

# Explorer Street Eveleigh Masterplan and Rezoning - Biodiversity Report

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**Department of Planning and Environment**

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Template 2.8.1

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## Abbreviations

Abbreviation	Description
BC Act	NSW <i>Biodiversity Conservation Act 2016</i>
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DPE	Department of Planning and Environment
EHG	Environment and Heritage Group (part of DPE)
ELA	Eco Logical Australia
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EPBC Act	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
FM Act	NSW <i>Fisheries Management Act 1994</i>
LGA	Local Government Area
MNES	Matters of National Environmental Significance
OEH	former Office of Environment and Heritage (now EHG)
PCT	Plant Community Type
WM Act	NSW <i>Water Management Act 1994</i>

# 1. Introduction

Eco Logical Australia Pty Ltd (ELA) was engaged by the NSW Department of Planning and Environment (DPE) to carry out biodiversity assessments for the proposed Masterplan and Rezoning of land at Explorer Street Eveleigh (the Site, Figure 1). This report identifies the biodiversity values present at the Site and provides recommendations for opportunities to improve and increase biodiversity within the Site.

## 1.1. The proposal

The NSW Department of Planning and Environment (DPE) proposes to rezone land at Explorer Street, Aurora Place and part of Station Place, Eveleigh. The Proposal would rezone land to provide for mixed tenancy residential dwelling space as well as public recreation. The intended future zones comprise:

- Zone A - medium density residential housing
- Zone H – public recreation.

These zones are the existing zones, however the rezoning would act to increase yield through changes to floor to space ratios, while maintaining the public recreation zone. The proposed changes would result in the ability to develop dwellings and parking for residents and visitors.

## 1.2. The site

The Site is in Eveleigh, about 3.5 km south-west from the Sydney CBD and is about 2.3 ha in size. It is bound by a rail corridor to the north, Henderson Road to the south the Eveleigh Maintenance Centre to the west and Station Place and Rowley Lane to the east. The Site comprises existing residential dwellings, a pocket park on the intersection of Rowley Lane and Station Place, and the South Sydney Rotary Park, which separates the existing dwellings from Henderson Road.

The Site has a long history of heavy industry associated with the maintenance and operation of the adjacent railway line. South Sydney Rotary Park previously housed a concrete plant (Arterra 2020). Today, South Sydney Rotary Park (the Park) contains a mix of planted native and exotic trees, and exotic ground cover persisting as a mown exotic grassland. The street trees comprise a mix of large native and exotic trees. The Park's topography is described as undulating and a large steep embankment runs along the entire southern face of the Park adjacent to Henderson Road. This Park is used by the residents of the existing housing at the Site and residents in the surrounding area.

A small row of plants separates the rail land to the north and the residential dwellings. The pocket park adjacent to Rowley Lane and the railway line contains several trees, a mown exotic grassland and limited park infrastructure.



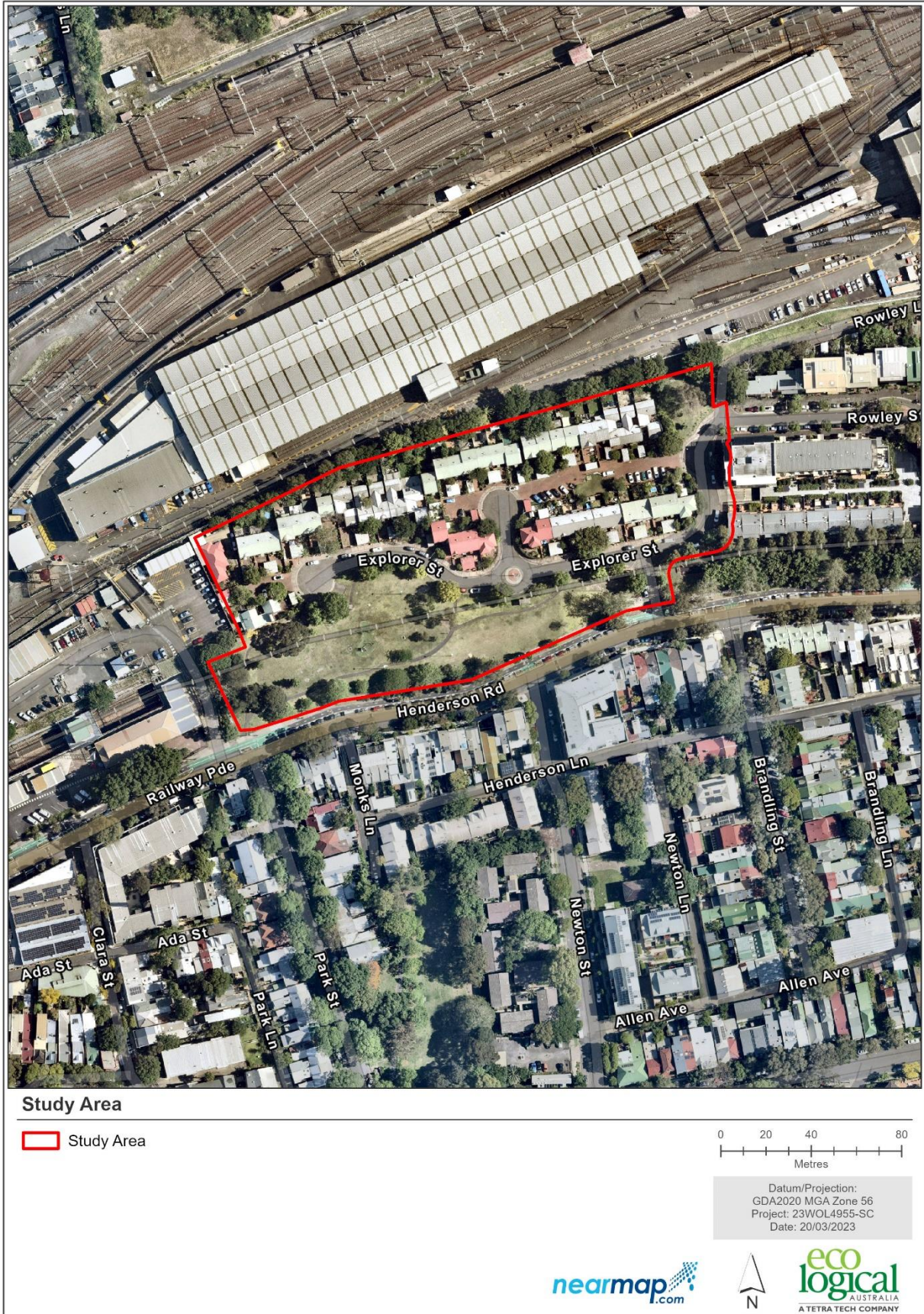


Figure 1: the study area of the Site at Eveleigh



## 2. Legislative context

The information contained in Table 1 provides an overview of the key biodiversity and environmental legislation considered by this technical report.

**Table 1: Relevant biodiversity legislation, instruments, and policies**

Name	Relevance to the Proposal	Report section
<b>Commonwealth legislation</b>		
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	The EPBC Act aims to protect Matters of National Environmental Significance (MNES). Proposed actions that have the potential to significantly impact on matters of MNES must be referred to the Commonwealth Department of Climate Change, Energy, Environment and Water to determine if they are a Controlled Action. MNES have been identified on or near the site. While Planning Proposals are not considered an 'action' under the EPBC Act, consideration of MNES at all stages of planning is prudent.	MNES considered in section 4.
<b>State legislation</b>		
<i>Environmental Planning and Assessment Act 1979</i> (EP&A Act)	Planning Proposals are prepared under Part 3 of the EP&A Act.	The report addresses the requirements for a biodiversity assessment for a planning proposal.
<i>Biodiversity Conservation Act 2016</i> (BC Act)	<p>The BC Act aims to conserve biodiversity and introduce a framework to avoid, minimise and offset impacts of proposed development.</p> <p>The Act does not have specific provisions that relate to Planning Proposals under Part 3 of the EP&amp;A Act, however it is expected that biodiversity would be considered in an Planning Proposal. The study area is not mapped by the Biodiversity Values Map, nor is there likely to be the area based threshold for complying with the NSW Biodiversity Offset Scheme at the DA stage. Unless at the DA stage there is likely to be a significant impact on threatened species under the BC Act, development applications are unlikely to require a Biodiversity Development Assessment Report.</p>	Considered in sections 4-6.
<i>Fisheries Management Act 1994</i> (FM Act)	<p>The FM Act aims to protect fish habitat and threatened species.</p> <p>The FM Act does not have specific provisions that relate to Planning Proposals under Part 3 of the EP&amp;A Act, however consideration of fish habitat should be undertaken at all planning stages.</p> <p>Subsequent development of the site will not involve harm to mangroves or other protected marine vegetation, dredging, reclamation or obstruction of fish passage.</p>	Not considered further in this report
<i>Water Management Act 2000</i> (WM Act)	The WM Act aims to protect the water resources of NSW. The Act does not have specific provisions that relate to Planning Proposals under Part 3 of the EP&A Act., however consideration of water resources should be undertaken at all stages of planning.	Not considered further in this report

Name	Relevance to the Proposal	Report section	
	<p>The <i>Water Management (General) Regulation 2018</i> hydroline spatial data 1.0 shows no area of mapped waterway on the site. Therefore, there is no requirement to consider waterways pursuant to the WM Act.</p>		
<b>Biodiversity strategies</b>			
<p>City of Sydney Urban Forest Strategy 2013</p>	<p>The City of Sydney’s Urban Forest Strategy aims to drive improvement in the quality and quantity of the City’s urban forest, provide the strategic and integrated planning to maximise the forest benefits and to promote the benefits of an urban forest.</p> <p>The City aims to prioritise the maintenance and protection of the existing tree network; increase the average canopy cover to 23.25% by 2030 and 27.13% by 2050; increase the age cohorts and species in trees planted along streets and in parks.</p>	<p>Considered in section 5.2</p>	
<p>City of Sydney Environmental Strategy 2021-2025</p>	<p>The Environmental Strategy aims to address the climate and biodiversity crises experienced by this global City. Among other things, the strategy targets improvements in air and water quality, water use efficiency, mitigating urban heat and regenerating land.</p>	<p>Considered in section 5.2</p>	
<p>City of Sydney Greening Sydney Strategy 2021</p>	<p>The City has a vision for a cool, calm and resilient city. This strategy provides the guidance to achieve this. In general, the Strategy provides direction to ‘turn grey to green’ in all settings. Major themes emerging from the strategy are a desire to increase overall vegetation cover (not just trees), increase canopy cover, provide connectivity across the landscape, provision of equitable greening, reconnection with nature and supporting community participation.</p>	<p>Considered in section 5.2</p>	



## 3. Methods

### 3.1. Literature and data review

The following information and data sources were reviewed:

- BioNet / Atlas of NSW Wildlife (EHG 2023)
- EPBC Act Protected Matters Search Tool (DCCEEW 2023)
- NSW Threatened Species Profiles (EHG 2023)
- The Native Vegetation of the Sydney Metropolitan Area. Volume 2: Vegetation Community Profiles. Version 2.0. NSW Office of Environment and Heritage, Sydney (OEH 2013)
- Biodiversity Values Map (LMBC 2023)
- The natural vegetation of the Sydney 1:100,000 map sheet (Benson and Howell 1994)
- Soil Landscapes of the Sydney 1:100,000 Sheet map, Ed. 4, Department of Environment, Climate Change and Water, Sydney (Chapman et al 2009)
- Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands. Version 1.0. Department of Environment and Conservation and Department of Natural Resources, Sydney (Tozer et al 2005).

The above information was reviewed to determine what, if any biodiversity values might be present within the Proposal area. Threatened species records obtained from BioNet were mapped on aerial photographs to determine if any threatened species habitat might be present.

The Benson and Howell (1994) mapping was inspected to determine what native vegetation communities may have been present prior to 1750. This vegetation dataset was used to provide an overview of the likely vegetation that may have been present and the potential opportunities for improving and increasing biodiversity within the site.

It should be noted that this assessment was supported by desktop studies only and feedback from the consultant team who have attended the Site.

## 4. Existing environment

### 4.1. Geology and soils

Based on geology maps, the land on which the Site sits is medium to fine-grained “marine” sand with podsols from the Pleistocene and Holocene epochs of the Quaternary period (Herbert 1983). However, Benson and Howell (1994) have also articulated that the area of interest may consist of Wianamatta and Shale soils as this is the geology associated with Turpentine-Ironbark Forest (see below).

Abel Ecology (2023) attended the site and confirmed the soil is consistent with sands rather than the shale based enriched soils, although it is likely the soil has been highly modified in the Park and surrounds.

### 4.2. Vegetation

The vegetation present identified through aerial imagery and the arborist reports (Arterra 2020, Abel Ecology 2023) within the Site is highly modified, does not contain any recorded threatened species or ecological communities and is not likely to reflect the vegetation that would have occurred prior to clearing. The vegetation would not correspond with any recognised Plant Community Type listed in the NSW Bionet Vegetation Classification Dataset. Therefore, to visualise what may have once occurred, examining several research reports and papers is required. Hints to what may have been present is based on examining geology, position in the landscape, proximity to the coast, elevation and surrogate sites in areas that may be relatively ‘intact’, or local reserves. Several vegetation mapping studies have occurred in the Sydney region.

According to Benson and Howell (1994), Eveleigh would have comprised Turpentine-Ironbark Forest pre-1750. This plant community would be an open forest with the main canopy species of *Syncarpia glomulifera* (Turpentine) and *Eucalyptus paniculata* (Grey Ironbark) with a shrubby, grassy understorey (Benson and Howell 1994). Turpentine was highlighted as a significant species to the community as it was responsible for 16% of the total basal area and 35% of total plant density (Benson and Howell 1994). The species *Eucalyptus globoidea* (White Stringybark), *Eucalyptus punctata* (Grey gum), *Eucalyptus resinifera* (Red Mahogany), *Eucalyptus pilularis* (Blackbutt) and *Angophora floribunda* (Rough-barked apple) also occurred within this community (Benson and Howell 1994).

As summarised in the arborist report (Arterra 2020), most of the trees on site are exotic or weed species where 69% of the total 214 trees surveyed have a low retention value. There were a number of species which the arborist report recommended to be retained within the Site, in the Park and along the street. These species include *Corymbia maculata* (Spotted Gum), *Eucalyptus robusta* (Swamp Mahogany), *Eucalyptus saligna* (Sydney Blue Gum), *Eucalyptus microcorys* (Tallowood), *Eucalyptus camaldulensis* (River Red Gum) and Fig trees.

### 4.3. Threatened species

A search of the BioNet threatened species records show there are 37 threatened fauna and 15 threatened flora recorded within 5 km of the Site (Figure 2 and Figure 3).

Many of the threatened fauna are marine or migratory bird species which are unlikely to be present on the Site. Limited suitable habitat is available for many of the species identified in the BioNet search

within the Site, and hence have been regarded as unlikely to use the Site. These species include fauna which occur along the coast, saltmarshes or near a reliable freshwater source, such as the Eastern Coastal Free-tailed Bat, Freckled Duck, Giant Dragon Fly, Green and Golden Bell Frog, Magpie Goose, White-fronted Chat, Square-tailed Kite and Southern Myotis. As there is no appropriate habitat or reliable water source present, it is unlikely for these species to occur within the Site.

There are a number of fauna which rely on a variety of specific or dense vegetation such as woodlands, sclerophyll forests, stands of suitable sheoak, rainforests and inland riparian forest. These species include Diamond Firetail, Dusky Woodswallow, Scarlet Robin, Koala, Spotted-tailed Quoll, Powerful Owl, Red Goshawk, Swift Parrot, Glossy-Black Cockatoo and White-throated Needletail. The lack of suitable vegetation, the Site’s fragmentation from other areas of vegetation outside the site and its proximity to housing and busy roads means it is unlikely for these species to use the Site.

Considering the conditions and vegetation present there are several species which have potential to frequent the Site. These species have been listed in Table 2.

**Table 2: Threatened fauna that may occur within 5 km of the study area**

Species	Common name	BC Act listing	General species comments (not specific to Eveleigh Precinct)
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	Vulnerable	Habitat includes subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Feed on the nectar and pollen of native trees, including Eucalyptus, Melaleuca and Banksia, and fruits of rainforest trees and vines.
<i>Miniopterus orianae oceanensis</i>	Large Bent-winged Bat	Vulnerable	Can occur in caves, tunnels, mines, culvert or other structures known or suspected to be used for breeding. Hunts in forested areas, catching moths and other flying insects above the tree tops.
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Vulnerable	This species is likely to forage for small, flying insects below the forest canopy. Habitat includes wet and dry sclerophyll forests, Cyprus Pine dominated forest, woodland, sub-alpine woodland, edges of rainforests and sandstone outcrop country. Can occur within two kilometres of rocky areas containing caves, overhangs, escarpments, outcrops, or crevices, or within two kilometres of old mines or tunnels
<i>Miniopterus australis</i>	Little Bent-winged Bat	Vulnerable	Habitat includes moist eucalypt forest, rainforest, vine thicket, wet and dry sclerophyll forest, Melaleuca swamps, dense coastal forests and banksia scrub. Generally found in well-timbered areas. Forage at night for small insects beneath the canopy of densely vegetated habitats. Can occur in caves, tunnels, mines, culvert or other structures known or suspected to be used for breeding.
<i>Saccolaimus flaviventris</i>	Yellow-bellied Sheath tail-bat	Vulnerable	Occurs in almost all habitats, including wet and dry sclerophyll forest, open woodland, open country, mallee, rainforests, heathland and waterbodies. It forages for insects above the canopy in eucalypt

Species	Common name	BC Act listing	General species comments (not specific to Eveleigh Precinct)
			forests, and closer to the ground in more open country. It is dependent on suitable hollow-bearing trees to provide roost sites.
<i>Ptilinopus superbus</i>	Superb Fruit Dove	Vulnerable	Principally from north-eastern Qld to north-eastern NSW. Further south, it is confined to pockets of suitable habitat, and occurs as far south as Moruya. Occurs in rainforest and closed forests. Forages high in the canopy, eating the fruits of many tree species such as figs and palms. May also forage in eucalypt or acacia woodland where there are fruit-bearing trees.

Of the threatened fauna which have been previously recorded within the 5 km search area, the species most likely to be present is the Grey-headed Flying-fox. According to the arborist report, a number of well-formed Fig trees, several *Melaleuca quinquenervia* (Broad-leaved paperbark) and *Melaleuca styphelioides* (Prickly-leaved paperbark) occur within the Site. These trees can provide important roosting and feeding resources for the Grey-headed Flying-fox. Breeding habitat for microbats, such as caves, tunnels, cliffs and rocky overhangs, is not present however there is potential for these species to use the Site for foraging.

While the BioNet threatened species search revealed the potential for 15 threatened flora to occur within 5 km of the Site, none of these species are likely to occur in the Site due to a lack of suitable conditions, including historic clearing, and ongoing management within the private and public open spaces (Table 3).

Seven Threatened Ecological Communities (TECs) also appeared in the BioNet search, however none of these TECs are present within the proposal area (Table 4). This is further supported by the arborist report which presents information on tree species that are not consistent with the community composition of the TECs.

**Table 3: Threatened flora that may occur within 5 km of the Site**

Species	Common name	BC Act Listing	General species comments (not site specific to Eveleigh Precinct)
<i>Acacia terminalis</i> subsp. Eastern Sydney	Sunshine Wattle	Endangered	Habitat includes coastal scrub and dry sclerophyll woodland on sandy soils.
<i>Caladenia tessellata</i>	Rosella Spider Orchid	Endangered	Single NSW record from Albury, estimated to have been collected before 1896. Now presumed extinct in NSW.
<i>Dichanthium setosum</i>	Bluegrass	Vulnerable	Habitat includes cleared woodland, grassy roadside remnants and highly disturbed pasture, on heavy basaltic black soils and red-brown loams with clay subsoil.
<i>Doryanthes palmeri</i>	Giant Spear Lily		Habitat includes exposed rocky outcrops, cliff-tops and on steep cliff-faces in montane heath next to



Species	Common name	BC Act Listing	General species comments (not site specific to Eveleigh Precinct)
			subtropical rainforest, warm temperate rainforest or wet eucalypt forest.
<i>Eucalyptus nicholii</i>	Narrow-leaved Black Peppermint	Vulnerable	Habitat includes dry grassy woodland, on shallow soils of slopes and ridges.
<i>Eucalyptus pulverulenta</i>	Silver-leafed Gum	Vulnerable	This habitat occurs in two separate areas, the Lithgow to Bathurst area and the Monaro (Bredbo to Bombala). This open forest is typically dominated by <i>Eucalyptus mannifera</i> (Brittle Gum), <i>E. macrorhyncamacrorhyncha</i> (Red Stringybark), <i>E. dives</i> (Broad-leafed Peppermint), <i>E. sieberi</i> (Silvertop Ash) and <i>E. bridgesiana</i> (Apple Box), on shallow soils.
<i>Eucalyptus scoparia</i>	Wallangarra White Gum	Endangered	In NSW it is known from only three locations near Tenterfield. Habitat includes open eucalypt forest, woodland and heaths on well-drained granite/rhyolite hilltops, slopes and rocky outcrops, typically at high altitudes.
<i>Hibbertia puberula</i>		Endangered	Occurs in Wollemi National Park south to Morton National Park and the south coast near Nowra. Habitat includes low heath, dry sclerophyll woodland, upland swamps, on sandy soils or clay.
<i>Macadamia integrifolia</i>	Macadamia Nut		Not known to occur naturally in the wild in NSW; recorded from Camden Haven but it is not known if the tree was cultivated or growing naturally. Habitat includes drier subtropical rainforest.
<i>Melaleuca deanei</i>	Deane's Paperbark	Vulnerable	Occurs in the Ku-ring-gai/Berowra area, Holsworthy/Wedderburn area, Springwood (in the Blue Mountains), Wollemi National Park, Yalwal (west of Nowra) and Central Coast (Hawkesbury River) areas. Habitat includes heath on sandstone.
<i>Persoonia hirsuta</i>	Hairy Geebung	Endangered	Scattered distribution around Sydney, from Singleton in the north, along the east coast to Bargo in the south and the Blue Mountains to the west. Habitat presumably heath or dry sclerophyll eucalypt woodland, forest on sandstone, or in coastal sand.
<i>Prostanthera marifolia</i>	Seaforth Mintbush	Critically Endangered	Only known from the northern Sydney suburb of Seaforth. In or in close proximity to the endangered Duffys Forest ecological community, on deeply weathered clay-loam soils associated with ironstone and scattered shale lenses.
<i>Rhodamnia rubescens</i>	Scrub Turpentine	Critically Endangered	Populations of <i>R. rubescens</i> typically occur in coastal regions and occasionally extend inland onto escarpments up to 600 m a.s.l. in areas with rainfall of 1,000-1,600 mm. Found in littoral, warm temperate and subtropical rainforest and wet sclerophyll forest usually on volcanic and sedimentary soils.

Species	Common name	BC Act Listing	General species comments (not site specific to Eveleigh Precinct)
<i>Syzygium paniculatum</i>	Magenta Lilly Pilly	Endangered	Occurs only in NSW, in a narrow, linear coastal strip from Upper Lansdowne to Conjola State Forest. Habitat includes subtropical and littoral rainforest on gravels, sands, silts and clays.
<i>Tetratheca juncea</i>	Black-eyed Susan	Vulnerable	Confined to the northern Sydney Basin bioregion and the southern North Coast bioregion in the local government areas of Wyong, Lake Macquarie, Newcastle, Port Stephens, Great Lakes and Cessnock. Habitat includes low open forest/woodland, heathland and moist forest, mainly on low nutrient soils associated with the Awaba Soil Landscape.

**Table 4: Threatened ecological communities predicted within 5 km of the Site**

Community name	Threatened Category
Coastal Swamp Oak ( <i>Casuarina glauca</i> ) Forest of New South Wales and South East Queensland ecological community	Endangered
Coastal Swamp Sclerophyll Forest of New South Wales and South East Queensland	Endangered
Coastal Upland Swamps in the Sydney Basin Bioregion	Endangered
Eastern Suburbs Banksia Scrub of the Sydney Region	Critically Endangered
River-flat eucalypt forest on coastal floodplains of southern New South Wales and eastern Victoria	Critically Endangered
Turpentine-Ironbark Forest of the Sydney Basin Bioregion	Critically Endangered
<i>Posidonia australis</i> seagrass meadows of the Manning-Hawkesbury ecoregion	Endangered

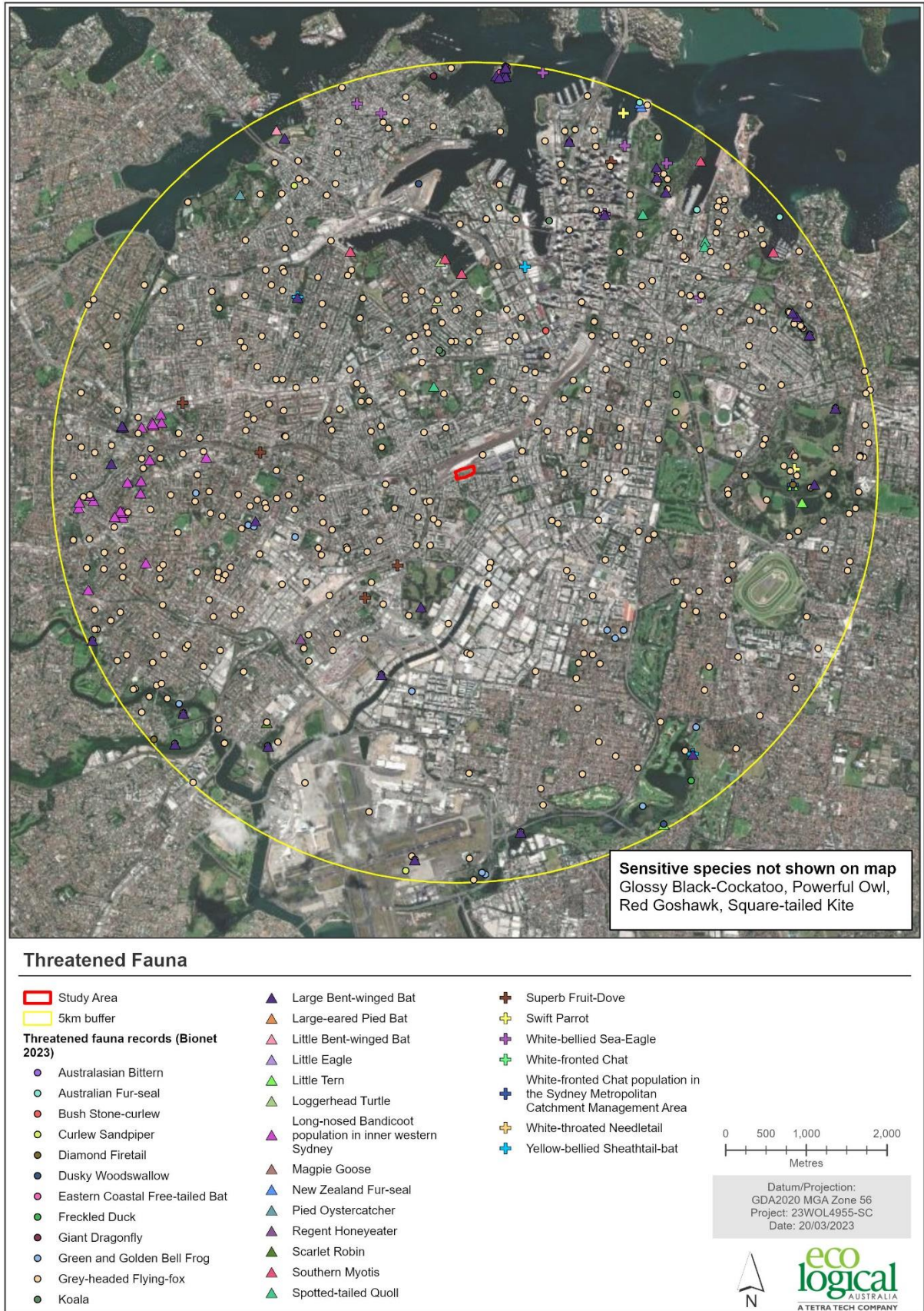


Figure 2: Threatened fauna records in and around the Site (source Bionet DPE 2023)





Figure 3: Threatened flora records within 5 km of the Site (source Bionet DPE 2023)



## 5. Potential impacts and opportunities

### 5.1. Potential biodiversity constraints and impacts

The Site contains very little remnant native biodiversity. There was no remnant native vegetation, no threatened ecological communities or threatened flora present. The vegetation present, including within the Park, included trees native to NSW (e.g., *Lophostemon confertus* (Brush Box)), locally endemic trees (e.g., *Eucalyptus saligna* (Sydney Blue Gum)), exotic ornamental trees (e.g. *Platanus x acerifolia* (London Plane Tree)), and trees considered environmental weeds (e.g., *Gleditsia triacanthos* (Honey Locust)).

Consistent with the requirements of the City of Sydney's Environmental, Urban Forest and Greening Strategies, there would be a need to retain functional trees within the Site. The trees retained would be based on the arborist report as well as species type. For example, the City may prefer that environmental weeds are removed and replaced with more suitable and locally endemic species. Trees that pose a constraint to development are those that provide high retention value, are locally native, are mature and also provide additional amenity, for example shade.

No significant breeding habitat is likely to occur within the Site. The only hollow detected by the arborist (in 2020) was a hollow *Acacia parramattensis*, although the arborist noted it was 'hollow when tapped', which suggests there is no entry point for fauna.

Buildings have not been surveyed for potential microbat habitat, since the dwellings are in use and no access can be gained. The dwellings are occupied, are maintained, and generally do not contain areas that are abandoned or derelict. The existing dwellings are low set brick and tin roofed constructions, with sub-floor spaces inaccessible due to the presence of ceramic vents. The roofs, gutters and fascias appear to be well maintained, with no openings or gaps that could be entry points for microbats. Therefore, while there is a possibility that microbats are present in the dwellings, the likelihood is low.

The most likely threatened species using the Site would include Grey-headed Flying-fox and microbats. It is more likely that these species are foraging across the Site than using it for breeding. No Grey-headed Flying-fox camps have been detected within the Site. During a development application for the Site, an assessment of the potential habitats and likely impacts would need to be undertaken for the likely threatened fauna (see section 6.1 below).

In addition to threatened species, there may be a need to consider urban species which may use the Site. Typically, these common urban species are not assessed as part of the required biodiversity assessments for development. In general, there is no requirement to 'protect' or conserve common species habitat, but there would be a requirement to consider managing impacts through pre-clearance surveys and clearance supervision to ensure harm to fauna is minimised.

The ecological values present on the Site do not limit the Proposal. The Proposal would enable significant opportunities to improve ecological and biodiversity values present (see below). Therefore, the Proposal is supportable from an ecological perspective.

## 5.2. Biodiversity opportunities

The Proposal includes principles and vision that encourage a Country centred approach to the consideration of biodiversity on the Site (WMK and Urbis 2023). The key vision themes relating to biodiversity are:

- Connection with Country
- Improve connectivity
- Enhance biodiversity.

The opportunities outlined below achieve these themes, align with the planning principles, and assist in achieving the City of Sydney’s environmental targets (see section 5.2.4).

### 5.2.1. Re-establishing Eastern Suburbs Banksia Scrub

Typical restoration would rely on making improvements to the existing elements of the natural heritage in the Site. There is little to restore since there is no remnant native vegetation present, a new approach could be used for the biodiversity opportunities on this Site.

As discussed in section 4.2, the vegetation present on site does not correspond to a naturally occurring native plant community. Following a walk on Country with Djinjama, the Site was identified as containing suitable conditions for the Eastern Suburbs Banksia Scrub threatened ecological community (TEC). There is an opportunity to draw on this TEC and re-establish it to increase biodiversity within the Site.

Eastern Suburbs Banksia Scrub in the Sydney Basin Bioregion is listed as critically endangered under the BC Act and the *Environment Protection and Biodiversity Conservation Act 1999*. It is typically a sclerophyllous heath community, occurring on wind-blown dune sand, in the eastern suburbs of Sydney between Botany, Randwick, Waverley and Northern Beaches local government areas (LGA). It currently only occupies about 146 ha in those LGAs. The community is usually present as a low scrubby / heathy community, with members from the *Banksia*, *Leptospermum*, *Lepidosperma*, *Monotoca* and *Xanthorrhoea* genera.

The main species of this TEC have been summarised in Table 5.

**Table 5: The main elements of Eastern Suburbs Banksia Scrub threatened ecological community**

Canopy species	Mid stratum species	Ground cover species	Where might this be used in the Site
<i>Angophora costata</i> , <i>Banksia aemula</i> , <i>Banksia serrata</i> , <i>Corymbia gummifera</i>	<i>Acacia longifolia</i> , <i>Acacia suaveolens</i> , <i>Allocasuarina distyla</i> , <i>Aotus ericoides</i> , <i>Astroloma pinifolium</i> , <i>Banksia ericifolia</i> subsp. <i>Ericifolia</i> , <i>Banksia marginata</i> , <i>Bossiaea ensata</i> , <i>Bossiaea heterophylla</i> , <i>Bossiaea scolopendria</i> , <i>Brachyloma daphnoides</i> subsp. <i>Daphnoides</i> , <i>Darwinia fascicularis</i> subsp. <i>Fascicularis</i> , <i>Dillwynia retorta</i> , <i>Elaeocarpus reticulatus</i> ,	<i>Actinotus helianthi</i> , <i>Actinotus minor</i> , <i>Austrostipa pubescens</i> , <i>Cassytha pubescens</i> , <i>Caustis pentandra</i> , <i>Chordifex fastigiatus</i> , <i>Dampiera stricta</i> , <i>Entolasia stricta</i> , <i>Gonocarpus teucrioides</i> , <i>Haemodorum planifolium</i> , <i>Hypolaena fastigiata</i> , <i>Lepidosperma concavum</i> , <i>Lepidosperma laterale</i> , <i>Lepyrodia scariosa</i> , <i>Lomandra</i>	Within the South Sydney Rotary Park

Canopy species	Mid stratum species	Ground cover species	Where might this be used in the Site
	<i>Gompholobium glabratum,</i> <i>Grevillea buxifolia,</i> <i>sphacelate,</i> <i>Hakea laevipes,</i> <i>Hibbertia fasciculata,</i> <i>linearis,</i> <i>Isopogon anemonifolius,</i> <i>Kunzea ambigua,</i> <i>Lambertia Formosa,</i> <i>Leptospermum laevigatum,</i> <i>ericoides,</i> <i>Melaleuca nodosa,</i> <i>Monotoca elliptica,</i> <i>Monotoca scoparia,</i> <i>Persoonia lanceolata,</i> <i>Philotheca buxifolia,</i> <i>Philotheca salsolifolia</i> subsp. <i>Salsolifolia,</i> <i>Phyllota phyllicoides,</i> <i>Pimelea linifolia</i> subsp. <i>Linifolia,</i> <i>Pittosporum undulatum,</i> <i>Platysace linearifolia,</i> <i>Ricinocarpos pinifolius,</i> <i>Woollisia pungens,</i> <i>Xanthorrhoea media,</i> <i>Xanthorrhoea resinosa</i>	<i>glauca,</i> <i>Lomandra longifolia,</i> <i>Patersonia glabrata,</i> <i>Pteridium esculentum,</i> <i>Schoenus ericetorum,</i> <i>Themeda triandra,</i> <i>Xanthosia pilosa</i>	



(source OEH 2022)

There is an opportunity for parts of this Site to be established as an ecological steppingstone and contribute to habitat connectivity within the local area. Lack of habitat connectivity was identified as one of the key biodiversity threats in the City of Sydney Urban Ecology Strategic Action Plan (City of Sydney 2014). While the South Sydney Rotary Park was not identified as a key priority site, inclusion of connecting habitat would contribute to the overall urban ecology targets in the City.

There are several demonstration sites nearby to South Sydney Rotary Park, where Eastern Suburbs Banksia Scrub has been restored or even recreated. The Centennial Park and Moore Park Trust manages four remnants within the lands now known as Centennial Park, while the City of Sydney has established the ecological community within Sydney Park.

### 5.2.2. Creation of a gilgai

A discussion with the consultant team revealed there were opportunities to create a 'light touch' solution in the Park to manage surface water arising from stormwater originating within the residential dwellings. Usually, an engineered raingarden would be designed and would require ongoing maintenance, with little opportunity to increase biodiversity. However, the alternate solution could incorporate a lower lying depression in the Park, consistent with its low point. The depression could mimic a 'gilgai', which are naturally occurring depressions in the landscape, containing a different suite of species to the surrounding vegetation. Often, in native grasslands, gilgais contain a higher diversity of forbs, sedges and grasses, mainly due to the ability to retain water longer than the surrounds. The gilgai would not result in ponding or require level changes and would increase the opportunities to improve biodiversity through the introduction of a range of native plants.

### 5.2.3. Use of Country positive plants

The landscape design could consider the inclusion of smaller areas of Country positive native plants, representative of previous elements (see Table 5) across the open space and other areas nearby. These areas could also incorporate First Nations story, public art and community engagement on greening urban landscapes.

### 5.2.4. Creating connectivity

While larger corridors and remnant patches of vegetation are considered the ideal for protection and resilience of biodiversity, in a highly spatially constrained area, this is not possible nor practical if other land uses are to be achieved. The Site is surrounded by existing hardstand development, however there is opportunity to create a green frame through and around the Site. Such a green frame would contribute to several of the objectives of the City of Sydney's environmental strategies by:

- Protecting the existing tree network
- Increasing canopy cover of trees
- Increase the age diversity of trees
- Regenerating land through introducing a greater diversity of plants
- Assisting to mitigate urban heat through increased canopy
- Increase overall vegetation cover from a suite of vegetation layers
- Providing opportunities to reconnect residents with nature
- Providing for opportunities to attract a range of urban native fauna, including invertebrates, smaller birds and mammals.



## 6. Further work required at the DA stage

### 6.1. Terrestrial biodiversity impact assessment requirements for development applications

For a development application under Part 4 of the EP&A Act the assessment provisions of the BC Act and EPBC Act would apply. The BC Act includes a range of triggers for the Biodiversity Offsets Scheme (BOS). The BOS applies to developments assessed under Part 4 of the EP&A Act. The triggers for the BOS and considerations for impact assessment under the BC Act include:

- impacts to land mapped under the Biodiversity Values Map
  - none detected in the Proposal area as at June 2023
- clearing of native vegetation above the permissible threshold per lot size
  - the study area does not appear to contain remnant native vegetation likely to trigger the area based threshold
  - planted native vegetation may need to be considered as contributing to the clearing thresholds, but only those plants native to NSW
- determination through the application of an assessment consistent with s7.3 BC Act that the impact is significant to the matter under consideration
  - threatened microbat species were not detected in the past according to Bionet records, however, these species need to be considered in future assessments as foraging habitat is likely to be present within the Park
  - assessments consistent with the BC Act would be required at the DA stage
- impacts to a listed matter that is subject to Serious and Irreversible Impacts (SAIL)
  - the study area does not contain any matters subject to SAIL (as at June 2023), however the consent authority can add SAIL matters for assessment, and it is understood the list is updated periodically.

Assessment of potential prescribed biodiversity impacts may also require consideration. According to s6.3 of the BC Act, assessment and biodiversity offsets may apply to impacts that are prescribed by the regulations. The prescribed impacts are described in cl. 6.1 (1) of the *Biodiversity Conservation Regulation 2017* and are:

- (a) the impacts of development on the following habitat of threatened species or ecological communities—
  - (i) karst, caves, crevices, cliffs and other geological features of significance,
  - (ii) rocks,
  - (iii) human made structures,

- (iv) non-native vegetation,
- (b) the impacts of development on the connectivity of different areas of habitat of threatened species that facilitates the movement of those species across their range,
- (c) the impacts of development on movement of threatened species that maintains their lifecycle,
- (d) the impacts of development on water quality, water bodies and hydrological processes that sustain threatened species and threatened ecological communities (including from subsidence or upsidence resulting from underground mining or other development),
- (e) the impacts of wind turbine strikes on protected animals,
- (f) the impacts of vehicle strikes on threatened species of animals or on animals that are part of a threatened ecological community.

Of relevance to the Site is the presence of human-made structures and non-native vegetation. The elements are present as the buildings which could be bat habitat and the exotic species which may be foraging habitat for microbats and Grey-headed Flying-fox. There are no likely impacts on waterbodies, and the development of the Site is unlikely to increase vehicle strike impacts on threatened species of animals or animals that form part of a threatened ecological community. Regardless, if a Biodiversity Development Assessment Report is required, prescribed impacts would need to be considered and appropriately assessed and impacts mitigated.

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