

Meriden School Flora and Fauna Assessment

Meriden School



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Contents

1. Introduction	1
1.1 Proposed works	1
1.2 Impact Assessment.....	2
1.3 Key Definitions	2
1.4 Study area.....	2
2. Legislative context.....	4
3. Methods	6
3.1 Data and literature review.....	6
3.2 Site inspection	6
4. Ecological values.....	8
4.1 Desktop review	8
4.2 Field survey results	8
4.2.1 Vegetation	8
4.2.2 Threatened ecological communities.....	9
4.2.3 Flora species	9
4.2.4 Threatened flora species	9
4.2.5 Priority weeds	9
4.2.6 Fauna species and habitat	9
4.2.7 Threatened fauna	10
5. Impact assessment	12
5.1 Summary of impacts.....	12
5.1.1 Direct impacts.....	12
5.1.2 Indirect impacts	12
5.2 Biodiversity Conservation Act 2016	12
5.2.1 Test of significance (BC Act).....	13
5.3 Significance assessment (EPBC Act).....	13
6. Conclusions and recommendations	14
References	15
Appendix A Likelihood of Occurrence Table	16
Appendix B Species List	34
Appendix C Microbat Activity and Survey Report – Site 3	36
Appendix D Waiver approvals.....	37

List of Figures

Figure 1: Location of proposed developments	3
Figure 2: Vegetation	11

List of Tables

Table 1: Legislative context	4
Table 2: Other weeds of regional concern	9
Table 3: Vegetation impact	12
Table 4: Likelihood of occurrence of threatened ecological communities	17
Table 5: Likelihood of occurrence of threatened fauna species	18
Table 6: Likelihood of occurrence of threatened flora species	29

Abbreviations

Abbreviation	Description
BC Act	Biodiversity Conservation Act 2016
BV Map	Biodiversity Values Map
DotEE	Commonwealth Department of the Environment and Energy
DP&E	Department of Planning and Environment
ELA	Eco Logical Australia
EP&A Act	NSW Environmental Planning and Assessment Act 1979
EPBC Act	Commonwealth Environment Protection and Biodiversity Conservation Act 1999
FM Act	Fisheries Management Act 1994
GIS	Geographic Information Systems
GSRSWMP	Greater Sydney Strategic Weed Management Plan 2017
LEP	Local Environment Plan
LGA	Local Government Area
MNES	Matters of National Environmental Significance
SEARs	Secretary's Environmental Assessment Requirements
TEC	Threatened Ecological Community
WM Act	Water Management Act 2000

Executive Summary

Eco Logical Australia Pty Ltd (ELA) was engaged by Meriden School to prepare a Flora and Fauna Assessment for impacts associated with the construction of new school buildings and a new playground in Strathfield.

This flora and fauna assessment has been prepared following the approval of a waiver for the requirement that a Biodiversity Assessment Report (BDAR) be submitted with the State Significant Development Application (SSD 9692).

The assessment considers the ecological constraints of the proposed development on threatened species, populations and communities listed under the NSW *Biodiversity Conservation Act 2016* (BC Act), and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) that occur within the development sites.

ELA undertook a database review and site inspection to determine the extent of native vegetation present and to inform an assessment of potential impacts to threatened species, their habitat and ecological communities.

No remnant native vegetation was recorded during the site inspection, and the vegetation present was confirmed as Urban Exotic /Native.

The current footprint will result in the removal/impact to approximately 0.032 ha of Urban Exotic/Native vegetation including one mature *Syncarpia glomulifera* (Turpentine). This latter species does not correlate with any threatened ecological community within the Strathfield local government area.

The Urban Exotic/Native vegetation within the study area may provide limited potential foraging resources for the highly mobile species *Pteropus poliocephalus* (Grey-headed Flying-fox).

Following the site inspection, habitat assessment and the consideration of vegetation clearing impacts, it was concluded that the impact area is quite small and not significant.

Several buildings will be demolished in the proposed development, with one being considered potential roosting habitat for threatened microbat species. An additional survey was undertaken to determine threatened microbat activity in the vicinity and roof cavity of that building. No threatened microbat presence was detected, and it is considered unlikely that these species use habitat within the study area.

This flora and fauna assessment has concluded that the proposed works are unlikely to result in a significant impact on any threatened ecological communities and threatened species.

Mitigation measures and recommendations have been provided to reduce impacts to any retained biodiversity.

1. Introduction

Eco Logical Australia Pty Ltd (ELA) was commissioned by Allen Jack + Cottier (on behalf of Meriden School) to conduct an ecological assessment of three development areas owned by Meriden School in Strathfield (**Figure 1**):

- Site 1: Senior School Campus – new Centre for Music and Drama (CMD) (10-12 Redmyre Road)
- Site 2: Lingwood Prep School – new Administration and Student centre (16 Margaret St, Strathfield)
- Site 3: Junior School – new Landscaped Playground (4 Vernon Street)

The proposed redevelopment will be assessed under a State Significant Development process (number SSD 9692) by the Department of Planning and Environment (DP&E) and the Secretary's Environmental Assessment Requirements (SEARs) have been issued which indicated that a Biodiversity Development Assessment Report (BDAR) may be required.

A waiver for the BDAR has been submitted to the Office of Environment and Heritage (OEH) and this requirement has been waived, with the provision that a flora and fauna assessment is undertaken.

This report assesses potential impacts of the proposed works on flora and fauna listed under the New South Wales (NSW) *Biodiversity Conservation Act 2016* (BC Act) and the federal *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The waiver for the BDAR and flora and fauna assessment has been prepared by Toni Frecker who has over ten years of experience as an environmental consultant specialising in ecological assessments. Toni has a Bachelor of Applied Biology (Environmental Biology) (University of Technology, Sydney) and Master of Environmental Studies (University of NSW).

This report has been reviewed by Diane Campbell (BAAS 17069) who is an accredited person under the BC Act.

1.1 Proposed works

The proposed works comprise the following:

SITE 1: SENIOR SCHOOL CAMPUS – NEW CENTRE FOR MUSIC AND DRAMA:

Demolition of the existing music building located towards the south-western corner of the Senior School Campus, and construction of a new 3-storey building with 2 basements incorporating a new music academy, drama facilities, music teaching rooms and staff facilities. Excavation to a depth of 6m below existing ground level to accommodate practice rooms, a recording studio, instrument storage rooms, staff room and drama performance area.

SITE 2: LINGWOOD PREP SCHOOL – NEW ADMINISTRATION AND STUDENT CENTRE:

Demolition of existing single storey Business Office building and construction of a new 2- storey general student services and administration building. The new building will be designed with maximum flexibility to accommodate a wide range of uses, and to adapt with the demands of the school. This will involve the removal of 6 trees.

SITE 3: JUNIOR SCHOOL – NEW LANDSCAPED PLAYGROUND:

Demolition of the existing residential dwelling at 4 Vernon Street to make way for a new landscaped playground area. This will involve the removal of 3 trees. The existing access and parking arrangements will be retained.

1.2 Impact Assessment

The assessment of the impact of the proposed works on threatened species and communities was undertaken in accordance with the following steps:

- Identification of known or potential habitat for threatened species or communities within and adjacent to the site.
- Assessment of the likely impact of the proposal on any threatened species or communities through Significance Assessments and/or Significant Impact Criteria.
- Identification of any additional controls or mitigation measures that would be required to avoid a likely significant impact.

1.3 Key Definitions

The following terminology has been used for this report and is consistent with the NSW Threatened Species Assessment Guidelines (Department of Environment and Climate Change (now Office of Environment and Heritage) 2007)

- **Subject site** - means the area directly affected by the proposal.
- **Study area** - means the subject site and any additional areas, which are likely to be affected by the proposal, either directly or indirectly.
- **Locality** - the same meaning as ascribed to local population of a species or local occurrence of an ecological community.

1.4 Study area

The Meriden school campus is located within the Strathfield local government area (LGA), within an urban environment. The three sites are currently zoned as R3 (Medium Density Residential), under the Strathfield *Local Environmental Plan 2012* (LEP).

The three development sites are within an area bounded by Vernon Street to the west, Redmyre Road to the north and commercial and residential premises to the south and east. This area is located approximately 11 km west of the Sydney CBD.



Figure 1: Location of proposed developments

2. Legislative context

Table 1 below provides a description of the relevant legislative context for the flora and fauna assessment. Approvals and/or legislative consideration will be required for the proposed development. This report addresses the objectives and requirements of the legislation as it relates to biodiversity and ecological values.

Table 1: Legislative context

Name	Relevance to the project	Section in this report
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Matters of National Environmental Significance (MNES) have been identified on or near the site. This report concludes that the development is not likely to have a significant impact on MNES.	Section 4.1, Section 5.3, Appendix A, Appendix C
State		
<i>Environmental Planning and Assessment Act 1979</i> (EP&A Act)	The EP&A Act provides the framework for land use planning in NSW. Part 4 of the Act relates to development, including the preparation and consideration of Development Applications. This development is a State Significant Development (SSD).	Section 5.2, Appendix A, Appendix D
<i>Biodiversity Conservation Act 2016</i> (BC Act)	The BC Act outlines the assessment requirements to determine whether proposed development (Part 4 of the EP&A Act) or activity (Part 5 of the EP&A Act) is likely to significantly affect threatened species or ecological communities, or their habitats under section 7.3, and whether the Biodiversity Offsets Scheme (BOS) will be triggered. The requirement for a Biodiversity Development Assessment Report (BDAR) for assessment of the development as an SSD has been waived by the Department of Planning after submission of a request to Waive this requirement.	Section 4.1, Section 5.2, Appendix A, Appendix C, Appendix D
<i>Biodiversity Conservation Regulation 2017</i>	The Biodiversity Values Map (BV Map) identifies land with high biodiversity value, as defined by the Biodiversity Conservation Regulation 2017. The study area does not contain land identified on the BV Map (accessed 5/2/2019).	N/A
<i>Biosecurity Act 2015</i>	Under the Biosecurity Act 2015, Priority weeds have been identified for local government areas and assigned strategies to contain, remove or manage. Occupiers of land (this includes owners of land) have responsibility for taking appropriate action for priority weeds on the land they occupy. The site does contain weeds identified under the Greater Sydney Strategic Weed Management Plan 2017 (GSSWMP) developed under this Act.	Section 4.2.5 Appendix B
<i>Water Management Act 2000</i> (WM Act)	The object of the WM Act is to provide for the sustainable and integrated management of water sources of the State for the benefit of both present and future generations. Among the objects relating to biodiversity are: (a) to apply the principles of ecologically sustainable development, and	N/A

Name	Relevance to the project	Section in this report
	<p>(b) to protect, enhance and restore water resources, their associated ecosystems, ecological processes and biological diversity and their water quality.</p> <p>Development on waterfront land (defined as 40 m from the top of bank) requires a Controlled Activity Approval from DPI-Water. As the proposed development will not result in impacts to waterfront land, a Controlled Activity Approval will not be required.</p>	
Planning Instruments		
The <i>Strathfield Local Environment Plan 2012</i> (The Strathfield LEP)	<p>The subject site is zoned R3 Medium Density Residential under the Strathfield LEP.</p> <p>The study area is not mapped on any biodiversity or environmental protection maps under the LEP</p>	N/A

3. Methods

3.1 Data and literature review

Database records and relevant literature pertaining to the ecology of the study area and surrounding environs were reviewed. The material reviewed included:

- NSW BioNet / Atlas of NSW Wildlife database search (5 km)
- EPBC Act Protected Matters Search Tool (5 km)
- Local government planning instruments
 - The Strathfield LEP

Aerial photography of the study area and surrounds were also used to investigate the extent of vegetation cover and landscape features. In addition, relevant GIS datasets (soil, geology, drainage) were reviewed to guide the field survey component.

Species searches from both the Atlas of NSW Wildlife and EPBC Act dataset were combined to produce a list of threatened species that may occur within the study area (“subject species”) (Appendix A). Likelihood of occurrences for threatened species, endangered populations and communities in the study area were then made based on location of database records, the likely presence or absence of suitable habitat on the subject site, and knowledge of the species’ ecology. A list of potentially “affected species” was then identified (those that were defined as “yes”, “likely” or having “potential” to occur in the study area).

Five terms for the likelihood of occurrence of species are used in this report, defined as follows:

“yes” = the species was or has been observed in the study area

“likely” = a medium to high probability that a species uses the study area

“potential” = suitable habitat for a species occurs in the study area, but there is insufficient information to categorise the species as likely to occur, or unlikely to occur

“unlikely” = a very low to low probability that a species uses the study area, and

“no” = habitat in the study area and in its vicinity is unsuitable for the species.

Note, that assessments for the likelihood of occurrence were made both prior to field survey and following field survey. The pre-survey assessments were performed to determine which species were “affected species”, and hence determine which sorts of habitat to look for during field survey. The post-survey assessments to determine “final affected species” were made after observing the available habitat in the study area.

3.2 Site inspection

Field survey was conducted over four hours by ELA senior ecologist Toni Frecker on 11 January 2019 to validate the vegetation communities, record habitat features and potential ecological constraints. As part of the field surveys, one Biodiversity Assessment Method (BAM) vegetation integrity plot was undertaken.

An additional survey was carried out to determine the presence of threatened microbats at Site 3 for four nights between 12 and 16 March 2019. Two Anabats were installed, one in the garden and one in the roof cavity of the building, and recordings were taken over a four night period.

4. Ecological values

4.1 Desktop review

The three sites are currently zoned as R3 (Medium Density Residential), under the Strathfield Local Environmental Plan 2012 (LEP).

A desktop assessment identified that the three sites (10-12 Redmyre Road, 4 Vernon Street and 16B Margaret Street, Strathfield) did not contain any areas identified on the Biodiversity Values Map (accessed on 5 February 2019).

The desktop review identified a total of 26 threatened flora species and a total of 45 threatened fauna species listed under the BC or EPBC Acts, which may have the potential to occur within a 5 km radius of the study area. An assessment of the likelihood of occurrence of threatened flora and fauna species within the impact assessment area is available in **Appendix A** and was used to guide the field survey methodology.

There are no previous BioNet records of threatened flora and fauna species previously recorded within the three development areas. There are no riparian corridors located within the three development areas.

Previous vegetation mapping by Sydney Metropolitan Catchment Management Authority (OEH 2013) has identified the vegetation within the three development areas as “Urban exotic /native”.

4.2 Field survey results

4.2.1 Vegetation

The field survey confirmed that the vegetation within the three development sites has been cleared of remnant vegetation and the original soil profile has been altered. The vegetation was confirmed to be *Urban exotic/native* (Figure 2).

One mature native *Syncarpia glomulifera* (Turpentine) (>70cm diameter at breast height) was recorded within Site 2. This tree appears to have been planted and does not represent a threatened ecological community.

A review using the BioNet Vegetation Classification (VIS) using *Syncarpia glomulifera* as a key diagnostic species for Strathfield LGA, did not identify any known native vegetation communities within this LGA which contain this species. It is assumed that this species is not remnant for the following reasons:

- no remnant vegetation communities occur within the wider locality of the site for more than 1 km
- there are no other native indigenous flora species recorded within the development areas
- the soil profile has been significantly altered and does not contain a native soil seedbank.

Furthermore, this tree was not listed on the Strathfield Council *Significant Tree Register Index* (Strathfield Council 2013), nor are any other trees recorded within the sites.

The remaining vegetation within Site 2 consists of planted gardens including *Grevillea robusta* (Silky Oak) and *Brachychiton populneus* (Kurrajong) which although native to Australia, these two species are not considered indigenous to the location. Exotic species were present in landscaped gardens and include several mature *Cinnamomum camphora* (Camphor Laurel) and larger shrubs: *Plumeria* sp. (Frangipani), horticultural varieties of *Syzygium luehmannii* (Lilly Pilly), *Nandina domestica* (Sacred Bamboo) and groundcover species such as *Ehrharta erecta* (Panic Veldtgrass) and *Bidens pilosa* (Cobblers Pegs).

Vegetation within Site 3 was typical of a landscaped garden and primarily exotic including *Murraya paniculata* (Murraya), *Plumeria* sp. (Frangipani), *Trachlospermum* sp. (Star Jasmine), *Liriope* sp. with one planted native shrub, *Callistemon citrinus* (Crimson Bottlebrush).

At Site 1 all vegetation was newly planted landscape horticultural varieties of exotic species, and a mown exotic lawn.

4.2.2 Threatened ecological communities

No threatened ecological communities were present on any of the three sites

4.2.3 Flora species

The field survey identified 39 flora species, comprising eight native and 31 exotic species. A flora list for the study area is presented in Appendix B.

4.2.4 Threatened flora species

No threatened flora species were recorded within the study area. Additionally, no habitat was identified for threatened flora species within the study area and it is considered unlikely they will occur within the study area (Appendix A).

4.2.5 Priority weeds

No priority weeds were recorded during the field survey within the study area. No flora species are also identified as Weeds of National Significance (WoNS). Other weeds of regional concern within the development sites and their management class are presented in Table 2.

Table 2: Other weeds of regional concern

Scientific Name	Common Name	Priority Weed Objective
<i>Araujia sericifera</i>	Moth Vine	Regional concern – Environment
<i>Cenchrus clandestinus</i>	Kikuyu	Regional concern – Environment
<i>Cinnamomum camphora</i>	Camphor Laurel	Regional concern – Environment
<i>Ehrharta erecta</i>	Panic Veldtgrass	Regional concern – Environment
<i>Ligustrum lucidum</i>	Large-leaf Privet	Regional concern – Environment
<i>Murraya paniculata</i>	Murraya	Regional concern – Environment
<i>Ochna serrulata</i>	Mickey Mouse Plant	Regional concern – Environment

4.2.6 Fauna species and habitat

No threatened fauna species were identified during the field survey.

The field survey at Site 3 identified one existing building to be demolished under the proposal contains small holes in the roof cavities which could provide potential habitat for threatened microbats. The specific microbat survey, which involved Anabats recording over four nights, located no microbat activity within the roof cavity and limited activity outside the building. No species listed as vulnerable under the NSW *Biodiversity Conservation Act 2016* (BC Act) or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were recorded. The results of this survey are included in Appendix C.

The nearest record for a threatened microbat species is at Olympic Park, approximately three kilometres to the north of this building. It is considered unlikely that this building does provide any roosting or breeding habitat for threatened microbat species.

Limited marginal foraging resources were considered to be present within the study area for the highly mobile species *Pteropus poliocephalus* (Grey-headed Flying-fox). The closest known Grey-headed Flying fox camp within a 20 km radius as identified on the National Flying-fox Monitoring viewer (DotEE 2016) is at Huntleys Point, which is located approximately 5 km to the north east of the study area. Counts performed in November 2018 estimated the population to be between 2,500 and 9,999 individuals.

4.2.7 Threatened fauna

No threatened fauna was observed during the site inspection. Furthermore, no hollow-bearing trees were recorded. It is also unlikely that the vegetation present on site will provide habitat for threatened fauna species other than limited foraging habitat for highly mobile species.



Figure 2: Vegetation

5. Impact assessment

5.1 Summary of impacts

5.1.1 Direct impacts

The proposed development will involve the clearing of landscaped vegetation and the demolition of several buildings.

The area of vegetation to be impacted at each site is provided below in Table 3.

Table 3: Vegetation impact

Site	Planted Native (ha)	Urban Exotic/Native (ha)
Site 1 – New Centre for Music & Drama		0.014
Site 2 – New Administration and Student Centre	0.01	0.015
Site 3 – New Landscaped Playground		0.002
Total	0.01	0.031

Removal of potential habitat for threatened species

The proposed development may impact upon foraging habitat for highly mobile threatened fauna species such as flying-foxes and birds. Areas of intact native vegetation are important for these species and therefore, only minor potential impacts to these species are expected under the proposed works as no remnant native vegetation is located within the study area.

5.1.2 Indirect impacts

Indirect impacts are those impacts that do not directly affect habitat and individuals but that have the potential to interfere through indirect action. Indirect impacts considered for this assessment are site impacts (noise, light and weed invasion).

During construction, noise, dust and to a small degree vibration will be emitted which could have an indirect impact on local fauna.

As the development is located within an urban environment with no habitat other than limited foraging habitat within the study area, the indirect impacts are unlikely to impact on any threatened species.

5.2 Biodiversity Conservation Act 2016

The BC Act came in to effect in August 2017 replacing the Threatened Species Conservation Act 1995. Impacts to threatened species and threatened ecological communities listed under the BC Act are required to be assessed in accordance with Section 7.3 of the BC Act, known as ‘assessment(s) of significance’.

As an SSD, the SEARs include the preparation of a BDAR. A waiver for this requirement has been approved by the DP&E. (Appendix D).

5.2.1 Test of significance (BC Act)

The 5-part test is used to determine if the development is likely to have a significant impact on any threatened species, population or ecological community.

The proposed development will not remove any remnant native vegetation or hollow bearing trees and will only result in the removal of 0.032 ha of landscaped gardens including a mature *Syncarpia glomulifera*. This may provide only very limited foraging habitat for the highly mobile species *Pteropus poliocephalus* (Grey-headed Flying-fox). No Test of Significance were undertaken for the following reasons:

- the development will not result in the clearing of any native vegetation
- no critical habitat will be impacted for these species
- the proposal will not fragment or isolate any fauna habitat
- the habitat is likely to be used in a transitory nature as no key breeding habitat is present within the study area.

5.3 Significance assessment (EPBC Act)

The EPBC Act establishes a process for assessing the environmental impact of activities and developments where 'Matters of National Environmental Significance' (NES) may be affected. Under the Act any action which "has, will have, or is likely to have a significant impact on a Matter of National Environmental Significance" is defined as a "controlled action", and requires approval from the Commonwealth Department of the Environment and Energy (DotEE) which is responsible for administering the EPBC Act.

Pteropus poliocephalus (Grey-headed Flying-fox) is listed under the EPBC Act and the study area has the potential to provide very limited foraging resources for this species. As this species is highly mobile and the development will not result in the clearing of any native vegetation an assessment in accordance with the EPBC Act Significance Guidelines was not undertaken.

Consequently, the preparation of a referral under the EPBC Act is not recommended.

6. Conclusions and recommendations

Eco Logical Australia conducted an assessment of the ecological values of the study area and assessed the impacts of the proposed development works.

The proposed development will require clearing of landscaped planted exotic/native vegetation which is unlikely to provide suitable nesting or roosting habitat for threatened fauna. However, it may provide very limited foraging habitat for highly mobile species such as the threatened species, Grey-headed Flying Fox. No hollow-bearing trees were identified within the study area.

The proposed development also includes the demolition of several buildings. After assessment, this demolition and the vegetation removal are considered unlikely to impact on threatened microchiropteran bats.

The study area is unlikely to provide habitat suitable for any threatened vegetation communities or threatened flora.

No threatened fauna or flora were identified within the study area.

Mitigation measures such as those listed below are recommended, if deemed necessary.

- Establish a Tree Protection Zone (TPZ) intended to protect the trees identified for retention from development impacts and to maintain their health and vigour during and after development. The TPZ should not be accessed by heavy machinery and care is to be taken to not damage any trees. The calculation for the TPZ radius is as follows:
 - $DBH \times 12$ where: DBH = Diameter at Breast height (in metres). It is recommended that TPZs are demarcated around trees that would be retained as part of the proposed works.
- Installation of appropriate measures (i.e. silt fences) around the impact area to limit the spread of sediment and weeds into adjacent waterways and vegetation.
- Develop a Construction Environmental Management Plan (CEMP) with relevant mitigation measures to ameliorate potential impacts to biodiversity values outside of the development area. The CEMP should include:
 - Sediment and Erosion Control Plan
 - the establishment of clearly defined areas, such as the works area and any 'no-go' areas within/adjacent to work site boundaries that are not to be in any way disturbed or damaged by the works
 - construction fencing pre and during construction to ensure that construction related impacts are contained within the construction areas.

References

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Strathfield Local Environment Plan 2012. <https://legislation.nsw.gov.au/#/view/EPI/2013/115/maps> (accessed 14 January 2019)

Appendix A Likelihood of Occurrence Table

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

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

An assessment of significance was conducted for threatened species or ecological communities that were recorded within the site or had a higher likelihood of occurring and were not recorded during the site visit and that potential to be significantly impacted. It is noted that some threatened fauna species that are highly mobile, wide ranging and vagrant may use portions of the site intermittently for foraging. For these fauna species, the habitat present and likely to be impacted is not considered to be important to the threatened species, particularly in relation to the amount of similar habitat remaining in the surrounding landscape. As such, an assessment of significance in reference to State or Commonwealth legislation was not considered necessary.

Note, that assessments for the likelihood of occurrence were made both prior to site inspection and following site inspection. The pre-survey assessments were performed to determine which species were “affected species”, and hence determine which sorts of habitat to look for during site inspection. The post-survey assessments to determine “final affected species” were made after observing the available habitat in the site and are depicted in the table below.

The records column refers to the number of records occurring within 5 km of the study area, as provided by the NSW Wildlife Atlas (BioNet) database search.

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

Table 4: Likelihood of occurrence of threatened ecological communities

Name	BC Act	EPBC Act	Habitat Associations	Likelihood of Occurrence
Castlereagh Scribbly Gum and Agnes Banks Woodland	V	E	Occurs almost exclusively on soils derived from Tertiary alluvium, or on sites located on adjoining shale or Holocene alluvium. Often adjacent to and on slightly higher ground than Castlereagh Ironbark Forest or Shale Gravel Transition Forest in the Sydney Basin Bioregion. Dominated by <i>Eucalyptus parramattensis</i> subsp. <i>parramattensis</i> , <i>Angophora bakeri</i> and <i>E. sclerophylla</i> . A small tree stratum of <i>Melaleuca decora</i> is sometimes present, generally in areas with poorer drainage. It has a well-developed shrub stratum consisting of sclerophyllous species such as <i>Banksia spinulosa</i> var. <i>spinulosa</i> , <i>Melaleuca nodosa</i> , <i>Hakea sericea</i> and <i>H. dactyloides</i> (multi-stemmed form). The ground stratum consists of a diverse range of forbs including <i>Themeda australis</i> , <i>Entolasia stricta</i> , <i>Cyathochaeta diandra</i> , <i>Dianella revoluta</i> subsp. <i>revoluta</i> , <i>Stylidium graminifolium</i> , <i>Platysace ericoides</i> , <i>Laxmannia gracilis</i> and <i>Aristida warburgii</i> .	No. This TEC was not recorded within the site
Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland	E	E	The structure of the community may vary from open forests to low woodlands, scrubs or reedlands with scattered trees. It has a dense to sparse tree layer in which <i>Casuarina glauca</i> (swamp oak) is the dominant species northwards from Bermagui. Other trees including <i>Acmena smithii</i> (lilly pilly), <i>Glochidion</i> spp. (cheese trees) and <i>Melaleuca</i> spp. (paperbarks) may be present as subordinate species and are found most frequently in stands of the community northwards from Gosford. <i>Melaleuca ericifolia</i> is the only abundant tree in this community south of Bermagui. The understorey is characterised by frequent occurrences of vines, <i>Parsonsia straminea</i> , <i>Geitonoplesium cymosum</i> and <i>Stephania japonica</i> var. <i>discolor</i> , a sparse cover of shrubs, and a continuous groundcover of forbs, sedges, grasses and leaf litter. The composition of the ground stratum varies depending on levels of salinity in the groundwater.	No. This TEC was not recorded within the site
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	E	CE	Open forest, with dominant canopy trees including Turpentine <i>Syncarpia glomulifera</i> , Grey Gum <i>Eucalyptus punctata</i> , Grey Ironbark <i>E. paniculata</i> and Thin-leaved Stringybark <i>E. eugenoides</i> . In areas of high rainfall (over 1050 mm per annum) Sydney Blue Gum <i>E. saligna</i> is more dominant. The shrub stratum is usually sparse and may contain mesic species such as Sweet Pittosporum <i>Pittosporum undulatum</i> and Elderberry <i>Panax Polyscias sambucifolia</i> . Contains many more species.	No. This TEC was not recorded within the site
Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion	E	CE	Ranges from open forest to low woodland, with a canopy dominated by Broad-leaved Ironbark (<i>Eucalyptus fibrosa</i>) and Paperbark (<i>Melaleuca decora</i>). The canopy may also include other eucalypts such as Woollybutt (<i>E. longifolia</i>). The dense shrubby understorey consists of Prickly-leaved Paperbark (<i>Melaleuca nodosa</i>) and Peach Heath (<i>Lissanthe strigosa</i>), with a range of 'pea' flower shrubs, such as <i>Dillwynia tenuifolia</i> , Hairy Bush-pea (<i>Pultenaea villosa</i>) and Gorse Bitter Pea (<i>Daviesia ulicifolia</i>) (can be locally abundant). The sparse ground layer contains a range of grasses and herbs. Contains many more species	No. This TEC was not recorded within the site

CE = Critically Endangered Ecological Community; E = Endangered Ecological Community; V = Vulnerable

Table 5: Likelihood of occurrence of threatened fauna species

Scientific Name	Common Name	BC Status	Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
Amphibia							
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V		V	Found in two distinct populations: a northern population in the sandstone geology of the Sydney Basin as far south as Ulladulla, and a southern population occurring from north of Narooma through to Walhalla, Victoria. Heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based.	0	No, suitable habitat not present.
<i>Litoria aurea</i>	Green and Golden Bell Frog	E1		V	Since 1990, recorded from ~50 scattered sites within its former range in NSW, from the north coast near Brunswick Heads, south along the coast to Victoria. Records exist west to Bathurst, Tumut and the ACT region. Marshes, dams and stream-sides, particularly those containing <i>Typha</i> sp. (bullrushes) or <i>Eleocharis</i> sp. (spikerushes). Some populations occur in highly disturbed areas.	127	No, suitable habitat not present.
<i>Mixophyes balbus</i>	Stuttering Frog	E1		V	Recorded along the east coast of Australia from southern Qld to north-eastern Victoria. Found in rainforest and wet, tall open forest in the foothills and escarpment on the eastern side of the Great Dividing Range.	0	No, suitable habitat not present.
Aves							
<i>Actitis hypoleucos</i>	Common Sandpiper	-		M	Summer migrant. In NSW, widespread along coastline and also occurs in many areas inland. Coastal wetlands and some inland wetlands, especially muddy margins or rocky shores. Also estuaries and deltas, lakes, pools, billabongs, reservoirs, dams and claypans, mangroves.	35	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Anthochaera phrygia</i>	Regent Honeyeater	E4A	CE	Inland slopes of south-east Australia, and less frequently in coastal areas. In NSW, most records are from the North-West Plains, North-West and South-West Slopes, Northern Tablelands, Central Tablelands and Southern Tablelands regions; also recorded in the Central Coast and Hunter Valley regions. Eucalypt woodland and open forest, wooded farmland and urban areas with mature eucalypts, and riparian forests of <i>Casuarina cunninghamiana</i> (River Oak).	5	Unlikely, suitable habitat not recorded on site.
<i>Apus pacificus</i>	Fork-tailed Swift	-	M	Recorded in all regions of NSW. Riparian woodland., swamps, low scrub, heathland, saltmarsh, grassland, Spinifex sandplains, open farmland and inland and coastal sand-dunes.	1	No, suitable habitat not present.
<i>Arenaria interpres</i>	Ruddy Turnstone	-	M	Summer migrant to most coastal regions, with occasional records inland, including in NSW. Tidal reefs and pools; pebbly, shelly and sandy shores; mudflats; inland shallow waters; sewage ponds, saltfields; ploughed ground.	9	Unlikely, suitable habitat not recorded on site.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	E1	E	Found over most of NSW except for the far north-west. Permanent freshwater wetlands with tall, dense vegetation, particularly <i>Typha</i> spp. (bullrushes) and <i>Eleocharis</i> spp. (spikerushes).	7	No, suitable habitat not present.
<i>Burhinus grallarius</i>	Bush Stone-curlew	E1	-	Found sporadically in coastal areas, and west of the divide throughout the sheep-wheat belt. In NSW, it occurs in lowland grassy woodland and open forest.	3	No, suitable habitat not present.
<i>Calidris canutus</i>	Red Knot	-	E, M	Summer migrant to Australia. In NSW, widespread in suitable habitat along the coast. Occasionally recorded inland in all regions. Intertidal mudflats, sandflats sheltered sandy beaches, estuaries, bays, inlets, lagoons, harbours, sandy ocean beaches, rock platforms, coral reefs, terrestrial saline wetlands near the coast, sewage ponds and saltworks. Rarely inland lakes or swamps.	16	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Calidris ferruginea</i>	Curlew Sandpiper	E1	CE, M	Occurs along the entire coast of NSW, and sometimes in freshwater wetlands in the Murray-Darling Basin. Littoral and estuarine habitats, including intertidal mudflats, non-tidal swamps, lakes and lagoons on the coast and sometimes inland.	332	No, suitable habitat not present.
<i>Calidris tenuirostris</i>	Great Knot	V	CE, M	In NSW, recorded at scattered sites along the coast down to about Narooma. It has also been observed inland at Tullakool, Armidale, Gilgandra and Griffith. Intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons.	2	Unlikely, suitable habitat not recorded on site.
<i>Charadrius leschenaultii</i>	Greater Sand-plover	V	V, M	In NSW, recorded between the northern rivers and the Illawarra, with most records coming from the Clarence and Richmond estuaries. Almost entirely restricted to coastal areas in NSW, mainly on sheltered sandy, shelly or muddy beaches or estuaries with large intertidal mudflats or sandbanks.	0	No, suitable habitat not present.
<i>Circus assimilis</i>	Spotted Harrier	V	-	Found throughout the Australian mainland, except in densely forested or wooded habitats, and rarely in Tasmania. Grassy open woodland, inland riparian woodland, grassland, shrub steppe, agricultural land and edges of inland wetlands.	3	No, suitable habitat not present.
<i>Epthianura albifrons</i>	White-fronted Chat	V	-	Occurs mostly in the southern half of the state, in damp open habitats along the coast, and near waterways in the western part of the state. Two isolated sub-populations known from the Sydney Metropolitan Catchment Management Authority area; one at Newington Nature Reserve on the Parramatta River and one at Towra Point Nature Reserve in Botany Bay. Saltmarsh vegetation, open grasslands and sometimes low shrubs bordering wetland areas.	44	No, suitable habitat not present.

Scientific Name	Common Name	BC Status	Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Falco subniger</i>	Black Falcon	V		-	Sparsely distributed in NSW, occurring mostly in inland regions. Found in woodland, shrubland and grassland, especially riparian woodland and agricultural land. Often associated with streams or wetlands.	1	No, suitable habitat not present.
<i>Gallinago hardwickii</i>	Latham's Snipe	-		M	Migrant to east coast of Australia, extending inland west of the Great Dividing Range in NSW. Freshwater, saline or brackish wetlands up to 2000 m above sea-level; usually freshwater swamps, flooded grasslands or heathlands.	619	No, suitable habitat not present.
<i>Glossopsitta pusilla</i>	Little Lorikeet	V		-	In NSW, found from the coast westward as far as Dubbo and Albury. Found in dry, open eucalypt forests and woodlands, including remnant woodland patches and roadside vegetation.	4	Unlikely, suitable habitat not recorded on site.
<i>Grantiella picta</i>	Painted Honeyeater	V		V	Widely distributed in NSW, predominantly on the inland side of the Great Dividing Range but avoiding arid areas. Found in Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests.	0	No, suitable habitat not present.
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	V		-	Distributed along the coastline of mainland Australia and Tasmania, extending inland along some of the larger waterways, especially in eastern Australia. Freshwater swamps, rivers, lakes, reservoirs, billabongs, saltmarsh and sewage ponds and coastal waters. Terrestrial habitats include coastal dunes, tidal flats, grassland, heathland, woodland, forest and urban areas.	129	Unlikely, suitable habitat not recorded on site.
<i>Hieraetus morphnoides</i>	Little Eagle	V		-	Throughout the Australian mainland, with the exception of the most densely-forested parts of the Dividing Range escarpment. Open eucalypt forest, woodland or open woodland, including sheoak or Acacia woodlands and riparian woodlands of interior NSW.	3	Unlikely, suitable habitat not recorded on site.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Hirundapus caudacutus</i>	White-throated Needletail	-	M	All coastal regions of NSW, inland to the western slopes and inland plains of the Great Divide. Occur most often over open forest and rainforest, as well as heathland, and remnant vegetation in farmland.	6	No, suitable habitat not present.
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	In NSW, records are scattered along the east coast, with individuals rarely being recorded south of Sydney or inland. Terrestrial and estuarine wetlands. Also flooded grassland, forest, woodland, rainforest and mangroves where permanent water is present.	3	No, suitable habitat not present.
<i>Lathamus discolor</i>	Swift Parrot	E1	CE	Migrates from Tasmania to mainland in Autumn-Winter. In NSW, the species mostly occurs on the coast and south west slopes. Box-ironbark forests and woodlands.	2	Unlikely, suitable habitat not recorded on site
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	V	M	Occur occasionally on the southern Australian coast. In NSW, mainly recorded in Hunter River estuary, with birds occasionally reaching the Shoalhaven estuary. There are few records for inland NSW. Found in sheltered parts of the coast such as estuarine sandflats and mudflats, harbours, embayments, lagoons, saltmarshes and reefs.	1	No, suitable habitat not present.
<i>Limosa limosa</i>	Black-tailed Godwit	V	M	Arrives in August and leaves in March. In NSW, most frequently recorded at Kooragang Island, with occasional records elsewhere along the coast, and inland in the Murray-Darling Basin, on the western slopes of the Northern Tablelands and in the far north-western corner of the state. Usually sheltered bays, estuaries and lagoons with large intertidal mudflats and/or sandflats. Further inland, it can also be found around muddy lakes and swamps.	10	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Monarcha melanopsis</i>	Black-faced Monarch	-	M	In NSW, occurs around the eastern slopes and tablelands of the Great Divide, inland to Coutts Crossing, Armidale, Widden Valley, Wollemi National Park and Wombeyan Caves. It is rarely recorded farther inland. Rainforest, open eucalypt forests, dry sclerophyll forests and woodlands, gullies in mountain areas or coastal foothills, Brigalow scrub, coastal scrub, mangroves, parks and gardens.	0	No, suitable habitat not present. No records for this species in 5 km radius of site.
<i>Motacilla flava</i>	Yellow Wagtail	-	M	Regular summer migrant to mostly coastal Australia. In NSW recorded Sydney to Newcastle, the Hawkesbury and inland in the Bogan LGA. Found in swamp margins, sewage ponds, saltmarshes, playing fields, airfields, ploughed land, lawns.	0	Unlikely, no records for this species in 5 km radius of site.
<i>Neophema pulchella</i>	Turquoise Parrot	V	-	Occurs along the length of NSW from the coastal plains to the western slopes of the Great Dividing Range. Eucalypt and cypress pine open forests and woodlands, ecotones between woodland and grassland, or coastal forest and heath.	1	No, suitable habitat not present.
<i>Ninox strenua</i>	Powerful Owl	V	-	In NSW, it is widely distributed throughout the eastern forests from the coast inland to tablelands, with scattered records on the western slopes and plains. Found in woodland, open sclerophyll forest, tall open wet forest and rainforest.	3	Unlikely, suitable habitat not recorded on site, nor habitat for prey species
<i>Numenius madagascariensis</i>	Eastern Curlew	-	CE, M	Summer migrant to Australia. Primarily coastal distribution in NSW, with some scattered inland records. Estuaries, bays, harbours, inlets and coastal lagoons, intertidal mudflats or sandflats, ocean beaches, coral reefs, rock platforms, saltmarsh, mangroves, freshwater/brackish lakes, saltworks and sewage farms.	9	Unlikely, suitable habitat not recorded on site.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Numenius minutus</i>	Little Curlew	-	M	Summer migrant to Australia. In NSW, most records scattered east of the Great Dividing Range, from Casino, south to Greenwell Point with a few scattered records west of the Great Dividing Range. Dry grasslands, open woodlands, floodplains, margins of drying swamps, tidal mudflats, airfields, playing fields, crops, saltfields, sewage ponds.	0	Unlikely, no records for this species in 5 km radius of site.
<i>Numenius phaeopus</i>	Whimbrel	-	M	Summer migrant to Australia. Found along almost the entire coast of NSW; scattered inland records. Estuaries, mangroves, tidal flats, coral cays, exposed reefs, flooded paddocks, sewage ponds, grasslands, sports fields, lawns.	2	Unlikely, suitable habitat not recorded on site.
<i>Pandion cristatus</i>	Eastern Osprey	V	-	Common around the northern NSW coast, and uncommon to rare from coast further south. Some records from inland areas. Rocky shorelines, islands, reefs, mouths of large rivers, lagoons and lakes.	2	No, suitable habitat not present.
<i>Petroica boodang</i>	Scarlet Robin	V	-	In NSW, it occurs from the coast to the inland slopes. Dry eucalypt forests and woodlands, and occasionally in mallee, wet forest, wetlands and tea-tree swamps.	1	Unlikely, suitable habitat not recorded on site.
<i>Petroica phoenicea</i>	Flame Robin	V	-	In NSW, breeds in upland tall moist eucalypt forests and woodlands. In winter uses dry forests, open woodlands, heathlands, pastures and native grasslands. Occasionally occurs in temperate rainforest, herbfields, heathlands, shrublands and sedgeland at high altitudes.	1	No, suitable habitat not present.
<i>Philomachus pugnax</i>	Ruff	-	M	Regular but rare summer migrant to Australia. In NSW, recorded at Kurnell, Tomki, Casino, Ballina, Kooragang Island, Broadwater Lagoon and Little Cattai Creek. Also found around the Riverina, including Windouran Swamp, Wanganella, Fivebough Swamo and the Tullakool Saltworks. Found in terrestrial wetlands including lakes, swamps, pools, lagoons, tidal rivers, swampy fields and floodlands. Occasionally found in harbours, estuaries, seashores, sewage farms and saltworks.	3	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Plegadis falcinellus</i>	Glossy Ibis	-	M	Recorded over much of NSW. Spring/summer breeding migrant to southern Murray-Darling region and Macquarie Marshes. Edges of lakes and rivers, lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and cultivated areas under irrigation. Occasionally estuaries, deltas, saltmarshes and coastal lagoons.	58	No, suitable habitat not present.
<i>Pluvialis fulva</i>	Pacific Golden Plover	-	M	Regular widespread summer migrant to Australia, including coastal NSW, Lord Howe and Norfolk Island. Estuaries, mudflats, saltmarshes, mangroves, rocky reefs, inland swamps, ocean shores, paddocks, sewage ponds, ploughed land, airfields, playing fields.	297	Unlikely, suitable habitat not recorded on site.
<i>Pluvialis squatarola</i>	Grey Plover	-	M	Regular summer migrant to coastal Australia, including NSW. Rarely inland, on passage. Mudflats, saltmarsh, tidal reefs and estuaries.	2	Unlikely, suitable habitat not recorded on site.
<i>Ptilinopus superbus</i>	Superb Fruit-Dove	V		Principally from north-eastern Qld to north-eastern NSW. Further south, it is confined to pockets of suitable habitat, and occurs as far south as Moruya. Found in rainforest and closed forests. May also forage in eucalypt or acacia woodland where there are fruit-bearing trees.	1	Unlikely, suitable habitat not recorded on site.
<i>Rhipidura rufifrons</i>	Rufous Fantail	-	M	Coastal and near coastal districts of northern and eastern Australia, including on and east of the Great Divide in NSW. Wet sclerophyll forests, subtropical and temperate rainforests. Sometimes drier sclerophyll forests and woodlands.	0	No, suitable habitat not present.
<i>Rostratula australis</i>	Australian Painted Snipe	E1	E	In NSW most records are from the Murray-Darling Basin. Other recent records include wetlands on the Hawkesbury River and the Clarence and lower Hunter Valleys. Swamps, dams and nearby marshy areas.	3	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Stictonetta naevosa</i>	Freckled Duck	V	-	Inland river systems, occurring as far as coastal NSW in times of drought. Freshwater swamps and creeks, lakes, reservoirs, farm dams and sewage ponds.	1	No, suitable habitat not present.
<i>Tringa glareola</i>	Wood Sandpiper		M	Summer migrant to Australia. In NSW, recorded east of the Great Divide, from Stratheden and Casino, south to Nowra and elsewhere, mostly from the Riverina, but also from the Upper and Lower Western Regions. Found in well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes; inundated grasslands; floodplains; irrigated crops; sewage ponds; reservoirs; large farm dams; bore drains; rarely brackish wetlands and saltmarsh.	4	No, suitable habitat not present.
<i>Tyto longimembris</i>	Eastern Grass Owl	V	-	Recorded occasionally in all mainland states. In NSW they are more likely to be resident in the north-east. Found in areas of tall grass, including grass tussocks, swampy areas, grassy plains, swampy heath, and in cane grass or sedges on flood plains.	2	No, suitable habitat not present.
<i>Tyto novaehollandiae</i>	Masked Owl	V	-	Recorded over approximately 90% of NSW, excluding the most arid north-western corner. Most abundant on the coast but extends to the western plains. Found in dry eucalypt forests and woodlands from sea level to 1100 m.	1	Unlikely, suitable habitat not recorded on site.
Mammalia						
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	Recorded from Rockhampton in Qld south to Ulladulla in NSW. Largest concentrations of populations occur in the sandstone escarpments of the Sydney basin and the NSW north-west slopes. Wet and dry sclerophyll forests, Cyprus Pine dominated forest, woodland, sub-alpine woodland, edges of rainforests and sandstone outcrop country.	0	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Dasyurus maculatus maculatus</i>	Spotted-tailed Quoll	V	E	Found on the east coast of NSW, Tasmania, eastern Victoria and north-eastern Qld. Found in rainforest, open forest, woodland, coastal heath and inland riparian forest, from the sub-alpine zone to the coastline.	0	No, suitable habitat not present.
<i>Isodon obesulus obesulus</i>	Southern Brown Bandicoot (eastern)	E1	E	Found in south-eastern NSW, east of the Great Dividing Range south from the Hawkesbury River. Heath or open forest with a heathy understorey on sandy or friable soils.	0	No, suitable habitat not present.
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V	-	In NSW it occurs on both sides of the Great Dividing Range, from the coast inland to Moree, Dubbo and Wagga Wagga. Found in rainforest, wet and dry sclerophyll forest, monsoon forest, open woodland, paperbark forests and open grassland.	31	Unlikely, suitable habitat not recorded on site.
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V	-	Found along the east coast from south Qld to southern NSW in dry sclerophyll forest, woodland, swamp forests and mangrove forests east of the Great Dividing Range.	1	Unlikely, suitable habitat not recorded on site.
<i>Myotis macropus</i>	Southern Myotis	V	-	In NSW, found in the coastal band. It is rarely found more than 100 km inland, except along major rivers. Foraging habitat is waterbodies (including streams, or lakes or reservoirs) and fringing areas of vegetation up to 20m.	9	Unlikely, suitable habitat not recorded on site.
<i>Perameles nasuta</i>	Long-nosed Bandicoot	E2	-	The exact area occupied by the population is not clearly defined, and includes the local government areas (LGA) of Marrickville and Canada Bay, with the likelihood that it also includes Canterbury, Ashfield and Leichhardt LGAs. Found in backyards and parkland.	3	Unlikely, suitable habitat not recorded on site.
<i>Phascolarctos cinereus</i>	Koala	V	V	In NSW it mainly occurs on the central and north coasts with some populations in the west of the Great Dividing Range. There are sparse and possibly disjunct populations in the Bega District, and at several sites on the southern tablelands. Eucalypt woodlands and forests.	0	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km Radius	Likelihood of Occurrence
<i>Pseudomys novaehollandiae</i>	New Holland Mouse	-	V	Fragmented distribution across eastern NSW. Open heathlands, woodlands and forests with a heathland understorey, vegetated sand dunes.	0	No, suitable habitat not present.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	Recorded along the eastern coast of Australia, from Bundaberg in Qld to Melbourne in Victoria. Found in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops.	24	Potential, limited foraging habitat present.
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath-tail-bat	V		There are scattered records of this species across the New England Tablelands and North West Slopes. Rare visitor in late summer and autumn to south-western NSW. Found in almost all habitats, including wet and dry sclerophyll forest, open woodland, open country, mallee, rainforests, heathland and waterbodies.	1	Unlikely, suitable habitat not recorded on site.
Reptilia						
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	E1	V	Largely confined to Triassic and Permian sandstones within the coast and ranges in an area within approximately 250 km of Sydney. Found in dry and wet sclerophyll forests, riverine forests, coastal heath swamps, rocky outcrops, heaths, grassy woodlands.	0	No, suitable habitat not present.

BC Act Status: CE = Critically Endangered; E = Endangered; E1 = Endangered; E2 = Endangered Population; E4A = Critically Endangered. EPBC Act Status: M = Migratory, CD = Conservation Dependent, CE = Critically Endangered, E = Endangered, V = Vulnerable, X = Extinct.

Table 6: Likelihood of occurrence of threatened flora species

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km radius	Likelihood of occurrence
<i>Acacia bynoeana</i>	Bynoe's Wattle	E1	V	Found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains. It is found in heath or dry sclerophyll forest on sandy soils.	1	Unlikely, suitable habitat not recorded on site.
<i>Acacia pubescens</i>	Downy Wattle	V	V	Restricted to the Sydney region around the Bankstown-Fairfield-Rookwood and Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. Open woodland and forest, including Cooks River/Castlereagh Ironbark Forest, Shale/Gravel Transition Forest and Cumberland Plain Woodland. It occurs on alluviums, shales and at the intergrade between shales and sandstones.	536	Unlikely, suitable habitat not recorded on site.
<i>Allocasuarina glareicola</i>	-	E1	E	Primarily restricted to the Richmond (NW Cumberland Plain) district, but with an outlier population found at Voyager Point, Liverpool. It is found in Castlereagh woodland on lateritic soil and in open woodland with <i>Eucalyptus parramattensis</i> , <i>Eucalyptus fibrosa</i> , <i>Angophora bakeri</i> , <i>Eucalyptus sclerophylla</i> and <i>Melaleuca decora</i> .	0	No, suitable habitat not present.
<i>Caladenia tessellata</i>	Thick Lip Spider Orchid	E1	V	Currently known from two disjunct areas; one population near Braidwood on the Southern Tablelands and three populations in the Wyong area on the Central Coast. It is found in grassy sclerophyll woodland on clay loam or sandy soils, or low woodland with stony soil.	0	No, suitable habitat not present.
<i>Callistemon linearifolius</i>	Netted Bottle Brush	V	-	Found from the Georges River to Hawkesbury River in the Sydney area (limited to the Hornsby Plateau area), and north to the Nelson Bay area of NSW. Also found in Coalcliff in the northern Illawarra. Found in dry sclerophyll forest.	1	Unlikely, suitable habitat not recorded on site.
<i>Cryptostylis hunteriana</i>	Leafless Tongue Orchid	V	V	In NSW, recorded mainly on coastal and near coastal ranges north from Victoria to near Forster, with two isolated occurrences inland north-west of Grafton. It is found in coastal heathlands, margins of	0	No, suitable habitat not present.

Scientific Name	Common Name		BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km radius	Likelihood of occurrence
					coastal swamps and sedgelands, coastal forest, dry woodland, and lowland forest.		
<i>Darwinia biflora</i>	-		V	V	Recorded in Ku-ring-gai, Hornsby, Baulkham Hills and Ryde local government areas, in an area bounded by Maroota, North Ryde, Cowan and Kellyville. Found in woodland, open forest or scrub-heath on the edges of weathered shale-capped ridges, where these intergrade with Hawkesbury Sandstone.	0	No, suitable habitat not present.
<i>Dillwynia tenuifolia</i>	-		V	-	Mainly on the Cumberland Plain, but also Bulga Mountains at Yengo in the north, and Kurrajong Heights and Woodford in the Lower Blue Mountains. Found in scrubby/dry heath areas within Castlereagh Ironbark Forest and Shale Gravel Transition Forest, transitional areas where these communities adjoin Castlereagh Scribbly Gum Woodland, and disturbed escarpment woodland on Narrabeen sandstone.	1	Unlikely, suitable habitat not recorded on site.
<i>Epacris purpurascens</i> var. <i>purpurascens</i>	-		V	-	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Found in sclerophyll forest, scrubs and swamps. Most habitats have a strong shale soil influence.	22	Unlikely, suitable habitat not recorded on site.
<i>Eucalyptus nicholii</i>	Narrow-leaved Peppermint	Black	V	V	Recorded in New England Tablelands from Nundle to north of Tenterfield, in dry grassy woodland, on shallow soils of slopes and ridges.	2	Unlikely, suitable habitat not recorded on site.
<i>Eucalyptus scoparia</i>	Wallangarra White Gum		E1	V	In NSW it is known from only three locations near Tenterfield. Found in open eucalypt forest, woodland and heaths on well-drained granite/rhyolite hilltops, slopes and rocky outcrops, typically at high altitudes.	1	Unlikely, suitable habitat not recorded on site.
<i>Genoplesium baueri</i>	Bauer's Midge Orchid		E1	E	Has been recorded from locations between Nowra and Pittwater and may occur as far north as Port Stephens. It is found in dry sclerophyll forest and moss gardens over sandstone.	0	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km radius	Likelihood of occurrence
<i>Grevillea beadleana</i>	Beadle's Grevillea	E1	E	Recorded in four separate areas of north-east NSW: the Torrington area west of Tenterfield, Oxley Wild Rivers National Park, Guy Fawkes River National Park and at Shannon Creek south-west of Grafton. Found in open eucalypt forest with a shrubby understorey, mainly on steep granite slopes at high altitudes.	1	Unlikely, suitable habitat not recorded on site.
<i>Isotoma fluviatilis</i> subsp. <i>fluviatilis</i>	-	E1	X	Currently known from only one property at Erskine Park in the Penrith LGA. Previously sighted at Homebush and at Agnes Banks. Damp places on the Cumberland Plain, including freshwater wetland, grassland/alluvial woodland, and alluvial woodland/shale plains woodland.	1	No, species is extinct.
<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V	V	Only found in NSW, populations found in the Jervis Bay area in the south and the Gosford-Wyong area in the north.	0	No, suitable habitat not present.
<i>Persoonia hirsuta</i>	Hairy Geebung	E1	E	Scattered distribution around Sydney, from Singleton in the north, along the east coast to Bargo in the south and the Blue Mountains to the west. It is found in sandy soils in dry sclerophyll open forest, woodland and heath on sandstone.	0	No, suitable habitat not present.
<i>Pimelea curviflora</i> var. <i>curviflora</i>	-	V	V	Confined to the coastal area of the Sydney and Illawarra regions between northern Sydney and Maroota in the north-west and Croom Reserve near Albion Park in the south. It is found in woodland, mostly on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes.	1	Unlikely, suitable habitat not recorded on site.
<i>Pimelea spicata</i>	Spiked Rice-flower	E1	E	Two disjunct areas; the Cumberland Plain (Marayong and Prospect Reservoir south to Narellan and Douglas Park) and the Illawarra (Landsdowne to Shellharbour to northern Kiama). It is found in well-structured clay soils, Eucalyptus moluccana (Grey Box) communities and in areas of ironbark on the Cumberland Plain.	0	No, suitable habitat not present.
<i>Pomaderris prunifolia</i>	-	E2	-	Population is known from only three sites: at Rydalmere, within Rookwood Cemetery and at The Crest of Bankstown. At Rydalmere it occurs among grass species on sandstone near a creek.	16	Unlikely, suitable habitat not recorded on site.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km radius	Likelihood of occurrence
<i>Pterostylis gibbosa</i>	Sydney Plains Greenhood	E1	E	Restricted to western Sydney between Freemans Reach in the north and Picton in the south. Found in small pockets of shallow soil in depressions on sandstone rock shelves above cliff lines, adjacent to sclerophyll forest or woodland on shale/sandstone transition soils or shale soils.	0	No, suitable habitat not present.
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	E1	V	Only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. It is found in subtropical and littoral rainforest on gravels, sands, silts and clays.	3	No, suitable habitat not present.
<i>Tetratheca juncea</i>	Black-eyed Susan	V	V	Confined to the northern Sydney Basin bioregion and the southern North Coast bioregion in the local government areas of Wyong, Lake Macquarie, Newcastle, Port Stephens, Great Lakes and Cessnock. Found in low open forest/woodland, heathland and moist forest, mainly on low nutrient soils associated with the Awaba Soil Landscape.	5	No, suitable habitat not present..
<i>Thesium australe</i>	Austral Toadflax	V	V	In eastern NSW it is found in very small populations scattered along the coast, and from the Northern to Southern Tablelands. It is found in grassland on coastal headlands or grassland and grassy woodland away from the coast.	0	No, suitable habitat not present.
<i>Wahlenbergia multicaulis</i>	Tadgell's Bluebell	E2	-	13 known sites, two of which are in northern Sydney (Thornleigh and Mt Ku-Ring-Gai) with the remainder in western Sydney (Rookwood, Chullora, Bass Hill, Bankstown, Georges Hall, Campsie, South Granville and Greenacre). In Hornsby LGA it occurs in or adjacent to sandstone gully forest. In Western Sydney it is found in remnants of Cooks River/ Castlereagh Ironbark Forest. Typically occurs in damp, disturbed sites.	68	No, suitable habitat not present.
<i>Wilsonia backhousei</i>	Narrow-leaved Wilsonia	V	-	In NSW, found on the coast between Mimosa Rocks National Park and Wamberal north of Sydney (Nelson's Lake, Potato Point, Sussex Inlet, Wowly Gully, Parramatta River at Ermington, Clovelly, Voyager Point, Wollongong and Royal National Park). Found in margins of salt marshes and lakes.	45	No, suitable habitat not present.

Scientific Name	Common Name	BC Act Status	EPBC Act Status	Distribution and Habitat	Records within 5 km radius	Likelihood of occurrence
<i>Zannichellia palustris</i>	-	E1	-	In NSW, known from the lower Hunter and in Sydney Olympic Park. Found in fresh or slightly saline stationary or slowly flowing water.	5	No, suitable habitat not present.

CE = Critically Endangered; E = Endangered; E1 = Endangered; E2 = Endangered Population; E4A= Critically Endangered. EPBC Act Status: M = Migratory, CD = Conservation Dependent, CE = Critically Endangered, E = Endangered, V = Vulnerable, X = Extinct.

Appendix B Species List

Scientific name	Common name	Native/Exotic	Weeds identified in GRSWMP
<i>Abelia sp.</i>	Abelia	E	
<i>Acmena smithii</i>	Lilly Pilly (horticultural variety)	N	
<i>Araujia sericifera</i>	Moth Vine	E	X
<i>Bidens pilosa</i>	Cobblers Peg	E	
<i>Brachychiton populneus</i>	Illawarra Flame Tree	N	
<i>Brunfelsia bonodora</i>	Yesterday Today and Tomorrow	E	
<i>Buxus microphylla var japonica</i>	Japanese Box	E	
<i>Callistemon citrinus</i>	Crimson Bottlebrush	N	
<i>Camellia japonica</i>	Camellia	E	
<i>Cenchrus clandestinus</i>	Kikuyu	E	X
<i>Cinnamomum camphora</i>	Camphor Laurel	E	X
<i>Coleonema sp.</i>	Diosma	E	
<i>Cynodon dactylon</i>	Couch	E	
<i>Dracaena sp.</i>	Dracaena	E	
<i>Ehrharta erecta</i>	Panic Veldtgrass	E	X
<i>Flindersia australis</i>	Australian Teak	N	
<i>Fraxinus sp.</i>	Ash	E	
<i>Gardenia augusta</i>	Gardenia	E	
<i>Grevillea robusta</i>	Silky Oak	N	
<i>Jacaranda mimosifolia</i>	Jacaranda	E	
<i>Ligustrum lucidum</i>	Large-leaf Privet	E	X
<i>Liriope muscari</i>		E	
<i>Loropetalum sp.</i>	Chinese Fringe Flower	E	
<i>Magnolia sp.</i>	Magnolia	E	
<i>Murraya paniculata</i>	Murraya	E	X
<i>Nandina domestica</i>	Sacred Bamboo	E	
<i>Ochna serrulata</i>	Mickey Mouse Plant	E	X
<i>Oplismenus sp.</i>	Basket Grass	N	
<i>Philodendron sp.</i>	Philodendron	E	
<i>Plumeria sp.</i>	Frangipani	E	
<i>Pyrostegia venusta</i>	Orange trumpet vine	E	
<i>Pyrus calleryana</i>	Ornamental Pear	E	
<i>Raphiolepis indica</i>	Indian Hawthorn	E	

Scientific name	Common name	Native/Exotic	Weeds identified in GRSWMP
<i>Strelitzia reginae</i>	Bird of Paradise	E	
<i>Syncarpia glomulifera</i>	Turpentine	N	
<i>Syzygium sp.</i>	Lilly Pilly (horticultural variety)	N	
<i>Taraxacum sp.</i>	Dandelion	E	
<i>Trachelospermum jasminoides</i>	Star Jasmine	E	
<i>Viburnum odoratissimum</i>	Sweet Viburnum	E	

Appendix C Microbat Activity and Survey Report – Site 3

Microbat Activity and Survey Report No. 4 Vernon St Meriden School

Ultrasonic Analysis Report – March 2019

Site Description

No. 4 Vernon St Strathfield is located in an highly urbanised environment with limited native vegetation in the surrounding area. The garden of the property consists of landscaped shrubs (exotic and horticultural native species), exotic groundcovers and mown grass. One Lilly Pilly, three metres high, is present within the rear garden of the house. No hollow bearing trees are located within the boundary of 4 Vernon St or the other areas surveyed for the proposed development at Meriden School.

The building at 4 Vernon St Strathfield is still occupied during the daytime and operates as the school clothing shop. Gaps were identified in the high brickwork leading into the roof cavity (**Figure 1**).

Methods

A brief visual inspection was made of the roof cavity at the time of installing the Anabat Swift in this space. A strong light was used to inspect for any bat guano in the roof cavity. No guano or other signs of microbats were identified.

One Anabat Swift was placed in the house roof cavity and another Anabat Swift was placed outside in the eastern garden of the building for four nights between 12 and 16 March 2019 for a total of 8 Anabat survey nights (Figure 6).

The second Anabat Swift was placed at the rear of the garden facing into the garden space of 4 Vernon St, facing across the lawn in the direction of the building.

The weather during the period that the Anabat Swifts were recording is given in the table below.

Date	Temp (min °C)	Temp (max °C)	Rain (mm)	Wind (km/hour) 9am / 3pm
14/3/19	19	28	3.8	2 - 15
15/3/19	17	24	12.4	4 - 22
16/3/19	17	24	32	2 - 17
17/3/19	19	21	38	9 - 9

Observation from Sydney Olympic Park (BOM 2019) (<http://www.bom.gov.au/climate/dwo/IDCJDW2061.latest.shtml>)



Figure 1: Holes leading to roof cavity at 4 Vernon Street Strathfield

Data Analysis

Bat calls were analysed by Danielle Adams-Bennett using the program AnalookW (Version 4.2n 16 March 2017, written by Chris Corben, www.hoarybat.com). Call identifications were made using regional based guides to the echolocation calls of microbats in New South Wales (Pennay et al 2004); and south-east Queensland and north-east New South Wales (Reinhold et al 2001) and the accompanying reference library of over 200 calls from Sydney Basin, NSW (which is available at <http://www.forest.nsw.gov.au/research/bats/default.asp>). Danielle has over five years of experience in the identification of ultrasonic call recordings. This report and a sample of the calls was reviewed by Alicia Scanlon from Eco Logical Australia, who has over twelve years of experience in the identification of ultrasonic call recordings.

Bat calls were analysed using species-specific call profile parameters including call shape, characteristic frequency, initial slope and time between pulses (Reinhold et al. 2001). To ensure reliable and accurate results the following protocols (adapted from Lloyd et al 2006) were followed:

- Search phase calls were used in the analysis, rather than cruise phase calls or feeding buzzes (McKenzie et al 2002). Cruise phase or feeding calls were labelled as being unidentifiable.
- Recorded calls containing less than three pulses were not analysed and these sequences were labelled as unidentifiable, being too short to confidently determine the identity of the species making the call (Law et al 1999).
- For those calls that were useful to identify the species making the call, two categories of confidence were used (Mills et al 1996):
 - Definitely present – the quality and structure of the call profile is such that the identity of the bat species making the calls is not in doubt
 - Potentially present – the quality and structure of the call profile is such that there is some / low probability of confusion with species that produce similar calls profiles
- Calls made by bats which cannot be used for identification purposes such as social calls, short and low-quality calls, cruise and approach phase calls were labelled as unidentifiable.
- Sequences labelled as unidentifiable were of inferior quality and therefore not able to be identified to any microbat species, they can however be used as an indicator of microbat activity at the site.
- *Nyctophilus* spp. (Long-eared bats) are difficult to identify confidently from their calls and no attempt was made to identify this genus to species level (Pennay et al 2004). There are two potential *Nyctophilus* species that could occur in the study area. Both species; *N. geoffroyi* (Lesser Long-eared Bat) and *N. gouldii* (Gould's Long-eared Bat) are relatively common and widely distributed across NSW.
- The Free-tailed Bats (previously referred to as the genus *Mormopterus*) have recently undergone taxonomic revision (Reardon et al 2014) and published reference calls for this group of species (Pennay et al 2004) are believed to contain errors (Greg Ford pers comm.). This report uses nomenclature for Free-tailed bat species as referred to in Jackson and Groves (2015). The correlation between nomenclature used in this report and that used in NSW State legislation is presented in **Table 1** below.
- Sequences not attributed to microbat echolocation calls (e.g. insect buzzes, wind, train and vehicle movement) were dismissed from the analysis.

Table 1: Correlations between current and previous nomenclature for the Free-tailed bats of NSW

Jackson and Groves 2015	Previously known as	Common Name	BC Act
<i>Austronomus australis</i>	<i>Tadarida australis</i>	White-striped Free-tailed Bat	
<i>Micronomus norfolkensis</i>	<i>Mormopterus norfolkensis</i>	Eastern Coastal Free-tailed Bat	Vulnerable
<i>Ozimops petersi</i>	<i>Mormopterus species 3</i> (small penis)	Inland Free-tailed Bat	
<i>Ozimops planiceps</i>	<i>Mormopterus species 4</i> (long penis eastern form)	Southern Free-tailed Bat	
<i>Ozimops ridei</i>	<i>Mormopterus species 2</i>	Ride's Free-tailed Bat	
<i>Setirostris eleryi</i>	<i>Mormopterus species 6</i>	Bristle-faced Free-tailed Bat	Endangered

Results

The detector placed inside the roof cavity did not record any bat call sequences but recorded data consisting of insect activity. There was a total of 10 sequences recorded from the Anabat Swift placed outside at 4 Vernon St at Meriden School. Approximately 90% of sequences (9) submitted were able to be identified to genus or species with the remainder being too short or of low quality preventing positive identification.

There were at least two and up to three microbat species recorded in this survey (**Table 2**). No species listed as vulnerable under the NSW *Biodiversity Conservation Act 2016* (BC Act) or Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) were recorded.

Microbat activity was low outside the building with only two calls per night recorded on average throughout the four night survey period. This low activity could be attributed to placement of the detector which was set facing the building away from native vegetation.

No calls were recorded around dusk and /or dawn with all calls recorded during the hours between 9 pm and 2 am indicating that it is unlikely that microbats are roosting in the building.

See the Survey Limitations section provided below for further information on call identification and separation of species with overlapping call profiles.

Table 2: Summary of microbat species recorded at Meriden School, Strathfield during surveys on 12-16 March 2019.

Scientific Name	Common Name	Definitely present	Potentially present
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	X	
<i>Ozimops ridei</i>	Ride's Free-tailed Bat	X	

* Threatened species listed under BC Act

Survey Limitations

Calls can only be positively identified when the defining characteristics are present and there is no chance of confusion between species with overlapping and/or similar calls. In this survey, there were some call sequences that could not be positively identified to species level because they were too unclear or too short.

The calls of *Chalinolobus gouldii* (Gould's Wattled Bat), and *Ozimops ridei* (Ride's Free-tailed Bat) can be difficult to separate. Calls were identified as Ride's Free-tailed Bat when the call shape was flat (slope S1 of less than 100 OPS generally) and the frequency was between 24 – 36 kHz. Gould's Wattled Bat was distinguished by a frequency of 27.5 – 32.5 kHz and alternation in call frequency between pulses.

When no distinguishing characteristics were present calls were assigned to multi-species groups.

Table 3: Combined Anabat results for four survey nights 12-16 March 2019, Meriden School (Outside), Strathfield.

Scientific name	Common name	Definitely present	Potentially potential	Total
<i>Chalinolobus gouldii</i>	Gould's Wattled Bat	1		
<i>Chalinolobus gouldii</i> / <i>Ozimops ridei</i>	Gould's Wattled Bat / Ride's Free-tailed Bat			6
<i>Ozimops ridei</i>	Ride's Free-tailed Bat	2		
Unidentifiable				1
Total identified calls				9
Total calls				10
Percentage identifiable				90%

*Threatened species listed under BC Act

Call Profiles

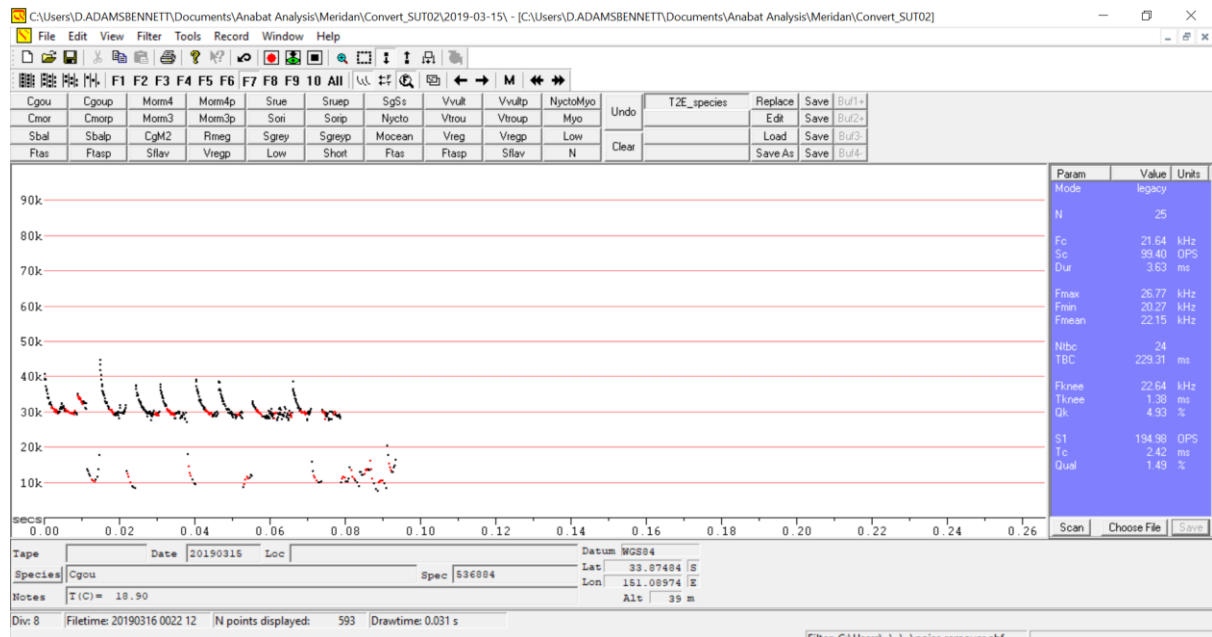


Figure 2: Call profile for *Chalinolobus gouldii* (Gould's Wattled Bat) recorded outside the building on Vernon St, Strathfield at 00:22 (12:22am) on 16 March 2019.

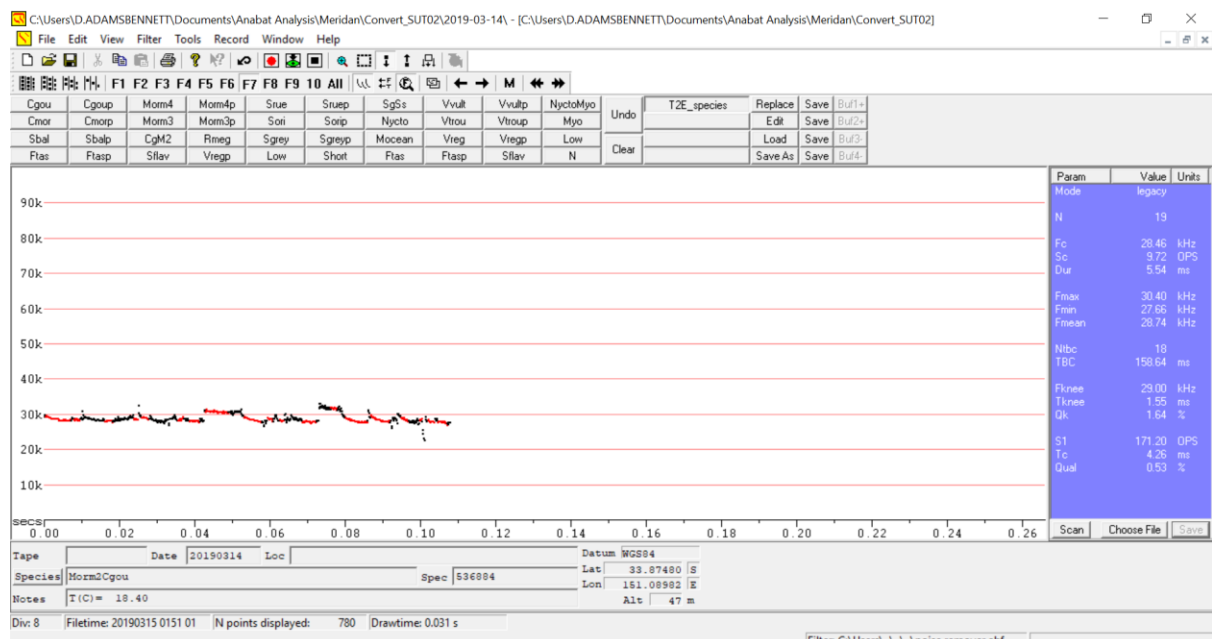


Figure 3: Call profile for *Chalinolobus gouldii* (Gould's Wattled Bat) / *Ozimops ridei* (Ride's Free-tailed Bat) recorded outside the building on Vernon St, Strathfield at 23:00 (11:00pm) on 13 March 2019.

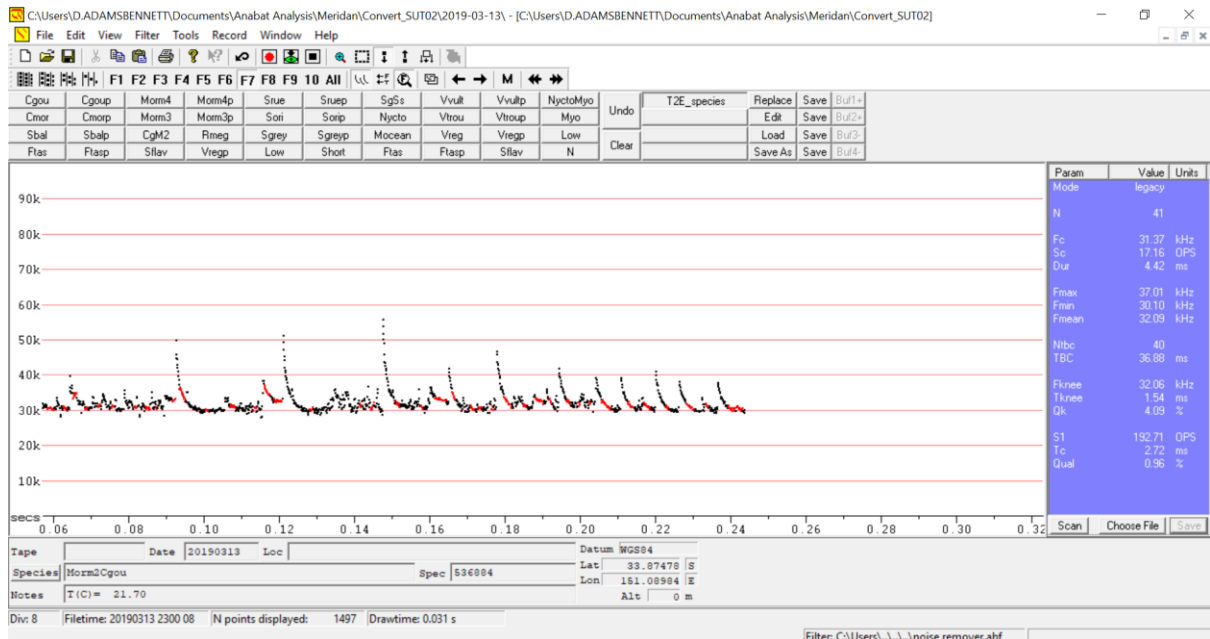


Figure 4: Call profile for *Chalinolobus gouldii* (Gould's Wattled Bat) / *Ozimops ridei* (Ride's Free-tailed Bat) recorded outside the building on Vernon St, Strathfield at 23:00 (11:00pm) on 13 March 2019.

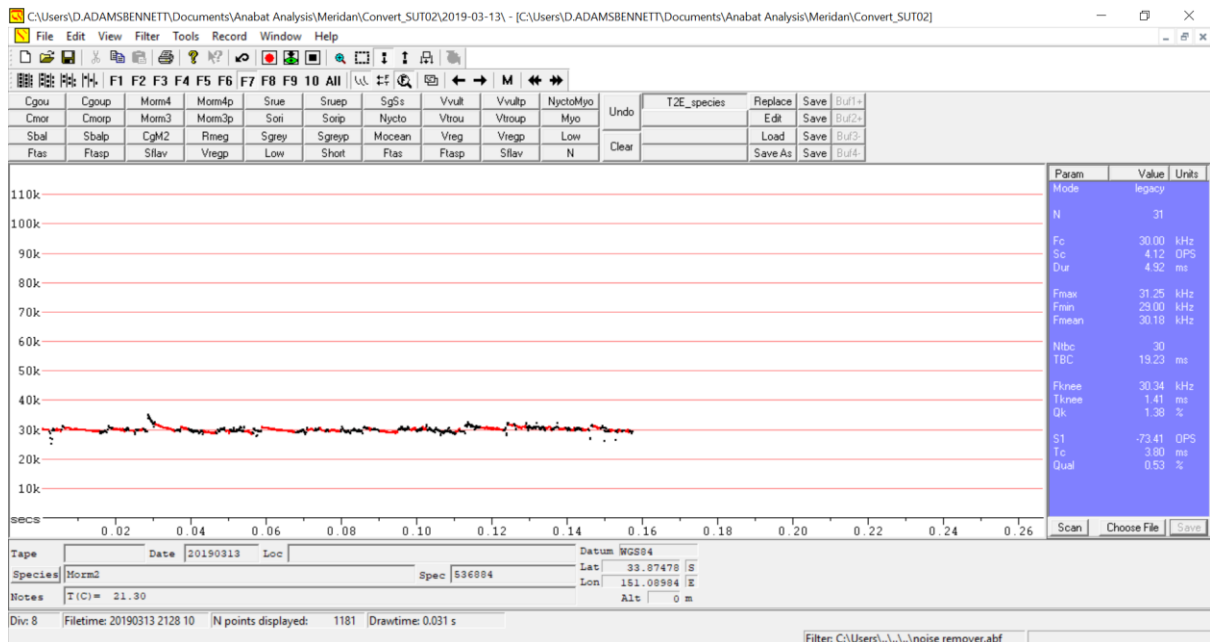


Figure 5: Call profile for *Ozimops ridei* (Ride's Free-tailed Bat) recorded outside the building on Vernon St, Strathfield at 21:28 (9:28pm) on 13 March 2019.

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Figure 6:Location of Anabats

Appendix D Waiver approvals



DOC19/131278
SSD 9692

Mr Andrew Beattie
Social and Other Infrastructure Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Dear Mr Beattie

Alterations and additions to Meriden School – 10-18 Redmyre Road; 3-13 Margaret Street and 36-38 Redmyre Road Strathfield (SSD 9692) – request for determination under Section 7.9(2) of the Biodiversity Conservation Act 2016

I refer to the Department's email of 7 February 2019 requesting that the Office of Environment and Heritage (OEH) review the Biodiversity Assessment waiver request which includes the report from Ecological Australia (dated 5 February 2019) on behalf of the proponent (Meriden School) to not require a Biodiversity Development Assessment Report (BDAR) to be submitted with the above State Significant Development (SSD) application. Reference is also made to the further information received by OEH on 27 March 2019 in relation to the Ultrasonic Analysis Report - March 2019 - Microbat Activity and Survey Report No. 4 Vernon Street Meriden School.

Under section 7.9(2) of the *Biodiversity Conservation (BC) Act 2016*:

"Any such application [SSD] is to be accompanied by a biodiversity development assessment report unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values."

The power to determine whether an SSD is "*not likely to have any significant impact on biodiversity values*" was delegated to the OEH Senior Executive on 4 December 2017.

I have reviewed the information prepared by Ecological Australia and the additional Ultrasonic Analysis Report submitted in support of the waiver request in relation to this SSD.

I note the waiver request report states vegetation within the site was of low abundance, no remnant or locally indigenous vegetation was present within the three development sites and the landscape gardens contain little or no native vegetation and suitable habitat for threatened species is highly limited within the site.

After reviewing all the information, I have determined that the proposed development is not likely to have any significant impact on biodiversity values and that there is no need for the SSD application to include a BDAR.

Should you have any queries in relation to this matter, please contact Janne Grose, Senior Conservation Planning Officer on 8837 6017 or by email at janne.grose@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Alex Graham', with a stylized, flowing script.

03/04/2019

ALEX GRAHAM
Director Greater Sydney
Communities and Greater Sydney Division



Anna Wang
Urbis
Level 8, Angel Place
123 Pitt Street
Sydney NSW 2000

Our ref: SSD 9692

-via email-

awang@urbis.com.au

Dear Ms Wang,

**Meriden School, Strathfield (SSD 9692)
Request to waive the need for a BDAR under the Biodiversity Conservation Act 2016**

I refer to your correspondence dated 7 February 2019, requesting to waive the need for a Biodiversity Development Assessment Report (BDAR) to be submitted as part of the above referenced State significant development (SSD) application.

Section 7.9(2) of the *Biodiversity Conservation Act 2016* (BC Act) requires:

"Any such application is to be accompanied by a biodiversity development assessment report unless the Planning Agency Head and the Environment Agency Head determine that the proposed development is not likely to have any significant impact on biodiversity values."

The authority of the "Planning Agency Head" to determine whether a proposed development is "not likely to have any significant impact on biodiversity values" has been delegated to Directors within the Planning Services Division on 21 December 2017.

I have reviewed the application of the test of significance under sections 1.5 and 7.3 of the BC Act and clause 1.4 of the *Biodiversity Conservation Regulation 2017*, and determine that the development is not likely to have any significant impact on biodiversity values. The application, therefore, does not need to be accompanied by a BDAR. Accordingly, a waiver under section 7.9 is granted for the proposed development (being the Alterations and Additions to Meriden School, Strathfield - SSD 9692).

The delegated *Environment Agency Head* in the Office of Environment and Heritage has also granted a waiver in a letter dated 3 April 2019 and a copy of that letter is attached.

This waiver is issued in respect of the proposed development detailed in a request for Secretary's environmental assessment requirements dated 22 November 2018. Amendments to the development may require a further waiver to be sought and issued.

Should you have any enquiries regarding the above matter, please contact Jonathan Kerr on 9274 6337 or via email at jonathan.kerr@planning.nsw.gov.au.

Yours sincerely,

David Gibson
Acting Director, Social and Other Infrastructure Assessments
As delegate of the Secretary

