



**ÖKOLOGIE** CONSULTING

# **Flora and Fauna Assessment**

**38-42 Mainsail Drive, St Leonards**

**Prepared for:  
Barwon Water**



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## Document Information

Flora and Fauna Assessment  
38-42 Mainsail Drive, St Leonards

Report prepared by Okologie Consulting for Barwon Water

Okologie Consulting  
24 Swamp Gum Drive  
Torquay, Victoria, 3228

ABN: 61 702 853 196  
www.okologie.com.au

## Document Control

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## Summary

Okologie Consulting was engaged by Barwon Water to undertake a flora and fauna assessment for the property at 38-42 Mainsail Drive, St Leonards, Victoria.

The site is proposed for residential subdivision and the assessment was required to ascertain the presence/absence of ecological values and inform legislative and planning requirements for future development of the site.

The site was highly modified and comprised planted native vegetation around the boundary, interspersed with exotic vegetation in cleared areas and surrounding site infrastructure. Remnant native vegetation was limited to a scattered cover (<5%) of shrubs and grasses under planted vegetation.

Forty one flora species and 20 fauna species were recorded during the field assessment, with the majority of these species common to the local area. No listed threatened flora or fauna species were recorded, and none are considered likely to occur due to the absence of suitable habitat within the site.

No matters of National Environmental Significance (i.e. species habitats and ecological communities) are likely to be impacted by future development of the site; therefore, a referral under the *Environment Protection Biodiversity Conservation Act 1999* is not required.

A permit application is required for the removal, destruction or lopping of native vegetation (i.e. scattered native shrubs and grasses) under Clause 52.17 of the Greater Geelong Planning Scheme. However, an assessment under the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* is not required, as the site does not support any remnant patches or scattered indigenous trees. A planning permit is not required to remove planted native or exotic trees on the site (if required for removal).



# 1 Introduction

## 1.1 Project Background

Okologie Consulting was engaged by Barwon Water to undertake a flora and fauna assessment for the property at 38-42 Mainsail Drive, St Leonards, Victoria.

The site is currently used as a water storage facility and is proposed for a planning scheme amendment for rezoning to General Residential Zone 2, and a planning permit application to enable a 2-3 lot residential subdivision. The flora and fauna assessment was required to ascertain the presence/absence of ecological values, and inform legislative and planning requirements for future development of the site.

## 1.2 Objectives

The objectives of the assessment were to:

- Identify and assess terrestrial ecological values (i.e. vegetation communities, flora and fauna species and associated habitats) within the site.
- Ensure ecological values are identified in the early planning phase.
- Identify environmental legislation and policy requirements.

## 1.3 Site Description

The site is located at 38-42 Mainsail Drive, St Leonards. It covers approximately 0.28 hectares and is bounded by Pearl Bay Passage to the north, Mainsail Drive to the east, Harbour Way to the south and private property to the west (Figure 1). The site topography was relatively flat, with a residential development in the immediate surrounds.


The Biodiversity Interactive Map shows the site occurs within the Otway Plain bioregion, the City of Greater Geelong municipality and the Corangamite Catchment Management Authority boundary. The Native Vegetation Location Risk mapping shows the site occurs within Location A (DELWP 2015).

The site consists of two parcels (Lot Res2 PS526864), with the larger parcel zoned Public Utility Zone 1 (PUZ1), and the smaller parcel zone General Residential Zone – Schedule 2 under the Greater Geelong Planning Scheme. It is not subject to any environmental overlays (DTPLI 2015).



**Figure 1**  
*Site Location*  
 38-42 Mainsale Drv,  
 St Leonards

**Legend**

 Subject Site



0 5 10 20  
 Metres



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## 2 Methodology

### 2.1 Species Information

Scientific and common names of flora species follow the Australian Plant Census (Australian National Botanic Gardens 2012). The names of terrestrial vertebrate fauna follow the Victorian Biodiversity Atlas (VBA) (DELWP 2015b). Vegetation community names follow the Ecological Vegetation Class (EVC) bioregion benchmarks (DELWP 2015a).

Native flora and fauna species referred to as 'threatened' refers to:

- Conservation status in Australia: listed as critically endangered, endangered or vulnerable under the *Environment Protection Biodiversity Conservation Act 1999* (EPBC Act).
- Conservation status in Victoria: listed as critically endangered, endangered, vulnerable or rare on Victoria's rare or threatened flora and fauna advisory lists (DSE 2005; 2013).
- Listed as Threatened under the *Flora and Fauna Guarantee Act 1988* (FFG Act).

### 2.2 Desktop Assessment

The desktop assessment included review of relevant databases and other resources, including:

- Biodiversity Interactive Map for modelled biodiversity data (DELWP 2015a).
- The VBA for threatened flora and fauna species records (DELWP 2015b).
- The Protected Matters Search Tool (PMST) for information relating to matters of National Environmental Significance (NES) (listed species and communities) under the EPBC Act (DOE 2015).
- Planning Schemes Online for planning information (DTPLI 2015).
- Relevant environmental legislation, policies and strategies.
- Previous reports for the site.

### 2.3 Field Assessment

The field assessment was undertaken on 11 March 2015. The weather was warm and clear, with a temperature of 25°C (BOM 2015). The assessment involved traversing the entire site and surrounding areas on foot to identify ecological values. A list of all observed flora and fauna species, and associated habitats were documented during the assessment. The extent of native vegetation was mapped onto an aerial photograph and with a hand held GPS (accuracy  $\pm$  five metres), with coordinates recorded to GDA 94 (WGS 84). EVCs were determined by reference to the relevant bioregion pre-1750 and



extant EVC mapping and benchmarks descriptions (DELWP 2015a), and review of remnant vegetation in the local area. Native vegetation in the area was classified and mapped according to the definitions of the *Permitted clearing of native vegetation – Biodiversity assessment guidelines* (the Guidelines) (DEPI 2013a).

## 2.4 Biodiversity Assessment Guidelines

The Guidelines (DEPI 2013a) outline how impacts on biodiversity should be considered when assessing a permit application to remove, lop or destroy native vegetation under Clause 52.17.

The objective for permitted clearing of native vegetation is that it results in no net loss, or a neutral impact on Victoria's biodiversity. This is achieved in part by either avoiding or minimising native vegetation removal, so that all or some of the removal of native vegetation does not occur. When native vegetation removal is permitted, an offset must be secured which achieves a no net loss outcome for biodiversity. To achieve this the offset makes a contribution to Victoria's biodiversity that is equivalent to the contribution made by the native vegetation that was removed (DEPI 2013a).

Under the Guidelines native vegetation is classified as a *remnant patch* or *scattered tree*.

A remnant patch of native vegetation (measure in hectares) is either:

- An area of native vegetation<sup>1</sup>, with or without trees, where at least 25 per cent of the total perennial understorey plant cover is native plants.
- An area with three or more indigenous canopy trees where the tree canopy cover is at least 20 per cent.

Scattered tree

- An indigenous canopy tree<sup>2</sup> that does not form part of a remnant patch (DEPI 2013).

There are three risk-based pathways for assessing an application to remove native vegetation: low, medium and high. The risk-based pathway is determined by considering the extent and location risk of the vegetation to be removed (DEPI 2013a).

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<sup>1</sup> An area of native vegetation is defined as *continuous and unbroken native vegetation*. A break in remnant patch will occur where the definition of remnant patch has not been met for a continuous width of at least 10 metres (DEPI 2013a).

<sup>2</sup> DEPI also defines a scattered tree as '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' (DEPI 2013b).



## 2.5 Limitations

The preferred survey period for undertaking flora assessments in Victoria is spring, which maximises the likelihood of detecting all flora species within a site. While autumn is still considered adequate for a general flora and fauna survey, the limitations of seasonal influence on the presence/absence of flora species (particularly annuals) must be considered. The short duration of the assessment limited the opportunity to observe migratory, transitory or uncommon fauna species.

The information outlined in this report relies on the accuracy of ecological database information, GIS layers and spatial imagery available at the time of the assessment. To minimise potential errors, the most current available data was obtained from relevant sources.

The DEPI bioregion and EVC mapping are subject to inherently broad environmental and ecological parameters used in the mapping process. Where the observed EVC was not reflective of what would be expected from EVC mapping and classification, it was attributed to the most appropriate EVC based on combination of its floristic, life form and ecological characteristics, and particular environmental conditions.



## 3 Results

### 3.1 Ecological Vegetation Classes

The Biodiversity Interactive Map modelling for the Otway Plain bioregion indicates that pre-1750 EVC mapping for the site and immediate surrounds would have predominantly comprised of Plains Grassy Woodland (EVC 55). Extant (2005) EVC mapping shows no mapped vegetation within the site (DELWP 2015a).

No remnant patches or scattered indigenous trees were recorded on the site. Scattered native vegetation (i.e. grasses, shrubs) was attributed to remnants of Plains Grassy Woodland.

### 3.2 Vegetation Condition

The site was highly modified and comprised planted native vegetation around the boundary, interspersed with exotic vegetation in cleared areas and surrounding site infrastructure. Remnant native vegetation was limited to a scattered cover (<5%) of shrubs and grasses under planted vegetation. These areas have been mapped as Predominantly Introduced Vegetation (Figure 2).

Areas of planted native trees and shrubs (Plates 1 & 2) included Bushy Yate *Eucalyptus lehmannii*, Lemon Scented-gum *E. citriodora*, Bellarine Yellow-gum, *E. leucoxydon* subsp. *bellarinensis*, Giant Honey-myrtle *Melaleuca armillaris*, Moonah *M. lanceolata* and Coastal Wattle *Acacia longifolia* subsp. *sophorae*. The understorey comprised scattered (<5% cover) indigenous shrubs and grasses such as Seaberry Saltbush *Chenopodium candolleanum*, Black-anther Flax-lily *Dianella admixta*, Wattle Mat-rush *Lomandra filiformis* and Bristly Wallaby-grass *Rytidosperмум setaceum*. Exotic species included Flax-leaf Broom *Genista linifolia*, Myrtle-leaf Milkwort *Polygala myrtifolia*, Cocksfoot *Dactylis glomerata* and Kikuyu *Pennisetum clandestinum*.

The ground layer in the centre of the site was dominated by exotic grasses and herbs including Brown-top Bent *Agrostis capillaris*, Buffalo Grass *Stenotaphrum secundatum*, Parramatta grass *Sporobolus africanus*, Buck's Horn Plantain *Plantago coronopus* and Cat's Ear *Hypochoeris radicata*.

### 3.3 Flora

Forty one flora species (comprising 7 indigenous, 26 exotic and eight planted native species) were recorded during the field assessment (Appendix 2). No listed threatened flora species were recorded within the site during the field assessment.



### 3.4 Threatened Flora Species

The VBA (DELWP 2015b) contains records of three listed threatened flora species in the local area (within five kilometres of the site) including Coast Wirilda *Acacia uncifolia*, Marsh Saltbush *Atriplex paludosa* subsp. *paludosa* and Prickly Arrowgrass *Triglochin mucronata* (Appendix 3). The PMST (DOE 2015) identified three EPBC Act listed flora species or species habitats as likely to occur within the local area. No listed threatened flora species are considered likely to occur due to the absence of suitable of habitat.

### 3.5 Fauna

Twenty fauna species were recorded during the field assessment, comprising 15 native and five exotic species (all birds) (Appendix 4). No listed threatened fauna species were recorded within the site during the assessment.

Areas of planted vegetation are of low to moderate value for fauna. Planted overstorey trees provides suitable perching, roosting and foraging habitat for species typically associated with modified habitats, including Willie Wagtail *Rhipidura leucophrys*, Welcome Swallow *Petrochelidon neoxena*, New Holland Honeyeater *Phylidonyris novaehollandiae*, Eastern Spinebill *Acanthorhynchus tenuirostris* and Australian Magpie *Gymnorhina tibicen*.

### 3.6 Threatened Fauna Species

The VBA (DELWP 2015b) contains records of 33 listed threatened fauna species in the local area (Appendix 5). The PMST (DOE 2015) identified 26 EPBC Act listed fauna species (terrestrial) or species habitats as likely to occur within the local area. However, no listed threatened fauna species are considered likely to occur due to the absence of suitable habitat.

### 3.7 Significant Ecological Communities

Review of the PMST (DOE 2015) identified that four nationally listed ecological communities may occur within the local area. These communities include:

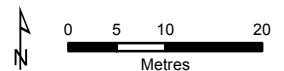
- Grassy Eucalypt Woodland of the Victorian Volcanic Plain (Critically Endangered).
- Natural Temperate Grassland of the Victorian Volcanic Plain (Critically Endangered).
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (Critically Endangered).

No listed threatened ecological communities were identified within the site or surrounding area.



**Figure 2**  
*Ecological Values*  
 38-42 Mainsale Drv,  
 St Leonards

- Legend**
- Subject Site
  - Predominantly Introduced Vegetation





## 4 Environmental Legislation and Policy Implications

### 4.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act provides a process for assessment of proposed actions that may have a significant impact on a matter of NES, which includes listed threatened species and ecological communities.

The EPBC Act affects any group or individual (including companies) whose actions are assessed for environmental impacts under the EPBC Act. An action is broadly defined under the Act, and includes 'a project, a development, an undertaking, an activity or a series of activities, or an alteration of any of these things' (Commonwealth of Australia 2009).

An action will require approval from the Commonwealth Environment Minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.

#### Implications for the Proposed Development

No EPBC Act listed threatened flora or fauna species were recorded within the site during the field survey, and none are considered likely to occur as no suitable habitat is present. Native vegetation within the site does not meet the criteria or threshold requirements for any EPBC Act listed ecological communities.

A referral to the Commonwealth Environment Minister is not required, as no matters of NES are likely to be impacted by the proposed development.

### 4.2 Flora and Fauna Guarantee Act 1988

The FFG Act is the main Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatening processes.

The FFG Act contains a list of threatened flora and fauna species and vegetation communities in accordance with Section 10 of the Act. In addition, 'Protected Flora' are species identified for protection under the Act, and includes species from three sources:

- Flora declared to be protected under section 46 of the FFG Act.
- Flora (species, subspecies or varieties) listed as threatened under section 10 the FFG Act.
- Flora belonging to communities listed as threatened under section 10 the FFG Act.



A permit is required from DSE to 'take' (kill, injure, disturb or collect) listed flora species, flora species that are members of listed communities or protected flora from public land. This includes any of the Asteraceae (Daisies), all orchids, ferns (excluding Bracken) and Acacia species (excluding *Acacia dealbata*, *Acacia decurrens*, *Acacia implexa*, *Acacia melanoxylon* and *Acacia paradoxa*).

### Implications for the Proposed Development

No listed threatened or protected flora species were recorded during the field survey. An FFG Act permit is generally not required for removal of protected flora species on private land.

### 4.3 Planning and Environment Act 1987

The purpose of the *Planning and Environment Act 1987* is to establish a framework for planning the use, development and protection of land in Victoria. Native vegetation clearance is managed under the Act and through municipal planning schemes.

Under Clause 52.17 Native Vegetation, a permit is required to remove, destroy or lop native vegetation, including dead vegetation (on a site of more than 0.4 hectares) but this does not apply if the application is exempt under the schedule to Clause 52.17.

Planning schemes may contain other provisions in relation to the removal of native vegetation. For example several environment and land management overlays include requirements to obtain a planning permit to remove, destroy or lop any vegetation that are separate to the permit requirements in Clause 52.17.

The impact on Victoria's biodiversity associated with removal of native vegetation requires consideration under the Guidelines, when applying for a permit under Clause 52.17. An application is classified under the low, medium or high risk-based pathway as defined in the Guidelines (DEPI 2013a). Each risk pathway has specific application requirements and decision guidelines that must be considered (DEPI 2013a).

Clause 66.02-2 requires that the following applications to remove native vegetation, triggered under Clause 52.17, be referred to DEPI for assessment:

- Applications in the low risk-based pathway where the native vegetation to be remove is 0.5 hectares or more;
- All applications in the moderate risk-based pathway;
- All applications in the high risk-based pathway;
- Applications where a property vegetation plan applies to the site; and,
- Applications on Crown land that is occupied or managed by the responsible authority (DEPI 2013a).

### Implications for the Proposed Development



### ***Clause 52.17 – Native Vegetation***

The site contains scattered native shrubs and grasses (<5% cover). A permit application is required for the removal, destruction or lopping of native vegetation under Clause 52.17 of the Greater Geelong planning scheme (DTPLI 2015). An assessment under the Guidelines is not required, as the site does not support any remnant patches or scattered indigenous trees.

A planning permit is not required to remove planted native or exotic trees on the site (if required for removal).

### **4.4 Catchment and Land Protection Act 1994**

The *Catchment and Land Protection Act 1994* (CaLP Act) is the main legislation covering noxious weed and pest animal management in Victoria. Under this Act species of plants and animals can be declared as noxious weeds and pest animals.

Under the CaLP Act all landowners have legal obligations regarding the management of declared noxious weeds and pest animals on their land. In relation to his or her land a landowner must take all reasonable steps to:

- Eradicate regionally prohibited weeds.
- Prevent the growth and spread of regionally controlled weeds.
- Prevent the spread of regionally controlled weeds and established pest animals on a roadside that adjoins the landowner's land (DPI 2010).

### **Implications for the Proposed Development**

The site contains two regionally controlled weed species (Flax-leaf Broom and Gorse) (Appendix 2). To meet land management requirements under the CaLP Act, land managers are required to take all reasonable steps to prevent the growth and spread of regionally controlled weeds (DPI 2010).



## 5 Conclusion

The site was highly modified and comprised planted native vegetation around the boundary, interspersed with exotic vegetation in cleared areas and surrounding site infrastructure. Remnant native vegetation was limited to a scattered cover (<5%) of shrubs and grasses under planted vegetation.

No listed threatened flora or fauna species were recorded during the field assessment, and none are considered likely to occur due to the modified condition of habitat.

No matters of National Environmental Significance (i.e. species habitats and ecological communities) are likely to be impacted by future development of the site; therefore, an EPBC Act referral is not required.

A permit application is required for the removal, destruction or lopping of native vegetation (i.e. scattered native shrubs and grasses) under Clause 52.17 of the Greater Geelong Planning Scheme. However, an assessment under the Guidelines is not required, as the site does not support any remnant patches or scattered indigenous trees. A planning permit is not required to remove planted native or exotic trees on the site (if required for removal).



## 6 Plates



Plate 1: Planted vegetation along the southern boundary



Plate 2: Planted vegetation along the northern boundary



## 7 References

Australian National Botanic Gardens 2012. Australian Plant Census.

<http://www.anbg.gov.au/cpbr/databases/apni-search-full.html>

Commonwealth of Australia 2009. *Matters of National Environmental Significance Significant impact guidelines: Environment Protection and Biodiversity Conservation Act 1999*. Commonwealth of Australia.

DEPI 2013a. *Permitted clearing of native vegetation: Biodiversity Assessment Guidelines*. Department of Environment and Primary Industries:  
<http://www.depi.vic.gov.au>

DEPI 2013b. *Permitted clearing of native vegetation - Defining and classifying native vegetation Fact sheet*. Department of Environment and Primary Industries:  
<http://www.depi.vic.gov.au>

DELWP 2015a. Biodiversity Interactive Map. Department of Environment, Land, Water and Planning: <http://www.depi.vic.gov.au>

DELWP 2015b. Victorian Biodiversity Atlas. Sourced from: VBA\_FLORA25; VBA\_FLORA100; VBA\_FAUNA25 and VBA\_FAUNA100. Department of Environment and Primary Industries: <https://vba.dse.vic.gov.au>

DOE 2014. Protected Matters Search Tool: Department of Environment  
<http://www.environment.gov.au/epbc/pmst/>

DPI 2010. Catchment and Land Protection Act 1994. Department of Primary Industries:  
<http://www.dpi.vic.gov.au>

DTPLI 2015. Planning Schemes Online: <http://planningschemes.dpcd.vic.gov.au>  
Department of Transport, Planning and Local Infrastructure.



## 8 Appendices

### Appendix 1 – Likelihood of Occurrence

One or more of the following criteria was used to establish the likelihood of occurrence for threatened flora and fauna species within the subject site:

#### High likelihood:

- Previously recorded in the site.
- Likely to visit the site during seasonal movements.
- Frequently recorded within the local area.
- Known or likely to maintain resident populations in the local area.
- Presence of preferred habitat within the site.

#### Moderate likelihood:

- May regularly move through or visit the site as a seasonal visitor.
- Previous records within the local area.
- Some characteristics of a species preferred habitat is present although in a modified condition.
- Unlikely to maintain a population within the site.

#### Low Likelihood:

- Species likely to occur as a rare or opportunistic visitor.
- Few previous records within the local area.
- Habitat within the site is highly modified and does represent the species preferred habitat.

#### Unlikely:

- No suitable habitat present on the site or in the surrounding area.
- No species records in the local area.
- Beyond the species natural distribution or considered locally extinct.



## Appendix 2 – Flora Survey Results

**Table 1: Flora species recorded during the field assessment**

Scientific Name	Common Name
<i>Acacia longifolia</i> subsp. <i>sophorae</i>	Coast Wattle#
<i>Agrostis capillaris</i>	Brown-top Bent*
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass*
<i>Arctotheca calendula</i>	Cape weed*
<i>Aster subulatus</i>	Aster-weed*
<i>Briza minor</i>	Lesser Quaking-grass*
<i>Bromus catharticus</i>	Prairie Grass*
<i>Bromus hordeaceus</i> subsp. <i>hordeaceus</i>	Soft Brome*
<i>Callistemon</i> spp.	Bottlebrush#
<i>Chenopodium candolleianum</i>	Seaberry Saltbush
<i>Cynodon dactylon</i> var. <i>dactylon</i>	Couch*
<i>Dactylis glomerata</i>	Cocksfoot*
<i>Dianella admixta</i>	Black-anther Flax-lily
<i>Ehrharta erecta</i> var. <i>erecta</i>	Panic Veldt-grass*
<i>Ehrharta longiflora</i>	Annual Veldt-grass*
<i>Eucalyptus lehmannii</i>	Bushy Yate#
<i>Eucalyptus leucoxylon</i> subsp. <i>bellarinensis</i>	Bellarine Yellow-gum#
<i>Eucalyptus citriodora</i>	Lemon Scented Gum#
<i>Eucalyptus</i> spp.	Eucalyptus#
<i>Galenia pubescens</i> var. <i>pubescens</i>	Galenia*
<i>Genista linifolia</i>	Flax-leaf Broom**
<i>Holcus lanatus</i>	Yorkshire Fog*
<i>Hypochaeris radicata</i>	Flatweed*
<i>Lagurus ovatus</i>	Hare's-tail Grass*
<i>Leptospermum laevigatum</i>	Coast Tea-tree
<i>Leucopogon parviflorus</i>	Coastal Beard-heath
<i>Lolium perenne</i>	Perennial Rye-grass*
<i>Lomandra filiformis</i>	Wattle Mat-rush
<i>Melaleuca armillaris</i>	Giant Honey-myrtle#
<i>Melaleuca lanceolata</i> subsp. <i>lanceolata</i>	Moonah#
<i>Paspalum dilatatum</i>	Caterpillar Grass*
<i>Plantago coronopus</i>	Buck's-horn Plantain*
<i>Plantago lanceolata</i>	Ribwort*
<i>Pennisetum clandestinum</i>	Kikuyu*
<i>Polygala myrtifolia</i>	Myrtle-leaf Milkwort*
<i>Rytidosperma setaceum</i>	Bristly Wallaby-grass
<i>Rytidosperma racemosum</i> var. <i>racemosum</i>	Slender Wallaby-grass
<i>Sporobolus africanus</i>	Parramatta Grass*



Scientific Name	Common Name
<i>Taraxacum officinale</i> spp. agg.	Garden Dandelion*
<i>Ulex europaeus</i>	Gorse**
<i>Vulpia bromoides</i>	Squirrel-tail Fescue*

**Notes:** \*Exotic species; \*\*Listed noxious weed; #Planted species



## Appendix 3 – Threatened Flora Records

**Table 2. Threatened flora records**

Scientific Name	Common Name	Records#	EPBC	FFG	DEPI	Likely Occurrence
<i>Atriplex paludosa</i> subsp. <i>paludosa</i>	Marsh Saltbush	3	-	-	r	U
<i>Triglochin mucronata</i>	Prickly Arrowgrass	1	-	-	r	U
<i>Acacia uncifolia</i>	Coast Wirilda	6	-	-	r	U

**Notes:** Threatened species records were sourced from the VBA (DELWP 2015b), within a 5 km radius of the site.

EPBC Act listed species (DOE 2014)

Cr Critically Endangered

En Endangered

V Vulnerable

Mm Migratory Marine

Mt Migratory Terrestrial

FFG Act listed species (DSE 2005; 2013)

L Listed as Threatened

DEPI listed species (DSE 2005; 2013):

cr Critically endangered

e Endangered

v Vulnerable

r Rare

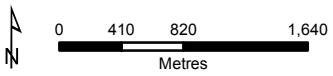
Likelihood of occurrence: H = High likelihood; M = Moderate likelihood; L = Low likelihood; U = Unlikely to occur (Appendix 1).

### Figure 3

Threatened Flora from the 5 Km VBA search  
38-42 Mainsale Drv,  
St Leonards

#### Legend

-  Subject Site
-  Coast Wirilda
-  Marsh Saltbush
-  Prickly Arrow-grass



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## Appendix 4 – Fauna Species Results

**Table 3. Recorded fauna species within the site**

Scientific Name	Common Name	Origin
<i>Acanthorhynchus tenuirostris</i>	Eastern Spinebill	
<i>Alauda arvensis</i>	European Skylark	Introduced
<i>Anthochaera carunculata</i>	Red Wattlebird	
<i>Colluricincla harmonica</i>	Grey Shrike-thrush	
<i>Corvus coronoides</i>	Australian Raven	
<i>Cracticus torquatus</i>	Grey Butcherbird	
<i>Eolophus roseicapilla</i>	Galah	
<i>Grallina cyanoleuca</i>	Magpie-lark	
<i>Gymnorhina tibicen</i>	Australian Magpie	
<i>Lichenostomus chrysops</i>	Yellow-faced Honeyeater	
<i>Malurus cyaneus</i>	Superb Fairy-wren	
<i>Passer domesticus</i>	House Sparrow	Introduced
<i>Petrochelidon neoxena</i>	Welcome Swallow	
<i>Phylidonyris novaehollandiae</i>	New Holland Honeyeater	
<i>Rhipidura albiscarpa</i>	Grey Fantail	
<i>Rhipidura leucophrys</i>	Willie Wagtail	
<i>Streptopelia chinensis</i>	Spotted Turtle-Dove	Introduced
<i>Sturnus vulgaris</i>	Common Starling	Introduced
<i>Trichoglossus haematodus</i>	Rainbow Lorikeet	
<i>Turdus merula</i>	Common Blackbird	Introduced



## Appendix 5 – Threatened Fauna Records

**Table 4. Threatened fauna records**

Scientific Name	Common Name	Status in Victoria	Records	Likely Occurrence
<i>Lewinia pectoralis pectoralis</i>	Lewin's Rail	v	1	U
<i>Porzana pusilla palustris</i>	Baillon's Crake	v	1	U
<i>Sternula albifrons sinensis</i>	Little Tern	v	6	U
<i>Sternula nereis nereis</i>	Fairy Tern	e	27	U
<i>Arenaria interpres</i>	Ruddy Turnstone	v	31	U
<i>Pluvialis squatarola</i>	Grey Plover	e	10	U
<i>Pluvialis fulva</i>	Pacific Golden Plover	v	15	U
<i>Charadrius mongolus</i>	Lesser Sand Plover	ce	8	U
<i>Charadrius leschenaultii</i>	Greater Sand Plover	ce	1	U
<i>Numenius madagascariensis</i>	Eastern Curlew	v	19	U
<i>Numenius phaeopus</i>	Whimbrel	v	2	U
<i>Tringa glareola</i>	Wood Sandpiper	v	2	U
<i>Tringa brevipes</i>	Grey-tailed Tattler	ce	1	U
<i>Tringa nebularia</i>	Common Greenshank	v	42	U
<i>Tringa stagnatilis</i>	Marsh Sandpiper	v	2	U
<i>Calidris ferruginea</i>	Curlew Sandpiper	e	40	U
<i>Calidris canutus</i>	Red Knot	e	17	U
<i>Calidris tenuirostris</i>	Great Knot	e	7	U
<i>Egretta garzetta nigripes</i>	Little Egret	e	11	U
<i>Ardea intermedia</i>	Intermediate Egret	e	1	U
<i>Ardea modesta</i>	Eastern Great Egret	v	8	U
<i>Anas rhynchos</i>	Australasian Shoveler	v	5	U
<i>Aythya australis</i>	Hardhead	v	5	U
<i>Oxyura australis</i>	Blue-billed Duck	e	2	U
<i>Biziura lobata</i>	Musk Duck	v	6	U
<i>Accipiter novaehollandiae novaehollandiae</i>	Grey Goshawk	v	1	U
<i>Haliaeetus leucogaster</i>	White-bellied Sea-Eagle	v	1	U
<i>Falco subniger</i>	Black Falcon	v	2	U
<i>Neophema chrysogaster</i>	Orange-bellied Parrot	ce	17	U
<i>Neophema elegans</i>	Elegant Parrot	v	1	U
<i>Calamanthus pyrrhopygius</i>	Chestnut-rumped Heathwren	v	1	U
<i>Chthonicola sagittatus</i>	Speckled Warbler	v	1	U
<i>Limosa limosa</i>	Black-tailed Godwit	v	5	U

**Notes:** Threatened species records were sourced from the VBA (DELWP 2015b), within a 5 km radius of the site

EPBC Act listed species (DOE 2014)

Cr Critically Endangered

En Endangered

V Vulnerable

FFG Act listed species (DSE 2005; 2013)

L Listed as Threatened

DEPI listed species (DSE 2005; 2013):

cr Critically endangered

e Endangered

v Vulnerable



Mm Migratory Marine  
Mt Migratory Terrestrial

r Rare

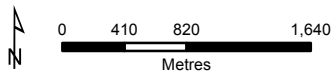
Likelihood of occurrence: H = High likelihood; M = Moderate likelihood; L = Low likelihood; U = Unlikely to occur (Appendix 1).

# Figure 4

Threatened Fauna from the  
5 Km VBA search  
38-42 Mainsale Drv,  
St Leonards

## Legend

- |                       |                       |
|-----------------------|-----------------------|
| Australasian Shoveler | Intermediate Egret    |
| Baillon's Crake       | Lesser Sand Plover    |
| Black Falcon          | Little Egret          |
| Black-tailed Godwit   | Little Tern           |
| Blue-billed Duck      | Marsh Sandpiper       |
| Common Greenshank     | Musk Duck             |
| Curlew Sandpiper      | Orange-bellied Parrot |
| Eastern Curlew        | Pacific Golden Plover |
| Elegant Parrot        | Red Knot              |
| Fairy Tern            | Ruddy Turnstone       |
| Great Knot            | Speckled Warbler      |
| Greater Sand Plover   | Whimbrel              |
| Grey Plover           | Wood Sandpiper        |
| Hardhead              | Subject Site          |



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