land is suitable for redevelopment, and a Flora and Fauna Assessment Report is appropriate.



## CONTENTS

|                                 |                                                |           |
|---------------------------------|------------------------------------------------|-----------|
| <b>ACRONYMS AND DEFINITIONS</b> |                                                | <b>3</b>  |
| 1.1                             | Key findings:                                  | 4         |
| 1.2                             | Mitigation Measures recommended:               | 4         |
| 1.3                             | Conclusion:                                    | 5         |
| <b>2</b>                        | <b>INTRODUCTION</b>                            | <b>8</b>  |
| <b>3</b>                        | <b>SUBJECT LAND DESCRIPTION</b>                | <b>9</b>  |
| <b>4</b>                        | <b>RELEVANT LEGISLATION</b>                    | <b>12</b> |
| <b>5</b>                        | <b>FLORA AND FAUNA ASSESSMENT REQUIREMENTS</b> | <b>14</b> |
| <b>6</b>                        | <b>EXISTING BIODIVERSITY</b>                   | <b>15</b> |
| 6.1                             | Plant Community Types                          | 15        |
| 6.2                             | Trees                                          | 15        |
| 6.3                             | Fauna                                          | 17        |
| 6.4                             | Historical - Exempt Land                       | 17        |
| 6.5                             | Other desktop findings                         | 17        |
| <b>7</b>                        | <b>FLORA AND FAUNA ASSESSMENT</b>              | <b>20</b> |
| 7.1                             | Vegetation                                     | 20        |
| 7.2                             | Plant Community Types (PCTs)                   | 20        |
| 7.3                             | Fauna and Habitat Assessment                   | 21        |
| 7.4                             | Survey limitations and compensatory measures:  | 21        |
| <b>8</b>                        | <b>MITIGATION AND MANAGEMENT MEASURES</b>      | <b>22</b> |
| <b>9</b>                        | <b>CONCLUSION</b>                              | <b>23</b> |
| <b>10</b>                       | <b>REFERENCES</b>                              | <b>24</b> |

## APPENDICES

Appendix A Likelihood of Occurrence

Appendix B Flora and Fauna Species

## LIST OF FIGURES

|            |                                    |    |
|------------|------------------------------------|----|
| Figure 6-2 | Historical Map c/o Ecological 2021 | 19 |
|------------|------------------------------------|----|

## LIST OF TABLES

|           |              |    |
|-----------|--------------|----|
| Table B-1 | Native Flora | 33 |
| Table B-3 | Fauna        | 34 |



|           |                                   |
|-----------|-----------------------------------|
| Table A-1 | Likelihood of Occurrence          |
| Table B-2 | Exotic: Non local Flora and Weeds |



## 2 INTRODUCTION

This Flora and Fauna Assessment (FFA) Report has been prepared for School Infrastructure NSW (SINSW) for the construction of a new school, the Shoalhaven Anglican School in Milton, NSW. Developments are regulated under the Environmental Planning and Assessment Act 1979, which requires proponents to submit a Development Application (DA) to the relevant council for development consent or infrastructure approval, supported by a Statement of Environmental Effects. These applications are also subject to biodiversity assessment requirements under the Biodiversity Conservation Act 2016 (BC Act). This FFA determines potential impacts of the proposed development on identified species and ecological communities and fulfils the Test of Significance as set out in section 7.3 of the New South Wales BC Act.



### 3 SUBJECT LAND DESCRIPTION

The proposed development for the Shoalhaven Anglican School is located at 17 Croobyar Road, Milton NSW 2538 and shown in Figure 3-1. Most of the vegetation is planted shrubs and trees and lawn areas. The subject land is scattered with buildings proposed for demolition or renovation. A new basketball court will be built in the north west area and a new carpark in the east side.

The “subject land” is defined by the Biodiversity Assessment Method (BAM) as the area to which a BDAR or Flora and Fauna Assessment Report applies and includes all areas that will be directly and indirectly impacted by a proposed development. For the purposes of this Flora and Fauna Assessment Report the subject land is bound by the red polygon in Figure 3-2. This 55,437 m<sup>2</sup> area includes the proposed development footprint as well as the Asset Protection Zone (APZ). The required APZ for the proposed development footprint is detailed in the Budawang School Bush Fire Assessment report by ELA (2020). The vegetation cover currently within the APZ complies with the APZ requirements (Table 12, ELA 2020) so no vegetation removal is required for establishment of the APZ.

The main development includes:

- Building 1: Refurbish and improve gymnasium and amenities
- Building 2: Refurbish and improve kitchen
- Building 3: Refurbish existing library as admin / staff and common area
- Building 4: Refurbishment of existing buildings
- Building 5: General landscape maintenance including canopy reduction
- Building 6: Playing field improvements including field, running track and athletics areas
- Building 7: New playing courts
- Building 9: Remove existing buildings; add new carpark with bus
- Building 11: Improvements to access road (gravel)
- Building 13: Re-landscaped areas following building removal



Figure 3-1 Approved Development

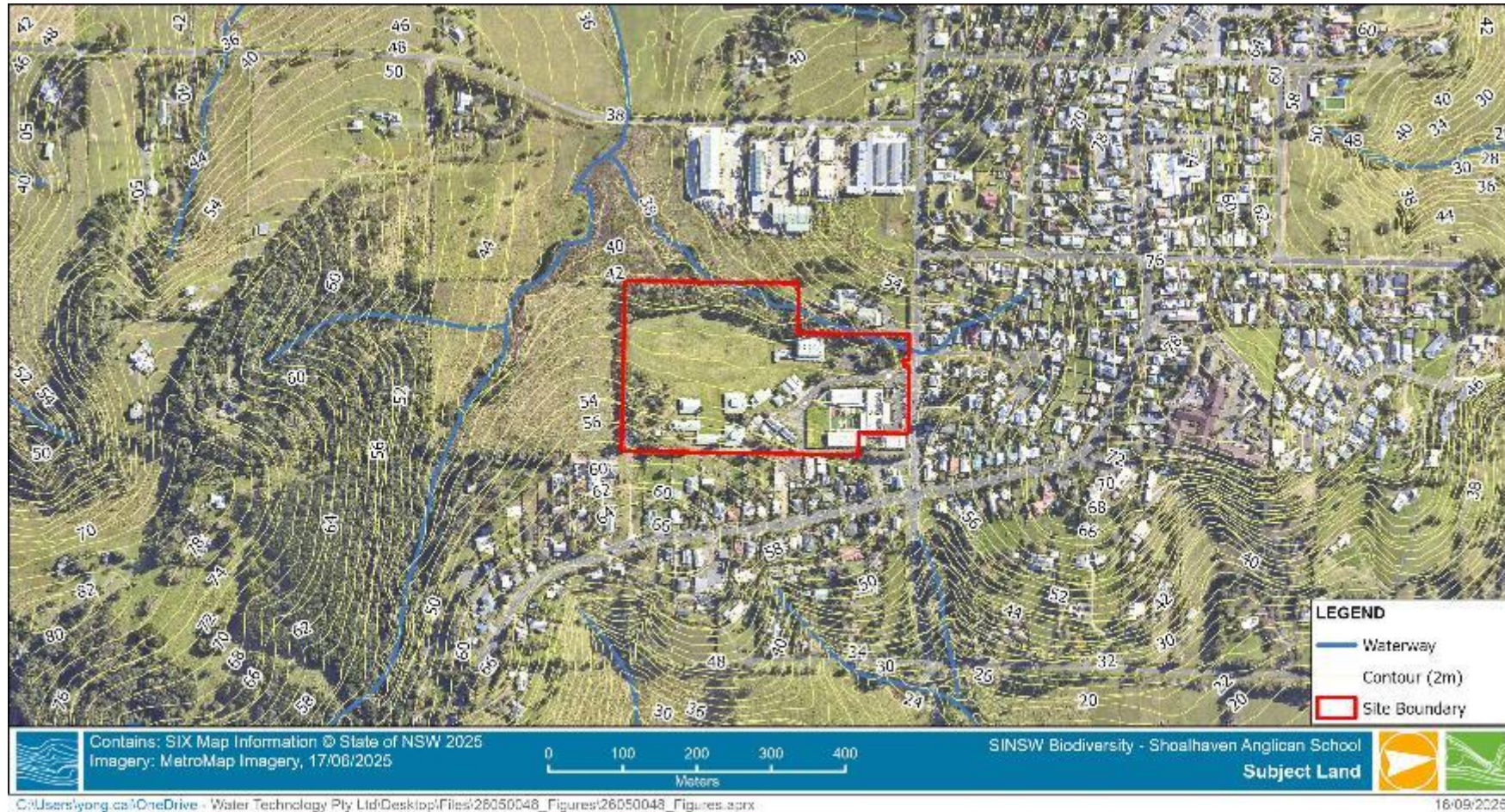


Figure 3-2 Subject Land



## 4 RELEVANT LEGISLATION

### ***Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)***

No Matter of National Environmental Significance (MNES) was identified on the subject land. This report, together with earlier assessments (Water Technology 2023; Ecological 2021), has evaluated the potential impacts on MNES and concludes that the proposed development is unlikely to result in a significant impact on any MNES.

### ***Environmental Planning and Assessment Act 1979 (EP&A Act)***

Planning and development within NSW is regulated by the *Environmental Planning & Assessment Act 1979* (EP&A Act). Under this Act, projects can be declared as complying development, meaning a certificate may be issued stating that the proposed development will comply with all applicable development standards.

Complying development is a combined planning and construction approvals pathway. A proposed development may receive a Complying Development Certificate (CDC) when it has been assessed as meeting all applicable development standards and other requirements prescribed by regulations. CDC projects are assessed under Division 4.5 of the EP&A Act by the council or a registered certifier.

### ***Biodiversity Conservation Act 2016 (BC Act)***

The proposed development will assess impacts to threatened entities through this Flora and Fauna Assessment Report.

### ***Fisheries Management Act 1994 (FM Act)***

The development does not involve impacts to Key Fish Habitat, does not involve harm to marine vegetation, dredging, reclamation or obstruction of fish passage. A permit or consultation under the FM Act is not required.

### ***Water Management Act 2000 (WM Act)***

The project does involve works on waterfront land as there is a first order stream located within 40m of the development. However, a Controlled Activity Approval under s91 of the WM Act is not required. The NSW Department of Education is a public authority, which both qualifies the department for certain exemptions including no Controlled Activity Approval needed for waterfront works. As the current project at the subject land is a development on an existing campus (within the limits set by the Education State Environmental Planning Policy), it can proceed.

### ***Transport and Infrastructure State Environmental Planning Policy SEPP (2021)***

Under Chapter 3 (Education and Child Care Facilities) of the State Environmental Planning Policy (Transport & Infrastructure) 2021 ("SEPP"), the NSW Department of Education / School Infrastructure NSW is lodging a Development Application (DA) for this school redevelopment.

The justification for this pathway is based on a preliminary biodiversity assessment showing that the entire project footprint falls largely within previously cleared areas, that no significant native vegetation or threatened species habitat will be disturbed, and that any biodiversity impacts are expected to be negligible.

### ***State Environmental Planning Policy (Koala Habitat Protection) 2020 (Koala SEPP)***

The proposed development is located within a Local Government Area to which the Koala SEPP applies. The proposed development does not impact on core koala habitat as defined by the Koala SEPP.



***Shoalhaven Local Environment Plan (LEP) 2014***

The subject land is zoned RU1 Primary Production under the Shoalhaven LEP (2014). In this zone development of educational establishments are permitted with consent.



## 5 FLORA AND FAUNA ASSESSMENT REQUIREMENTS

Under the *Biodiversity Conservation Act 2016* (BC Act) proponents of development may be required to prepare a BDAR. However, in circumstances where the proposed development is unlikely to have significant biodiversity impacts, a proponent may conduct a Flora and Fauna Assessment Report.



## 6 EXISTING BIODIVERSITY

Desktop studies, including the Due Diligence assessment (Water Technology 2023) and arborist reports (Penkow & Varley 2023 and Beisler & Varley 2025), and regional mapping tools, were used to build the biodiversity baseline for the subject land. Water Technology has reviewed background information and data and undertake searches of relevant online databases and mapping of the subject land. Search tools used included:

- NSW Planning Portal (NSW DPE)
- NSW Biodiversity Values Map (NSW DPE)
- NSW State Vegetation Type Map (NSW DPE)
- BioNet Vegetation Classification (NSW DEECCW)
- BioNet Atlas of NSW Wildlife (NSW DEECCW)
- EPBC Protected Matters Search Tool (DAWE)
- Key Fish Habitat Mapping (NSW DPI)
- NSW eSpade (NSW DPIE)
- Aerial mapping (historical) and photography (Metromaps; NSW Spatial Services)
- NSW Threatened Species Profile Database (DPIE 2020b)

### 6.1 Plant Community Types

The NSW State Vegetation Type showed three Plant Community Types (PCTs) recorded on or near the subject land (Figure 6-1):

- PCT 3077 – Illawarra Complex Dry Rainforest (linked with threatened ecological communities)
- PCT 4052 – South Coast Low Hills Red Gum Grassy Forest (linked with threatened ecological communities)
- PCT 3588 – Shoalhaven Foothills Bloodwood Heathy Forest

Remnant vegetation matching these PCTs was confined to a riparian corridor along the western and southern subject land boundaries, based on aerial imagery and desktop review. These areas lie outside the redevelopment footprint, which is in previously cleared or developed parts of the campus to the north and east. Accordingly, these PCTs were not subject to field-based biodiversity or vegetation surveys for this report, as they will not be directly impacted by the works.

### 6.2 Trees

According to the arborist reports (Varley 2023 & 2025) documented species, location, dimensions, health, Safe Useful Life Expectancy (SULE), and Significance of a Tree Assessment Rating System (STARS) for each tree. The reports also assessed potential impacts of the proposed school redevelopment on each tree and provided recommendations for removal, retention, or pruning. Tree Protection Zones (TPZs) and Structural Root Zones (SRZs) were defined for retained trees, including protection specifications. Some trees outside the redevelopment zone were not reviewed due to subject land access constraints.



Figure 6-1 PCTs and Proposed Vegetation Removal



Tree ratings, taken from key findings from the arborist reports (Penkow & Varley 2023; Beisler & Varley 2025), together with adjustments for the subject land, identified the following tree classifications (Table 6-1):

Table 6-1 Tree Ratings

| Number of Trees | Classification                                                                           |
|-----------------|------------------------------------------------------------------------------------------|
| 14              | Low significance (removal or retention at council discretion)                            |
| 19              | Medium significance (could be removed or retained pending the discretion of the council) |
| 1               | High significance (recommended for retention)                                            |

Refer to Figure 6-2 for location of trees and their ratings.

### 6.3 Fauna

A Likelihood of Occurrence (Appendix A) has been compiled using information obtained from the NSW BioNet database, NSW Threatened Species Profile Database. The Likelihood of Occurrence focuses on threatened species that may occur in the area. This informs which species have a high probability of occurring within the subject land and guides whether any targeted species surveys are required.

According to the Due Diligence assessment (Water Technology 2023) the desktop assessment noted a recorded sighting of Grey-headed flying-fox near the subject land, suggesting occasional use of nearby habitat by the species. However, no flying-fox roosts nor camps were identified within the redevelopment footprint, and no direct impacts on roosting habitat are expected. Available habitat for flying-foxes on subject land is limited.

### 6.4 Historical - Exempt Land

The proposed redevelopment occurs entirely within previously cleared and developed areas of the Shoalhaven Anglican School campus. Historical aerial photography confirms that the subject land was largely treeless paddock until the mid-1990s, with landscaping and planted vegetation established around 2004 Figure 6-3.

No remnant native vegetation or areas mapped on the Biodiversity Values Map occurred within the development footprint, with mapped PCTs confined to riparian boundaries outside the subject land. On this basis, the development footprint meets the definition of Category 1 – Exempt Land under the *Biodiversity Conservation Regulation 2017*. Accordingly, only prescribed impacts are required to be considered for the purposes of this Flora and Fauna Assessment.

### 6.5 Other desktop findings

- No Biodiversity Values Map zones were mapped within the subject land.
- No Key Fish Habitat was mapped within the subject land.
- No threatened fauna species were considered likely to occur on the subject land.



Figure 6-2 Tree Significance

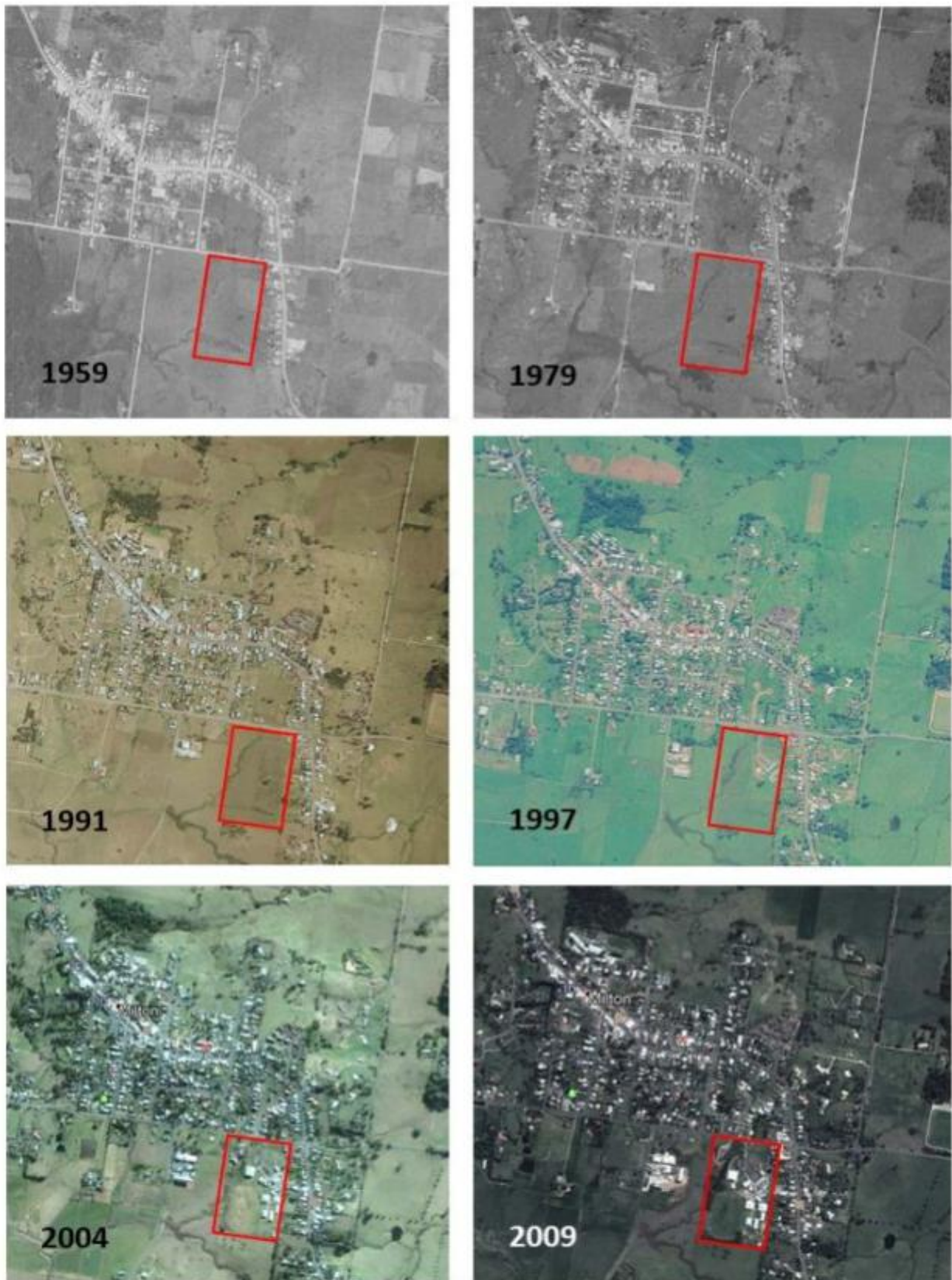


Figure 6-3 Historical Map c/o Ecological 2021

## 7 FLORA AND FAUNA ASSESSMENT

A field survey was undertaken by ecologist Marion Huxley on 10 September 2025 under wet and windy conditions, with 144.8 mm of rain recorded in 24 hours and maximum wind gusts reaching 50 km/h. Observations involved traversing the subject land and recording vegetation and habitat features including:

- Flora identifications
- Dominant and common plant species
- Habitat features (e.g. tree hollows, logs, ground litter, dreys)

### 7.1 Vegetation

Vegetation within the subject land comprised a mixture of planted garden beds, ornamental plantings, and maintained lawn areas. Although many of the planted trees were Australian native species, most were not endemic to the Milton region. Some plantings occurred in raised planter boxes or occupied former vegetable garden plots. Numerous shrubs planted on the subject land were exotic ornamental species.

On the western section of the subject land the mapped PCTs were identified, refer to Figure 6-2. One threatened species, *Syzygium paniculatum* (Magenta Lilly Pilly) was recorded in the western PCT 3077 area (Plate 7-1 and Plate 7-2). This PCT area nor the Magenta Lilly Pilly will not be impacted by the development.



Plate 7-1 Magenta Lilly Pilly Fruit



Plate 7-2 Magenta Lilly Pilly

It was noted that part of the mapped PCTs were infiltrated by weeds. All plant species observed are listed in Appendix B.

### 7.2 Plant Community Types (PCTs)

The NSW State Vegetation Type Map is a regional-scale tool that maps PCTs across NSW, showing the current distribution of each PCT, Vegetation Class, and Vegetation Formation across all land tenures. Three PCTs were mapped within the subject land including:

- PCT 3077 - Illawarra Complex Dry Rainforest



- PCT 4052 - South Coast Low Hills Red Gum Grassy Forest
- PCT 3588 - Shoalhaven Foothills Bloodwood Heathy Forest

No PCTs were within the development footprint and will not be impacted by the development so they were not assessed under a BAM.

### 7.3 Fauna and Habitat Assessment

Two birds were observed foraging in the PCTs in the western area of the subject land. One bird was identified as an *Anthochaera carunculata* (Red Wattlebird). No other fauna was observed largely due to inclement weather. However, scats of *Macropus giganteus* (Grey Kangaroo) and bird possibly *Columba sp.* (Pigeon) scat were observed (Plate 7-3 and Plate 7-4). Trees, vegetation and inside buildings were assessed for scratches, hollows, nests and dreys. The survey also included a targeted search for potential microbat habitat. No distinctive habitat evidence was found.



Plate 7-3 Grey Kangaroo Scat



Plate 7-4 Bird Scat

### 7.4 Survey limitations and compensatory measures:

Wet and windy weather conditions on the survey date may have reduced the detectability of certain fauna species. The single day field survey conducted on 10 September 2025 was supplemented by previous ecological assessments undertaken for the site (Water Technology 2023; Ecological 2021), providing temporal context and baseline data for comparative analysis.



## 8 MITIGATION AND MANAGEMENT MEASURES

To further reduce residual risks, the project incorporates mitigation measures including compensatory replanting, protection of retained trees, pre-clearance fauna checks, weed management, and erosion and sediment control including:

- **Voluntary measures:** compensatory replanting with local native species, revegetation of disturbed areas, and weed management to enhance ecological values.
- **Impact minimisation:** fencing of sensitive areas, adherence to construction exclusion zones, and staged works to avoid or minimise impacts on nearby vegetation and biodiversity assets.
- **Biodiversity management:** protection of retained trees through Tree Protection Zones (TPZs), pre-clearance fauna checks, and monitoring of biodiversity assets adjacent to works.
- **Environmental mitigation:** erosion and sediment control, stormwater management, and landscaping to stabilise disturbed soils.



## 9 CONCLUSION

The biodiversity assessment undertaken for the proposed redevelopment of Shoalhaven Anglican School at 17 Croobyar Road, Milton, has considered all relevant requirements of the Biodiversity Conservation Act 2016, and associated NSW Government guidelines.

The assessment confirmed that:

- No land within the subject land is mapped on the Biodiversity Values Map.
- While three Plant Community Types (PCT 3077 – Illawarra Complex Dry Rainforest, PCT 4052 – South Coast Low Hills Red Gum Grassy Forest, and PCT 3588 – Shoalhaven Foothills Bloodwood Heathy Forest) occur along riparian boundaries, these areas are outside the development footprint and will not be impacted.
- Native vegetation and threatened ecological communities are avoided, with the works confined to previously cleared areas and existing built form.
- *Syzygium paniculatum* (Magenta Lilly Pilly) was observed in the western PCT area but will not be impacted.
- Arboricultural assessments identified tree removals limited to planted or lower and medium significance trees. Tree Protection Zones (TPZs) and Structural Root Zones (SRZs) have been defined and will be implemented for retained trees.
- No impacts to: MNES, Key Fish Habitat, or riparian corridors will occur. Sediment, erosion, and stormwater controls will ensure downstream biodiversity values are protected.
- The proposed works avoid fragmentation of habitat and maintain ecological connectivity within the landscape.

Based on the findings of this assessment, the proposed redevelopment is not likely to have a significant impact on biodiversity values as defined under the BC Act.

The proposed works are consistent with relevant legislative and policy frameworks and can proceed subject to the recommended mitigation measures.



## 10 REFERENCES

Beisler G & Varley W 2025, Preliminary arboricultural assessment – Ex Shoalhaven Anglican School, Ref. D5301.1, Allied Tree Consultancy, Wollongong.

Eco Logical Australia 2020, Bush fire assessment – Budawang School, prepared for SINSW, Sydney.

Eco Logical Australia Pty Ltd. 2021, Biodiversity Development Assessment Report – Budawang School, Prepared for School Infrastructure NSW.

Penkow & Varley 2023, Arboricultural assessment, Allied Tree Consultancy, Wollongong.

Water Technology 2023, Due diligence assessment – Shoalhaven Anglican School, Sydney.



## APPENDIX A LIKELIHOOD OF OCCURRENCE





**Table A-1 Likelihood of Occurrence**

| Code     | Jurisdiction / Category             | Meaning                                                                                              |
|----------|-------------------------------------|------------------------------------------------------------------------------------------------------|
| E1       | NSW (BC Act 2016)                   | Endangered (Schedule 1, Part 1)                                                                      |
| E4A      | NSW (BC Act 2016)                   | Critically Endangered (Schedule 1, Part 1)                                                           |
| V        | NSW (BC Act 2016)                   | Vulnerable (Schedule 1, Part 2)                                                                      |
| P        | NSW                                 | Protected fauna/flora (all native species unless exempt)                                             |
| 2 / 3    | NSW (Sensitive Species Data Policy) | Locations denatured for sensitive species (rounded coordinates)                                      |
| CE       | Commonwealth (EPBC Act 1999)        | Critically Endangered                                                                                |
| E        | Commonwealth (EPBC Act 1999)        | Endangered                                                                                           |
| V        | Commonwealth (EPBC Act 1999)        | Vulnerable                                                                                           |
| C        | International (CAMBA)               | China–Australia Migratory Bird Agreement (listed migratory species)                                  |
| J        | International (JAMBA)               | Japan–Australia Migratory Bird Agreement (listed migratory species)                                  |
| K        | International (ROKAMBA)             | Republic of Korea–Australia Migratory Bird Agreement (listed migratory species)                      |
| Low      | Likelihood of Occurrence            | Species has been recorded regionally but habitat is unsuitable/marginal on site – unlikely to occur. |
| Moderate | Likelihood of Occurrence            | Suitable habitat features present; species may use site but not confirmed locally.                   |
| High     | Likelihood of Occurrence            | High-quality habitat present and/or multiple recent local records; species likely to occur.          |

| Family          | Scientific Name                 | Common Name                | NSW status | Comm. status | Records | Description                                                                                 | Likelihood |
|-----------------|---------------------------------|----------------------------|------------|--------------|---------|---------------------------------------------------------------------------------------------|------------|
| Myobatrachidae  | <i>Mixophyes balbus</i>         | Stuttering Frog            | E1,P,2     | V            | 1       | Frog of forests/woodlands and streams; breeds after heavy rain in suitable aquatic habitat. | Low        |
| Limnodynastidae | <i>Heleioporus australiacus</i> | Giant Burrowing Frog       | V,P        | V            | 4       | Frog of forests/woodlands and streams; breeds after heavy rain in suitable aquatic habitat. | Low        |
| Hylidae         | <i>Litoria aurea</i>            | Green and Golden Bell Frog | E1,P       | V            | 5       | Frog of forests/woodlands and streams; breeds after heavy rain in suitable aquatic habitat. | Low        |



| Family         | Scientific Name               | Common Name               | NSW status | Comm. status | Records | Description                                                                                             | Likelihood |
|----------------|-------------------------------|---------------------------|------------|--------------|---------|---------------------------------------------------------------------------------------------------------|------------|
| Cheloniidae    | <i>Caretta caretta</i>        | Loggerhead Turtle         | E1,P       | E            | 1       | Marine turtle of tropical–subtropical waters; forages at sea and nests on sandy beaches.                | Low        |
| Cheloniidae    | <i>Chelonia mydas</i>         | Green Turtle              | V,P        | V            | 6       | Marine turtle of tropical–subtropical waters; forages at sea and nests on sandy beaches.                | Low        |
| Cheloniidae    | <i>Eretmochelys imbricata</i> | Hawksbill Turtle          | P          | V            | 2       | Marine turtle of tropical–subtropical waters; forages at sea and nests on sandy beaches.                | Low        |
| Columbidae     | <i>Ptilinopus superbus</i>    | Superb Fruit-Dove         | V,P        |              | 3       | Threatened species recorded regionally; habitat use varies by life stage and season.                    | Low        |
| Apodidae       | <i>Hirundapus caudacutus</i>  | White-throated Needletail | V,P        | V,C,J,K      | 26      | Threatened species recorded regionally; habitat use varies by life stage and season.                    | Low        |
| Diomedidae     | <i>Thalassarche cauta</i>     | Shy Albatross             | E1,P       | E            | 1       | Large pelagic seabird; spends most time at sea, occasionally over continental shelf waters.             | Low        |
| Procellariidae | <i>Ardenna grisea</i>         | Sooty Shearwater          | P          | J            | 1       | Pelagic seabird of offshore waters; breeds colonially on islands and headlands in burrows.              | Low        |
| Procellariidae | <i>Ardenna pacifica</i>       | Wedge-tailed Shearwater   | P          | J            | 17      | Pelagic seabird of offshore waters; breeds colonially on islands and headlands in burrows.              | Low        |
| Procellariidae | <i>Ardenna tenuirostris</i>   | Short-tailed Shearwater   | P          | C,J,K        | 28      | Pelagic seabird of offshore waters; breeds colonially on islands and headlands in burrows.              | Low        |
| Accipitridae   | <i>Haliaeetus leucogaster</i> | White-bellied Sea-Eagle   | V,P        |              | 29      | Large raptor associated with coasts, estuaries and large inland waters; nests in tall trees near water. | Low        |
| Accipitridae   | <i>Lophoictinia isura</i>     | Square-tailed Kite        | V,P,3      |              | 11      | Raptor of woodlands and forests; hunts along wooded watercourses and forest edges.                      | Low        |
| Accipitridae   | <i>Pandion cristatus</i>      | Eastern Osprey            | V,P,3      |              | 6       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                             | Low        |
| Burhinidae     | <i>Esacus magnirostris</i>    | Beach Stone-curlew        | E4A,P      |              | 1       | Shorebird using intertidal mudflats and sandflats; migratory non-breeding visitor.                      | Low        |
| Haematopodidae | <i>Haematopus fuliginosus</i> | Sooty Oystercatcher       | V,P        |              | 13      | Coastal oystercatcher of rocky shores and open beaches; forages on intertidal substrates.               | Low        |



| Family         | Scientific Name                        | Common Name                         | NSW status | Comm. status | Records | Description                                                                                | Likelihood |
|----------------|----------------------------------------|-------------------------------------|------------|--------------|---------|--------------------------------------------------------------------------------------------|------------|
| Haematopodidae | <i>Haematopus longirostris</i>         | Pied Oystercatcher                  | E1,P       |              | 24      | Coastal oystercatcher of rocky shores and open beaches; forages on intertidal substrates.  | Low        |
| Charadriidae   | <i>Pluvialis squatarola</i>            | Grey Plover                         | V,P        | V,C,J,K      | 2       | Coastal plover of sandy beaches and estuaries; nests above the high-tide mark.             | Low        |
| Charadriidae   | <i>Thinornis cucullatus cucullatus</i> | Eastern Hooded Dotterel             | E4A        | V            | 36      | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                | Low        |
| Scolopacidae   | <i>Calidris melanotos</i>              | Pectoral Sandpiper                  | P          | J,K          | 1       | Shorebird using intertidal mudflats and sandflats; migratory non-breeding visitor.         | Low        |
| Scolopacidae   | <i>Numenius madagascariensis</i>       | Eastern Curlew                      | E4A,P      | CE,C,J,K     | 2       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                | Low        |
| Scolopacidae   | <i>Numenius phaeopus</i>               | Whimbrel                            | P          | C,J,K        | 1       | Shorebird using intertidal mudflats and sandflats; migratory non-breeding visitor.         | Low        |
| Stercorariidae | <i>Stercorarius parasiticus</i>        | Arctic Jaeger                       | P          | C,J,K        | 1       | Pelagic predatory seabird; breeds in polar regions and migrates at sea.                    | Low        |
| Laridae        | <i>Hydroprogne caspia</i>              | Caspian Tern                        | P          | J            | 2       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                | Low        |
| Laridae        | <i>Sternula albifrons</i>              | Little Tern                         | E1,P       | C,J,K        | 7       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                | Low        |
| Laridae        | <i>Thalasseus bergii</i>               | Crested Tern                        | P          | J            | 15      | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                | Low        |
| Cacatuidae     | <i>Callocephalon fimbriatum</i>        | Gang-gang Cockatoo                  | E1,P,3     | E            | 16      | Hollow-dependent parrot/cockatoo of eucalypt forests and woodlands; feeds on seeds/nectar. | Low        |
| Cacatuidae     | <i>Calyptorhynchus lathami lathami</i> | South-eastern Glossy Black-Cockatoo | V,P,2      | V            | 65      | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                | Low        |
| Psittacidae    | <i>Lathamus discolor</i>               | Swift Parrot                        | E1,P       | CE           | 2       | Hollow-dependent parrot/cockatoo of eucalypt forests and woodlands; feeds on seeds/nectar. | Low        |
| Psittacidae    | <i>Parvipsitta pusilla</i>             | Little Lorikeet                     | V,P        |              | 5       | Hollow-dependent parrot/cockatoo of eucalypt forests and woodlands; feeds on seeds/nectar. | Low        |



| Family          | Scientific Name                        | Common Name                        | NSW status | Comm. status | Records | Description                                                                                 | Likelihood |
|-----------------|----------------------------------------|------------------------------------|------------|--------------|---------|---------------------------------------------------------------------------------------------|------------|
| Psittacidae     | <i>Pezoporus wallicus wallicus</i>     | Eastern Ground Parrot              | V,P,3      |              | 1       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                 | Low        |
| Strigidae       | <i>Ninox strenua</i>                   | Powerful Owl                       | V,P,3      |              | 34      | Forest owl; roosts in dense vegetation or hollows; hunts small mammals.                     | Low        |
| Tytonidae       | <i>Tyto novaehollandiae</i>            | Masked Owl                         | V,P,3      |              | 4       | Forest owl; roosts in dense vegetation or hollows; hunts small mammals.                     | Low        |
| Tytonidae       | <i>Tyto tenebricosa</i>                | Sooty Owl                          | V,P,3      |              | 7       | Forest owl; roosts in dense vegetation or hollows; hunts small mammals.                     | Low        |
| Meliphagidae    | <i>Anthochaera phrygia</i>             | Regent Honeyeater                  | E4A,P,2    | CE           | 3       | Honeyeater of eucalypt forests and woodlands; feeds on nectar, lerp and insects.            | Low        |
| Meliphagidae    | <i>Epthianura albifrons</i>            | White-fronted Chat                 | V,P        |              | 1       | Honeyeater of eucalypt forests and woodlands; feeds on nectar, lerp and insects.            | Low        |
| Neosittidae     | <i>Daphoenositta chrysoptera</i>       | Varied Sittella                    | V,P        |              | 2       | Canopy-foraging passerine of eucalypt forests and woodlands.                                | Low        |
| Artamidae       | <i>Artamus cyanopterus cyanopterus</i> | Dusky Woodswallow                  | V,P        |              | 2       | Open-forest and woodland insectivore; forms flocks outside breeding.                        | Low        |
| Petroicidae     | <i>Petroica boodang</i>                | Scarlet Robin                      | V,P        |              | 2       | Understorey insectivore of dry eucalypt forests and grassy woodlands.                       | Low        |
| Dasyuridae      | <i>Dasyurus maculatus</i>              | Spotted-tailed Quoll               | V,P        | E            | 3       | Spotted-tailed quoll; uses forests and rainforests; dens in logs, caves and rocky outcrops. | Low        |
| Peramelidae     | <i>Isoodon obesulus obesulus</i>       | Southern Brown Bandicoot (eastern) | E1,P       | E            | 6       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                 | Low        |
| Phascolarctidae | <i>Phascolarctos cinereus</i>          | Koala                              | E1,P       | E            | 2       | Arboreal folivore of eucalypt forests and woodlands; feeds on select eucalypt species.      | Low        |
| Pseudocheiridae | <i>Petauroides volans</i>              | Southern Greater Glider            | E1,P       | E            | 52      | Nocturnal glider using tree hollows in eucalypt forests; feeds on eucalypt foliage.         | Low        |
| Pteropodidae    | <i>Pteropus poliocephalus</i>          | Grey-headed Flying-fox             | V,P        | V            | 112     | Large flying-fox roosting in camps near water; forages widely on flowering/fruited trees.   | Moderate   |



| Family           | Scientific Name                       | Common Name                     | NSW status | Comm. status | Records | Description                                                                                         | Likelihood                  |
|------------------|---------------------------------------|---------------------------------|------------|--------------|---------|-----------------------------------------------------------------------------------------------------|-----------------------------|
| Emballonuridae   | <i>Saccolaimus flaviventris</i>       | Yellow-bellied Sheath-tail-bat  | V,P        |              | 1       | Insectivorous bat roosting in tree hollows/buildings; forages aerially over forests and open areas. | Low                         |
| Molossidae       | <i>Micronomus norfolkensis</i>        | Eastern Coastal Free-tailed Bat | V,P        |              | 1       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                         | Low                         |
| Vespertilionidae | <i>Chalinolobus dwyeri</i>            | Large-eared Pied Bat            | E1,P       | E            | 31      | Insectivorous bat/forest owl using forests and woodlands; roosts in hollows, caves or buildings.    | Low                         |
| Vespertilionidae | <i>Falsistrellus tasmaniensis</i>     | Eastern False Pipistrelle       | V,P        |              | 5       | Coastal seabird; roosts and forages along beaches, sandflats and estuaries.                         | Low                         |
| Vespertilionidae | <i>Myotis macropus</i>                | Southern Myotis                 | V,P        |              | 20      | Fishing bat associated with water; roosts near water in bridges, caves and tree hollows.            | Low                         |
| Vespertilionidae | <i>Phoniscus papuensis</i>            | Golden-tipped Bat               | V,P        |              | 2       | Insectivorous bat/forest owl using forests and woodlands; roosts in hollows, caves or buildings.    | Low                         |
| Vespertilionidae | <i>Scoteanax rueppellii</i>           | Greater Broad-nosed Bat         | V,P        |              | 3       | Insectivorous bat/forest owl using forests and woodlands; roosts in hollows, caves or buildings.    | Low                         |
| Miniopteridae    | <i>Miniopterus orianae oceanensis</i> | Large Bent-winged Bat           | V,P        |              | 12      | Cave-roosting bent-winged bat; large maternity colonies; forages above forest.                      | Low                         |
| Myrtaceae        | <i>Syzygium paniculatum</i>           | Magenta Lilly Pilly             | V          | V            | 5       | Small-to-medium rainforest tree of coastal districts; threatened by myrtle rust and habitat loss.   | Moderate (observed on site) |
| Orchidaceae      | <i>Caladenia tessellata</i>           | Thick Lip Spider Orchid         | V,P,2      | V            | 1       | Small terrestrial orchid of sandstone habitats; emergent and flowering in winter–spring after rain. | Low                         |
| Orchidaceae      | <i>Cryptostylis hunteriana</i>        | Leafless Tongue Orchid          | V,P,2      | V            | 9       | Small terrestrial orchid of sandstone habitats; emergent and flowering in winter–spring after rain. | Low                         |
| Orchidaceae      | <i>Genoplesium baueri</i>             | Bauer's Midge Orchid            | E1,P,2     | E            | 16      | Small terrestrial orchid of sandstone habitats; emergent and flowering in winter–spring after rain. | Low                         |



| Family      | Scientific Name               | Common Name      | NSW status | Comm. status | Records | Description                                                                                         | Likelihood |
|-------------|-------------------------------|------------------|------------|--------------|---------|-----------------------------------------------------------------------------------------------------|------------|
| Orchidaceae | <i>Pterostylis ventricosa</i> | nan              | E4A,P,2    |              | 5       | Small terrestrial orchid of sandstone habitats; emergent and flowering in winter–spring after rain. | Low        |
| Santalaceae | <i>Thesium australe</i>       | Austral Toadflax | V          | V            | 1       | Root-parasitic herb of grassy woodlands and open forests; requires native grass/host presence.      | Low        |



## APPENDIX B FLORA AND FAUNA SPECIES





**Table B-1 Native Flora**

| Scientific Name                 | Common Name(s)                                    |
|---------------------------------|---------------------------------------------------|
| <i>Acacia floribunda</i>        | White Sally                                       |
| <i>Acacia implexa</i>           | Lightwood                                         |
| <i>Acacia melanoxylon</i>       | Blackwood                                         |
| <i>Allocasuarina littoralis</i> | Black She-oak                                     |
| <i>Allocasuarina torulosa</i>   | Forest Oak / Rose She-oak                         |
| <i>Angophora floribunda</i>     | Rough-barked Apple                                |
| <i>Banksia ericifolia</i>       | Heath-leaved Banksia, Wadangari                   |
| <i>Banksia integrifolia</i>     | Coastal Banksia                                   |
| <i>Callistemon citrinus</i>     | Crimson Bottlebrush                               |
| <i>Callistemon pallidus</i>     | Yellow Bottlebrush                                |
| <i>Callistemon rigidus</i>      | Stiff Bottlebrush                                 |
| <i>Callistemon viminalis</i>    | Weeping Red Bottlebrush                           |
| <i>Casuarina glauca</i>         | Swamp Oak                                         |
| <i>Clematis glycinoides</i>     | Headache Vine, Guwalyari                          |
| <i>Corymbia gummifera</i>       | Red Bloodwood                                     |
| <i>Corymbia maculata</i>        | Spotted Gum                                       |
| <i>Eucalyptus botryoides</i>    | Bangalay                                          |
| <i>Eucalyptus camaldulensis</i> | River Red Gum                                     |
| <i>Eucalyptus nicholii</i>      | Narrow-leaved Peppermint / Black Peppermint       |
| <i>Eucalyptus pilularis</i>     | Blackbutt                                         |
| <i>Eucalyptus piperita</i>      | Sydney Peppermint                                 |
| <i>Eucalyptus punctata</i>      | Grey Gum                                          |
| <i>Eucalyptus robusta</i>       | Swamp Mahogany                                    |
| <i>Eucalyptus scias</i>         | Large-fruited Red Mahogany                        |
| <i>Eucalyptus tereticornis</i>  | Forest Red Gum                                    |
| <i>Eucalyptus viminalis</i>     | Manna Gum (Ribbon Gum)                            |
| <i>Hymenosporum flavum</i>      | Native Frangipani                                 |
| <i>Leptospermum petersonii</i>  | Lemon-scented Tea-tree                            |
| <i>Lophostemon confertus</i>    | Brush Box                                         |
| <i>Melaleuca bracteata</i>      | Black Tea-tree                                    |
| <i>Melaleuca linariifolia</i>   | Narrow-leaved Paperbark / Snow-in-Summer          |
| <i>Melaleuca salicina</i>       | Willow Bottlebrush                                |
| <i>Pittosporum undulatum</i>    | Sweet Pittosporum / Native Daphne / Snowdrop Tree |
| <i>Syzygium australe</i>        | Brush Cherry                                      |



| Scientific Name               | Common Name(s)      |
|-------------------------------|---------------------|
| <i>Syzygium paniculatum</i>   | Magenta Lilly Pilly |
| <i>Syzygium smithii</i>       | Common Lilly Pilly  |
| <i>Toona ciliata</i>          | Red Cedar           |
| <i>Tristaniaopsis laurina</i> | Water Gum (Kanooka) |

**Table B-2 Exotic: Non local Flora and Weeds**

| Scientific Name                   | Common Name(s)                                                  | WONS / Weed Risk                                    |
|-----------------------------------|-----------------------------------------------------------------|-----------------------------------------------------|
| <i>Acer buergerianum</i>          | Trident Maple                                                   | Exotic (ornamental)                                 |
| <i>Leucadendron coniferum</i>     | Dune Conebush                                                   | Exotic (ornamental)                                 |
| <i>Laurus nobilis</i>             | Bay Tree                                                        | Exotic (ornamental)                                 |
| <i>Calocasia</i> sp.              | Elephant Ear                                                    | Exotic garden species                               |
| <i>Cinnamomum camphora</i>        | Camphor Laurel                                                  | WONS *                                              |
| <i>Citrus aurantium</i>           | Ornamental Orange                                               | Exotic (ornamental)                                 |
| <i>Erythrina</i> × <i>sykesii</i> | Coral Tree (hybrid)                                             | Exotic (ornamental)                                 |
| <i>Ficus watkinsiana</i>          | Green-leaved Moreton Bay Fig                                    | Exotic / Naturalised                                |
| <i>Fraxinus angustifolia</i>      | Raywood / Claret Ash                                            | Exotic (ornamental)                                 |
| <i>Ligustrum ovalifolium</i>      | Large-leaved Privet                                             | WONS *                                              |
| <i>Melia azedarach</i>            | White Cedar / Pride of India                                    | Exotic (naturalised)                                |
| <i>Pinus radiata</i>              | Monterey Pine                                                   | Exotic (plantation)                                 |
| <i>Quercus palustris</i>          | Pin Oak                                                         | Exotic (ornamental)                                 |
| <i>Schefflera actinophylla</i>    | Umbrella Tree                                                   | WONS *                                              |
| <i>Salix babylonica</i>           | Weeping Willow                                                  | Exotic (ornamental)                                 |
| <i>Acacia mearnsii</i>            | Black Wattle                                                    | Moderate — naturalised / potentially invasive       |
| <i>Pittosporum undulatum</i>      | Sweet Pittosporum / Native Daphne / Snowdrop Tree / Mock Orange | Moderate — native but invasive / naturalised in NSW |

\* Weeds of National Significance (WONS)

**Table B-3 Fauna**

| Species (Scientific Name)      | Common Name           | Evidence / Observation Type          |
|--------------------------------|-----------------------|--------------------------------------|
| <i>Macropus giganteus</i>      | Eastern Grey Kangaroo | Scats observed                       |
| <i>Anthochaera carunculata</i> | Red Wattlebird        | Visual observation (foraging/flying) |

## Melbourne

15 Business Park Drive  
Notting Hill VIC 3168

## Brisbane

Level 5, 43 Peel Street  
South Brisbane QLD 4101

## Perth

Level 1, 21 Adelaide Street  
Fremantle WA 6160

## Wangaratta

First Floor, 40 Rowan Street  
Wangaratta VIC 3677

## Wimmera

597 Joel South Road  
Stawell VIC 3380

## Darwin

Unit 40/29 Woods Street  
Darwin City NT 0800

## Sydney

Suite 3, Level 1, 20 Wentworth Street  
Parramatta NSW 2150

## Adelaide

1/198 Greenhill Road  
Eastwood SA 5063

## New Zealand

7/3 Empire Street  
Cambridge New Zealand 3434

## Geelong

51 Little Fyans Street  
Geelong VIC 3220

## Gold Coast

Suite 37, Level 4, 194 Varsity Parade  
Varsity Lakes QLD 4227

## Sunshine Coast

Office #4 of the Regatta 1 Business Centre  
2 Innovation Parkway  
Birtinya QLD 4575

1300 198 413



watertech.com.au

