

BEVERLY HILLS STATION MULTI-STOREY CARPARK DEVELOPMENT

Flora and Fauna Assessment

For:

pitt&sherry

November 2018

Final Report



**PO Box 2474
Carlingford Court 2118**

Report No. 18087RP1

The preparation of this report has been in accordance with the brief provided by the Client and has relied upon the data and results collected at or under the times and conditions specified in the report. All findings, conclusions or recommendations contained within the report are based only on the aforementioned circumstances. The report has been prepared for use by the Client and no responsibility for its use by other parties is accepted by Cumberland Ecology.

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Approved by: Dr David Robertson

Position: Director

Signed: 

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Introduction

1.1 Background

Cumberland Ecology was commissioned by pitt&sherry on behalf of Transport for New South Wales (TfNSW) to conduct a technical ecological assessment and prepare a detailed Flora and Fauna Assessment (FFA) to assess the ecological impacts of a proposed two-part multi-storey car park development at Beverly Hills including commuter and council car parking (hereafter referred to as the 'Proposal'). This FFA is to be included in a Review of Environmental Factors (REF) that is being prepared to assess the impacts of the proposed works on the biodiversity values of the Proposal site. Additionally, this assessment is to provide supplementary support for the Council carpark Development Application (DA) submitted to King Georges Council under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

1.1.1 Aims

The aims of this assessment are to:

- Identify threatened species, populations or ecological communities in the Proposal site listed under the *NSW Biodiversity Conservation Act 2016* (BC Act) and/or the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act);
- Assess the potential impacts of the Proposal on any threatened species, populations and communities identified as having the potential to occur within the Proposal site;
- Identify the location and identity of species listed as 'Priority Weeds' under the *NSW Biosecurity Act 2015* at the Proposal site;
- Provide recommendations on the need for further ecological assessments required under the BC Act and/or EPBC Act; and
- Provide recommendations on how to minimise impacts of the Proposal on the ecological values of the Proposal site.

1.2 Description of the Proposal

1.2.1 Location

The Proposal site is located at 2-2a Edgbaston Road, Beverly Hills, within the Georges River Local Government Area (LGA). Additionally, accessible car spaces will be constructed at the commuter car park off Tooronga Terrace, Beverly Hills and staircase modifications will take place adjacent to King Georges Road overbridge (**Figure 1.1**).

1.2.2 Proposed Scope of Works

The Proposal is part of TfNSW application to develop a multi-storey carpark for the adjoining Beverly Hills train line and surrounding suburbia. The Proposal comprises the construction of a multi-storey car park comprised of a ground level plus four additional levels with an anticipated total of 270 parking spaces that will supplement the existing Georges River Council single storey car park. The Proposal site is around 0.33ha in area and it is assumed that all vegetation within the Proposal site will be cleared for construction works. This assessment has thus considered the maximum level of clearance required as a precaution.

The Proposal will include:

- Replacement of existing timed car spaces on the ground floor and first floors to comprise 54 timed spaces for Council purposes (non-commuter). An additional 31 spaces will be developed as part of the proposed Roads and Maritime Services (RMS) Clearways project (non-commuter);
- Provision of untimed commuter car spaces on the second, third and fourth floors;
- Construction of a new vehicle access way from Edgbaston Road;
- Installation of a lift to the north-east of the carpark;
- Installation of two stair cases (to the south-west and north-eastern sites of the car park);
- Kerb and gutter adjustments;
- Ancillary works including but not limited to utility adjustments, provision of lighting, line marking and signage;
- Site compounds for temporary equipment storage;
- Removal of vegetation; and
- Landscaping.

It has been determined that three existing parking spaces are to be converted into two accessible car spaces located at the commuter car park off Tooronga Terrace, Beverly Hills (**Figure 1.1**). This will involve the loss of two parking spaces and the delineation of accessible

parking spaces and associated pavement works in the existing commuter carpark adjacent to Beverly Hills Station.

Furthermore, proposed upgrade works will be undertaken on the existing stairs adjacent to King Georges Road overbridge to facilitate access (**Figure 1.1**). This will include:

- Modifications to the top riser for safety compliance;
- Upgrade of safety components such as installation of nosing's and concrete toppings and tactiles; and
- Repainting of the stair case to match existing finishes.

An assessment was undertaken to identify any possible impacts to nearby vegetation, and it has been determined that no ecological values exist within the Tooronga Terrace car park and King Georges River stair case impact areas. Furthermore, ecological values that are directly adjacent to these areas will not be adversely impacted.

Subject to planning approval, construction is expected to commence mid-2019 and take around 12 months to complete. **Figure 1.1** indicates the disturbance area (the entire Proposal site) for construction of the multi-storey car park, Tooronga Terrace car spaces and King Georges Road staircase considered in this FFA. Detailed design plans and the proposed site layouts for the proposed development are provided in the REF.



Legend

 Proposal Site

Image Source:
Image © NearMap 2018
Dated: 9/11/2018

Coordinate System: MGA Zone 56 (GDA 94)



0 20 40 60 80 m

Figure 1.1. Aerial view of the proposal site

Methodology

2.1 Desktop Assessment

2.1.1 Database Search

A review of government databases was conducted utilising the NSW Wildlife Atlas (OEH 2018) and the EPBC Protected Matters Database (DoEE 2018), to identify threatened species, populations and ecological communities that occur or are likely to occur within ten kilometres (the surrounding area) of the Proposal site.

2.1.2 Likelihood of Occurrence Assessment

All threatened species, populations and ecological communities identified in the database search were assessed for their likelihood to occur within the Proposal site. Factors considered in the likelihood of occurrence assessment for each threatened species, population and ecological community included:

- Habitat requirements;
- Number, age and location of previous records from the locality; and
- The availability of suitable habitat within the Proposal site.

The likelihood of occurrence assessments of threatened species, populations and communities are provided in **Appendix A**.

2.2 Site Assessment

Field surveys were undertaken on 9 October 2018 by Cumberland Ecology staff Elise McCarthy (ecologist) and Bryan Furchert (botanist). The inspection involved traversing the Proposal site on foot and visually inspecting the areas where ecological disturbance is proposed. Photographs were taken at various locations of proposed disturbance to document the condition of vegetation within the Proposal site. The locations of surveys conducted during the site assessment are shown in **Figure 2.1**.

2.2.1 Flora Survey

Flora surveys were conducted to verify and update any existing mapping, with particular reference to Threatened Ecological Communities (TECs), as listed under the BC Act and/or EPBC Act.

The vegetation within the Proposal site was ground-truthed via a random meander survey and the condition and composition of vegetation was assessed as per the TfNSW Vegetation Offset Guidelines (TfNSW 2013). The vegetation survey consisted of the following methods:

- The establishment of a 20mx50m plot to sample the vegetation within the Proposal site. The following details were recorded:
 - Cover and abundance of native and exotic species (in a 20mx20m plot nestled within the 20mx50m plot);
 - Presence of mature trees (Diameter at Breast Height (DBH) ≥ 30 cm);
 - Structural information of each stratum;
 - Identification of hollow-bearing trees, logs/timber, rock cover and leaf litter; and
 - Condition and connectivity of vegetation.
- Targeted survey for threatened flora species known to occur within the area.

Under the *NSW Biosecurity Act 2015*, state and regional listed Priority Weeds have specific legal requirements for management and have higher management priorities. A survey for Priority weeds and Weeds of National Significance (WoNS) within the Proposal site was also carried out.

Furthermore, a simple assessment of the condition and presence of flora to be impacted during the construction of two accessible car spaces off Tooronga Terrace and King Georges Road staircase upgrades were undertaken. It was determined from this assessment that no ecological impacts will result from such works as no vegetation exists within the impact areas.

2.2.2 Fauna Habitat Assessment

A fauna habitat assessment was completed within the Proposal site with consideration of significant indicators of habitat availability, condition and complexity. A search for the following indicators of fauna habitat was conducted:

- Ground, shrub/understorey and canopy cover;
- Tree hollows, noting the number and size of hollows;
- Habitat features such as bush rock, fallen logs and decorticated bark; and

- Indirect indicators such as scats, scratches, nests, burrows, paths and runways.

Additionally, an assessment of the structural complexity and connectivity of vegetation, age of structure and nature and extent of human disturbance was also undertaken.



Legend

- Proposal Site
- Survey Tracks

Image Source:
Image © NearMap 2018
Dated: 9/11/2018



Coordinate System: MGA Zone 56 (GDA 94)

cumberland
ecology

0 5 10 15 20 m

Figure 2.1. Survey tracks within the proposal site

Results

3.1 Database Search

The results of the database search and likelihood of occurrence assessment are shown in **Appendix A**. No threatened flora species were identified as having the potential to occur on the Proposal site. Urban adapted threatened fauna species such as the Grey-headed Flying-fox and Microchiropteran bats have been considered to potentially utilise the Proposal site as marginal foraging habitat and are considered in more detail in subsequent subsections.

3.2 Vegetation Communities

Previous broad scale mapping reveals that the Proposal site is itself unmapped (OEH 2013), however vegetation throughout the surrounding locality has been mapped as Castlereagh Ironbark Forest and Sydney Turpentine-Ironbark Forest TECs. Both of these TECs have been listed as an Endangered Ecological Community (EEC) under the BC Act and a Critically Endangered Ecological Community (CEEC) under the EPBC Act. Despite the presence of these TECs within the wider locality, neither have been mapped within the Proposal site. Surveys conducted by Cumberland Ecology for this assessment confirm that the community that persists within the Proposal site is Urban Native/Exotic Vegetation (0.042ha).

A description of this vegetation community is provided below, and the distribution of this community is shown in **Figure 3.1**.

3.2.1 Urban Native/Exotic Vegetation

BC Act Status: Not listed

EPBC Act Status: Not listed

Urban Native/Exotic Vegetation occurs primarily along the boundary of the Proposal site and covers an area of approximately 0.042ha. It is evident that this vegetation is comprised of planted species and not remnant native vegetation due to the species composition and location throughout the site. Species present include planted native canopy, sub-canopy and shrub species such as *Eucalyptus punctata* (Grey Gum), *Acacia Implexa* (Hickory Wattle), *Corymbia ficifolia* (Red-flowering Gum), *Casuarina glauca* (Swamp Oak), *Acacia elata* (Mountain Cedar Wattle) and *Livistona australis* (Cabbage Gum) (**Photograph 3.1**). The ground cover is comprised of planted natives including *Lomandra longifolia* (Spiny-headed Mat-rush) and *Crinum pedunculatum* (Swamp Lily). Exotic species are primarily dominant in the understorey and groundcover comprising of species such as *Conyza sumatrensis* (Tall

Fleabane), *Bidens pilosa* (Cobbler's Pegs), *Sonchus asper* (Prickly Sowthistle), *Ehrharta erecta* (Panic Veldtgrass), *Arundo donax* (Giant Reed) and *Paspalum dilatatum* (Paspalum) (Photograph 3.2).

A complete flora species list is provided in **Appendix B**.



Photograph 3.1 Planted *Eucalyptus punctata* (Grey Gum)



Photograph 3.2 Dominant exotic understorey



Legend

- Proposal Site
- Planted *Eucalyptus nicholii* (V - BC Act, E - EPBC Act) location
- Vegetation Community**
- Urban Native/Exotic

Image Source:
Image © NearMap 2018
Dated: 9/11/2018

Coordinate System: MGA Zone 56 (GDA 94)



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0 5 10 15 20 m

Figure 3.1. Vegetation communities within the proposal site

3.3 Flora

3.3.1 General Species

A total of 57 flora species were recorded from within the Proposal site. Species present within the Proposal site consist of a mix of exotic (70%) and native species, including non-endemic planted species (30%). A flora species list obtained from the 20mx20m plot assessment detailing native and exotic cover and abundance is provided in **Appendix B**. A supplementary flora species list is also provided in **Appendix B**, documenting all species observed during the random meander survey of the entire site. Leaf and litter cover was observed as minimal throughout the Proposal site, comprising about 1% of total groundcover.

As the Proposal site runs alongside residential blocks to the south-west, a number of species have been recorded due to over-hanging foliage that may have the potential to be trimmed or removed for the proposed works. The species identified to have over-hanging foliage are a mix of exotic and planted natives. Planted native species include *Eucalyptus scoparia* (Willow Gum) (**Photograph 3.3**). Exotic over-hanging species include *Bougainvillea glabra* (Paper flower), *Citrus limon* (Lemon Tree), and *Schefflera sp.* (Schefflera) (**Photograph 3.4**).



Photograph 3.3 Overhanging *Eucalyptus scoparia* trunk



Photograph 3.4 Overhanging *Bougainvillea glabra* foliage

3.3.2 Threatened Species

No threatened flora species were recorded within the Proposal site. An analysis of the likelihood of occurrence of the Proposal site for each threatened flora species recorded within the surrounding area is provided in **Appendix A**. It is unlikely that any threatened flora species naturally occur within the Proposal site as it is highly disturbed and the vegetation has been planted.

Additionally, one threatened species (*Eucalyptus nicholii*) was identified adjacent to the Proposal site (**Photograph 3.5**). *Eucalyptus nicholii* (Narrow-leaved Black Peppermint) is listed as Vulnerable under the BC Act and EPBC Act (OEH 2018). This species is distributed throughout the New England Tablelands and is thus considered most likely planted as an urban tree. This individual (DBH = 100cm, height = 18m) is located outside of the impact area, directly north-east of the site boundary as shown in **Figure 3.1**.



Photograph 3.5 *Eucalyptus nicholii* adjacent to the Proposal site

3.3.3 Priority Weeds

A total of seven Priority weeds and one WoNS were identified within the Proposal site. A list of Priority weeds and their Biosecurity Act / WoNS status is provided in **Table 3.1**.

Table 3.1 Priority weeds and WoNS within the Proposal site

Family	Scientific Name	Common Name	Biosecurity Act Status/WoNS
Poaceae	<i>Eragrostis curvula</i>	African Lovegrass	OWRC
Poaceae	<i>Arundo donax</i>	Giant Reed	RP
Poaceae	<i>Andropogon virginicus</i>	Whisky Grass	OWRC
Asparagaceae	<i>Asparagus aethiopicus</i>	Asparagus Fern	SP, WoNS
Iridaceae	<i>Watsonia meriana</i>		OWRC
Phormiaceae	<i>Phormium tenax</i>	New Zealand Flax	OWRC
Apocynaceae	<i>Araujia sericifera</i>	Moth Vine	OWRC

Note: OWRC = Other Weed of Regional Concern, RC = Regional Concern, SP = State Priority.

3.4 Fauna

3.4.1 Fauna Habitat

The Proposal site provides limited habitat for fauna species. Although there are some areas of potential habitat for urban adapted species and small reptiles, the potential habitat is not considered to be a reliable resource and it is only likely to be used for foraging by urban adapted bird species such as the Noisy Miner (*Manorina melanocephala*) and Rainbow Lorikeet (*Trichoglossus haematodus*). Potential habitat is also present that may provide occasional foraging resources for urban adapted microbats and Grey-headed Flying-foxes. No nests, hollows, fallen logs/timber or indicative signs of fauna use were present within the Proposal site. A total of three medium-large trees (DBH≥30cm) occur within the Proposal site, however they do not possess significant habitat features such as hollows, decorticated bark or habitat connectivity.

The connectivity of habitat within the Proposal site is minimal. The site and surrounding locality has been exposed to long-term fragmentation for industrial and urban purposes. The Proposal site is largely disconnected from any surrounding habitat, offering potential however minimal refuge for native species. Due to the Proposal site's high exposure to edge effects due to it being bound by the rail corridor, it is expected that the only species likely to utilise the site are urban adapted native and exotic fauna species.

3.4.2 General Species

No fauna were sighted within the Proposal site during the site inspection, however it is likely that common urban adapted species such as the Noisy Miner (*Manorina melanocephala*) and Rainbow Lorikeet (*Trichoglossus haematodus*) forage within the Proposal site on occasion.

3.4.3 Threatened Species

A number of threatened species have been recorded within the surrounding locality (10km radius) that have low potential to occur within the Proposal site. An analysis of the likelihood of occurrence of threatened fauna to occupy the Proposal site has been conducted and is included in **Appendix A**.

The likelihood of occurrence assessments indicate that a small number of threatened species listed under the BC Act and/or EPBC Act have potential to occur based on the foraging habitat available, including highly mobile bat species. The vegetation present on the Proposal site would provide potential foraging habitat, but no breeding habitat, for the following species;

- Grey-headed Flying-fox (*Pteropus poliocephalus*) (Vulnerable under the BC Act/EPBC Act);
- Eastern-false Pipistrelle (*Falsistrellus tasmaniensis*) (Vulnerable under the BC Act);
- Little Bentwing-bat (*Miniopterus australis*) (Vulnerable under the BC Act);

- Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*) (Vulnerable under the BC Act);
- Eastern Freetail-bat (*Mormopterus norfolkensis*) (Vulnerable under the BC Act); and
- Southern Myotis (*Myotis macropus*) (Vulnerable under the BC Act).

Impact Assessment

4.1 Removal of Vegetation

4.1.1 Impacts to Vegetation Communities

For the purposes of this assessment, it has been considered that the proposed works will require the removal of all (0.042ha) Urban Native/Exotic vegetation within the Proposal site. This includes the removal of 22 trees comprising three mature trees (DBH ≥ 30 cm) and 19 smaller trees (DBH < 30 cm) and additional areas of native and exotic shrubs and groundcovers. **Table B3** in **Appendix B** provides a list of all native trees that will be impacted by the proposed works and **Figure 4.1** details the location of individual trees and clusters of trees to be cleared.

No TECs are present in the Proposal site, nor will be impacted indirectly by the proposed works.

4.1.2 Impacts to Threatened Flora

No threatened flora species were recorded within the Proposal site, however one planted threatened species, *E. nicholii*, has been observed adjacent to the site boundary (**Figure 3.1**). As this species is not located within the impact area, it has been considered that the proposed works will not adversely impact the individual. The Proposal site and surrounding locality has been subject to extensive urbanisation and fragmentation, therefore it is considered that habitat within the Proposal site is not suitable for the occurrence of threatened species endemic to the area.

4.1.3 Priority Weeds and WoNS

The proposed works will require the potential removal of the Priority weeds and WoNS identified within the Proposal site (**Table 3.1**). Precautionary actions and recommendations are provided in **Chapter 5** to aid efficient removal and minimise the spread of these species into adjacent land.

4.1.4 Impacts to Threatened Fauna

The Proposal site is located in an ecologically degraded urban environment, surrounded by fragmented habitat throughout the wider locality. Although the Proposal will result in the removal of some marginal foraging habitat for threatened fauna species, no roosting or breeding habitat is present, and it is only likely to be used as a much larger foraging range.

The areas of potential habitat do not represent a reliable continual resource and it is unlikely that any species would be reliant on it as a foraging source.

Tests of Significance under Section 7.3 of the BC Act have been prepared for the threatened fauna species that have potential to utilise the Proposal site. These indicate that the removal of vegetation within the Proposal site will not significantly impact any threatened fauna species.




Legend

Proposal Site

■ Tree ID

Image Source:
Image © NearMap 2018
Dated: 9/11/2018

Coordinate System: MGA Zone 56 (GDA 94)



0 5 10 15 20 m

Figure 4.1. Location of trees to be removed within the proposal site

4.2 Indirect Impacts

In general, vegetation removal for urban development has the potential to indirectly impact the remaining vegetation and habitats of the locality. Such impacts may include:

- Habitat fragmentation: affects biodiversity and natural systems through reduction of available habitat and connectivity between habitat patches and corridors;
- Edge effects: affects biodiversity through changes in light, temperature, humidity and wind that can favour an array of different species and thus drive significant change in ecological processes (Lindenmayer and Fischer 2006);
- Increase sedimentation and erosion: affects biodiversity through the smothering of vegetation, increasing turbidity of waterways and transportation of weed matter and nutrients; and
- Introduction and spread of invasive species: affects biodiversity through increased competition for resources.
- Habitat disturbance: changes in noise levels during the construction phase

These impacts are not considered likely to occur in the Proposal site as it does not contain a native vegetation community, and only already highly fragmented areas of Urban Native/Exotic vegetation will be removed. Therefore, it is not expected that the proposed works will significantly exacerbate the impacts on areas of surrounding habitat.

Mitigation Measures

The following recommendations have been provided to minimise impacts of the proposed works on the biodiversity values of the Proposal site.

5.1 Vegetation Clearing

To avoid unnecessary removal or damage to any adjoining vegetation outside of the Proposal site, the clearing area should be clearly demarcated and signed, where appropriate, to ensure no vegetation beyond these boundaries is removed. Clearing works and equipment should be excluded from areas outside the clearing area. Site inductions are to be provided by the civil contractor to ensure all site workers and visitors are aware of any no-access areas.

If a habitat feature, such as a nest is identified during clearing, a stop works order should be issued and the project ecologist called to remove the fauna safely.

If a threatened species is identified during clearing activities, the occurrence will be surveyed by a suitably qualified ecologist and fully documented. Results will be made available to OEH and to Council, if requested.

5.2 Weed Removal

Due to the presence of weeds listed as Priority weeds under the *Biosecurity Act 2015* and WoNS within the Proposal site, all vegetation removed from site must not be reused as mulch within the Proposal site or off site. Prior to any vegetation clearance, Priority weeds should be demarcated in order for these to be disposed of separately from native material. All groundcover should be disposed of in a manner that will prevent spread as the majority comprises of exotic species.

5.3 Sedimentation, Erosion and Pollution Control

To reduce sedimentation on the Proposal site, erosion control measures should be implemented. This includes minimising the amount of exposed soils on the site at any given time. All soil stockpiles should be adequately covered when not in use to prevent erosion during heavy rainfall. To reduce the potential impacts of sediment/erosion runoff, it is recommended that no works be carried out during periods of heavy rainfall. Sediment fences should be set up in all areas down slope of proposed works.

5.4 Offsetting

TfNSW has prepared a Vegetation Offset Guide (TfNSW 2013) to assist in meeting biodiversity sustainability targets and providing a framework for a consistent approach for offsetting impacts to vegetation on TfNSW projects. The Vegetation Offset Guide specifies the ratios required for replacement planting of removed trees. The following tree replacement ratios that apply to this project include:

- Eight planted trees for every tree removed with a DBH $\geq 60\text{cm}$;
- Four planted trees for every tree removed with a DBH of 15cm-60cm; and
- Two planted trees for every tree removed with a DBH $\leq 15\text{cm}$.

It has been determined that a total of 52 trees are to be replanted in accordance with the TfNSW Vegetation Offset Guide for the removal of 13 trees with DBH 15cm – 60cm that persist within the proposal site. Furthermore, a total of 18 trees are to be replanted for the removal of nine trees with DBH $\leq 15\text{cm}$ (see **Table B3** in **Appendix B** for details).

Conclusion

The proposed works require the removal of 0.042ha of Urban Native/Exotic vegetation to enable the construction of the multi-storey carpark consisting of a ground level and four additional levels.

No vegetation will be impacted for the construction of two accessible parking spaces located in the commuter carpark off Tooronga Terrace. Similarly, due to lack of ecological values present, no vegetation is to be impacted from the King Georges Road staircase upgrades.

The vegetation in the Proposal site forms an Urban Native/Exotic vegetation community, with a high likelihood that all species are planted. This vegetation community is not a native vegetation community and is not listed as a TEC under the BC Act or EPBC Act. Native vegetation to be removed includes three mature trees (DBH ≥ 30 cm) and 19 small trees (DBH 2cm - 25cm). The location and details of individual trees and clusters of trees are provided in **Figure 4.1** and **Table B3** respectively. All shrubs and groundcovers are also expected to be removed, the majority of which are exotic species.

No threatened flora species were identified within the Proposal site, and none are likely to occur due to the degraded and fragmented condition of the site. Although some threatened fauna species may utilise the Proposal site periodically for foraging, none are likely to rely on the Proposal site and would only utilise it as a resource for foraging as part of a wider foraging range.

TfNSW has prepared a Vegetation Offset Guide to assist in meeting biodiversity sustainability targets and providing a framework for a consistent approach for offsetting impacts to vegetation on TfNSW projects. It has been determined that a total of 70 trees are to be replanted in accordance with the TfNSW Vegetation Offset Guide for the removal of 13 trees with DBH 15cm – 60cm and nine trees with DBH ≤ 15 cm that persist within the Proposal site.

The proposed works are unlikely to have a significant impact upon any biodiversity of the Proposal site and surrounding locality.

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TfNSW (2013). Vegetation Offset Guide. Sydney NSW.

Appendix A

Likelihood of Occurrence Assessments

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Myrtaceae	<i>Melaleuca biconvexa</i>	Biconvex Paperbark	V	V	Species or species habitat may occur within area	PMST	It is only found in NSW, with scattered and dispersed populations found in the Jervis Bay area in the south and the Gosford-Wyong area in the north. It generally grows in damp places, often near streams or low-lying areas on alluvial soils of low slopes or sheltered aspects.	Unlikely. No suitable habitat present within the Proposal site
Anthericaceae	<i>Caesia parviflora</i> var. <i>minor</i>	Small Pale Grass-lily	E	-	1	BioNet Atlas	This variety occurs uncommonly in Tasmania, southern Victoria and south-east South Australia with an outlying population in NSW, in Barcoongere State Forest, between Grafton and Coffs Harbour. Found in damp places in open forest on sandstone.	Unlikely. No suitable habitat present within the Proposal site
Apocynaceae	<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i>	Marsdenia viridiflora R. Br. subsp. viridiflora population in the Bankstown, Blacktown, Camden, Campbelltown, Fairfield, Holroyd, Liverpool and	E	-	10	BioNet Atlas	Recent records are from Prospect, Bankstown, Smithfield, Cabramatta Creek and St Marys. Previously known north from Razorback Range. Grows in vine thickets and open shale woodland.	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Apocynaceae	<i>Cynanchum elegans</i>	Penrith local government areas White-flowered Wax Plant	E	E	Species or species habitat may occur within area	PMST	Restricted to eastern NSW where it is distributed from Brunswick Heads on the north coast to Gerroa in the Illawarra region. The species has been recorded as far west as Merriwa in the upper Hunter River valley. It usually occurs on the edge of dry rainforest vegetation. Other associated vegetation types include littoral rainforest, coastal scrub, open forest and woodland and open scrub.	Unlikely. No suitable habitat present within the Proposal site
Campanulaceae	<i>Wahlenbergia multicaulis</i>	Tadgell's Bluebell in the local government areas of Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield	E	-	73	BioNet Atlas	Restricted to northern and western Sydney. Found in disturbed sites and grows in a variety of habitats including forest, woodland, scrub, grassland and the edges of watercourses and wetlands. Typically occurs in damp, disturbed sites, typically amongst other herbs rather than in the open.	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Casuarinaceae	<i>Allocasuarina diminuta subsp. mimica</i>	Allocasuarina diminuta subsp. mimica L.A.S.Johnson population in the Sutherland and Liverpool local government areas	E	-	3	BioNet Atlas	Found on sandstone ridges and upper hillsides in the region northwest from Heathcote, towards Menai and Holsworthy, in heathy and low open woodland communities. It is restricted to the Sutherland and Liverpool LGAs.	Unlikely. No suitable habitat present within the Proposal site
Casuarinaceae	<i>Allocasuarina glareicola</i>		E	E	1	BioNet Atlas	Restricted to the Richmond (NW Cumberland Plain) district, but with an outlier population found at Voyager Point, Liverpool. Grows in Castlereagh woodland on lateritic soil. Spreads by vegetative means and is not killed outright by fire but resprouts from the rootstock.	Unlikely. No suitable habitat present within the Proposal site
Convolvulaceae	<i>Wilsonia backhousei</i>	Narrow-leafed Wilsonia	V	-	4	BioNet Atlas	Occurs on the margins of salt marshes and lakes. In NSW it is found on the coast between Mimosa Rocks National Park and Wamberal north of Sydney.	Unlikely. No suitable habitat present within the Proposal site
Dilleniaceae	<i>Hibbertia puberula</i>		E	-	1	BioNet Atlas	Habitats are typically dry sclerophyll woodland communities, although heaths are also occupied. Occurs on sandy soil often associated with sandstone, or on clay. It extends from Wollemi National Park south	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Dilleniaceae	<i>Hibbertia sp.</i> <i>Bankstown</i>		CE	CE	3	BioNet Atlas	to Morton National Park and the south coast near Nowra. This species is endemic to NSW and is currently known to occur in only one population at Bankstown Airport in Sydney's southern suburbs. This site lacks canopy species and is currently a low grass/shrub association with many pasture grasses and other introduced herbaceous weeds on sandy alluvium soil with a high silt content.	Unlikely. No suitable habitat present within the Proposal site
Dilleniaceae	<i>Hibbertia stricta subsp. furcatula</i>		E	-	11	BioNet Atlas	It is known to occur in two populations, one in the southern outskirts of Sydney, and one near Nowra on the mid-South Coast of NSW. Habitat of the Southern Sydney population is broadly dry eucalypt forest and woodland where it occurs on upper slopes and sandy soil.	Unlikely. No suitable habitat present within the Proposal site
Ericaceae	<i>Epacris purpurascens</i> var. <i>purpurascens</i>		V	-	27	BioNet Atlas	Recorded from Gosford in the north, to Narrabeen in the east, Silverdale in the west and Avon Dam vicinity in the South. Found in a range of habitat types, most of which have a strong shale soil influence.	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Fabaceae (Faboideae)	<i>Pultenaea aristata</i>	Prickly Bush-pea	V	V	1	BioNet Atlas	It is restricted to the Woronora Plateau where it occurs in either dry sclerophyll woodland or wet heath on sandstone.	Unlikely. No suitable habitat present within the Proposal site
Fabaceae (Faboideae)	<i>Pultenaea parviflora</i>		E	V	2	BioNet Atlas	Endemic to the Cumberland Plain, with the core distribution from Windsor to Penrith and east to Dean Park. Found among vegetation communities growing on tertiary alluvium or laterised clay soil.	Unlikely. No suitable habitat present within the Proposal site
Fabaceae (Faboideae)	<i>Pultenaea pedunculata</i>	Matted Bush-pea	E	-	1	BioNet Atlas	NSW populations are generally among woodland vegetation but plants have also been found on road batters and coastal cliffs. It is largely confined to loamy soils in dry gullies in populations in the Windellama area. In the Cumberland Plain the species favours sites in clay or sandy-clay soils	Unlikely. No suitable habitat present within the Proposal site
Fabaceae (Mimosoideae)	<i>Acacia bynoeana</i>	Bynoe's Wattle	E	V	1	BioNet Atlas	Found in central eastern NSW, from the Hunter District (Morisset) south to the Southern Highlands and west to the Blue Mountains. Occurs in heath or dry sclerophyll forest on sandy soils and seems to prefer open, sometimes slightly disturbed sites such as trail margins, edges of roadside spoil mounds and in recently burnt patches.	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Fabaceae (Mimosoideae)	<i>Acacia prominens</i>	Gosford Wattle, Hurstville and Kogarah Local Government Areas	E	-	3	BioNet Atlas	Occurs at a few sites along the railway line at Penshurst, at Carss Bush Park, Carss Park. Grows in open situations on clayey or sandy soils. Generally has high seed dormancy and long-lived persistent soil seedbanks. Seeds are bird and/or ant dispersed.	Unlikely. No suitable habitat present within the Proposal site
Fabaceae (Mimosoideae)	<i>Acacia pubescens</i>	Downy Wattle	V	V	2602	BioNet Atlas	Concentrated around the Bankstown-Fairfield-Rookwood area and the Pitt Town area, with outliers occurring at Barden Ridge, Oakdale and Mountain Lagoon. Occurs on alluviums, shales and at the intergrade between shales and sandstones. The soils are characteristically gravelly soils, often with ironstone. Also occurs in open woodland and forest, in a variety of plant communities including Cumberland Plain Woodland.	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.
Fabaceae (Mimosoideae)	<i>Acacia terminalis subsp. terminalis</i>	Sunshine Wattle	E	E	5	BioNet Atlas	Very limited distribution, mainly in near-coastal areas from the northern shores of Sydney Harbour south to Botany Bay. Prefer coastal scrub and dry sclerophyll woodland on sandy soils. Habitat is generally sparse and scattered. Seeds are dispersed by ants and a fire temperature of 60 degrees is required for optimum germination.	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Geraniaceae	<i>Pelargonium sp. Striatellum</i>	Omeo Stork's-bill	E	E	Species or species habitat may occur within area	PMST	Known from only 4 locations in NSW, with three on lake-beds on the basalt plains of the Monaro and one at Lake Bathurst. It has a narrow habitat that is usually just above the high-water level of irregularly inundated or ephemeral lakes, in the transition zone between surrounding grasslands or pasture and the wetland or aquatic communities. It sometimes colonises exposed lake beds during dry periods.	Unlikely. No suitable habitat present within the Proposal site
Lamiaceae	<i>Prostanthera saxicola</i>	Prostanthera saxicola population in Sutherland and Liverpool local government areas	E	-	1	BioNet Atlas	Found primarily in Eucalypt forest, heath and low shrubland, often in damp or moist sites. This population is restricted to the Liverpool and Sutherland LGAs. Also found on rocky ridges and areas of outcrop.	Unlikely. No suitable habitat present within the Proposal site
Myrtaceae	<i>Callistemon linearifolius</i>	Netted Bottle Brush	V	-	27	BioNet Atlas	Grows in dry sclerophyll forest on the coast and adjacent ranges. Recorded from the Georges River to Hawkesbury River in the Sydney area, and north to the Nelson Bay area of NSW.	Unlikely. No suitable habitat present within the Proposal site
Myrtaceae	<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	V	V	3	BioNet Atlas	Typically grows in dry grassy woodland, on shallow soils of slopes and ridges. Found primarily on infertile soils derived from granite or metasedimentary rock.	Potential but unlikely. One individual identified

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							Tends to grow on lower slopes in the landscape. This species is sparsely distributed but widespread on the New England Tablelands from Nundle to north of Tenterfield, being most common in central portions of its range. Found largely on private property and roadsides, and occasionally in conservation reserves. Planted as urban trees, windbreaks and corridors.	adjacent to the site by CE, 2018. Most likely a planted individual due to lack of suitable habitat for recruitment.
Myrtaceae	<i>Eucalyptus scoparia</i>	Wallangarra White Gum	E	V	1	BioNet Atlas	Found in open eucalypt forest, woodland and heaths on well-drained granite/rhyolite hilltops, slopes and rocky outcrops, typically at high altitudes. In NSW it is known from only three locations near Tenterfield, including Bald Rock National Park.	Unlikely. No suitable habitat present within the Proposal site
Myrtaceae	<i>Melaleuca deanei</i>	Deane's Paperbark	V	V	9	BioNet Atlas	Occurs in two distinct areas, in the Ku-ring-gai/Berowra and Holsworthy/Wedderburn areas respectively. The species occurs mostly in ridgetop woodland, with only 5% of sites in heath on sandstone.	Unlikely. No suitable habitat present within the Proposal site
Myrtaceae	<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	E	V	17	BioNet Atlas	It is found only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. It occurs on grey soils over sandstone and gravels, sands, silts and clays in riverside gallery rainforests and remnant littoral rainforest communities.	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Orchidaceae	<i>Pterostylis saxicola</i>	Sydney Plains Greenhood	E	E	2	BioNet Atlas	Restricted to western Sydney between Freemans Reach in the north and Picton in the south. Most commonly found growing in small pockets of shallow soil in depressions on sandstone rock shelves above cliff lines. Occurs in sclerophyll forest or woodland on shale/sandstone transition soils or shale soils.	Unlikely. No suitable habitat present within the Proposal site
Orchidaceae	<i>Caladenia tessellata</i>	Thick-lipped Spider-orchid	E	V	Species or species habitat may occur within area	PMST	Generally found in grassy sclerophyll woodland on clay loam or sandy soils. It known from the Sydney area, Wyong, Ulladulla and Braidwood in NSW.	Unlikely. No suitable habitat present within the Proposal site
Orchidaceae	<i>Cryptostylis hunteriana</i>	Leafless Tongue-orchid	V	V	Species or species habitat may occur within area	PMST	Found in a range of communities, including swamp-heath and woodland.	Unlikely. No suitable habitat present within the Proposal site
Orchidaceae	<i>Genoplesium baueri</i>		V	E	Species or species habitat may occur within area	PMST	Grows in dry sclerophyll forest and moss gardens over sandstone. The species has been recorded from locations between Ulladulla and Port Stephens.	Unlikely. No suitable habitat present within the Proposal site
Orchidaceae	<i>Pterostylis gibbosa</i>	Illawarra Greenhood	E	E	Species or species habitat	PMST	Known from a small number of populations in the Hunter region, the Illawarra region and the Shoalhaven	Unlikely. No suitable habitat

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					known to occur within the area		region. It is found in open forest or woodland, on flat or gently sloping land with poor drainage.	present within the Proposal site
Orchidaceae	<i>Thelymitra kangaloonica</i>	Kangaloon Sun Orchid	CE	CE	Species or species habitat may occur within area	PMST	It is found in swamps in sedgeland over grey silty grey loam soils. It is only known to occur on the southern tablelands of NSW in the Moss Vale / Kangaloon / Fitzroy Falls area at 550-700 m above sea level.	Unlikely. No suitable habitat present within the Proposal site
Poaceae	<i>Deyeuxia appressa</i>		E	E	Species or species habitat may occur within area	PMST	A highly restricted NSW endemic, it hasn't been sighted in over 60 years and may be extinct in the wild.	Unlikely. No suitable habitat present within the Proposal site
Proteaceae	<i>Grevillea beadleana</i>	Beadle's Grevillea	E	E	1	BioNet Atlas	Known from four separate areas, all in 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. It prefers open eucalypt forest with a shrubby understorey and is usually found on steep granite slopes at high altitudes.	Unlikely. No suitable habitat present within the Proposal site
Proteaceae	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Small-flower Grevillea	V	V	2	BioNet Atlas	Grows in sandy or light clay soils usually over thin shales, often with lateritic ironstone gravels and nodules. Occurs in a range of vegetation types from heath and shrubby woodland to open forest. In Sydney it has been recorded from Shale Sandstone Transition	Unlikely. No suitable habitat present within the Proposal site

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Proteaceae	<i>Persoonia hirsuta</i>	Hairy Geebung	E	E	4	BioNet Atlas	Forest and in the Hunter in Kurri Sand Swamp Woodland. Often occurs in open, slightly disturbed sites such as along tracks. The species is distributed 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.	Unlikely. No suitable habitat present within the Proposal site
Proteaceae	<i>Persoonia nutans</i>	Nodding Geebung	E	E	8	BioNet Atlas	Restricted to the Cumberland Plain in western Sydney, between Richmond in the north and Macquarie Fields in the south. Grows on aeolian and alluvial sediments and occur in a range of sclerophyll forest and woodland vegetation communities.	Unlikely. No suitable habitat present within the Proposal site
Rhamnaceae	<i>Pomaderris prunifolia</i>	P. prunifolia in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas	E	-	15	BioNet Atlas	Known from only three sites within the listed local government areas, at Rydalmere, within Rookwood Cemetery and at The Crest of Bankstown. Occurs among grass species on sandstone or on shale soil.	Unlikely. No suitable habitat present within the Proposal site
Rutaceae	<i>Asterolasia elegans</i>		E	E	Species or species habitat	PMST	Occurs on Hawkesbury sandstone, in sheltered forests on mid- to lower slopes and valleys. Occurs north of	Unlikely. No suitable habitat

Table A.6.1 Threatened flora likelihood of occurrence assessment

Family	Scientific	Common Name	BC Act Status	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					may occur within area		Sydney, in the Baulkham Hills, Hawkesbury and Hornsby LGAs.	present within the Proposal site
Santalaceae	<i>Thesium australe</i>	Austral Toadflax	V	V	Species or species habitat may occur within area	PMST	Occurs in grassland on coastal headlands or grassland and grassy woodland away from the coast. It is found in very small populations scattered across eastern NSW, along the coast, and from the Northern to Southern Tablelands.	Unlikely. No suitable habitat present within the Proposal site
Thymelaeaceae	<i>Pimelea spicata</i>	Spiked Rice-flower	E	E	208	BioNet Atlas	Occurs in two disjunct areas; Cumberland Plain and Illawarra. This species is found on well-structured clay soils. Associated with both Grey Box communities and open woodland.	Unlikely. No suitable habitat present within the, despite large number of records.
Thymelaeaceae	<i>Pimelea curviflora</i> var. <i>curviflora</i>		V	V	Species or species habitat known to occur within the area	PMST	Confined to the coastal area of the Sydney and Illawarra regions. Occurs on shaley/lateritic soils over sandstone and shale/sandstone transition soils on ridgetops and upper slopes amongst woodlands.	Unlikely. No suitable habitat present within the Proposal site

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Amphibia								
Myobatrachidae	<i>Crinia tinnula</i>	Wallum Froglet	V	-	1	BioNet	Distribution limited to the coastal margin from Litabella National Park in south-east Queensland to Kurnell in Sydney. Found in sedges and wet heathlands, can also be found in drainage lines. Breeds in acidic swamps with permanent water or shallow ephemeral pools and drainage ditches. Shelters under very wet or damp leaf litter, vegetation, other debris or in burrows of other species.	Unlikely to occur, no suitable habitat present within the Proposal site.
Hylidae	<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V	3	BioNet	Marshes, dams, stream sides, particularly those containing bulrushes or spikerushes; unshaded water bodies free of Gambusia form optimum habitat; vegetation and/or rocks are needed for sheltering.	Unlikely to occur, no suitable habitat present within the Proposal site.
Myobatrachidae	<i>Pseudophryne australis</i>	Red-crowned Toadlet	V	-	4	BioNet	Has a distribution restricted to the Sydney Basin, from Pokolbin in the north, Nowra to the south, and Mt Victoria in the Blue Mountains to the west. It inhabits ephemeral drainage lines below sandstone ridges that often have shale caps, in open forests on Hawkesbury and Narrabeen Sandstones. The species utilises dense vegetation and debris besides water in the breeding	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							season. Outside of breeding season the species is found under rocks, logs, and leaf litter nearby to breeding areas.	
Myobatrachidae	<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	V	Species or species habitat likely to occur within area	PMST	Found in heath, woodland and open dry sclerophyll forest on a variety of soil types except those that are clay based. Breeding habitat is generally soaks or pools within first or second order streams and are commonly recorded from 'hanging swamp' seepage lines and where small pools form from the collected water. Largely confined to sandstone in the Sydney Basin.	Unlikely to occur, no suitable habitat present within the Proposal site.
Hylidae	<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	V	V	Species or species habitat likely to occur within area	PMST	Found in heath forests and woodlands under leaf litter and low vegetation. Breeds in the upper reaches of permanent streams and in perched swamps.	Unlikely to occur, no suitable habitat present within the Proposal site.
Hylidae	<i>Litoria raniformis</i>	Southern Bell Frog	E	V	Species or species habitat may occur within area	PMST	In NSW, the species is known to exist only in isolated populations in the Coleambally Irrigation Area, the Lowbidgee floodplain and around Lake Victoria. Usually found around swamps or billabongs along floodplains. Tadpoles require standing water for at least 4 months for	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							development and metamorphosis to occur but can take up to 12 months to develop. Outside the breeding season animals disperse away from the water and take shelter beneath ground debris such as fallen timber and bark, rocks, grass clumps and in deep soil cracks.	
Myobatrachidae	<i>Mixophyes balbus</i>	Stuttering Frog	E	V	Species or species habitat likely to occur within area	PMST	Found in rainforest and wet, open forest in the foothills and escarpment on the eastern side of the Great Dividing Range. Occurs in deep leaf litter and thick understorey vegetation, and breeds in streams after heavy rain.	Unlikely to occur, no suitable habitat present within the Proposal site.
Aves								
Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	-	Mig	6	BioNet	Found along all coastlines of Australia, and many inland areas. It does not breed in Australia. It utilises coastal and inland wetlands, predominately occurring in estuaries and stream deltas, and upstream banks, though has been recorded around lakes, pools, billabongs, reservoirs, dams, and claypans. It forages in shallow water or on soft mud at the edges of wetlands, for molluscs, crustaceans, and insects.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Meliphagidae	<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE	8	BioNet	Inhabits dry open forest and woodland, particularly Box-Ironbark woodland, and riparian forests of River Sheoak. These woodlands have significantly large numbers of mature trees, high canopy cover and abundance of mistletoes. Every few years non-breeding flocks are seen foraging in flowering coastal Swamp Mahogany and Spotted Gum forests, particularly on the central coast and occasionally on the upper north coast. The Regent Honeyeater is a generalist forager, which mainly feeds on the nectar from a wide range of eucalypts and mistletoes. Key eucalypt species include Mugga Ironbark, Yellow Box, Blakely's Red Gum, White Box and Swamp Mahogany. Also utilises: <i>E. microcarpa</i> , <i>E. punctata</i> , <i>E. polyanthemos</i> , <i>E. moluccana</i> , <i>Corymbia robusta</i> , <i>E. crebra</i> , <i>E. caleyi</i> , <i>Corymbia maculata</i> , <i>E. mckieana</i> , <i>E. macrorhyncha</i> , <i>E. laevopinea</i> , and <i>Angophora floribunda</i> . Nectar and fruit from the mistletoes <i>A. miquelii</i> , <i>A. pendula</i> , <i>A. cambagei</i> are also eaten during the breeding season.	Unlikely to occur, no suitable habitat present within the Proposal site.
Apodidae	<i>Apus pacificus</i>	Fork-tailed Swift	-	Mig	Species or species	PMST	Species has been recorded throughout NSW, but mostly east of the Great Divide. The species is almost	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					habitat likely to occur within area		exclusively aerial in Australia and breeds overseas. It forages from a metre above the ground, up to hundreds of metres in altitude, and mostly occur over inland plains, though sometimes over foothills, and coastal areas.	present within the Proposal site.
Ardeidae	<i>Ardea ibis</i>	Cattle Egret	-	Mig	7	BioNet	Utilises temperate and tropical grasslands, wooded lands and terrestrial wetlands. Often forages away from water on low-lying grasslands.	Unlikely to occur, no suitable habitat present within the Proposal site.
Procellariidae	<i>Ardenna pacificus</i>	Wedge-tailed Shearwater	-	Mig	1	BioNet	Marine and pelagic species. Breeds mostly on vegetated islands, atolls and cays. Creates burrows on flat areas with dense grassy and tussock vegetation. Forages along the junction between inshore and offshore water masses.	Unlikely to occur, no suitable habitat present within the Proposal site.
Procellariidae	<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	-	Mig	1	BioNet	Migrates from the southern hemisphere for the Australian summer. Establishes massive colonies along the south and south-eastern coast of Australia. Its nest consist of a leaf-lined chamber at the end of a burrow in the ground. Forages for krill and small fish on the surface of the water.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Arenaria interpres</i>	Ruddy Turnstone	-	Mig	87	BioNet	Breeds in the Northern Hemisphere. In Australia, it is mainly found on coastal regions with exposed rock coast lines or coral reefs. It can also be found on sand, coral or shell beaches. It often forage in coastal areas, among banks of stranded seaweed or other tide-wrack. It roosts on beaches, above the tideline, among rocks, shells, beachcast seaweed or other debris. Its nest is placed in a small depression, in wet or dry hummocky sites, and is lined with plant material. It may be concealed in or under vegetation, or in a fully open site	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.
Artamidae	<i>Artamus cyanopterus</i>	Dusky Woodswallow	V	-	7	BioNet	Occurs from Atherton Tableland in Queensland, down to Tasmania and west to the Eyre Peninsula in South Australia. In NSW it occurs from the coast to the western slopes of the Great Dividing Range and farther west. It breeds primarily on the western slopes of the Great Dividing Range in woodland and open dry forest. The species often occurs in eucalypt woodland and forest, though is also found in shrubland and heathland. It forages both above and below the canopy primarily for invertebrates, though will occasionally consume nectar, fruit and seed.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Ardeidae	<i>Botaurus poiciloptilus</i>	Australasian Bittern	E	E	2	BioNet	Occurs in freshwater wetlands, and more rarely, estuarine wetlands. It favours wetlands with tall, dense vegetation, and forages in shallow water up to a depth of 0.3m. It nests in deep vegetative cover over shallow pools.	Unlikely to occur, no suitable habitat present within the Proposal site.
Burhinidae	<i>Burhinus grallarius</i>	Bush Stone-curlew	E	-	5	BioNet	Lives in open forest and woodlands with a sparse, grassy ground layer, and fallen timber. It feeds on insects and small vertebrates including frogs, lizards, and snakes. Nesting is undertaken in a scrape or small bare patch.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopacidae	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	-	Mig	30	BioNet	The species does not breed in Australia. It spends the non-breeding season in Australia, mostly in the south-east, and occurs in widespread areas in both inland and coastal locations. It inhabits both freshwater and saline habitats. It prefers muddy edges of shallow fresh or brackish wetlands with inundated or emergent sedges, grass, saltmarsh, or other low vegetation. It forages for seeds, worms, molluscs, crustaceans, and insects, and is known to feed in and surrounding lagoons, swamps, lakes, dams, waterholes, soaks, bore drains, salt pans, and hypersaline inland lakes.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Calidris alba</i>	Sanderling	V	Mig	3	BioNet	Regular summer migrant from Northern Hemisphere breeding grounds. They occur along the NSW coast, with occasional inland records. Occur on low beaches of firm sand, near reefs and inlets, along tidal mudflats and bare open coastal lagoons, and very rarely in near-coastal wetlands. The species forages behind receding waves, catching insects and other invertebrates in the sand, before running back up the beach when the next wave breaks. Also known to feed on plants, seed, worms, crustaceans and other invertebrates at the edges of shallow pools on sandspits and mudflats. It roosts in the bare sand behind clumps of stranded kelp, or in sand dunes.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopacidae	<i>Calidris canutus</i>	Red Knot	-	Mig	16	BioNet	summer migrant from the Northern Hemisphere where it breeds. In NSW it mainly occurs on intertidal mudflats, estuaries, bays, inlets, lagoons, harbours, sandflats, and sandy beaches, of sheltered coasts. It is occasionally found closer to the open ocean, and rarely in terrestrial saline and freshwater swamps. It forages near the water's edge on worms, bivalves, gastropods, crustaceans, and echinoderms. It roosts on sandy	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Calidris ferruginea</i>	Curlew Sandpiper	E	CE, Mig	206	BioNet	beaches, spits, islets, and mudflats close to feeding grounds in open areas. Occurs around coastal areas and is widespread inland. The species occupies mainly intertidal mudflats in sheltered coastal areas, such as estuaries, bays, inlets and lagoons, and around non-tidal swamps. It forages for invertebrates at the edges of shallow waters. The species generally roosts in dunes and sandy areas.	Unlikely. No suitable habitat present within Proposal site, despite large number of records.
Scolopacidae	<i>Calidris ruficollis</i>	Red-necked Stint	-	Mig	175	BioNet	Breeds in the Northern Hemisphere and migrates from south for the Australian summer. It is found on the coast, in sheltered inlets, bays, lagoons, estuaries, intertidal mudflats and protected sandy or coralline shores. Forages on intertidal and near-coastal wetlands.	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.
Scolopacidae	<i>Calidris subminuta</i>	Long-toed Stint	-	Mig	1	BioNet	Breeds in the Northern Hemisphere and migrates to the southern hemisphere to feeding grounds in summer. It gathers in large flocks on the coast in sandy estuaries with tidal mudflats. It forages in mud or sand for worms and crustaceans but will also eat insects and seeds.	Unlikely to occur, no suitable habitat present within the Proposal site .
Scolopacidae	<i>Calidris tenuirostris</i>	Great Knot	V	CE, Mig	13	BioNet	Occurs within sheltered, coastal habitats such as sandy beached with mudflats, sandy pits and inlets, and	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							sometimes reefs and rock platforms. Forages for invertebrates in the mud. Migrates to Australia from late Aug to early Sep. Although most return north in Mar-Apr, some individuals remain over winter.	present within the Proposal site .
Cacatuidae	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	-	4	BioNet	Occurs within a variety of forest and woodland types. Usually frequents forested areas with old growth attributes required for nesting and roosting purposes. Also utilises less heavily timbered woodlands and urban fringe areas to forage, but appears to favour well timbered country through which it habitually flies as it moves about.	Unlikely to occur, no suitable habitat present within the Proposal site .
Cacatuidae	<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V	-	2	BioNet	Inhabits open forest and woodlands of the coast and the Great Dividing Range up to 1000 m ASL in which stands of She-Oak species, particularly Black She-oak (<i>Allocasuarina littoralis</i>), Forest She-oak (<i>A. torulosa</i>) or Drooping She-oak (<i>A. verticillata</i>) occur.	Unlikely to occur, no suitable habitat present within the Proposal site .
Charadriidae	<i>Charadrius leschenaultii</i>	Greater Sand-plover	V	V, Mig	5	BioNet	Breeds in the Northern Hemisphere and annually migrates to the southern hemisphere to feeding grounds summer. During summer in Australia it is widespread through the continent, though predominately occurs in north-western Australia. Most records in NSW are from	Unlikely to occur, no suitable habitat present within the Proposal site .

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Charadriidae	<i>Charadrius mongolus</i>	Lesser Sand-plover	V	E, Mig	5	BioNet	the Clarence and Richmond estuaries. It is restricted to coastal areas, occurring mainly on sheltered sandy, shelly, or muddy beaches or estuaries. It roosts during high tide on beaches and shores and forages at low tide away from the edge of the water on wet ground. It feeds on insects, crustaceans, worms and molluscs. Breeds in Asia and annually migrates south for the winter. It is found along the entire Australian coast however it is found mostly in the Gulf of Carpentaria and along the east coast of Queensland and northern NSW. Almost entirely coastal, it favours sheltered bays, harbours and estuaries with large intertidal mudflats and sandflats. Forages at low tide on wet ground, away from the water's edge.	Unlikely to occur, no suitable habitat present within the Proposal site .
Accipitridae	<i>Circus assimilis</i>	Spotted Harrier	V	-	2	BioNet	Occurs throughout mainland Australia except in densely forested or wooded habitats of the coast, escarpment, and ranges. It inhabits open grassy woodland, shrubland, and grassland. It nests in trees and preys on terrestrial mammals, birds, and reptiles, and will occasionally consume carrion.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Climacteridae	<i>Climacteris picumnus victoriae</i>	Brown Treecreeper (eastern subspecies)	V	-	1	BioNet	Endemic to eastern Australia and occurs in grassy eucalypt forests and woodlands. Mostly occurs on inland plains and slopes of the Great Dividing Range, though less commonly occurs on coastal plains and ranges. Mainly inhabits woodlands dominated by stringybarks or other rough-barked eucalypts. Usually not found in areas with a dense shrub layer. Fallen timber is an important habitat component for foraging. Species forage in trees or across fallen logs, pecking and probing for insects and other invertebrates. It requires tree hollows for nesting.	Unlikely to occur, no suitable habitat present within the Proposal site.
Neosittidae	<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	-	4	BioNet	Inhabits eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and Acacia woodland.	Unlikely to occur, no suitable habitat present within the Proposal site.
Ardeidae	<i>Egretta sacra</i>	Eastern Reef Egret	-	Mig	2	BioNet	Occurs along most of Australia's coastline except in Victoria, Tasmania and the coast adjacent to the Nullarbor Plain. This species usually inhabits rocky shorelines and coral islands and reefs, where they forage for fish, crustaceans and molluscs. The nest consists of a stick nest platform lined with seaweed, and	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E	-	2	BioNet	can be found in trees in island woodlands, or on the ground under shrubs or rock ledges. Inhabits wetlands of the major coastal rivers along with minor floodplains, coastal sandplain wetlands and estuaries. Nests in high trees close to water and forages in water with depths between 5-30 cm.	Unlikely to occur, no suitable habitat present within the Proposal site.
Meliphagidae	<i>Epthianura albifrons</i>	White-fronted Chat population in the Sydney Metropolitan Catchment Management Area	E	-	2	BioNet	This is a gregarious species generally found foraging on bare or grassy ground in wetland areas, alone or in pairs. It feeds on insects, mainly flies and beetle caught on the ground or close to. It occupies foothills and slopes up to 1000 m ASL, though in coastal areas is predominately found in areas of salt marsh, and occasionally in low shrubs bordering wetland areas.	Unlikely to occur, no suitable habitat present within the Proposal site.
Burhinidae	<i>Esacus magnirostris</i>	Beach Stone-curlew	CE	-	2	BioNet	Occurs on coastlines generally from NW Australia around the top of Australia to NE NSW, with occasional individuals recorded in SE NSW and Victoria. It is found exclusively on the coast on beaches, islands, reefs, estuaries, and at the edge of mangroves. It forages in the intertidal zones for crabs and marine invertebrates. It breeds at the backs of beaches, or on sandbanks and	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Gallinago hardwickii</i>	Latham's Snipe	-	Mig	27	BioNet	islands, amongst low grassy vegetation, or amongst bushes and low trees, and open mangroves. Usually inhabit open, freshwater wetlands with low, dense vegetation. Will utilise artificial habitats including pasture and ploughed paddocks.	Unlikely to occur, no suitable habitat present within the Proposal site.
Laridae	<i>Gelochelidon nilotica</i>	Gull-billed Tern	-	Mig	1	BioNet	Found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. It is only rarely found over the ocean. It forages by gliding swiftly down to the surface of the water, but never diving or settling on the water. The nests are shallow depressions scraped in sand or mud, lined with some vegetation.	Unlikely to occur, no suitable habitat present within the Proposal site.
Psittacidae	<i>Glossopsitta porphyrocephala</i>	Purple-crowned Lorikeet	V	-	1	BioNet	Uncommon in NSW with records scattered around Murray Valley and the South Coast. It is a nomadic species and most records are associated with flowering eucalypts. It feeds on pollen and nectar of eucalypt flowers, including planted trees in urban areas. Mostly found in open forests and woodlands. Breeds in hollow branches and holes in trees.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Psittacidae	<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-	15	BioNet	Forages mostly in the canopy of open Eucalyptus forest and woodland, on Eucalypt species, and species of Angophora, Melaleuca, and other trees. Riparian habitats are ideal for the species due to higher productivity of flowering feed species. Isolated trees in paddocks and roadside remnants, along with urban trees can help sustain populations of the species. The species roosts in tree tops, often some distance from food trees, though prefers to nest in close proximity to feed areas. The species nests in hollows with a small entrance (3 cm) and at a height of between two and fifteen metres. Often nest trees are in riparian areas, and include trees of species like Allocasuarina spp.	Unlikely to occur, no suitable habitat present within the Proposal site.
Haematopodidae	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher	V	-	6	BioNet	Found around the entire Australian coast, including offshore islands, and is most common in Bass Strait. Small numbers of the species are evenly distributed along the NSW coast. It favours rocky headlands, rocky shelves, exposed reef with rock pools, beaches and muddy estuaries. Forages on exposed rock or coral at low tide for foods such as limpets and mussels. Breeds in spring and summer, almost exclusively on offshore	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Accipitridae	<i>Hieraaetus morphnoides</i>	Little Eagle	V	-	45	BioNet	islands, and occasionally isolated promontories. The nest is shallow scrape on the ground, or mounds of Occupies open eucalypt forest, woodland or open woodland. Sheoak or acacia woodlands and riparian woodlands of interior NSW also used. Nests in tall living trees within a remnant patch, where pairs build a large stick nest in winter. Preys on birds, reptiles and mammals, occasionally adding large insects and carrion.	Unlikely to occur, no suitable habitat present within the Proposal site.
Apodidae	<i>Hirundapus caudacutus</i>	White-throated Needletail	-	Mig	7	BioNet	Species is almost exclusively aerial, and is found commonly overhead of wooded areas and heathland. Is less commonly found overhead of grassland and swamps.	Unlikely to occur, no suitable habitat present within the Proposal site.
Laridae	<i>Hydroprogne caspia</i>	Caspian Tern	-	Mig	7	BioNet	Found throughout coastal areas, it feeds almost entirely of fish. It forages by shallow diving.	Unlikely to occur, no suitable habitat present within the Proposal site.
Ardeidae	<i>Ixobrychus flavicollis</i>	Black Bittern	V	-	65	BioNet	Inhabits terrestrial and estuarine wetlands, generally in areas containing permanent water and dense vegetation. The species can occur in flooded grassland, woodland, rainforest, and mangroves. It feeds on frogs, reptiles,	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							fish, and invertebrates such as snails, dragonflies, shrimp and crayfish. It roosts during the day on the ground amongst dense reeds or within trees. It nests in branches overhanging water.	
Psittacidae	<i>Lathamus discolor</i>	Swift Parrot	E	CE	10	BioNet	Migrates to the Australian south-east mainland between March and October. On the mainland, it occurs in areas where eucalypts are flowering profusely or where there are abundant lerp (from sap-sucking bugs) infestations.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopacidae	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	V	Mig	9	BioNet	Inhabits NSW during its non-breeding season and occurs in coastal areas from Ballina to Shoalhaven Heads. Preferred habitat is within sheltered areas of the coast including estuarine mudflats, salt marshes, freshwater lagoons and sewerage farms.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopacidae	<i>Limosa lapponica</i>	Bar-tailed Godwit	-	Mig	5	BioNet	A migratory, long-necked wader with a migratory route of approximately 11,000km. The species is most commonly recorded along major coastal river estuaries and sheltered embayments, particularly in the Tweed, Richmond, Clarence, Macleay, Hastings, Hunter and Shoalhaven river estuaries. Found in coastal habitats (sandflats, banks, mudflats, inlets, bays). Occurs around seagrass beds and occasionally in salt marshes or outer	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Limosa limosa</i>	Black-tailed Godwit	V	Mig	410	BioNet	mangrove margins. Forages in low to mid tide on worms, molluscs, insects and plant material. Breeds in the Northern Hemisphere and migrates south for summer. Largest populations in Australia are on the north coast. Generally sporadic through the rest of the country including some inland records, though predominately found in coastal areas. It forages on the shores of intertidal mud and sand flats, banks of mud, sand, or shell-grit, and along the shores of inland lakes and other wetlands. It roosts on banks of sand, mud, and shell, along with beaches in sheltered areas, and saltflats behind mangroves, and occasionally among low vegetation such as saltmarsh.	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.
Cacatuidae	<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo	V	-	262	BioNet	It predominately occurs across the arid and semi-arid inland of Australia and very rarely further east. In NSW Bourke and Griffith are the main extent of its eastern occurrence, though it sporadically occurs further east. It inhabits a wide range of treed and treeless habitat, always in reach of water. It feeds mostly on the ground on seeds of melons, and species of saltbush, wattles, and cypress pines. It nests in tree hollows.	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Cacatuidae	<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo	V	-	3	BioNet	It predominately occurs across the arid and semi-arid inland of Australia and very rarely further east. In NSW Bourke and Griffith are the main extent of its eastern occurrence, though it sporadically occurs further east. It inhabits a wide range of treed and treeless habitat, always in reach of water. It feeds mostly on the ground on seeds of melons, and species of saltbush, wattles, and cypress pines. It nests in tree hollows.	Unlikely to occur, no suitable habitat present within the Proposal site.
Accipitridae	<i>Lophoictinia isura</i>	Square-tailed Kite	V	-	8	BioNet	Found in a variety of timbered habitats including dry woodlands and open forests. It is a specialist hunter preying on passerine birds, especially honeyeaters and targets predominately nestlings and insects occurring in the tree canopy. It nests in tree forks or on large horizontal tree limbs located mostly along or near watercourses.	Unlikely to occur, no suitable habitat present within the Proposal site.
Meliphagidae	<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subspecies)	V	-	1	BioNet	This species range extends from central Queensland through NSW to Victoria. Occupies mostly upper levels of drier open forests or woodlands dominated by box and ironbark eucalypts but can also inhabit open forests. Has a large foraging territory > 5 ha, feeding on insects and nectar. It nests high in the tree crown, hidden by foliage.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Psittacidae	<i>Neophema pulchella</i>	Turquoise Parrot	V	-	1	BioNet	The species range extents from southern Queensland's to northern Victoria, from coastal plains to the western slopes of the Great Dividing Range. The species is found inhabiting the edges of eucalypt woodlands, timbered ridges and creeks in farmland. Prefers to feed in the shade of trees and spends most of the day foraging in the ground for seeds and grasses. The Turquoise Parrot nests in hollows, logs or pots August to December.	Unlikely to occur, no suitable habitat present within the Proposal site.
Strigidae	<i>Ninox strenua</i>	Powerful Owl	V	-	144	BioNet	It requires large tracts of forest or woodland habitat but can occur in fragmented landscapes as well. It breeds and hunts in open or closed sclerophyll forests or woodlands and occasionally hunts in open habitats. Roosting during the day time occurs in dense vegetation of Eucalypts and species such as <i>Syncarpia glomulifera</i> (Turpentine), <i>Angophora floribunda</i> (Rough-barked Apple), and other species. Prey species are medium-sized arboreal mammals such as the Greater Glider, Common Ringtail Possum, and Sugar Glider. As most prey species require hollows and a shrub layer these are important habitat components also of the Powerful Owl. Nests are in large tree hollows (at least 0.5 m deep), in	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Numenius madagascariensis</i>	Eastern Curlew	-	Mig	194	BioNet	large eucalypts (diameter at breast height of 80-240 cm) that are at least 150 years old. Breeds in the Northern Hemisphere and spends the non-breeding season in all states of Australia in coastal areas and rarely inland. In NSW it is distributed along all coastal areas but it mainly found in estuaries such as the Hunter River, Port Stephens, Clarence River and Richmond River. It occupies lakes, inlets, bays and estuarine habitat. It is mainly found in intertidal mudflats and sometimes saltmarsh. It forages at the edge of shallow water and roosts on sandy spits and islets especially on dry beach sand.	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.
Scolopacidae	<i>Numenius minutus</i>	Little Curlew	-	Mig	1	BioNet	This species gathers in large flocks on coastal and inland grasslands and black soil plains in northern Australia, near swamps and flooded areas. It also feeds on playing fields, paddocks and urban lawns. It forages by walking along slowly, picking and probing at the ground. It does not breed in Australia.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopacidae	<i>Numenius phaeopus</i>	Whimbrel	-	Mig	93	BioNet	It is found mainly on the coast, on tidal and estuarine mudflats, especially near mangroves but can sometimes found on beaches and rocky shores of northern	Unlikely. No suitable habitat present within the Proposal site,

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Laridae	<i>Onychoprion fuscata</i>	Sooty Tern	V	-	1	BioNet	Australia. It feeds on intertidal mudflats by day and night, despite large number on worms, crustaceans and occasionally fish and nestling birds. Breeds in the Northern Hemisphere and migrate south for the summer. Occasionally occurs along NSW coasts, but is mostly found over tropical and sub-tropical seas. Breeds on offshore islands including Norfolk Island and Lord Howe Island.	Unlikely to occur, no suitable habitat present within the Proposal site.
Accipitridae	<i>Pandion cristatus</i>	Eastern Osprey	V	-	22	BioNet	Found in littoral and coastal habitats and terrestrial wetlands. Generally are found in coastal areas though will travel inland along major water courses. It visits a wide range of wetland habitats including inshore waters, reefs, bays, coastal cliffs, estuaries, mangrove swamps, broad rivers, reservoirs, large lakes, and water holes. Feed on fish over clear, open water, and nest in trees or dead trees, generally within one kilometre of the ocean.	Unlikely to occur, no suitable habitat present within the Proposal site.
Petroicidae	<i>Petroica boodang</i>	Scarlet Robin	V	-	2	BioNet	Lives in mature and regrowth dry eucalypt forests and woodlands. Occasionally found in mallee, or wetter forests, or in wetlands and tea-tree swamps. The understorey is usually open and grassy with few scattered shrubs. Habitat usually contains abundant logs	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							and fallen timber. It breeds on ridges, hills and foothills of the Great Dividing Range, Western Slopes, and in eastern coastal regions. The species predominately inhabits forests and woodlands though some individuals may disperse to more open habitats following breeding. In Autumn and Winter the predominate habitat is open grassy woodlands, grasslands, or grazed paddocks with scattered trees. Birds pounce on insects and other invertebrates from low perches, though occasionally forage in the shrub and canopy layer.	
Petroicidae	<i>Petroica phoenicea</i>	Flame Robin	V	-	2	BioNet	Breeds in upland tall moist eucalypt forests and woodlands, often on ridges and slopes. Prefers clearings or areas with open understoreys. Ground layer of the breeding habitat is dominated by native grasses with shrub layer either sparse or dense. Often nests near the ground and are built in sheltered sites e.g. shallow cavities in trees, stumps or banks.	Unlikely to occur, no suitable habitat present within the Proposal site.
Petroicidae	<i>Petroica rodinogaster</i>	Pink Robin	V	-	1	BioNet	Inhabits rainforest and tall, open eucalypt forest, particularly in densely vegetated gullies. Forages for insects and spiders on the ground. Nests in an upright or	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Charadriidae	<i>Pluvialis fulva</i>	Pacific Golden Plover	-	Mig	67	BioNet	oblique fork, from 30cm to 6m above the ground, in deep undergrowth. Found on muddy, rocky and sandy wetlands, shores, paddocks, saltmarsh, coastal golf courses, estuaries and lagoons. Breeds in Alaska and migrates south for the summer months. Feeds on molluscs, insects, worms, crustaceans, lizards and is known to eat birds' eggs and small fish.	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.
Charadriidae	<i>Pluvialis squatarola</i>	Grey Plover	-	Mig	3	BioNet	Almost entirely coastal, being found mainly on marine shores, inlets, estuaries and lagoons with large tidal mudflats or sandflats for feeding, sandy beaches for roosting, and also on rocky coasts. Feeds on molluscs, insects, crustaceans, polychaete worms, and occasionally vegetation and seeds. Breeds in the Northern Hemisphere and migrates to the west and south coasts of Australia during the summer months.	Unlikely to occur, no suitable habitat present within the Proposal site.
Columbidae	<i>Ptilinopus superbus</i>	Superb Fruit-Dove	V	-	4	BioNet	Inhabits rainforest and closed forests where it forages high in the canopy, preferring figs and palms. Occasionally occurs in eucalypt or acacia woodland where fruit-bearing trees are present.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Rostratulidae	<i>Rostratula australis</i>	Australian Painted Snipe	E	E	1	BioNet	Inhabits fringes of shallow inland wetlands, swamps, dams and nearby marshy areas where there is a cover of grasses, lignum, low scrub or open timber.	Unlikely to occur, no suitable habitat present within the Proposal site.
Laridae	<i>Sterna hirundo</i>	Common Tern	-	Mig	3	BioNet	It is mainly coastal when not breeding and found in offshore waters, ocean beaches, estuaries and large lakes but can also be seen in freshwater swamps, floodwaters, sewage farms and brackish and saline lakes. Forages by diving into the water, looking for small marine fish. Will also eat aquatic insects and crustaceans from mud.	Unlikely to occur, no suitable habitat present within the Proposal site.
Laridae	<i>Sternula albifrons</i>	Little Tern	E	Mig	1316	BioNet	Migratory bird which spends part of the year in eastern Asia and breeds in the north, east, and south-east Australian coasts from Shark Bay in Western Australia to the gulf of St Vincent in South Australia. Within NSW it occurs mainly north of Sydney, although occurs in small numbers south to Victoria. It is an almost exclusively coastal species, preferring sheltered environments, though has been known to occur several kilometres from the sea in harbours, inlets, and rivers. It nests in small	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Tringa brevipes</i>	Grey-tailed Tattler	-	Mig	97	BioNet	colonies in low dunes or on sandy beaches above the high tide mark. Occurs on sheltered coasts with reefs and rock platforms or with intertidal mudflats. It is also found in intertidal rocky, coral or stony reefs, platforms and islets that are exposed at high tide. Breeds in Siberia and migrate to the southern hemisphere for the summer. Mostly found in Northern Australia.	Unlikely. No suitable habitat present within the Proposal site, despite large number of records.
Scolopacidae	<i>Tringa incana</i>	Wandering Tattler	-	Mig	1	BioNet	It generally found on rocky coasts with reefs and platforms, points, spits, piers, offshore islands and shingle beaches or beds. It is occasionally seen on coral reefs or beaches, and tends to avoid mudflats. It forages among rocks or shingle, or in shallow pools at edges of reefs or beaches, mainly along the tideline. It breeds in the Northern Hemisphere and migrates south for the summer.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopacidae	<i>Tringa nebularia</i>	Common Greenshank	-	Mig	2	BioNet	Does not breed in Australia. Occurs in all types of wetlands, both inland, and coastal. Utilises both permanent and ephemeral terrestrial wetlands, and utilises artificial wetlands including dams. It forages around the edge of wetland in shallow water and soft	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Tringa stagnatilis</i>	Marsh Sandpiper	-	Mig	1	BioNet	mud and feeds on mollusc, crustaceans, insects, and occasionally fish and frogs. Found in fresh or brackish wetlands such as rivers, water meadows, sewage farms, drains, lagoons and swamps. It forages for aquatic insects, molluscs and crustaceans in shallow water. Breeds in marshlands in the Northern Hemisphere and migrates south.	Unlikely to occur, no suitable habitat present within the Proposal site.
Tytonidae	<i>Tyto novaehollandiae</i>	Masked Owl	V	-	1	BioNet	Roosts and breeds in moist eucalypt forested gullies, using large tree hollows or sometimes caves for nesting. Lives in dry eucalypt forests and woodlands from sea level to 1100 m. A forest owl, but often hunts along the edges of forests, including roadsides. The typical diet consists of tree-dwelling and ground mammals, especially rats.	Unlikely to occur, no suitable habitat present within the Proposal site.
Tytonidae	<i>Tyto tenebricosa</i>	Sooty Owl	V	-	7	BioNet	Occurs in coastal rainforest, including dry, subtropical, and temperate rainforests, and moist eucalypt forests. Utilises tall trees in heavily vegetated areas for day time resting. It hunts during the night for small ground or tree dwelling mammals such as the Common Ringtail Possum or Sugar Glider. The species requires very large tree hollows for nesting.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Xenus cinereus</i>	Terek Sandpiper	V	Mig	29	BioNet	Breeds in the Northern Hemisphere. In the non-breeding season within Australia it is most common in northern Australia. The two main sites it occurs in NSW are the Richmond River and Hunter River estuaries. It occurs on coastal mudflats, lagoons, creeks, and estuaries. It favours mud and sand banks near mangroves, but is also recorded around rocky pools and reefs and occasionally up to 10km inland around brackish pools. It roosts amongst mangroves or dead trees, and forages in intertidal areas.	Unlikely to occur, no suitable habitat present within the Proposal site.
Dasyornithidae	<i>Dasyornis brachypterus</i>	Eastern Bristlebird	E	E	Species or species habitat likely to occur within area	PMST	Inhabits low dense vegetation in: sedgeland, heathland, swampland, shrubland, sclerophyll forest and woodland, and rainforest. Found near the coast, on tablelands and in ranges.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Diomedea antipodensis</i>	Antipodean Albatross	V	V, Mig	Foraging, feeding or related behaviour likely to	PMST	Marine and pelagic species. The majority of birds breed on the ridges, sloped and plateaus of Antipodes Island, with a small number of pairs breeding on Campbell Island. This species regularly occurs in small numbers off the NSW south coast from Green Cape to Newcastle	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					occur within area		during winter where they feed on cuttlefish. Foraging for this species is extremely patchy, both spatially and temporally, and individuals traverse great distances in search of food such as squid, fish and crustaceans.	
Diomedidae	<i>Diomedea gibsoni</i>	Gibson's Albatross	V	V	Foraging, feeding or related behaviour likely to occur within area	PMST	Marine and pelagic species. Essentially endemic to New Zealand, this species regularly occurs off the NSW coast from Green Cape to Newcastle. Foraging for this species is extremely patchy, both spatially and temporally, and individuals traverse great distances in search of food such as squid, fish and crustaceans..	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Diomedea epomophora</i>	Southern Royal Albatross	-	V, Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Marine and pelagic species. Nests on large islands and islets.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Diomedea exulans</i>	Wandering Albatross	-	V, Mig	Foraging, feeding or related	PMST	Marine and pelagic species. Nests in open patchy vegetation on ridges, slopes and plateaus.	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					behaviour likely to occur within area			present within the Proposal site.
Diomedidae	<i>Diomedea sanfordi</i>	Northern Royal Albatross	-	E, Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Marine species, found in waters off south-eastern Australia, occasionally found in NSW waters. Breeds almost exclusively on the Chatham Islands off the New Zealand coast. Forages by taking cephalopods, fish and crustaceans from the surface of the water. It is also known to fly long distances to search for food, following boats and feeding aggressively on offal and diving for baits.	Unlikely to occur, no suitable habitat present within the Proposal site.
Hydrobatidae	<i>Fregetta grallaria</i>	White-bellied Storm-Petrel	V	V	Species or species habitat likely to occur within area	PMST	Marine species, occurs in coastal NSW waters, particularly after storm events. In Australia breeds only on offshore islands in the Lord Howe Island group. Nest consists of a chamber usually located amongst large rocks.	Unlikely to occur, no suitable habitat present within the Proposal site.
Meliphagidae	<i>Grantiella picta</i>	Painted Honeyeater	V	V	Species or species habitat may	PMST	Sparsely distributed from south-eastern Australia to north-western Queensland and eastern North Territory. Most records and all breeding records are from the	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					occur within area		inland slopes of the Great Dividing Range between the Grampians in Victoria, to Roma in Queensland. It moves north-south following the fruiting of mistletoe species. It feeds predominately on mistletoe fruits, but occasionally nectar of eucalypts, mistletoes, and potentially banksias, and arthropods. The species prefers woodlands with large numbers of mature trees which host mistletoes. The species nests in mistletoes.	present within the Proposal site.
Scolopacidae	<i>Limosa lapponica menzbieri</i>	Northern Siberian Bar-tailed Godwit	-	CE	Species or habitat may occur within area	PMST	Breeds in north Siberia east to the Kolyma Delta and winters in South-east Asia and Northern Australia. Occupies marshy areas in lowland tundra, and migrate to muddy coastlines, inlets, mangrove lagoons and sheltered bays to forage on bivalves, annelids and crustaceans.	Unlikely to occur, no suitable habitat present within the Proposal site.
Procellariidae	<i>Macronectes giganteus</i>	Southern Giant-Petrel	E	E, Mig	Species or habitat may occur within area	PMST	Pelagic species with a circumpolar range from Antarctica to approximately 20° S and is a common visitor off the coast of NSW.	Unlikely to occur, no suitable habitat present within the Proposal site.
Procellariidae	<i>Macronectes halli</i>	Northern Giant Petrel	V	V, Mig	Species or habitat may occur within area	PMST	Pelagic species with a circumpolar pelagic distribution, usually between 40-64°S in open oceans. Its range	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					habitat may occur within area		extends into subtropical waters (to 28°S) in winter and early spring, and it is a common visitor in NSW waters, predominantly along the south-east coast during winter and autumn.	present within the Proposal site.
Psittacidae	<i>Neophema chrysogaster</i>	Orange-bellied Parrot	CE	CE	Species or species habitat may occur within area	PMST	Recent records of this species in NSW are rare, but it has been recorded at Comerong Island, Shoalhaven Estuary, in June 1986. It is found in salt marshes, coastal dunes, pastures, shrub lands, estuaries, islands, beaches and moorlands within 10 km of the coast. Species utilises holes in eucalypts for nesting.	Unlikely to occur, no suitable habitat present within the Proposal site.
	<i>Pachyptila turtur subantarctica</i>	Fairy Prion	-	V	Species or species habitat known to occur within area	PMST	In Australia, breeding is recorded on two rock stacks off Macquarie Island and on the nearby Bishop and Clerk Island. Nests in burrows dug below mat-forming herbs among rocks and low vegetation. Forages by plucking food from the ocean surface.	Unlikely to occur, no suitable habitat present within the Proposal site.
Procellariidae	<i>Pterodroma leucoptera leucoptera</i>	Gould's Petrel	V	E	Species or species habitat may occur within area	PMST	Breeds on both Cabbage Tree Island, 1.4 km offshore from Port Stephens and on nearby Boondelbah island. The range and feeding areas of non-breeding petrels are unknown. It nests predominantly in natural rock crevices among the rock scree and also in hollow fallen palm	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							trunks, under mats of fallen palm fronds and in cavities among the buttresses of fig trees.	
Procellariidae	<i>Pterodroma neglecta neglecta</i>	Kermadec Petrel	V	V	Foraging, feeding or related behaviour likely to occur within area	PMST	Occurs in coastal NSW waters, particularly after storm events. Ranges over subtropical and tropical waters of the South Pacific. Balls Pyramid (near Lord Howe Island) and Phillip Island (near Norfolk Island) are the only known breeding sites in Australian waters. It nests in a crevice amongst rocks.	Unlikely to occur, no suitable habitat present within the Proposal site.
Laridae	<i>Sternula nereis nereis</i>	Australian Fairy Tern	-	V	Breeding likely to occur within area	PMST	Species nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation. It has been found in embayments of a variety of habitats including offshore, estuarine or lacustrine (lake) islands, wetlands and mainland coastline. It roosts on beaches at night.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Thalassarche bulleri</i>	Buller's Albatross	-	V	Species or species habitat may occur within area	PMST	In Australia, Buller's Albatross are seen over inshore, offshore and pelagic waters. Breeds and nests in the New Zealand region.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Diomedidae	<i>Thalassarche bulleri platei</i>	Northern Buller's Albatross	-	V	Species or habitat may occur within area	PMST	Marine and pelagic species that breeds only on Chatham and Three Kings Island, New Zealand. However it does forage in the inshore, offshore and pelagic waters off the east coast of the Australia mainland.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Thalassarche cauta cauta</i>	Shy Albatross	V	V, Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Marine species that nests on level or gently sloping ledges, summits, slopes and caves of rocky islets and stacks, usually in broken terrain with little soil and vegetation.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Thalassarche cauta steadi</i>	White-capped Albatross	-	V, Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Marine species that nests on slopes vegetated with tussock and succulents on Auckland Island.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Diomedidae	<i>Thalassarche eremita</i>	Chatham Albatross	-	V	Foraging, feeding or related behaviour likely to occur within area	PMST	Marine species that nests on level or gently sloping ledges, summits, slopes and caves of rocky islets and stacks, usually in broken terrain with little soil and vegetation.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Thalassarche impavida</i>	Campbell Albatross		V	Species or habitat may occur within area	PMST	Marine species that breeds and nests only on sub-Antarctic Campbell Island, south of New Zealand. However it commonly forages on the surface, or just below, of the oceanic continental slopes off Tasmania, Victoria and NSW.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Thalassarche melanophris</i>	Black-browed Albatross	V	V, Mig	Species or habitat may occur within area	PMST	Marine species that breeds on subantarctic and peri-Antarctic islands. Species is rarely sighted over land away from its breeding islands.	Unlikely to occur, no suitable habitat present within the Proposal site.
Diomedidae	<i>Thalassarche cauta salvini</i>	Salvin's Albatross	V	V, Mig	Foraging, feeding or related	PMST	Marine species found in inshore and offshore waters, but rarely in pelagic waters. This species forages primarily in shelf waters, taking food from the surface or just below.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					behaviour likely to occur within area			present within the Proposal site.
	<i>Calonectris leucomelas</i>	Streaked Shearwater	-	Mig	Species or species habitat known to occur within area	PMST	Marine and pelagic species that breeds in the Northern Hemisphere and migrates south for the summer. Forages for fish and squid on, of just below, the water surface.	Unlikely to occur, no suitable habitat present within the Proposal site.
	<i>Fregata ariel</i>	Lesser Frigatebird	-	Mig	Species or species habitat likely to occur within area	PMST	This species inhabits remote islands in tropical and sub-tropical seas, where it breeds in small bushes, mangroves and even on the ground. Lacks waterproof plumage and therefore will only forage for prey on the water surface or just below.	Unlikely to occur, no suitable habitat present within the Proposal site.
	<i>Fregata minor</i>	Great Frigatebird	-	Mig	Species or species habitat may occur within area	PMST	Marine and pelagic species found in Pacific and Indian Ocean. Forages for fish taken in flight from the ocean's surface.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Cuculidae	<i>Cuculus optatus</i>	Oriental Cuckoo	-	Mig	Species or species habitat may occur within area	PMST	Inhabits a large area during breeding season stretching from the Himalayas to Southern China. During winter, this species migrates further south including areas of northern and eastern Australia. Has been recorded in a large variety of habitats including all levels of the forest canopy.	Unlikely to occur, no suitable habitat present within the Proposal site.
Apodidae	<i>Hirundapus caudacutus</i>	White-throated Needletail	-	Mig	Species or species habitat known to occur within area	PMST	Species is almost exclusively aerial, and is found commonly overhead of wooded areas and heathland. Is less commonly found overhead of grassland and swamps.	Unlikely to occur, no suitable habitat present within the Proposal site.
Muscicapidae	<i>Monarcha melanopsis</i>	Black-faced Monarch	-	Mig	Species or species habitat known to occur within area	PMST	Found along the coast of eastern Australia, becoming less common further south. The Black-faced Monarch is found in rainforests, eucalypt woodlands, coastal scrub and damp gullies. It may be found in more open woodland when migrating.	Unlikely to occur, no suitable habitat present within the Proposal site.
Muscicapidae	<i>Monarcha trivirgatus</i>	Spectacled Monarch	-	Mig	Species or species	PMST	Found along the entire eastern seaboard of Australia. More often found where there is thick understorey in	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					habitat may occur within area		rainforests, wet gullies, waterside vegetation and also in mangroves.	present within the Proposal site.
Motacilla flava	<i>Motacilla flava</i>	Yellow Wagtail	-	Mig	Species or species habitat known to occur within area	PMST	A very widespread species, occurring across Europe, Africa, Asia, Alaska and Australia. The species occurs in a variety of damp or wet habitats with low vegetation. Typically found foraging in damp grassland and open grounds at edges of rivers.	Unlikely to occur, no suitable habitat present within the Proposal site.
Monarchidae	<i>Myiagra cyanoleuca</i>	Satin Flycatcher	-	Mig	Species or species habitat known to occur within area	PMST	Found along the east coast of Australia in tall forests, preferring wetter habitats such as heavily forested gullies, but not rainforests.	Unlikely to occur, no suitable habitat present within the Proposal site.
Rhipiduridae	<i>Rhipidura rufifrons</i>	Rufous Fantail	-	Mig	Species or species habitat known to occur within area	PMST	Found in rainforest, dense wet forests, swamp woodlands and mangroves, preferring deep shade, and is often seen close to the ground.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopacidae	<i>Calidris melanotos</i>	Pectoral Sandpiper	-	Mig	Species or species habitat likely to occur within area	PMST	Scattered but widespread distribution within NSW from east of the Great Divide, from Casino and Ballina to Ulladulla. Species prefers shallow, fresh-saline wetlands and is found at coastal lagoons, estauries, bays, swamps, lakes, inundated grasslands, saltmarches, river pools, creek and floodplains. the species forages on algae, seeds, spiders and insects.	Unlikely to occur, no suitable habitat present within the Proposal site.
Charadriidae	<i>Charadrius bicinctus</i>	Double-banded Plover	-	Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Found on the east coast of Australia on coastal beaches, mudflats, sewage farms, river banks, fields, dunes, upland tussock grasses and shingle. Breeds in New Zealand. This species forages on molluscs, crustaceans, insects, and occasionally seeds and fruit.	Unlikely to occur, no suitable habitat present within the Proposal site.
Charadriidae	<i>Charadrius veredus</i>	Oriental Plover	-	Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Generally found inland; in open grasslands in arid and semi-arid zones; and less often in estuarine or littoral environments. This species prefers flat inland plains, sparsely vegetated short grass with hard bare ground including claypans, playing fields, lawns and cattle camps. Breeds in Mongolia and migrates south. Forages on insects only.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Scolopidae	<i>Gallinago megala</i>	Swinhoe's Snipe	-	Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Species is a non-breeding visitor to Australia, but only a few definite records exist. Closest specimen was taken in Normanton, Queensland.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopidae	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	V	Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Inhabits NSW during its non-breeding season and occurs in coastal areas from Ballina to Shoalhaven Heads. Preferred habitat is within sheltered areas of the coast including estuarine mudflats, salt marshes, freshwater lagoons and sewerage farms.	Unlikely to occur, no suitable habitat present within the Proposal site.
Scolopidae	<i>Gallinago stenura</i>	Pin-tailed Snipe	-	Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Occurs most often in or at the edges of shallow freshwater swamps, ponds and lakes with emergent, sparse to dense cover of grass/sedge or other vegetation. The species is also found in drier, more open wetlands such as claypans in more arid parts of species' range. It is also commonly seen at sewage ponds; not normally in saline or inter-tidal wetlands. Breeds and	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							nests in the Northern Hemisphere and migrates south for the summer months. Only one confirmed sighting exists in NSW.	
Scolopacidae	<i>Limicola falcinellus</i>	Broad-billed Sandpiper	V	Mig	Foraging, feeding or related behaviour likely to occur within area	PMST	Inhabits NSW during its non-breeding season and occurs in coastal areas from Ballina to Shoalhaven Heads. Preferred habitat is within sheltered areas of the coast including estuarine mudflats, salt marshes, freshwater lagoons and sewerage farms.	Unlikely to occur, no suitable habitat present within the Proposal site.
Gastropoda								
Camaenidae	<i>Meridolum corneovirens</i>	Cumberland Plain Land Snail	E	-	5	BioNet	Primarily inhabits Cumberland Plain Woodland (an endangered ecological community). This community is a grassy, open woodland with occasional dense patches of shrubs. Lives under litter of bark, leaves and logs, or shelters in loose soil around grass clumps. Occasionally shelters under rubbish.	Unlikely to occur, no suitable habitat present within the Proposal site.
Camaenidae	<i>Pommerhelix duralensis</i>	Dural Land Snail	E	E	Species or species habitat	PMST	Inhabits areas that are between shale-derived and sandstone-derived soils with forested vegetation that have good native cover and woody debris. Species	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
					likely to occur within area		prefers sheltering under rocks, inside curled-up bark and underneath leaf litter and light woody debris.	present within the Proposal site.
Mammalia								
Otariidae	<i>Arctocephalus pusillus doriferus</i>	Australian Fur-seal	V	-	1	BioNet	Prefers rocky parts of islands with flat, open terrain. Occupies flatter areas than do New Zealand Fur-seals where they occur together. Breeds at Seal Rocks, near Port Stephens and Montague Island in Southern NSW.	Unlikely to occur, no suitable habitat present within the Proposal site.
Burramyidae	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V	-	3	BioNet	Species is found in a broad range of habitats from rainforest to wet and dry sclerophyll forests through to woodland and heath. Woodland and heath habitats are preferred. The species feeds on pollen and nectar from banksias, eucalypts, and bottlebrushes, though will eat soft fruits when flowers are unavailable, and will also eat insects throughout the year. It shelters in tree hollows, rotten stumps, holes in the ground, abandoned birds nests and Ringtail Possum dreys, and thickets of vegetation. Tree hollows are preferred for nesting but the species will also nest under tree bark and shredded bark in tree forks.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Vespertilionidae	<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V	4	BioNet	Roosts in caves (near their entrances), crevices in cliffs, old mine workings and in the disused, bottle-shaped mud nests of the Fairy Martin. Found in well-timbered areas containing gullies.	Unlikely to occur, no suitable habitat present within the Proposal site.
Dasyuridae	<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	E	1	BioNet	Occurs in wide variety of habitats; rainforest, open forest, woodland, coastal heath and riparian forest. Uses hollows in trees, logs and rock crevasses as den sites.	Unlikely to occur, no suitable habitat present within the Proposal site.
Vespertilionidae	<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-	5	BioNet	Occurs in moist habitat with trees over 20m in height, hunting insects above or just below the tree canopy. Roosts in eucalypt hollows, under bark and in buildings	Potential to occur. Marginal foraging habitat present within the Proposal site.
Vespertilionidae	<i>Miniopterus australis</i>	Little Bentwing-bat	V	-	8	BioNet	Inhabits moist eucalypt forest, rainforest, wet and dry sclerophyll forest, melaleuca swamps, dense coastal forests and banksia scrub, preferring well timbered areas. Species roosts in caves, tunnels, tree hollows, stormwater drains, culverts, bridges and sometimes in buildings.	Potential to occur. Marginal foraging habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Vespertilionidae	<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	V	-	34	BioNet	Roosts mainly in caves but also in tunnels, mines or buildings. Non-breeding populations disperse within a 300 km range of maternity caves. Hunting for moths and other insects takes place in forested areas above the canopy.	Potential to occur. Marginal foraging habitat present within the Proposal site.
Molossidae	<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	V	-	3	BioNet	Occur in dry sclerophyll forest and woodland east of the Great Dividing Range. Roosts in tree hollows but will also roost under bark or in man-made structures.	Potential to occur. Marginal foraging habitat present within the Proposal site.
Vespertilionidae	<i>Myotis macropus</i>	Southern Myotis	V	-	4	BioNet	Roosts close to water in caves, hollow-bearing trees, storm water channels, buildings, under bridges and in dense foliage. Forage over streams and pools catching insects and small fish. Known from a range of habitats close to water from lakes, small creeks to large lakes and mangrove lined estuaries	Potential to occur. Marginal foraging habitat present within the Proposal site.
Peramelidae	<i>Perameles nasuta</i>	Long-nosed Bandicoot population in inner western Sydney	E	-	22	BioNet	This species distribution includes the local government areas (LGA) of Marrickville and Canada Bay, with the likelihood that it also includes Canterbury, Ashfield and Leichhardt LGAs. Shelters mostly under older houses and buildings. Forages in parkland and back-yards	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Petauridae	<i>Petaurus australis</i>	Yellow-bellied Glider	V	-	1	BioNet	Occurs in tall, mature eucalypt forest, mostly in areas with high rainfall and soil nutrients. Forest types include mixed coastal forests, dry escarpment forests, moist coastal gullies and creek flats, to tall montane forests. Feeds primarily on plant and insect exudates, including nectar, sap, honeydew, and manna, supplemented with insects to provide protein. The species dens in family groups, in hollows in large trees.	Unlikely to occur, no suitable habitat present within the Proposal site.
Phascolarctidae	<i>Phascolarctos cinereus</i>	Koala	V	V	60	BioNet	Inhabits eucalypt woodlands and forests, feeding on the leaves of Eucalyptus species. Feeds on the foliage of more than 70 Eucalypt species and 30 non-eucalypt species.	Unlikely to occur, no suitable habitat present within the Proposal site.
Pteropodidae	<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V	187	BioNet	Occur in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Commonly found in gullies, close to water, in vegetation with a dense canopy.	Potential to occur. Marginal foraging habitat present within the Proposal site.
Emballonuridae	<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheathtail-bat	V	-	4	BioNet	Roosts singly or in groups of up to six, in tree hollows and buildings; in treeless areas they are known to utilise mammal burrows. When foraging for insects, flies high	Unlikely to occur, no suitable habitat

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
							and fast over the forest canopy, but lower in more open country. Forages in most habitats across its very wide range, with and without trees; appears to defend an aerial territory.	present within the Proposal site.
Peramelidae	<i>Isoodon obesulus</i>	Southern Brown Bandicoot (eastern)	E	E	Species or species habitat may occur within area	PMST	Within NSW, the species is rare and almost exclusively restricted to the coastal fringe of the state, from the southern side of the Hawkesbury River in the north to the Victorian border in the south. More specifically, the subspecies is considered to occur primarily in two areas: (i) Ku-ring-gai Chase and Garigal National Parks; and (ii) in the far south-east corner of the state. Occurs within their distribution in a variety of habitats including heathland, shrubland, sedgeland, heathy open forest and woodland.	Unlikely to occur, no suitable habitat present within the Proposal site.
Pseudocheiridae	<i>Petauroides volans</i>	Greater Glider	E	V	Species or species habitat may occur within area	PMST	Restricted to eastern Australia, and occurring from the Windsor Tableland in Queensland south to Wombat State Forest in central Victoria. Largely restricted to eucalypt forests and woodlands. The diet is predominately comprised of eucalypt leaves, and more rarely flowers. Highest abundances occur in tall montane forests with old trees and abundant hollows.	Unlikely to occur, no suitable habitat present within the Proposal site.

Table A.6.2 Threatened fauna likelihood of occurrence assessment

Family	Scientific	Common	BC Act	EPBC Act	No Records (10km locality)	Source	Habitat Requirements	Likelihood of Occurrence
Macropodidae	<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	E	V	Species or species habitat likely to occur within area	PMST	Occupies rock outcrops, escarpments and cliffs with features such as caves, fissures and ledges. Browses on adjacent vegetation. Has a home range of about 15 ha and shelters in caves.	Unlikely to occur, no suitable habitat present within the Proposal site.
Muridae	<i>Pseudomys novaehollandiae</i>	New Holland Mouse	-	V	Species or species habitat known to occur within area	PMST	Occurs in open habitats (heathland, woodland and forest) with a heath understorey and vegetated sand dunes. The species prefers deep soft top soils in order to burrow.	Unlikely to occur, no suitable habitat present within the Proposal site.
Reptilia								
Varanidae	<i>Varanus rosenbergi</i>	Rosenberg's Goanna	V	-	1	BioNet	Inhabits heath, open forest and woodland containing termite mounds. Shelters in hollow logs, rock crevices and in burrows.	Unlikely to occur, no suitable habitat present within the Proposal site.

Appendix B

Flora Species List

Table B.1 Flora species recorded in quadrat survey on the Proposal site

Family	Scientific Name	Common Name	Status	C	A
Canopy					
Myrtaceae	<i>Eucalyptus punctata</i>	Grey Gum	P	15	5
Shrubs					
Myrtaceae	<i>Corymbia ficifolia</i>	Red-flowering Gum	P, NE	0.5	1
Understorey					
Asteraceae	<i>Bidens pilosa</i>	Cobbler's Pegs	*	0.1	20
Asteraceae	<i>Conyza bonariensis</i>	Flaxleaf Fleabane	*	0.1	5
	<i>Galinsoga parviflora</i>	Potato Weed	*	0.1	10
Asteraceae	<i>Gamochaeta americana</i>		*	0.1	2
Asteraceae	<i>Hypochaeris radicata</i>	Catsear	*	0.1	50
Asteraceae	<i>Sonchus asper</i>	Prickly Sowthistle	*	0.1	5
Asteraceae	<i>Taraxacum officinale</i>	Dandelion	*	0.1	20
Campanulaceae	<i>Wahlenbergia gracilentata</i>	Annual Bluebell		0.1	2
Fabaceae (Faboideae)	<i>Medicago polymorpha</i>	Burr Medic	*	0.5	500
Fabaceae (Faboideae)	<i>Trifolium repens</i>	White Clover	*	0.2	50
Fabaceae (Faboideae)	<i>Vicia sativa</i>	Common vetch	*	0.1	20
Malvaceae	<i>Sida rhombifolia</i>	Paddy's Lucerne	*	0.1	5
Plantaginaceae	<i>Plantago lanceolata</i>	Lamb's Tongues	*	0.5	100
Tropaeolaceae	<i>Tropaeolum majus</i>	Nasturtium	*	0.1	1
Groundcover (grasses)					
Poaceae	<i>Avena barbata</i>	Bearded Oats	*	0.25	20

Table B.1 Flora species recorded in quadrat survey on the Proposal site

Family	Scientific Name	Common Name	Status	C	A
Poaceae	<i>Poa annua</i>	Winter Grass	*	0.1	20
		Panic	*	1	100
Poaceae	<i>Ehrharta erecta</i>	Veldtgrass			
	<i>Cynodon dactylon</i>	Common Couch		0.5	20
Poaceae	<i>Sporobolus africanus</i>	Parramatta Grass	*	0.1	1
Poaceae	<i>Stenotaphrum secundatum</i>	Buffalo Grass	*	35	3000
Groundcover (other)					
	<i>Crinum pedunculatum</i>	Swamp Lily	P	0.1	2
		Slender Flat-			
Cyperaceae	<i>Cyperus gracilis</i>	sedge		0.1	1
Climbers/Vines					
Fabaceae	<i>Glycine</i>	Small-leaf		0.1	5
(Faboideae)	<i>microphylla</i>	Glycine			

Note: P = Planted, N = Native, NE = Non-endemic native, * = Exotic, ** = Priority Weed

C = Projective Foliage Cover (%)

A = Abundance (relative estimate of number of stems)

Quadrat = (20 x 20m)

Table B.2 Complete list of flora within entire Proposal site

Family	Species	Common	Status
Canopy			
Fabaceae (Mimosoideae)	<i>Acacia implexa</i>	Hickory Wattle	P
Cupressaceae	<i>Cupressus spp.</i>		O, *
Nyctaginaceae	<i>Bougainvillea spp.</i>		O, *
Myrtaceae	<i>Eucalyptus punctata</i>	Grey Gum	P
Sub-canopy			
Arecaceae	<i>Livistona australis</i>	Cabbage Palm	P
Casuarinaceae	<i>Casuarina glauca</i>	Swamp Oak	P

Table B.2 Complete list of flora within entire Proposal site

Family	Species	Common	Status
Fabaceae (Mimosoideae)	<i>Acacia elata</i>	Mountain Cedar Wattle	P
Musaceae	<i>Musa spp.</i>	Banana	O, *
Myrtaceae	<i>Eucalyptus scoparia</i>	Willow Gum	O
Myrtaceae	<i>Eucalyptus punctata</i>	Grey Gum	P
Shrubs			
Fabaceae (Mimosoideae)	<i>Acacia implexa</i>	Hickory Wattle	P
Myrtaceae	<i>Corymbia ficifolia</i>	Red-flowering Gum	P, NE
Myrtaceae	<i>Syzygium australe</i>	Brush Cherry	P
Rutaceae	<i>Citrus spp.</i>		*
Understorey			
Asteraceae	<i>Bidens pilosa</i>	Cobbler's Pegs	*
Brassicaceae	<i>Brassica fruticulosa</i>	Twiggy Turnip	*
Apiaceae	<i>Centella asiatica</i>	Indian Pennywort	
Asteraceae	<i>Conyza bonariensis</i>	Flaxleaf Fleabane	*
Asteraceae	<i>Conyza sumatrensis</i>	Tall fleabane	*
Asteraceae	<i>Cotula australis</i>	Common Cotula	
Fumariaceae	<i>Fumaria muralis</i> subsp. <i>muralis</i>	Wall Fumitory	*
Asteraceae	<i>Galinsoga parviflora</i>	Potato Weed	*
Asteraceae	<i>Gamochaeta spp.</i>		*
Asteraceae	<i>Hypochaeris radicata</i>	Catsear	*
Asteraceae	<i>Lactuca serriola</i>	Prickly Lettuce	*
Malvaceae	<i>Malva parviflora</i>	Small-flowered Mallow	*
Fabaceae (Faboideae)	<i>Medicago polymorpha</i>	Burr Medic	*
Plantaginaceae	<i>Plantago lanceolata</i>	Lamb's Tongues	*
Caryophyllaceae	<i>Polycarpha spp.</i>		
Portulacaceae	<i>Portulaca oleracea</i>	Pigweed	
Malvaceae	<i>Sida rhombifolia</i>	Paddy's Lucerne	*
Asteraceae	<i>Soliva sessilis</i>	Bindyi	*
Asteraceae	<i>Sonchus asper</i>	Prickly Sowthistle	*
Asteraceae	<i>Sonchus oleraceus</i>	Common Sowthistle	*
Asteraceae	<i>Taraxacum officinale</i>	Dandelion	*
Fabaceae (Faboideae)	<i>Trifolium repens</i>	White Clover	*
Tropaeolaceae	<i>Tropaeolum majus</i>	Nasturtium	*
Verbenaceae	<i>Verbena bonariensis</i>	Purpletop	*

Table B.2 Complete list of flora within entire Proposal site

Family	Species	Common	Status
Fabaceae (Faboideae)	<i>Vicia sativa</i>	Common vetch	*
Campanulaceae	<i>Wahlenbergia gracilentia</i>	Annual Bluebell	
Groundcover (grasses)			
Poaceae	<i>Poa annua</i>	Winter Grass	*
Poaceae	<i>Ehrharta erecta</i>	Panic Veldtgrass	*
Poaceae	<i>Eragrostis curvula</i>	African Lovegrass	**
Poaceae	<i>Urochloa panicoides</i>	Urochloa Grass	*
Poaceae	<i>Cynodon dactylon</i>	Common Couch	
Poaceae	<i>Arundo donax</i>	Giant Reed	**
Poaceae	<i>Bromus catharticus</i>	Prairie Grass	*
Poaceae	<i>Avena barbata</i>	Bearded Oats	*
Poaceae	<i>Stenotaphrum secundatum</i>	Buffalo Grass	*
Poaceae	<i>Andropogon virginicus</i>	Whisky Grass	**
Poaceae	<i>Paspalum dilatatum</i>	Paspalum	*
Groundcover (other)			
Amaryllidaceae	<i>Crinum pedunculatum</i>	Swamp Lily	P
Asparagaceae	<i>Asparagus aethiopicus</i>	Asparagus Fern	**
Commelinaceae	<i>Commelina cyanea</i>	Native Wandering Jew	
Iridaceae	<i>Watsonia meriana</i>		**
Liliaceae	<i>Liriope muscari</i>	big blue lilyturf	*
Lomandraceae	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	P
Phormiaceae	<i>Phormium tenax</i>	New Zealand Flax	**
Climbers/Vines			
Apocynaceae	<i>Araujia sericifera</i>	Moth Vine	**
Fabaceae (Faboideae)	<i>Glycine microphylla</i>	Small-leaf Glycine	

Note: P = Planted, NE = Non-endemic Native, * = Exotic, ** = Priority Weed, O = Overhanging foliage

Table B.3 Trees to be impacted by the proposed works

Tree ID	Species	Common Name	Height (m)	DBH (cm)	Hollows (no.)	Notes
1	<i>Acacia implexa</i>	Hickory Wattle	3-6	15-20	Nil	Cluster of three individuals

Table B.3 **Trees to be impacted by the proposed works**

Tree ID	Species	Common Name	Height (m)	DBH (cm)	Hollows (no.)	Notes
2	<i>Livistona australis</i>	Cabbage Palm	6	30	Nil	-
3	<i>Acacia implexa</i>	Hickory Wattle	2	2.5	Nil	Cluster of three individuals
4	<i>Acacia elata</i>	Mountain Cedar Wattle	5	15	Nil	-
5	<i>Acacia elata</i>	Mountain Cedar Wattle	6	35	Nil	-
6	<i>Eucalyptus scoparia</i>	Willow Gum	5	15	Nil	Overhanging trunk
7	<i>Corymbia ficifolia</i>	Red-flowering Gum	2.5	10	Nil	-
8	<i>Eucalyptus punctata</i>	Grey Gum	8	20	Nil	-
9	<i>Eucalyptus punctata</i>	Grey Gum	8	15	Nil	-
10	<i>Eucalyptus punctata</i>	Grey Gum	6	25	Nil	-
11	<i>Eucalyptus punctata</i>	Grey Gum	6	20	Nil	-
12	<i>Eucalyptus punctata</i>	Grey Gum	5	15	Nil	-
13	<i>Corymbia ficifolia</i>	Red-flowering Gum	2	10	Nil	-
14	<i>Casuarina glauca</i>	Swamp Oak	2-3	2-15	Nil	Cluster of three individuals
15	<i>Corymbia ficifolia</i>	Red-flowering Gum	2	8	Nil	-

Appendix C

Significance Assessments

C.1 Tests of Significance

Section 7.3 of the BC Act provides a 'Test of Significance' that is used for determining whether proposed development or activity likely to significantly affect threatened species or ecological communities, or their habitats.

The Test of Significance comprises five questions that are to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

For each threatened species, population or ecological community listed under the BC Act, and with potential to occur on the Proposal site, a Test of Significance is provided below:

C.1.1 Grey-headed Flying-fox (*Pteropus poliocephalus*)

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

Numerous scattered records of the species are present throughout the surrounding locality and adjoining reserves. The Grey-headed Flying-fox roosts in large camps, and the closest known location to the Proposal site is at Wolli Creek, approximately 6km to the north east of the Proposal site. The habitat to be removed as part of the Proposal represents a very small portion of potential foraging habitat available in the locality.

The Grey-headed Flying-fox is a highly mobile species that accesses resources from across a wide area and this species would not depend upon resources contained on the Proposal site for its survival. The proposal is not considered to affect the life cycle of this species such that a viable local population is placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

No applicable

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

The proposal will remove approximately 0.042ha of Urban Native/Exotic vegetation habitat within the Proposal site. The vegetation to be removed is not optimum habitat as fruiting and flowering species are limited to planted street trees and garden plantings, with a lack of structured native vegetation as larger patches to provide adequate resources to support a local population.

As the habitat within the Proposal site is set within a high disturbed residential area, it is not anticipated that further fragmentation or isolation will occur as a result of the proposal.

Habitat on the Proposal site is not important for the Grey-headed Flying-fox in the locality as it is a relatively small area of vegetation. This species is highly mobile, thus capable of accessing suitable foraging habitat throughout the wider locality.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No areas of outstanding biodiversity value have been mapped within or near the Proposal site will be impacted.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The Proposal would involve the key threatening process of “Clearing of native vegetation”. The vegetation to be removed on the Proposal site only constitutes marginal habitat for the Grey-headed Flying-fox. Therefore, the process of “Clearing of native vegetation” on the Proposal site is not likely to significantly affect this species.

Conclusion

The Proposal is considered unlikely to result in a significant impact to the Grey-headed Flying-fox. No further assessment is required under the BC Act and the Biodiversity Offsets Scheme does not apply to the Proposal.

C.1.2 Microchiropteran Bats

All microbat species with potential to occur in the Proposal site have been assessed together due to similar foraging requirements. The following Test of Significance has been prepared for the following species:

- Eastern-false Pipistrelle (*Falsistrellus tasmaniensis*);
- Little Bentwing-bat (*Miniopterus australis*);
- Eastern Freetail-bat (*Mormopterus norfolkensis*);
- Southern Myotis (*Myotis macropus*); and

➤ Eastern Bentwing-bat (*Miniopterus schreibersii oceanensis*).

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,

Numerous scattered records of the species are present throughout the surrounding locality however these species are known to forage in urban areas. These microbat bat species roost in tree hollows and caves and no roosting habitat exists within the Proposal site. The foraging habitat to be removed as part of the proposal represents a very small portion of potential foraging habitat available throughout the surrounding locality.

These microbats are highly mobile species that accesses resources from across a wide area and thus would not depend upon resources contained on the Proposal site for survival. The Proposal is not considered likely to affect the life cycle of these species such that a viable local population is placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,

Not applicable

(c) in relation to the habitat of a threatened species or ecological community:

(i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

(iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,

The proposal will remove approximately 0.047ha of Urban Native/Exotic vegetation habitat which represents marginal potential foraging habitat for these species. However, this is not optimum habitat as the Proposal site lacks structured woodland vegetation or hollow-bearing trees. More optimal potential foraging and roosting habitat will remain throughout the surrounding locality and reserves.

As the habitat within the Proposal site is set within a highly disturbed residential area, it is not anticipated that further fragmentation or isolation will occur as a result of the proposal.

Habitat on the Proposal site is not important for the above assessed microbat species in the locality as it is a relatively small area of degraded vegetation. Much larger areas of potential habitat occur throughout the wider locality and will remain accessible due to their high mobility.

(d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),

No areas of outstanding biodiversity values have been mapped from within the Proposal site or surrounding areas.

(e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

The Proposal would result in the key threatening process of “Clearing of native vegetation”. The vegetation to be removed on the Proposal site only constitutes marginal habitat for the microbat species. Therefore, the process of “Clearing of native vegetation” Proposal site is not likely to significantly affect these species.

Conclusion

The Proposal is considered unlikely to result in a significant impact to microbats. No further assessment is required under the BC Act and the Biodiversity Offsets Scheme does not apply to the Proposal.