ecology & heritage partners

Final Report

# Biodiversity Assessment, 360-438 Point Cook Road, Point Cook, Victoria

Prepared for

**Australand Property Group**

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# GLOSSARY

| Acronym | Description |
|---|---|
| AVW | Atlas of Victorian Wildlife |
| CaLP | *Catchment and Land Protection Act 1994* |
| CEMP | Construction Environmental Management Plan |
| CMA | Catchment Management Authority |
| CMP | Conservation Management Plan |
| DEPI | Victorian Department of Environment and Primary Industries |
| DoE | Federal Department of the Environment (former Department of Sustainability, Environment, Water, Population and Communities) |
| DTPLI | Victorian Department of Transport, Planning and Local Infrastructure (former Department of Planning and Community Development) |
| EES | Environment Effects Statement |
| EPBC Act | *Environment Protection and Biodiversity Conservation Act 1999* |
| EVC | Ecological Vegetation Class |
| FFG Act | *Flora and Fauna Guarantee Act 1988* |
| FIS | Flora Information System |
| HabHa | Habitat Hectare |
| NES | National Environmental Significance |
| NVIM Tool | Native Vegetation Information Management Tool (DEPI) |
| PMST | Protected Matters Search Tool (DoE) |
| VBA | Victorian Biodiversity Atlas (DEPI) |

# SUMMARY

**Introduction**

Ecology and Heritage Partners Pty Ltd was commissioned by Australand Property Group to conduct a Biodiversity Assessment at 360-438 Point Cook Road, Point Cook, Victoria. This assessment was undertaken to identify and characterise the vegetation on-site, determine the presence (or likelihood thereof) of any significant flora and fauna species and/or ecological communities, and address any implications under Commonwealth and State environmental legislation.

**Methods**

A field assessment was undertaken on 15 and 22 July 2014 to obtain information on terrestrial flora and fauna values within the study area. A habitat hectare assessment was undertaken in conjunction with the flora survey. Vegetation within the study area was assessed according to the habitat hectare methodology, which is described in the Vegetation Quality Assessment Manual. This report has been prepared to inform the ecological implications associated with the development associated with the Precinct Structure Plan for the site.

**Results**

The majority of the study area consists of cleared agricultural land which has recently been cropped, with other introduced flora species around the edges of the study area. In the south western corner of the study area, there is a relatively large area that is likely to be seasonally inundated with water that is generally dominated by indigenous flora species.

*Flora*

Sixty-one flora species (32 indigenous and 29 non-indigenous) were recorded within the study area during the field assessment. No significant flora species were recorded during the site assessment; however there is marginal habitat within the wetland in the study area for one flora species of national (River Swamp Wallaby-grass) and several species of State conservation significance.

*Fauna*

Twenty-five (25) fauna species were recorded within the study area and immediate surrounds during the field assessment, including one mammal, 23 birds and one frog. No significant fauna species were recorded during the site assessment; however there is suitable habitat within the study area for fauna species of national (Growling Grass Frog *Litoria raniformis*), State (Magpie Goose *Anseranas semipalmata*, Eastern Great Egret *Ardea modesta*, Intermediate Egret *Ardea intermedia*, Little Egret *Egretta garzetta nigripes* and Black Falcon *Falco subniger*) conservation significance and regional (Royal Spoonbill *Platalea regia* and Latham's Snipe *Gallinago hardwickii*) conservation significance.

*Communities*

Vegetation within parts of the study area was consistent with the condition thresholds for one ecological community of national conservation significance (*Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*).

*Permitted Clearing Assessment (the Guidelines)*

Based on the location risk as shown on DEPIs Native Vegetation Information Management tool, and the extent risk thresholds summarised in Table 1, the proposal falls under the Low risk-pathway, with a total of 0.336 habitat hectares (0.483 hectares) of remnant vegetation proposed for permitted removal. An offset target of 0.150 general biodiversity equivalence units is required through the proposed removal of 0.336 habitat hectares (0.483 hectares) of native vegetation.

**Legislative and Policy Implications**

*Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act - Federal)*

There is one matter of National Environmental Significance confirmed present within the study area (Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains) and marginal habitat within the study area for one flora species (River Swamp Wallaby-grass) and one fauna species (Growling Grass Frog) listed under the EPBC Act. Based on the development plans for the site (Brown Consulting 2014), the Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains community will not be impacted, and the majority of potential habitat for significant flora and fauna will be retained. However, a referral as a non-controlled action to the Commonwealth Environment Minister is recommended to ensure compliance with the EPBC Act.

*Flora and Fauna Guarantee Act 1988 (FFG Act - Victoria)*

There is potential habitat within the study area for several species listed or protected under the FFG Act. However the study area is privately owned, as such a permit under the FFG Act is not required.

*Planning and Environment Act 1987*

A Planning Permit from Wyndham City Council is required to remove, disturb or lop any native vegetation unless exempt under Clause 52.17-7 of the Planning Scheme. Areas of remnant native vegetation, Scattered Trees and habitat for rare or threatened species must be offset if they are proposed to be disturbed as part of the project.

Provided the responsible authority applies the permit exemption described in Section 6.3.1, DEPI is unlikely to be a recommending referral authority.

*Other Legislation and Policy*

Implications relating to other local and State policy (*Wildlife Act 1975*, *Catchment and Land Protection Act 1994*, local government authorities) as well as additional studies or reporting that may be required (targeted surveys, Conservation Management Plan, Weed Management Plan, Construction Environment Managements Plan) are provided in Section 8.

**Table S1.** Application requirements for a permit to remove native vegetation (*Victoria Planning Provisions* Clause 52.17 -3; DEPI 2013a)

| No. | Application Requirement | Response |
|---|---|---|
| Application requirements for Low risk pathway applications: | | |
| 1 | The location of the site of native vegetation to be removed. | Refer to Section 1.3. |
| 2 | A description of the native vegetation to be removed, including the area of the patch of native vegetation and/or the number of any scattered trees to be removed. | Refer to Section 3. |
| 3 | Maps or plans containing information set out in the Guidelines, (Department of Environment and Primary Industries, September 2013) | Refer to Figures and BAR report when available (Appendix 4.1). |
| 4 | Recent dated photographs of the native vegetation to be removed. | Refer to Section 3. |
| - | Topographic information, highlighting ridges, crests and hilltops, streams and waterways, slopes of more than 20 percent, drainage lines, low lying areas, saline discharge areas, and areas of existing erosion. | Refer to Section 1.3. |
| 5 | The risk-based pathway of the application to remove native vegetation. | Refer to Section 4.1 |
| 6 | Where the purpose of removal, destruction or lopping of native vegetation is to create defendable space, a statement is required that explains why removal, destruction or lopping of native vegetation is necessary. The statement must have regard to other available bushfire risk mitigation measures. This requirement does not apply to the creation of defendable space in conjunction with an application under the Bushfire Management Overlay. | Not applicable. |
| 7 | A copy of any property vegetation plan that applies to the site. | Not applicable. |
| 8 | Details of any other native vegetation that was permitted to be removed on the same property with the same ownership as the native vegetation to be removed, where the removal occurred in the five year period before the application to remove native vegetation is lodged. | Not applicable. |
| 9 | The strategic biodiversity score of the native vegetation to be removed. | Refer to Section 4.1 and BAR report (Appendix 4.1). |
| 10 | The offset requirements should a permit be granted to remove native vegetation. | Refer to Section 4.1 and BAR report (Appendix 4.1). |

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# 1 INTRODUCTION

## 1.1 Background

Ecology and Heritage Partners Pty Ltd was commissioned by Australand Property Group to conduct a Biodiversity Assessment at 360-438 Point Cook Road, Point Cook, Victoria. This assessment was undertaken to inform ecological implications associated with the residential development associated with the Precinct Structure Plan (PSP) for the site.

The purpose of the assessment was to identify the extent and type of remnant native vegetation present within the study area and to determine the presence of any significant flora and fauna species and/or ecological communities. This report presents the results of the assessment and discusses the potential ecological and legislative implications. The report also provides recommendations to address or reduce impacts and, where necessary, highlights components that require further investigation.

## 1.2 Scope and Objectives

The objectives of the flora and fauna assessment were to:

- Review the relevant flora and fauna databases and available literature;
- Conduct a site assessment to identify flora and fauna values within the study area;
- Provide maps showing any areas of remnant native vegetation and locations of any significant flora and fauna species, and/or fauna habitat (if present);
- Classify any flora and fauna species and vegetation communities identified or considered likely to occur within the study area in accordance with Commonwealth and State legislation;
- Document relevant environmental legislation and policy;
- Document any opportunities and constraints associated with the proposed works; and,
- Advise whether any additional flora and/or fauna surveys are required prior to works commencing (e.g. targeted surveys for significant flora and fauna species).

Where areas of remnant vegetation were present, the following tasks were completed to address requirements under the 'Permitted clearing of native vegetation - Biodiversity assessment guidelines' (the Guidelines) (DEPI 2013a):

- Identification of the appropriate risk-based pathway;
- A habitat hectare assessment of any areas of remnant native vegetation within the study area;
- Recommendations to address requirements under the Biodiversity Assessment Guidelines to avoid and/or minimise impacts to remnant vegetation; and,
- Provision of offset targets for any native vegetation, scattered trees and habitat for rare or threatened species proposed to be lost as a result of the proposed works.

## 1.3 Study Area

The study area is located at 360-438 Point Cook Road, Point Cook, Victoria, approximately 20 kilometres southwest of Melbourne's CBD (Figure 1). The site covers approximately 43 hectares and is bound by existing residential subdivisions to the north and west, Point Cook Road to the east and farmland to the south. The topography of the study area consists of a low-lying area in the south and gentle south facing slopes in the north that slope down towards the low-lying area.

According to the Department of Environment and Primary Industries (DEPI) Biodiversity Interactive Map (DEPI 2014a), the study area occurs within the Victorian Volcanic Plain Bioregion. It is located within the jurisdiction of the Port Phillip and Westernport Catchment Management Authority (CMA) and the Wyndham City Council municipality. Section 6.3.1 discusses zoning and overlays relevant to the study area.

### 1.3.1 Site history

The majority of the site has been recently cropped, although a low-lying area in the south west of the property was excluded from the more recent cropping activity. Historically, the majority of the site had been cultivated and cropped annually between 2005 and 2011 (PKA 2012), including the opportunistic cultivation of wetland in the south west corner of the site (MWH 2009). In addition, the catchment of the wetland has been altered by drainage changes and the historic land use (cropping), which has reduced the frequency of inundation of the wetland and hence enabled it to be cultivated during drier seasons (MWH 2009).

### 1.3.2 Proposed development

Australand Property Group are proposing to develop the site for residential purposes. The latest development plan prepared by Brown Consulting (2014), is the culmination of several meetings and working group sessions with Council, DEPI, MPA, and other relevant parties over the past six months. Based upon this plan, the majority of the site, which has been cropped up until recently is proposed for development. Whereas the majority of the south western corner of the study area is dominated by native vegetation, and is proposed to be retained.

# 2 METHODS

## 2.1 Nomenclature

Common and scientific names of vascular plants follow the Victorian Biodiversity Atlas (VBA) (DEPI 2014b) and the Census of Vascular Plants of Victoria (Walsh and Stajsic 2007). Vegetation community names follow DEPI's Ecological Vegetation Classes (EVC) benchmarks (DEPI 2014c). The names of aquatic and terrestrial vertebrate and invertebrate fauna follow the VBA (DEPI 2011).

## 2.2 Desktop Assessment

Relevant literature, online-resources and numerous databases were reviewed to provide an assessment of flora and fauna values associated with the study area. The following information sources were reviewed:

- The DEPI Biodiversity Interactive Map (DEPI 2014a) for:
    - modelled data for location risk, remnant vegetation patches, scattered trees and habitat for rare or threatened species;
    - the extent of historic and current EVCs; and,
    - the location of sites of biological significance (BioSites) within the region.
- The VBA (DEPI 2014b), Flora Information System (FIS) (Viridans 2013a) and Atlas of Victorian Wildlife (AVW) (Viridans 2013b) for previously documented flora and fauna records within the project locality;
- The Federal Department of Environment (DoE) Protected Matters Search Tool (PMST) for matters of National Environmental Significance (NES) protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (DoE 2014a);
- The Victorian Department of Transport, Planning and Linear Infrastructure (former Department of Planning and Community Development) Planning Maps Online to ascertain current zoning and environmental overlays (DTPLI 2014);
- Aerial photography of the study area;
- Relevant environmental legislation and policies; and,
- Previous ecological assessments within the study area.

## 2.3 Flora Assessment

A flora assessment was undertaken on 15 and 22 July 2013 to obtain information on flora values within the study area. The study area was walked, with all observed flora species recorded, any significant records mapped and the overall condition of vegetation noted. Remnant vegetation in the local area was also investigated to assist in determining the pre-European vegetation within the study area. EVCs were determined with reference to DEPI pre-1750 and extant EVC mapping and their published descriptions (DEPI 2014c). The significance assessment criteria of taxa and vegetation communities are presented in Appendix 1.

## 2.4 Fauna Assessment

A fauna assessment was undertaken on 15 July 2013 to obtain information on terrestrial fauna values within the study area. The study area, and habitat adjacent to the study area (e.g. a created wetland in a residential subdivision to the west) was visually assessed and active searching under and around ground debris for reptiles, frogs and small mammals was undertaken. Binoculars were also used to scan the area for birds, and observers listened for calls and searched for other signs of fauna such as nests, remains of dead animals, droppings and footprints. Potential habitat for fauna was assessed, with a particular emphasis on habitats that may provide shelter, food or other resources for significant species.

## 2.5 Permitted Clearing Assessment (the Guidelines)

### 2.5.1 Risk-based Pathway

The planning system manages the impacts on biodiversity from native vegetation removal using a risk-based approach. Two factors – extent risk and location risk – are used to determine the risk associated with an application for a permit to remove native vegetation (Table 1). The extent risk is determined by the extent of native vegetation (in hectares) or the number of scattered trees that are proposed to be removed. The location risk (A, B or C) has been determined for all areas in Victoria and is available on DEPI's Native Vegetation Information Management (NVIM) Tool (DEPI 2014d). The risk-based pathway is determined by combining the extent risk and the location risk of the vegetation to be removed (Table 1). If the risk-based pathway for vegetation differs to that for scattered trees, the higher of the two must be applied.

**Table 1.** Risk-based pathways for applications to remove native vegetation (DEPI 2013a)

| Extent* | | Location | | |
|---|---|---|---|---|
| | | A | B | C |
| Native Vegetation | < 0.5 hectares | Low | Low | High |
| | ≥ 0.5 hectares and < 1 hectare | Low | Moderate | High |
| | ≥ 1 hectare | Moderate | High | High |
| Scattered Trees | < 15 scattered trees | Low | Moderate | High |
| | ≥ 15 scattered trees | Moderate | High | High |

* For the purpose of determining the risk-based pathway of an application to remove native vegetation the extent includes any other native vegetation that was permitted to be removed on the same contiguous parcel of land with the same ownership as the native

vegetation to be removed, where the removal occurred in the five year period before an application to remove native vegetation is lodged.

The *Planning and Environment Act 1987* contains several permit exemptions for vegetation removal, such as for vegetation clearing of regrowth less than 10 years of age. Relevant permit exemptions which are considered to be applicable in this case are discussed in detail in Section 6.3.

### 2.5.2 Vegetation Assessment

The 'habitat hectare' is a unit of measurement which combines the condition and extent of native vegetation. The methodology for undertaking a habitat hectare assessment is described in the Vegetation Quality Assessment Manual (DSE 2004a) and summarised in Table 2. Native vegetation is defined in the Victorian Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'. Under the Biodiversity Assessment Guidelines, native vegetation is classified into two categories, remnant patches of native vegetation and scattered trees (Table 2).

For Low Risk-based pathways, the extent (in hectares) of native vegetation is determined by a site assessment, and the condition of native vegetation is based on modelled data (although a proponent may commission on-ground assessments), available on DEPI's NVIM Tool (DEPI 2014d).

**Table 2.** Assessment of remnant native vegetation under Moderate and High Risk-based pathways (DEPI 2013a)

| Category | Definition | Extent | Condition |
|---|---|---|---|
| Remnant patch of native vegetation | An area of native vegetation where at least 25 per cent of the total perennial understorey plant cover is native plants.<br>OR<br>An area with three or more native canopy trees where the canopy foliage cover is at least 20 per cent of the area. | Measured in hectares.<br>Based on hectare area of the remnant patch. | Vegetation Quality Assessment Manual (DSE 2004a). |
| Scattered tree | A native canopy tree that does not form part of a patch. | Measured in hectares.<br>Each scattered tree is assigned an extent of 0.071 hectares (30m diameter). | Scattered trees are assigned a default condition score of 0.2. |

### 2.5.3 Avoid and Minimise

Avoid and minimise requirements are summarised in Table 3. The impact avoidance and minimisation measures are discussed in Section 7.

**Table 3.** Avoid, minimise and offset requirements

| Risk-based Pathway | Avoid | Minimise | Offset |
|---|---|---|---|
| Low | X | X | ✓ |
| Moderate | X | ✓ | ✓ |
| High | ✓* | ✓ | ✓ |

*Where native vegetation makes a significant contribution to Victoria's biodiversity

### 2.5.4 Offset

When the removal of native vegetation has a significant impact on habitat for a rare or threatened species[1], the offset must compensate for the removal of that species' habitat. Offsets are divided into two categories: General and Specific. General offsets are based on the contribution a site makes to biodiversity overall, while Specific offsets consider the contribution a site makes to the persistence of rare or threatened species.

General offsets require an offset multiplier (Risk Factor) of 1.5 with restrictions on location (same Catchment Management Authority boundary or municipal district) and biodiversity value (strategic biodiversity score at least 80% that of the vegetation to be removed). A Specific offset requires an offset multiplier of 2, with no location or biodiversity value restrictions, and must support habitat for each rare or threatened species for which an offset is required (currently designated by DEPI).

The tools used to determine offset obligations are summarised in Appendix 1.5.1, and offset site criteria are summarised in Appendix 1.5.2.

### 2.5.5 Biodiversity Assessment Report (BAR)

For Low-risk pathway applications, the offset requirements for native vegetation removal are calculated by DEPI via the on-line NVIM tool (DEPI 2014d). The resulting Biodiversity Assessment Report (BAR), based on the most recent development plan (Brown Consulting 2014) is presented in Appendix 4.

## 2.6 Assessment Qualifications and Limitations

Data and information held within the ecological databases and mapping programs reviewed in the desktop assessment (e.g. VBA, PMST, Biodiversity Interactive Maps etc.) are unlikely to represent all flora and fauna observations within, and surrounding, the study area. It is therefore important to acknowledge that a lack of documented records does not necessarily indicate that a species or community is absent, but instead may reflect a lack of survey effort.

The 'snap shot' nature of a standard flora and fauna assessment reduces the likelihood of mobile, migratory, seasonal, cryptic, nocturnal or uncommon species being detected. Generally, targeted or repeated surveys, at specific times of the year, are required to detect such species.

The ephemeral nature of wetland vegetation means that estimates of plant percentage cover change throughout the year.

Notwithstanding the above, terrestrial flora and fauna data collected during the field assessment, and information obtained from relevant sources (e.g. biological databases and relevant literature) are considered adequate to provide an accurate assessment of the ecological values within the study area.

[1] Only species listed as 'critically endangered', 'endangered', 'vulnerable' or 'rare' on DEPI's advisory lists (DSE 2005; DSE 2013) for flora and fauna are considered a rare or threatened species.

# 3 RESULTS

## 3.1 Flora and Fauna

Sixty-one flora species (32 indigenous and 29 non-indigenous) were recorded within the study area during the field assessment. A consolidated list of flora species recorded is provided in Appendix 2.1.

Twenty-five (25) fauna species were recorded within the study area and immediate surrounds during the field assessment, including one mammal, 23 birds and one frog. The majority of fauna species were recorded within a constructed wetland located adjacent to the south-west corner of the study area in an existing residential subdivision, but not within the study area. The wetland was developed in 2009/2010 and supports a diversity of emergent and submergent vegetation utilised by a variety of common waterbird species, such as Purple Swamphen *Porphyrio porphyrio* and Eurasian Coot *Fulica atra*. The waterbody is bordered by planted native trees and shrubs, which were observed to be attracting a range of urban adapted birds, including Red Wattlebird *Anthochaera carunculata* and Rainbow Lorikeet *Trichoglossus haematodus*. A consolidated list of fauna species recorded is provided in Appendix 3.1.

## 3.2 Existing Conditions

The majority of the study area consists of cleared agricultural land which has recently been cropped, with other introduced flora species around the edges of the study area. In the south western corner of the study area, there is currently a relatively large ephemeral wetland that is generally dominated by indigenous flora species, with scattered introduced flora species (Figure 2a).

The study area also supports two broad vegetation and habitat types: wetland and degraded grassland (previously cropped with Wheat *Triticum aestivum*). These are discussed in further detail below.

### 3.2.1 Wetland

#### *3.2.1.1 Vegetation Condition*

A large ephemeral wetland currently exists in the south of the study area. This wetland is dominated by several wetland EVC's, including Plains Grassy Wetland (EVC 125), Spike-sedge Wetland (EVC 819), Sweet Grass Wetland (EVC 920) and Plains Rushy Wetland (EVC 961) (Figure 2a). This is generally consistent with extant DEPI mapping which shows these areas are dominated by Plains Grassy Wetland (DEPI 2014c).

Plains Grassy Wetland (Plate 1) is a treeless, grass-dominated seasonal wetland community (DSE 2012). Within the study area, Plains Grassy Wetland existed as a wetland dominated by Brown-back Wallaby-grass *Rytidosperma duttonianum* and Poison Lobelia *Lobelia pratioides*. It contained a diversity of wetland herbs including Common Woodruff *Asperula conferta* s.l., Woodland Swamp-daisy *Brachyscome basaltica var. gracilis,* Prickfoot *Eryngium vesiculosum* and Common Nardoo *Marsilea drummondii*. Weed cover was generally low (less than 20%) and bare ground cover was high (up to 30% during autumn and 10% during winter).

Spike-sedge Wetland (Plate 2) is a sedge-dominated seasonal wetland (DSE 2012). Within the study area, Spike-sedge Wetland was dominated by Common Spike-sedge *Eleocharis acuta* with minor components of other wetland grasses including Australian Sweet Grass *Glyceria australis*, Rush *Juncus* spp. and Southern Cane-grass *Eragrostis infecunda*. Several wetland herbs such as Common Nardoo and Woodland Swamp-daisy were also present. Weed cover was very low (less than 5%).

Sweet Grass Wetland (Plate 3) is a treeless, seasonal wetland dominated by Sweet Grass *Glyceria* spp. with low species diversity (DSE 2012). Within the study area Sweet Grass Wetland was a virtual monoculture of Australian Sweet-grass with several wetland herbs such as Woodland Swamp-daisy, Common Woodruff, Common Nardoo and Prickfoot present at low abundances. Weed cover and bare ground cover were both very low (less than 1%).

Plains Rushy Wetland (Plate 4) is a Rush-dominated seasonal wetland (DSE 2012). Plains Rushy Wetland within the study area was dominated by several Rush species including Gold Rush *Juncus flavidus*, Finger Rush *J. subsecundus*, Hollow Rush *J. amabilis* and Joint-leaf Rush *Juncus holoschoenus*. Other wetland grasses such as Southern Cane-grass and Australian Sweet-grass were at low abundances, as were wetland herbs, with Woodland Swamp-daisy and Varied Raspwort the most common. Weeds and bare ground cover were of generally low abundance. It should be noted that based upon aerial photography, extensive areas of Plains Rushy Wetland have been cropped in the past, and the vegetation currently present is regrowth since the previous cropping event.

#### *3.2.1.2 Fauna Habitat*

The ephemeral wetland provides habitat for a range of urban adapted birds. During the field assessment species including Purple Swamphen and Australasian Pipit *Anthus novaeseelandiae* were observed foraging within this area. Common Froglet *Crinia signifera* was recorded calling throughout the wetland during the field assessment and these areas are likely to provide potential habitat for a range of other common frogs, including Spotted Marsh Frog *Limnodynastes tasmaniensis* and Striped Marsh Frog *Limnodynastes peronii*. The nationally significant Growling Grass Frog may also utilise this habitat (Section 3.3.2).

### 3.2.2 Exotic Grassland

#### *3.2.2.1 Vegetation Condition*

Higher elevation areas of the study area had been cropped with Wheat and contained no patches of native vegetation (Plates 5 and 6). Scattered occurrences of Wallaby-grass *Rytidosperma caespitosum* and several Drooping Cassinia *Cassinia arcuata* are present along site boundary fence lines.

#### *3.2.2.2 Fauna Habitat*

Cropped land within the study area provides little fauna habitat and is suitable for common urban-adapted native birds such as the Willie Wagtail *Rhipidura leucophrys*, Magpie-lark *Grallina cyanoleuca*, Australian Magpie *Cracticus tibicen*, and Noisy Miner *Manorina melanocephala,* and introduced birds such as the Rock Dove *Columba livia*, Spotted Dove *Spilopelia chinensis*, and Common Myna *Acridotheres tristi.*

**Plate 1.** Plains Grassy Wetland within the study area.

**Plate 2.** Spike-sedge Wetland within the study area

**Plate 3.** Sweet Grass Wetland within the study area

**Plate 4.** Plains Rushy Wetland within the study area

**Plate 5.** Exotic Grassland within the study area

**Plate 6.** Former Wheat crop within the study area

## 3.3 National Significance Assessment

National significance for flora and fauna is defined in Appendix 1.2.

### 3.3.1 Flora

No nationally significant flora species were recorded within the study area during the field assessment. The VBA and FIS contain records of 12 nationally listed flora species previously recorded within 10 kilometres of the study area (DEPI 2014b; Viridans 2013a) (Appendix 2.2; Figure 3). The PMST nominated an additional 2 nationally significant species which have not been recorded in the locality but have the potential to occur (DoE 2014a).

Of these species, there is marginal habitat within the ephemeral wetland in the study area for River Swamp Wallaby-grass *Amphibromus fluitans*.

River Swamp Wallaby-grass predominantly grows in permanent wetlands and swamps on heavy soils (NSW OEH 2013). In Victoria, it mostly occurs in the northern part of the state between Wodonga and Echuca along the Murray River, and scattered populations in the north-east. In southern Victoria, it is known from several localities in south Gippsland, as well as in the Melbourne (Lysterfield), Ballarat, and Portland–Casterton areas (TSSC 2008).

The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological communities (TSSC 2008).

Wetland flora such as River Swamp Wallaby-grass are often widely distributed due to the isolated nature of wetlands and one record from 1991 is located approximately eight kilometres to the north exists within 10 kilometres of the study area (Appendix 2; Figure 3).

The wetland vegetation within the study area is of high quality. However, as the area has been highly modified via agricultural activities (cropping) over the past 10 years (Plates 7- Plate 10), and the wetland is seasonally inundated during periods of high rainfall, rather than a permanent feature of the site, it is considered that suitable habitat for the River Swamp Wallaby-grass is marginal, and the species has a low likelihood of occurrence within the wetland in the study area.

It should be noted that the majority of areas that contain marginal habitat for River Swamp Wallaby-grass (Spike-sedge Wetland, Sweet Grass Wetland and Plains Grassy Wetland EVCs) are proposed to be retained as part of the PSP.

### 3.3.2 Fauna

No nationally significant fauna species were recorded within the study area during the field assessment. The VBA and AVW contain records of 16 nationally listed fauna species (nine birds, two mammals, one reptile, one frog, two fish and one invertebrate) previously recorded within 10 kilometres of the study area (DEPI 2014b; Viridans 2013b) (Appendix 3.2; Figure 4). The PMST nominated an additional 14 nationally significant species which have not been recorded in the locality but have the potential to occur (DoE 2014a). Owing to the inclusion of Port Phillip Bay within the database search area, a number of marine mammal species were

nominated during the desktop review and these have been discounted accordingly e.g. Southern Right Whale *Eubalaena australis*.

Of the 30 nationally significant species known or predicted to occur in the project locality, five are discussed further - Australasian Bittern *Botaurus poiciloptilus*, Orange-bellied Parrot *Neophema chrysogaster*, Australian Painted Snipe *Rostratula australis*, Growling Grass Frog *Litoria raniformis* and Golden Sun Moth *Synemon plana*. All other nominated species are unlikely to occur as there is no suitable habitat in the study area or they are presumed to be extinct in the locality (e.g. Grassland Earless Dragon *Tympanocryptis pinguicolla*). The likelihood of occurrence of each key EPBC Act listed species is discussed in the following sections.


**Plate 7.** Aerial taken 12 November 2003


**Plate 8.** Aerial taken 15 September 2005


**Plate 9.** Aerial taken 30 June 2009

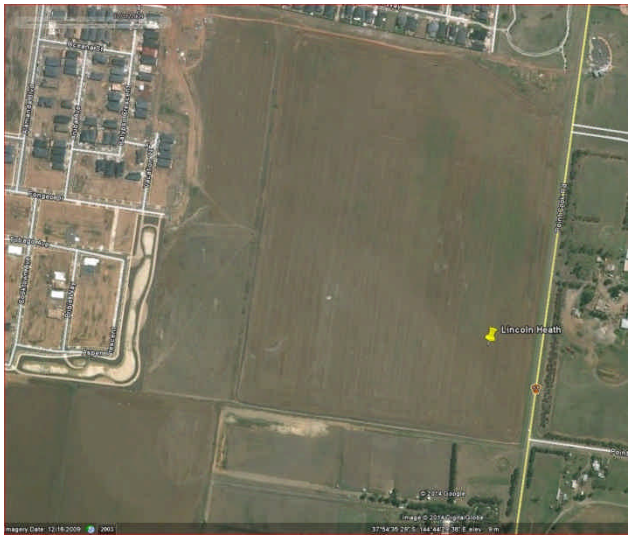


**Plate 10.** Aerial taken 16 December 2009

**Australasian Bittern**

The Australasian Bittern is listed as Endangered under the EPBC Act and has been recorded 27 times within 10 kilometres of the study area, with the closest being recorded in 1997, approximately 1.1 kilometres from the site. This species occurs in terrestrial freshwater wetlands and, rarely, estuarine habitats. It favours wetlands with tall, dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water (DoE 2014b). While wetland areas with the study area provide potential foraging habitat for this species, the habitat lacks complexity (i.e. varying water levels and reed densities) and is unlikely to support breeding activity. This species may very occasionally forage within the wetland areas; however these are not considered to constitute significant habitat in comparison to higher quality sites in the locality (e.g. RAAF Lake and Spectacle Lake).

**Orange-bellied Parrot**

The Orange-bellied Parrot is listed as Critically Endangered under the EPBC Act and has been recorded 20 times within 10 kilometres of the study area, with the closest being recorded in 1977, approximately 90 metres from the site. Within Victoria, recent data suggests that up to 70% of the known Orange-bellied Parrot population congregates at three sites in Victoria - the Western Treatment Plant at Point Wilson (mainly within the Spit Nature Conservation Reserve), Lake Connewarne, and Swan Bay. In Victoria this species mostly occurs in sheltered coastal habitats, such as bays, lagoons and estuaries. They are also found in low samphire herbland dominated by Beaded Glasswort (*Sarcocornia quinqueflora*), Sea Heath (*Frankenia pauciflora*) or Sea-blite (*Suaeda australis*), and in taller shrubland dominated by Shrubby Glasswort (*Sclerostegia arbuscula*). The species has also been occasionally recorded foraging in paddocks, golf courses and improved pasture (DoE 2014c). The wetland areas within the study area lack the preferred plant species and provide limited foraging habitat for Orange-bellied parrot. Given the extent of similar habitat in the project locality, the study area is not considered to provide significant habitat for this species, which is more likely to utilise the large tracts of saltmarsh within the locality (e.g. Cheetham Wetlands and Point Cook Coastal Park).

**Australian Painted Snipe**

The Australian Painted Snipe is listed as Vulnerable under the EPBC Act and has been recorded once within 10 kilometres of the study area, approximately 90 metres from the site. This species has been recorded at scattered locations across the state and generally inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains (DoE 2014d). Wetland habitat within the study area provides potential foraging and breeding habitat for Australian Painted Snipe, however this species is highly nomadic and habitat of similar or greater quality is dispersed throughout the surrounding landscape. Removal of this potential habitat within the study area is unlikely to significantly impact upon this species.

**Growling Grass Frog**

The Growling Grass Frog is listed as Vulnerable under the EPBC Act and has been recorded 53 times within 10 kilometres of the study area, with the closest being recorded in 1988, approximately 2.7 kilometres from the site. The Growling Grass Frog is largely associated with permanent or semi-permanent still or slow flowing waterbodies (i.e. streams, lagoons, farm dams and old quarry sites), supporting an extensive cover of emergent, submerged and floating vegetation (Robertson et al. 2002). This species is also known to inhabit temporarily inundated waterbodies for breeding purposes providing they contain water over the breeding season (Organ 2003). The Growling Grass Frog has been recorded throughout the project locality, which supports large and interconnected saline/ freshwater bodies. Although Growling Grass Frogs are unlikely to utilise highly saline wetlands, the network of freshwater sites within the locality is considered sufficient to allow frog dispersal at a landscape scale. During a recent study on Growling Grass Frog movement, an individual frog moved 427 metres from a pool on the Merri Creek to a pool on the Curley Sedge Creek in Somerton, following its inundation by heavy rainfall in February 2005 (Heard et al. 2010). Overland movements of up to 490 metres were also documented (Heard et al. 2010). Wetland areaswithin the site, generally when inundated, provide potential foraging and dispersal habitat for the Growling Grass Frog. However these are not considered to constitute significant or regular movement corridors and/or permanent habitat in comparison to higher quality sites in the locality such as RAAF Lake to the south-east, Spectacle Lake to the north-east, and Cunningham Swamp further to the south of the study area.

**Golden Sun Moth**

The Golden Sun Moth is listed as Critically Endangered under the EPBC Act and has been recorded 49 times within 10 kilometres of the study area, with the closest being recorded in 2010, approximately six kilometres from the site. Golden Sun Moth generally occurs in native grassland dominated by greater than 40% cover of wallaby grass, in particular Short Wallaby-grass *Rytidosperma carphoides* (DSE 2004b) but may also inhabit areas dominated by Kangaroo Grass (Endersby and Koehler 2006) and introduced grassland (A. Organ, pers obs.). Prior to European settlement, the Golden Sun Moth was widespread and relatively continuous throughout its range, inhabiting grassy open woodlands and grassland, although it currently inhabits small isolated sites (DSE 2004b). Small areas of Plains Grassy Wetland EVC, within the larger ephemeral wetland, within the study area are dominated by Brown-back Wallaby-grass; however the Golden Sun Moth species is not considered to occur on-site, as larvae would not survive periodical inundation.

### 3.3.3 Communities

One nationally listed ecological community was recorded within the study area (*Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*) (Figure 2a). This community is listed as Critically Endangered and occurs in the south of the study area. The total area of *Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains* within the study area is 3.16 hectares. The following details the criteria for the classification of *Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*.

Key Diagnostic Characteristics:

- Limited to the temperate zone of mainland south-eastern Australia.

- On flat plains grading into slopes, 500 m asl.
- Associated soils are generally fertile but poorly draining clays.
- In rainfall zones with a winter seasonal rainfall pattern, mean annual rainfall usually 400 to 800 mm/year.
- On isolated drainage lines or depressions which are seasonally inundated during winter-spring and subsequently dry by late summer.
- Rainfall is the main water source.
- Salinity is fresh to slightly brackish.
- Trees are sparse to absent.
- Vegetative cover is dominated by a range of native wetland graminoids (*Amphibromus*, *Carex tereticaulis*, *Deyeuxia*, *Glyceria*, *Lachnagrostis*, *Poa labillardierei*, and *Rytidosperma duttonianum*) and/or forbs.
- At least one native wetland forb species is present.

Condition Thresholds: following Part A – 'typical' wet/dry cycle (i.e. not drought)

A1: Is the wetland consistent with the key diagnostic characteristics above? Yes.

A2: Is 50% or more of the total cover of plants in the ground layer dominated by native species characteristic of the Seasonal Herbaceous Wetland ecological community? Yes (Go to Part C).

Minimum Wetland Size:

C: Wetland connected to or part of a native vegetation remnant – minimum wetland size = 0.1 hectares, minimum wetland + native vegetation remnant size = 1.0 hectares. Yes.

Very High Quality Wetlands:

D: Wetland zone (Sweet Grass Wetland – SGWe1) contains the following indicator species for very high quality Seasonal Herbaceous Wetlands: Common Woodruff *Asperula conferta* s.l., Woodland Swamp-daisy *Brachyscome basaltica var. gracilis*, Prickfoot *Eryngium vesiculosum* and Common Nardoo *Marsilea drummondii.* Very high quality Seasonal Herbaceous Wetland.

D: Wetland Zone (Plains Grassy Wetland – PGWe1 and PGWe2) contains the following indicator species for very high quality Seasonal Herbaceous Wetlands: Common Woodruff *Asperula conferta s.l.*, Woodland Swamp-daisy *Brachyscome basaltica var. gracilis*, Prickfoot *Eryngium vesiculosum*, Poison Lobelia *Lobelia pratioides* and Common Nardoo *Marsilea drummondii*. Very high quality Seasonal Herbaceous Wetland.

An additional four nationally listed ecological communities (Grassy Eucalypt Woodland of the Victorian Volcanic Plain; Grey Box (*Eucalyptus microcarpa*) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia; Natural Temperate Grassland of the Victorian Volcanic Plain; and, Subtropical and Temperate Coastal Saltmarsh) are predicted to occur within 10 kilometres of the study area (DoE 2014a). Vegetation within the study area did not meet the condition thresholds that define these communities.

## 3.4 State Significance Assessment

State significance for flora and fauna is defined in Appendix 1.2.

### 3.4.1 Flora

No State-significant flora species were recorded within the study area during the field assessment. The VBA and FIS contain records of 44 State-significant flora species within 10 kilometres of the study area (DEPI 2014b; Viridans 2013a) (Appendix 2.2; Figure 3).

Of these species, there is suitable habitat and a low to moderate likelihood of occurrence within the study area for Plains Joyweed *Alternanthera* sp. 1 (Plains), Plump Swamp Wallaby-grass *Amphibromus pithogastrus*, Pale Swamp Everlasting *Coronidium gunnianum*, Grey Spike-sedge *Eleocharis macbarronii*, Pale Spike-sedge *E. pallens*, Flat Spike-sedge *E. plana* and Perennial Blown-grass *Lachnagrostis perennis* spp. agg.. These species are all wetland species with nearby, recent records.

An additional group of State-significant flora species have a low likelihood of occurrence in the study area due to the presence of marginal habitat or a lack of recent records. These species are Wimmera Woodruff *Asperula wimmerana*, Slender Bindweed *Convolvulus angustissimus* subsp. *omnigracilis*, Creeping Rush *Juncus revolutus*, Coast Saltwort *Salsola tragus*, Floodplain Fireweed *Senecio campylocapus* and Tiny Arrowgrass *Triglochin minutissima*.

### 3.4.2 Fauna

No State-significant fauna species were recorded within the study area during the field assessment. The VBA and AVW contain records of 46 State-significant fauna species (41 birds, one mammal, two reptiles, one fish and one invertebrate) within 10 kilometres of the study area (DEPI 2014b; Viridans 2013b) (Appendix 2.2; Figure 4).

Of the 46 species State-significant fauna species recorded in the locality, four are considered likely to occasionally forage within the study area - Magpie Goose *Anseranas semipalmata,* Eastern Great Egret *Ardea modesta*, Intermediate Egret *Ardea intermedia*, Little Egret *Egretta garzetta nigripes* and Black Falcon *Falco subniger*. The study area, however, does not provide significant habitat for these species, which are highly nomadic and likely to utilise higher quality areas across the landscape. Other waterbird species, such as Blue-billed Duck *Oxyura australis* and Hardhead *Aythya australis* are also likely to occasionally visit the constructed wetland adjacent to the site.

### 3.4.3 Communities

Vegetation within the study area did not meet the condition thresholds that define any State-significant communities.

## 3.5 Regional Significance Assessment

Regional significance for fauna is defined in Appendix 1.2.

No regionally significant fauna species were recorded within the study area during the field assessment. The VBA and AVW contain records of 21 regionally significant fauna species within 10 kilometres of the study area (DEPI 2014b; Viridans 2013b) (Appendix 3.2; Figure 4). Wetland habitats within the study area provide potential habitat for two regionally significant birds, Royal Spoonbill *Platalea regia* and Latham's Snipe *Gallinago hardwickii*. As for other significant and nomadic bird species noted in Sections 3.3.2 and 3.4.2, the study area does not constitute significant habitat for these species, in comparison to areas of higher quality habitat in the locality.

## 3.6 Adjacent Areas

Several sites of ecological significance are located within close proximity to the study area, including the Point Cook Coastal Park immediately to the south east (across Point Cook Road), Cheetham Wetlands further to the east on Port Phillip Bay, additional low-lying areas immediately to the south and Cunningham Swamp further to the south west.

# 4 PERMITTED CLEARING ASSESSMENT

The objective for the permitted clearing of native vegetation is that it results in 'no net loss', resulting in any permitted clearing of native vegetation having a neutral impact on Victoria's biodiversity (DEPI 2013a).

When native vegetation removal is permitted, an offset must be secured which achieves the no net loss outcome for biodiversity. To achieve this, the offset must make a contribution to biodiversity equivalent to the contribution made by the native vegetation that was permitted to be removed. Therefore, the type and amount of the required offset depends on the native vegetation being removed, and the contribution it made to Victoria's biodiversity.

The extent of native vegetation removal and the associated offset targets presented in Table 4 and Table 5 are based on the detailed design of the wetland in the south-west of the study area (plus a buffer of 2 metres) provided by Neil M Craigie Pty Ltd (2014).

## 4.1 Risk-based Pathway

Based on the location risk as shown on DEPIs Native Vegetation Information Management tool, and the extent risk thresholds summarised in Table 1, the proposal falls under the Low risk-pathway, with a total of 0.336 habitat hectares (0.483 hectares) of remnant vegetation proposed for permitted removal. A detailed discussion regarding the relevant exemptions applicable to native vegetation removal at the site within the City of Wyndham Planning Scheme is presented in Section 6.4. Site information is summarised below (Table 4)

**Table 4.** Permitted Clearing Assessment

| Location | | A |
|---|---|---|
| **Strategic Biodiversity Score** (of vegetation to be removed) | | 0.299 |
| **Vegetation to be removed** | Remnant Patch (ha) | 0.483 |
| | Scattered Trees (no) | 0 |
| | **Total Hectares** | **0.483** |
| | **Total Habitat Hectares** | **0.336** |
| **Risk** | Vegetation Risk | Low |
| | Scattered Trees Risk | Low |
| | **Risk-pathway** | **Low** |

As the current proposal falls under the Low Risk-pathway, the Biodiversity Assessment Guidelines do not require any demonstration of avoidance or minimisation of impacts by the proposed removal of native vegetation on biodiversity.

## 4.2 Offset Targets

The offset requirements for native vegetation removal, as prescribed by the Biodiversity Assessment Guidelines, have been calculated by DEPI, based on the modelled condition score of native vegetation within the NVIM tool. The resulting Biodiversity Assessment Report (BAR) is presented in Appendix 4.

An offset target of **0.150 general biodiversity equivalence units** is required through the proposed removal of 0.336 habitat hectares (0.483 hectares) of native vegetation (Appendix 4).

A summary of proposed vegetation losses is presented in Table 4, while the results of the habitat hectare assessment are provided in Appendix 2.3. If a permit is granted to remove the vegetation identified in the study area (as summarised in Table 4), a requirement to obtain native vegetation offsets will be included in the permit conditions. The offsets must meet the requirements of Table 5 (detailed in Appendix 4).

**Table 5.** Offset requirements for the permitted clearance of vegetation

| Offset Type | General Offset |
|---|---|
| General Offset Amount | **0.150 general biodiversity equivalence units** |
| **General Offset Attributes** | |
| Vicinity | Port Phillip and Westernport CMA, or City of Wyndham municipality |
| Minimum Strategic Biodiversity Score | 0.239* |

**Note. *** Minimum strategic biodiversity score is 80% of the weighted average score across habitat zones where a general offset is required.

Note that these calculations do not take into account any offsets that may be required under the EPBC Act.

# 5 POTENTIAL IMPACTS

The proposed action is likely to directly impact on several indigenous flora and fauna species, and communities recorded within the study area. These impacts may include:

- Loss of potential habitat for national and State significant flora and fauna species;
- The removal of EVCs (Plains Grassy Wetland formations);
- Loss of habitat and potential mortality for locally common fauna species dependent on wetlands or inundated areas for foraging, shelter or nesting (e.g. aquatic or wading birds, frogs, microbats);
- Potential for further habitat fragmentation in a fragmented landscape and the associated creation of barriers to the movement and migration of indigenous fauna;
- Potential for indirect impacts on a nationally significant ecological community;
- Potential for an increase to levels of indigenous fauna roadkill along new road alignments;
- Potential for the further spread of weeds and soil pathogens due to on-site activities;

Indirect effects on adjacent areas are also possible if construction activities and drainage are not appropriately managed, and these include:

- Potential for further spread of environmental weeds from on-site activities and subsequent degradation of native vegetation adjacent to the site;
- Indirect impacts to adjoining native vegetation/habitat, e.g. light and noise pollution, increased human activity during construction and once the residential subdivision is established;
- Increased incidence of native fauna being predated upon by dogs and cats, as a result of the influx of pets into the study area;
- Inappropriate landscape plantings, which could increase the spread of weeds into adjacent areas supporting remnant native vegetation;
- Degradation of retained vegetation through increased pressures from recreation activities and increased presence of people and domestic pets;
- Increased disturbance to wildlife from increased human activity and noise during construction; and,
- Increased amount of hard surfacing and subsequent stormwater runoff to waterways etc.

# 6 LEGISLATIVE AND POLICY IMPLICATIONS

This section identifies biodiversity policy and legislation relevant to the proposed development, principally:

- *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (Commonwealth);
- *Flora and Fauna Guarantee Act 1988* (FFG Act) (Victoria);
- *Environment Effects Act 1978* (Victoria);
- *Planning and Environment Act 1987* (Victoria);
    - Local Planning Schemes;
    - Victoria's Native Vegetation Permitted Clearing Regulations.
- *Wildlife Act 1975* and Wildlife Regulations 2002 (Victoria);
- *Catchment and Land Protection Act 1994* (CALP Act) (Victoria); and,
- *Water Act 1989* (Victoria).

## 6.1 Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)

The EPBC Act establishes a Commonwealth process for the assessment of proposed actions (i.e. project, development, undertaking, activity, or series of activities) that are likely to have a significant impact on matters of national environmental significance (NES), or on Commonwealth land. An action, unless otherwise exempt, requires approval from the Commonwealth Environment Minister if it is considered likely to have an impact on any of the following matters of NES:

- World Heritage properties;
- National heritage places;
- Ramsar wetlands of international significance;
- Threatened species and ecological communities;
- Migratory and marine species;
- Commonwealth marine area;
- Nuclear actions (including uranium mining);
- Great Barrier Reef Marine Park; or,
- Water resources impacted by coal seam gas or mining development.

### 6.1.1 Ramsar wetlands of international significance

The study area is near one Ramsar wetland (DoE 2014a):

- Port Phillip Bay (western shoreline) and Bellarine

The above wetlands are unlikely to be impacted as they are not connected to the wetland within the study area. Provided management practices and construction techniques are consistent with Construction Techniques for Sediment Pollution Control (EPA 1991) and Environmental Guidelines for Major Construction Sites (EPA 1996), the project is unlikely to affect the ecological character of any Ramsar wetland.

### 6.1.2 Threatened species and ecological communities

Flora: No flora species listed under the EPBC Act were recorded within the study area during the field assessment. There is marginal habitat within the wetland in the study area for one flora species listed under the EPBC Act (River Swamp Wallaby-grass) (Section 3.3.1).

Fauna: There is potential foraging and dispersal habitat within the study area for one fauna species listed under the EPBC Act (Growling Grass Frog) (Section 3.3.2).

Communities: One ecological community listed under the EPBC Act (*Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*) was recorded within the study area (Section 3.3.3).

### 6.1.3 Migratory and marine species

A number of Migratory and/or Marine species have been recorded within 10 kilometres of the study area (DEPI 2014b; Appendix 3.2). However, the study area would not be classed as an 'important habitat' as defined under the EPBC Act Policy Statement 1.1 Principal Significant Impact Guidelines (DoE 2013).

### 6.1.4 Implications

There is one matter of National Environmental Significance confirmed present within the study area (*Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains*) and marginal habitat within the study area for one flora species (River Swamp Wallaby-grass) and one fauna species (Growling Grass Frog) listed under the EPBC Act. Based on the development plans for the site (Brown Consulting 2014), the *Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains* community will not be impacted, and the majority of potential habitat for significant flora and fauna will be retained. However, a referral as a non-controlled action to the Commonwealth Environment Minister is recommended to ensure compliance with the EPBC Act.

## 6.2 Flora and Fauna Guarantee Act 1988 (Victoria)

The FFG Act is the primary Victorian legislation providing for the conservation of threatened species and ecological communities, and for the management of processes that are threatening to Victoria's native flora and fauna. The FFG Act contains protection procedures such as the listing of threatened species and/or communities, and the preparation of action statements to protect the long-term viability of these values.

Proponents are required to apply for an FFG Act Permit to 'take' listed and/or protected[2] flora species, listed vegetation communities and listed fish species in areas of public land (i.e. within road reserves, drainage lines and public reserves). An FFG Act permit is generally not required for removal of species or communities on private land, or for the removal of habitat for a listed terrestrial fauna species.

Flora: No 'listed' flora species and three 'protected' flora species (Woodland Swamp-daisy, Drooping Cassinia and Annual Cudweed) were recorded within the study area during the field assessment. There is marginal habitat within the study area for one flora species listed under the FFG Act (Plump Swamp Wallaby-grass) (Section 3.3.1 and 3.4.1).

Fauna: No fauna species listed under the FFG Act were recorded within the study area during the field assessment. There is suitable habitat within the study area for four fauna species listed under the FFG Act (Magpie Goose, Eastern Great Egret, Intermediate Egret and Little Egret) (Section 3.3.2 and 3.4.2).

Communities: No ecological communities listed under the FFG Act were recorded within the study area (Section 3.4.3).

Threatening processes: The following threatening processes listed under the FFG Act should be considered in relation to the proposed development:

- Habitat fragmentation as a threatening process for fauna in Victoria;
- Invasion of native vegetation by 'environmental weeds'.
- Infection of amphibians with Chytrid Fungus, resulting in chytridiomycosis;
- Predation of native wildlife by the cat, *Felis catus*;
- The spread of *Phytophthora cinnamomi* from infected sites into parks and reserves, including roadsides, under the control of a state or local government authority;
- Use of Phytophthora-infected gravel in construction of roads, bridges and reservoirs; and,
- Wetland loss and degradation as a result of change in water regime, dredging, draining, filling and grazing.
- Input of toxic substances into Victorian rivers and streams; and,
- Invasion of native vegetation communities by Tall Wheat-grass *Lophopyrum ponticum*.

[2] In addition to 'listed' flora species, the FFG Act identifies 'protected' flora species. This includes any of the Asteraceae (Daisies), all orchids, ferns (excluding *Pteridium esculentum*) and Acacia species (excluding *Acacia dealbata*, *Acacia decurrens*, *Acacia implexa*, *Acacia melanoxylon* and *Acacia paradoxa*), as well as any taxa that may be a component of a listed ecological community. A species may be both listed and protected.

### 6.2.1 Implications

The local planning authority may consider flora, fauna and communities listed under the FFG Act when making decisions regarding the use and development of land.

There is potential habitat within the study area for several species listed or protected under the FFG Act. However the study area is privately owned, as such a permit under the FFG Act is not required.

## 6.3 Planning and Environment Act 1987 (Victoria)

The *Planning and Environment Act 1987* outlines the legislative framework for planning in Victoria and for the development and administration of planning schemes. All planning schemes contain native vegetation provisions at Clause 52.17 which require a planning permit from the relevant local Council to remove, destroy or lop native vegetation on a site of more than 0.4 hectares, unless an exemption under clause 52.17-7 of the Victorian Planning Schemes applies (Appendix 1.5.3) or a subdivision is proposed with lots less than 0.4 hectares[3]. Local planning schemes may contain other provisions in relation to the removal of native vegetation (Section 6.3.1).

Where the clearing of native vegetation is permitted, the quantity and type of vegetation to be offset is determined using methodology specified in the Guidelines (DEPI 2013a).

### 6.3.1 Local Planning Schemes

The study area is located within the Wyndham City Council municipality. The following zoning and overlays apply (DPCD 2013):

- Development Plan Overlay – Schedule 2 (DPO2); and
- Urban Growth Zone (UGZ).

**Exemptions under clause 52.17-7**

Several exemptions are listed under 52.17-7 (refer Appendix 1.5), where no permit is required to remove, destroy or lop native vegetation to the minimum extent necessary, including the removal of 'Regrowth'.

The Regrowth exemption applies '*for regrowth which has naturally established or regenerated on land lawfully cleared of naturally established native vegetation…*' and is ' *less than 10 years old*'.

Based on several points including the historical land use (Section 1.3.1), historical photos of the site that are less than 10 years old (Plates 7 – 10), the clear disturbance lines within areas of Plains Rushy Wetland noted during Ecology and Heritage Partners' assessment , the previous assessments by other ecological consultants where the relatively large extent of native vegetation was not noted as it was cropped (MWH 2009; PKA 2012), it is considered that the native flora speces within the patches identified as Plains Rushy Wetland EVC

[3] In accordance with the Victorian Civil and Administrative Tribunal's (VCAT) decision Villawood v Greater Bendigo CC (2005) VCAT 2703 (20 December 2005) all native vegetation is considered lost where proposed lots are less than 0.4 hectares in area and must be offset at the time of subdivision.

have naturally regenerated following cropping activities, and the 'regrowth' exemption applies in this instance. Therefore a permit for the proposed removal of Plains Rushy Wetland is unlikely to be required.

#### *6.3.1.1 Implications*

A Planning Permit from Wyndham City Council is required to remove, disturb or lop any native vegetation unless exempt under Clause 52.17-7 of the Planning Scheme.

### 6.3.2 The Biodiversity Assessment Guidelines

In December 2013 the Victorian Government integrated the 'Permitted clearing of native vegetation - Biodiversity assessment guidelines' (the Guidelines) (DEPI 2013a) into the Victorian Planning Provisions, replacing the *Victoria's Native Vegetation Management – A Framework for Action* (The Framework) (NRE 2002). The primary objective of the regulations is "no net loss in the contribution made by native vegetation to Victoria's biodiversity". The State Planning Policy Framework and the decision guidelines at Clause 52.17 (Native Vegetation) of Particular Provisions and Clause 12.01 require Planning and Responsible Authorities to have regard for the Biodiversity Assessment Guidelines.

In addition, a permit must be referred to DEPI if vegetation removal meets one or more of the below thresholds (Table 6).

**Table 6.** Permit to remove native vegetation – application referral triggers (Clause 66, Referral and Notice Provisions)

| | |
|---|---|
| **Native Vegetation** | • Remove, destroy or lop native vegetation where the area to be cleared is 0.5 hectares or more |
| | • Remove, destroy or lop native vegetation which is to be considered under the High Risk-based pathway |
| **Other Circumstances** | • Remove, destroy or lop native vegetation if a property vegetation plan applies to the site |
| | • Remove, destroy or lop native vegetation on Crown land which is occupied or managed by the responsible authority (DEPI) |

#### *6.3.2.1 Implications*

Areas of remnant native vegetation, Scattered Trees and habitat for rare or threatened species must be offset if they are proposed to be disturbed as part of the project, and if no exemptions apply. An assessment under the Guidelines is presented in Section 4 based upon the concept plan for the wetland to be created in the south-west of the site (Neil M Craigie 2014), and the vegetation exemptions described above in Section 6.4.1.

Provided the responsible authority applies the permit exemption described in Section 6.3.1, DEPI is unlikely to be a recommending referral authority.

## 6.4 Wildlife Act 1975 and Wildlife Regulations 2002 (Victoria)

The *Wildlife Act 1975* (and associated Wildlife Regulations 2002) is the primary legislation in Victoria providing for protection and management of wildlife. The Act requires people engaged in wildlife research (e.g. fauna surveys, salvage and translocation activities) to obtain a permit under the Act to ensure that these activities are undertaken in a manner consistent with the appropriate controls.

The *Wildlife Act 1975* has the following objectives:

- To establish procedures for the promotion of protection and conservation of wildlife, the prevention of species extinctions, and the sustainable use and access to wildlife; and,
- To prohibit and regulate the conduct of those involved in wildlife related activities.

### 6.4.1 Implications

Authorisation for habitat removal may be obtained under the *Wildlife Act 1975* through a licence granted under the *Forests Act 1958*, or under any other Act such as the *Planning and Environment Act 1987*. Any persons engaged to remove, salvage, hold or relocate native fauna during construction must hold a current Management Authorisation under the *Wildlife Act 1975*.

## 6.5 Water Act 1989 (Victoria)

The purposes of the *Water Act 1989* are manifold but (in part) relate to the orderly, equitable, efficient and sustainable use of water resources within Victoria. This includes the provision of a formal means of protecting and enhancing environmental qualities of waterways and their in-stream uses as well as catchment conditions that may affect water quality and the ecological environments within them.

### 6.5.1 Implications

A 'works on waterways' permit from the Port Phillip and Westernport CMA is unlikely to be required due to the absence of any registered waterways within the study area.

## 6.6 Catchment and Land Protection Act 1994 (Victoria)

The *Catchment and Land Protection Act 1994* (CaLP Act) contains provisions relating to catchment planning, land management, noxious weeds and pest animals. The Act also provides a legislative framework for the management of private and public land and sets out the responsibilities of land managers, stating that they must take all reasonable steps to:

- Avoid causing or contributing to land degradation which causes or may cause damage to land of another land owner;
- Protect water resources;
- Conserve soil;
- Eradicate regionally prohibited weeds;
- Prevent the growth and spread of regionally controlled weeds; and,
- Prevent the spread of, and as far as possible eradicate, established pest animals.

### 6.6.1 Implications

A number of weeds listed as noxious under the CaLP Act were recorded during the assessment (Spear Thistle *Cirsium vulgare*, African Boxthorn *Lycium ferocissimum*, Chilean Needle-grass *Nassella neesiana*, Serrated Tussock *Nassella trichotoma* and Bathurst Burr *Xanthium spinosum*) (Appendix 2.1). Similarly, there is evidence that the study area is currently occupied by several pest fauna species listed under the CaLP Act (Fox, European Hare). Landowners are responsible for the control of any infestation of noxious weeds and pest fauna species. To meet CaLP Act requirements listed noxious weeds should be appropriately controlled throughout the study area to minimise their spread and impact on ecological values, and a Weed Management Plan may be required. A pest fauna eradication plan may also be required.

# 7 MITIGATION MEASURES

Any loss of ecological values should be viewed in the overall context of on-going loss, fragmentation, and deterioration in the quality of remnant vegetation throughout the greater Victorian Volcanic Plain bioregion.

The current proposal will be assessed under the Low Risk-based pathway. As such, the Biodiversity Assessment Guidelines do not require any demonstration of avoidance or minimisation of impacts by the proposed removal of native vegetation on biodiversity. However, it should be noted that as part of the development, approximately 50% of all native vegetation recorded within the site will be retained, including all ecological communities of national conservation significance (Figure 2b).

Further recommended measures to minimise and mitigate impacts to terrestrial and aquatic ecological values within and adjacent to the study area include:

- Minimise impacts to native vegetation and habitats through construction and micro-siting techniques, including fencing retained areas of native vegetation. Similarly, soil disturbance and sedimentation within wetlands should be avoided or kept to a minimum, to avoid, or minimise impacts to fauna habitats;
- Appropriate consideration in planning processes and expert input into project design or management. Project planning should include consideration of Water Sensitive Urban Design techniques to address stormwater runoff and associated hydrological changes to the wetland and Cunningham Swamp;
- Ensure management practices and construction techniques are consistent with Construction Techniques for Sediment Pollution Control (EPA 1991) and Environmental Guidelines for Major Construction Sites (EPA 1996), to minimise impacts on adjacent wetlands;
- All contractors should be aware of ecologically sensitive areas to minimise the likelihood of inadvertent disturbance to areas marked for retention. Habitat Zones (areas of sensitivity) should be included as a mapping overlay on any construction plans;
- Where possible, construction stockpiles, machinery, roads, and other infrastructure should be placed away from the wetland;
- Ensure that best practice sedimentation and pollution control measures are undertaken at all times, in accordance with Environment Protection Agency guidelines (EPA 1991; EPA 1996; Victorian Stormwater Committee 1999) to prevent offsite impacts to waterways and wetlands; and,
- As indigenous flora provides valuable habitat for indigenous fauna, it is recommended that any landscape plantings that are undertaken as part of the proposed works are conducted using indigenous species sourced from a local provenance, rather than exotic deciduous trees and shrubs.

In addition to these measures, the following documents should be prepared and implemented prior to any construction activities:

- Construction Environmental Management Plan (CEMP). The CEMP should include specific species/vegetation conservation strategies, daily monitoring, sedimentation management, site specific rehabilitation plans, weed and pathogen management measures, etc.;
- Weed Management Plan. This plan should follow the guidelines set out in the CaLP Act, and clearly outline any obligations of the project team in relation to minimising the spread of weeds as a result of this project. This may include a pre-clearance weed survey undertaken prior to any construction activities to record and map the locations of all noxious and environmental weeds;
- Significant Species Conservation Management Plan (CMP). A CMP will be required if significant species or their habitats are proposed to be impacted, and may include a salvage and translocation plan; and,
- Fauna Management Plan. This may be required if habitat for common fauna species is likely to be impacted and salvage and translocation must be undertaken to minimise the risk of injury or death to those species.

## 7.1 Offset Impacts

### 7.1.1 Federal (EPBC Act)

The Australian Government's EPBC Act Environmental Offsets Policy (SEWPaC 2012) outlines a framework for the use of environmental offsets under the EPBC Act including when they can be required, how they are determined and the framework under which they operate. Clear guidelines on what constitutes a suitable offset are provided and should be considered as part of any proposed offset strategy. Suitable offsets must include the following:

1. It delivers an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed development.
2. It is built around direct offsets but may include compensatory measures.
3. It is in proportion to the level of statutory protection that applies to the protected manner.
4. It is of a size and scale proportionate to the residual impacts on the protected manner.
5. It is additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs.
6. It effectively accounts for and manages the risks of the offset not succeeding.
7. It is efficient, effective, timely, transparent, scientifically robust and reasonable.
8. It has transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.

The study area contains a wetland that qualifies as a high-quality *Seasonal Herbaceous Wetland (Freshwater) of the Temperate Lowland Plains*. This EPBC Act-listed ecological community is listed as Critically Endangered. The EPBC Act has an offset policy associated with any permitted vegetation loss. Based on a

preliminary assessment of the vegetation, the offset calculator indicates that approximately three to five times the area cleared is required for an offset, although this varies depending upon the condition, size, likelihood of success and threats to the proposed offset site.

Based upon the proposed development plan (Brown Consulting 2014), the nationally significant ecological community *Seasonal Herbaceous Wetland (Freshwater) of the Temperate Lowland Plains* is not proposed to be impacted as part of the development, and therefore there are no offset requirements under the EPBC Act.

### 7.1.2 State (The Guidelines)

#### *7.1.2.1 Offset Criteria*

The Biodiversity Assessment Guidelines require offsetting as the final step in considering the impacts of development on native vegetation. Emphasis is placed on avoiding (High Risk) and minimising impacts, and only after these steps have been taken should offsets (actions undertaken to achieve commensurate gains) be considered.

Offset targets must be met, as specified in Section 4.1. In determining the appropriate offset responses for permitted vegetation clearance, the Guidelines set out several criteria which must be considered for any offset site. These criteria are presented in Appendix 1.5.

#### *7.1.2.2 Offset Management Strategy*

Although not required under the Low risk based application pathway, an offset strategy has been provided. It is anticipated that the offset obligations generated by the native vegetation removal associated with the development of the study area will be satisfied via::

- Over-the-Counter Offsets Scheme: The Guidelines include the expansion of the "Over-the-Counter" (OTC) Offsets Scheme, allowing non-government agencies to establish themselves as OTC Facilities. OTC Facilities will broker native vegetation offsets (credits) between landholders (with offset sites) and permit holders (with offset requirements). The OTC Offsets Scheme differs from other third party offsets (Bushbroker, Trust for Nature) as permit holders will not be required to negotiate directly with landholders. Instead, they can review available credits and relevant sale prices at each private OTC Facility, and purchase their required credits through them Ecology and Heritage Partners is an accredited OTC Facility.

Ecology and Heritage Partners Pty Ltd are a DEPI accredited Over-The-Counter (OTC) offset broker. We have been assisting permit holders meet their native vegetation offset obligations since 2006. Ecology and Heritage Partners broker native vegetation credits between permit holders and credit holders across all Catchment Management Authorities (CMAs), and have an excellent knowledge of the type and extent of available credits in the marketplace.

Ecology and Heritage Partners have several landowners registered in their offset database that have suitable General Biodiversity Equivalence Unit (BEUs) native vegetation credits available within the Port Phillip and Westernport CMA, and it is anticipated that the relevant offset obligations can be secured through an OTC scheme without any difficulty should a permit be issued for the development.

# 8 FURTHER REQUIREMENTS

Further requirements associated with development of the study area, as well as additional studies or reporting that may be required, are provided in Table 7, below.

**Table 7.** Further requirements associated with development of the study area

| Relevant Legislation | Implications | Further Action |
|---|---|---|
| *Environment Protection and Biodiversity Conservation Act 1999* | There is one matter of National Environmental Significance confirmed present within the study area (Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains) and marginal habitat within the study area for one flora species (River Swamp Wallaby-grass) and one fauna species (Growling Grass Frog) listed under the EPBC Act. Based on the development plans for the site (Brown Consulting 2014), the Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains community will not be impacted, and the majority of potential habitat for significant flora and fauna will be retained. However, a referral as a non-controlled action to the Commonwealth Environment Minister is recommended to ensure compliance with the EPBC Act. | Prepare and submit a referral to the Commonwealth Environment Minister at DoE. |
| *Flora and Fauna Guarantee Act 1988* | There is potential habitat within the study area for several species listed or protected under the FFG Act. However the study area is privately owned, as such a permit under the FFG Act is not required. | No further action required. |
| *Planning and Environment Act 1987* | Based on the location risk as shown on DEPIs Native Vegetation Information Management tool, and the extent risk thresholds summarised in Table 1, the proposal falls under the Low risk-pathway, with a total of 0.336 habitat hectares (0.483 hectares) of remnant vegetation proposed for permitted removal.<br>A Planning Permit from Wyndham City Council is required to remove, disturb or lop any native vegetation unless exempt under Clause 52.17-7 of the Planning Scheme. An offset target of 0.150 general biodiversity equivalence units is required through the proposed removal of 0.336 habitat hectares (0.483 hectares) of native vegetation.<br>Provided the responsible authority applies the permit exemption described in Section 6.3.1, DEPI is unlikely to be a recommending referral authority.<br>The responsible authority may consider the biodiversity objectives of the Port Phillip and Westernport Native Vegetation Plan. Any development within the study area should incorporate these objectives. | Prepare and submit a Planning Permit application. Planning Permit conditions are likely to include a requirement for:<br>• Vegetation offsets, as detailed in Section 4.2<br>• A Construction Environment Management Plan (CEMP). |
| *Catchment and Land Protection Act 1994* | Several weed species listed under the CaLP Act were recorded within the study area. To meet | Planning Permit conditions are likely to include a requirement for a Weed |

| Relevant Legislation | Implications | Further Action |
|---|---|---|
| | requirements under the CaLP Act, listed noxious weeds should be appropriately controlled throughout the study area. | Management Plan. |
| *Water Act 1989* | A 'works on waterways' permit is unlikely to be required from the Port Phillip and Westernport CMA. | No further action required. |
| *Wildlife Act 1975* | Any persons engaged to conduct salvage and translocation or general handling of terrestrial fauna species must hold a current Management Authorisation. | Ensure wildlife specialists hold a current Management Authorisation. |

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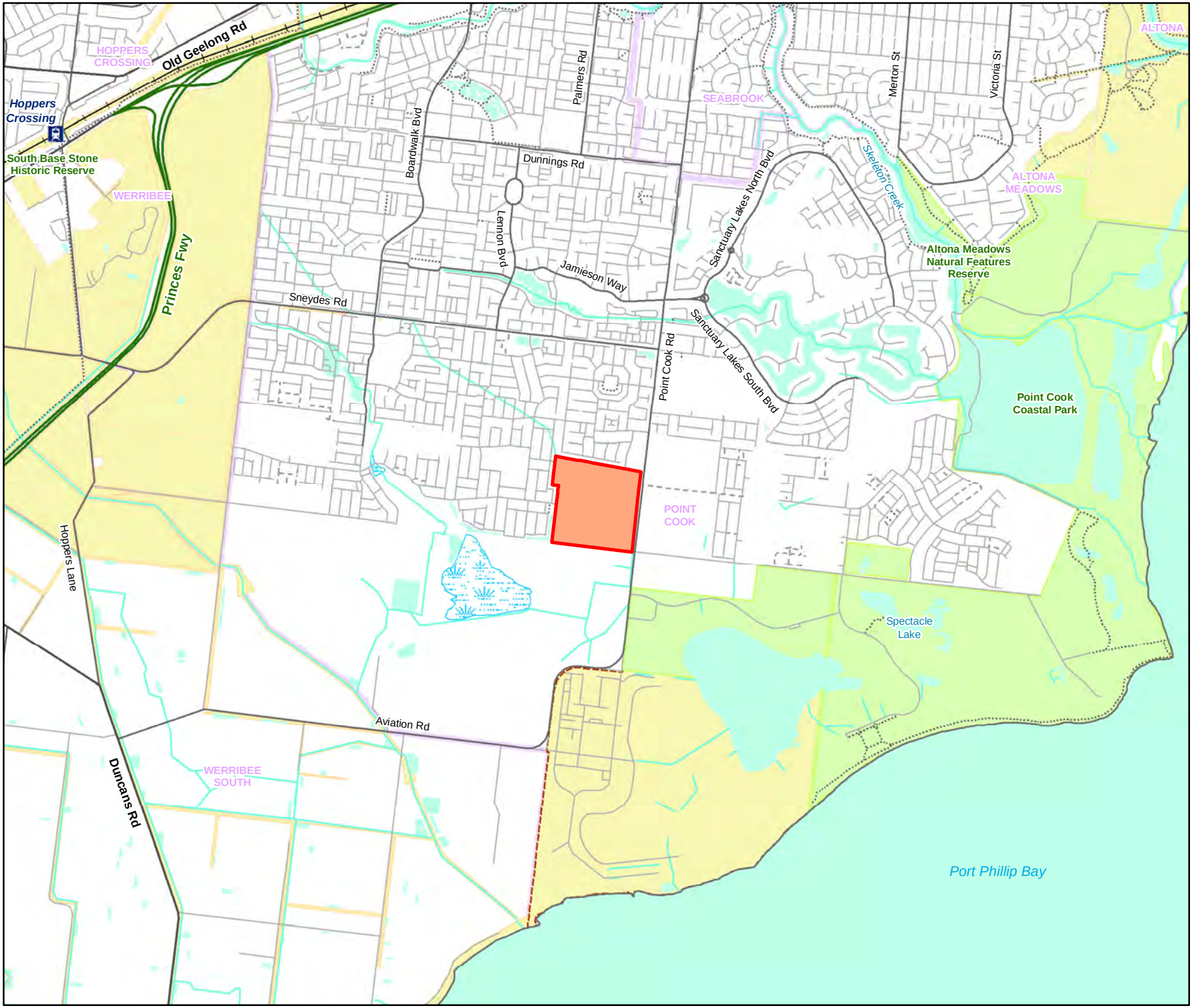
# FIGURES




## Legend

- Study Area
- Freeway
- Major Road
- Collector Road
- Minor Road
- Proposed Road
- Walking Track
- Minor Watercourse
- Permanent Waterbody
- Wetland/Swamp
- Parks and Reserves
- Crown Land
- Localities


# Figure 1

**Location of the study area**

*Flora and Fauna Assessment and Biodiversity Assessment, 360-438 Point Cook Road, Point Cook*

N

0 500 1,000

Metres

ecology & heritage partners


## Legend

- Study Area
- Wetland
- 2m buffer

**Ecological Vegetation Classes**

- EVC 125 Plains Grassy Wetland
- EVC 819 Spike-sedge Wetland
- EVC 920 Sweet Grass Wetland
- EVC 961 Plains Rushy Wetland
- Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains
- Exempt


# Figure 2a

**Ecological features**

*Biodiversity Assessment 360-438 Point Cook Road, Point Cook*

N

0 50 100

Metres

ecology & heritage partners


CONTOUR INTERVAL: 0.20m

| LINCOLN HEATH SOUTH | 43.32 ha | 100% |
|---|---|---|
| Connector Road (Fongeo Drive) | 1.734 | 4.0% |
| Passive Parks | 2.378 | 1.1% |
| Grassland Surrounds | 4.520 | 10.4% |
| EPBC/EVC Areas | 2.710 | 6.3% |
| NET RESIDENTIAL DEVELOPABLE AREA | 31.978 | 73.8% |
| Subdivisional Roads | 8.628 | 19.9% |
| Residential Area | 23.343 | 53.9% |
| (Medium Density Sites) | (2.882) | |

SCALE 1:3000@A3

30 0 30 60 90 120

# PRELIMINARY ROAD NETWORK

## LINCOLN HEATH 2

BROWN
Smart Consulting
BROWN CONSULTING (VIC) PTY LTD
Level 2, 55 Southbank Boulevard
Southbank VIC 3006
T 03 9203 9000
F 03 9203 9099
www.brownconsulting.com.au

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Version Date: 22-09-14
M110736
Version H
PG 15.9.14

## Legend

Study Area

### Significant flora

- Arching Flax-lily
- Basalt Peppercress
- Basalt Podolepis
- Buloke
- Button Wrinklewort
- Coast Hollyhock
- Coast Saltwort
- Coast Wirilda
- Creeping Rush
- Grey Mangrove
- Grey Spike-sedge
- Large-headed Fireweed
- Marsh Saltbush
- Native Peppercress
- Pale Swamp Everlasting
- Perennial Blown-grass
- Plains Joyweed
- Rye Beetle-grass
- Salt Lawrencia
- Sand Brome
- Sea Nymph
- Shore Spleenwort
- Short Sun-orchid
- Slender Bindweed
- Slender Tick-trefoil
- Small Golden Moths
- Small Milkwort
- Southern Blue-gum
- Spiny Rice-flower
- Tasman Grass-wrack
- Tough Scurf-pea
- Tuberous Tassel


# Figure 3

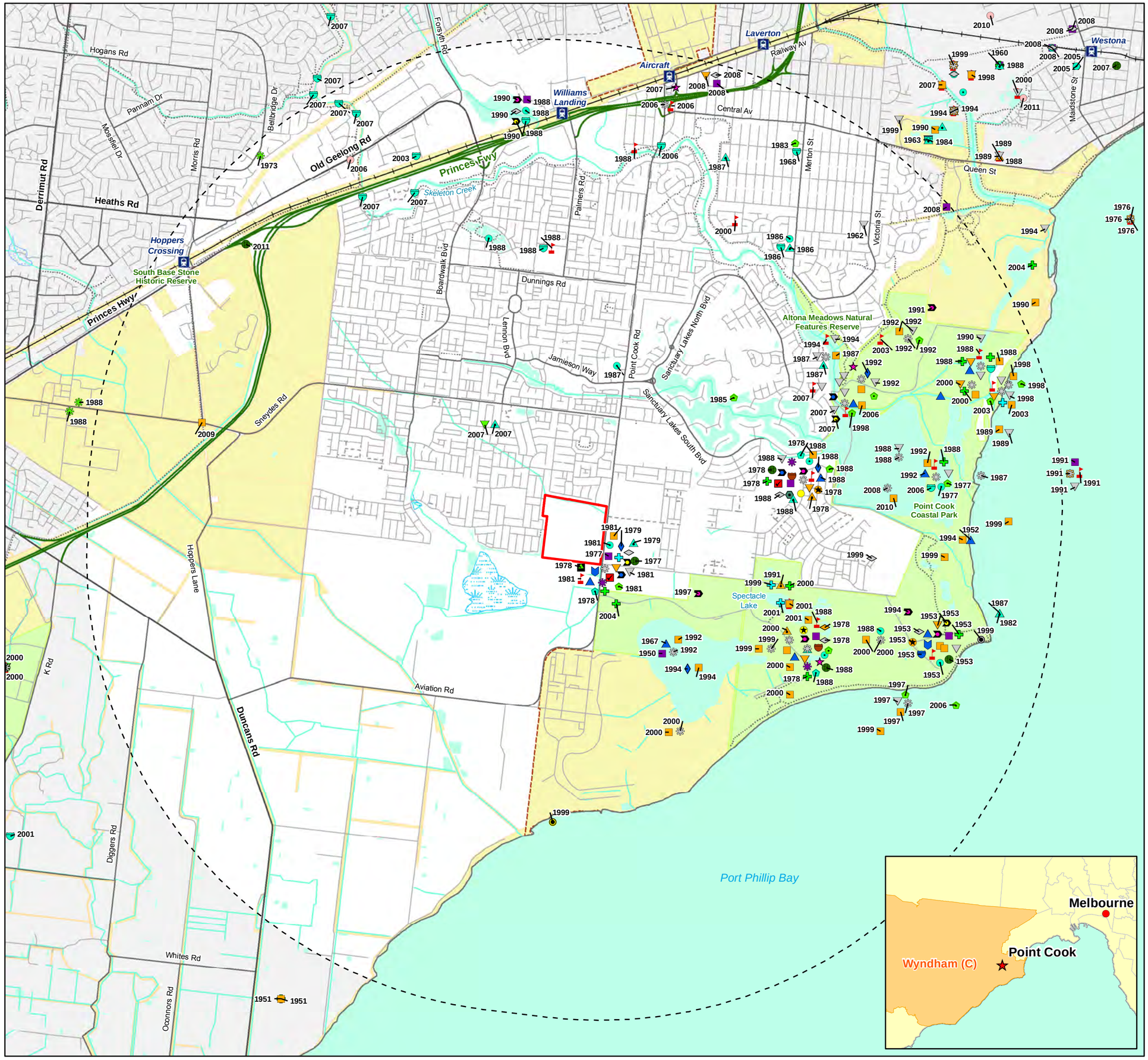
**Previously documented significant flora within 5km of the study area**

*Flora and Fauna Assessment and Biodiversity Assessment, 360-438 Point Cook Road, Point Cook*

0 0.75 1.5

Kilometres

ecology & heritage partners







## Legend

- Study Area

**Significant fauna**

- Australasian Bittern
- Australian Painted Snipe
- Australian Pratincole
- Baillon's Crake
- Black-eared Cuckoo
- Black-faced Cormorant
- Blue-billed Duck
- Caspian Tern
- Chestnut-rumped Heathwren
- Common Diving-Petrel
- Common Long-necked Turtle
- Diamond Firetail
- Eastern Great Egret
- Fairy Prion
- Fairy Tern
- Fat-tailed Dunnart
- Glossy Ibis
- Great Knot
- Greater Sand Plover
- Grey Goshawk
- Grey-headed Flying-fox
- Grey-tailed Tattler
- Growling Grass Frog
- Gull-billed Tern
- Hooded Plover
- Intermediate Egret
- Latham's Snipe
- Lesser Sand Plover
- Lewin's Rail
- Little Button-quail
- Little Egret
- Little Tern
- Long-toed Stint
- Magpie Goose
- Nankeen Night Heron
- Orange-bellied Parrot
- Pacific Gull
- Pectoral Sandpiper
- Pied Cormorant

# Figure 4

**Previously documented significant fauna within 5km of the study area**

*Flora and Fauna Assessment and Biodiversity Assessment, 360-438 Point Cook Road, Point Cook*

N

0 0.75 1.5

Kilometres

ecology & heritage partners

# APPENDICES

# APPENDIX 1

## Appendix 1.1 – Rare or Threatened Categories for Listed Victorian Taxa

**Table A1.1.** Rare or Threatened categories for listed Victorian taxa.

| Rare or Threatened Categories |
|---|
| **Conservation Status in Australia (Based on the EPBC Act 1999)** |
| **EX** - Extinct: Extinct is when there is no reasonable doubt that the last individual of the species has died. |
| **CR** - Critically Endangered: A species is critically endangered when it is facing an extremely high risk of extinction in the wild in the immediate future. |
| **EN** - Endangered: A species is endangered when it is not critically endangered but is facing a very high risk of extinction in the wild in the near future. |
| **VU** - Vulnerable: A species is vulnerable when it is not critically endangered or endangered but is facing a high risk of extinction in the wild in the medium-term future. |
| **R*** - Rare: A species is rare but overall is not currently considered critically endangered, endangered or vulnerable. |
| **K*** - Poorly Known: A species is suspected, but not definitely known, to belong to any of the categories extinct, critically endangered, endangered, vulnerable or rare. |
| **Conservation Status in Victoria (Based on DSE 2005, DSE 2009, DSE 2013)** |
| **x** - Presumed Extinct in Victoria: not recorded from Victoria during the past 50 years despite field searches specifically for the plant, or, alternatively, intensive field searches (since 1950) at all previously known sites have failed to record the plant. |
| **e** - Endangered in Victoria: at risk of disappearing from the wild state if present land use and other causal factors continue to operate. |
| **v** - Vulnerable in Victoria: not presently endangered but likely to become so soon due to continued depletion; occurring mainly on sites likely to experience changes in land-use which would threaten the survival of the plant in the wild; or, taxa whose total population is so small that the likelihood of recovery from disturbance, including localised natural events such as drought, fire or landslip, is doubtful. |
| **r** - Rare in Victoria: rare but not considered otherwise threatened - there are relatively few known populations or the taxon is restricted to a relatively small area. |
| **k** - Poorly Known in Victoria: poorly known and suspected, but not definitely known, to belong to one of the above categories (x, e, v or r) within Victoria. At present, accurate distribution information is inadequate. |

# Appendix 1.2 – Defining Ecological Significance

**Table A1.2.** Criteria for defining Ecological Significance ratings for significant flora, fauna and communities.

| National Significance |
|---|
| **Flora:**<br>National conservation status is based on the EPBC Act list of taxa considered threatened in Australia (i.e. extinct, critically endangered, endangered, vulnerable). |
| **Fauna:**<br>National conservation status is based on the EPBC Act list of taxa considered threatened in Australia (i.e. Extinct, Critically Endangered, Endangered, Vulnerable).<br>Fauna listed as Extinct, Critically Endangered, Endangered, Vulnerable, or Rare under National Action Plans for terrestrial taxon prepared for DoE: threatened marsupials and monotremes (Maxwell et al. 1996), rodents (Lee 1995), bats (Duncan et al. 1999), birds (Garnett and Crowley 2000), reptiles (Cogger et al. 1993), amphibians (Tyler 1997) and butterflies (Sands and New 2002). |
| **Communities:**<br>Vegetation communities considered critically endangered, endangered or vulnerable under the EPBC Act and considering vegetation condition. |
| **State Significance** |
| **Flora:**<br>Threatened taxa listed under the provisions of the FFG Act.<br>Flora listed in the State Government's Advisory List of Rare or Threatened Plants in Victoria (DSE 2005). |
| **Fauna:**<br>Threatened taxon listed under Schedule 2 of the FFG Act.<br>Fauna listed as Extinct, Critically Endangered, Endangered and Vulnerable on the State Government's Advisory List of Threatened Vertebrate Fauna in Victoria (DSE 2013).<br>Listed as Lower Risk (Near Threatened, Conservation Dependent or Least concern) or Data Deficient under National Action Plans for terrestrial species prepared for the DoE: threatened marsupials and monotremes (Maxwell et al. 1996), rodents (Lee 1995), bats (Duncan et al. 1999), birds (Garnett and Crowley 2000), reptiles (Cogger et al. 1993), amphibians (Tyler 1997) and butterflies (Sands and New 2002). |
| **Communities:**<br>Ecological communities listed as threatened under the FFG Act.<br>EVC listed as threatened (i.e. endangered, vulnerable) or rare in a Native Vegetation Plan for a particular bioregion (DSE 2013c) and considering vegetation condition. |
| **Regional Significance** |
| **Fauna:**<br>Fauna with a disjunct distribution, or a small number of documented recorded or naturally rare in the particular Bioregion in which the study area is located.<br>A particular taxon that is has an unusual ecological or biogeographical occurrence or listed as Lower Risk – Near Threatened, Data Deficient or Insufficiently Known on the State Government's Advisory List of Threatened Vertebrate Fauna in Victoria (DSE 2013). |
| **Communities:**<br>EVC listed as depleted or least concern in a Native Vegetation Plan for a particular bioregion (DSE 2013c) and considering vegetation condition.<br>EVC considered rare by the author for a particular bioregion. |
| **Local Significance** |
| Local significance is defined as flora, fauna and ecological communities indigenous to a particular area, which are not considered rare or threatened on a national, state or regional level. |

# Appendix 1.3 – Defining Site Significance

**Table A1.3.** Criteria for defining Site Significance ratings.

| National Significance |
|---|
| A site is of National significance if:<br>• It regularly supports, or has a high probability of regularly supporting individuals of a taxon listed as 'Critically Endangered' or 'Endangered' under the EPBC Act and/or under National Action Plans for terrestrial taxon prepared for the DoE.<br>• It regularly supports, or has a high probability of supporting, an 'important population' as defined under the EPBC Act of one or more nationally 'vulnerable' flora and fauna taxon.<br>• It is known to support, or has a high probability of supporting taxon listed as 'Vulnerable' under National Action Plans.<br>• It is known to regularly support a large proportion (i.e. greater than 1%) of a population of a taxon listed as 'Conservation Dependent' under the EPBC Act and/or listed as Rare or Lower Risk (near threatened, conservation dependent or least concern) under National Action Plans.<br>• It contains an area, or part thereof designated as 'critical habitat' under the EPBC Act, or if the site is listed under the Register of National Estate compiled by the Australian Heritage Commission.<br>• It is a site which forms part of, or is connected to a larger area(s) of remnant native vegetation or habitat of national conservation significance such as most National Park, and/or a Ramsar Wetland(s). |
| **State Significance** |
| A site is of State significance if:<br>• It occasionally (i.e. every 1 to 5 years) supports, or has suitable habitat to support taxon listed as 'Critically Endangered' or 'Endangered' under the EPBC Act and/or under National Action Plans.<br>• It regularly supports, or has a high probability of regularly supporting (i.e. high habitat quality) taxon listed as 'Vulnerable', 'Near threatened', 'Data Deficient' or 'Insufficiently Known' in Victoria (DSE 2005, 2013), or species listed as 'Data Deficient' or 'Insufficiently Known' under National Action Plans.<br>• It contains an area, or part thereof designated as 'critical habitat' under the FFG Act.<br>• It supports, or likely to support a high proportion of any Victorian flora and fauna taxa.<br>• It contains high quality, intact vegetation/habitat supporting a high species richness and diversity in a particular bioregion.<br>• It is a site which forms part of, or connected to a larger area(s) of remnant native vegetation or habitat of state conservation significance such as most State Parks and/or Flora and Fauna Reserves. |
| **Regional Significance** |
| A site is of Regional significance if:<br>• It regularly supports, or has a high probability of regularly supporting regionally significant fauna as defined in Table 1.2.<br>• Is contains a large population (i.e. greater than 1% or 5%) of flora considered rare in any regional native vegetation plan for a particular bioregion.<br>• It supports a fauna population with a disjunct distribution, or a particular taxon that has an unusual ecological or biogeographical occurrence.<br>• It is a site which forms part of, or is connected to a larger area(s) of remnant native vegetation or habitat of regional conservation significance such as most Regional Parks and/or Flora and Fauna Reserves. |
| **Local Significance** |
| Most sites are considered to be of at least local significant for conservation, and in general a site of local significance can be defined as:<br>• An area which supports indigenous flora species and/or a remnant EVC, and habitats used by locally significant fauna species.<br>• An area which currently acts, or has the potential to act as a wildlife corridor linking other areas of higher conservation significance and facilitating fauna movement throughout the landscape. |

# Appendix 1.4 – Vegetation Condition and Habitat Quality

**Table A1.4.1** Defining Vegetation Condition ratings.

| Criteria for defining Vegetation Condition |
|---|
| High Quality:<br>Vegetation dominated by a diversity of indigenous species, with defined structures (where appropriate), such as canopy layer, shrub layer, and ground cover, with little or few introduced species present. |
| Moderate Quality:<br>Vegetation dominated by a diversity of indigenous species, but is lacking some structures, such as canopy layer, shrub layer or ground cover, and/or there is a greater level of introduced flora species present. |
| Low Quality:<br>Vegetation dominated by introduced species, but supports low levels of indigenous species present, in the canopy, shrub layer or ground cover. |

**Table A1.4.2** Defining Habitat Quality.

| Criteria for defining Habitat Quality |
|---|
| High Quality:<br>• High degree of intactness (i.e. floristically and structurally diverse), containing several important habitat features such as ground debris (logs, rocks, vegetation), mature hollow-bearing trees, and a dense understorey component.<br>• High species richness and diversity (i.e. represented by a large number of species from a range of fauna groups).<br>• High level of foraging and breeding activity, with the site regularly used by native fauna for refuge and cover.<br>• Habitat that has experienced, or is experiencing low levels of disturbance and/or threatening processes (i.e. weed invasion, introduced animals, soil erosion, salinity).<br>• High contribution to a wildlife corridor, and/or connected to a larger area(s) of high quality habitat.<br>• Provides known, or likely habitat for one or more rare or threatened species listed under the EPBC Act, FFG Act, or species considered rare or threatened according to DSE 2005; 2009 or 2013. |
| Moderate Quality:<br>• Moderate degree of intactness, containing one or more important habitat features such as ground debris (logs, rocks, vegetation), mature hollow-bearing trees, and a dense understorey component.<br>• Moderate species richness and diversity - represented by a moderate number of species from a range of fauna groups.<br>• Moderate levels of foraging and breeding activity, with the site used by native fauna for refuge and cover.<br>• Habitat that has experienced, or is experiencing moderate levels of disturbance and/or threatening processes.<br>• Moderate contribution to a wildlife corridor, or is connected to area(s) of moderate quality habitat.<br>• Provides potential habitat for a small number of threatened species listed under the EPBC Act, FFG Act, or species considered rare or threatened according to DSE 2005; 2009 or 2013. |
| Low Quality:<br>• Low degree of intactness, containing few important habitat features such as ground debris (logs, rocks, vegetation), mature hollow-bearing trees, and a dense understorey component.<br>• Low species richness and diversity (i.e. represented by a small number of species from a range of fauna groups).<br>• Low levels of foraging and breeding activity, with the site used by native fauna for refuge and cover.<br>• Habitat that has experienced, or is experiencing high levels of disturbance and/or threatening processes.<br>• Unlikely to form part of a wildlife corridor, and is not connected to another area(s) of habitat.<br>• Unlikely to provide habitat for rare or threatened species listed under the EPBC Act, FFG Act, or considered rare or threatened according to DSE 2005; 2009 or 2013. |

# Appendix 1.5 – Offsets and Exemptions

**Table A1.5.1.** Calculation of Biodiversity Equivalence Scores and General or Specific Offsets (DEPI 2013a)

| Pathway | Biodiversity Assessment Tools | Information Source |
|---|---|---|
| Low Risk-based pathway | Condition Score | Modelled data, NVIM Tool (DEPI 2014d) |
| | Habitat Hectares | = Condition Score x Extent (ha) |
| | Strategic Biodiversity Score | Modelled data, NVIM Tool (DEPI 2014d) |
| | General Biodiversity Equivalence Score | = Habitat Hectares x Strategic Biodiversity Score |
| Moderate or High Risk-based pathway | Condition Score | Habitat hectare assessment |
| | Habitat Hectares | = Condition Score x Extent (ha) |
| | Strategic Biodiversity Score and Habitat Importance Score | Modelled data, determined by DEPI |
| | Specific Biodiversity Equivalence Score **(A)** | = Habitat Hectares x Habitat Importance Score |
| | Sum of Specific Biodiversity Equivalence Scores of remaining habitat **(B)** | Data gathered during the site assessment is provided to DEPI for analysis and a resulting assessment offset report is provided by the Department. |
| | Specific Offset Threshold **(C)** | |
| | General/Specific Threshold Test:<br>If **A ÷ B > C** a **Specific** offset is required<br>If **A ÷ B < C** a **General** offset required | |

**Table A1.5.2.** Summary of offset requirements (DEPI 2013a)

| Risk –based Pathway | Offset Type | Offset Amount (Risk adjusted biodiversity equivalence score) | Offset Attributes | | |
|---|---|---|---|---|---|
| | | | Habitat for Species | Vicinity | Strategic Biodiversity Score |
| Low Risk | General offset | 1.5 times the general biodiversity equivalence score of the native vegetation to be removed. | No restrictions | In the same Catchment Management Authority or Local Government Area boundary as the native vegetation to be removed. | At least 80 per cent of the strategic biodiversity score of the native vegetation to be removed. |
| Moderate or High Risk | General offset | 1.5 times the general biodiversity equivalence score of the native vegetation to be removed. | No restrictions | In the same Catchment Management Authority or Local Government Area boundary as the native vegetation to be removed. | At least 80 per cent of the strategic biodiversity score of the native vegetation to be removed. |
| Moderate or High Risk | Specific offset | For each species impacted, 2 times the specific biodiversity equivalence score of the native vegetation to be removed. | Likely habitat for each rare or threatened species that a specific offset is required for, according to the specific-general offset test. | No restrictions | No restrictions |

**Table A1.5.3.** Permit exemptions (from *Victorian Planning Provisions* Clause 52.17 -7)

| **No permit is required to remove, destroy or lop native vegetation to the minimum extent necessary if any of the following apply:** | |
|---|---|
| Property size | A permit is not required for removal of native vegetation if the native vegetation is on land which, together with all contiguous land in one ownership, has an area of less than 0.4 hectares. This exemption does not apply to native vegetation within a road reservation, or where a subdivision is proposed with lots less than 0.4 hectares[4]. |
| Lopping or pruning | Generally, minor lopping or pruning of up to a third of the foliage (not including the trunk) that does not affect the continued health of the tree does not require a permit or attract an offset requirement. |
| Regrowth | A permit is not generally not required for removal of native vegetation that is For regrowth which has naturally established or regenerated on land lawfully cleared of naturally established native vegetation and is:<br>a) Less than 10 years old; or,<br>b) Bracken (*Pteridium esculentum*); or,<br>c) Less than ten years old at the time of a Property Vegetation Plan being signed by the Secretary of the Department of Sustainability and Environment (as constituted under Part 2 of the *Conservation, Forest and Lands Act 1987*), and is shown on that Plan as being 'certified regrowth', and is on land that is to be used or maintained for cultivation or pasture during the term of that Plan; or,<br>d) Within the boundary of a timber production plantation, as indicated on a Plantation Development Notice or other documented record, and has established after the plantation.<br>This exemption does not apply to land on which native vegetation has been cleared or otherwise destroyed or damaged as a result of flood, fire or other natural disaster. |
| Weeds | A permit is not required for removal of native vegetation to enable the removal or destruction of a weed listed in the schedule to the clause. The maximum extent of native vegetation removed, destroyed or lopped under this exemption on contiguous land in the same ownership in a five year period must not exceed any of the following:<br>a) 1 hectare of native vegetation which does not include a tree; or,<br>b) 15 native trees if each tree has a DBH of less than 20. |
| Planted vegetation | The removal of planted trees does not require a permit or attract an offset requirement, except if public funding was provided to assist in planting or managing the native vegetation and the terms of the funding did not anticipate removal or harvesting of the vegetation. |
| Other | Numerous additional exemptions apply to works relating to approvals granted prior to 15 September 2008, fencing, mowing, stone exploration / extraction, utility maintenance, crown land, emergency works, works in Farming Zone and Rural Activity Zone, fire protection, geothermal energy exploration, grazing, greenhouse gas sequestration, harvesting timber, mineral exploration / extraction, pest animal burrow removal, road safety, stock movement on roads and surveying.<br>See Clause 52.17 -6 for details. |

[4] In accordance with the Victorian Civil and Administrative Tribunal's (VCAT) decision Villawood v Greater Bendigo CC (2005) VCAT 2703 (20 December 2005) all native vegetation is considered lost where proposed lots are less than 0.4 hectares in area and must be offset at the time of subdivision.

# APPENDIX 2 - FLORA

## Appendix 2.1 – Flora Results

**Table A2.1.** Flora recorded within the study area.

| Scientific name | Common name |
|---|---|
| **INDIGENOUS SPECIES** | |
| *Amphibromus nervosus* | Common Swamp Wallaby-grass |
| *Asperula conferta* | Common Woodruff |
| *Atriplex semibaccata* | Berry Saltbush |
| *Brachyscome basaltica* var. *gracilis* | Woodland Swamp-daisy |
| *Cassinia arcuata* | Drooping Cassinia |
| *Chloris truncata* | Windmill Grass |
| *Dianella brevicaulis* | Small-flower Flax-lily |
| *Dichondra repens* | Kidney-weed |
| *Eleocharis acuta* | Common Spike-sedge |
| *Enchylaena tomentosa* var. *tomentosa* | Ruby Saltbush |
| *Eragrostis infecunda* | Southern Cane-grass |
| *Eryngium vesiculosum* | Prickfoot |
| *Euchiton sphaericus* | Annual Cudweed |
| *Glyceria australis* | Australian Sweet Grass |
| *Haloragis heterophylla* | Varied Raspwort |
| *Juncus amabilis* | Hollow Rush |
| *Juncus flavidus* | Gold Rush |
| *Juncus holoschoenus* | Joint-leaf Rush |
| *Juncus subsecundus* | Finger Rush |
| *Lachnagrostis filiformis* s.l. | Common Blown-grass |
| *Lobelia pratioides* | Poison Lobelia |
| *Lythrum hyssopifolia* | Small Loosestrife |
| *Marsilea drummondii* | Common Nardoo |
| *Muehlenbeckia florulenta* | Tangled Lignum |
| *Oxalis perennans* | Grassland Wood-sorrel |
| *Poa labillardierei* | Common Tussock-grass |
| *Rumex bidens* | Mud Dock |
| *Rytidosperma caespitosum* | Common Wallaby-grass |
| *Rytidosperma duttonianum* | Brown-back Wallaby-grass |

| Scientific name | Common name |
|---|---|
| *Schoenus apogon* | Common Bog-sedge |
| *Walwhalleya proluta* | Rigid Panic |
| *Wilsonia rotundifolia* | Round-leaf Wilsonia |
| **NON-INDIGENOUS SPECIES** | |
| *Aster subulatus* | Aster-weed |
| *Brassica fruticulosa* | Twiggy Turnip |
| *Cirsium vulgare* * | Spear Thistle |
| *Conyza* spp. | Fleabane |
| *Cynodon dactylon* | Couch |
| *Dactylis glomerata* | Cocksfoot |
| *Erodium moschatum* | Musky Heron's-bill |
| *Galenia pubescens* var. *pubescens* | Galenia |
| *Helminthotheca echioides* | Ox-tongue |
| *Hordeum* spp. | Barley Grass |
| *Kickxia elatine* subsp. *crinita* | Twining Toadflax |
| *Lactuca serriola* | Prickly Lettuce |
| *Leontodon saxatilis* | Hairy Hawkbit |
| *Lolium spp.* | Rye Grass |
| *Lycium ferocissimum* W * | African Boxthorn |
| *Malva parviflora* | Small-flower Mallow |
| *Nassella hyalina* | Cane Needle-grass |
| *Nassella neesiana* W * | Chilean Needle-grass |
| *Nassella trichotoma* W * | Serrated Tussock |
| *Phalaris aquatica* | Toowoomba Canary-grass |
| *Physalis hederifolia* | Sticky Ground-cherry |
| *Plantago lanceolata* | Ribwort |
| *Polygonum aviculare* s.l. | Prostrate Knotweed |
| *Romulea rosea* | Onion Grass |
| *Rumex crispus* | Curled Dock |
| *Solanum nigrum* s.l. | Black Nightshade |
| *Sonchus oleraceus* | Common Sow-thistle |
| *Triticum aestivum* | Wheat |
| *Xanthium spinosum* * | Bathurst Burr |

**Note: W = Weed of National Significance; * = Declared Noxious weed in Victoria.**

# Appendix 2.2 – Significant Flora Species

**Table A2.2** Significant flora recorded within 10 kilometres of the study area

**Key:**

| | |
|---|---|
| X | Extinct |
| e | Endangered |
| v | Vulnerable |
| r | Rare |
| k | Poorly Known |
| L | Listed |
| | |
| EX | Extinct |
| CR | Critically endangered |
| EN | Endangered |
| VU | Vulnerable |
| K | Poorly Known (Briggs and Leigh 1996) |
| # | Records identified from EPBC Act Protected Matters Search Tool. |
| * | Records identified from the FIS |

| | |
|---|---|
| EPBC | Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) |
| FFG | Flora and Fauna Guarantee Act 1988 (FFG Act) |
| DSE | Advisory List of Threatened Flora in Victoria (DSE 2005) |
| | |
| 1 | *Known Occurrence :* Recorded within the study area recently (i.e. within ten years) |
| 2 | *High Likelihood:* Previous records of the species in the local vicinity; and/or, the study area contains areas of high quality habitat. |
| 3 | *Moderate Likelihood*: Limited previous records of the species in the local vicinity; and/or, the study area contains poor or limited habitat. |
| 4 | *Low Likelihood*: Poor or limited habitat for the species however other evidence (such as a lack of records or environmental factors) indicates there is a very low likelihood of presence. |
| 5 | *Unlikely*: No suitable habitat and/or outside the species range. |

| Scientific name | Common name | Total # of documented records | Last documented record | EPBC | FFG | DSE | Likelihood of occurrence in study area |
|---|---|---|---|---|---|---|---|
| **NATIONAL SIGNIFICANCE** | | | | | | | |
| # *Amphibromus fluitans* | River Swamp Wallaby-grass | 1 | 1991 | VU | - | - | 4 |
| *Ballantinia antipoda* | Southern Shepherd's Purse | 1 | 1866 | EN | L | e | 5 |
| # *Carex tasmanica* | Curly Sedge | - | - | VU | L | v | 5 |
| # *Dianella amoena* | Matted Flax-lily | 1 | 2004 | EN | L | e | 5 |
| # *Diuris basaltica* | Small Golden Moths | 4 | 2000 | EN | L | v | 5 |
| # *Diuris fragrantissima* | Sunshine Diuris | 1 | 2005 | EN | L | e | 5 |
| # *Glycine latrobeana* | Clover Glycine | 1 | 1899 | VU | L | v | 5 |
| *Lepidium hyssopifolium* | Basalt Peppercress | 3 | 1984 | EN | L | e | 5 |
| # *Pimelea spinescens* subsp. *spinescens* | Spiny Rice-flower | 93 | 2010 | CR | L | e | 5 |
| # *Prasophyllum frenchii* | Maroon Leek-orchid | - | - | EN | L | e | 5 |
| *Prasophyllum suaveolens* | Fragrant Leek-orchid | 2 | 1900 | EN | L | e | 5 |
| # *Rutidosis leptorhynchoides* | Button Wrinklewort | 21 | 2009 | EN | L | e | 5 |
| # *Senecio macrocarpus* | Large-headed Fireweed | 10 | 2006 | VU | L | e | 5 |
| *Thesium australe* | Austral Toad-flax | 1 | 1906 | VU | L | v | 5 |
| **STATE SIGNIFICANCE** | | | | | | | |
| *Acacia uncifolia* | Coast Wirilda | 1 | 1990 | - | - | r | 5 |
| *Allocasuarina luehmannii* | Buloke | 1 | 1981 | - | L | | 5 |
| *Alternanthera* sp. 1 (Plains) | Plains Joyweed | 4 | 2006 | - | - | k | 3 |
| *Amphibolis antarctica* | Sea Nymph | 2 | 1996 | - | - | k | 5 |
| *Amphibromus pithogastrus* | Plump Swamp Wallaby-grass | 3 | 2004 | - | L | e | 3 |
| **Asperula wimmerana* | Wimmera Woodruff | 1 | 2011 | - | - | r | 4 |
| *Asplenium obtusatum* subsp. *northlandicum* | Shore Spleenwort | 1 | 1996 | - | - | v | 5 |

| Scientific name | Common name | Total # of documented records | Last documented record | EPBC | FFG | DSE | Likelihood of occurrence in study area |
|---|---|---|---|---|---|---|---|
| *Atriplex paludosa* subsp. *paludosa* | Marsh Saltbush | 4 | 1996 | - | - | r | 5 |
| *Avicennia marina* subsp. *australasica* | Grey Mangrove | 3 | 1996 | - | - | r | 5 |
| *Bromus arenarius* | Sand Brome | 2 | 1984 | - | - | r | 5 |
| *Comesperma polygaloides* | Small Milkwort | 7 | 1994 | - | L | v | 5 |
| *Convolvulus angustissimus* subsp. *omnigracilis* | Slender Bindweed | 17 | 2011 | - | - | k | 4 |
| *Coronidium gunnianum* | Pale Swamp Everlasting | 5 | 2006 | - | - | v | 3 |
| *Cullen parvum* | Small Scurf-pea | 2 | 2009 | - | L | e | 5 |
| *Cullen tenax* | Tough Scurf-pea | 6 | 2006 | - | L | e | 5 |
| **Cuscuta australis* | Australian Dodder | 1 | 1900 | - | - | k | 5 |
| *Desmodium varians* | Slender Tick-trefoil | 2 | 2010 | - | - | k | 5 |
| *Dianella* sp. aff. *longifolia* (Benambra) | Arching Flax-lily | 43 | 2009 | - | - | v | 5 |
| *Diuris behrii* | Golden Cowslips | 1 | 1900 | - | - | v | 5 |
| *Diuris palustris* | Swamp Diuris | 1 | 1900 | - | L | v | 5 |
| *Eleocharis macbarronii* | Grey Spike-sedge | 3 | 2006 | - | - | k | 3 |
| *Eleocharis pallens* | Pale Spike-sedge | 1 | 2009 | - | - | k | 3 |
| **Eleocharis plana* | Flat Spike-sedge | 1 | 2011 | - | - | v | 3 |
| *Eucalyptus baueriana* subsp. *thalassina* | Werribee Blue-box | 3 | 2010 | - | - | e | 5 |
| *Geranium solanderi* var. *solanderi* s.s. | Austral Crane's-bill | 1 | 2005 | - | - | v | 5 |
| *Geranium* sp. 3 | Pale-flower Crane's-bill | 12 | 2011 | - | - | r | 5 |
| *Heterozostera tasmanica* | Tasman Grass-wrack | 4 | 1996 | - | - | r | 5 |
| *Juncus revolutus* | Creeping Rush | 10 | 1996 | - | - | r | 4 |
| *Lachnagrostis perennis* spp. agg. | Perennial Blown-grass | 8 | 2007 | - | - | k | 3 |
| *Lawrencia spicata* | Salt Lawrencia | 9 | 2007 | - | - | r | 5 |

| Scientific name | Common name | Total # of documented records | Last documented record | EPBC | FFG | DSE | Likelihood of occurrence in study area |
|---|---|---|---|---|---|---|---|
| *Lepidium pseudohyssopifolium* | Native Peppercress | 3 | 1984 | - | - | k | 5 |
| **Lotus australis* var. *australis* | Austral Trefoil | 3 | 1906 | - | - | k | 5 |
| *Malva preissiana* s.s. (white-flowered coastal form) | Coast Hollyhock | 1 | 2007 | - | - | v | 5 |
| **Myoporum montanum* | Waterbush | 1 | 1985 | - | - | r | 5 |
| *Nicotiana suaveolens* | Austral Tobacco | 1 | 1770 | - | - | r | 5 |
| **Parietaria australis* | Western Pellitory | 1 | 1900 | - | - | r | 5 |
| *Podolepis* sp. 1 | Basalt Podolepis | 17 | 2006 | - | - | e | 5 |
| *Ruppia tuberosa* | Tuberous Tassel | 1 | 1961 | - | - | k | 5 |
| *Salsola tragus* subsp. *pontica* | Coast Saltwort | 3 | 1987 | - | - | r | 4 |
| *Senecio campylocarpus* | Floodplain Fireweed | 1 | 1905 | - | - | r | 4 |
| *Swainsona behriana* | Southern Swainson-pea | 1 | 1894 | - | - | r | 5 |
| *Thelymitra exigua* | Short Sun-orchid | 1 | 2000 | - | - | k | 5 |
| **Triglochin minutissima* | Tiny Arrowgrass | 2 | 1903 | - | - | r | 4 |
| *Tripogon loliiformis* | Rye Beetle-grass | 3 | 2011 | - | - | r | 5 |

# Appendix 2.3 – Habitat Hectares

**Table A2.3.** Habitat Hectares results for remnant vegetation recorded within the study area.

| EVC | | Plains Grassy Wetland | Plains Grassy Wetland | Spike-sedge Wetland | Sweet Grass Wetland | Plains Rushy Wetland |
|---|---|---|---|---|---|---|
| Label | | PGWe1 | PGWe2 | SSWe1 | SGWe1 | PRWe1 |
| EVC Number | | 125 | 125 | 819* | 920* | 961* |
| Bioregion | | Victorian Volcanic Plain | Victorian Volcanic Plain | Victorian Volcanic Plain | Victorian Volcanic Plain | Victorian Volcanic Plain |
| EVC Conservation Status | | Endangered | Endangered | Endangered | Endangered | Endangered |
| Patch Condition | Large Old Trees /10 | na | na | na | na | na |
| | Canopy Cover /5 | na | na | na | na | na |
| | Under storey /25 | 15 | 15 | 15 | 15 | 15 |
| | Lack of Weeds /15 | 9 | 6 | 11 | 11 | 9 |
| | Recruitment /10 | 6 | 3 | 6 | 0 | 3 |
| | Organic Matter /5 | 5 | 4 | 5 | 5 | 3 |
| | Logs /5 | na | na | na | na | na |
| | Treeless EVC Multiplier | 1.36 | 1.36 | 1.36 | 1.36 | 1.36 |
| | Subtotal = | 47.6 | 38.08 | 50.32 | 42.16 | 40.8 |
| Landscape Value /25 | | 8 | 8 | 8 | 8 | 8 |
| Habitat Points /100 | | 55.6 | 46.08 | 58.32 | 50.16 | 48.8 |
| Habitat Score | | 0.56 | 0.46 | 0.583 | 0.50 | 0.49 |
| Total Area (ha) | | 1.42 | 0.46 | 2.07 | 1.29 | 7.84 |
| Total habitat hectares | | 0.795 | 0.212 | 1.207 | 0.645 | 3.842 |
| EPBC Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains ecological community? | | Yes | Yes | No | Yes | No |

*EVC 125 Plains Grassy Wetland benchmark used during habitat hectares calculation as no benchmarks for these EVC's exist.

# APPENDIX 3 - FAUNA

## Appendix 3.1 – Fauna Results

**Table A3.1.** Fauna recorded within the study area during the field assessment

| Common name | Scientific name | Hollow use | Mi/ Ma |
|---|---|---|---|
| MAMMALS | | | |
| European Hare* | *Lepus europeaus* | - | - |
| BIRDS | | | |
| Black Swan | *Cygnus atratus* | - | - |
| Australian Wood Duck | *Chenonetta jubata* | Total | - |
| Chestnut Teal | *Anas castanea* | Total | - |
| Hoary-headed Grebe | *Poliocephalus poliocephalus* | - | - |
| Little Pied Cormorant | *Microcarbo melanoleucos* | - | - |
| Brown Falcon | *Falco berigora* | - | - |
| Purple Swamphen | *Porphyrio porphyrio* | - | - |
| Eurasian Coot | *Fulica atra* | - | - |
| Masked Lapwing | *Vanellus miles* | - | - |
| Welcome Swallow | *Petrochelidon neoxena* | Partial | - |
| Rainbow Lorikeet | *Trichoglossus haematodus* | Total | - |
| Yellow-rumped Thornbill | *Acanthiza chrysorrhoa* | - | - |
| Spotted Pardalote | *Pardalotus punctatus* | - | - |
| Red Wattlebird | *Anthochaera carunculata* | - | - |
| Australian Magpie | *Gymnorhina tibicen* | - | - |
| Willie Wagtail | *Rhipidura leucophrys* | - | - |
| Australian Raven | *Corvus coronoides* | - | - |
| Magpie-lark | *Grallina cyanoleuca* | - | - |
| Common Starling* | *Sturnus vulgaris* | Partial | - |
| Common Myna* | *Acridotheres tristis* | - | - |
| House Sparrow* | *Passer domesticus* | - | - |
| Australasian Pipit | *Anthus novaeseelandiae* | - | - |
| European Goldfinch* | *Carduelis carduelis* | - | - |
| AMPHIBIANS | | | |
| Common Froglet | *Crinia signifera* | - | - |

Key:
Mi - Migratory
Ma- Marine
* - Introduced species

# Appendix 3.2 – Significant Fauna Species

**Table A3.2.** Significant fauna within 10 kilometres of the study area.

Habitat characteristics of significant fauna species previously recorded within 10 kilometres of the study area, or that may potentially occur within the study area were assessed to determine their likelihood of occurrence. The likelihood of occurrence rankings for each of the threatened species are:

| | | |
|---|---|---|
| 1 | High Likelihood | • Known resident in the study area based on site observations, database records, or expert advice; and/or,<br>• Recent records (i.e. within five years) of the species in the local area (DEPI 2011); and/or,<br>• The study area contains the species' preferred habitat. |
| 2 | Moderate Likelihood | • The species is likely to visit the study area regularly (i.e. at least seasonally); and/or,<br>• Previous records of the species in the local area (DEPI 2011); and/or,<br>• The study area contains some characteristics of the species' preferred habitat. |
| 3 | Low Likelihood | • The species is likely to visit the study area occasionally or opportunistically whilst en route to more suitable sites; and/or,<br>• There are only limited or historical records of the species in the local area (i.e. more than 20 years old); and/or,<br>• The study area contains few or no characteristics of the species' preferred habitat. |
| 4 | Unlikely | • No previous records of the species in the local area; and/or,<br>• The species may fly over the study area when moving between areas of more suitable habitat; and/or,<br>• Out of the species' range; and/or,<br>• No suitable habitat present. |

| Common name | Scientific name | Last record | Total # of records | EPBC | DSE | FFG | NAP | Likely use of study area |
|---|---|---|---|---|---|---|---|---|
| **NATIONAL SIGNIFICANCE** | | | | | | | | |
| **Birds** | | | | | | | | |
| Australasian Bittern | *Botaurus poiciloptilus* | 2008 | 27 | EN | EN | L | VU | 3 |
| Shy Albatross | *Thalassarche cauta* | 1956 | 2 | VU | VU | L | VU | 4 |
| Fairy Prion | *Pachyptila turtur* | 1950 | 1 | VU | VU | - | - | 4 |
| Hooded Plover | *Thinornis rubricollis rubricollis* | 1950 | 4 | - | VU | L | VU | 4 |
| Plains-wanderer | *Pedionomus torquatus* | 2008 | 13 | VU | CR | L | EN | 4 |
| Fairy Tern | *Sternula nereis nereis* | 1996 | 37 | VU | EN | L | - | 4 |
| Swift Parrot | *Lathamus discolor* | 1995 | 4 | EN | EN | L | EN | 4 |

| Common name | Scientific name | Last record | Total # of records | EPBC | DSE | FFG | NAP | Likely use of study area |
|---|---|---|---|---|---|---|---|---|
| Orange-bellied Parrot | *Neophema chrysogaster* | 2008 | 20 | CR | CR | L | CR | 3 |
| Regent Honeyeater | *Anthochaera phrygia* | 1951 | 3 | EN | CR | L | EN | 4 |
| Australian Painted Snipe | *Rostratula australis* | 1977 | 1 | VU | CR | L | VU | 3 |
| # Black-browed Albatross | *Thalassarche melanophris* | - | - | VU | VU | - | NT | 4 |
| # Buller's Albatross | *Diomedea bulleri* | - | - | VU | - | L | VU | 4 |
| # Gould's Petrel | *Pterodroma leucoptera* | - | - | EN | - | - | VU | 4 |
| # Grey-headed Albatross | *Thalassarche chrysostoma* | - | - | VU | VU | L | VU | 4 |
| # Northern Giant-Petrel | *Macronectes halli* | - | - | VU | NT | L | - | 4 |
| # Northern Royal Albatross | *Diomedea sanfordi* | - | - | - | - | - | EN | 4 |
| # Royal Albatross | *Diomedea epomophora* | - | - | VU | VU | L | VU | 4 |
| # Salvin's Albatross | *Thalassarche salvini* | - | - | - | - | - | VU | 4 |
| # Southern Giant-Petrel | *Macronectes giganteus* | - | - | EN | VU | L | VU | 4 |
| **Mammals** | | | | | | | | |
| Eastern Barred Bandicoot | *Perameles gunnii* | 1982 | 3 | EN | RX | L | CR | 4 |
| Grey-headed Flying-fox | *Pteropus poliocephalus* | 2010 | 7 | VU | VU | L | VU | 4 |
| # New Holland Mouse | *Pseudomys novaehollandiae* | - | - | VU | VU | L | - | 4 |
| **Reptiles** | | | | | | | | |
| Striped Legless Lizard | *Delma impar* | 2010 | 10 | VU | EN | L | VU | 3 |
| # Grassland Earless Dragon | *Tympanocryptis pinguicolla* | - | - | EN | CR | L | VU | 4 |
| **Amphibians** | | | | | | | | |
| Growling Grass Frog | *Litoria raniformis* | 2011 | 53 | VU | EN | L | VU | 2 |
| **Fish** | | | | | | | | |
| Flat-headed Galaxias | *Galaxias rostratus* | 1900 | 1 | - | DD | - | RA | 4 |
| Bluenose Cod (Trout Cod) | *Maccullochella macquariensis* | 1877 | 1 | EN | CR | L | EN | 4 |
| # Australian Grayling | *Prototroctes maraena* | - | - | VU | VU | L | VU | 4 |
| # Dwarf Galaxias | *Galaxiella pusilla* | - | - | VU | VU | L | VU | 4 |
| **Invertebrates** | | | | | | | | |
| Golden Sun Moth | *Synemon plana* | 2010 | 49 | CR | CR | L | - | 2 |
| **STATE SIGNIFICANCE** | | | | | | | | |
| **Birds** | | | | | | | | |
| Magpie Goose | *Anseranas semipalmata* | 2007 | 9 | - | NT | L | - | 2 |

| Common name | Scientific name | Last record | Total # of records | EPBC | DSE | FFG | NAP | Likely use of study area |
|---|---|---|---|---|---|---|---|---|
| Musk Duck | *Biziura lobata* | 2003 | 81 | - | VU | - | - | 4 |
| Freckled Duck | *Stictonetta naevosa* | 2008 | 8 | - | EN | L | - | 4 |
| Australasian Shoveler | *Anas rhynchotis* | 2007 | 139 | - | VU | - | - | 4 |
| Hardhead | *Aythya australis* | 2011 | 120 | - | VU | - | - | 4 |
| Blue-billed Duck | *Oxyura australis* | 2002 | 46 | - | EN | L | - | 4 |
| White-throated Needletail | *Hirundapus caudacutus* | 2008 | 17 | - | VU | - | - | 3 |
| White-faced Storm-Petrel | *Pelagodroma marina* | 2007 | 5 | - | VU | - | - | 4 |
| Little Bittern | *Ixobrychus minutus dubius* | 1980 | 3 | - | EN | L | - | 3 |
| Eastern Great Egret | *Ardea modesta* | 2007 | 154 | - | VU | L | - | 2 |
| Intermediate Egret | *Ardea intermedia* | 2007 | 14 | - | EN | L | - | 2 |
| Little Egret | *Egretta garzetta nigripes* | 2007 | 136 | - | EN | L | - | 2 |
| White-bellied Sea-Eagle | *Haliaeetus leucogaster* | 2008 | 5 | - | VU | L | - | 3 |
| Grey Goshawk | *Accipiter novaehollandiae novaehollandiae* | 2006 | 5 | - | VU | L | - | 3 |
| Black Falcon | *Falco subniger* | 2009 | 34 | - | VU | - | - | 2 |
| Brolga | *Grus rubicunda* | 2008 | 3 | - | VU | L | - | 4 |
| Lewin's Rail | *Lewinia pectoralis pectoralis* | 2008 | 36 | - | VU | L | NT | 4 |
| Baillon's Crake | *Porzana pusilla palustris* | 2008 | 31 | - | VU | L | - | 4 |
| Pacific Golden Plover | *Pluvialis fulva* | 2010 | 47 | - | VU | - | - | 4 |
| Grey Plover | *Pluvialis squatarola* | 1992 | 10 | - | EN | - | - | 4 |
| Lesser Sand Plover | *Charadrius mongolus* | 1994 | 7 | - | CR | - | - | 4 |
| Greater Sand Plover | *Charadrius leschenaultii* | 1978 | 2 | - | CR | - | - | 4 |
| Black-tailed Godwit | *Limosa limosa* | 1986 | 11 | - | VU | - | - | 4 |
| Whimbrel | *Numenius phaeopus* | 1986 | 3 | - | VU | - | - | 4 |
| Eastern Curlew | *Numenius madagascariensis* | 1997 | 28 | - | VU | - | - | 4 |
| Terek Sandpiper | *Xenus cinereus* | 1997 | 10 | - | EN | L | - | 4 |
| Common Sandpiper | *Actitis hypoleucos* | 2007 | 19 | - | VU | - | - | 4 |
| Grey-tailed Tattler | *Tringa brevipes* | 2006 | 5 | - | CR | L | - | 4 |
| Common Greenshank | *Tringa nebularia* | 2008 | 175 | - | VU | - | - | 4 |
| Marsh Sandpiper | *Tringa stagnatilis* | 2008 | 95 | - | VU | - | - | 4 |
| Wood Sandpiper | *Tringa glareola* | 2008 | 28 | - | VU | - | - | 4 |

| Common name | Scientific name | Last record | Total # of records | EPBC | DSE | FFG | NAP | Likely use of study area |
|---|---|---|---|---|---|---|---|---|
| Ruddy Turnstone | *Arenaria interpres* | 2006 | 18 | - | VU | - | - | 4 |
| Great Knot | *Calidris tenuirostris* | 2007 | 11 | - | EN | L | - | 4 |
| Red Knot | *Calidris canutus* | 2006 | 18 | - | EN | - | - | 4 |
| Red-chested Button-quail | *Turnix pyrrhothorax* | 1986 | 1 | - | VU | L | - | 4 |
| Little Tern | *Sternula albifrons sinensis* | 2006 | 34 | - | VU | L | - | 4 |
| Gull-billed Tern | *Gelochelidon nilotica macrotarsa* | 2008 | 7 | - | EN | L | - | 4 |
| Caspian Tern | *Hydroprogne caspia* | 2008 | 28 | - | NT | L | - | 4 |
| Elegant Parrot | *Neophema elegans* | 1950 | 1 | - | VU | - | - | 4 |
| Chestnut-rumped Heathwren | *Calamanthus pyrrhopygius* | 1978 | 1 | - | VU | L | - | 4 |
| Diamond Firetail | *Stagonopleura guttata* | 1950 | 1 | - | NT | L | NT | 4 |
| **Mammals** | | | | | | | | |
| Yellow-bellied Sheathtail Bat | *Saccolaimus flaviventris* | 1928 | 1 | - | DD | L | LC | 4 |
| **Reptiles** | | | | | | | | |
| Murray Short-necked Turtle | *Emydura macquarii* | 2006 | 1 | - | VU | - | - | 4 |
| Tussock Skink | *Pseudemoia pagenstecheri* | 2008 | 15 | - | VU | - | - | 3 |
| **Fish** | | | | | | | | |
| Freshwater Catfish | *Tandanus tandanus* | 2013 | 2 | - | EN | L | - | 4 |
| **Invertebrates** | | | | | | | | |
| Yellow Sedge-skipper | *Hesperilla flavescens flavescens* | 1989 | 179 | - | VU | L | LC | 3 |
| **REGIONAL SIGNIFICANCE** | | | | | | | | |
| **Birds** | | | | | | | | |
| Common Diving-Petrel | *Pelecanoides urinatrix* | 1999 | 1 | - | NT | - | - | 4 |
| Pied Cormorant | *Phalacrocorax varius* | 2008 | 174 | - | NT | - | - | 4 |
| Black-faced Cormorant | *Phalacrocorax fuscescens* | 2008 | 6 | - | NT | - | - | 4 |
| Nankeen Night Heron | *Nycticorax caledonicus hillii* | 2011 | 30 | - | NT | - | - | 4 |
| Glossy Ibis | *Plegadis falcinellus* | 2008 | 22 | - | NT | - | - | 4 |
| Royal Spoonbill | *Platalea regia* | 2008 | 120 | - | NT | - | - | 2 |
| Spotted Harrier | *Circus assimilis* | 2006 | 18 | - | NT | - | - | 3 |
| Sooty Oystercatcher | *Haematopus fuliginosus* | 2007 | 14 | - | NT | - | - | 4 |
| Latham's Snipe | *Gallinago hardwickii* | 2008 | 52 | - | NT | - | - | 2 |
| Sanderling | *Calidris alba* | 1987 | 11 | - | NT | - | - | 4 |

| Common name | Scientific name | Last record | Total # of records | EPBC | DSE | FFG | NAP | Likely use of study area |
|---|---|---|---|---|---|---|---|---|
| Long-toed Stint | *Calidris subminuta* | 2007 | 13 | - | NT | - | - | 4 |
| Pectoral Sandpiper | *Calidris melanotos* | 2007 | 25 | - | NT | - | - | 4 |
| Little Button-quail | *Turnix velox* | 1950 | 1 | - | NT | - | - | 4 |
| Australian Pratincole | *Stiltia isabella* | 1950 | 2 | - | NT | - | - | 4 |
| Whiskered Tern | *Chlidonias hybridus javanicus* | 2008 | 134 | - | NT | - | - | 4 |
| White-winged Black Tern | *Chlidonias leucopterus* | 2007 | 32 | - | NT | - | - | 4 |
| Pacific Gull | *Larus pacificus pacificus* | 2010 | 190 | - | NT | - | - | 4 |
| Black-eared Cuckoo | *Chrysococcyx osculans* | 1987 | 2 | - | NT | - | - | 4 |
| Red-backed Kingfisher | *Todiramphus pyrropygia pyrropygia* | 1978 | 1 | - | NT | - | - | 4 |
| **Mammals** | | | | | | | | |
| Fat-tailed Dunnart | *Sminthopsis crassicaudata* | 2005 | 14 | - | NT | - | - | 4 |
| **Reptiles** | | | | | | | | |
| Long neck tortoise | *Chelodina longicollis* | 2011 | 5 | - | DD | - | - | 4 |

# APPENDIX 4 – BIODIVERSITY ASSESSMENT REQUIREMENTS REPORT

## Appendix 4.1 – Biodiversity Assessment Report

# Biodiversity assessment report

## Biodiversity information for applications for permits to remove native vegetation under clause 52.16 or 52.17 of the Victoria Planning Provisions

**Date of issue:** **14 October 2014**

**Time of issue:** **11:52:23**

| | |
|---|---|
| **Property address** | 360-438 POINT COOK ROAD POINT COOK 3030 |

## Summary of marked native vegetation

| | |
|---|---|
| **Risk-based pathway** | **Low** |
| **Total extent** | 0.483 ha |
| Remnant patches | |
| 1 | 0.483 ha |
| **Location risk** | A |

**See Appendix 1 for risk-based pathway details**

## Offset requirements

If a permit is granted to remove the marked native vegetation, a requirement to obtain a native vegetation offset will be included in the permit conditions. The offset must meet the following requirements:

| | |
|---|---|
| **Offset type** | General offset |
| **Offset amount (general biodiversity equivalence units)** | 0.150 |
| **Offset attributes** | |
| Vicinity | Port Phillip And Westernport Catchment Management Authority (CMA) |
| Minimum strategic biodiversity score | 0.239 |
| **Strategic biodiversity score of marked native vegetation** | 0.299 |

**See Appendix 2 for offset requirements details**

## Next steps

This proposal to remove native vegetation must meet the application requirements of the low risk-based pathway and it will be assessed in the low risk-based pathway.

If you wish to remove the marked native vegetation you are required to apply for a permit from your local council.

The Biodiversity assessment report should be submitted with your application for a permit to remove native vegetation you plan to remove, lop or destroy.

The Biodiversity assessment report provides the following information that is required to be provided with your application for a permit to remove native vegetation:

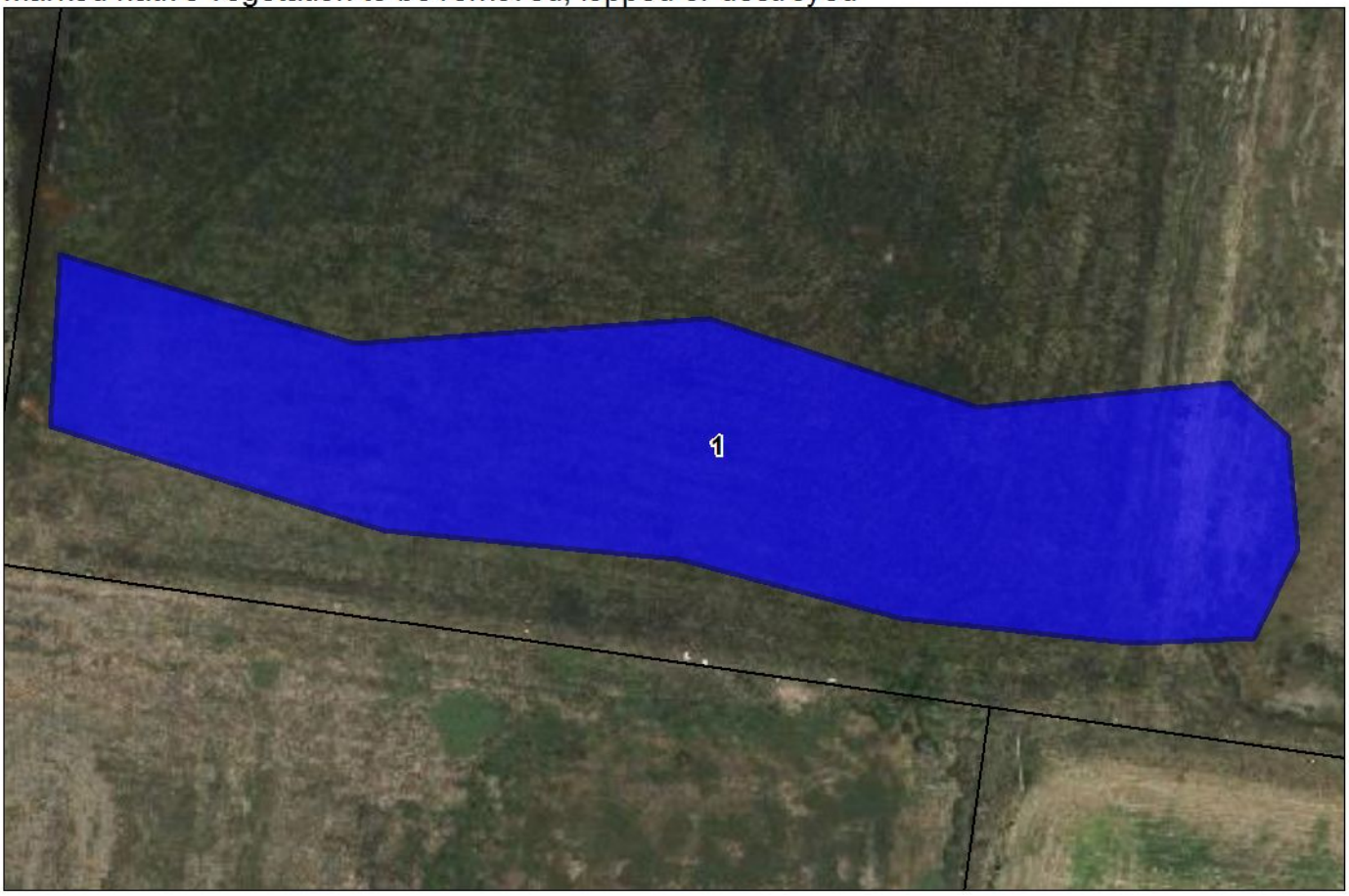
- The location of the site where native vegetation is to be removed.
- The area of the patch of native vegetation and/or the number of any scattered trees to be removed.
- Maps or plans containing information set out in the *Permitted clearing of native vegetation - Biodiversity assessment guidelines*.
- The risk-based pathway of the application for a permit to remove native vegetation.
- The strategic biodiversity score of the native vegetation to be removed.
- The offset requirements should a permit be granted to remove native vegetation.

If you have undertaken any permitted clearing on your property within the last five years contact DEPI to confirm offset requirements.

Additional information is required when submitting an application for a permit to remove native vegetation. Refer to the *Permitted clearing of native vegetation - Biodiversity assessment guidelines* for a full list of application requirements.

## Maps of marked native vegetation

Marked native vegetation to be removed, lopped or destroyed




**Legend**

Marked native vegetation

Property boundary

N

0 10 20 30

Metres

Department of Environment and Primary Industries

State Government Victoria

## Property view of marked native vegetation


**Legend**

Marked native vegetation

Property boundary

N

0 70 140 210

Metres

Department of Environment and Primary Industries

State Government Victoria

**See Appendix 3 for biodiversity information maps**



Authorised by the Victorian Government, 8 Nicholson Street, East Melbourne.

For more information contact the DEPI Customer Service Centre 136 186

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Obtaining this publication does not guarantee that an application will meet the requirements of clauses 52.16 or 52.17 of the Victoria Planning Provisions or that a permit to remove native vegetation will be granted.

Notwithstanding anything else contained in this publication, you must ensure that you comply with all relevant laws, legislation, awards or orders and that you obtain and comply with all permits, approvals and the like that affect, are applicable or are necessary to undertake any action to remove, lop or destroy or otherwise deal with any native vegetation or that apply to matters within the scope of clauses 52.16 or 52.17 of the Victoria Planning Provisions.

Department of Environment and Primary Industries

State Government Victoria

www.depi.vic.gov.au

# Appendix 1 - Risk-based pathway details

| | |
|---|---|
| **Risk-based pathway** | **Low** |
| **Total extent** | 0.483 ha |
| Remnant patches | |
| 1 | 0.483 ha |
| **Location risk** | A |

## Why is the risk-based pathway low?

**The following table explains how the risk-based pathway is determined:**

| Extent | Location A | Location B | Location C |
|---|---|---|---|
| < 0.5 hectares | Low | Low | High |
| ≥ 0.5 hectares and < 1 hectares | Low | Moderate | High |
| ≥ 1 hectares | Moderate | High | High |

The marked native vegetation is located entirely within Location A and has a total extent of less than 0.5 hectares.

At this location, native vegetation removal of this size is not expected to have a significant impact on the habitat of any rare or threatened species. As a result, an application for the removal of this native vegetation must meet the requirements of, and will be assessed in, the low risk-based pathway.

For further information on location risk please see *Native vegetation location risk map factsheet*. For information on the determination of the risk-based pathway see *Permitted clearing of native vegetation – Biodiversity assessment guidelines*.

## Have you received a planning permit to remove native vegetation in the last five years?

If you have undertaken any permitted clearing on your property within the last five years, the extent of this past clearing must be included in the total extent of your current permit application. The risk-based pathway for your application requirements and assessment pathway is determined using the combined extent of permitted clearing within the last five years and proposed clearing.

If the risk-based pathway determined from this combined extent is low, contact DEPI to confirm offset requirements.

# Appendix 2 - Offset requirements details

If a permit is granted to remove the marked native vegetation  the permit condition will include the requirement to obtain a native vegetation offset. This offset must meet the following requirements:

| | |
|---|---|
| **Offset type** | General offset |
| **Offset amount (general biodiversity equivalence units)** | 0.150 |
| **Offset attributes** | |
| Vicinity | Port Phillip And Westernport Catchment Management Authority (CMA) |
| Minimum strategic biodiversity score | 0.239 |
| **Strategic biodiversity score of marked native vegetation** | 0.299 |

| **Native vegetation to be removed** | | |
|---|---|---|
| **Total extent (hectares) for calculating habitat hectares** | 0.483 | This is the total area of the marked native vegetation in hectares.<br><br>The total extent of native vegetation is an input to calculating the habitat hectares of a site and in calculating the general biodiversity equivalence score. Where the marked native vegetation includes scattered trees, each tree is converted to hectares using a standard area calculation of 0.071 hectares per tree. |
| **Condition score*** | 0.695 | This is the weighted average condition score of the marked native vegetation. This condition score has been calculated using the *Native vegetation condition map*.<br><br>The condition score of native vegetation is a site-based measure of how close the native vegetation is to its mature natural state, as represented by a benchmark reflecting pre-settlement circumstances. The *Native vegetation condition map* is a modelled layer based on survey data combined with a benchmark model and a range of other environmental data. |
| **Habitat hectares** | 0.336 | Habitat hectares is a site-based measure that combines extent and condition of native vegetation. The habitat hectares of native vegetation is equal to the current condition of the vegetation (condition score) multiplied by the extent of native vegetation.<br><br>Habitat hectares = total extent x condition |
| **Strategic biodiversity score** | 0.299 | This is the weighted average strategic biodiversity score of the marked native vegetation. This strategic biodiversity score has been calculated using the *Strategic biodiversity map*.<br><br>The strategic biodiversity score of native vegetation is a measure of the native vegetation's importance for Victoria's biodiversity, relative to other locations across the landscape. The *Strategic biodiversity map* is a modelled layer that prioritises locations on the basis of rarity and level of depletion of the types of vegetation, species habitats, and condition and connectivity of native vegetation. |

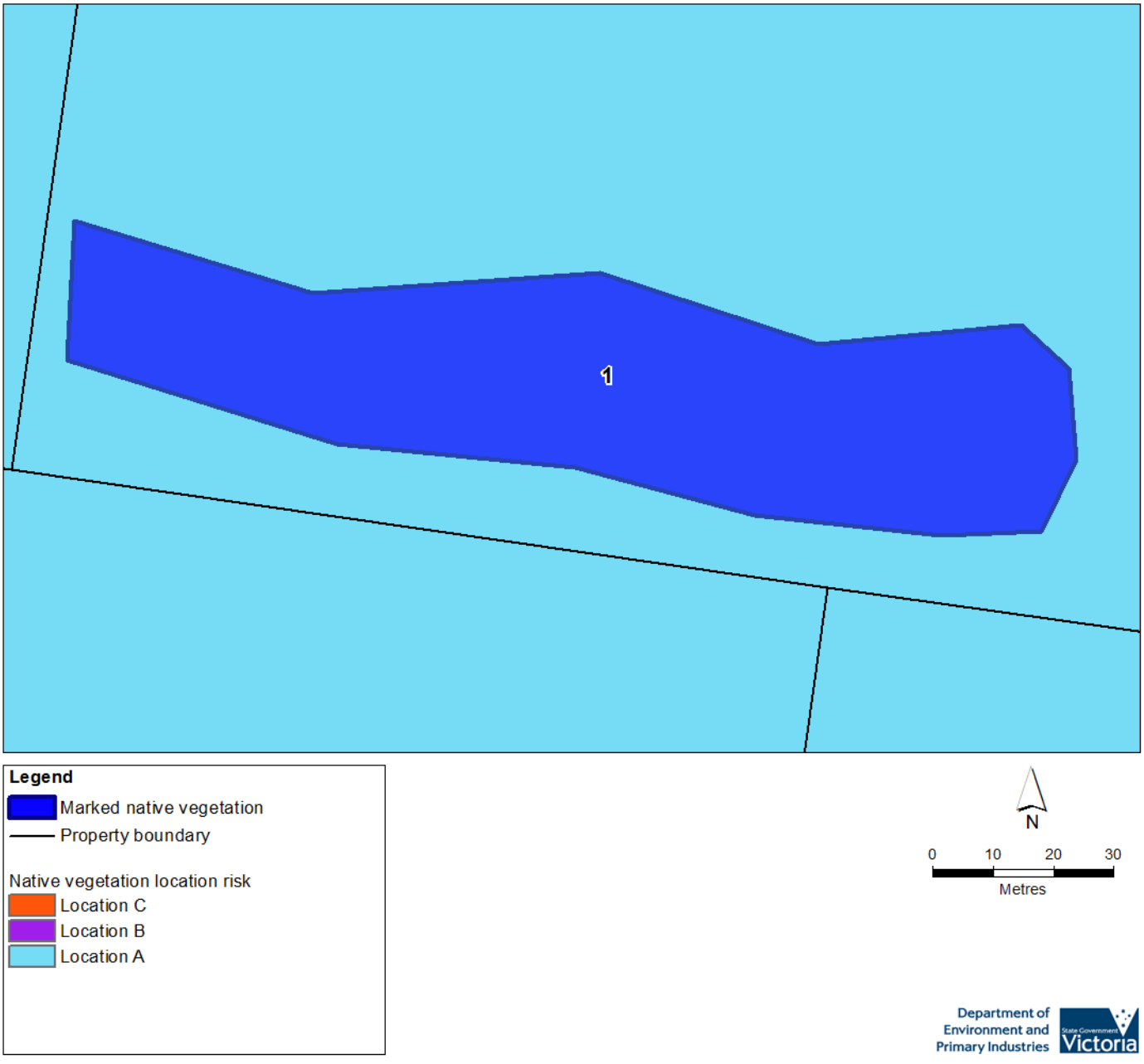
| | | |
|---|---|---|
| **General biodiversity equivalence score** | 0.100 | The general biodiversity equivalence score quantifies the relative overall contribution that the native vegetation to be removed (the marked native vegetation) makes to Victoria's biodiversity. It is calculated as follows:<br><br>General biodiversity equivalence score = habitat hectares × strategic biodiversity score |

* Offset requirements for partial clearing: If your proposal is to remove parts of the native vegetation in a remnant patch (for example only understorey plants) the condition score must be adjusted. This will require manual editing of the *condition score*, and an update to the following calculations that the biodiversity assessment tool has provided: *habitat hectares*, *general biodiversity equivalence score* and *offset amount*.

| **Offset requirements** | | |
|---|---|---|
| **Offset type** | General offset | A general offset is required when a proposal to remove native vegetation is not deemed, by application of the specific-general offset test, to have a significant impact on habitat for any rare or threatened species. All proposals in the low risk-based pathway will require a general offset. |
| **Risk factor for general offsets** | 1.5 | There is a risk that the gain from undertaking the offset will not adequately compensate for the loss from the removal of native vegetation. If this were to occur, despite obtaining an offset, the overall impact from removing native vegetation would result in a loss in the contribution that native vegetation makes to Victoria's biodiversity.<br><br>To address the risk of offsets failing, an offset risk factor is applied to the calculated loss to biodiversity value from removing native vegetation. |
| **Offset amount (general biodiversity equivalence units)** | 0.150 | This is calculated by multiplying the general biodiversity equivalence score of the native vegetation to be removed by the risk factor for general offsets. This number is expressed in general biodiversity equivalence units and is the amount of offset that is required to be provided should the application be approved. This offset requirement will be a condition to the permit for the removal of native vegetation.<br><br>Risk adjusted general biodiversity equivalence score = general biodiversity equivalence score $_{\text{clearing}}$ × 1.5 |
| **Minimum strategic biodiversity score** | 0.239 | The strategic biodiversity score of the offset site must be at least 80 per cent of the strategic biodiversity score of the native vegetation to be removed. This is to ensure offsets are located in areas with a strategic value that is comparable to, or better than, the native vegetation to be removed. |
| **Vicinity** | Port Phillip And Westernport CMA | The offset site must be located within the same Catchment Management Authority boundary as the native vegetation to be removed. |

## Appendix 3 - Biodiversity information maps

Marked native vegetation and the *Native vegetation location risk map*



Marked native vegetation and the *Native vegetation condition map*


**Legend**

Marked native vegetation

Property boundary

Native vegetation condition*

0.81 - 1.00

0.61 - 0.80

0.41 - 0.60

0.21 - 0.40

0.00 - 0.20

* These classes are for display purposes only

N

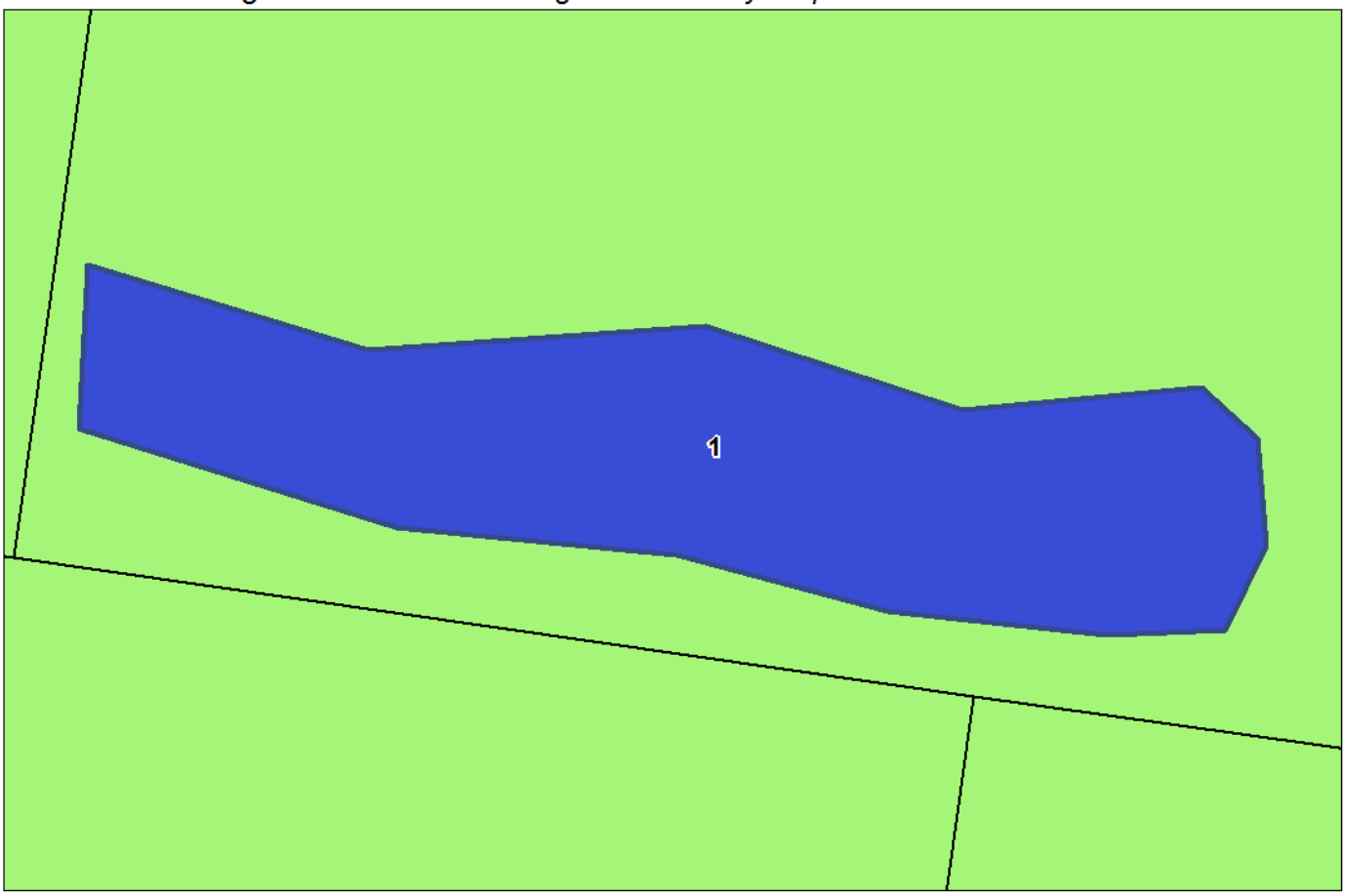
0 10 20 30

Metres

Department of Environment and Primary Industries

State Government Victoria

Marked native vegetation and the *Strategic biodiversity map*




**Legend**

Marked native vegetation

Property boundary

Strategic biodiversity score*

0.81 - 1.00

0.61 - 0.80

0.41 - 0.60

0.21 - 0.40

0.00 - 0.20

* These classes are for display purposes only

N

0 10 20 30

Metres

Department of Environment and Primary Industries

State Government Victoria