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bushfire & ecology

# Biodiversity Constraints Assessment

Lots 1 & 2 DP 194469,
Lots A & B DP 312359,
Lot 1 DP 123147
Lots 4-8 DP 8350
Napier, Frances
& High Streets,
Canterbury

May 2018
(REF: A18043)

# Biodiversity Constraints Report

**Lots 1 & 2 DP 194469, Lots A & B DP 312359,**
**Lot 1 DP 123147 & Lots 4-8 DP 8350**
**Napier, Frances & High Streets, Canterbury**

**MAY 2018**


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|---|---|
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Survey effort has been reduced to provide an indication of the insitu vegetation and fauna habitat present. The location of all mapped features is to be confirmed by a registered surveyor.


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# List of abbreviations

| | |
|---|---|
| APZ | asset protection zone |
| BC Act | *Biodiversity Conservation Act (2016)* |
| BCR | *Biodiversity Conservation Regulation (2017)* |
| BPA | bushfire protection assessment |
| CLUMP | conservation land use management plan |
| DCP | Development Control Plan |
| DEC | NSW Department of Environment and Conservation (superseded by DECC from April 2007) |
| DECC | NSW Department of Environment and Climate Change (superseded by DECCW from October 2009) |
| DECCW | NSW Department of Environment, Climate Change and Water (superseded by OEH from April 2011) |
| DEWHA | Commonwealth Department of Environment, Water, Heritage & the Arts (superseded by SEWPAC) |
| DOEE | Commonwealth Department of Environment and Energy |
| EEC | endangered ecological community |
| EPA | Environmental Protection Agency |
| EP&A Act | *Environmental Planning and Assessment Act (1979)* |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act (1999)* |
| ESMP | ecological site management plan |
| FF | flora and fauna assessment |
| FM Act | *Fisheries Management Act* |
| FMP | fuel management plan |
| HTA | habitat tree assessment |
| IPA | inner protection area |
| LEP | Local Environment Plan |
| LGA | local government area |
| NES | national environmental significance |
| NPWS | NSW National Parks and Wildlife Service |
| NSW DPI | NSW Department of Primary Industries |
| OEH | Office of Environment and Heritage (Part of the NSW Department of Premier and Cabinet) |
| OPA | outer protection area |
| PBP | *Planning for bushfire protection 2006* |
| POM | plan of management |
| RF Act | *Rural Fires Act (1997)* |
| RFS | NSW Rural Fire Service |
| ROTAP | rare or threatened Australian plants |
| SEPP 44 | *State Environmental Protection Policy No 44 – Koala Habitat Protection* |
| SEWPAC | Commonwealth Dept. of Sustainability, Environment, Water, Population & Communities (superseded by DOEE) |
| SIS | species impact statement |
| SULE | safe useful life expectancy |
| TPO | tree preservation order |
| TPZ | tree preservation zone |
| TRRP | tree retention and removal plan |
| TSC Act | *Threatened Species Conservation Act (1995)* |
| VMP | vegetation management plan |

# Biodiversity Assessment

*Travers bushfire & ecology* has been engaged to undertake a biodiversity constraints assessment within Lots 1 & 2 DP 194469, Lots A & B DP 312359, Lot 1 DP 123147 & Lots 4-8 DP 8350, Napier, Frances & High Streets, Canterbury within Canterbury Bankstown local government area (LGA). These lots will hereafter be referred to as the 'study area'.

## 1.0 Proposed development

The planned development is currently in concept phase and involves upgrades to an existing primary school. This will likely include the demolition of some existing buildings and construction of new buildings including new library, hall, canteen, admin and classroom buildings, plus new covered walkways and seating area.


**Figure 1 – Aerial appraisal of site**

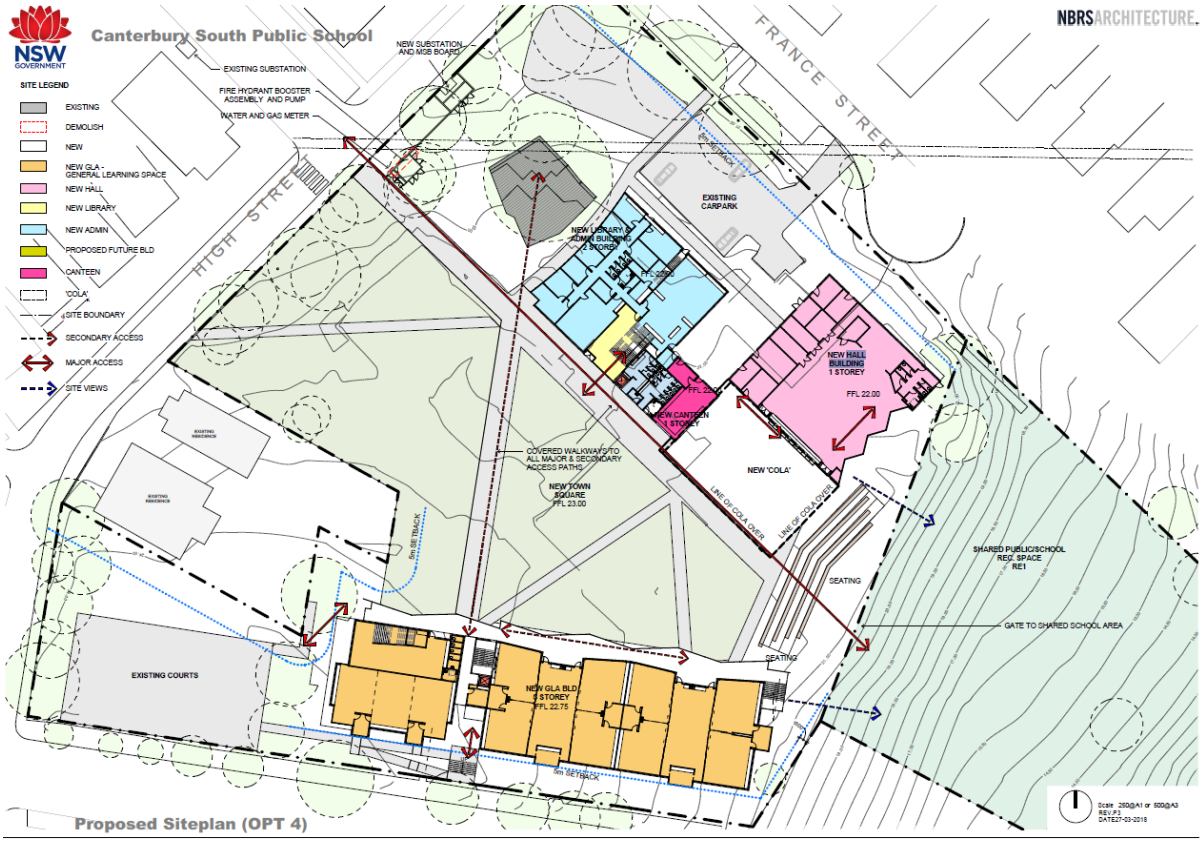



**Figure 2 – Concept plan**

## 2.0 Survey

Botanical survey was undertaken on 4 April 2018 over a time frame of approximately 2 hrs.

Botanical survey included a random meander in accordance with *Cropper* (1993) to gain a full species list of the plants within the site. A review of the *Atlas of NSW Wildlife* (OEH 2018) was undertaken prior to the site visit to determine threatened species previously recorded within 10km of the study area, and relevant target searches were undertaken as suited.

All naturally occurring species were identified to species level where possible, and tabulated in Appendix 1.

A fauna habitat assessment was undertaken during the botanical survey to identify the habitat types available, the quality and any specific or important features. Section 6 of the report describes the habitat values present.

## 3.0 Site description

Table 1 provides a summary of the planning, cadastral, topographical, and disturbance details of the study area.

**Table 1 – Site features**

| | |
|---|---|
| **Location** | Lots 1 & 2 DP 194469, Lots A & B DP 312359, Lot 1 DP 123147 & Lots 4-8 DP 8350, Napier, Frances & High Streets, Canterbury |
| **Size** | Approximately 1.939 ha |
| **Local government area** | Canterbury Bankstown |
| **Grid reference** | 325866 E 6245348 S |
| **Elevation** | Approximately 10-25m AHD |
| **Topography** | The site has a slope to the east with an average slope of around 3 degrees |
| **Geology and soils** | Geology; The western 65% of the site is upon Ashfield Shale, the remainder is on Quaternary alluvium.<br>Soils; Gymea Soil Landscape over most of the site; Blacktown Soil Landscape over the north western tenth of the site. |
| **Catchment and drainage** | Catchment – Georges. The site drains into Cup and Saucer Creek adjacent to the eastern boundary, and then into Cooks River. |
| **Vegetation** | No remnant native vegetation occurs on site. All existing vegetation has been planted. |
| **Existing land use** | There is an existing school on the property. The site is zoned R4 – High Density Residential, R3 – Medium Density Residential, and RE1 – Public Recreation. |
| **Clearing** | All of the original canopy vegetation has been previously cleared. |

Gymea Soil Landscape: http://www.environment.nsw.gov.au/Salisapp/resources/spade/reports/9130gy.pdf
Blacktown Soil Landscape: http://www.environment.nsw.gov.au/Salisapp/resources/spade/reports/9030bt.pdf


**Figure 3 – Field survey effort**

# 4.0 Biodiversity Offsets Scheme (BOS)

The *BC Act* repeals the *Threatened Species Conservation Act 1995*, the *Nature Conservation Trust Act 2001* and the animal and plant provisions of the *National Parks and Wildlife Act 1974*.

Together with the *Biodiversity Conservation Regulation 2017*, the *BC Act* establishes a new regulatory framework for assessing and offsetting biodiversity impacts on proposed developments and clearing. It establishes a framework to avoid, minimise and offset impacts on biodiversity from development through the Biodiversity Offsets Scheme. Where development consent is granted, the authority may impose as a condition of consent an obligation to retire a number and type of biodiversity credits determined under the new Biodiversity Assessment Method (BAM).

The BOS includes two (2) elements to the threshold test – an area trigger and a Sensitive Biodiversity Values Land Map trigger. If clearing exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed clearing.

Development consent cannot be granted for non-State significant development under Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW) if the consent authority is of the opinion it is likely to have serious and irreversible impacts (SAII) on biodiversity values. The determination of SAII is to be made in accordance with principles prescribed section 6.7 of the BC Regulation (2017). The principles have been designed to capture those impacts which are likely to contribute significantly to the risk of extinction of a threatened species or ecological community in New South Wales.

## 4.1 Threshold assessment

The BOS includes two (2) elements to the threshold test – an area trigger and a Sensitive Biodiversity Values Land Map trigger. If clearing exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed clearing.

- A small area near the eastern edge of the study area is mapped as Sensitive Biodiversity Values Land – for any impacts within this area an offset is would be required. Figure 4 shows the site in relation to those areas shaded as having biodiversity values. It is expected that no development will however directly or indirectly impact on this mapped area, therefore offsetting is not likely to be required for this trigger.
- Although the size of the lot is 1.939 ha, the minimum lot size is 460 $m^2$. The threshold for clearing above which the BAM and offsets scheme apply is 0.25 ha or more. No native vegetation occurs within the study site – offsetting is not required for this trigger.

<u>Conclusion</u>

The preliminary concept plan shows no planned development within the Biodiversity Values Land so offsetting will not be required as long as no further development is proposed within the Biodiversity Values Land.


**Figure 4** – Sensitive biodiversity land map (source: OEH – Biodiversity Values Map – March 2018 https://www.lmbc.nsw.gov.au/Maps/index.html?viewer=BVMap). Sensitive areas shown in Orange; approx. study area / development shown in red.

## 4.2 Serious and irreversible impacts on biodiversity values

The determination of serious and irreversible impacts on biodiversity values for the purposes of the biodiversity offsets scheme is to be made in accordance with principles prescribed section 6.7 of the BC Regulation (2017).

The principles have been designed to capture those impacts which are likely to contribute significantly to the risk of extinction of a threatened species or ecological community in New South Wales. These are impacts that:

- will cause a further decline of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to be in a rapid rate of decline, or
- will further reduce the population size of the species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very small population size, or
- impact on the habitat of a species or ecological community that is currently observed, estimated, inferred or reasonably suspected to have a very limited geographic distribution, or
- impact on a species or ecological community that is unlikely to respond to measures to improve habitat and vegetation integrity and is therefore irreplaceable.

The first three principles broadly align with the IUCN (2017) (see also Bland et al. (2016)) criteria used to identify entities at the greatest risk of extinction (i.e. critically endangered entities) and the fourth principle captures impacts on entities that cannot be offset.

*Conclusion*

Two threatened fauna species with considered potential to occur including Eastern Bentwing-bat and Swift Parrot and one (1) recorded threatened flora *Eucalyptus scoparia* are listed potential SAII species most at risk of extinction. The individuals of *E. scoparia* recorded are considered to be planted as these species have restricted distribution and habitat requirements and would not naturally occur within the site.

Based on the principles for determining SAII these species are unlikely to offer a constraint to development. The proposal is therefore not likely to be constrained by any serious and irreversible impacts.

# 5.0 Flora

## 5.1 Vegetation communities

Field verification of the study area found the following vegetation communities:

- Managed Lands

**Managed Lands**

This vegetation community describes the majority of the study area. While there are several locally-occurring species present, they have all been planted following the clearing of the original vegetation in the past. A mix of native and exotic species are present. Common trees include *Ficus microcarpa* var. "Hillii", *Corymbia citriodora, Corymbia maculata*, *Jacaranda mimosifolia, Eucalyptus microcorys, Eucalyptus nicholii* and *Eucalyptus scoparia.* The ground layer generally consists of managed lawn composed largely of *Pennisetum clandestinum* (Kikuyu grass) with occasional garden beds of mostly exotic species. The exception is provided in the far west of the site between the sports court and High Street which has a dense planting of *Lomandra longifolia* and some exotic weed species such as *Ligustrum sinense* and *Lantana camara.*

*Photo 1 – Managed lands in the north-west portion of the site*

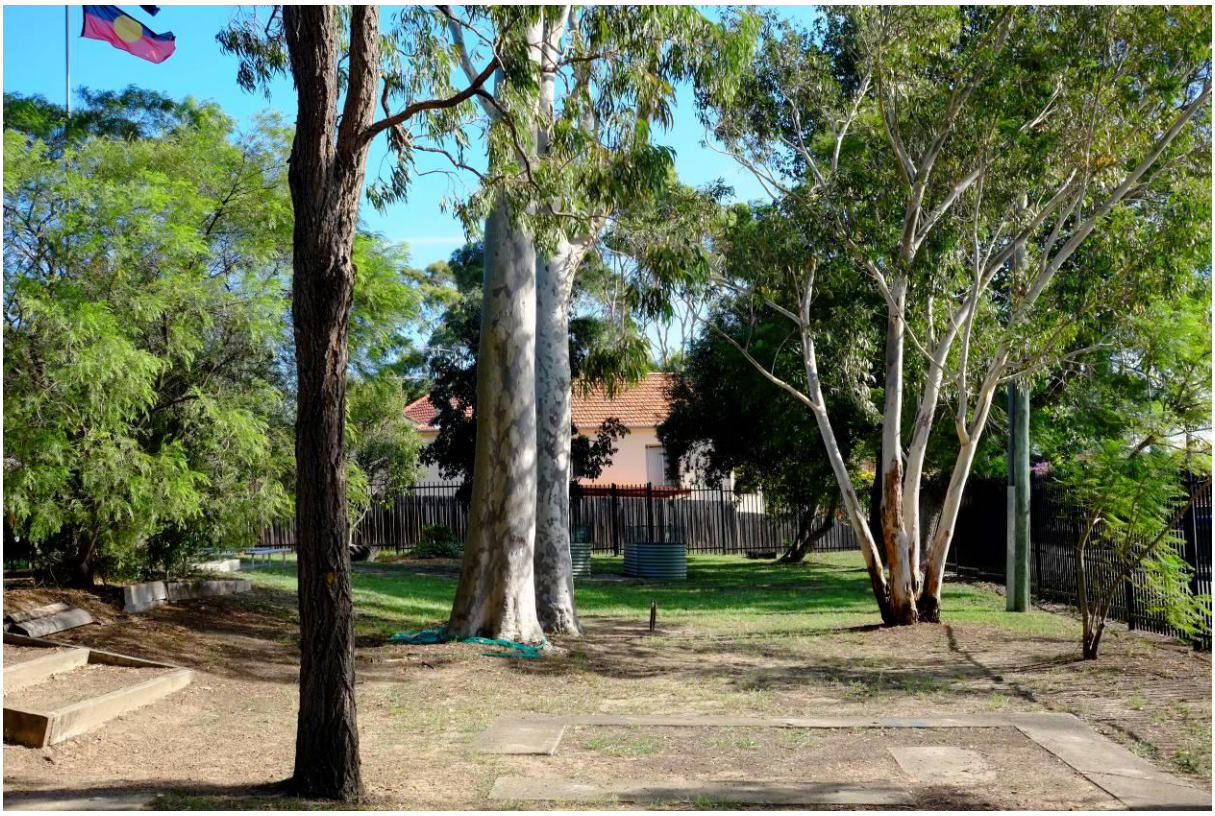


*Photo 2 – Managed land in the west of the site adjacent to High Street*

*Photo 3 – Managed land in the southern portion of the school grounds*

*Photo 4 – Managed land in the far western portion of the study site between the sports court and High Street*

## 5.2 Threatened flora species

*Biodiversity Conservation Act (BC Act)* – A search of the *Atlas of NSW Wildlife* (OEH, 2018) indicated a list of species that have been recorded within a 10 km radius of the study area. These species are listed in Appendix 2 Table A2.1 and are considered for potential habitat within the study area.

*Environmental Protection and Biodiversity Conservation Act (EPBC Act)* – A review of the schedules of the *EPBC Act* indicated the potential for a list of threatened flora species to occur within a 10km radius of the study area. These species have also been listed in Appendix 2 Table A2.1 for consideration of potential to occur.

Based on the habitat assessment within Table A2.1 it is considered that the study area provides no potential habitat for any threatened flora species.

Three (3) threatened tree species were observed on site - *Eucalyptus nicholii*, *Eucalyptus scoparia* and *Syzygium paniculatum*. The approximate positions of those individuals are indicated on Figure 3. The individuals recorded on site are considered to be planted as these species have restricted distribution and/or habitat requirements and would not naturally occur within the site. It is therefore considered these individuals within the site are not important for the preservation of the naturally occurring populations of these species and are not of high conservation priority.

All other threatened species in both the Bionet (NSW) and EPBC coordinate search (National) were considered to have low potential suitable habitat within the study area because of previous clearing and landscaping works, past and ongoing land management practices, unsuitable soils / geology, unsuitable previous vegetation type or large distance to known specimens.

## 5.3 Endangered flora populations

Five (5) endangered flora populations are known to occur within 10km of the study area. These populations are:

- *Acacia prominens* in the Hurstville and Kogarah Local Government Areas
- *Pomaderris prunifolia* in the Parramatta, Auburn, Strathfield and Bankstown Local Government Areas
- *Prostanthera saxicola* population in Sutherland and Liverpool Local Government Areas
- *Wahlenbergia multicaulis* in the Auburn, Bankstown, Baulkham Hills, Canterbury, Hornsby, Parramatta and Strathfield Local Government Areas.
- *Marsdenia viridiflora* subsp. *viridiflora* population in the Bankstown, Blacktown, Camden, Campelltown, Fairfield, Holroyd, Liverpool and Penrith Local Government Areas.

No specimens of *Acacia bynoeana, Pomaderris prunifolia, Prostanthera saxicola, Wahlenbergia multicaulis* or *Marsdenia viridiflora* subsp. *viridiflora* were observed within the study area during the flora survey. Given the lack of any remnant vegetation and likelihood of natural regeneration, the species are unlikely to occur. Therefore, it is considered that these endangered populations do not occur within the study area.

## 5.4 Endangered ecological communities

The site contains no Endangered Ecological Communities (EECs) as listed under the NSW *BC Act* (2016) or the Commonwealth *EPBC Act* (1999).

## 5.5 Endangered wetland communities

A number of wetland communities have been listed as an 'endangered ecological community' under the NSW BC Act. We note that ‘wetlands’ are included in the definition of ‘waterfront lands’ in accordance with the Water Management Act 2000 due to their inclusion in the definition of a ‘lake’ under the same act.

Impacts on wetland communities must be assessed under the *BC Act* and if present the management of wetland communities must be given due consideration in accordance with the objectives and principles of management as contained within the NSW Wetlands Policy (2010), and appropriate management as determined by NSW DPI - Office of Water in their general terms of approval (GTA’s). This may include but not limited to the provision of buffers, management of stormwater runoff and maintenance of natural inflows or runoff into those wetland communities.

- Artesian springs ecological community - endangered ecological community listing
- Castlereagh swamp woodland community - endangered ecological community listing
- Coastal saltmarsh in the NSW North Coast, Sydney Basin and South East Corner bioregions - endangered ecological community listing
- Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions - endangered ecological community listing
- Kurri sand swamp woodland in the Sydney Basin Bioregion - endangered ecological community listing
- Lagunaria swamp forest on Lord Howe Island - endangered ecological community listing
- Maroota Sands swamp forest - endangered ecological community listing
- Newnes Plateau Shrub Swamp in the Sydney Basin Bioregion - endangered ecological community listing
- Swamp oak floodplain forest of the NSW North Coast, Sydney Basin and South East Corner bioregions - endangered ecological community listing

- Swamp sclerophyll forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions - endangered ecological listing
- Sydney Freshwater Wetlands in the Sydney Basin Bioregion - endangered ecological community listing
- The shorebird community occurring on the relict tidal delta sands at Taren Point - endangered ecological community listing
- Upland wetlands of the drainage divide of the New England Tableland Bioregion - endangered ecological community listing
- Wingecarribee swamp

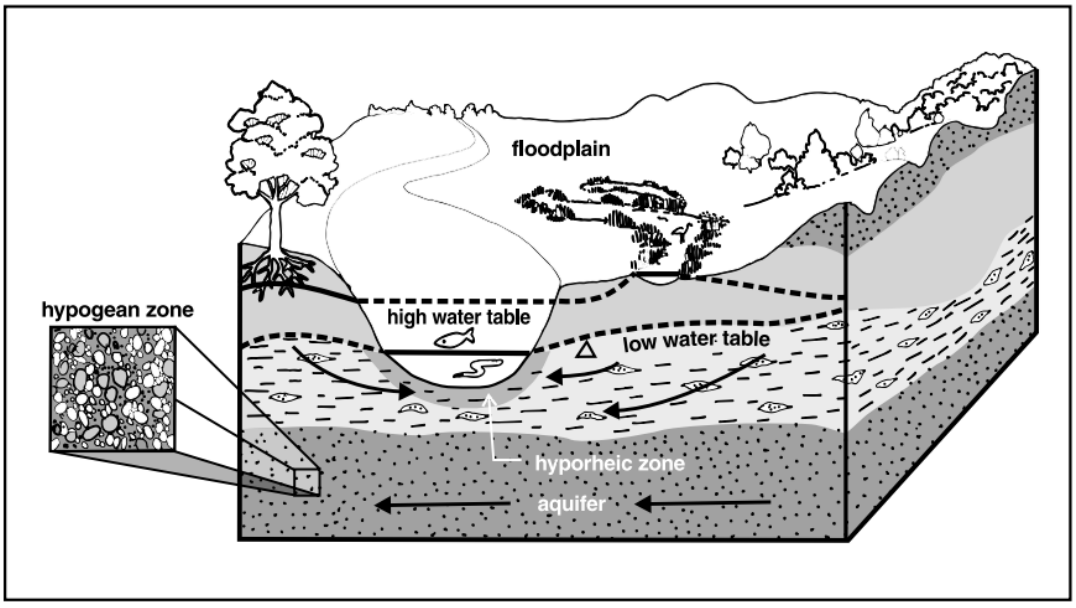
In accordance with the NSW DPI - Office of Water - Guidelines for Controlled Activities a standardised buffer of 40m applies to these communities subject to offset provisions. Where they are mostly cleared, highly fragmented or highly disturbed, consolidation and management in accordance with a Vegetation Management Plan is recommended. The buffers provided are to be considered in the landscape context and consultation with NSW DPI – WaterNSW (formerly NSW Office of Water) undertaken to confirm the appropriateness of setbacks.

No endangered wetland communities were present within the study area.

## 5.6 Groundwater dependent ecosystems (GDEs)

Groundwater dependent ecosystems are communities of plants, animals and other organisms whose extent and life processes are dependent on groundwater. Some examples of ecosystems which depend on groundwater are:

- wetlands;
- red gum forests, vegetation on coastal sand dunes and other terrestrial vegetation;
- ecosystems in streams fed by groundwater;
- limestone cave systems;
- springs; and
- hanging valleys and swamps.




**Alluvial groundwater system discharging into a river**

Groundwater dependent ecosystems are therefore ecosystems which have their species composition and their natural ecological processes determined by groundwater (NSW State Groundwater Dependent Ecosystems Policy April 2002).

No Groundwater Dependent Ecosystems (GDEs) were present within the study area.

## 5.7 State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017

The *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017* (Vegetation SEPP) was one of a suite of Land Management and Biodiversity Conservation (LMBC) reforms that commenced in New South Wales on 25 August 2017. The Vegetation SEPP (the SEPP) works together with the *Biodiversity Conservation Act 2016* and the *Local Land Services Amendment Act 2016* to create a framework for the regulation of clearing of native vegetation in NSW.

The SEPP will ensure the biodiversity offset scheme (established under the Land Management and Biodiversity reforms) will apply to all clearing of native vegetation that exceeds the offset thresholds in urban areas and environmental conservation zones that does not require development consent.

Vegetation SEPP applies to the following local government areas:

*Bayside, City of Blacktown, Burwood, Camden, City of Campbelltown, Canterbury-Bankstown, Canada Bay, Cumberland, City of Fairfield, Georges River, City of Hawkesbury, Hornsby, Hunter's Hill, Georges River, Inner West, Ku-ring-gai, Lane Cove, City of Liverpool, Mosman, Newcastle, North Sydney, Northern Beaches, City of Parramatta, City of Penrith, City of Randwick, City of Ryde, Strathfield, Sutherland Shire, City of Sydney, The Hills Shire, Waverley, City of Willoughby, Woollahra.*

The Vegetation SEPP also applies to land within a variety of zones as set out in the legislation 'Land to which the policy applies'.

### *5.7.1 Is an Authority to clear vegetation required*

As 'development consent' is required for the proposed works, the Vegetation SEPP does not apply.

# 6.0 Fauna

## 6.1 Habitat assessment

The fauna assessment is based on desktop analysis, threatened species records (OEH 2018) and habitat attributes identified during the flora survey. Particular note was taken to search for the following potential threatened fauna species habitat:

- Structures of notable potential or indicated use by subterranean microbat species.
- Hollow-bearing trees present.
- Presence of any raptor nests.

The following habitat was present:

- No hollow-bearing trees
- Nectar producing tree species, principally *Eucalyptus* and *Corymbia* spp.
- Large fruit-producing trees, principally *Syzygium paniculatum* and *Ficus* spp.
- No seed producing *Allocasuarina* trees
- No sandstone outcrops providing any notable shelter opportunity
- No ground hollows
- No native ground cover or terrestrial shelter opportunity
- No permanent water such as dams or creeks

- No drainages

## 6.2 Threatened fauna species

*BC Act* – A search of the *Atlas of NSW Wildlife* (OEH, 2018) provided a list of threatened fauna species previously recorded within a 10km radius of the study area. These species are listed in Appendix Table A2.2 and are considered for potential habitat within the study area.

*Fisheries Management Act (FM Act)* – No habitats suitable for threatened aquatic species were observed within the study area and as such the provisions of this act do not require any further consideration.

*EPBC Act* – A review of the schedules of the *EPBC Act* identified a list of threatened fauna species or species habitat likely to occur within a 10km radius of the study area. These species have also been listed in Appendix Table A2.2.

In accordance with Table A2.2 the following state and nationally listed threatened fauna species are considered to have suitable habitat with varying potential to occur within the study area. The state listed species will require further consideration in regard to a 'test of significance'.

**Table 2** – Threatened fauna species with suitable habitat present

| Common name | *BC Act* | *EPBC Act* | Potential to occur |
|---|---|---|---|
| Grey-headed Flying-fox | V | V | ✓ |
| Eastern Bentwing-bat | V | - | ✓ |
| Green and Golden Bell Frog | E | V | unlikely |
| Little Lorikeet | V | - | unlikely |
| Swift Parrot | E | E | unlikely |
| Large-footed Myotis | V | - | unlikely |

Additionally protected migratory species listed under the *EPBC Act* are considered for habitat potential in Table A2.3.

The above listed threatened fauna species will need to be assessed for significance of impact under the *BC Act*. None of these species are considered likely to cause constraint to development.

## 6.3 Endangered fauna populations

There are no endangered fauna populations identified to The Canterbury Bankstown LGA.

# 7.0 Conclusions

Ecological survey and biodiversity constraints assessment has been undertaken for a proposed development within Lots 1 & 2 DP 194469, Lots A & B DP 312359, Lot 1 DP 123147 & Lots 4-8 DP 8350 Napier, Frances & High Streets, Canterbury. Assessment has been undertaken in consideration to the *BC Act* through the relevant process outlined by the *EP&A Act*. The schedules and assessment criteria under the *EPBC Act* and the *FM Act* have also been considered for the proposal.

Three threatened tree species were observed on site - *Eucalyptus nicholii*, *Eucalyptus scoparia* and *Syzygium paniculatum*. The individuals recorded on site are considered to be planted and would not naturally occur within the site. It is therefore considered these

individuals are not important for the preservation of the naturally occurring populations of these species and are not of conservation priority. No further threatened flora species have been observed or are considered likely to occur in a natural state.

Whilst fauna survey has not been undertaken, it is considered that the habitat attributes within the study area do not provide any significant or unique habitat of breeding importance for any threatened fauna species. Remnant and planted vegetation may provide low key foraging value.

The vegetation present within the study area is not attributable to any Endangered Ecological Community (EEC) listed within the NSW *BC Act* (2016) or within the Commonwealth *EPBC Act* (1999).

The potential impacts of future development are considered to include the following:

- Removal of seasonal fruit and nectar producing trees for foraging by birds and flying-foxes

These impacts are not considered likely to cause constraint to development. Impacts may be avoided or mitigated as recommended in Section 7.2.

## 7.1 Biodiversity Conservation Act

The new Biodiversity Offsets Scheme (BOS) and The Regulation (2017) and Biodiversity Assessment Method (2017) came into force under the *BC Act* on the 25th of August, 2017. There are two (2) elements to the threshold test – an area trigger and a Sensitive Biodiversity Values Land Map trigger. If clearing exceeds either trigger, the Biodiversity Offset Scheme applies to the proposed clearing.

- A small area near the eastern edge of the study area is mapped as Sensitive Biodiversity Values Land – for any impacts within this area an offset is would be required. Figure 4 shows the site in relation to those areas shaded as having biodiversity values. It is expected that no development will however directly or indirectly impact on this mapped area, therefore offsetting is not likely to be required for this trigger.
- Although the size of the lot is 1.939 ha, the minimum lot size is 460 $m^2$. The threshold for clearing above which the BAM and offsets scheme apply is 0.25 ha or more. The estimated clearing of native vegetation is less than the threshold – offsetting is not required.

Therefore the proposed development does not trigger biodiversity offsets under the threshold tests. The proposal also is not likely to cause a serious or irreversible impact upon any threatened entities most at risk of extinction.

The Significance of Impact Test of the *BC Act* would need to be applied for threatened biodiversity recorded or with potential to occur. Based on survey findings and habitat assessment no threatened biodiversity are considered likely to constrain development.

Threatened or migratory fauna species listed as matters of national environmental significance under the *EPBC Act* are also unlikely to constrain development.

## 7.2 Recommendations

To minimise adverse ecological impacts, the following mitigation measures are proposed:

1. Aim to retain fruiting and flowering trees to provide feeding habitat for Grey-Headed Flying-fox.

2. If any microbats emerge from building during the demolition process a contact fauna ecologist should be contacted immediately and prior to any further works proceeding.

# Appendix 1
# Flora Species List

**Table A1.1** – Flora species recorded

| Family | Scientific name | Common name |
|---|---|---|
| **TREES** | | |
| Sterculiaceae | *Brachychiton acerifolius* | Illawarra Flame Tree |
| Cupressaceae | *Chamaecyparis sp. (cultivar)* | Cypress |
| Lauraceae | *Cinnamomum camphora** | Camphor Laurel |
| Rutaceae | *Citrus sp.* (Cultivar)* | - |
| Myrtaceae | *Corymbia citriodora* | Lemon-scented Gum |
| Cupressaceae | *Cupressus torulosa* (Cultivar)* | Bhutan Cypress |
| Eleocarpaceae | *Elaeocarpus reticulatus* | Blueberry Ash |
| Malaceae | *Eriobotrya japonica** | Loquat |
| Myrtaceae | *Eucalyptus microcorys* | Tallowwood |
| Myrtaceae | *Eucalyptus nicholii* | Narrow-leaved Black Peppermint |
| Myrtaceae | *Eucalyptus paniculata* | Grey Ironbark |
| Myrtaceae | *Eucalyptus punctata* | Grey Gum |
| Myrtaceae | *Eucalyptus robusta* | Swamp Mahogany |
| Myrtaceae | *Eucalyptus scoparia* | Wallangarra White Gum |
| Myrtaceae | *Eucalyptus sideroxylon* | Red Ironbark |
| Myrtaceae | *Eucalyptus spp.* | Eucalyptus |
| Moraceae | *Ficus microcarpa* (Cultivar)* | Hill's Weeping Fig |
| Bignoniaceae | *Jacaranda mimosifolia** | Jacaranda |
| Lythraceae | *Lagerstroemia indica* (Cultivar)* | Crepe Myrtle |
| Hamamelidaceae | *Liquidambar styraciflua** | Sweetgum |
| Arecaceae | *Livistona australis* | Cabbage Tree Palm |
| Myrtaceae | *Lophostemon confertus* | Brush Box |
| Myrtaceae | *Melaleuca diosmofolia* | - |
| Myrtaceae | *Melaleuca styphelioides* | Prickly-leaved Tea Tree |
| Meliaceae | *Melia azedarach* | White Cedar |
| Moraceae | *Morus nigra** | Black Mulberry |
| Oleaceae | *Olea europaea subsp. europaea** | Common Olive Tree |
| Fabaceae | *Phanera purpurea** | Orchid tree |
| Arecaceae | *Phoenix canariensis** | Canary Island Date Palm |
| Rosaceae | *Prunus persica** | Peach Tree |
| Myrtaceae | *Syncarpia glomulifera* | Turpentine |
| Myrtaceae | *Syzygium paniculatum* | Magenta Lilly Pilly |
| **SHRUBS** | | |
| Fabaceae | *Acacia floribunda* | White Sally |
| Fabaceae | *Acacia longifolia* | |
| Fabaceae | *Acacia podalyriifolia* | Queensland Silver Wattle |
| Myrtaceae | *Callistemon viminalis* | Weeping Bottlebrush |
| Asteraceae | *Chrysanthemoides monilifera subsp. rotundata** | Bitou Bush |
| Lamiaceae | *Clerodendron sp.* (Cultivar)* | - |
| Asteliaceae | *Cordyline spp.** | Cordyline |

| Family | Scientific name | Common name |
|---|---|---|
| Proteaceae | *Grevillea banksii* | Banks's Grevillea |
| Proteaceae | *Grevillea glossadenia x venusta* | Grevillea 'Orange marmalade' |
| Oleaceae | *Ligustrum lucidum** | Large-leaved Privet |
| Myrtaceae | *Melaleuca armillaris subsp. armillaris* | Bracelet Honey Myrtle |
| Apocynaceae | *Plumeria obtusa* (Cultivar)* | Frangipani |
| Rosaceae | *Rosa sp. (cultivar)** | Rose |
| **GROUNDCOVERS** | | |
| Alliaceae | *Agapanthus spp.** | |
| Amaranthaceae | *Amaranthus viridis** | Green Amaranth |
| Iridaceae | *Aristea ecklonii** | |
| Asparagaceae | *Asparagus aethiopicus** | Asparagus Fern |
| Asteraceae | *Bidens pilosa** | Cobbler's Pegs |
| Brassicaceae | *Brassica spp.** | Brassica |
| Bromeliaceae | *Bromelia sp.* (Cultivar)* | Bromeliads |
| Carophyllaceae | *Cerastium glomeratum** | Mouse-ear Chickweed |
| Poaceae | *Cynodon dactylon* | Common Couch |
| Iridaceae | *Dietes bicolor** | |
| Poaceae | *Digitaria sanguinalis** | Crab Grass |
| Poaceae | *Ehrharta erecta** | Panic Veldtgrass |
| Poaceae | *Eleusine indica** | Crowsfoot Grass |
| Poaceae | *Eragrostis curvula** | African Lovegrass |
| Fumariaceae | *Fumaria muralis subsp. muralis** | Wall Fumitory |
| Asteraceae | *Hypochaeris radicata** | Flatweed |
| Balsaminaceae | *Impatiens walleriana** | Busy Lizzie |
| Convolvulaceae | *Ipomoea batatas** | Sweet Potato |
| Asteraceae | *Lactuca spp.** | Lettuce |
| Asparagaceae | *Liriope spicata** | Lilyturf |
| Lomandraceae | *Lomandra longifolia* | Spiky-headed Mat-rush |
| Malvaceae | *Malva neglecta** | Dwarf Mallow |
| Malvaceae | *Modiola caroliniana** | Red-flowered Mallow |
| Davalliaceae | *Nephrolepis cordifolia** | Fish-bone Fern |
| Asteraceae | *Osteospermum fruticosum** | shrubby daisy bush |
| Oxalidaceae | *Oxalis corniculata** | Creeping Oxalis |
| Poaceae | *Paspalum dilatatum** | Paspalum |
| Poaceae | *Pennisetum clandestinum** | Kikuyu, Kikuyu Grass |
| Plantaginaceae | *Plantago lanceolata** | Ribwort |
| Portulacaceae | *Portulaca oleracea* | Purslane |
| Lamiaceae | *Rosemarinus officinalis* (Cultivar)* | Rosemary |
| Poaceae | *Saccharum officinarum** | Sugarcane |
| Malvaceae | *Sida rhombifolia** | Paddy's Lucerne |
| Solanaceae | *Solanum tuberosum** | Potato |
| Asteraceae | *Soliva sessilis** | Bindii |
| Asteraceae | *Sonchus oleraceus** | Common Sow-thistle |

| Family | Scientific name | Common name |
|---|---|---|
| Araceae | *Spathiphyllum sp.* (Cultivar) | Peace Lily |
| Poaceae | *Sporobolus africanus** | Parramatta Grass |
| Poaceae | *Stenotaphrum secundatum** | Buffalo Grass |
| Asteraceae | *Taraxacum officinale** | Dandelion |
| Fabaceae/faboideae | *Trifolium dubium** | Yellow Suckling Clover |
| Campanulaceae | *Wahlenbergia gracilis* | Australian Bluebell |
| **VINES** | | |
| Asclepiadaceae | *Araujia sericifera** | Mothvine |
| Fabaceae/faboideae | *Phaseolus vulgaris* (Cultivar)* | Bean, String Bean |
| * denotes exotic species | | |

It should be noted that not all garden, cultivar or landscape species have been identified as part of this assessment.

# Appendix 2

# Threatened Flora and Fauna Species Habitat Assessment

**Table A2.1** – Threatened flora species habitat assessment

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Acacia bynoeana* OEH EPBC | E1 | V | Erect or spreading shrub to 0.3m high growing in heath and dry sclerophyll Open Forest on sandy soils. Often associated with disturbed areas such as roadsides. Distribution limits N-Newcastle S-Berrima. | x | x | - | - | x | x |
| *Acacia pubescens* OEH EPBC | V | V | Spreading shrub 1-4m high open sclerophyll growing in open forest and woodlands on clay soils. Distribution limits N-Bilpin S-Georges River. | x | x | - | - | x | x |
| *Acacia terminalis* subsp. *terminalis* OEH EPBC | E1 | E | Erect shrub to 2m tall, flowers from March to July. Occurs in eucalypt woodland or forest, usually in sandy soil on creek banks, hillslopes or in shallow soil in rock crevices and sandstone platforms on cliffs. Typically restricted to the Port Jackson and eastern suburbs of Sydney. | x | x | - | - | x | x |
| *Allocasuarina glareicola* EPBC | E1 | E | Small shrub 1-2m high growing in open sclerophyll forest on lateritic soils derived from tertiary alluviums. Distribution limits Castlereagh NR region. | x | x | - | - | x | x |
| *Caladenia tessellata* OEH EPBC | E1 | V | Terrestrial orchid. Clay-loam or sandy soils. LHCCREMS guidelines suggest the species grows in Map Unit 34 – Coastal Sand Wallum Woodland - Heath. Flowers in September – November. Distribution limits N-Swansea S-south of Eden. | x | x | - | - | x | x |
| *Callistemon linearifolius* OEH | V | - | Shrub to 4m high. Dry sclerophyll forest on coast and adjacent ranges. Distribution limits N-Nelson Bay S-Georges River. | x | x | - | - | x | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Camarophyllopsis kearneyi* OEH | E1 | - | Small gilled fungus Known only from Lane Cove Bushland Park in Sydney. | x | x | - | - | x | x |
| *Cryptostylis hunteriana* EPBC | V | V | Saprophytic orchid. Grows in swamp heath on sandy soils. Distribution limits N-Gibraltar Range S-south of Eden. | x | x | - | - | x | x |
| *Darwinia biflora* OEH EPBC | V | V | Erect or spreading shrub to 0.8m high. Grows in heath or understorey of woodland on or near shale-capped ridges underlain by Hawkesbury sandstone. Distribution limits N-Gosford S-Cheltenham. | x | x | - | - | x | x |
| *Deyeuxia appressa* OEH EPBC | E1 | E | Erect grass to 0.9m high. Grows on wet ground. Distribution limits N-Hornsby S-Bankstown. | x | x | - | - | x | x |
| *Dillwynia tenuifolia* OEH | V | - | Erect shrub 0.6-1m high. Grows in Woodlands and Open Forest on sandstone shale or laterite. Distribution limits N-Howes Valley S-Cumberland Plain. | x | x | - | - | x | x |
| *Epacris purpurascens* var. *purpurascens* OEH | V | - | Erect shrub to 1.5m high growing in sclerophyll forest and scrub and near creeks and swamps on Sandstone. Distribution limits N-Gosford S-Blue Mountains. | x | x | - | - | x | x |
| *Eucalyptus camfieldii* OEH \ | V | V | Stringybark to 10m high. Grows on coastal shrub heath and woodlands on sandy soils derived from alluviums and Hawkesbury sandstone. Distribution limits N-Norah Head S-Royal NP. | x | x | - | - | x | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Eucalyptus nicholii* OEH | V | - | This species is widely planted as an urban street tree and in gardens but is quite rare in the wild. It is confined to the New England Tablelands of NSW, where it occurs from Nundle to north of Tenterfield, largely on private property. | ✓ Planted specimen | x | - | - | ✓ Only as planted specimen | x |
| *Eucalyptus scoparia* OEH | E1 | V | Smooth-barked tree only known from vicinity of Bald Rock. | ✓ Planted specimen | x | - | - | ✓ Only as planted specimen | x |
| *Genoplesium baueri* OEH EPBC | E1 | E | A terrestrial orchid that grows in sparse sclerophyll forest and moss gardens over sandstone. Flowers Feb – Mar Distribution limits N – Hunter Valley S – Nowra | x | x | - | - | x | x |
| *Grevillea beadleana* OEH | E1 | E | Spreading shrub, up to 2.5 m. grows in eucalypt forest on granite in the Northern Tableland of NSW. | x | x | - | - | x | x |
| *Hibbertia stricta* subsp. *furcatula* OEH | E1 | - | Small shrub 0.8-1.3m tall. Flowers from Jul-Dec. Grows in Dry Sclerophyll Forest and woodland over sandstone. Known from one population along the Woronora River gorge area and one population near Nowra. | x | x | - | - | x | x |
| *Hygrocybe anomala* var. *inanthinomarginata* OEH | V | - | Small gilled fungus known only from Lane Cove Bushland Park, Blue Mountains National Park and Royal National Park. | x | x | - | - | x | x |
| *Hygrocybe aurantipes* OEH | V | - | Small gilled fungus known only from Lane Cove Bushland Park and Blue Mountains National Park. | x | x | - | - | x | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Hygrocybe collucera* OEH | E1 | - | Small gilled fungus known only from Lane Cove Bushland Park. | x | x | - | - | x | x |
| *Hygrocybe griseoramosa* OEH | E1 | - | Small gilled fungus known only from Lane Cove Bushland Park. | x | x | - | - | x | x |
| *Hygrocybe lanecovensis* OEH | E1 | - | Small gilled fungus known only from Lane Cove Bushland Park. | x | x | - | - | x | x |
| *Hygrocybe reesiae* OEH | V | - | Small gilled fungus known only from Lane Cove Bushland Park and Blue Mountains National Park on moss covered banks under closed canopy. | x | x | - | - | x | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Hygrocybe rubronivea* OEH | V | - | Known in a few locations including in Lane Cove Bushland Park and the Blue Mountains in NSW and in areas of south-east Queensland. Little information exists for populations outside Lane Cove Bushland Park. Occurs in gallery warm temperate forests dominated by *Acmena smithii, Backhousia myrtifolia, Glochidion ferdinandi* and *Pittosporum undulatum*. Associated with alluvial sandy soils of the Hawkesbury Soil Landscapes. Occur as individuals or in groups, terrestrial rarely on wood and only if extremely rotten; substrates include soil, humus, or moss. Does not produce above ground fruiting bodies (fungus) all year round. Fruiting bodies begin appearing mid May to mid-July sometimes to August. | x | x | - | - | x | x |
| *Hypsela sessiliflora* OEH | E1 | Ext. | Prostrate herb, rooting at nodes, growing in damp places on the Cumberland Plain. | x | x | - | - | x | x |
| *Leptospermum deanei* OEH | V | V | Shrub to 5m high. Grows on forested slopes. Distribution limits Near watershed of Lane Cove River. | x | x | - | - | x | x |
| *Leucopogon exolasius* OEH | V | V | Erect shrub to 2m high. Rocky hillsides and creek banks in Sydney Sandstone Gully Forest. Confined to Woronora and Georges Rivers and Stokes Creek. | x | x | - | - | x | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Maundia triglochinoides* OEH | V | - | A reed-like herb which grows in swamps and shallow fresh water on clay. Distribution Limits N-Qld border S-Wyong. | x | x | - | - | x | x |
| *Melaleuca biconvexa* OEH EPBC | V | V | Tall shrub. Grows in wetlands adjoining perennial streams and on the banks of those streams, generally within the geological series known as the Terrigal Formation. Distribution limits N-Port Macquarie S-Jervis Bay. | x | x | - | - | x | x |
| *Melaleuca deanei* OEH | V | V | Shrub to 3m high. Grows in heath on sandstone. Distribution limits N-Gosford S-Nowra. | x | x | - | - | x | x |
| *Pelargonium* sp. *Striatellum* EPBC | E1 | E | Herb to 90cm tall which grows in damp places especially beside streams and lakes. Occasionally in swamp forest or associated with disturbance. Varied distribution from SE NSW to QLD. | x | x | - | - | x | x |
| *Persoonia hirsuta* OEH EPBC | E1 | E | Erect to decumbent shrub. Grows in dry sclerophyll forest and woodland on Hawkesbury sandstone with infrequent fire histories. Distribution limits N-Glen Davis S-Hill Top. | x | x | - | - | x | x |
| *Persoonia nutans* OEH | E1 | E | Erect to spreading shrub. Grows in dry sclerophyll forest and woodland on laterite and alluvial sands. Distribution limits Cumberland Plain. | x | x | - | - | x | x |
| *Pimelea curviflora* var. *curviflora* OEH EPBC | V | V | Woody herb or sub-shrub to 0.2-1.2m high. Grows on Hawkesbury sandstone near shale outcrops. Distribution Sydney. | x | x | - | - | x | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Pimelea spicata* OEH EPBC | E1 | E | Decumbent or erect shrub to 0.5m high. Occurs principally in woodland on soils derived from Wianamatta Shales. Distribution limits N-Lansdowne S-Shellharbour. | x | x | - | - | x | x |
| *Prostanthera marifolia* OEH | E4A | CE | Erect shrub to 0.3m high. Woodland dominated by Eucalyptus sieberi and Corymbia gummifera. In deeply weathered clay soil with ironstone nodules. Has been recorded previously in the Sydney Harbour region. | x | x | - | - | x | x |
| *Pterostylis saxicola* OEH EPBC | E1 | E | Terrestrial orchid. Grows in shallow sandy soil above rock shelves, usually near Wianamatta / Hawkesbury transition. Distribution limits N-Hawkesbury River S-Campbelltown. | x | x | - | - | x | x |
| *Pultenaea aristata* OEH | V | V | A small shrub, mostly 20-40cm tall. Restricted to the Woronora Plateau, a small area between Helensburgh, south of Sydney, and Mt Kiera above Wollongong. Occurs in either dry sclerophyll woodland or wet heath on sandstone. Flowers in winter and spring. | x | x | - | - | x | x |
| *Pultenaea pedunculata* OEH | E1 | - | Prostrate shrub. Grows in dry sclerophyll forest and disturbed sites. Confined to Prestons and Villawood in NSW. | x | x | - | - | x | x |
| *Syzygium paniculatum* OEH EPBC | V | V | Small tree. Subtropical and littoral rainforest on sandy soil. Distribution limits N-Forster S-Jervis Bay. | ✓ Planted specimen | x | - | - | ✓ Only as planted specimen | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Tetratheca glandulosa* OEH | V | - | Spreading shrub to 0.2m high. Sandy or rocky heath or scrub. Distribution limits N-Mangrove Mountain S-Port Jackson. | x | x | - | - | x | x |
| *Tetratheca juncea* OEH | V | V | Prostrate shrub to 1m high. Dry sclerophyll forest and heath. Distribution limits N-Bulahdelah S-Port Jackson. | x | x | - | - | x | x |
| *Thelymitra sp. 'Kangaloon'* *(Thelymitra kangaloonica)* EPBC | E4A | CE | A terrestrial orchid with dark blue flowers, presented in mid-late spring. Only known from the Robertson area in the Southern Highlands. Often in association with the endangered ecological community *Temperate Highland Peat Swamps on Sandstone.* | x | x | - | - | x | x |
| *Thesium australe* EPBC | V | V | Erect herb to 0.4m high. Root parasite. Themeda grassland or woodland often damp. Distribution limits N-Tweed Heads S-south of Eden. | x | x | - | - | x | x |
| *Wilsonia backhousei* OEH | V | - | Perennial subshrub with procumbent branches. Grows in coastal saltmarshes. *Wilsonia backhousei* is salt tolerant and is found in intertidal saltmarshes and, more rarely, on seacliffs. In New South Wales *Wilsonia backhousei* is scattered along the coast, reaching a northern limit at Wamberal Lagoon. In the Sydney region there has been a considerable decline in the abundance of the species over the last 100yrs, largely as a result of loss of habitat. Distribution limits N-Sydney S-South of Eden. | x | x | - | - | x | x |

| ***Scientific name*** DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Growth form and habitat requirements** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and / or high number of record(s) (✓)** *Notes 1,2 & 3* | **Record(s) from recent years (✓)** *Notes 1,2 & 3* | **Potential to occur** | |
| *Zannichellia palustris* OEH | E1 | - | Submerged herb. Fresh or slightly saline stationary or slow-flowing water. Distribution limits N-Tweed Heads S-Newcastle. | x | x | - | - | x | x |

| | |
|---|---|
| OEH | - Denotes species listed within 10km of the study area on the *Atlas of NSW Wildlife* |
| EPBC | - Denotes species listed within 10km of the study area in the *EPBC Act* habitat search |
| V | - Denotes vulnerable listed species under the relevant Act |
| E or E1 | - Denotes endangered listed species under the relevant Act |
| E4A/CE | - Denotes critically endangered listed species under the relevant Act |
| NOTE: | 1. This field is not considered if no suitable habitat is present within the study area<br>2. 'records' refer to those provided by the *Atlas of NSW Wildlife*<br>3. 'nearby' or 'recent' records are species specific accounting for home range, dispersal ability and life cycle |

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**Table A2.2** – Threatened fauna species habitat assessment

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Wallum Froglet<br>*Crinia tinnula*<br>OEH | V | - | Found in acidic paperbark swamps and wallum country with dense groundcover. Breeds in temporary and permanent pools and ponds of high acidity. *Distribution Limit: N-Tweed Heads S-Kurnell.* | x | x | - | - | x | x |
| Giant Burrowing Frog<br>*Heleioporus australiacus*<br>EPBC | V | V | Inhabits open forests and riparian forests along non-perennial streams, digging burrows into sandy creek banks. *Distribution Limit: N-Near Singleton S-South of Eden.* | x | x | - | - | x | x |
| Stuttering Frog<br>*Mixophyes balbus*<br>EPBC | E | V | Terrestrial inhabitant of rainforest and wet sclerophyll forests. *Distribution Limit: N-near Tenterfield S-South of Bombala*. | x | x | - | - | x | x |
| Red-crowned Toadlet<br>*Pseudophryne australis*<br>OEH | V | - | Prefers sandstone areas, breeds in grass and debris beside non-perennial creeks or gutters. Individuals can also be found under logs and rocks in non-breeding periods. *Distribution Limit: N-Pokolbin. S-near Wollongong.* | x | x | - | - | x | x |
| Green and Golden Bell Frog<br>*Litoria aurea*<br>OEH EPBC | E | V | Prefers the edges of permanent water, streams, swamps, creeks, lagoons, farm dams and ornamental ponds. Often found under debris. *Distribution Limit: N-Byron Bay S-South of Eden.* | x | marginal | ✓ | x | unlikely | ✓ |

| Common name<br>*Scientific name*<br>DATABASE SOURCE | *BC Act* | *EPBC Act* | Preferred habitat<br>*Distribution limit* | Recorded on site (✓) | If not recorded on site | | | | Further consideration required (✓) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Suitable habitat present (✓) | Nearby and/or high number of record(s) (✓)<br>*Notes 1,2 & 3* | Record(s) from recent years (✓)<br>*Notes 1,2 & 3* | Potential to occur | |
| Littlejohn's Tree Frog<br>*Litoria littlejohnii*<br>OEH EPBC | V | V | Found in wet and dry sclerophyll forest associated with sandstone outcrops at altitudes 280-1,000m on eastern slopes of Great Dividing Range. Prefers flowing rocky streams. *Distribution Limit: N-Hunter River S-Eden.* | x | x | - | - | x | x |
| Southern Bell Frog<br>*Litoria raniformis*<br>EPBC | E | V | Prefers the edges of permanent water, streams, swamps, creeks, lagoons, farm dams and ornamental ponds. Often found under debris. *Distribution Limit: N-ACT Bay. S-Albury.* | x | x | - | - | x | x |
| Rosenberg's Goanna<br>*Varanus rosenbergi*<br>OEH | V | - | Hawkesbury sandstone outcrop specialist. Inhabits woodlands, dry open forests and heathland sheltering in burrows, hollow logs, rock crevices and outcrops. *Distribution Limit: N-Nr Broke. S-Nowra Located in scattered patches near Sydney, Nowra and Goulburn.* | x | x | - | - | x | x |
| Broad-headed Snake<br>*Hoplocephalus bungaroides*<br>EPBC | E | V | Sandstone outcrops, exfoliated rock slabs and tree hollows in coastal and near coastal areas. *Distribution Limit: N-Mudgee Park. S-Nowra.* | x | x | - | - | x | x |
| Freckled Duck<br>*Stictonetta naevosa*<br>OEH | V | - | Occurs mainly within the Murray-Darling basin and the channel country within large cool temperate to sub-tropical swamps, lakes and floodwaters with cumbungi, lignum or melaleucas. *Distribution Limit: N- Tenterfield. S-Albury.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Superb Fruit-dove<br>*Ptilinopus superbus*<br>OEH | V | - | Rainforests, adjacent mangroves, eucalypt forests, scrubland with native fruits. *Distribution Limit: N-Border Ranges National Park. S-Bateman's Bay.* | x | x | - | - | x | x |
| Spotted Harrier<br>*Circus assimilis*<br>OEH | V | - | Utilises grassy plains, crops and stubblefields; saltbush, spinifex associations; scrublands, mallee, heathlands; open grassy woodlands. *Distribution Limit: N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |
| White-bellied Sea Eagle<br>(*Haliaeetus leucogaster*)<br>OEH | V | - | Occupies coasts, islands, estuaries, inlets, large rivers, inland lakes and reservoirs. *Sedentary; dispersive. N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |
| Little Eagle<br>*Hieraaetus morphnoides*<br>OEH | V | - | Utilises plains, foothills, open forests, woodlands and scrublands; river red gums on watercourses and lakes. *Distribution Limit - N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |
| Square-tailed Kite<br>*Lophoictinia isura*<br>OEH | V | - | Utilises mostly coastal and sub-coastal open forest, woodland or lightly timbered habitats and inland habitats along watercourses and mallee that are rich in passerine birds. *Distribution Limit: N-Goondiwindi. S-South of Eden.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Eastern Osprey<br>*Pandion cristatus*<br>OEH | V | - | Utilises waterbodies including coastal waters, inlets, lakes, estuaries and offshore islands with a dead tree for perching and feeding. *Distribution Limit: N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |
| Black Falcon<br>*Falco subniger*<br>OEH | V | - | Inhabits plains, grasslands, foothills, timbered watercourses, wetland environs, crops; occasionally over towns and cities. *N-Tweed Heads. S-South of Eden* | x | x | - | - | x | x |
| Bush Stone-curlew<br>*Burhinus grallarius*<br>OEH | E | - | Utilises open forests and savannah woodlands, sometimes dune scrub, savannah and mangrove fringes. *Distribution Limit: N-Border Ranges National Park. S-Near Nowra.* | x | x | - | - | x | x |
| Gang-gang Cockatoo<br>*Callocephalon fimbriatum*<br>OEH | V | - | Prefers wetter forests and woodlands from sea level to > 2,000m on the Great Dividing Range, timbered foothills and valleys, timbered watercourses, coastal scrubs, farmlands and suburban gardens. *Distribution Limit: mid north coast of NSW to western Victoria.* | x | x | - | - | x | x |
| Glossy Black-Cockatoo<br>*Calyptorhynchus lathami*<br>OEH | V | - | Open forests with *Allocasuarina* species and hollows for nesting. *Distribution Limit: N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Little Lorikeet<br>*Glossopsitta pusilla*<br>OEH | V | - | Inhabits forests, woodlands; large trees in open country; timbered watercourses, shelterbeds, and street trees. *Distribution Limit: N-Tweed Heads. S-South of Eden*. | x | marginal | x | ✓ | unlikely | ✓ |
| Swift Parrot<br>*Lathamus discolour*<br>OEH EPBC | E | E | Inhabits eucalypt forests and woodlands with winter flowering eucalypts. *Distribution Limit: N-Border Ranges National Park. S-South of Eden*. | x | marginal | x | ✓ | unlikely | ✓ |
| Turquoise Parrot<br>*Neophema pulchella*<br>OEH | V | - | Inhabits coastal scrubland, open forest and timbered grassland, especially ecotones between dry hardwood forests and grasslands. *Distribution Limit: N-Near Tenterfield. S-South of Eden.* | x | x | - | - | x | x |
| Orange-bellied Parrot<br>*Neophema chrysogaster*<br>EPBC | E | E | Favours small islands, peninsulas in coastal areas; with saltmarsh plants; coastal pastures, golf courses; crops of millet and sunflowers; dunes, beaches. *Distribution Limit: N-Southern Sydney coast. S-South of Eden.* | x | x | - | - | x | x |
| Barking Owl<br>*Ninox connivens*<br>OEH | V | - | Inhabits principally woodlands but also open forests and partially cleared land and utilises hollows for nesting. *Distribution Limits: N-Border Ranges National Park. S-Eden.* | x | x | - | - | x | x |
| Powerful Owl<br>*Ninox strenua*<br>OEH | V | - | Forests containing mature trees for shelter or breeding and densely vegetated gullies for roosting. *Distribution Limits: N-Border Ranges National Park. S-Eden.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Grass Owl<br>*Tyto longimembris*<br>OEH | V | - | Inhabits grassland, coastal heath and lignum swamps, sheltering in dense grass tussocks by day. *Distribution Limit: N-Tweed Heads. S-Lithgow.* | x | x | - | - | x | x |
| Masked Owl<br>*Tyto novaehollandiae*<br>OEH | V | - | Open forest and woodlands with cleared areas for hunting and hollow trees or dense vegetation for roosting. *Distribution Limit: N-Border Ranges National Park. S-Eden.* | x | x | - | - | x | x |
| Sooty Owl<br>*Tyto tenebricosa*<br>OEH | V | - | Tall, dense, wet forests containing trees with very large hollows. *Distribution Limit: N-Border Ranges National Park. S-South of Eden.* | x | x | - | - | x | x |
| Eastern Bristlebird<br>*Dasyornis brachypterus*<br>EPBC | E | E | Coastal woodlands, dense scrubs and heathlands, especially where low heathland borders taller woodland or dense tall tea-tree. *Distribution Limit: N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |
| Regent Honeyeater<br>*Xanthomyza Phrygia*<br>OEH EPBC | E4A | CE | Found in temperate eucalypt woodland and open forest including forest edges, wooded farmland and urban areas with mature eucalypts. *Distribution Limit: N-Urbanville. S-Eden.* | x | marginal | ✓ | x | Not likely | x |
| White-fronted Chat<br>*Epithianura albifrons*<br>OEH | V | - | Found in open damp ground, grass clumps, fencelines, heath, samphire saltmarshes, mangroves, dunes, saltbush plains. *Distribution Limit: N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Painted Honeyeater<br>*Grantiella picta*<br>EPBC | V | V | A nomadic bird occurring in low densities within open forest, woodland and scrubland feeding on mistletoe fruits. Inhabits primarily Boree, Brigalow and Box-Gum Woodlands and Box-Ironbark Forests. *Distribution Limit: N-Boggabilla. S-Albury with greatest occurrences on the inland slopes of the Great Dividing Range.* | x | x | - | - | x | x |
| Black-chinned Honeyeater<br>*Melithreptus gularis gularis*<br>OEH | V | - | Found in woodlands containing box-ironbark associations and River Red Gums, also drier coastal woodlands of the Cumberland Plain and Hunter Richmond and Clarence. *Distribution Limit: N-Cape York Pen. Qld. S-Victor H. Mt Lofty Ra & Flinders Ra. SA.* | x | x | - | - | x | x |
| Varied Sittella<br>*Daphoenositta chrysoptera*<br>OEH | V | - | Open eucalypt woodlands / forests (except heavier rainforests); mallee, inland acacia, coastal tea-tree scrubs; golf courses, shelterbelts, orchards, parks, scrubby gardens. *Distribution Limit: N-Border Ranges National Park. S-South of Eden*. | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Dusky Woodswallow<br>*Artamus cyanopterus cyanopterus*<br>OEH | V | - | Found in woodlands and dry open sclerophyll forests, usually dominated by eucalypts, including mallee associations. It has also been recorded in shrublands and heathlands and various modified habitats, including regenerating forests; very occasionally in moist forests or rainforests. Prefers habitat with an open understorey. Often observed in farmland tree patches or roadside remnants. *Widespread in eastern, southern and southwestern Australia.* | x | x | - | - | x | x |
| Scarlet Robin<br>*Petroica boodang*<br>OEH | V | - | Found in foothill forests, woodlands, watercourses; in autumn-winter, more open habitats: river red gum woodlands, golf courses, parks, orchards, gardens. *Distribution Limit: N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |
| Flame Robin<br>*Petroica phoenicea*<br>OEH | V | - | Summer: forests, woodlands, scrubs, from sea-level to *c.* 1800 m. Autumn-winter: open woodlands, plains, paddocks, golf courses, parks, orchards. *Distribution Limit: N northern NSW tablelands. S-South of Eden.* | x | x | - | - | x | x |
| Pink Robin<br>*Petroica rodinogaster*<br>OEH | V | - | Found in dense gullies, rainforests and open forests, dispersing into drier more open habitats in winter. *Distribution Limit: N-Sydney. S-South of Eden.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Spotted-tailed Quoll<br>*Dasyurus maculatus*<br>OEH EPBC | V | E | Dry and moist open forests containing rock caves, hollow logs or trees. *Distribution Limit: N-Mt Warning National Park. S-South of Eden.* | x | x | - | - | x | x |
| Southern Brown Bandicoot<br>*Isoodon obesulus*<br>EPBC | E | E | Utilises a range of habitats containing thick ground cover - open forest, woodland, heath, cleared land, urbanised areas and regenerating bushland. *Distribution Limit: N-Kempsey. S-South of Eden.* | x | x | - | - | x | x |
| Koala<br>*Phascolarctos cinereus*<br>OEH EPBC | V | V | Inhabits both wet and dry eucalypt forest on high nutrient soils containing preferred feed trees. *Distribution Limit: N-Tweed Heads. S-South of Eden.* | x | x | - | - | x | x |
| Eastern Pygmy Possum<br>*Cercatetus nanus*<br>OEH | V | - | Found in a variety of habitats from rainforest through open forest to heath. Feeds on insects but also gathers pollen from banksias, eucalypts and bottlebrushes. Nests in banksias and myrtaceous shrubs. *Distribution Limit: N-Tweed Heads. S-Eden.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Greater Glider<br>*Petauroides volans*<br>EPBC | - | V | Favours forests with a diversity of eucalypt species, due to seasonal variation in its preferred tree species. Population density is optimal at elevation levels at 845 m above sea level. Prefer overstorey basal areas in old-growth tree stands. Highest abundance typically in taller, montane, moist eucalypt forests, with relatively old trees and abundant hollows *Distribution Limit: N-Border Ranges National Park. S- South of Eden.* | x | x | - | - | x | x |
| Brush-tailed Rock-wallaby<br>*Petrogale penicillata*<br>EPBC | E | V | Found in rocky gorges with a vegetation of rainforest or open forests to isolated rocky outcrops in semi-arid woodland country. *Distribution Limit: N-North of Tenterfield. S-Bombala.* | x | x | - | - | x | x |
| Grey-headed Flying-fox<br>*Pteropus poliocephalus*<br>OEH EPBC | V | V | Found in a variety of habitats including rainforest, mangroves, paperbark swamp, wet and dry open forest and cultivated areas. Forms camps commonly found in gullies and in vegetation with a dense canopy. *Distribution Limit: N-Tweed Heads. S-Eden.* | x | ✓ | ✓ | ✓ | ✓ | ✓ |
| Yellow-bellied Sheathtail-bat<br>*Saccolaimus flaviventris*<br>OEH | V | - | Rainforests, sclerophyll forests and woodlands. *Distribution Limit: N-North of Walgett. S-Sydney.* | x | x | - | - | x | x |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| East-coast Freetail Bat<br>*Micronomus norfolkensis*<br>OEH | V | - | Inhabits open forests and woodlands foraging above the canopy and along the edge of forests. Roosts in tree hollows, under bark and buildings. *Distribution Limit: N-Woodenbong. S-Pambula.* | x | x | - | - | x | x |
| Large-eared Pied Bat<br>*Chalinolobus dwyeri*<br>OEH EPBC | V | V | Warm-temperate to subtropical dry sclerophyll forest and woodland. Roosts in caves, tunnels and tree hollows in colonies of up to 30 animals. *Distribution Limit: N-Border Ranges National Park. S-Wollongong.* | x | x | - | - | x | x |
| Eastern Falsistrelle<br>*Falsistrellus tasmaniensis*<br>OEH | V | - | Recorded roosting in caves, old buildings and tree hollows. *Distribution Limit: N-Border Ranges National Park. S-Pambula.* | x | x | - | - | x | x |
| Little Bentwing-bat<br>*Miniopterus australis*<br>OEH | V | - | Roosts in caves, old buildings and structures in the higher rainfall forests along the south coast of Australia. *Distribution Limit: N-Border Ranges National Park. S-Sydney.* | x | x | - | - | x | x |
| Eastern Bentwing-bat<br>*Miniopterus orianae oceanensis*<br>OEH | V | - | Prefers areas where there are caves, old mines, old buildings, stormwater drains and well-timbered areas. *Distribution Limit: N-Border Ranges National Park. S-South of Eden.* | x | Sub-optimal | ✓ | ✓ | ✓ | ✓ |

| **Common name**<br>***Scientific name***<br>DATABASE SOURCE | ***BC Act*** | ***EPBC Act*** | **Preferred habitat**<br>***Distribution limit*** | **Recorded on site (✓)** | **If not recorded on site** | | | | **Further consideration required (✓)** |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Suitable habitat present (✓)** | **Nearby and/or high number of record(s) (✓)**<br>*Notes 1,2 & 3* | **Record(s) from recent years (✓)**<br>*Notes 1,2 & 3* | **Potential to occur** | |
| Large-footed Myotis<br>*Myotis macropus*<br>OEH | V | - | Roosts in caves, mines, tunnels, buildings, tree hollows and under bridges. Forages over open water. *Distribution limits: N-Border Ranges National Park. S-South of Eden.* | x | Sub-optimal | x | ✓ | unlikely | ✓ |
| Greater Broad-nosed Bat<br>*Scoteanax rueppellii*<br>OEH | V | - | Inhabits areas containing moist river and creek systems, especially tree lined creeks. *Distribution Limit: N-Border Ranges National Park. S-Pambula.* | x | x | - | - | x | x |
| New Holland Mouse<br>*Pseudomys novaehollandiae*<br>EPBC | - | V | Occurs in heathlands, woodlands, open forest and paperbark swamps and on sandy, loamy or rocky soils. Coastal populations have a marked preference for sandy substrates, a heathy understorey of leguminous shrubs less than 1m high and sparse ground litter. Recolonise of regenerating burnt areas. *Distribution Limit: N-Border Ranges National Park. S-South of Eden.* | x | x | - | - | x | x |
| Cumberland Plain Land Snail<br>*Meridolum corneovirens*<br>OEH | E | - | Inhabits remnant eucalypt woodland of the Cumberland Plan. Shelters under logs, debris, clumps of grass, around base of trees and burrowing into loose soil. *Distribution Limit: Cumberland Plain of Sydney Basin Region.* | x | x | - | - | x | x |

| Common name<br>*Scientific name*<br>DATABASE SOURCE | *BC Act* | *EPBC Act* | Preferred habitat<br>*Distribution limit* | Recorded on site (✓) | If not recorded on site | | | | Further consideration required (✓) |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Suitable habitat present (✓) | Nearby and/or high number of record(s) (✓)<br>*Notes 1,2 & 3* | Record(s) from recent years (✓)<br>*Notes 1,2 & 3* | Potential to occur | |
| Dural Land Snail<br>*Pommerhelix duralensis*<br>EPBC | - | E | Inhabits shale-influenced habitat along the north-western fringes of the Cumberland Plan on shale-sandstone transitional landscapes. Occur in low abundance and shelters under logs, debris, and leaf litter. *Distribution Limit: St Albans to Mulgoa with most records from The Hills LGA.* | x | x | - | - | x | x |

| | | |
|---|---|---|
| OEH | - | Denotes species listed within 10km of the study area on the *Atlas of NSW Wildlife* |
| EPBC | - | Denotes species listed within 10km of the study area in the *EPBC Act* habitat search |
| V | - | Denotes vulnerable listed species under the relevant Act |
| E | - | Denotes endangered listed species under the relevant Act |
| E4A/CE | - | Denotes critically endangered listed species under the relevant Act |
| NOTE: | 1. | This field is not considered if no suitable habitat is present within the study area |
| | 2. | 'records' refer to those provided by the *Atlas of NSW Wildlife* |
| | 3. | 'nearby' or 'recent' records are species specific accounting for home range, dispersal ability and life cycle |

Table A2.3 provides an assessment of potential habitat within the study area for nationally *protected* migratory fauna species recorded within 10km on the *EPBC Act* Protected Matters Tool. Nationally *threatened* migratory species are considered in Table A2.3.

**Table A2.3** – Migratory fauna habitat assessment

| **Common name**<br>***Scientific name*** | **Preferred habitat**<br>***Migratory breeding*** | **Suitable habitat present (✓)** | **Recorded on site (✓)** | **Comments** |
|---|---|---|---|---|
| Oriental Cuckoo (*Cuculus optatus*) | It mainly inhabits forests, occurring in coniferous, deciduous and mixed forest. It feeds mainly on insects and their larvae, foraging for them in trees and bushes as well as on the ground. | x | - | - |
| White-throated Needletail (*Hirundapus caudacutus*) | Airspace over forests, woodlands, farmlands, plains, lakes, coasts, towns; companies forage often along favoured hilltops and timbered ranges. *Breeds Siberia, Himalayas, east to Japan. Summer migrant to eastern Australia.* | marginal | low | No likely impacts |
| Black-faced Monarch (*Monarcha melanopsis*) | Rainforests, eucalypt woodlands; coastal scrubs; damp gullies in rainforest, eucalypt forest; more open woodland when migrating. *Summer breeding migrant to coastal south east Australia, otherwise uncommon*. | x | - | - |
| Spectacled Monarch (*Monarcha trivirgatus*) | Understorey of mountain / lowland rainforest, thickly wooded gullies, waterside vegetation, mostly well below canopy. *Summer breeding migrant to south-east Qld and north-east NSW down to Port Stephens from Sept/Oct to May. Uncommon in southern part of range.* | x | - | - |
| Satin Flycatcher (*Myiagra cyanoleuca*) | Heavily vegetated gullies in forests, taller woodlands, usually above shrub-layer; during migration, coastal forests, woodlands, mangroves, trees in open country, gardens. *Breeds mostly south east Australia and Tasmania over warmer months, winters in north east Qld.* | x | - | - |
| Rufous Fantail (*Rhipidura rufifrons*) | Undergrowth of rainforests / wetter eucalypt forests / gullies; monsoon forests, paperbarks, sub-inland and coastal scrubs; mangroves, watercourses; parks, gardens. On migration, farms, streets buildings. *Breeding migrant to south east Australia over warmer months. Altitudinal migrant in north east NSW in mountain forests during warmer months.* | x | - | - |
| Yellow Wagtail (*Motacilla flava*) | The yellow wagtail typically forages in damp grassland and on relatively bare open ground at edges of rivers, lakes and wetlands, but also feeds in dry grassland and in fields of cereal crops. | x | - | - |