# Elwood Foreshore Biodiversity Constraints Assessment

# **Port Phillip City Council**





#### **DOCUMENT TRACKING**

Project Name	Elwood Foreshore Biodiversity Constraints Assessment
Project Number	15809
Project Manager	Rani Sherriff
Prepared by	Rani Sherriff and Danielle Woodhams
Reviewed by	James Garden
Approved by	James Garden
Status	Final
Version Number	V2
Last saved on	2 September 2020

This report should be cited as 'Eco Logical Australia 2020. Elwood Foreshore Biodiversity Constraints Assessment. Prepared for Port Phillip City Council.'

#### ACKNOWLEDGEMENTS

This document has been prepared by Eco Logical Australia Pty Ltd with support from Julian Hawkins.

#### Disclaimer

This document may only be used for the purpose for which it was commissioned and in accordance with the contract between Eco Logical Australia Pty Ltd and Port Phillip City Council. The scope of services was defined in consultation with Port Phillip City Council, by time and budgetary constraints imposed by the client, and the availability of reports and other data on the subject area. Changes to available information, legislation and schedules are made on an ongoing basis and readers should obtain up to date information. Eco Logical Australia Pty Ltd accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report and its supporting material by any third party. Information provided is not intended to be a substitute for site specific assessment or legal advice in relation to any matter. Unauthorised use of this report in any form is prohibited.

Template 2.8.1

# Contents

1. Introduction	1
1.1 Background	1
1.2 Study area	1
2 Methods	3
2.1 Desktop review	
2.2 Field survey	
2.3 Likelihood of occurrence	
2.4 Potential implications	
2.5 Study limitations	4
3. Results	4
3.1 Local and regional setting	4
3.2 Vegetation and habitat	4
3.3 Significant Ecological Values	8
3.3.1 Native vegetation	8
3.3.2 Significant species	8
3.3.3 Threatened ecological communities	9
3.3.4 Weeds	9
4. Recommendations	10
4.1 Project description	10
4.2 Potential impacts	
4.3 Implications	10
5. Next steps	
6. References	
Appendix A Observed species	15
A1 Key	
A2 Fauna	
A3 Flora	

# List of Figures

Figure 1: Location of study area	2
Figure 2: Ecological values	7

## List of Tables

Table 1. Land administration details for study area.	.1
Table 2. Significant species present or likely to occur within the study area	.8
Table 3. Potential ecological impacts and design recommendations of the proposed project	10

## 1. Introduction

### 1.1 Background

Eco Logical Australia (ELA) has been engaged by the Port Phillip City Council to undertake an ecological constraints assessment of the Elwood coastal foreshore precinct, Victoria. The purpose of this assessment is to inform master planning and understand development opportunities, constraints and implications arising from the site's ecological values, and determine further investigations and approvals necessary to accomplish development objectives. Design recommendations and management measures, aimed at avoiding and minimising potential impacts, have been provided based on the values identified.

### 1.2 Study area

The study area is located at Elwood coastal foreshore precinct in the bayside suburb of Elwood, Victoria (Figure 1) and is based on information provided by Port Phillip City Council. Land administration details for the study area are provided in Table 1.

Study Site			
Location	Elwood coastal foreshore		
Proposed works	Coastal foreshore precinct master plan		
Current Zones	Public Park and Recreation (PPRZ)		
Overlays	No ecological overlays		
Bushfire	No		
Local council	City of Port Phillip		
Bioregion	Gippsland Plain		
Catchment	Port Phillip and Westernport		
Area	Approximately 18 hectares		

#### Table 1. Land administration details for study area.

Figure 1. Location of study area

#### Elwood foreshore ecological due diligence







Client name: Port Phillip City Council Project number: 15809 Date: 5/05/2020 Version: 1



Spatial Reference: GDA 1994 MGA Zone 55

## 2. Methods

### 2.1 Desktop review

Relevant information sources were reviewed to identify the presence or likely occurrence of biodiversity values across the study area and surrounds. This included online databases (e.g. Victorian Biodiversity Atlas, Native Vegetation Information System, Protected Matters Search Tool and VicPlan), spatial datasets (e.g. modelled vegetation and habitat extent), scientific literature, previous reports and relevant environmental legislation, regulations and policies. All searches were undertaken on an investigation area centred on the study area and covering a 5 km radius.

### 2.2 Field survey

Field surveys of the study area were undertaken by ELA ecologists on 15 and 22 April 2020. Features of ecological significance were recorded including remnant and introduced vegetation, fauna habitat and any sightings or evidence of significant species. During the surveys, a Vegetation Quality Assessment was also undertaken on any areas of remnant vegetation to enable losses to be calculated under the permitted clearing regulations should impacts be unavoidable.

### 2.3 Likelihood of occurrence

Based on the results of the desktop review and field survey, the likelihood of occurrence was determined for relevant threatened flora, fauna or communities listed under the *Flora and Fauna Guarantee Act 1988* (FFG Act) and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Species listed on the Department of Environment, Land, Water and Planning's (DELWP) advisory lists were considered where critical populations may be present.

Likelihood of occurrence is a determination of the potential for threatened species to be present and make significant use of the study area and for the potential occurrence of threatened communities. Species were ranked as having either no, low, medium, or high likelihood of occurrence, or as being present, by assessing information contained in public biological datasets (e.g. past records and species distribution models), considering species habitat requirements (including surrounding habitat connectivity) and field observations. Species ranked as medium, high or present were investigated in further detail for the possibility of targeted surveys. The determinations of a species likelihood provided are not absolute; rather, they represent a species' potential to occur in the study area.

## 2.4 Potential implications

A review of potential implications has been undertaken based on preliminary advice regarding the nature and extent of the project works. This includes consideration of approval requirements under the *Planning and Environment Act 1987* (including Clauses under the state and local planning schemes associated with biodiversity, native vegetation and overlays), FFG Act, EPBC Act and other legislation where applicable.

#### 2.5 Study limitations

A common limitation of ecological surveys is the short duration and lack of sampling across seasons. The field assessment was undertaken during autumn, which is generally considered the sub-optimal time for observing many flowering species. The survey timing may be also insufficient for detecting migratory or cryptic species. As such, a conservative approach has been taken with the determination based on the suitability of the habitat and recent records on or near the study area.

## 3. Results

#### 3.1 Local and regional setting

The study area is located on the Elwood Foreshore in the inner-city bayside suburb of Elwood, approximately nine kilometres south of Melbourne's CBD and within the Gippsland Plain bioregion. Elwood foreshore forms part of the eastern coastline of Port Phillip Bay and is bound by the bayside suburbs of St Kilda to the north, Brighton to the south and the inner-city suburbs of Elsternwick, Ripponlea and Balaclava to the west. Forming the shape of a horseshoe, Port Phillip Bay coastline extends from Point Lonsdale on the Bellarine Peninsula near Gelong, to Point Nepean on the Mornington Peninsula and is Victoria's largest embayment and Australia's busiest container port, measuring almost 2,000 square kilometres. It is also known for its ecological and recreational importance.

#### 3.2 Vegetation and habitat

The Department of Environment, Land, Water and Planning's (DELWP) pre-1750 Ecological Vegetation Class (EVC) modelling indicates the study area would have once supported Coast Banksia Woodland (EVC 2), Coastal Dune Scrub (EVC 160) and Damp Sands Herb-rich Woodland (EVC 3). A large portion of land to the west of the study area would have been dominated by Grassy Woodland (EVC 175) with scattered patches of Heathy Woodland (EVC 48), Sand Heathland (EVC 6) and Sedgy Swamp Woodland (707). To the north, small patches of Brackish Wetland (EVC 656) were present.

#### Flora

Based on the field survey, native vegetation within the study area comprised a remnant patch of modified Coastal Dune Scrub (EVC 160) at the north-west end of the study area, which was dominated by a diverse closed shrub layer with occasional emergent trees (Plates 1 and 2; Figure 2). The shrub layer was dominated by Coast Tea-tree *Leptospermum laevigatum* and Coast Wattle *Acacia longifolia* subsp. *sophorae*, with low shrubs of Coast Daisy-Bush *Olearia axillaris*, and Twiggy Daisy-bush *Olearia ramulosa var. ramulosa* abundant. Emergent Coast Manna Gum *Eucalyptus viminalis* subsp. *pryoriana*, Coast Banksia *Banksia integrifolia* subsp. *integrifolia* and Drooping Sheoak *Allocasuarina verticillata* were present, more commonly to the north towards the road. The ground layer was in places smothered by abundant scrambling shrubs and herbs, including Seaberry Saltbush *Rhagodia candolleana* subsp. *candolleana*, Bower Spinach *Tetragonia implexicoma* and Climbing Lignum *Muehlenbeckia australis*. Native and introduced grasses and herbs were present the ground layer, including Coast Tussock Grass *Poa poiformis*, Small-flower Flax-lily *Dianella brevicaulis*, Wallaby Grass *Rytidosperma spp.*, Couch *Cynodon dactylon* and the introduced Cape Weed *Arctotheca calendula*.

Vegetation over the remainder of the study area is comprised of:

- several remnant Coast Banksia *Banksia integrifolia* subsp. *integrifolia* located behind Elwood Sailing Club and bordering the tennis courts.
- small planted native trees, including Coast Banksia and Sheoak, throughout the carpark areas and along the perimeter of open grassed areas, some of which supported a grassy understorey of introduced species and indigenous Seaberry Saltbush and Bower Spinach (Plate 3).
- garden beds supporting a diversity of native coastal vegetation in the understorey (Plate 4 and 5), including Coast Saltbush *Atriplex cinerea*, Coast Tussock Grass, Small-flower Flax-lily and a single Giant Honey Myrtle *Melaleuca armillaris*.
- managed recreational areas containing introduced lawns interspersed with small, medium and large planted trees, such as Norfolk Island Pine Araucaria heterophylla, Coast Banksia, Drooping Sheoak, Norfolk Island Hibiscus Lagunaria Patersonia, Southern Mahogany Eucalyptus botryiodes and Yellow Gum Eucalyptus Leucoxylon (Plate 6).

#### Fauna

The main fauna habitat within the study area comprised the large patch of modified Coastal Dune Scrub which covers most of the northern half of the study area, and scattered remnant and planted trees and shrubs including large Coast Banksia throughout the carpark and the along perimeter of Elwood Park (Plates 1 - 4, Figure 2). Small thin branches primarily from shrubs make up the coarse woody debris in the ground layer mixed with leaf litter approximately 1 cm in depth. Directly adjacent to the east of the study area is the coastline of Port Phillip Bay, comprising of sand extending from the walking path to the sea and a mix of rocks and scattered shrubs along the Elwood boat ramp (Figure 2).

At the southern end of study area in Head Street Reserve, fauna habitat is primarily planted trees and shrubs, with some planted Eucalyptus potentially providing foraging opportunities for urban-tolerant birds and mammals (Figure 2). Habitat surrounding the ovals is limited to native garden beds, some containing mature Eucalyptus and Banksia trees.

Overall, the study area provides some limited habitat for small common reptiles and urban-tolerant birds and mammals. All flora and fauna species observed during the field survey are listed in Appendix A.



Plate 1. Coastal Dune Scrub EVC 160



Plate 2. Coastal Dune Scrub EVC 160



Plate 3. Planted Banksia trees in carpark area



Plate 5. DELWP Advisory listed Giant Honey Myrtle



Plate 4. Planted native garden beds



Plate 6. Large planted Eucalyptus botyroides tree







Client name: Port Phillip City Council Project number: 15809 Date: 5/05/2020 Version: 1



Spatial Reference: GDA 1994 MGA Zone 55

## 3.3 Significant Ecological Values

#### 3.3.1 Native vegetation

The field survey identified one 2-hectare patch of remnant Coastal Dune Scrub (EVC 160) within the study area. This patch was located in the north-west corner of the study area (Figure 2).

This patch was assessed to be of moderate quality with a VQA (Vegetation Quality Assessment) condition score of 0.47 out of 1.0. The patch is a modified example of this EVC and was likely once a combination of Coastal Dune Scrub (EVC 160) and Coast Banksia Woodland (EVC 2), as emergent trees were present particularly along the roadside. The history of disturbance and management makes it difficult to interpret a distinction between these two EVCs. The patch had a high diversity of indigenous coastal species, which have been introduced or maintained by infill plantings.

In addition, four large and one small remnant scattered Coast Banksia *Banksia integrifolia* subsp. *integrifolia* trees were identified (Figure 2).

#### 3.3.2 Significant species

The likelihood of occurrence assessment identified 98 national or state significant species (74 fauna and 25 flora) considered likely to occur within a 5 km radius of the study area. Considering the presence of existing records, habitat requirements and known information about the study area and surrounding landscape, six significant species were determined as being present or likely to occur within the study area (Table 2). All other species were considered unlikely to occur within the study area, based on nearby records, lack of suitable habitat, lack of connectivity with other native vegetation, and the level of disturbance within and near the study area.

Four flora species or genera protected under the *Flora and Fauna Guarantee Act 1988* (FFG Act) were recorded within the study area (Appendix A).

Common Name	Species Name	Status	Likelihood of occurrence	Location of Habitat	Use of study area
Grey-headed Flying-fox	Pteropus poliocephalus	EPBC Act	Moderate	Banksia and Eucalypt trees	Foraging
White-throated Needletail	Hirundapus caudacutus	EPBC Act – Migratory/Marine	Moderate	Primarily an aerial species, it may occasionally roost in trees or on land	Foraging above the canopy line
Fork-tailed Swift	Apus pacificus	EPBC Act – Migratory/Marine	Moderate	Primarily an aerial species, it may occasionally roost in trees	Foraging above the canopy line
Black Falcon	Falco subniger	DELWP advisory List	Moderate	Whole study area	Foraging
Giant Honey Myrtle	Melaleuca armillaris subsp. armillaris	DELWP advisory List	Present	Garden bed in Head Street Reserve	Growth and reproduction

#### Table 2. Significant species present or likely to occur within the study area

Common Name	Species Name	Status	Likelihood of occurrence	Location of Habitat	Use of study area
Marsh Saltbush	Atriplex paludosa ssp. paludosa	DELWP advisory List	Present	Within areas of remnant vegetation	Growth and reproduction

#### Flora

Two DELWP advisory listed flora species, Marsh Saltbush *Atriplex paludosa* ssp. *paludosa* and Giant Honey Myrtle *Melaleuca armillaris subsp. armillaris* were recorded within the study area (Plate 5). Marsh Saltbush was recorded throughout the northern half of study area and a single Giant Honey Myrtle was recorded in Head Street Reserve. While both are rare in the state, they are locally common where found in coastal environments and have been widely planted in the coastal areas of Melbourne during revegetation projects.

No other listed flora species were considered likely to occur within the study area. While the patch within the study area is likely remnant in origin, it has experienced ongoing and significant disturbance, with multiple access tracks, dumping and evidence of camping present along with investment in management and revegetation. The patch has no connectivity with other high-quality coastal native vegetation in the local vicinity for rare and threatened species to have been able to sustain a viable outbreeding population.

#### Fauna

Three EPBC Act and one DELWP advisory listed fauna species are considered likely to occur within the study area. Both White-throated Needletail *Hirundapus caudacutus* and Fork-tailed Swift *Apus pacificus* (EPBC Act – marine/migratory) are primarily aerial birds which forage above the canopy and infrequently utilise terrestrial habitat. Therefore, they are unlikely to make significant use of the study area. Flowering Banksia and Eucalyptus trees within the study area may provide suitable foraging habitat for Grey-headed Flying-fox *Pteropus poliocephalus* (EPBC Act) and Black Falcon *Falco subniger* (DELWP Advisory list) may use the study area to forage for prey such as birds and small mammals as part of a broader foraging area. Both species are highly mobile and known to forage over large distances (DAWE 2010, Menkhorst and Knight 2011). It is unlikely that potential habitat within the study area represents a significant foraging resource for these species.

#### 3.3.3 Threatened ecological communities

The desktop review identified the following threatened communities with a natural or modelled distribution covering the project area:

- Natural Damp Grassland of the Victorian Coastal Plains (EPBC Act: Critically Endangered),
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (EPBC Act: Critically Endangered).

Both threatened communities were considered unlikely to be present due to no equivalent ecological vegetation class or comparable floristic compositions being present within the study area.

#### 3.3.4 Weeds

The field assessment identified the presence of several high-threat weeds within the study area, however no noxious weeds were recorded (Appendix A). High-threat weeds of note included Flatweed *Hypochaeris radicata*, Cape weed *Arctotheca calendula* and Annual Veldt-grass *Ehrharta longiflora*.

Several individuals of the introduced species New Zealand Christmas Tree *Metrosideros excelsa* were recorded; while the plant is not currently a threat, it is a woody weed and may represent an emerging issue for the study area.

## 4. Recommendations

#### 4.1 Project description

Port Phillip City Council commissioned an assessment of ecological constraints along the Elwood Foreshore (study area) to inform master planning and understand development opportunities, constraints and implications arising from the site's ecological values, and determine further investigations and approvals necessary to accomplish development objectives.

#### 4.2 Potential impacts

Potential impacts to ecological values are informed by relevant standards, policies and guidelines, such as the *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017) and *AS 4970-2009 Protection of trees on development sites* (Standards Australia Limited, 2009), and considers the significance of the value being impacted and the spatial and temporal extent of the impact.

#### 4.3 Implications

The potential impacts and design recommendations of the proposed project and associated regulatory implications are summarised by ecological value in Table 3.

Value	Risk	Potential impacts	Implications
Remnant vegetation	High	The study area supports one remnant patch of Coastal Dune Scrub (EVC 160) ( Figure 2). This EVC is listed as Depleted in the Gippsland Plain Bioregion. The study area also supports four large and one small remnant scattered trees.	<ul> <li>A planning permit is required for the removal of any native vegetation under Clause 52.17 (Native Vegetation) of the local planning scheme. Applications will need to consider measures to avoid, minimise and offset removal in accordance with the Guidelines for the removal, destruction or lopping of <i>native vegetation</i> (the Guidelines).</li> <li>Recommendations:</li> <li>Any future development should consider the location of native vegetation including associated Tree Protection Zones and avoid impacts where practical.</li> </ul>
Other vegetation	Low	Planted indigenous trees and shrubs are abundant across the study area. The planted vegetation provides habitat for common fauna species.	<ul> <li>The removal of planted native trees and shrubs is exempt under clause 52.17-7 of the provision.</li> <li>Recommendations:</li> <li>Project design to consider the location of planted and naturalised vegetation, with an aim to avoid continuous patches and mature trees where possible due to high habitat and amenity values.</li> </ul>

Table 3. Potential ecological impacts and design recommendations of the proposed project

Value	Risk	Potential impacts	Implications
Significant species	Low	Potential suitable habitat was identified within the study area for three EPBC Act listed fauna species and one DELWP Advisory listed fauna species. These four species are highly mobile and forage over large distances and the study area is unlikely to represent critical habitat. Two DELWP listed flora species were recorded within the study area, Marsh Saltbush and Giant Honey Myrtle. Four common flora species protected under the FFG Act were recorded.	<ul> <li>Removal of vegetation and associated habitat is unlikely to represent a significant impact on any significant species. As a result, no further implications are considered likely.</li> <li>As the study area is on public land, a Protected Flora Licence under the FFG Act must be obtained for any impacts to protected species associated with removal of native vegetation. The licence is issued by the regional DELWP office.</li> <li>Recommendations:</li> <li>Project design should consider avoiding the removal for native vegetation which may provide potential habitat for listed fauna species.</li> </ul>
Significant communities	Low	The study area does not support any State or nationally significant ecological communities.	None.
Other habitat	Low	Potential habitat for a number of State listed waterbirds is adjacent to the study area along the coastline.	<ul> <li>Recommendations:</li> <li>Design and planning should ensure all direct and indirect impacts to beach areas are avoided.</li> </ul>
Weeds	Low	The study area had several high-risk weeds, all of which are relatively common in Victoria. No noxious weeds were recorded.	<ul> <li>Ensure all reasonable steps are undertaken to prevent the growth and spread of regionally controlled weeds in accordance with the requirements of the <i>Catchment and Land Protection Act 1994</i> (CaLP Act). This could include:</li> <li>Ensure all machinery and equipment entering or leaving construction areas is clean and free of propagative material.</li> <li>Ensure soil or fill imported into the construction area is free of propagative material.</li> </ul>

## 5. Next steps

Multiple ecological values have been identified within the study area. In accordance with their significance under national and state legislation, we recommend that avoidance of these ecological values be prioritised as follows:

- One remnant patch of Coastal Dune Scrub (EVC 160) and four large and one remnant scattered Banksia trees. If impacted, a planning permit will be required for the removal of any native vegetation under Clause 52.17 (Native Vegetation) of the local planning scheme. The permit application will need to show consideration of Victoria's Native Vegetation Removal Regulations, including the requirement to avoid and minimise impacts prior to offsets being considered.
- Where possible, retain planted native vegetation to provide habitat for common fauna. In order of priority, this should include eucalyptus species (as shown on Figure 2), mature trees and shrubs, and continuous native garden beds.
- Potential habitat was identified for a few State listed waterbirds outside of the study area along the coastline. Project design should consider limiting potential construction within this area to minimise any potential impacts to listed waterbirds.

Two DELWP listed flora species and four flora species protected under the *Flora and Fauna Guarantee Act 1988* (FFG Act) were also recorded within the patch of Coastal Dune Scrub. A Protected Flora Licence must be obtained for any impacts to protected species associated with removal of native vegetation on public land. The licence is issued by the regional DELWP office. There are no implications for the protection of DELWP listed species.

We note that, White-throated Needletail and Fork-tailed Swift (EPBC Act – marine/migratory) are primarily aerial birds which forage above the canopy and infrequently utilise terrestrial habitat. Therefore, they are unlikely to make significant use of the study area and have a low likelihood of being impacted by any future works, therefore they do not require any additional consideration for planning.

Where avoidance is not possible, the following additional assessments and approvals may be required. These can be undertaken as part of an 'ecological impact assessment' designed to support approval applications.

## 6. References

Bull, M., & Stolfo, G. 2014. *Flora of Melbourne: a guide to the indigenous plants of the Greater Melbourne area* (4. enlarged, fully rev. ed). Carlton: Hyland House Publ.

Department of Agriculture, Water and the Environment 2010. 2010 NOMINATION – Falco subniger <u>https://www.environment.gov.au/system/files/pages/a7465fc2-2fa1-4de4-b562-</u> <u>4eb56012296d/files/nomination-falco-subniger.pdf</u>

Department of Agriculture, Water and the Environment 2020, 'Species Profiles and Threats Database (SPRAT) - Apus pacificus — Fork-tailed Swift'. Available: http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl.

Department of the Environment and Energy 2018. *Protected Matters Search Tool.* Available: http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf

Department of Environment Land Water and Planning 2017. *Port Phillip Bay Environmental Management Plan 2017–2027*. Available:

https://www.marineandcoasts.vic.gov.au/\_\_data/assets/pdf\_file/0024/88710/PPB-EMP-2017-Main-Doc.pdf

Department of Environment Land Water and Planning 2017. *Planning Advisory List of Threatened Plant in Victoria*.

Department of Environment Land Water and Planning 2017. *Guidelines for the removal, destruction or lopping of native vegetation*.

Department of Environment Land Water and Planning 2018. *Victorian Biodiversity Atlas*. Available: https://vba.dse.vic.gov.au/vba/index.jsp

Department of Environment Land Water and Planning 2020 *Nature Kit.* Available: http://maps.biodiversity.vic.gov.au/viewer/?viewer=NatureKit

Department of Environment and Primary Industries 2013. *Biodiversity Assessment Guidelines: Permitted clearing of native vegetation.* 

Department of Environment and Primary Industries 2014. Advisory List of Threatened Plant in Victoria.

Department of Sustainability and Environment 2009. Advisory List of Threatened Invertebrate Fauna in Victoria.

Department of Sustainability and Environment 2013. Advisory List of Threatened Vertebrate Fauna.

Menkhorst, P. and Knight, F. 2011. A field Guide to the Mammals of Australia. Oxford University Press.

Practical Ecology 2015. *Foreshore and Hinterland Vegetation Management Plan – City of Port Phillip.* Prepared for City of Port Phillip.

Richardson, F. 2006. *Weeds of the south-east: an identification guide for Australia*. Meredith Vic.: R.G. and F.J. Richardson.

Royal Botanic Gardens Victoria. 2015. *Vicflora: Flora of Victoria*. Available: https://vicflora.rbg.vic.gov.au/

Standards Limited 2009. Protection of trees on development sites (AS4970).

Visualising Victoria's Biodiversity. [Online Resource]. Available: http://www.vvb.org.au/vvb\_map.php#

Tzaros, C. 2005. Wildlife of the Box-Ironbark Country. CSIRO Publishing. Page 102.

# Appendix A Observed species

## A1 Key

Origin	Status
* - Introduced	EPBC – listed under EPBC Act
N - Naturalised	EPBC Mi- migratory species listed under EPBC Act
In – Indigenous	EPBC Ma - marine species listed under EPBC Act
Pl – Planted	FFG L – Listed under FFG Act
	FFG P – Protected under the FFG Act
	DELWP – Listed on the DELWP Advisory lists
	Noxious – Listed as a noxious weed
	H/T – Considered a high threat weed in the context of the site

## A2 Fauna

Common name	Species name	Origin <sup>1</sup>	Status <sup>2</sup>
Australian Magpie	Cracticus tibicen	In	
Brown Thornbill	Acanthiza pusilla	In	
Common Blackbird	Turdus merula	*	
Common Myna	Acridotheres tristis	*	
Feral Pigeon	Columba livia domestica	*	
Little Wattlebird	Anthochaera chrysoptera	In	
Magpie Lark	Grallina cyanoleuca	In	
Noisy Minor	Manorina melanocephala	In	
Rainbow Lorikeet	Trichoglossus moluccanus	In	
Red Wattlebird	Anthochaera carunculata	In	
Silver Gull	Chroicocephalus novaehollandiae	In	
Sulphur Crested Cockatoo	Cacatua galerita	In	
Turtle Dove	Streptopelia turtur	*	

## A3 Flora

Common name	Species name	<b>O</b> rigin <sup>1</sup>	Status <sup>2</sup>
Annual Veldt-grass	Ehrharta longiflora	*	H/T
Austral Stork's-bill	Pelargonium australe	In	
Australian Salt-grass	Distichlis distichophylla	In	
Bastard's Fumitory	Fumaria bastardii	*	
Black Wattle	Acacia mearnsii	In	FFG P
Black-anther Flax-lily	Dianella revoluta s.l.	In	

Common name	Species name	Origin <sup>1</sup>	Status <sup>2</sup>
Bower Spinach	Tetragonia implexicoma	In	
Broad-leaf Privet	Ligustrum lucidum	*	
Cape weed	Arctotheca calendula	*	H/T
Climbing Lignum	Muehlenbeckia australis	In	
Coast Banksia	Banksia integrifolia subsp. integrifolia	In	
Coast Daisy-Bush	Olearia axillaris	In	
Coast Manna-gum	Eucalyptus viminalis subsp. pryoriana	In	
Coast Pomaderris	Pomaderris paniculosa subsp. paralia	In	
Coast Saltbush	Atriplex cinerea	In	
Coast Tea-tree	Leptospermum laevigatum	In	
Coast Tussock-grass	Poa poiformis	In	
Coast Wattle	Acacia longifolia subsp. sophorae	In	FFG P
Common Boobialla	Myoporum insulare	In	
Common Correa	Correa reflexa var. reflexa	In	FFG P
Common Everlasting	Chrysocephalum apiculatum	In	
Cushion Bush	Leucophyta brownii	In	
Couch	Cynodon dactylon	In	
Drooping Sheoak	Allocasuarina verticillata	In	
Flatweed	Hypochaeris radicata	*	H/T
Flax-leaf fleabane	Erigeron bonariensis	*	
Giant Honey Myrtle	Melaleuca armillaris subsp. armillaris	In	DELWP
Hare's-tail Grass	Lagurus ovatus	*	H/T
Hedge Wattle	Acacia paradoxa	In	
Hop Goodenia	Goodenia ovata	In	
Karkalla	Carpobrotus rossii	In	
Kidney-weed	Dichondra repens	In	
Kikuyu	Cenchrus clandestinus	*	
Knobby Club-sedge	Ficinia nodosa	In	
Long-hair Plume-grass	Dichelachne crinita	In	
Marsh Saltbush	Atriplex paludosa subsp. paludosa	In	DELWP
New Zealand Christmas Tree	Metrosideros excelsa	*	
Nodding Saltbush	Einadia nutans	In	
Norfolk Island Hibiscus	Lagunaria Patersonia	Pl	
Prickly Spear-grass	Austrostipa stipoides	In	
Purple Coral-pea	Hardenbergia violacea	In	

Common name	Species name	Origin <sup>1</sup>	Status <sup>2</sup>
Rat-tail Grass	Sporobolus africanus	*	
Ribwort	Plantago lanceolata	*	
Rounded Noon-flower	Disphyma crassifolium subsp. clavellatum	In	
Ruby Saltbush	Enchylaena tomentosa	In	
Seaberry Saltbush	Rhagodia candolleana subsp. candolleana	In	
Slender Velvet-bush	Lasiopetalum baueri	In	
Small-flower Flax-lily	Dianella brevicaulis	In	
Small-flower Mallow	Malva parviflora	*	
Small-leaved Clematis	Clematis microphylla s.s.	In	
Southern Mahogany	Eucalyptus botryoides	In	
Spiny-headed Mat-rush	Lomandra longifolia	In	
Swamp Paperbark	Melaleuca ericifolia	In	
Twiggy Daisy-bush	Olearia ramulosa var. ramulosa	In	
Wallaby Grass	Rytidosperma spp.	In	
White Correa	Correa alba	In	FFG P
Yellow Gum	Eucalyptus leucoxylon	In	





• 1300 646 131 www.ecoaus.com.au