

# Walker Street, Northcote: Flora and fauna assessment

DRAFT REPORT

Prepared for Department of Health and Human Services

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## Summary

Biosis Pty Ltd was commissioned by the Department of Health and Human Services to undertake a flora and fauna assessment of a site at Walker Street, Northcote. This assessment was intended to provide an overview of the indigenous flora and fauna values of the site to guide future planning.

The study area exists within a highly urbanised environment. The flora and fauna values of the site have been highly modified by a long history of occupation and development. As a result, the site contains little biodiversity value. There is no remnant indigenous vegetation within the study area. All vegetation present has been established as part of amenity plantings and gardens. Common fauna were observed using the site.

No permits or approvals under biodiversity legislation are likely to be required for future development of the site.

# 1 Introduction

## 1.1 Project background

Biosis Pty Ltd was commissioned by the Department of Health and Human Services (DHHS) to undertake a flora and fauna assessment of a site at Walker Street, Northcote (Figure 1). This assessment will inform future development of the site.

## 1.2 Scope of assessment

This assessment was intended to provide a detailed description of the indigenous flora and fauna values of the site to guide future planning. The objectives of this investigation are to:

- Describe the vascular flora (ferns, conifers, flowering plants), vertebrate fauna (mammals, birds, reptiles, frogs, fishes)
- Map native vegetation and other habitat features
- Review the implications of relevant biodiversity legislation and policy, including Victoria's Permitted clearing of native vegetation: Biodiversity assessment guidelines ('the Guidelines')
- Identify potential implications of the proposed development and provide recommendations to assist with development design
- Recommend any further assessments of the site that may be required (such as a vegetation impact assessment or targeted searches for significant species).

## 1.3 Location of the study area

The location of the study area is shown in Figure 1. It is within the:

- Victorian Volcanic Plain Bioregion
- Darebin Shire

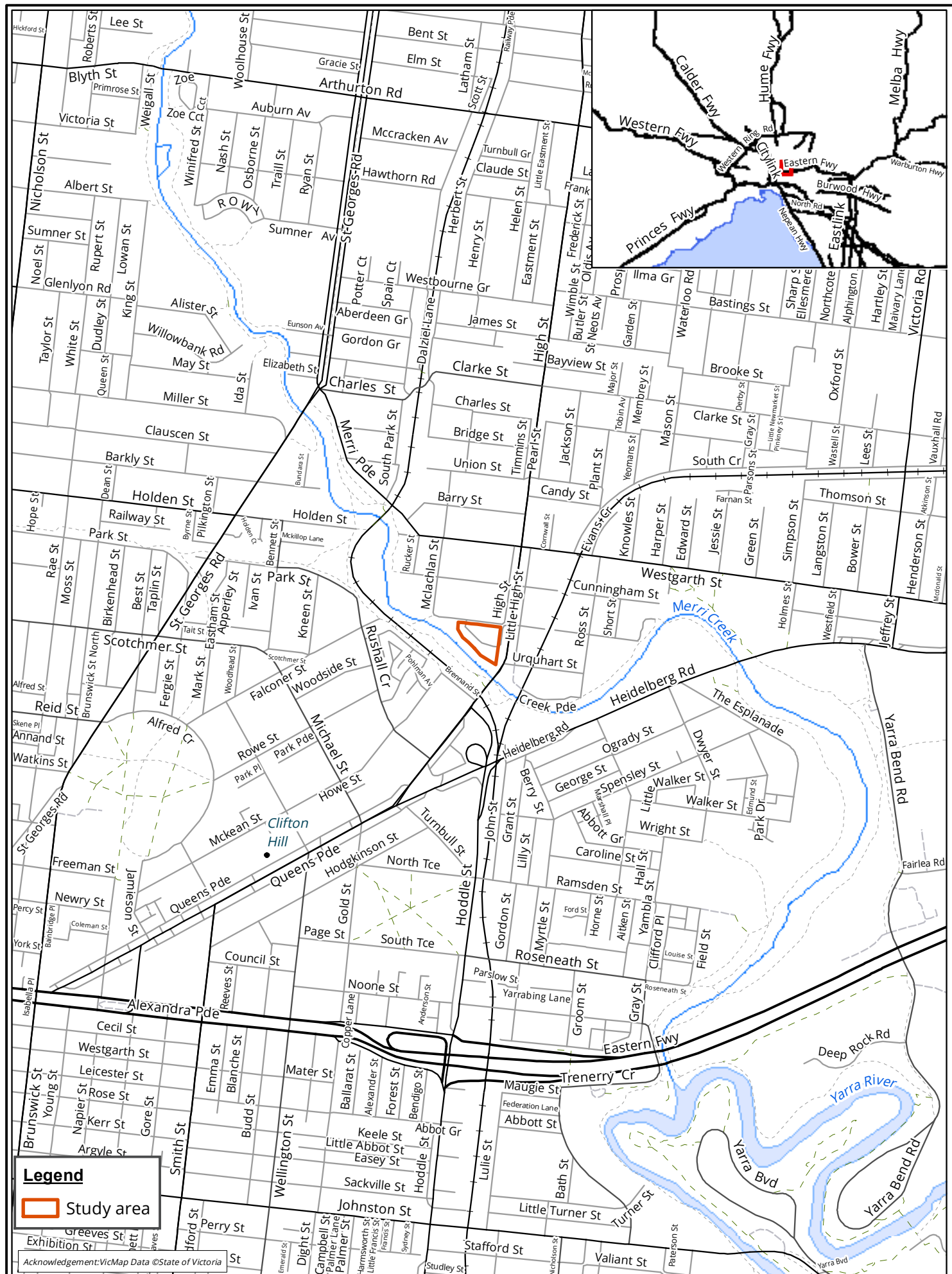


Figure 1: Location of the study area - Walker, Victoria

## 2 Methods

### 2.1 Database review

In order to provide a context for the study area, information about flora and fauna from within 5 kilometres of the study area (the 'local area') was obtained from relevant biodiversity databases. Records from the following databases were collated and reviewed:

- Flora Information System (FIS) which includes records from the Victorian Biodiversity Atlas 'VBA\_FLORA25, FLORA100 & FLORA Restricted' August 2015 © The State of Victoria, Department of Environment, Land, Water and Planning (DELWP).
- Victorian Biodiversity Atlas 'VBA\_FAUNA25, FAUNA100 & FAUNA Restricted' August 2015 © The State of Victoria
- DELWP Biodiversity Interactive Map (BIM)
- BirdLife Australia Atlas of Australian Birds (BA)
- Protected Matters Search Tool of the Australian Government Department of the Environment and Energy for matters protected by the EPBC Act
- Planning Scheme overlays relevant to biodiversity based on <http://planningschemes.dpcd.vic.gov.au/index.html>.

### 2.2 Definitions of significance

The significance of a species or ecological community is determined by its listing status under Commonwealth or State legislation / policy (Table 1).

**Table 1 Criteria for determining significance of species & ecological communities**

Significance	
<b>National</b>	Listed as critically endangered, endangered or vulnerable under the EPBC Act
<b>State</b>	Listed as critically endangered, endangered, vulnerable or rare in Victoria on a DELWP Advisory List (DSE 2009; DSE 2013; DEPI 2014a) Listed as threatened under the FFG Act

Lists of significant species generated from the databases are provided in Appendix 1(flora) and Appendix 2 (fauna) and the species have been assessed to determine their likelihood of occurrence. These species are not discussed further in this report unless they:

- are considered likely to occur on site based on available information and expert opinion
- are species listed as threatened under the FFG Act with a medium or greater likelihood of occurrence.

### 2.3 Site investigation

A site investigation was undertaken within all publically accessible portions of the study area. Private gardens and the like were not assessed.

#### 2.3.1 Flora assessment

The flora assessment was undertaken on 16 November 2016. A botanist inspected the site and made observations regarding the flora and fauna values present. Any indigenous species were recorded.

Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses' (Clause 72).

The Guidelines classify native vegetation into two categories (DEPI 2013a):

- A **remnant patch** of native vegetation (measured in hectares) is either:
  - An area of native vegetation, with or without trees, where at least 25 percent of the total perennial understorey cover is native plants.
  - An area with three or more indigenous canopy trees where the tree canopy cover is at least 20 percent.

Remnant patch vegetation is classified into ecological vegetation classes (EVCs). An EVC contains one or more floristic (plant) communities, and represents a grouping of broadly similar environments. Definitions of EVCs and benchmarks (condition against which vegetation quality at the site can be compared) are determined by DELWP.

- A **scattered tree** is defined as (extent measured by number of trees):
  - An indigenous canopy tree that does not form part of a remnant patch of native vegetation.

A canopy tree is a mature tree that is greater than three metres in height and is normally found in the upper layer of a vegetation type. Ecological vegetation class descriptions provide a list of the typical canopy species. A condition score and extent is applied to each scattered tree based on information provided by DELWP's NVIM.

Species nomenclature for flora follows the Flora Information System (FIS).

### 2.3.2 Fauna assessment

The study area was investigated on 16 November 2016 to determine its values for fauna. These were determined primarily on the basis of the types and qualities of habitat(s) present. All species of fauna observed during the assessment were noted and active searching for fauna was undertaken. The fauna assessment involved walking the perimeter of the site and through the site using direct observation, and identifying calls. Particular attention was given to searching for significant species and their habitats. Fauna species were recorded with a view to characterising the values of the site and the investigation was not intended to provide a comprehensive survey of all fauna that has potential to utilise the site over time.

The investigation of fauna will be submitted to DELWP for incorporation into the Victorian Biodiversity Atlas. No targeted surveys were undertaken for nationally significant fauna, due the low likelihood of occurrence and poor quality habitat. Biosis Standard Operating Procedures provide a comprehensive outline of methods used for fauna survey and are available on request.

## 2.4 Legislation and policy

The implications for the project were assessed in relation to key biodiversity legislation and policy including:

- Matters listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), associated policy statements, significant impacts guidelines, listing advice and key threatening processes
- Threatened taxa, communities and threatening processes listed under Section 10 of the *Flora & Fauna Guarantee Act 1988* (FFG Act); associated action statements and listing advice



- 
- Permitted Clearing of native vegetation: Biodiversity assessment guidelines (DEPI 2013a)
  - Native Vegetation Management Plans prepared by Catchment Management Authorities
  - *Planning and Environment Act 1987* – specifically Clauses 12.01-2, 52.17 and 66.02 and Overlays in the Darebin Planning Scheme
  - Noxious weeds and pest animals lists under the *Catchment and Land Protection Act 1994* (CaLP Act)

## 3 Results

### 3.1 Vegetation & fauna habitat

The study area exists within a highly urbanised environment. The flora and fauna values of the site have been highly modified by a long history of occupation and development. As a result, the site contains little biodiversity value.

There is no remnant indigenous vegetation within the study area. Vegetation within the study area consists of species planted as part of landscaping works or gardens. They include non-site indigenous Australian natives such as Lemon-scented Gum *Corymbia citriodora*, Giant Honey-myrtle *Melaleuca armillaris*, Cootamundra Wattle *Acacia baileyana* and Sweet Pittosporum *Pittosporum undulatum*. Exotic planted species include Pepper Tree *Schinus molle* and Chinese Elm *Ulmus parviflora*. Grassy areas are dominated by common lawn species such as Kikuyu *Cenchrus clandestinus* or Couch *Cynodon dactylon*.

Four fauna species were recorded at the site including one indigenous bird: Australian Magpie *Cracticus tibicen* and three introduced bird species: Common Blackbird *Turdus merula*, Rock Dove *Columba livia*, Common Myna *Acridotheres tristis*.



**Plate 1: Typical planted vegetation within the study area**

### 3.2 Significant species and ecological communities

No significant flora or fauna species were recorded within the study area. Appendix 1 (flora) and Appendix 2 (fauna) contain listed species that have been previously identified within 5km of the study area. None of the

flora or fauna species identified in these appendices are likely to occur within the study area. However, the EPBC Act and FFG act listed Grey-headed Flying Fox *Pteropus poliocephalus* (Appendix 2) may use the trees as "stop-over" points for feeding or resting. Planted vegetation at the site is not considered critical habitat and development of the site would not have a significant impact on this species.

## 4 Biodiversity legislation and government policy

This section provides an assessment of the project in relation to key biodiversity legislation and government policy as listed in Section 2.4. This section does not describe the legislation and policy in detail but provides an overview of relevant obligations under this legislation for future development of the site.

Biodiversity legislation considered under this assessment protects indigenous flora and fauna, threatened species and threatened vegetation communities. The CaLP Act contains requirements for management of noxious weeds.

This site assessment did not record any values that are protected under this legislation, nor noxious weeds listed under the CaLP Act. Table 2 provides a summary of the implications of relevant biodiversity legislation.

**Table 2: Summary of biodiversity legislation**

Legislation	Implications for development
<i>Environment protection and Biodiversity Conservation Act 1999</i>	No listed species or threatened vegetation communities were identified on the site. Grey-headed Flying Fox may occur on rare occasions, however, the study area does not constitute core or limiting habitat. The EPBC Act applies to developments and associated activities that have the potential to significantly impact on matters protected under the Act. On the basis of criteria outlined in the relevant EPBC Act <i>Significant Impact Guidelines</i> it is considered unlikely that a significant impact on a matter protected under the Act would result from development of the site.
<i>Flora and Fauna Guarantee Act 1988</i>	No listed flora or fauna observed. Grey-headed Flying Fox may occur on rare occasions but the study area is unlikely to constitute core or limiting habitat.  No permits or approvals are required under the FFG Act.
<i>Planning and Environment Act 1987</i> (incorporating the <i>Permitted Clearing of Native Vegetation - Biodiversity Assessment Guidelines</i> )	There is no native vegetation within the study area. A permit to remove native vegetation under Clause 52.17 of the Darebin Planning Scheme is not required and future development does not require an assessment under the <i>Permitted Clearing of Native Vegetation Biodiversity Assessment Guidelines</i> .  Schedule 1 to the Environmental Significance Overlay (ESO1) applies to the study area. ESO1 aims the restore and revitalise the environs of the Merri Creek and to protect its important cultural heritage and ecological values. ESO1 requires a permit for removal of any vegetation (including dead vegetation) but provides an exemption for planted vegetation, such as that located within the study area. A permit is not required to remove vegetation on site. When

	developing the study area DHHS should consider the objectives of ESO1 and may choose to incorporate site indigenous plantings to enhance the ecological value of the Merri Creek corridor.
<i>Catchment and Land Protection Act 1994</i>	No listed noxious weeds were identified on site. No permits or approvals are required under the CaLP Act.

Given the very low biodiversity value of the site it is likely that future development of the site will not require any approvals or permits under biodiversity legislation considered in this assessment.

## 5 Key ecological values and recommendations

The study area contains relatively low biodiversity value due to its highly modified nature. Vegetation within the study area is primarily introduced and provides limited fauna habitat. Grey-headed flying fox *Pteropus poliocephalus* may use the site on occasion for foraging or roosting opportunities and, where possible, it is recommended to retain fruit-bearing trees as part of any future development.

DHHS should consider the objectives of ESO 1 when developing the site and may choose to incorporate site indigenous plantings into landscaping works to enhance the ecological value of the Merri Creek corridor.

On the basis of this assessment there are no obligations for permits or approvals under biodiversity legislation relevant to future development of the site.

## References

- DEPI 2013a. *Permitted clearing of native vegetation - Biodiversity assessment guidelines*. Victorian Government Department of Environment and Primary Industries, Melbourne (September 2013).
- DEPI 2013b. *Native vegetation gain scoring manual, version 1*. Victorian Government Department of Environment and Primary Industries, Melbourne (May 2013).
- DEPI 2014a. *Advisory List of Rare or Threatened Plants in Victoria - 2014*. Victorian Government Department of Environment & Primary Industries, East Melbourne.
- DEPI 2014b. *Permitted clearing of native vegetation - Biodiversity assessment handbook*. Version 0.2. Victorian Government Department of Environment and Primary Industries, Melbourne (January 2014).
- DNRE 2002. *Victoria's Native Vegetation Management: A Framework for Action*. Victorian Government Department of Natural Resources & Environment, East Melbourne.
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- DSE 2010. Victorian Biodiversity Atlas 'VBA\_FAUNA25, FAUNA100 & FAUNARestricted, FLORA25, FLORA100 & FLORARestricted' August 2010 © The State of Victoria. Victorian Government Department of Sustainability & Environment, Melbourne.
- DSE 2013. *Advisory List of Threatened Vertebrate Fauna in Victoria - 2013*. Victorian Government Department of Environment & Primary Industries, Melbourne.

## Appendices

## Appendix 1 Flora

Notes to tables:

<b>EPBC Act:</b> CR - Critically Endangered EN - Endangered VU - Vulnerable  PMST – Protected Matters Search Tool	<b>DEPI 2014a:</b> e - endangered v - vulnerable r - rare
<b>FFG Act:</b> L - listed as threatened under FFG Act P - protected under the FFG Act (public land only)	# - Native species outside natural range
<b>Noxious weed status:</b> SP - State prohibited species RP - Regionally prohibited species RC - Regionally controlled species RR - Regionally restricted species	

## A1.1 Listed flora species

The following table includes the listed flora species that have the potential to occur within 5km of the study area. The list of species is sourced from the Victorian Flora Information System and the Protected Matters Search Tool (DoE; accessed on 10.01.17).

**Table A1**Error! Reference source not found..1 Listed flora species recorded / predicted to occur within 5 km of the study area

Scientific name	Common name	Conservation status			Most recent database record	Other records	Habitat description
		EPBC	VIC	FFG			
National significance							
<i>Amphibromus fluitans</i>	River Swamp Wallaby-grass	VU				PMST	Swampy areas, mainly along the Murray River between Wodonga and Echuca with scattered records from southern Victoria.
<i>Dianella amoena</i>	Matted Flax-lily	EN	e	L	2010		Lowland grassland and grassy woodland, on well-drained to seasonally waterlogged fertile sandy loam soils to heavy cracking clays.
<i>Diuris fragrantissima</i>	Sunshine Diuris	EN	e	L		PMST	Grassland dominated by <i>Themeda trianda</i> , on plains with heavy basalt soils and embedded boulders; only known naturally occurring population is in Sunshine.
<i>Glycine latrobeana</i>	Clover Glycine	VU	v	L	1853		Grasslands and grassy woodlands, particularly those dominated by Kangaroo Grass.
<i>Lepidium hyssopifolium</i>	Basalt Peppercress	EN	e	L	1978		Basalt plains grassland and woodland communities.
<i>Pimelea spinescens</i> subsp. <i>spinescens</i>	Spiny Rice-flower	CR	e	L		PMST	Primarily grasslands featuring a moderate diversity of other native species and inter-tussock spaces, although also recorded in grassland dominated by introduced perennial grasses.
<i>Prasophyllum frenchii</i>	Maroon Leek-orchid	EN	e	L		PMST	Grassland and grassy woodland environments on sandy or black clay loam soils, that are generally damp but well drained.
<i>Pterostylis cucullata</i>	Leafy Greenhood	VU	v	L		PMST	Sand dune scrubs in coastal areas, and inland on slopes and river flats in moist foothill and montane forests.
State significance							



<i>Adiantum capillus-veneris</i>	Venus-hair Fern		e	L	1999		Typically found on calcareous soils. Known in Victoria from three locations only: near Cape Schanck, Bendigo, and Greensborough.
<i>Botrychium australe</i>	Austral Moonwort		v	L	1858		Lowland forest and scrubland to subalpine grasslands, lightly-wooded plains, at the base of granitic hills, alongside subalpine streams, and in some disturbed environments.
<i>Cullen tenax</i>	Tough Scurf-pea		e	L	1853		Lowland grasslands, including pastures and occasionally in otherwise disturbed grassy areas.
<i>Geranium</i> sp. 1	Large-flower Crane's-bill		e	L	2010		The habitat requirements of this species are poorly known.

## Appendix 2 Fauna

Notes to tables:

<b>EPBC Act:</b> EX - Extinct CR - Critically Endangered EN - Endangered VU - Vulnerable CD - Conservation dependent	<b>DSE 2009, DSE 2013:</b> ex - extinct cr - critically endangered en - endangered vu - vulnerable nt - near threatened dd - data deficient rx - regionally extinct
<b>FFG Act:</b> L - listed as threatened under FFG Act N - nominated for listing as threatened I - determined ineligible for listing	* - introduced species
PS - pest species listed under the CaLP Act	
Most recent database records are from the Victorian Biodiversity Atlas unless otherwise specified as follows # – Protected Matters Search Tool BA – Birds Australia	

Fauna species in these tables are listed in alphabetical order within their taxonomic group.

## A2.1 Fauna species recorded from the study area

**Table A2.1 Fauna recorded from the study area**

Status	Scientific name	Common name
<b>Indigenous species</b>		
	<i>Cracticus tibicen</i>	Australian Magpie
<b>Introduced species</b>		
	<i>Columba livia</i>	Rock Dove
	<i>Turdus merula</i>	Common Blackbird
	<i>Acridotheres tristis</i>	Common Myna

## A2.3 Listed fauna species

The following table includes a list of the listed fauna species that have potential to occur within 5km of the study area. The list of species is sourced from the Victorian Biodiversity Atlas and the Protected Matters Search Tool (DoE; accessed on 10.01.17).

**Table A2.3 Listed fauna species recorded, or predicted to occur, within 5 km of the study area**

Scientific name	Common name	Conservation status			Most recent database record	Other records	Habitat description
		EPBC	VIC	FFG			
National significance							
<i>Pedionomus torquatus</i>	Plains-wanderer	CR	cr	L	1972	PMST	Native grassland with a sparse, open structure.
<i>Numenius madagascariensis</i>	Eastern Curlew	CR	vu				Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	en		2011		Large intertidal sandflats, banks, mudflats, estuaries, inlets, sewage farms, saltworks, harbours, coastal lagoons and bays.
<i>Rostratula australis</i>	Australian Painted Snipe	EN	cr	L	2012		Shallows of well-vegetated freshwater wetlands.
<i>Botaurus poiciloptilus</i>	Australasian Bittern	EN	en	L	PMST		Shallow freshwater and brackish wetlands with abundant emergent aquatic vegetation.
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	CR	cr	L	PMST		Coastal vegetation including saltmarshes, dunes, pastures, shrublands, sewage plants, saltworks, islands, and beaches.
<i>Lathamus discolor</i>	Swift Parrot	CR	en	L	2011		A range of forests and woodlands, especially those supporting nectar-producing tree species. Also well-treed urban areas.
<i>Grantiella picta</i>	Painted Honeyeater	VU	vu	L		PMST	Dry open woodlands and forests. Typically forages for fruit and nectar in mistletoes and in tree canopies.
<i>Anthochaera phrygia</i>	Regent Honeyeater	CR	cr	L	1993		A range of dry woodlands and forests dominated by nectar-producing tree species.
<i>Dasyurus viverrinus</i>	Eastern Quoll	EN	rx	L	1948		The Eastern Quoll is a medium-sized carnivorous marsupial that once occupied a broad range of forest, woodland and grassland habitats in

							Victoria. The species is now restricted to Tasmania and is considered to be extinct from mainland Australia.
<i>Antechinus minimus maritimus</i>	Swamp Antechinus	VU	nt	L		PMST	Dense wet heath and heathy woodland, sedgeland and dense tussock grassland.
<i>Isoodon obesulus obesulus</i>	Southern Brown Bandicoot (eastern)	EN	nt	L	1948		Heathland, shrubland, sedgeland, heathy open forest and woodland. Exotic vegetation, such as blackberry thickets and rank grasses can and often do, provide important habitat where native vegetation has been removed.
<i>Perameles gunnii</i> unnamed subsp.	Eastern Barred Bandicoot (mainland form)	EN	cr	L	1886		Natural temperate grasslands and grassy woodlands.
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	VU	vu	L	2010		Rainforest, wet and dry sclerophyll forest, woodland and urban areas.
<i>Delma impar</i>	Striped Legless Lizard	VU	en	L	1975		Natural temperate grassland, grassy woodland and exotic grassland.
<i>Litoria raniformis</i>	Growling Grass Frog	VU	en	L	1991		Still or slow-flowing waterbodies and surrounding terrestrial vegetation.
<i>Prototroctes maraena</i>	Australian Grayling	VU	vu	L	2014		Adults inhabit cool, clear, freshwater streams
<i>Galaxiella pusilla</i>	Dwarf Galaxias	VU	en	L		PMST	Slow-flowing or still freshwater wetlands such as swamps, drains and backwaters of streams.
<i>Craterocephalus fluviatilis</i>	Murray Hardyhead	EN	cr	L	1989		Margins of lakes, wetlands, backwaters and billabongs.
<i>Maccullochella macquariensis</i>	Bluenose Cod	EN	cr	L	1881		Streams characterised by a high abundance of large woody debris.
<i>Maccullochella peelii peelii</i>	Murray Cod	VU	en	L	2000		A diverse range of stream habitats in the Murray-Darling basin; principally the main channels of rivers and their major tributaries.
<i>Macquaria australasica</i>	Macquarie Perch	EN	en	L	2015		Streams with clear water and deep, rocky holes with abundant cover.
<i>Bidyanus bidyanus</i>	Silver Perch	CR	cr	L	1981		Lowland streams within the Murray-Darling Basin.
<i>Nannoperca obscura</i>	Yarra Pygmy Perch	VU	vu	L	1872		Lakes, pools and slow-flowing streams with abundant aquatic vegetation.
<i>Paralucia pyrodiscus lucida</i>	Eltham Copper	EN	en	L		PMST	Drier sclerophyll forests and woodlands supporting Sweet Bursaria, especially along

<i>Synemon plana</i>	Golden Sun Moth	CR	cr	L		PMST	ridgelines. Natural temperate grassland, grassy woodland and pasture supporting spear grasses and wallaby grasses and exotic grassland dominated by Chilean needle grass.
<b>State significance</b>							
<i>Lewinia pectoralis</i>	Lewin's Rail		vu	L	2009		Swamps, dense riparian vegetation and saltmarsh.
<i>Porzana pusilla</i>	Baillon's Crake		vu	L	2011		Well-vegetated permanent and temporary fresh and brackish wetlands.
<i>Hydroprogne caspia</i>	Caspian Tern		nt	L	1988		Estuaries, inlets, bays, lagoons, inland lakes, flooded pasture, sewage ponds,
<i>Egretta garzetta</i>	Little Egret		en	L	2009		Swamps, billabongs, floodplain pools, mudflats, mangroves and channels; breeds in trees standing in water.
<i>Ardea intermedia</i>	Intermediate Egret		en	L	2011		Densely-vegetated freshwater wetlands including lakes, swamps and billabongs. Breeds in trees standing in water.
<i>Ardea modesta</i>	Eastern Great Egret		vu	L	2014		Flooded crops, pasture, swamps, lagoons, saltmarsh, sewage ponds, estuaries, dams, roadside ditches. Breeds in trees standing in water.
<i>Anseranas semipalmata</i>	Magpie Goose		nt	L	1999		Swamps, lakes, sewage ponds, flooded pasture, dams.
<i>Oxyura australis</i>	Blue-billed Duck		en	L	2011		Open or densely vegetated wetlands.
<i>Accipiter novaehollandiae</i>	Grey Goshawk		vu	L	2010		Rainforest, gallery forest, tall wet forest and woodland. Also partially cleared agricultural land.
<i>Ninox connivens</i>	Barking Owl		en	L	1990		Eucalypt forests and woodlands.
<i>Ninox strenua</i>	Powerful Owl		vu	L	2011		Eucalypt forests and woodlands, well-treed urban areas
<i>Lophochroa leadbeateri</i>	Major Mitchell's Cockatoo		vu	L	2008		Mallee, mulga, treed farmland, cereal crops and callitris woodland.
<i>Miniopterus schreibersii</i> GROUP	Common Bent-wing Bat			L	1966		A variety of treed and treeless habitats. Roosts in caves and man-made structures.
<i>Pseudophryne bibronii</i>	Brown Toadlet		en	L	2005		A wide variety of woodland, forest and grassland habitats.
<i>Neochanna cleaveri</i>	Australian Mudfish		cr	L	1991		Freshwater habitats with abundant aquatic

							vegetation such as streams, backwaters, billabongs and floodplain wetlands.
<i>Tandanus tandanus</i>	Freshwater Catfish		en	L	2000		Rivers, creeks and billabongs of the Murray-Darling river system.

## A2.4 Migratory species (EPBC Act listed)

**Table A2.4 Migratory fauna species recorded or predicted to occur within 5 km of the study area**

Scientific name	Common name	Most recent record
<i>Ardenna tenuirostris</i>	Short-tailed Shearwater	2004
<i>Hydroprogne caspia</i>	Caspian Tern	1988
<i>Charadrius bicinctus</i>	Double-banded Plover	1899
<i>Numenius madagascariensis</i>	Eastern Curlew	PMST
<i>Actitis hypoleucos</i>	Common Sandpiper	2007
<i>Tringa nebularia</i>	Common Greenshank	PMST
<i>Calidris ferruginea</i>	Curlew Sandpiper	2011
<i>Gallinago hardwickii</i>	Latham's Snipe	2009
<i>Ardea modesta</i>	Eastern Great Egret	2014
<i>Pandion cristatus</i>	Eastern Osprey	PMST
<i>Hirundapus caudacutus</i>	White-throated Needletail	2007
<i>Apus pacificus</i>	Fork-tailed Swift	1994
<i>Rhipidura rufifrons</i>	Rufous Fantail	2014
<i>Myiagra cyanoleuca</i>	Satin Flycatcher	2010
<i>Monarcha melanopsis</i>	Black-faced Monarch	2010
<i>Acrocephalus stentoreus</i>	Clamorous Reed Warbler	2009
<i>Motacilla flava</i>	Yellow Wagtail	PMST
<i>Sterna hirundo</i>	Common Tern	1987
<i>Ardea ibis</i>	Cattle Egret	2009