



Bellarine Bayside Foreshore  
Committee of Management

Point Richards Flora and  
Fauna Reserve

Background Report



2410-46-1, Bellarine Bayside Coastal Management

Point Richards Flora and Fauna Reserve Background Report

December 2025

TerraLab Pty Ltd (ACN: 631 535 496)

San Remo, Victoria

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## Document History

| Date                     | Version | Author/editor | Reviewer     |
|--------------------------|---------|---------------|--------------|
| 28/02/2025               | 0.1     | S. Clark      | H. Schinagl  |
| 10/04/2025               |         | H. Pickering  | S. Clark     |
| 10/07/2025               | 0.2     | H. Pickering  | S. Clark     |
| 8/12/2025                | 0.3     | M. Chatterton | H. Pickering |
| Approved for publication |         |               |              |

## Preferred reference

*Schinagl, H., Clark, S., Mirrabelle, G., and Bates, J. (2024) Point Richards Flora and Fauna Reserve Background Report, TerraLab, San Remo, 2024.*

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## Acknowledgement of Country

*This project is undertaken on the lands of the Wadawurrung People. We pay our respects to Elders past, present and future.*

*We are privileged to manage the northern Bellawiyin coastal land of Wadawurrung Country. We recognise the unique ability of Wadawurrung people to care for Country and the continuing spiritual, cultural, economic, social and environmental connections they have to the land, sea, sky and waterways.*

*We are committed to working in meaningful partnership to progress Wadawurrung aspirations for coastal Country.*

## Other acknowledgements

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## Executive Summary

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TerraLab has been commissioned by Bellarine Bayside Coastal Management to prepare a Strategic Management Plan for Point Richards Flora and Fauna Reserve, Portarlington. The first step in the preparation of the plan is to conduct a background assessment and field survey to inform the plan (this report). This Background Report forms the foundation for the forthcoming Plan, summarizing the previous studies done at the reserve, commenting on its current status, and detailing the values and threats to the Reserve.

The Point Richards Flora and Fauna Reserve is located west of the township of Portarlington on the Bellarine Peninsula and spans approximately 62 hectares. It is a significant conservation area containing diverse vegetation communities, including several Ecological Vegetation Classes (EVCs). A detailed database and literature review was undertaken followed by a desktop cultural heritage assessment. Thereafter TerraLab conducted a site survey which included an assets survey, fuel hazard assessment and a variety of ecological assessments including weed, vegetation type and native plant surveys along with recording incidental fauna observations.

A desktop cultural heritage assessment found that there is a moderate to high potential for Wadawurrung lithic artefacts within the Site.

The ecological component of the site survey confirmed the presence of native vegetation that meets the definition of remnant patches, classified into eight EVCs. When combining literature review records and field surveys, a total of 268 vascular plant species were identified, of which 83 are not native to Victoria. Several rare or threatened plant species were recorded, including *Acacia uncifolia* (Coast Wirilda), *Adriana quadripartita* (Coast Bitter-bush), and *Eucalyptus leucoxylon* subsp. *bellarinensis* (Bellarine Yellow-gum), *Eucalyptus leucoxylon* subsp. *megalocarpa* (Large-fruit Yellow-gum), and *Geranium solanderi* var. *solanderi* s.s. (Austral Crane's-bill). These findings highlight the ecological significance of the Reserve and the need for targeted conservation actions.

Fauna assessments identified a total of 158 species, with several significant species recorded. Notably, the *Litoria raniformis* (Growling Grass Frog) which is listed as Vulnerable by the *Environment Protection and Biodiversity Conservation Act 1999*.

Values and threats to the reserve were summarised based on the ecological values identified and legislative requirements.

Values of the reserve are listed as: Cultural Values; The Growling Grass Frog Population; Southern Wetland; Native vegetation and Biodiversity; Ecological Significance; Assets and Infrastructure; and the Engaged Local Community who care for and contribute to the maintenance and promotion of the reserve.

Threats to these values are listed as: stormwater impacts on the Southern Wetland; loss of biodiversity from invasive plants; loss of biodiversity from inappropriate fire regimes; impacts on wildlife from pest animals; impacts on biodiversity from pest herbivores; disturbance to unknown cultural heritage; poorly maintained infrastructure and tracks; failure to maintain engagement with the community; and climate change impacting on the sites character.



This Background Report provides a comprehensive ecological assessment that will inform the Strategic Management Plan, ensuring that the Point Richards Flora and Fauna Reserve continues to support regional biodiversity and provide valuable natural and cultural benefits for future generations.

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## Glossary

| Term/Acronym                                    | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bioregion                                       | Biogeographic areas that capture the patterns of ecological characteristics in the landscape or seascape, providing a natural framework for recognising and responding to biodiversity values.                                                                                                                                                                                                                                                                                                                   |
| Bioregional Conservation Status (BCS of an EVC) | A state-wide classification of the degree of depletion in the extent and/or quality of an Ecological Conservation Class (EVC) within a bioregion in comparison to the State's estimation of its pre-1750 extent and condition.                                                                                                                                                                                                                                                                                   |
| BBCM                                            | Bellarine Bayside Foreshore Committee of Management                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| CMA                                             | Catchment Management Authority                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| DEECA                                           | Department of Energy, Environment and Climate Action                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Ecological Vegetation Class (EVC)               | A type of native vegetation classification that is described through a combination of its floristic, life form and ecological characteristics, and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities (i.e. lower level in the classification that is based solely on groups of the same species) that occur across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating. |
| EVC Benchmark                                   | A standard vegetation-quality reference point relevant to the vegetation type that is applied in habitat hectare assessments. Represents the average characteristics of a mature and apparently long-undisturbed state of the same vegetation type.                                                                                                                                                                                                                                                              |
| EPBC Act                                        | <i>Environment Protection and Biodiversity Conservation Act (1999) Cth</i>                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| FFG Act                                         | <i>Flora and Fauna Guarantee Act (1988) Vic</i> or the <i>Flora and Fauna Guarantee Amendment Act (2019) Vic</i>                                                                                                                                                                                                                                                                                                                                                                                                 |
| Habitat Hectares                                | Combined measure of condition and extent of native vegetation. This measure is obtained by multiplying the site's condition score (measured between 0 and 1) with the area of the site (in hectares).                                                                                                                                                                                                                                                                                                            |
| Habitat Zone                                    | A discrete area of native vegetation consisting of a single vegetation type (EVC) with an assumed similar quality. This is the base spatial unit for conducting a habitat hectare assessment.                                                                                                                                                                                                                                                                                                                    |
| Location risk                                   | The risk that removing native vegetation in a particular location will have an impact on the persistence of rare or threatened species.                                                                                                                                                                                                                                                                                                                                                                          |
| Native vegetation                               | Native vegetation is defined in the Victoria Planning Provisions as 'plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses'.                                                                                                                                                                                                                                                                                                                                                        |
| Rare or threatened species or communities       | A species of flora, fauna or ecological community listed by the FFG Act, or EPBC Act as vulnerable, or greater.                                                                                                                                                                                                                                                                                                                                                                                                  |
| Remnant patch                                   | <ul style="list-style-type: none"> <li>- An area of vegetation where at least 25 per cent of the total perennial understorey plant cover is native; or</li> <li>- Any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy; or</li> <li>- Any mapped wetland included in the Current wetlands map, available in DELWP systems and tools.</li> </ul>                                                        |
| Strategic biodiversity score                    | A score that quantifies the relative value of a location in the landscape with regard to its condition, extent, connectivity and the support function it plays for species.                                                                                                                                                                                                                                                                                                                                      |
| VBA                                             | Victorian Biodiversity Atlas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Vegetation Quality Assessment (VQA)             | The Vegetation Quality Assessment (VQA) otherwise known as the habitat hectare assessment method is the standard approach of assessing vegetation quality in Victoria. Consistency in the application of the method by assessors is essential to support the delivery of Victoria's native vegetation removal regulations.                                                                                                                                                                                       |

# 1 Introduction

---

TerraLab has been commissioned by Bellarine Bayside Foreshore Committee of Management for the consulting services required to prepare a Strategic Management Plan and Priority Operational Plans for Point Richards Flora and Fauna Reserve.

The first step in the preparation of the Plans, is to prepare a Background Report (this document) which aims to summarise the current status of Point Richards Flora and Fauna Reserve.

## 1.1 Project Background

Bellarine Bayside Foreshore Committee of Management (Bellarine Bayside) is a not-for-profit, Category 1 coastal Committee of Management formed by the Victorian Government in 1994 to manage 17 kilometres of coastal Crown land reserve on the northern Bellarine Peninsula (BBCM, 2019). Bellarine Bayside is responsible for management of the foreshore reserve in accordance with the Crown Land (Reserves) Act 1978 which encompasses Point Richards Flora and Fauna Reserve (the Site or the Reserve).

The Reserve was established in 1979 under the *Crown Land (Reserves) Act 1978* (Stokes, Discovering Portarlington's History - A driving trail, 2007b). The site is zoned Public Resource and Conservation Zone under the Geelong Planning Scheme and is one of the largest areas of native bushland and ephemeral wetlands on the Bellarine Peninsula (BBCM, 2024a).

In 2019, Bellarine Bayside published the Northern Bellarine Coastal Management and Marine Management Plan (2020-2025), which, among many other things, stipulated in Precinct Action P1.1 to Develop a Management Plan for Point Richards Flora and Fauna Reserve in coordination with relevant agencies and stakeholders (BBCM, 2019).

### 1.1.1 Project Objectives

The project aims to address elements of four major 'themes'. These are:

- Wadawurrung Cultural heritage,
- Biodiversity conservation, including wetlands
- Fire management,
- Visitors and community

The Management Plan for the Reserve will include six documents:

- The Background Report (this document) which aims to summarise the current status of the Site based on database searches, literature searches and site investigations.
- A Strategic Management Plan which will set out objectives for the Site and strategies on how to achieve those. And,

- Priority Operational Plans that outline some of the key operational management approaches such as timing, resources and monitoring requirements across the following four areas (separate documents for each area):
  - Threatened Species Plan,
  - Pest Animal Plan,
  - Vegetation Plan,
  - Visitor and Community Plan.

### 1.1.2 Objectives of the Background Report

The objectives of the background report are:

- Outline the traditional owner status, rights and connections associated with the reserve including native title and relevant information from the Wadawurrung Healthy Country Plan.
- Outline the land status, guiding legislation and policy, planning area and regional context, including surrounding land management responsibility.
- Review and provide a summary of relevant strategic and other plans that will inform the plans.
- Conduct database searches of key public databases pertaining to the site and the subject matter of the management plan.
- Conduct a literature review of documents pertaining to the Site.
- Undertake a site assessment that includes:
  - An assessment of site infrastructure,
  - A snapshot assessment of flora and fauna present on Site,
  - An assessment of the occurrence of weeds across the Site,
  - Incidental observation of pest animal occurrence across the Site,
  - An indicative assessment of fuel hazard,
  - An indicative assessment of habitat quality.
- Undertake a Values Assessment which includes a combination of desktop and site-based assessments (where appropriate) on,
  - Landscape and environment:
    - Climate,
    - Landscape (geology, geomorphology and soils),
    - Hydrology (waterways, waterbodies and groundwater),
    - Ecology (native vegetation, significant ecological communities, flora, fauna, invasive species),
    - Fire (history, tolerable fire intervals, fuel hazard),
  - Country, culture and heritage:
    - Ethnography of the Registered Aboriginal Party (RAP),
    - Land use history,
    - Victorian Aboriginal Heritage Register,
    - Cultural Heritage Management Plans,
  - Visitor experience:
    - Recreation values
    - Infrastructure

- Level of use and user profile
  - Programs / volunteering
  - High level assessment of the contribution to visitor economy
- Conduct a desktop assessment of risks to the reserve.
- Divide the site into zones based on like management requirements.
- Undertake a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis.
- Compilation of all information into a document (this report).

## 1.2 Strategic Context

### 1.2.1 Relevant legislation and policy

The following listed legislation are considered and/or otherwise relevant to the Site and the preparation of this document. However, it should be noted that consideration of legislation is only done at a higher level, and further investigation may be required.

- Commonwealth
  - *Environment Protection and Biodiversity Conservation Act 1999*
- State
  - *Environmental Protection Act 1970*
  - *Wildlife Act 1975*
  - *Environmental Effects Act 1978*
  - *Crown Land (Reserves) Act 1978*
  - *Planning and Environment Act 1987*
  - *Flora and Fauna Guarantee Act 1988*
  - *Water Act 1989*
  - *Catchment and Land Protection Act 1994*
  - *Aboriginal Heritage Act 2006*
  - *Marine and Coastal Act 2018*

Refer to Section 0 for further consideration of these legislation and policies.

The reserve also sits within the context of the following plans, strategies and guidelines:

- Northern Bellarine Coastal and Marine Management Plan (2020-2025) (BBCM, 2019).
- Corangamite Regional Catchment Management Strategy to 2027.
- Planning and Environment Amendment (Distinctive Areas and Landscapes) Act 2018  
Bellarine Peninsula Distinctive Area and Landscape.
- Planning zones
  - Public Conservation and Resource Zone (PCRZ)
    - Schedule to clause 36.03 Public Conservation and Resource Zone
- Overlays
  - Environmental Significance Overlay (ESO)
    - Schedule 2 to clause 42.01 Environmental Significance Overlay – High value wetlands and associated habitat protection.
  - Land Subject to Inundation Overlay (LSIO)

- Schedule 2 to clause 44.04 land subject to inundation overlay – Coastal inundation and hazard.
- Additional encumbrances
  - Area of Aboriginal Cultural Heritage Sensitivity
  - Designated Bushfire Prone Area

Other overlays in the vicinity of the Site, but not directly affecting it include:

- Design and Development Overlay (DDO)
- Development Plan Overlay (DPO)
- Heritage Overlay (HO)
- Public Acquisition Overlay (PAO)
- Special Building Overlay (SBO)
- Significant Landscape Overlay (SLO)

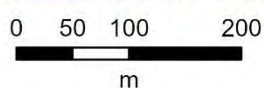
Refer to Map 12 – Planning Overlays to view the overlays affecting the Site.

### 1.3 Site and Study Area

The Study Area is a five-kilometre region surrounding the Site. It is situated approximately 40 kilometres east southwest of Melbourne, Victoria. It is located within the Greater Geelong City Council, the Otway Plains bioregion and within the Corangamite Catchment Management Authority region.

The Point Richards Flora and Fauna Reserve site is situated on the Portarlington coast of the Bellarine Peninsula and is approximately 62 hectares in size. It is one of the largest native bushlands and ephemeral wetland areas remaining on the Bellarine Peninsula.

The extent of the site is shown in Figure 1.



Imagery source: Nearmap (04/09/2024)

Spatial Reference  
Name: GDA2020 Vicgrid  
PCS: GDA2020 Vicgrid  
GCS: GDA2020  
Datum: GDA2020  
Projection: Lambert Conformal Conic



Figure 1 – Point Richards Flora and Fauna Reserve (the Site)

## 2 Methods

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### 2.1 Key Definitions

The definitions below are essential for the interpretation of this report. For additional definitions, refer to the Glossary.

#### 2.1.1 Native Vegetation

Native vegetation is defined in the Victoria Planning Provisions (Definitions – Clause 72) as ‘*plants that are indigenous to Victoria, including trees, shrubs, herbs and grasses*’. DELWP’s *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017) (the Guidelines) further defines native vegetation into two categories: ‘remnant patches’ and ‘scattered trees’ outlined below.

A ‘remnant patch’ of native vegetation is either:

- An area of vegetation where at least 25 percent of the total perennial understorey plant cover is native, or
- Any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy, or
- Any mapped wetland included in the *Current wetlands map*, available in DELWP systems and tools.

A ‘scattered tree’ is:

- A native canopy tree that does not form part of a remnant patch.

Definitions are from the Guidelines (DELWP, 2017).

#### 2.1.2 Weed

A vascular plant species that is not considered native to Victoria. Species that are native to Victoria can be considered ‘beyond their natural range’ and also considered a weed in the context of the Site.

Weeds are generally classed as either:

- A Weed of National Significance (WoNS), which are those that are invasive with potential for spread and environmental, social and economic impacts (DAFF, 2025).
- A weed proclaimed by the *Catchment and Land Protection Act 1994* (CaLP weed).
- Environmental weed, which are those with a risk rating of high or very high in the “Advisory list of environmental weeds in Victoria” (White, et al., 2018).

Note, that a single weed species can fit into all these categories.

### 2.1.3 Rare or threatened species or ecological communities

A rare or threatened species or community is a species of flora, fauna or ecological community listed by the FFG Act, or EPBC Act as vulnerable, or greater.

The significance of a species or ecological community follows its listing status under Commonwealth or State legislation.

- National significance includes all species and communities listed as critically endangered, endangered or vulnerable under the EPBC Act.
- State significance includes all species and communities listed as critically endangered, endangered or vulnerable under the FFG Act.

## 2.2 Desktop assessment

A desktop assessment was performed which included detailed database searches and a literature review of publicly available documents, and those obtained from Bellarine Bayside.

### 2.2.1 Database searches

A range of database searches were conducted to provide background information and context to the themes of the project. The databases queried included:

- Search of the Victorian Biodiversity Atlas (VBA) (DEECA, 2024).
- Protected Matters Search Tool (DCCEEW, 2024).
- Victorian Aboriginal Heritage Register (VAHR) (ACHRIS, 2024)
- NatureKit (for pre-1750 and extant Ecological Vegetation Class [EVC] mapping) (DEECA, 2024).
- Historic imagery sources from the Department of Energy, Environment and Climate Action (DEECA) and Geoscience Australia (DEECA, 2024; Geoscience Australia, 2024).
- Environmental Protection Agency Priority Sites Register via Victoria Unearthed. (EPA Victoria, 2024)
- Planning schemes and overlays via VicPlan (DEECA, 2024).
- Spatial data including:
  - Geology [SG\_GEOLOGICAL\_UNIT\_250K] (DJISR, 2024)
  - Geomorphology [GMU250] (DJISR, 2024)
  - Coastal Acid Sulphate Soils [COASTAL\_ACID\_SULPHATE\_SOILS] (DJISR, 2024)
  - Victorian Soil type mapping [SOIL\_TYPE] (DJISR, 2024)
  - Ramsar Wetland Areas [RAMSAR25] (DEECA, 2025)
  - Hydrology [VICMAP\_HYDRO] (DEECA, 2024)
  - EVCs [NV1750\_EVCBCS and NV2005\_EVCBCS] (DEECA, 2024) (DEECA, 2024)
  - Threatened communities [NV2005\_FFG\_COMM] (DEECA, 2024)
  - Fire History Records of Fires across Victoria [FIRE\_HISTORY\_SCAR] (DEECA, 2024)
  - Vicmap Transport [VICMAP\_TRANSPORT] (DTP, 2025)
  - Nearmap Imagery (Nearmap, 2025)

For the VBA and Protected Matters Search Tool (PMST), a search radius of five kilometres was used (which is the definition of the ‘Study Area’). For the VAHR search, a search radius of two kilometres was used (which is the definition of the ‘Geographic Region’ for this project).

The outcomes of each database search are reported in the relevant section of the results.

### 2.2.2 Literature review

Bellarine Bayside provided a selection of documents that appeared to suit the themes covered by the project. Each document was investigated for relevance to the site survey or goals of the project.

Key dates and milestones/events that occurred at the Sites location were recorded in a document in chronological order to assist with understanding the reserves history.

Public sources queried included:

- State Library of Victoria digital archive for reports referencing the sites history (State Library Victoria, 2024).

## 2.3 Site survey

A site survey was conducted from the 7<sup>th</sup> of January 2024 by:

- Harley Schinagl, BSc. (Env. Mgt.) PG. Dip. NRM (policy and planning), 20 years’ experience.
- Sarah Clark, BSc. (Env. Mgt.), 4 years’ experience.
- Gidget Mirrabelle, BSc. Marine & Botany, MS. Env. Sci. (marine and coastal management), 7 years’ experience.
- Greena George, BSc Forestry, MS. Env. Sci. (protected area governance).
- Damien Cook (Wetland Revival Trust), 34 years’ experience.

The survey included the following sub-surveys.

### 2.3.1 Asset survey

Database searches were used to determine the likely location and length of the track network across the site.

All tracks and point infrastructure (such as gates, signs, steps, noticeboards, shelters, etc.) were mapped using Real Time Kinematic (RTK) Global Navigation Satellite System (GNSS) over Network Transport of RTCM via Internet Protocol (NITRIP) connected to the QCLF (QCLF00AUS0) base station with a typical horizontal accuracy of <5 cm.

Point data was categorised as either sign, gate, stairs, building or other, named, given a condition rating based on the definitions shown in Table 1 and a photograph taken. If stairs were present, the step count was also recorded.

Line data was collected for tracks and was first categorised by surface type (asphalt, concrete, gravel, sand, other), before the following additional attributes were recorded:

- The condition of the path was ranked based on the Likert scale shown in Table 1.
- The path width recorded as either <1.2 metres wide, 1.2 to 2.0 metres wide, or >2.0 metres wide.
- Easement width (the entire unimpeded width including grassy verge adjacent to the track) was recorded as either <2.4 metres wide, 2.4 to 5.0 metres wide or >5.0 metres wide.
- The vertical clearance height was recorded as either <2.0 metres high, 2.0 to 5.0 metres high or unobstructed.

Where one of the attributes changed, the line was ended and a new line commenced.

*Table 1 – The five step Likert scale used for assessing the condition of infrastructure on site.*

| Rating           | Definition                                                                                           |
|------------------|------------------------------------------------------------------------------------------------------|
| <b>Excellent</b> | Asset is brand new (typically <5 years), or near-new condition with no obvious signs of degradation. |
| <b>Good</b>      | Asset is somewhat new (typically 5-10 years), with only minor aesthetic signs of degradation.        |
| <b>Average</b>   | Asset shows some signs of degradation, but fulfills its function.                                    |
| <b>Poor</b>      | Asset is aging and shows significant signs of degradation, some of which may impact its function.    |
| <b>Very poor</b> | Asset is very old and/or no longer fulfils its function adequately.                                  |

### 2.3.2 Vegetation survey

Database and literature searches were used to determine the likely type and extent of EVCs across the site. A Vegetation Quality Assessment (VQA) accredited assessor evaluated the desktop sources and inspected the site. Ecotones were inspected and the determination of EVCs reviewed. If required, new ecotones were mapped using Field Maps (v24.3.0 build 1526) (Esri, Redlands California) using a Google Pixel 7's integrated GPS receiver.

Habitat quality was estimated by using an abbreviated form of the Habitat Hectare assessment method (DSE, 2004), implemented by a VQA accredited assessor. That is, all components of the assessment were rapidly estimated with habitat scoring entered on to a Habitat Hectares field sheet. The goal of the rapid assessment was to determine approximate habitat zones across the site. Habitat zone delineation was based on the "Revised advice for habitat zone (patch) delineation" for removal sites (DELWP, 2018) of which the most critical component was that a habitat zone may be split if the site condition score (out of 75) varies by at least 15 points. Though, habitat zones were not split if they were greater than one hectare. A written description of each habitat zone was also recorded.

The information from the abbreviated habitat assessment was used to draft habitat zones using a Geographic Information System (GIS). Information from the vegetation survey and botanical survey were also used during this analysis.

EVCs were also evaluated against a short list of significant ecological communities derived from the database and literature search. If any candidate ecological communities were identified, they would be re-inspected at a later date following the official advice for identifying said community.

### 2.3.3 Botanical survey

A botanical survey was conducted using a quadrat-based approach stratified by EVC. Larger, more variable EVCs may have been subject to multiple quadrats while others may not have had any assessment. This was determined by the assessors at the time in the field based on the likelihood for identifying novel species.

Quadrats were 10x10 metres and oriented in a north-south direction. Photos were taken from the south-west corner, looking north-east. All species with projected foliage cover within the quadrat were recorded in a spreadsheet and attributed with a cover code based on the Braun-Blanquet method (shown below).

Table 2 – The Braun-Blanquet code used in the botanical survey

| Code | Abundance  | Cover (%) |
|------|------------|-----------|
| r    | Individual | <5        |
| +    | Few        | <5        |
| 1    | Many       | <5        |
| 2    | Many       | 5-25      |
| 3    | Many       | 25-50     |
| 4    | Many       | 50-75     |
| 5    | Many       | 75-100    |

Rare or threatened species identified during the database and literature review were also searched for during field surveys.

### 2.3.4 Weed survey

Database and literature searches were used to determine the weed species likely to occur on site.

Weeds were sampled in plots across the reserve equal to 5.6 metres radius (~100 m<sup>2</sup>). A sample site calculator was used to determine the number of plots required to achieve a confidence level of 90% to within 10% of the true mean, assuming a relatively low cover of weeds of around 20%. This resulted in 43 sample locations being required which were randomly scattered across the site using the Create Random Points tool in ArcGIS Pro (v3.4.0) (Esri Inc. Redlands California).

Equation 1 – Sample size calculation used to estimate the approximate mean weed coverage.

$$n = \frac{(Z_a)^2(p)(q)}{d^2}$$

Where:

$Z_a$  is the standard normal deviate coefficient for a given level of confidence

$p$  is the approximate mean proportion of weed cover

$q = 1 - p$

$d$  is the desired level of precision

Sample locations were inspected on foot by the survey team. The sample radius was visually estimated (a tape measure was used at the beginning of the survey to calibrate estimates), and data recorded in the following format:

- The top three most prevalent weeds (by estimated cover) within the sample area were listed by species name.
- The estimated cover of all non-native species was recorded (that is, excluding native species that may be beyond their natural range).
- The estimated cover of all WoNS was recorded.
- The estimated cover of all weeds proclaimed by the CaLP Act was recorded

Weed cover estimates were classified as <1%, <5%, <10%, and then at 10% intervals thereafter.

The mean and max estimated cover of weeds for each category (all weeds, WoNS, and CaLP) was calculated. The most prevalent weed species were determined based on the frequency (*f*) of detection.

### 2.3.5 Fauna and pest animal survey

Database and literature searches were used to determine the fauna species likely to occur on site. The fauna survey was incidental in nature, conducted alongside the other surveys. Notes were taken on the species either directly or indirectly observed, as well as their location and extent.

Rare or threatened species identified during the database and literature review were also searched for during field surveys, though no targeted methods were utilised.

### 2.3.6 Fuel hazard assessment

Fuel hazard assessments were undertaken following the methods described by the Overall fuel hazard assessment guide (Hines, Tolhurst, Wilson, & MrCarthy, 2010). These were undertaken in locations that represented the different types of habitat across the reserve, as well as being geographically distinct from one another. Overall fuel hazard was evaluated in line with the reference methodology.

## 2.4 Legislation and Policy

The outcomes of the database searches, literature review, and site survey were reviewed against the legislation and policy listed in Section 2.4. Discussion around requirements under each policy mechanism was discussed, though as there are no specific development plans to reference, in many cases, the discussion is general in nature.

## 2.5 Values and Threats

The values and threats of the Site will be distilled from the outcomes of the background work and field survey. A value will:

- Be directly linked to legislation,
- Be considered something to be valued or protected by the local and broader community,
- Have implications for not protecting it,
- Have direct financial value, or
- Have some other intangible value.

Conversely, a threat will:

- Be directly linked to legislation,
- Have the potential to indirectly impact a listed value, or
- Have implications for not adequately managing.

## 2.6 Risk Assessment

Threats to the site were identified from the database and literature searches and field survey. These threats were refined and a risk assessment was undertaken. The risk assessment followed a likelihood/consequence matrix with different definitions of each level of consequence health and safety, environment, cultural heritage, and financial impacts. The likelihood and consequence was estimated by the authors and the scores multiplied together to give the risk rating. The risk assessment matrix can be seen in Appendix 8 – Risk assessment matrix

## 2.7 Limitations

The timing of the site survey means it is possible that some annual, deciduous or dormant taxa may not have been visible. Further, due to the cryptic nature, site conditions, climate and seasonal growth cycles of certain taxa, it is possible that important diagnostic features were not visible, not present, or indistinguishable from other, non-target species. It is plausible that false positives or negatives may have occurred which can potentially influence results.

Assumptions, interpretations and recommendations may be based on information from historical datasets. While every care has been made to account for uncertainty in historical datasets, it is possible that the limitations of that data may influence the outcomes from this report.

## 3 Assessments

### 3.1 Database searches and literature review

Prior to field work, a thorough database and literature review was undertaken. This included nine database sources which are listed in Section 2.2.1.

Bellarine Bayside supplied a package of background material of which 45 documents were reviewed Appendix 1 – Literature Review Sources

The outcome of each database query and document reviewed is documented in the following sub-sections.

#### 3.1.1 Site history

As a result of the database search and literature review, the following key events and milestones were extracted.

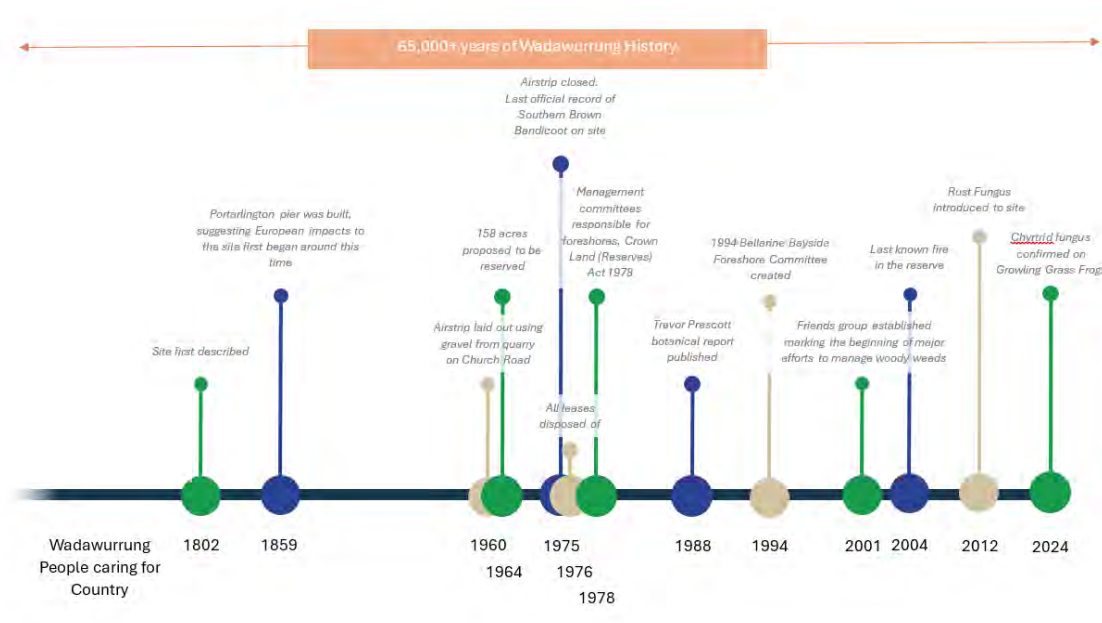


Figure 2 – An overview of the major, known, recent events of Point Richards Flora and Fauna Reserve.

## 3.2 Landscape and Environment

### 3.2.1 Climate

During the last glacial period, starting around 80,000 years ago, temperatures and sea levels dropped significantly, peaking about 18,000 years ago with sea levels 120 meters lower and temperatures 6–10°C colder (Kershaw, 1995). Tasmania was connected to the mainland by land,

and semi-arid grasslands spread across Victoria. As the climate warmed, conditions became milder and wetter, stabilizing around 5,000 years ago to resemble today's cooler, drier climate, with grasslands remaining dominant in Victoria until recently (Kershaw, 1995).

Today, Melbourne has a temperate climate with warm summers and mild to cold winters. Summer temperatures average between 14°C and 25.8°C, while winter averages range from 7.5°C to 13.3°C. Annual rainfall is 600–700 mm (Land Conservation Council, 1991).

The closest weather station with long-term temperature data was 087113 Avalon Airport, 18.8km away. The mean maximum temperature for each year from 1968 – 2024 averaged at 20.4°C.

The closest weather station with long-term rainfall data was 087114 Drysdale (Brimdale), 8.1km away. The average annual rainfall from 1968 – 2024 was 665mm.

These local climate conditions preceding the January 2025 survey (Figure 3 and Figure 4) suggest that:

1. Monthly mean maximum temperatures in 2024 were at or greater than the median, with the Spring preceding the survey being warmer than the long-term average (monthly median from 1995-2024).
2. Rainfall oscillated frequently throughout the year (monthly median from 1968-2024).

The Northern Bellarine Coastal and Marine Management Plan 2020–2025 (BBCM, 2019) outlines expected climate change impacts such as sea-level rise, increased erosion, and storm surge, which may affect coastal vegetation, habitat extent, and land use in the region (BBCM, 2019). A forthcoming Coastal Climate Change Adaptation Plan (CCCAP) will build on this by modelling future climate scenarios to guide long-term management decisions. In addition to surface impacts, it is also plausible that climate change may affect ground water systems, including rising water tables and increased salinity.

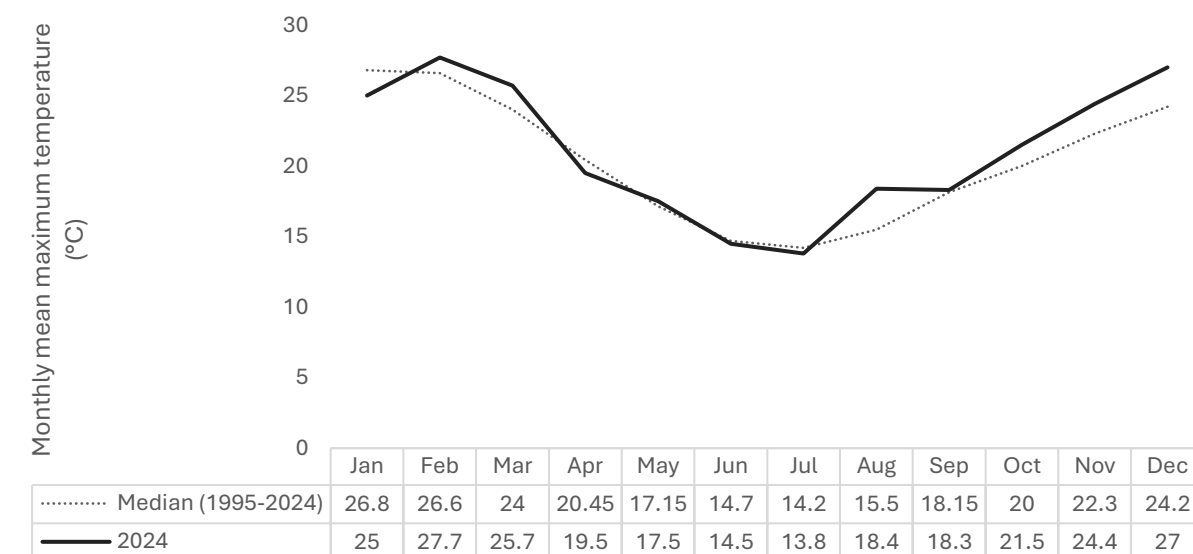


Figure 3 – Monthly climate data for Avalon Airport (station number 87113) for monthly mean maximum temperature (°C).

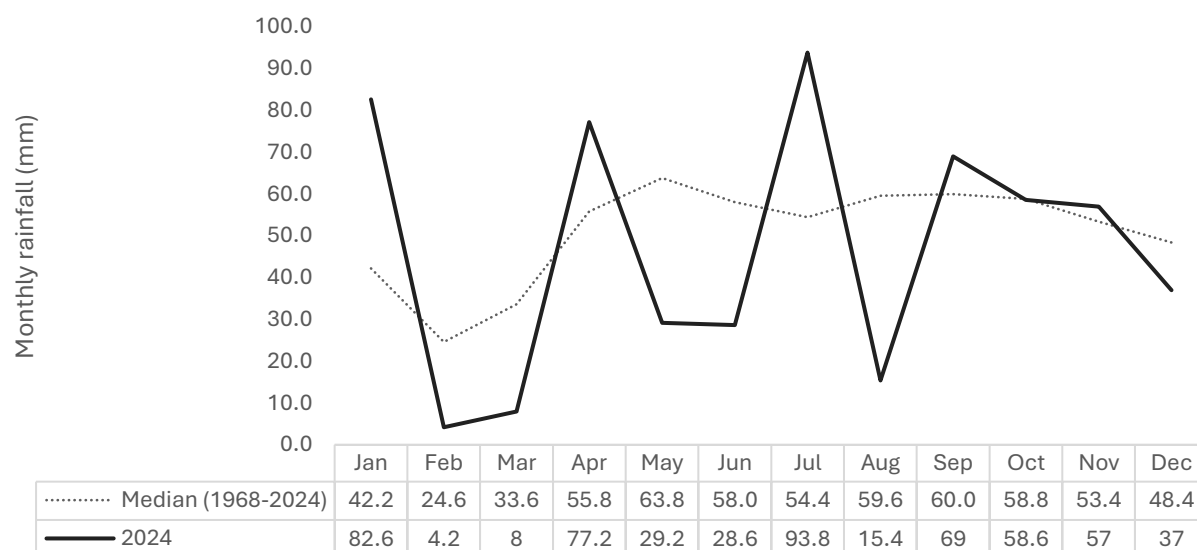


Figure 4 - Monthly climate data for Drysdale (Brimdale) (station number 087114) for monthly rainfall (mm).

### 3.2.2 Landscape

The Site is located broadly with the Western Plains (WP), which is made up of low-lying undulating plains formed on both volcanic and sedimentary lithologies. These plains stretch from Melbourne to Portland and as wide as Colac to Beaufort. It consists of vast open areas of grasslands, large, shallow lakes, small patches of woodland and stony rises from the once hot lava flows. The low peaks of dormant and extinct volcanoes dot the landscape.

The youngest landscapes, the stony rises, have skeletal uniform or gradational soils, whereas the earlier lava flows have deeper soils varying from friable gradational to strongly texture contrast soils. Further south on the marls and limestones, the soils vary from clay-rich (medium or heavy textured) gradational to strongly texture contrast soils and generally heavy (uniform) clays. Much of the area is a natural grassland plain, bounded by the Western Uplands to the north, and the coastline and Otway Range to the south (Agriculture Victoria, 2020). The sedimentary parts of the Western Plains mainly comprise the marine sands deposited by the retreating Pliocene sea and sometimes the older underlying Gellibrand Marl and Port Campbell Limestone is also exposed. These sand plains also appear in ‘windows’ within the area of the volcanic plains, where they have not been covered by lava flows (Agriculture Victoria, 2020).

#### 3.2.2.1 Geology

Query of the Geology spatial data (DJISR, 2024) identified one geological unit across the site: Coastal dune deposits (Qdl1): generic. Refer to Table 3 for more information.

Table 3– Geology spatial data attributes (DJISR, 2024).

| Name                                  | Description                                                                                              | Geologic Unit Type | Rank                                    | Lithology                                                                         | Geologic History                                                               |
|---------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------|-----------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| coastal dune deposits (Qdl1): generic | Sand, silt, clay: well sorted, poorly consolidated; coastal dune and beach deposits, some swamp deposits | Informal           | informal Formation [lithostratigraphic] | silt [material] (significant); sand (significant); clay [lithology] (significant) | Holocene to Holocene (sand deposition - beach-ridge strandplain [environment]) |

Qdl1 coastal dune deposits are a generic term for well-sorted, poorly consolidated sand, silt, and clay deposits found in coastal dunes and beaches, and sometimes in swamps. Coastal dunes are dynamic, shifting features of the shoreline that are formed by the accumulation of sand over time. They are made up of sedimentary particles like sand, silt, and clay, and are shaped by wind, waves, and tides.

Refer to Map 7 – Geologic map of Point Richards Flora and Fauna Reserve and its surrounds to see the geology of the Study Area.

### 3.2.2.2 Geomorphology

Query of the Geomorphology spatial data (DJISR, 2024) identified two geomorphological units across the site: Coastal barriers (Ninety Mile Beach) and Sedimentary Plains (Plains on unconsolidated (sedimentary) deposits (Table 4 and Map 8).

Table 4– Geomorphology spatial data attributes (DJISR, 2024).

| GMU_T1_DESC         | GMU_T2_DESC                                                         | LITHOLOGY         | GMU_T3_DESC                                                                               |
|---------------------|---------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------|
| Coast (C)           | Coastal barriers (Ninety Mile Beach)                                | Fluvial & Aeolian | Coastal barriers (Ninety Mile Beach)                                                      |
| Western Plains (WP) | Sedimentary plains (Plains on unconsolidated (sedimentary) deposits | Alluvium          | Terraces and floodplains, and coastal plains (Barwon River, Moolap sunklands, Cape Otway) |

Analysis of historic imagery shows that over the course of 70 years, longshore drift is causing material to be deposited west of the boat ramp (downdrift side). Refer to Figure 5.

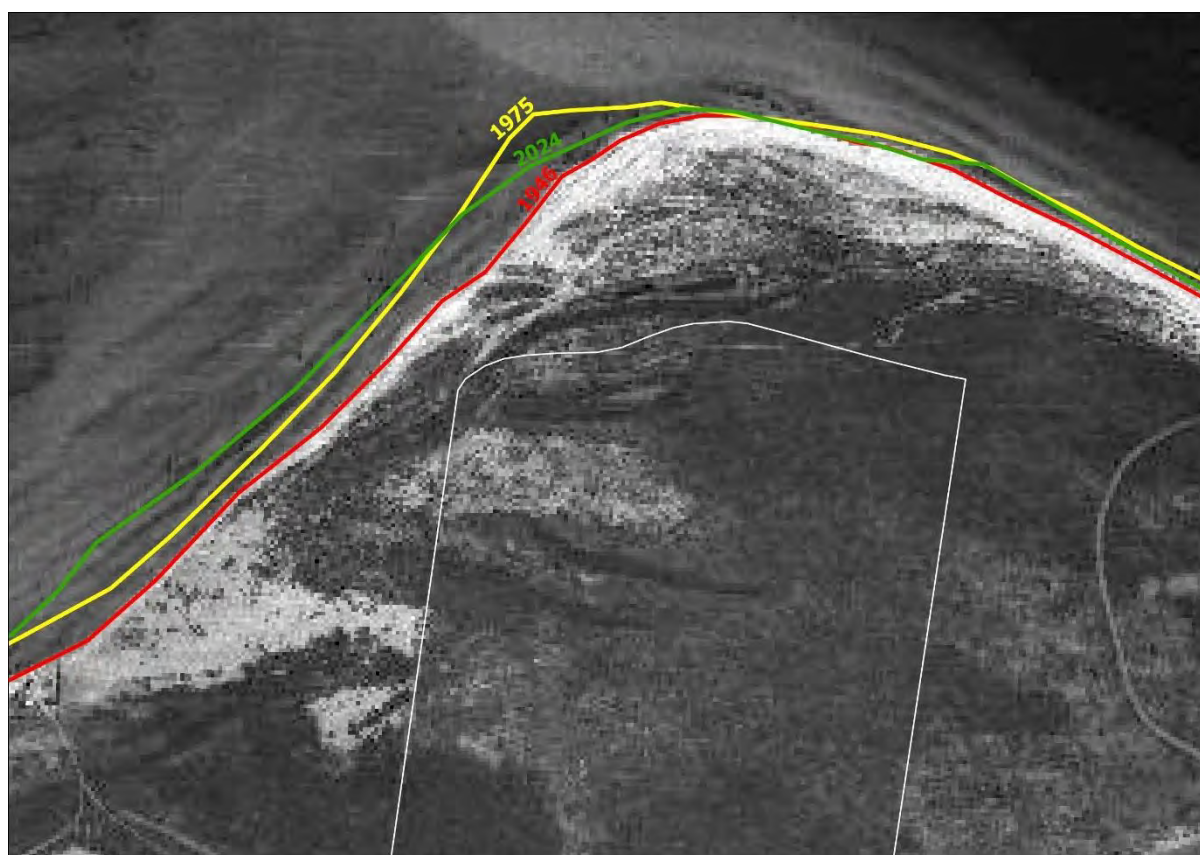


Figure 5 - Approximate shoreline positions across the decades mapped from aerial imagery (basemap image is from 1950).

Point Richards Boat Ramp has impacted the natural deposition that is occurring. The west side of Figure 5 reflects the true pattern of deposition. Over longer timescales, this process may be the cause for the sandy deposition with which Point Richards reserve is located. This sandy substrate gives rise to its unique vegetation (Map 10 – Modelled Ecological Vegetation Classes of

Point Richards Flora and Fauna Reserve and its surrounds and unique geology (Map 7 – Geologic map of Point Richards Flora and Fauna Reserve and its surrounds)

Refer to Map 8 – Geomorphological map of Point Richards Flora and Fauna Reserve and its surrounds to see the geomorphology of the Study Area.

### 3.2.2.3 Soils

Query of the Soil Type spatial data (DJISR, 2024) identified one soil type across the site: Aerice Podzols (POAL) (Table 5).

Table 5– Soil Type spatial data attributes (DJISR, 2024).

| Order        | Sub-order   | ASC_OSO |
|--------------|-------------|---------|
| Podzols (PO) | Aerice (AL) | POAL    |

Podzols are soils characterized by B horizons enriched with organic matter, aluminium, and/or iron compounds. Recognized globally, Australia is notable for its 'giant' Podzols. These soils are commonly found near coastlines and on quartz sand islands.

Podzols contain specific diagnostic horizons:

- Bs horizon: Dominated by iron compounds.
- Bhs horizon: Enriched with organic-aluminium and iron compounds.
- Bh horizon: Contains organic-aluminium compounds.

These horizons may occur individually or in combination within a soil profile.

The Aerice sub-order indicates that the soil is free-draining, with no impediments to water movement in the B horizon or substrate. There is no waterlogging or seasonal saturation. B horizons in Aerice Podzols are weakly coherent, porous, brightly coloured, and show no signs of seasonal reduction (Soil Science Australia, 2024).

Query of the Coastal Acid Sulphate Soils (CASS) dataset identified that the site has potential to contain CASS (DJISR, 2024).

Disturbing CASS refers to allowing oxygen to enter earth materials containing metal oxides found in either sulfidic or sulfuric substances. Sulfidic material consists of soil or sediment with metal sulfides that oxidize into sulfuric acid when exposed to oxygen. Sulfuric material, on the other hand, contains metal oxides that are partially or fully oxidized (Victorian Resources Online, 2025).

Refer to Map 9 – Soils map of Point Richards Flora and Fauna Reserve and its surrounds to see the soils of the Study Area.

## 3.2.3 Hydrology

### 3.2.3.1 Waterways

VicMap Hydro (DEECA, 2024) was queried to determine if any designated waterways (Water Act 1989) occur on site. No waterways were identified.

Field surveys confirmed that there are no waterways on site.

### 3.2.3.2 Waterbodies

VicMap Hydro (DEECA, 2024) was queried to determine if any waterbodies occurred on site. Three areas subject to inundation were identified on site.

Query of the PMST (DCCEEW, 2024) identified one Ramsar wetland as occurring within five kilometres of the site: Port Phillip Bay (Western Shoreline) and Bellarine Peninsula.

No Wetlands of National Importance are present within the Site or its adjacent surrounds.

The literature review indicated that the site has a complicated hydrological history. Namely, that residential development to the south of the Site, and the subsequent increase in stormwater that enters the southern wetland of the Site is changing the character of the wetland (City of Geelong, 2020). Water quality monitoring has been occurring and concludes that the changes in hydrology from development are likely to pose a low risk of pollution impacts to the wetland (Thomson, 2024; Thomson, 2023; Salmi, 2020; Salmi, 2020). However, it is the indirect impacts of the stormwater that are believed to pose the most significant threat to the wetland. The increase of freshwater (and potentially sediment too) is creating the ideal conditions for the growth and expansion of *Phragmites australis* (Common Reed) which is known to become locally dominant in some contexts (Arthur Rylah Institute, 2023; Cook, 2020). This expansion has the potential to impact on other ecological values in and near the wetland.

Field surveys confirmed the presence of the three waterbodies, though their extent and nature is more complex than the database sources suggest. At the time of survey those in the centre and north of the reserve were dry, whilst the southern wetland was deeply inundated and surrounded by large, dense swaths of Common Reed. The southern wetland is also protected by an Environmental Significance Overlay (refer to Section 4.7).

The hydrology of the site, particularly the southern wetland are complicated and have significant implications on the ecology of the site. While there is reasonable evidence to suggest that the change in Common Reed extent is occurring, a detailed historical assessment was not conducted to confirm this.

Refer to Map 7 – Geologic map of Point Richards Flora and Fauna Reserve and its surrounds to see the hydrological features of the site.

### 3.2.3.3 Groundwater

Query of VVG (VVG, 2024) identified one groundwater bore on site: Bore WRK043060. This bore is active/used and described to be unmonitored and used for domestic and stock irrigation.

Depth to water table is estimated to be less than 5 metres across the entire site (VVG, 2024).

The Corangamite CMA (VVG, 2024) identifies that the site has a local flow system in Quaternary Sediments. The Groundwater Flow System (GFS) is made up of quaternary alluvium, lake, dunes and lunettes. This GFS has the largest area of mapped salinity (approximately 1,000 to 3,500 mg/l of groundwater salinity) within the CCMA region (Western Victorian Uplands, Western Victorian Plains and Southern Uplands), resulting in high soil and water salinity hazards.

Groundwater interactions with the soil and vegetation are possible and may complicate the already complex hydrology of the site.

### 3.2.4 Ecology

#### 3.2.4.1 Native Vegetation

Query of NatureKit (DEECA, 2024) identified one pre-1750's modelled EVC occurring on the site, EVC 3: *Damp Sands Herb-rich Woodland*. Extant mapping suggests that this EVC is still present on site, albeit in a fragmented state.

The literature review confirms the presence of the *Damp Sands Herb-rich Woodland* EVC on site (Cook, 2020; Trengrove, 2023; Trengrove, 2015). This concurs with the outcomes of the database review for soils (Section 3.2.2.3). However, literature goes further to classify six additional wetland EVCs as being present on site:

- EVC 537: *Brackish Aquatic Herbland*
- EVC 821: *Tall Marsh*
- EVC 952: *Estuarine Reedbed*
- EVC 1113: *Sedge Wetland/Brackish Herbland Complex*
- EVC A107: *Wet Saltmarsh Herbland*
- EVC A110: *Coastal Dry Saltmarsh*

(Cook, 2020; Trengrove, Bellarine Bayside Northern Bellarine Rehabilitation Plan 2023-2028, 2023)

Field surveys confirmed that native vegetation that meets the definition of remnant patch (DELWP, 2017) is present on site. EVC mapping was conducted within areas of remnant patch and confirmed that eight EVCs are present on site, of which one, EVC 13: *Brackish Sedgeland* was newly identified.

These are summarised in Table 6. The location and extent of these EVCs on site can be seen in Map 10 – Modelled Ecological Vegetation Classes of Point Richards Flora and Fauna Reserve and its surrounds

Table 6 – The EVCs identified on site and its bioregional conservation significance (DEECA, 2024; DELWP, 2022).

| Bioregion   | EVC                                         | Bioregional Conservation Significance | EVC Description                                                                                                                                                                                                                                                                                                              |
|-------------|---------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Otway Plain | EVC 3: <i>Damp Sands Herb-rich Woodland</i> | Vulnerable                            | A low, grassy or bracken-dominated eucalypt open forest or woodland to 15 m tall with a large shrub layer and ground layer rich in herbs, grasses, and orchids. Occurs mainly on flat or undulating areas on moderately fertile, relatively well-drained, deep sandy or loamy topsoils over heavier subsoils (duplex soils). |
| Otway Plain | EVC 13: <i>Brackish Sedgeland</i>           | Vulnerable                            | Medium to tall sedgeland, dominated by salt-tolerant sedges in association with a low grassy/herbaceous ground-layer with a halophytic component. Scattered in near-coastal and western inland areas.                                                                                                                        |
| Otway Plain | EVC 537: <i>Brackish Aquatic Herbland</i>   | Vulnerable                            | Submerged (to weakly emergent) herbland, including more salt-tolerant aquatic species in semi-attached                                                                                                                                                                                                                       |

| Bioregion   | EVC                                                      | Bioregional Conservation Significance | EVC Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|----------------------------------------------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             |                                                          |                                       | floating mats. Scattered in inland and near-coastal areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Otway Plain | EVC 821: <i>Tall Marsh</i>                               | Vulnerable                            | Wetland dominated by tall emergent graminoids, typically in thick, species-poor swards. The structure is variously rushland, sedgeland or reedbed, locally closed or in association or fine-scale mosaic with Aquatic Herbland (EVC 653), e.g. along floodway lagoons. The vegetation is typically treeless, but sparse <i>Eucalyptus camaldulensis</i> (or in higher rainfall areas, <i>Eucalyptus ovata</i> ) are dispersed through some sites where sufficient dry periods occur to allow their survival. Scattered across lowland Victoria. |
| Otway Plain | EVC 952: <i>Estuarine Reedbed</i>                        | Endangered                            | Vegetation dominated by tall reeds (usually c. 1.5-3 m in height), in association with a sparse ground-layer of salt tolerant herbs. Distinguished from Estuarine Wetland (EVC 10) by the vigour and total dominance of the reeds, as well as the absence or low abundance of samphires in the ground layer. Sub-saline situations of coastal estuaries (sometimes periodically blocked by sand bars), localised in scattered near coastal sites between Nelson and East Gippsland.                                                             |
| Otway Plain | EVC 1113: <i>Sedge Wetland/Brackish Herbland Complex</i> | Endangered                            | Sedgeland of near coastal depressions, with the structural dominant species of Sedge Wetland (EVC 136) occurring in association with a component of halophytic herbs. Very rare, recorded from sub-saline soils with a high organic content on the Mornington Peninsula, but potentially at least previously more widespread in coastal areas.                                                                                                                                                                                                  |
| Otway Plain | EVC A107: <i>Wet Saltmarsh Herbland</i>                  | Depleted                              | Low herbland dominated by succulent to semi-succulent halophytic herbs or semi-shrubs, occupying low lying areas of coastal saltmarsh subject to regular inundation. Widespread but confined to restricted areas of suitable habitat in sheltered parts of the Victorian coast.                                                                                                                                                                                                                                                                 |
| Otway Plain | EVC A110: <i>Coastal Dry Saltmarsh</i>                   | Vulnerable                            | Herbland to low shrubland of upper coastal saltmarsh in lower rainfall areas, subject to relatively infrequent tidal inundation or sometimes in remnant near coastal lacustrine sites which no longer have direct access to tidal inundation events. Localised and severely depleted, Bellarine Peninsula, Western Port Phillip Bay, head of Western Port and Lake Reeve.                                                                                                                                                                       |

The only EVC with a tree component is *Damp Sands Herb-rich Woodland*. Within that EVC, Large Trees are defined as those with a diameter at breast height (DBH) of 70 cm or greater with an expected density of 15 per hectare (DEECA, 2024). It was beyond the scope of the project to measure and map the location of large trees across the Site, however, field observations suggest that large trees are effectively absent (based on the sampling approach described in Section 2.3.2) with none of those observed during field surveys meeting the 70 cm DBH threshold.

Large trees are integral components of the canopy and serve as vital seed sources for future vegetation, in addition to offering habitat for various animals and insects such as roosting sites for birds, hollows for arboreal animals, and large logs that serve as shelter for reptiles (DELWP, 2017).

There is approximately 4,250 hectares of land in the study area and 498 hectares of extant native vegetation (DEECA, 2024) indicating a native vegetation cover in the landscape of 11.7%. The Site (65 hectares) represents 13% of the remaining native vegetation despite only being 1.5% of the Study Area.

A total of 12 habitat zones were identified across the Site, five terrestrial and seven wetland. These were derived based on the abbreviated Vegetation Quality Assessment described in Section 2.3.2 for the purposes of identifying land management units and should not be relied on for purposes pertaining to the removal of native vegetation as described by the Guidelines. Figure 6 displays the location and extent of habitat zones across the Site.



Figure 6 - EVCs and habitat zones of the Site.

## Terrestrial habitat zones

### DAMP SANDS HERB-RICH WOODLAND – HABITAT ZONE 1 (WOODED)

Largely wooded and dominated by *Eucalyptus viminalis* ssp. *pyroriana* (Coastal Manna Gum) to a maximum of 15 metres tall, occasionally by *Banksia integrifolia* (Coast Banksia). Stems never greater than 70 centimetres DBH.

Shrubs frequent but not dense including *Acacia longifolia* subsp. *sophorae* (Coast Wattle), *Acacia implexa* (Lightwood) *Acacia longifolia* (Sallow Wattle) and *Leucopogon parviflorus* (Coast Beard-heath).

The ground story is often dominated by *Lomandra longifolia* (Spiny-headed Mat-rush) in many locations, and accompanied by a variable suite of species like *Ficinia nodosa* (Knobby Club-sedge), *Clematis microphylla* (Small-Leaved Clematis), and *Pteridium esculentum* (Austral Bracken). There are occasional swaths where organic litter dominates supported by small logs and branches. Exotic species are also widespread in this stratum with *Ehrharta calycina* (Perennial Veldt-grass) common.



Figure 7 - Damp Sands Herb-rich Woodland habitat zone 1, Wooded.

## DAMP SANDS HERB-RICH WOODLAND – HABITAT ZONE 2 (GRAMINOID DOMINATED)

In contrast to habitat zone 1, this zone is largely treeless with only scattered Coastal Manna Gum individuals present. Other woody plants such as Coast Wattle and *Gaudium laevigatum* (Coast Tea Tree) are also present, but are equally scattered. Though when they do occur, they are in clusters.

The zone is dominated by its ground storey vegetation and is often dominated by one of either Wattle Mat-rush or Blady Grass. Grasses, herbs, lilies, climbers and orchids are all represented with some common species being *Dichondra repens* (Kidney-weed), Knobby Club-sedge, *Poa labillardierei* var. *labillardierei* (Common Tussock Grass), *Rytidosperma racemosum* var. *racemosum* (Slender Wallaby-grass) or *Tricoryne elatior* (Yellow Rush Lily). Exotic species such as Perennial Veldt-grass is frequent along with immature *Genista linifolia* (Flax-leaf Broom).

Due to its lack of woody vegetation, logs are effectively absent. Organic litter is usually dense in inter-tussock spaces.



Figure 8– Damp Sands Herb-rich Woodland habitat zone 2, Graminoid dominated.

### DAMP SANDS HERB-RICH WOODLAND – HABITAT ZONE 3 (BRACKEN DOMINATED)

This zone is also largely treeless with a similar density and diversity of woody species as habitat zone 2.

Where it differs significantly is that instead of being dominated by graminoids with a rich array of other lifeforms, this zone is dominated by Austral Bracken with an otherwise low diversity. Austral Bracken is usually so dense that it leaves little room for other species to persist and so the fern is the zone characteristic feature.



*Figure 9 – Damp Sands Herb-rich Woodland habitat zone 3, Bracken dominated.*

#### DAMP SANDS HERB-RICH WOODLAND – HABITAT ZONE 4 (BRACKEN AND GRAMINOID MOSAIC, EXOTICS DOMINANT)

This zone is a mosaic of habitat zone 2 and 3 that could not be separated at the scale of the site mapping. As well as having areas represented by each of the two zones listed above, it also occasionally has fields dominated by Perennial Veldt-grass. In some instances, the exotic grass may be so dominant that the area fails to meet the definition of native vegetation.



*Figure 10 – Damp Sands Herb-rich Woodland habitat zone 4, Bracken and graminoid mosaic, exotics dominant.*

#### DAMP SANDS HERB-RICH WOODLAND – HABITAT ZONE 5 (REVEGETATION)

This zone is represented by a small section in the north of the site that is largely cleared of a previous cover of woody weeds and is now dominated by small, planted native plants and some natural regeneration, particularly of *Solanum* sp. (Kangaroo Apple). Litter cover is dense as a result of the clearing of woody weeds.



Figure 11– Damp Sands Herb-rich Woodland habitat zone 5, Revegetation.

A rapid evaluation of the three major terrestrial habitat zone (excluding the mosaic and revegetated zones) was undertaken to give an indicative habitat quality score and identify what habitat components may be depauperate. Refer to



Table 7.

Table 7 – Indicative habitat quality scores (Vegetation Quality Assessment) of each terrestrial habitat zone.

| Habitat zone             | 1                             | 2                             | 3                             |
|--------------------------|-------------------------------|-------------------------------|-------------------------------|
| EVC Name                 | Damp Sands Herb-rich Woodland | Damp Sands Herb-rich Woodland | Damp Sands Herb-rich Woodland |
| EVC Number               | 3                             | 3                             | 3                             |
| Large Trees              | 0                             | 0                             | 0                             |
| Tree Canopy Cover        | 2-5                           | 0                             | 0                             |
| Lack of Weeds            | 9-13                          | 7                             | 13                            |
| Understorey              | 15                            | 15                            | 10                            |
| Recruitment              | 3-5                           | 0-1                           | 0-1                           |
| Organic Litter           | 5                             | 3-5                           | 3                             |
| Logs                     | 2-3                           | 0                             | 0-1                           |
| <b>TOTAL (out of 75)</b> | <b>36-46</b>                  | <b>25-28</b>                  | <b>26-28</b>                  |

It is clear that large trees, and for the case of habitat zones 2 and 3 that large trees and tree canopy cover, are significantly lacking owing to their scattered or absent tree cover. This has flow on effects to recruitment and logs which are also poor in these zones. However, it is pertinent to note that although this is a treed EVC, there is some evidence to suggest that the broader region may have always had a sparse tree cover (Flinders, 1814). While this is simply conjecture at this point as field surveys did not highlight evidence either way, assessing those communities as treeless EVC's may be more appropriate and yield higher habitat quality scores, should that be how they naturally occur.

With that said, it is also reasonable to assume (and is the default position) that the trees were simply cleared either intentionally for firewood collection or grazing, or unintentionally through frequent burning or other forms of mismanagement.

Based on the final habitat score ranges, there is little difference between habitat zones 2 (graminoid dominated) and 3 (Bracken dominated). There are grounds to consider them the same zone, however, differences do occur in the lack of weeds and the understorey components. Where the Bracken dominated zone tends to benefit from a lower cover and diversity of weeds, it also suffers from a reduced understorey diversity. Conversely, the graminoid dominated zone has a higher diversity of understorey species with a range of herbs and lilies, though it does also suffer from grassy weed invasion. The key exception to this is when *Imperata cylindrica* (Blady Grass) dominates as it acts much more like Bracken in its dominance of the understorey.

Due to the lack of tree cover, and large trees in particular, logs are generally lacking across the site. The same can be said for recruitment as there are only a few species of woody plants that were noted as recruiting across the site.

## Wetland habitat zones

The following wetland habitat zone descriptions are from Control of Common Reed (*Phragmites australis*) and the impact of stormwater discharge at Point Richards Flora and Fauna Reserve (Cook, 2020), except for “Brackish Sedgeland”, which was newly identified on the site during the January 2025 field survey. All wetland communities were represented by a single habitat zone and therefore do not have habitat zone numbering.

#### BRACKISH SEDGELAND

At Point Richards, this EVC was identified in the South-West of the Southern Wetland as a small pocket surrounded by Estuarine Reedbed and non-native vegetation. *Gahnia filim* (Chaffy Saw-sedge) was the dominant species found supported by *Lemna disperma* (Common Duckweed) and Common Reed.

#### TALL MARSH

Tall Marsh dominated by Broadleaf Cumbungi (*Typha orientalis*) occurs in deep swales in the northern section of the reserve. These swales may receive inputs of fresh groundwater, as the presence of Broadleaf Cumbungi indicates prolonged inundation or saturation of the soil.

#### SEDGE WETLAND/BRACKISH HERBLAND COMPLEX

At Point Richards this EVC occurs in swales in the centre of the reserve and is dominated by a range of sedges and rushes including Fine Twig-sedge (*Baumea arthropphylla*), Bare Twig-sedge (*Baumea juncea*) and Sea Rush (*Juncus kraussii* subsp. *australiensis*). Associated herbs include Angled Lobelia (*Lobelia anceps*) and Shiny Swamp-mat (*Selliera radicans*).

#### BRACKISH AQUATIC HERBLAND

This EVC occurs in the deepest part of the lagoon. It is dominated by the submerged aquatic Sago Pondweed (*Stuckenia pectinata*) and Creeping Monkey-flower (*Thyridia repens*), which provide a valuable food source for herbivorous wetland birds, important habitat for aquatic invertebrates and cover for Growling Grass Frogs.

#### WET SALTMARSH HERBLAND

This EVC occurs on the fringes of the lagoon and is dominated by Beaded Glasswort (*Sarcocornia quinqueflora* subsp. *quinqueflora*) and Creeping Brookweed (*Samolus repens*). It usually grows in areas that are saturated or shallowly inundated for prolonged periods with high salinity, where it is protected from invasion by most weeds because they cannot survive the extreme environmental conditions. However, because of the inputs of fresh stormwater at Point Richards Flora and Fauna Reserve it is being invaded by Kikuyu and a range of other weeds and the native Common Reed.

#### COASTAL DRY SALTMARSH

This EVC grows in areas of high salinity that are less frequently flooded or saturated than Wet Saltmarsh Herbland on the outer fringes of the lagoon. At Point Richards it is dominated by Southern Sea-heath (*Frankenia pauciflora* var. *gunnii*), Rounded Noon-flower (*Disphyma crassifolium* subsp. *clavellatum*) and Australian Salt-grass (*Distichlis distichophylla*).

This EVC is usually protected from invasion by most non-local plants because they cannot survive the extreme environmental conditions where it grows. However, because of the inputs of fresh stormwater at Point Richards Flora and Fauna Reserve it is being invaded by the native Common Reed.

#### ESTUARINE REEDBED

This EVC is naturally dominated by Common Reed (*Phragmites australis*), with associated species commonly including Sea Rush (*Juncus kraussii* subsp. *australiensis*) and Creeping

Brookweed (*Samolus repens*). This EVC now occurs around much of the lagoon on the southern boundary of the reserve. In the past it may have had a much more restricted distribution on the site, but changes to environmental conditions caused by fresh stormwater inputs have allowed it to expand substantially. As the water in the lagoon has become increasingly fresh this EVC has been invaded by Broadleaf Cumbungi (*Typha orientalis*).

The diversity and significance of the wetland habitat zones makes them a significant value to the Site. Particularly so, the southern wetland of which the ecological character is protected by an Environmental Significance Overlay (refer to Section 4.7).

### 3.2.4.2 Significant Ecological Communities

Query of the PMST (DCCEEW, 2024) identified four threatened ecological communities as potentially occurring within five kilometres of the site:

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (likely to occur).
- Natural Damp Grassland of the Victorian Coastal Plains (may occur).
- Natural Temperate Grassland of the Victorian Volcanic Plain (may occur).
- Grassy Eucalypt Woodland of the Victorian Volcanic Plain (known to occur).

While a detailed assessment of each was beyond the scope of the project, the vegetation communities identified on site do not appear to be a good match for any of the communities identified in the PMST.

Query of the FFG Threatened Communities (DEECA, 2024) identified two threatened ecological communities as present within five kilometres of the site:

- Coastal Moonah Woodland.
- Western Basalt Plains (River Red Gum) Grassy Woodland.

The vegetation communities found on site are not a good match for the Western Basalt Plains (River Red Gum) Grassy Woodland but do share some affinities with the Coastal Moonah Woodland.

*“Coastal Moonah (Melaleuca lanceolata subsp. lanceolata) Woodland Community The Coastal Moonah Woodland Community is open grassy woodland that is dominated by Moonah (Melaleuca lanceolata ssp. lanceolata = Melaleuca lanceolata) and found along parts of the Victorian coastline.*

*Commonly associated species are Wirilda (Acacia retinodes var. uncifolia = Acacia uncifolia), Coast Swainson-pea (Swainsona lessertiifolia), Thyme Rice-Flower (Pimelea serpyllifolia = P. serpyllifolia subsp. serpyllifolia), Coast Tea-tree (Leptospermum laevigatum), Coast Beardheath (Leucopogon parviflorus) and Kidney-weed (Dichondra repens). Other associated species include various grasses and sedges.*

*Coastal Moonah Woodlands tend to occur on high-level dunes along the coast where soils are strongly alkaline and developed on moderately organic aeolian sands or on dune calcarenites. The community has a scattered distribution between Phillip Island and Lorne, with disjunct occurrences west of Portland. (The Moonah-dominated communities of north-central and north-western Victoria, although dominated by that species, are floristically distinct from Coastal Moonah Woodland.)”*

(DEECA, 2024)

The species of which this community derives its name, Coastal Moonah, is present on Site, albeit in a limited extent. And while Coast Beard heath, Kidney-weed and Coast Tea-tree are all present on Site, the other, less-common species are not. A detailed evaluation of this community was beyond the scope of the survey and therefore it cannot be conclusively determined if the Coastal Moonah on Site meet the criteria of the threatened FFG community. It should be protected as a significant plant within the reserve nonetheless.

### 3.2.4.3 Flora

Query of the VBA (DEECA, 2024) identified 333 flora species within five kilometres of the Site. Of these, 167 are considered not native to Victoria, and 19 are native but considered beyond their natural range. Of the remaining flora species, 14 are considered significant:

- *Acacia uncifolia* (Coast Wirilda)
- *Atriplex paludosa* subsp. *paludosa* (Marsh Saltbush)
- *Corymbia maculata* (Spotted Gum)
- *Cyanothamnus anemonifolius* subsp. *variabilis* (Coast Boronia)
- *Eucalyptus diversifolia* subsp. *megacarpa* (Coast Gum)
- *Geranium solanderi* var. *solanderi* s.s. (Austral Crane's-bill)
- *Heterozostera tasmanica* (Eelgrass)
- *Nicotiana suaveolens* (Austral Tobacco)
- *Lachnagrostis adamsonii* (Adamson's Blown-grass)
- *Lachnagrostis semibarbata* var. *filifolia* (Purple Blown-grass)
- *Lachnagrostis robusta* (Salt Blown-grass)
- *Malva preissiana* s.s. (white-flowered coastal form) (Coast Hollyhock)
- *Rutidosis leptorhynchoides* (Button Wrinklewort)
- *Salsola tragus* subsp. *pontica* (Coast Saltwort)

Query of the PMST (DCCEEW, 2024) identified 18 nationally significant species as potentially occurring within five kilometres of the Site. See Appendix 3 – PMST search report for the study area for the full PMST query report.

The literature review identified 249 flora species within the Site. The literature review also confirmed the presence of five rare or threatened flora species. These are:

- *Acacia uncifolia* (Coast Wirilda)

- *Adriana quadripartita* (Coast Bitter-bush)
- *Eucalyptus leucoxylon* subsp. *bellarinensis* (Bellarine Yellow-gum)
- *Eucalyptus leucoxylon* subsp. *megalocarpa* (Large-fruit Yellow-gum)
- *Geranium solanderi* var. *solanderi* s.s. (Austral Crane's-bill)

With the exception of Austral Crane's-bill, all of the rare or threatened flora identified are recorded as being planted (BBCM, 2023).

The flora survey consisted of 12 quadrats, and the weed survey consisted of 43 randomised survey points. A total of 100 plants were identified on site during these site surveys. Of these, 37 are introduced, 8 are native but with some stands being alien, 55 are native to Victoria, and 9 were recorded for the first time. The species recorded for the first time during field surveys include:

- *Boronia parviflora* (Swamp boronia)
- *Eucalyptus ovata* (Swamp Gum)
- *Lemna trisulca* (Ivy-leaved Duckweed)
- *Lilaeopsis polyantha* (Australian Lilaeopsis)
- *Potamogeton crispus* (Crisp-leaved Pondweed)
- *Puccinellia stricta* (Australian Saltmarsh Grass)
- *Senecio angulatus* (Creeping Groundsel/Cape Ivy)
- *Senecio pinnatifolius* var. *lanceolatus* (Swamp Groundsel)
- *Senecio quadridentatus* (Cotton Fireweed)

None of the species identified during the field surveys are considered rare or threatened species. A full list of flora species identified during the Flora field survey is in Appendix 4 – Flora Survey Results.

#### 3.2.4.4 Fauna

Query of the VBA (DEECA, 2024) identified 189 fauna species within the study area. Of these, 14 are considered not native to Victoria. Of the remaining fauna species, 26 are listed as significant.

Significant bird species:

- *Accipiter novaehollandiae* (Grey Goshawk)
- *Arenaria interpres* (Ruddy Turnstone)
- *Botaurus poiciloptilus* (Australasian Bittern)
- *Calidris acuminata* (Sharp-tailed Sandpiper)
- *Calidris ferruginea* (Curlew Sandpiper)
- *Egretta garzetta* (Little Egret)
- *Falco subniger* (Black Falcon)
- *Gallinago hardwickii* (Latham's Snipe)
- *Haliaeetus leucogaster* (White-bellied Sea-Eagle)
- *Hieraaetus morphnoides* (Little Eagle)
- *Hirundapus caudacutus* (White-throated Needletail)
- *Hydroprogne caspia* (Caspian Tern)
- *Neophema chrysostoma* (Blue-winged Parrot)

- *Numenius madagascariensis* (Eastern Curlew)
- *Oxyura australis* (Blue-billed Duck)
- *Spatula rhynchotis* (Australasian Shoveler)
- *Sternula albifrons* (Little Tern)
- *Sternula nereis* (Fairy Tern)
- *Stictonetta naevosa* (Freckled Duck)
- *Tringa nebularia* (Common Greenshank)
- *Xenus cinereus* (Terek Sandpiper)

Significant mammal species:

- *Arctophoca tropicalis* (Subantarctic Fur Seal)
- *Tursiops australis* (Burrnan Dolphin)
- *Isodon obesulus obesulus* (Southern Brown Bandicoot)

Significant invertebrate species:

- *Athanopsis australis* (Southern Hooded Shrimp)

Significant amphibian species:

- *Litoria raniformis* (Growling Grass Frog)

Query of the PMST (DCCEE, 2024) identified 61 significant species as potentially occurring within five kilometres of the site. This includes:

- 6 mammal species,
- 44 bird species,
- 5 fish species,
- 5 reptile species, and
- 1 amphibian species.

See Appendix 3 – PMST search report for the study area for the full PMST query report.

The literature review identified 152 fauna species within the Site. Of these 10 were considered significant, these are:

- *Accipiter novaehollandiae* (Grey Goshawk)
- *Biziura lobata* (Musk duck)
- *Botaurus poiciloptilus* (Australasian Bittern)
- *Calidris acuminata* (Sharp-tailed Sandpiper)
- *Falco subniger* (Black Falcon)
- *Gallinago hardwickii* (Latham's Snipe)
- *Hieraaetus morphnoides* (Little Eagle)
- *Litoria raniformis* (Growling Grass Frog)
- *Pteropus poliocephalus* (Grey-headed Flying Fox)
- *Spatula rhynchotis* (Australasian shoveler)

The earliest literature record for Southern Brown Bandicoots is from 1964 (Stokes, 2007b) which lists the habitat of “Short-nosed Bandicoots” as one of the key drivers for conservation of the site. It is not clear whether they were present at the time the document was published or whether the conservation effort was consolatory, but it does suggest that they were very much known to have occurred on the site historically. The VBA database search shows no record of Southern Brown Bandicoots from within the study area since May, 1975.

It is quite likely, that given their vocal nature, that it has always been understood that Growling Grass Frogs have been on site, despite the first record in databases being from 1991 (DEECA, 2024). Nevertheless, they are still known to occur on site (pers. comms. Hayley Pickering, Bellarine Bayside Coastal Management). Literature sources indicate that in May 2024, Chytrid Fungus was detected on Growling Grass Frogs for the first time (Cesar Pty Ltd, 2024).

A detailed likelihood of occurrence assessment was not undertaken for all remaining rare or threatened species.

### 3.2.4.5 Invasive species

#### PEST PLANTS

Query of the VBA identified 20 invasive flora species proclaimed by the *Catchment and Land Protection Act* (1994) (CaLP), and 7 listed as Weeds of National Significance (WoNS) within 5 kilometres of the Site (Table 8).

Table 8 – Database search results for CaLP and WoNS listed species within the Study Area.

| Scientific name                             | Common name            | CaLP | WoNS |
|---------------------------------------------|------------------------|------|------|
| <i>Asparagus asparagoides</i>               | Bridal Creeper         | ✓    | ✓    |
| <i>Carduus tenuiflorus</i>                  | Winged Slender-thistle | ✓    |      |
| <i>Chrysanthemoides monilifera</i>          | Boneseed               | ✓    | ✓    |
| <i>Conium maculatum</i>                     | Hemlock                | ✓    |      |
| <i>Crataegus monogyna</i>                   | Hawthorn               | ✓    |      |
| <i>Cynara cardunculus subsp. flavescent</i> | Artichoke Thistle      | ✓    |      |
| <i>Echium plantagineum</i>                  | Paterson's Curse       | ✓    |      |
| <i>Genista linifolia</i>                    | Flax-leaf Broom        | ✓    |      |
| <i>Genista monspessulana</i>                | Montpellier Broom      | ✓    |      |
| <i>Juncus acutus subsp. acutus</i>          | Spiny Rush             | ✓    |      |
| <i>Lycium ferocissimum</i>                  | African Box-thorn      | ✓    | ✓    |
| <i>Nassella neesiana</i>                    | Chilean Needle-grass   | ✓    | ✓    |
| <i>Nassella trichotoma</i>                  | Serrated Tussock       | ✓    | ✓    |
| <i>Opuntia robusta</i>                      | Wheel Cactus           | ✓    |      |
| <i>Oxalis pes-caprae</i>                    | Soursob                | ✓    |      |
| <i>Rubus fruticosus spp. agg.</i>           | Blackberry             | ✓    | ✓    |
| <i>Silybum marianum</i>                     | Variegated Thistle     | ✓    |      |
| <i>Solanum linnaeanum</i>                   | Apple of Sodom         | ✓    |      |
| <i>Ulex europaeus</i>                       | Gorse                  | ✓    | ✓    |
| <i>Xanthium spinosum</i>                    | Bathurst Burr          | ✓    |      |

Furthermore, a total of 17 were identified which are considered native to Victoria but some stands may be beyond their natural range. These include:

- *Acacia floribunda* (White Sallow-wattle)
- *Acacia longifolia* (Sallow Wattle) (including subsp. *longifolia* and subsp. *sophorae*)
- *Chenopodium glaucum* (Glaucous Goosefoot)

- *Cynodon dactylon* (Couch)
- *Cyperus difformis* (Variable Flat-sedge)
- *Eucalyptus botryoides* (Southern Mahogany)
- *Gaudium laevigatum* (Coast Tea-tree)
- *Grevillea rosmarinifolia* (Rosemary Grevillea)
- *Imperata cylindrica* (Blady Grass)
- *Juncus bufonius* (Toad Rush)
- *Melaleuca decussata* (Totem-poles)
- *Melaleuca ericifolia* (Swamp Paperbark)
- *Myoporum insulare* (Common Boobialla)
- *Pittosporum undulatum* (Sweet Pittosporum)
- *Portulaca oleracea* (Common Purslane)

Four species are subject to written approval to remove them under the conservation work exemption listed in Clause 52.17-7 of the City of Greater Geelong planning schemes (Gottwald, 2024). These are Coast Tea-tree, Sallow Wattle (subsp. *longifolia*), Coast Banksia and Sweet Pittosporum.

The weed survey confirmed the presence of 23 introduced species on site. Of those, *Ehrharta calycina* (Perennial Veldt-grass) was the most prevalent, being present in 58% of weed survey locations.

Table 9 – Exotic flora identified on site during weed survey, including each species status and frequency (f) of detection.

| Scientific name                   | Common name           | WoNS | CaLP | Frequency (%) |
|-----------------------------------|-----------------------|------|------|---------------|
| <i>Asparagus asparagoides</i>     | Bridal Creeper        | ✓    | R    | 2.3           |
| <i>Briza maxima</i>               | Large Quaking-grass   |      |      | 4.7           |
| <i>Cenchrus clandestinus</i>      | Kikuyu                |      |      | 7.0           |
| <i>Cirsium arvense</i>            | Perennial Thistle     |      | C    | 14.0          |
| <i>Cirsium vulgare</i>            | Spear Thistle         |      | R    | 9.3           |
| <i>Cynodon dactylon</i>           | Couch                 |      |      | 4.7           |
| <i>Dactylis glomerata</i>         | Cocksfoot             |      |      | 4.7           |
| <i>Ehrharta calycina</i>          | Perennial Veldt Grass |      |      | 58.1          |
| <i>Ehrharta erecta</i>            | Panic Veldt-grass     |      |      | 7.0           |
| <i>Erigeron bonariensis</i>       | Flaxleaf Fleabane     |      |      | 4.7           |
| <i>Genista linifolia</i>          | Flax-leaf Broom       |      | C    | 11.6          |
| <i>Genista monspessulana</i>      | Montpellier Broom     |      | C    | 7.0           |
| <i>Holcus lanatus</i>             | Yorkshire Fog         |      |      | 18.6          |
| <i>Hypochaeris radicata</i>       | Flatweed, cat's ear   |      |      | 16.3          |
| <i>Lactuca serriola</i>           | Prickly Lettuce       |      |      | 7.0           |
| <i>Lycium ferocissimum</i>        | African Box-thorn     | ✓    | C    | 2.3           |
| <i>Paspalum dilatatum</i>         | Paspalum              |      |      | 4.7           |
| <i>Plantago lanceolata</i>        | Ribwort               |      |      | 4.7           |
| <i>Rubus fruticosus</i> spp. agg. | Blackberry            | ✓    | C    | 4.7           |
| <i>Sonchus asper</i> s.l.         | Rough Sow-thistle     |      |      | 2.3           |
| <i>Sonchus oleraceus</i>          | Common Sow-thistle    |      |      | 4.7           |
| <i>Sporobolus africanus</i>       | Rat-tail Grass        |      |      | 2.3           |
| <i>Ulex europaeus</i>             | Gorse                 | ✓    | C    | 9.3           |

In addition to the introduced species found during the weed survey, the flora survey found an additional 22 introduced species, resulting in a total of 45 introduced species known to occur on the Site. Of the 22, seven are considered Native but some stands may be alien.

The presence of three of these species and other environmental weeds is consistent with the following Listed potentially threatening processes (DELWP, 2022):

- Invasion of native vegetation by Blackberry *Rubus fruticosus* L. agg.
- Invasion of native vegetation by 'environmental weeds'.
- Loss of biodiversity as a result of the spread of Coast Wattle (*Acacia longifolia* subsp. *sophorae*) and Sallow Wattle (*Acacia longifolia* subsp. *longifolia*) into areas outside its natural range.
- Spread of *Pittosporum undulatum* in areas outside its natural distribution

Table 10 displays the estimated cover of weeds across the reserve, per class.

Table 10 – The estimated cover of each weed class within the Site.

| Type of weed                            | Estimated cover |
|-----------------------------------------|-----------------|
| Weeds of National Significance          | 0.2%            |
| Catchment and Land Protection Act weeds | 0.9%            |
| All non-native species                  | 10.8%           |

It is noteworthy that CaLP Act listed and WoNS both occupy less than one percent cover of the site. Field observations also indicate that large mature individuals were not common. The majority of weed cover was produced by grassy weeds like Perennial Veldt Grass, Yorkshire Fog and Kikuyu.

## PEST ANIMALS

Query of the VBA identified 14 invasive fauna species within five kilometres of the site:

- *Acridotheres tristis* (Common Myna)
- *Alauda arvensis* (Eurasian Skylark)
- *Carduelis carduelis* (European Goldfinch)
- *Chloris chloris* (European Greenfinch)
- *Columba livia* (Domestic Pigeon)
- *Mus musculus* (House Mouse)
- *Oryctolagus cuniculus* (European Rabbit)
- *Passer domesticus* (House Sparrow)
- *Rattus norvegicus* (Brown Rat)
- *Rattus rattus* (Black Rat)
- *Spilopelia chinensis* (Spotted Dove)
- *Sturnus vulgaris* (Common Starling)
- *Turdus merula* (Common Blackbird)
- *Vulpes vulpes* (Red Fox)

Many sources from the literature review confirmed these species to be present on Site (Prescott, 1988; BBCM, 2013; BirdLife Bellarine Bayside Peninsula, 2016; EnviroDNA, 2024; Geelong Field Naturalists, 2024; BBCM, 2024b; BBCM, 2024c; BBCM, 2024d).

The presence of two of these species is consistent with the following Listed potentially threatening processes (DELWP, 2022):

- Predation of native wildlife by the introduced Red Fox, *Vulpes vulpes*
- Reduction in biomass and biodiversity of native vegetation through grazing by the Rabbit, *Oryctolagus cuniculus*.

The literature review did not present any invasive species that did not appear in the Database search. However, it was noted that there is an ongoing rabbit control programs conducted at the Site (BBCM, 2024d).

Field surveys confirmed the presence of European Rabbit and Red Fox through indirect evidence (scats and diggings).

While not directly observed during site assessment, it is reasonable to assume that due to the site location that domestic and feral cats (*Felis catus*) prey on wildlife in the reserve, which is also a Listed potentially threatening process.

### 3.2.5 Fire

#### 3.2.5.1 History

Query of the Fire History Records of Fires across Victoria spatial data (DEECA, 2024) found no historic fires within the Study Area.

The literature review found that a “significant” fire event for fuel reduction occurred on the site in 2004 though the extent and intensity is unknown (Moulton, 2005). Additionally, it was noted that, due to the wetland characteristics, the frequency of fire was naturally low (Moulton, 2005).

From the perspective of risk, fire management is led by DEECA and Barwon South West Joint Fuel Management Plan (Gazzard, et al., 2020; Forest Fire Management Victoria, 2023).

#### 3.2.5.2 Tolerable Fire Intervals

Tolerable Fire Intervals (TFIs) are the minimum and maximum time periods between fires that allow vegetation in a given ecosystem to maintain its biodiversity and ecological processes. In Victoria, TFIs are determined based on the life cycles of key plant species, ensuring that fire-sensitive species can mature and regenerate while preventing over-dominance by fire-adapted species. They serve as a guideline for fire management to balance ecological health with fire risk reduction (Cheal, 2010).

The EVCs of the State are grouped into 32 units based on ecological similarities called Ecological Vegetation Divisions (EVD). Each EVC belongs to one of the 32 EVDs. The EVDs on site are described below:

### EVD 3: GRASSY/HEATHY DRY FORESTS

Low open-forests on infertile sandy soils, often adjacent to heathlands (sands), low growth and decomposition rates (except after fires), sclerophyllous shrubs and/or bracken dominate the lower strata, high species richness, grasses may be rare on sandy soils and/or not forming continuous swards, sedges and sclerophyllous monocots common throughout.

It has a regime of high frequency and very high severity fires, is flammable for most of the year (possibly not winter), has rapid recovery post-fire, and much of the regeneration is fire-cued.

### EVD 26: FRESHWATER WETLAND (EPHEMERAL)

Open hermland to shrubland (occasionally with emergent eucalypts or other small trees from Riverine Woodland / Forest) in areas subject to sporadic but extended inundation by fresh water, on fertile loams and clays which vary from anoxic and saturated (when inundated) to deeply cracking and parched for the long periods between inundation. Dominant shrubs often divaricate, with abundant herbs and subshrubs (but of relatively few species) when sites moist and as the floodwaters recede, drying through a succession of vegetation communities to (often) crustal cryptogams or bare soil for extended periods.

Largely non-flammable, although the margins may occasionally burn.

### EVD 27: SALINE WETLAND

Open hermland to shrubland dominated by succulent plants, on sodic soils which are regularly moist (from tides or ground water) from saline water and alternately dry (between inundations), high salinity at all times, often adjoining unvegetated areas with exposed salt, includes fringing zones of gradually less saline influence.

Largely non-flammable, although the margins may occasionally burn in exceptional years when extended summer rains promote vigorous grass growth, in which event they are damaged by even rare fires (Cheal, 2010).

*Table 11 – Tolerable Fire Intervals for Victoria's native vegetation (Cheal, 2010).*

| Ecological Vegetation Division (EVD)   | Maximum TFI (years) | Minimum TFI for High Severity Fires (years) | Minimum TFI for Low Severity, Patchy Fires (years) |
|----------------------------------------|---------------------|---------------------------------------------|----------------------------------------------------|
| EVD 3: Grassy/Heathy Dry Forests       | 45                  | 15                                          | 10                                                 |
| EVD 26: Freshwater Wetland (ephemeral) | ∞                   | 2                                           | 2                                                  |
| EVD 27: Saline Wetland                 | ∞                   | 20                                          | 2                                                  |

Growth Stage Assessments were not conducted.

### 3.2.5.3 Overall Fuel Hazard

Four Fuel Hazard Assessments were conducted across the site during the site survey (Refer to Table 12 and Map 13 – Survey locations including Weed mapping points, fuel hazard assessments, VQAs & flora survey).

Table 12 - Point Richards Flora & Fauna Reserve Fuel Hazard Assessment Results

| Zone                              | Veg Type                        | Canopy Top/<br>Base height | Bark        | Elevated | Near-<br>surface | Surface | Combined<br>Hazard | Overall<br>Hazard |
|-----------------------------------|---------------------------------|----------------------------|-------------|----------|------------------|---------|--------------------|-------------------|
| Damp Sands Herb-<br>rich Woodland | Shrubland                       |                            | NP          | VH       | VH               | H       | VH                 | VH                |
| Damp Sands Herb-<br>rich Woodland | Swamp<br>scrub                  |                            | NP          | VH       | VH               | E       | E                  | VH                |
| Damp Sands Herb-<br>rich Woodland | Coastal<br>tussock<br>grassland |                            | NP          | L        | VH               | L       | H                  | M                 |
| Damp Sands Herb-<br>rich Woodland | Eucalypt<br>forest              | 4/1                        | Other:<br>M | VH       | VH               | E       | E                  | VH                |

NP – Not Present

L – Low

M – Moderate

H – High

VH – Very High

E – Extreme

The overall hazard was determined to be Very High in three assessment areas, and Moderate in the grassland zone. Based on the Overall Fuel Hazard Assessment Guide (Hines, Tolhurst, Wilson, & MrCarthy, 2010), indicative fuel loads can be estimated to be 1 t/ha for bark, 0-5 t/ha (but more commonly 3-5 t/ha for elevated fuel, 4-6 t/ha for near surface fuel, 8-20+ t/ha for surface fuel. This accumulation of fuel is consistent with the findings that there has not been a fire at the Site in at least 20 years.

### 3.3 Country, Culture and Heritage

#### *Wadawurrung – Place of Significance*

*“The land and surrounds encompassing the Pt. Richards Reserve hold high cultural values, both tangible and intangible, to generations of Wadawurrung peoples. A Place of Plenty, Pt. Richards was a supermarket for our people, with everything to thrive, located in this biocultural landscape. Our stories and songline are ever present, with Pt. Richards playing an instrumental part.*

*Wadawurrung peoples have occupied the Pt. Richards region and its surrounds for tens of thousands of years. Stories, both before and after the bay flooded, have been passed down from generation to generation of Wadawurrung people. The evidence of Pt. Richards cultural significance is still evident through tangible cultural heritage present at the reserve. It also extends to the intangible cultural heritage of place, verbally communicated through our songlines and stories.*

*Prior to Wadawurrung obtaining RAP status in 2009, only tangible cultural heritage was mapped, and that was through a western lens, by non Wadawurrung people. The extent of the tangible Cultural Heritage at Pt. Richards, would be of higher density than what has been mapped here historically. Visible Cultural Heritage also doesn’t tell the full scale of its density, as sub-surface evidence of occupation is a certainty at the reserve. Pt. Richards holds high intangible cultural values, as it was a site of celebration, marriage, and the landscape was part of Wadawurrung songlines.*

*Pt. Richards is a supermarket for our people. Although there have been variations of the landscape throughout time, it was used as required by generations of Wadawurrung people. The sea provided a plethora of saltwater species, including shellfish; muscle, oysters, limpets, turbos; and fish species; snapper and flatheads. All these species have been found in shell middens in the surrounding areas of Portarlington, with carbon sampling dating the age of some middens to approximately 8,000 years. Salt Marsh species found in the area would be gathered and made into a salad to eat with the protein of the sea. Significant plants such as murnong were abundant and would be eaten regularly. Mammals were also ever present within the landscape, allowing for the site not to be over fished and hunted when longer stays were required.*

*The biocultural landscape of the reserve is also a place of manufacture, where eucalyptus, wattle and Moonah tree were used to create such tools like, coolamon’s, axe handles, digging sticks and clap sticks. Additionally, fibrous grasses and tussocks were used to make hunting and fishing nets, baskets and rope. Our people only took what was needed, as to allow for the sustainability of the landscape. Wadawurrung people would assist with the management of the land, by burning Country, using generations of fire and land knowledge. The reserve allowed for generations of Wadawurrung people, to not only survive on the land, but to thrive.*

*Currently, Wadawurrung people still use the Reserve to retrieve resource and to undertake cultural practices. The protection of the cultural significance of Pt. Richards and its surrounds are critical to allow this reserve to continue to thrive and be enjoyed by everyone.”*

### 3.3.1 Geographic Region

Geological mapping identifies one distinct geological unit in the Site as Coastal Dune Deposits (Section 3.2.2.1), which comprise well sorted, poorly consolidated siliceous sand and gravel with some calcareous component from crushed shells (Welch, Higgins, & Callaway, 2011). Geomorphologically, this unit forms a cusped ridged foreland; a series of low and broad sand ridges deposited as a prograding foreland by westward longshore drift (Bird, 2011) (Rosengren, 1988). These sand ridges are one of few existing examples in Victoria where sand ridges are still accumulating along the coastline. Due to the system of accumulation, the youngest deposits occur closest to the coastline, while the older deposits occur furthest inland. Given the proximity of the deposits within the activity area to the coastline, it is likely that these are the youngest represented.

The activity area is in the coast geomorphic division, on the Coastal Barriers (Ninety Mile Beach) (GMU 8.4) and Terraces and Floodplains, and Coastal Plains (Barwin River, Moolap Sunklands, Cape Otway) (GMU 6.2.5) (DJISR, 2024).

While the relationship of the formation of this foreland with past sea level rises and falls is unknown, elevation data shows the presence of the 6,000-year-old shoreline to be located c. 960 m to the south of the Site (Figure 5) (see Section 3.2 for further information about the changing coastline of Port Phillip Bay in the Pleistocene and Holocene). Freshwater springs have been noted near Drysdale, Clifton Springs, Point Lonsdale and Queenscliff and soaks may be associated with the source bordering sand dune that lies south and southeast of the activity area.

Based on local geographical features, the vast majority of Wadawurrung sites will have been formed during the past 10,000 years, and more probably the last 6,500 years when the current landform stabilised (Hopely & Thom, 1983). The climate of the geographic region is characterised by cool wet winters and warm summers with short dry periods.

### 3.3.2 Climate

The last world glacial period, which began c. 80,000 years before present (BP), lowered temperatures and sea levels. This cooling period peaked c. 18,000 BP when the sea level receded to 120 metres below its present level and the temperature dropped to between six and ten degrees Celsius colder than present temperatures (Kershaw, 1995). During this phase, Tasmania was joined to the mainland by an isthmus of land, and semi-arid grasslands covered large areas of Victoria. As conditions ameliorated, climatic conditions became milder, although wetter. At approximately 5,000 BP, conditions became slightly cooler and drier, similar to the present climate. Vast grasslands continued to dominate Victoria until recently (Kershaw, 1995).

The changes over time described suggest that the flora and fauna of Victoria, and therefore of the Site, went through substantial changes during the same period. The changes would have in turn impacted on Wadawurrung subsistence and patterns of exploitation in the activity area and the surrounding region. During cooler and windier periods, especially between 18,000 and 5,000 BP, the region was exposed to strong, cold, westerly winds. It can be assumed that if the region was occupied during this period, areas with some protection from those winds were favoured during the colder periods. The generally mild but seasonably variable climate of the past 5,000 years would have been conducive to Wadawurrung occupation throughout the year with possible

seasonal movements to more sheltered locations in winter months (Hiscock, 2008). See Figure 12 for map of Wadawurrung Country boundaries.

The Geelong region has a temperate climate with warm summers and cold to mild winters. The mean temperatures vary between a maximum of 25°C and minimum of 13.8°C in summer and a maximum of 13.6°C and minimum of 5.2°C in winter. Modern records record that the average rainfall ranges between 500 and 700 mm per (Bureau of Meteorology, 2025).

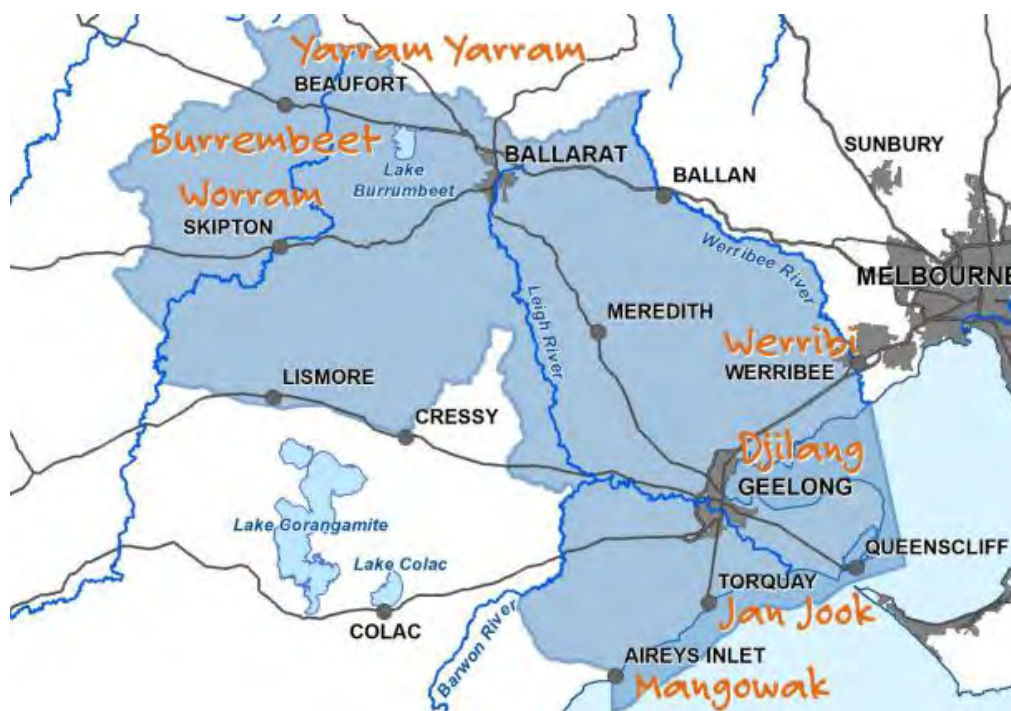


Figure 12 – Wadawurrung’s current Registered Aboriginal Party boundaries -subject to change (Wadawurrung Traditional Owners Aboriginal Corporation 2020).

### 3.3.3 Vegetation and wildlife

Pre-1750s, the vegetation of the activity area was characterised by the Damp Sands Herb- rich Woodland ecological vegetation community (EVC 3, Otway Plain Bioregion). The Grassy Woodland ecological vegetation community (EVC 175) was present across the wider geographic region. The Damp Sands Herb-rich Woodland (EVC 3, Otway Plain Bioregion) dominates the activity area and the surrounding region in association with the coastal dune deposits geological unit (Qd 1) (DEECA, 2025). Damp Sands Herb-rich Woodland was characterised by an open eucalypt woodland with a grassy and bracken-dominated understorey on flat to undulating well-drained sandy areas (DSE, 2004). The predominant tree species generally comprised of Eucalyptus, with an understorey of smaller trees and medium shrubs such as Blackwood (*Acacia melanoxylon*), and Sweet Bursaria (*Bursaria spinosa*). Grasses and herbs present in these areas included Austral Cranesbill (*Geranium Solanderi s.l.*) and Common Tussock-grass (*Poa Labillardierei*).

The Grassy Woodland ecological vegetation community (EVC 175) occurs in the wider region further south of the activity area and is described as a variable open eucalypt or sheoak woodland standing up to 15m tall over a diverse ground layer of grasses and herbs (DELWP 2004: n.p.). Eucalypt species present include Bellarine Yellow-gum (*Eucalyptus leucoxylon ssp. bellarensis*)

and Coast Manna Gum (*Eucalyptus viminalis* ssp *pyroriana*). Drooping Sheoak (*Allocasuarina verticillata*) was also occasionally present.

Prior to European arrival, the region supported a wide range of faunal species such as kangaroos, possums, wallabies and emu. Other species recorded at the time of early European Contact, which have since largely or wholly disappeared, included quolls, pademelons, potoroos, fat-tailed dunnart and eastern barred bandicoot (LCC, 1991).

### 3.3.4 Wadawurrung Places in the Geographic Region

A review of the Victorian Aboriginal Heritage Register (VAHR) online, administered by First Peoples – State Relations (FPSR). The geographic region has been defined as the area of 2.5km from the centre of the activity area.

Although there is a high likelihood of high density artefacts in the sub-surface layer, previously registered artefact scatters comprised only of isolated or low numbers of artefacts found on the surface (Table 13). A number of registered places are located along the waterways in the geographic region. They are predominantly located on slope landforms on volcanic plains, river terraces and escarpments. The most common raw material for lithic artefacts in the geographic region is silcrete, followed by quartz and quartzite, with smaller amounts of chert, coastal flint, basalt, greenstone, and post-contact materials such as historic ceramic and glass. Artefact types recorded include flakes (whole and broken), tools such as blades, scrapers, core tools, edge-ground axes, hammerstones/grindstones cores and debitage material.

Table 13 - Previously Registered VAHR Places within the geographic region

| Aboriginal Place No. | Aboriginal Place Name | Component Type   | Description                                                                                                                                                                                                                              |
|----------------------|-----------------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7821-0571            | PBAS1                 | Artefact Scatter | Stone artefacts identified in small surface exposures on a dune, approximately 75 m from the current coastline.                                                                                                                          |
| 7821-0572            | PBAS 2                | Artefact Scatter | Stone artefacts identified in small surface exposures on a dune, approximately 150 m from the current coastline.                                                                                                                         |
| 7821-0573            | PBAS 3                | Artefact Scatter | Stone artefacts identified on the surface of a dune, approximately 100 m from the current coastline.                                                                                                                                     |
| 7821-0574            | PBAS 4                | Artefact Scatter | Stone artefacts identified on the surface of a dune, approximately 250 m from the current coastline.                                                                                                                                     |
| 7821-0575            | PBAS 5                | Artefact Scatter | Stone artefacts identified on the surface of a dune, approximately 300 m from the current coastline.                                                                                                                                     |
| 7821-0576            | PBAS 6                | Artefact Scatter | Stone artefacts identified on the surface of a dune 300 m from the current coastline.                                                                                                                                                    |
| 7821-0577            | PBAS 7                | Artefact Scatter | Dense surface scatter of cultural material comprising stone artefacts and an ochre outcrop. This material was identified on an escarpment of the 6,000-year-old coastline. Slope erosion was observed to have impacted the place extent. |
| 7821-0578            | PBIA 1                | Artefact Scatter | Isolated surface artefact identified on a coastal flat adjacent the current coastline.                                                                                                                                                   |
| 7821-0579            | PBIA 2                | Artefact Scatter | Isolated surface artefact identified on a coastal flat, approximately 600 m from the current coastline.                                                                                                                                  |
| 7821-0580            | PBIA 3                | Artefact Scatter | Isolated surface artefact identified on a coastal flat, approximately 300 m from the current coastline.                                                                                                                                  |
| 7821-0581            | PBIA 4                | Artefact Scatter | Isolated surface artefact identified on a coastal flat, approximately 150 m from the current coastline.                                                                                                                                  |
| 7821-0582            | PBIA 5                | Artefact Scatter | Isolated surface artefact identified on a coastal flat, approximately 450 m from the current coastline.                                                                                                                                  |
| 7821-0615            | Allens Road 1         | Artefact Scatter | Surface stone artefacts identified on a dune, approximately 1.7 km inland from the coastline.                                                                                                                                            |
| 7821-0616            | Allens Road 2         | Artefact Scatter | Surface stone artefacts identified on a dune, approximately 1.7 km inland from the coastline.                                                                                                                                            |
| 7821-0617            | Allens Road 3         | Artefact Scatter | Surface stone artefact identified on a dune, approximately 1.7 km inland from the current coastline.                                                                                                                                     |

| Aboriginal Place No. | Aboriginal Place Name           | Component Type                    | Description                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------|---------------------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>7821-0956</b>     | Steeles Rock 1, Portarlington   | Shell Midden                      | Shell material was a low density, largely dispersed midden stretching along a 1,200 m section of shoreline. Cliffs and sloping edges were considered to form the place boundary. Complex deposits of cultural material were also observed eroding from cliff faces. Material was found at depths between 150-300 mm and ranged in thickness between 50-80 mm within dark loose sandy loam deposits. |
| <b>7821-1063</b>     | Allens Road, Portarlington LDAD | Low Density Artefact Distribution | Surface stone artefacts identified within a ploughed field.                                                                                                                                                                                                                                                                                                                                         |

### 3.3.5 Previous Work in the Geographic Region

Bellarine Peninsula: Archaeological Site Assessment and Management Activity (Rhoads, 1986)

Undertaken for the Victorian Archaeological Survey (VAS) during the mid-1980s, the archaeological assessment of the Bellarine Peninsula aimed to assist in the management and conservation of Wadawurrung places located within the region.

These archaeological surveys of Wadawurrung Culture and heritage prior to the establishment of the Wadawurrung RAP (2009) were almost always undertaken without Wadawurrung people's involvement and/or knowledge. For this reason, some of the sites surveys prior to 2009 may not give full context of the extent of Wadawurrung Culture and Heritage at the site surveyed.

The study area however included the Shire of Bellarine, City of South Barwon and the Borough of Queenscliff (measuring a total of c. 50,000 ha) and encompassed the current activity area, although the activity area was not subject to a field survey. Pedestrian and vehicle surveys resulted in the identification of 15 Wadawurrung places. Rhoads targeted reserves, dirt tracks, surface exposures and road cut exposures covering approximately 75% of the Bellarine Peninsula's thoroughfares.

Rhoads (1986) divided the soil deposits of the Peninsula into four groups:

- Alluvium (estuarine, lacustrine and riverine)
- Basalt clays
- Podzols (inland and bay)
- Sands (inland, bay and coast).

Rhoads (1986) further analysed the depositional structure of these soil groups and divided the study area into eight geographical units: Inland sands (around Drysdale), Sea Coast Sands, Bay Sands, Inland Podzols, Bay Podzols, Estuarine Alluvium, Lacustrine Alluvium and Riverine Alluvium.

Aboriginal Archaeological Investigations in the Barwon Drainage Basin (Richards & Jordan, 1999).

This project was part of a state-wide survey program investigation undertaken by the former Aboriginal Affairs Victoria (AAV). The project aimed to describe the nature and condition of the Aboriginal archaeological record in the Barwon River basin and develop predictive models of Wadawurrung place distribution and density. The project examined three areas: Middle Barwon (Inverleigh), Lower Barwon (Bellarine Peninsula – incorporating the current activity area) and

Upper Barwon (around the town of Forest). A field investigation was carried out in the Inverleigh area only. The Lower Barwon (Bellarine Peninsula) study area comprised a literature review and brief analysis of archaeological work to date.

### 3.3.6 Post-colonial History of the Site

A review of the land use history of the study area provides insight into the potential integrity of any surface or buried archaeological contexts. While increased and intensive land use, such as ploughing, market gardening, and the construction of buildings have the potential to severely disturb surface and, to a varying degree, subsurface deposits, there remains potential, even within highly disturbed contexts, for the remains of tangible Wadawurrung cultural heritage. The cumulative effect of land use over time also means that any areas of less disturbed or undisturbed land containing Wadawurrung cultural heritage become increasingly valuable in a local and regional context, and from a cultural and scientific perspective.

Hume and Hovell also passed through the district and crossed Hovells Creek as part of their overland journey from New South Wales to Corio Bay in 1824 (Brownhill, 1955). In 1835, John Batman undertook a journey through the west and north of Port Phillip Bay as part of a settlement venture with the Port Phillip Association. He initially passed west of the You Yangs and probably crossed the Werribee River near Cobbledick's Ford, which is north of the Site.

In 1836, Joseph Sutherland was the first European settler to disembark in Geelong, running sheep into the Brisbane Ranges (Clark, 1990). John Anthony Cowie and David Stead also arrived from Van Diemen's Land in 1836 with sheep. They took up land at what is now known as Cowie's Creek, a run which extended from the Moorabool River to Corio Bay (Peel, 1974). In 1836, a village was established on the foreshore and left bank of the Barwon River, which was proclaimed the township of Geelong in 1838.

Bellarine Peninsula was regarded as the granary of the Victorian colony. The mill owners built a private jetty and began receiving grain shipments from Geelong and shipping out the flour and bran produced. A post office opened on 1 March 1863 (known as Port Arlington until about 1866, although that may have been in error). By 1865, the population of Portarlington had passed 200, and the town boasted two hotels and a blacksmith's shop. The Wesleyan congregation, who were the most numerous, built the town's first church in 1866. Prior to this, the congregation had conducted their services at the mill.

The Portarlington Pier was constructed in 1859, after a petition from local farmers demanding access to a public jetty, and it quickly became an important port of call for the network of steamers plying Port Phillip Bay, both for goods and passengers. The *Petrel*, the first vessel serving the direct run to Melbourne's Hobsons Bay, was reportedly doing a brisk trade by 1866, delivering hay, butter, eggs, cheese, potatoes, wheat, flour, geese, turkeys, poultry, bacon, pork, and pigs, and returning with supplies of tea, sugar, coffee, wine, beer, spirits, and other commercial items. The jetty was extended in 1870, allowing sufficient depth for shallow draft vessels to dock at any tide, and soon daily steamers from Melbourne were calling. The first to pick up passengers and cargo was the *Despatch* in 1872. The direct run to Melbourne provided markets for large deliveries of potatoes and onions from around Portarlington, and lines of carts laden with produce were a

common sight heading down to the port. At times up to eight or nine lighters would be loading at the jetty with cargo for Melbourne, as well as a steamer. The jetty was reconstructed in 1872 to add storage sheds.

In 1871, there were 343 inhabitants of Portarlington. Portarlington's picturesque setting and fine sandy beaches attracted visitors from Geelong and Melbourne, and the regular steamer service secured the town's progress as a popular seaside resort. A public bathing house existed from as early as 1868, and a replacement was built in 1877. Bathing on the open beaches was prohibited in early days "out of respect for public sentiment". A brickworks was established in 1870, producing bricks, tiles and pipes from the high-grade Portarlington clay, for local use, but it was soon exporting to Geelong and Melbourne. When the flour mill closed in 1874, the brickworks moved into the building. It seems to have ceased production during the 1890s depression.

By the 1920s, the increasing popularity of the automobile generated a new influx of holiday makers from Melbourne and regional Victoria. Several camping grounds and caravan parks were established throughout the town, and in summer months the town's permanent residents were outnumbered many times over by holidaying families and tourists.

### 3.4 Visitor Experience

The Site is a significant natural area comprising coastal wetlands, saltmarshes, and remnant woodlands. These habitats support a variety of plant and animal species, some of which are of conservation significance (Section 3.2.4). The proximity to Port Phillip Bay enhances its ecological and aesthetic appeal, offering opportunities for visitors to engage with the natural environment.

Key attractions include birdwatching opportunities, as the reserve is a habitat for birds of prey, woodland birds, shorebirds and waders, including migratory species protected under international agreements. Informative signage highlights the ecological importance of these habitats, enhancing visitor understanding. Seasonal wildflowers provide additional visual interest, contributing to the reserve's dynamic natural setting.

Walking trails within the reserve provide access to its diverse landscapes while minimizing ecological disturbance. These trails are designed to offer a balance between visitor experience and environmental conservation.

#### 3.4.1 Recreational values

The reserve supports passive recreational activities such as walking, birdwatching, and photography. These activities align with the reserve's conservation objectives, as they are low-impact and encourage appreciation of the natural environment.

Cycling access is facilitated through shared pathways that connect the reserve with surrounding areas (Port Phillip Ferries, 2025). This integration into the broader trail network enhances its accessibility for visitors exploring the Bellarine Peninsula. However, the activity may not be suitable for the reserve in its current state due to its surface type, and the potential for cyclists to be a hazard to other users.

Nevertheless, activities within the reserve are carefully managed to prioritize conservation goals.

### 3.4.2 Infrastructure

Query of Vicmap Transport (DTP, 2025) identified that the Site contains 6,009 metres of tracks within it.

There are no survey markers or monuments on Site (DTP, 2025).

The literature review identified a spatial dataset collected in 2022 with an inventory of point data from the reserve. This included three seats, 44 signs, four gates, five picnic tables, one shelter and one boardwalk (Gordon Tafe, 2022).

Recent work has been undertaken to improve the wayfinding and interpretive signage at the Site as well as provide guidance on nature-focused walks (Shearer, Unknown).

Field surveys identified that there are six official access points to the reserve:

1. The main entrance, on Point Richards Road which also caters for management and emergency vehicles.
2. A pedestrian entrance on Point Richards Road linked to “Twitcher Track”.
3. A pedestrian entrance on Point Richards Road linked to “Growling Grass Frog Loop” (closest to the southern wetland).
4. A pedestrian entrance on Boat Road.
5. A pedestrian entrance adjacent to Traum Street.
6. A pedestrian access via the reserve to the east of the Site.

Road verge parking on grass is available at the first four listed access points, though no formal parking bays are designated. Roadside parking is possible on Traum Street.

The reserve’s facilities include walking trails with boardwalks in sensitive areas to protect the environment. Trail markers and directional signs ensure visitors can navigate the reserve effectively.

A total of 5.8 kilometres of tracks were mapped within the Site, almost matching that identified in the desktop assessment. This included four types of surface (of which the last one was “Other”). Of these, the average condition was regarded as 3.5 out of 5 indicating the track network was in good condition.

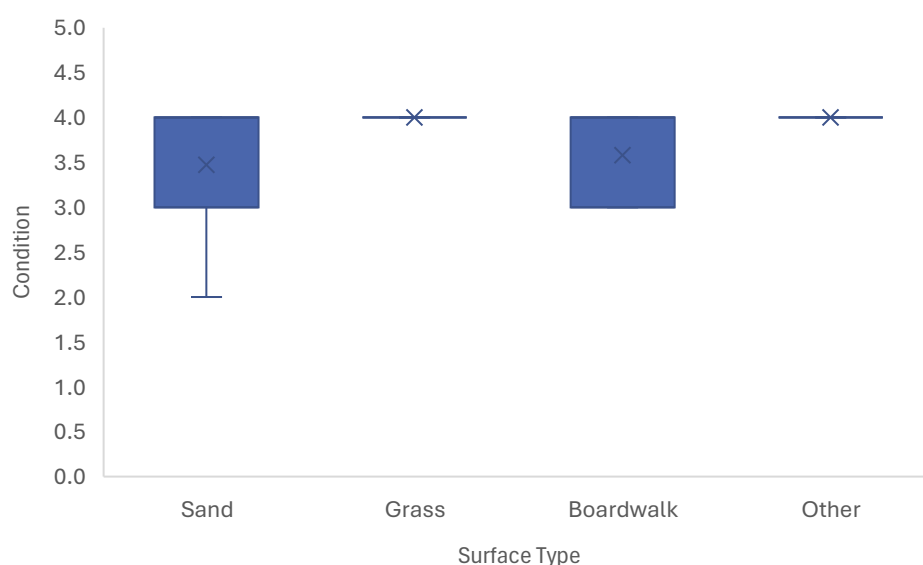


Figure 13 – Whisker plot of the condition of the track surface within the Site

No parts of the reserve could be considered accessible by wheelchair. This is largely due to unconsolidated sand being the predominate track surface type. The boardwalk locations also offer a challenge to wheelchair use due to the step up involved to get on to the boardwalk, however, this is not a critical outcome as the tracks leading to this point are also sand.

It is estimated that approximately 1.1 kilometres of the track network (44%) is accessible by large emergency vehicle (such as a fire truck).

Amenities such as picnic tables and seating areas are provided at the main entrance. The Site has no on-site toilets which may be a limitation for some users, although nearby facilities at the Point Richards boat ramp partially mitigate this.

A total of 58 features were mapped within the Site. This included 39 signs, 8 gates (or entrance ways), 1 building and 7 other features. Of these, the average condition was regarded as 3.5.

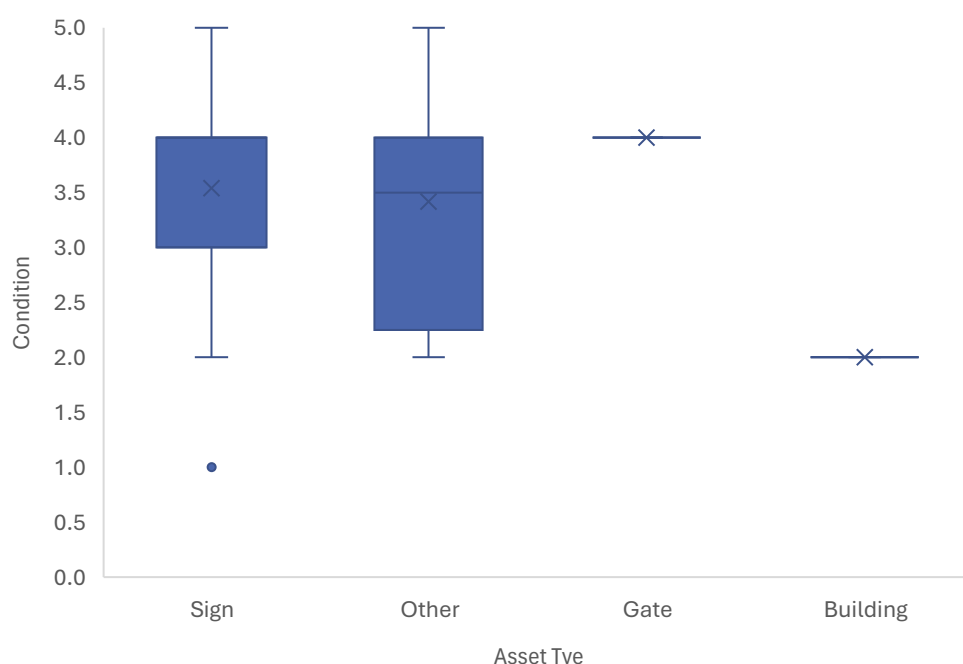


Figure 14 – Whisker plot of the condition of the point features within the Site

Map 14 – Assets and Infrastructure displays the assets identified during the field assessment.

### 3.4.3 Users

Data about the users of the reserve is somewhat lacking. However, Bellarine Bayside are aware of some common themes and trends observed during management of the reserve. These are described below.

The reserve attracts a mix of local residents, regional visitors, and tourists. Usage tends to increase during weekends, holidays, and warmer months. The typical user profile includes families, retirees, and small groups of nature enthusiasts. Birdwatchers and ecotourists, in particular, value the reserve for its ecological significance.

The emphasis on low-impact recreational activities means the reserve appeals to individuals seeking relaxation and nature appreciation rather than high-energy or thrill-seeking experiences. This user demographic aligns with the reserve’s conservation-focused management approach.

A “bush kinder” program began mid-2024 which involves the kinder group visiting the Site on a regular basis (pers. comm. Heidi Snow).

Dogs are not permitted at the Site, and there is signage at the entrance locations indicating as much (BBCM, 2025). However, it is anecdotally reported that dog walkers frequent the site (pers. comm. Hayley Pickering). Some locations nearby do allow dogs, including the City of Greater Geelong’s Recreation Reserve neighbouring the site. Therefore, the Site becomes a natural thoroughfare to those sites conflicting with the no dog policy.



Figure 15 – Dog walking regulations (BBCM, 2025).

This is particularly pertinent where local residents to the south of the reserve may wish to get access to the council reserve to the east, which allows dogs on leads

In late 2024, an online survey was conducted for community members to answer questions regarding priority areas and values of sites managed by BBCM, including Points Richards. The results of the survey are shown in Figure 16 and 17.

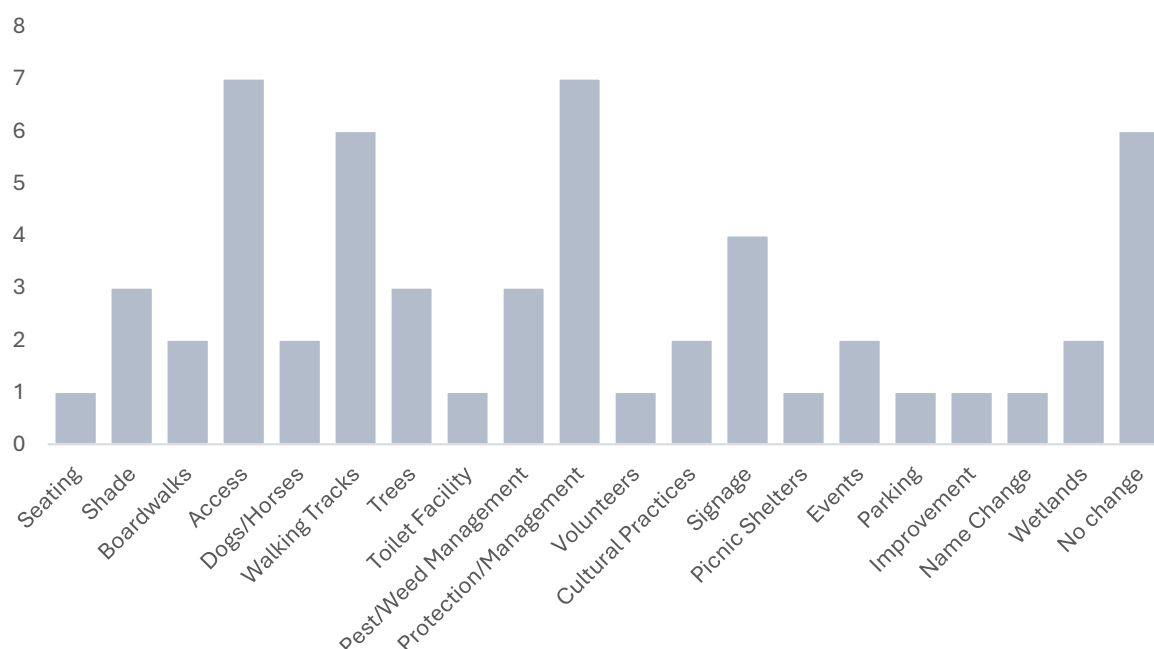


Figure 16 – Number of community responses (y) on suggestions to change Point Richards Flora and Fauna Reserve (x).

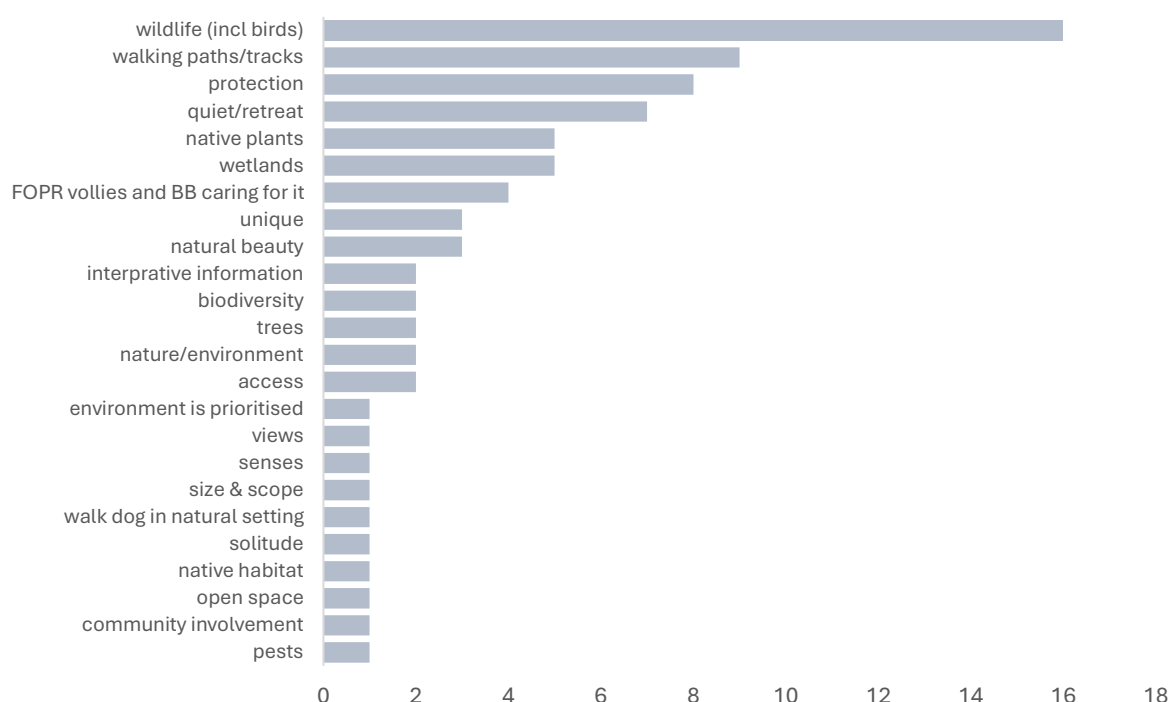


Figure 17 – Community responses to the question “What do you value at Point Richards Flora & Fauna Reserve” (y) and the number of responses per value (x).

The most valued components of the Site appear to be wildlife, the walking paths/tracks, and protection of the Site. The suggestions focused on the same themes, with the added suggestion of ‘No change’ which is somewhat commensurate with protection.

### 3.4.4 Programs and volunteering

Community involvement is a key aspect of the reserve’s management. Local environmental groups and volunteers participate in activities such as weed control, revegetation, habitat restoration and monitoring. These efforts enhance the ecological health of the reserve and foster community engagement.

The local Friends of Point Richards Reserve group has been active since 2001. They meet weekly for two hours to contribute to the management of the reserve. The Friends have also recently lead development of a monthly Waterwatch program to monitor water parameters of the southern wetland. The Geelong Field Naturalists Club continue to program in fauna and flora surveys to contribute to knowledge and awareness of the reserve.

Educational programs, including guided walks, provide opportunities for visitors to learn about the reserve’s unique attributes. These initiatives are particularly valuable for schools and community groups, promoting environmental awareness and stewardship.

### 3.4.5 Contribution to visitor economy

The Site contributes to the visitor economy of Portarlington and the Bellarine Peninsula by attracting tourists interested in nature-based experiences. Although the reserve itself does not generate direct revenue, it supports the local economy through indirect means. While quantities cannot be substantiated, visitors are believed to spend on accommodation, dining, and other activities in the region and incorporate visitation to the reserve within their trip.

The reserve's emphasis on ecological sustainability and education enhances Portarlington's reputation as a destination for eco-tourism. The aesthetic the reserve provides to the western part of the township also adds value to those seeking nature-based experiences.

Additionally, programs and volunteer opportunities strengthen community ties and create advocates for the region's natural assets.

## 4 Policy and Legislative Implications

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### 4.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act establishes a Commonwealth process for assessment of proposed actions that are likely to have a significant impact on Matters of National Environmental Significance (MNES) or on Commonwealth land. An action (i.e. project, development, undertaking, activity, or series of activities), unless otherwise exempt, requires approval from the Commonwealth Environment Minister if they are considered likely to have an impact on any MNES. A referral under the EPBC Act is required if a proposed action is likely to have a 'significant impact' on any of the following MNES:

- 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; and
- A water resource, in relation to coal seam gas development and large coal mining development.

#### 4.1.1 Implications (Significant Impact Criteria)

- Four fauna species listed as threatened under the EPBC Act are known to be on site: the Australasian Bittern, Sharp-tailed Sandpiper, Latham's Snipe and Growling Grass Frog. Any action to occur on or near the site should consider impacts to these species.
- No flora species listed under the EPBC Act were found to occur from within the site.
- No ecological communities listed as threatened under the EPBC Act were found to occur within the site.
- A range of MNES were identified as potentially occurring within the study area. The likelihood for these to occur on site was not evaluated.

### 4.2 Flora and Fauna Guarantee Act 1988

The *Flora and Fauna Guarantee Act 1988* (FFG Act) is the primary State legislation for the protection of native plants, native animals and ecological communities on public land and waters in Victoria. Species and ecological communities can be listed as threatened under the Act based on assessments by an independent Scientific Advisory Committee. Threatening processes may also be listed.

Previously, Victoria had multiple lists of threatened species - those listed under the FFG Act, and non-statutory lists called the Victorian Threatened Species Advisory Lists.

Amendments to the FFG Act have removed duplication by establishing a single comprehensive list of threatened flora and fauna species. This will continue to be known as the FFG Act Threatened List. With the new comprehensive list now in effect, the Advisory lists have been revoked.

Under the FFG Act a permit is required from the DEECA to 'take' 'protected' flora species, 'listed communities' or 'threatened species' from public land. Removal of any protected flora taxa, listed flora species or listed communities may not be undertaken until this permit has been issued (DELWP, 2020e).

The FFG Act also provides specific protection of fish passage by noting that the '*prevention of passage of aquatic biota as a result of the presence of instream structures*' is a potentially threatening process and that '*there should be no further preventable decline in the viability of any rare species*'.

The FFG Act also includes a list of potentially threatening process which are defined as: *a process which may have the capability to threaten the survival, abundance or evolutionary development of any taxon or community of flora or fauna.*

#### 4.2.1 Implications

Five flora species are known to occur on Site that are listed as protected under the FFG Act.

An application for a 'Permit to Take Protected Flora' must be lodged with the DELWP for the removal of these protected flora species where they occur on public land. Removal of any protected flora taxa may not be undertaken until this permit has been issued. Table provides the detail on flora protected under the FFG Act requiring removal.

Table 14 - Details of flora taxa known to occur on Site protected under Flora and Fauna Guarantee Act 1988

| Scientific Name                                          | Common Name            | Conservation Status   |
|----------------------------------------------------------|------------------------|-----------------------|
| <i>Acacia unicfolia</i>                                  | Coast Wirilda          | Endangered            |
| <i>Adriana quadripartita</i>                             | Coast Bitter-bush      | Endangered            |
| <i>Eucalyptus leucoxylon</i> subsp. <i>bellarinensis</i> | Bellarine Yellow-gum   | Critically Endangered |
| <i>Eucalyptus leucoxylon</i> subsp. <i>megalocarpa</i>   | Large-fruit Yellow-gum | Critically Endangered |
| <i>Geranium solanderi</i> var. <i>solanderi</i> s.s.     | Austral Crane's-bill   | Endangered            |

Up to seven potentially threatening processes occur on site. They are:

- Invasion of native vegetation by Blackberry *Rubus fruticosus* L. agg.
- Invasion of native vegetation by 'environmental weeds'.
- Loss of biodiversity as a result of the spread of Coast Wattle (*Acacia longifolia* subsp. *sophorae*) and Sallow Wattle (*Acacia longifolia* subsp. *longifolia*) into areas outside its natural range.
- Spread of *Pittosporum undulatum* in areas outside its natural distribution

- Predation of native wildlife by the introduced Red Fox *Vulpes vulpes*
- Reduction in biomass and biodiversity of native vegetation through grazing by the Rabbit *Oryctolagus cuniculus*.
- Predation of native wildlife by the cat, *Felis catus*.

Some floristic components of Coastal Moonah (*Melaleuca lanceolata* subsp. *lanceolata*) Woodland Community were identified on site, however, a targeted survey was not undertaken to determine if the Coastal Moonah plants on site meet the criteria of the threatened FFG community. The community should be protected as though it meets the criteria until a targeted survey can be completed.

### 4.3 Catchment and Land Protection Act 1994

In accordance with Section 20 of the CaLP Act, landholders and managers have a responsibility to take all reasonable steps to:

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

#### 4.3.1 Implications

Fifteen weeds declared noxious under the Catchment and Land Protection Act 1994 (CaLP Act) were identified on Site during assessments (Table ). Nine of these weeds are categorised within the Corangamite Catchment Management Authority region as 'Regionally Controlled' and six are categorised as 'Restricted' (Agriculture Victoria, 2020).

Table 15 - Declared noxious weeds known to occur on Site proclaimed under the Catchment and Land Protection Act 1994

| Scientific Name                           | Common Name       | Classification        |
|-------------------------------------------|-------------------|-----------------------|
| <i>Chrysanthemoides monilifera</i>        | Boneseed          | Regionally Controlled |
| <i>Conium maculatum</i>                   | Hemlock           | Regionally Controlled |
| <i>Foeniculum vulgare</i>                 | Fennel            | Regionally Controlled |
| <i>Genista linifolia</i>                  | Flax-leaf Broom   | Regionally Controlled |
| <i>Genista monspessulana</i>              | Montpellier Broom | Regionally Controlled |
| <i>Lycium ferocissimum</i>                | African Box-thorn | Regionally Controlled |
| <i>Nassella trichotoma</i>                | Serrated Tussock  | Regionally Controlled |
| <i>Rubus fruticosus</i> spp. agg.         | Blackberry        | Regionally Controlled |
| <i>Ulex europaeus</i>                     | Gorse             | Regionally Controlled |
| <i>Asparagus asparagoides</i>             | Bridal Creeper    | Restricted            |
| <i>Cirsium vulgare</i>                    | Spear Thistle     | Restricted            |
| <i>Juncus acutus</i> subsp. <i>acutus</i> | Spiny Rush        | Restricted            |
| <i>Opuntia robusta</i>                    | Wheel Cactus      | Restricted            |
| <i>Oxalis pes-caprae</i>                  | Sour sob          | Restricted            |
| <i>Solanum linnaeanum</i>                 | Apple of Sodom    | Restricted            |

## 4.4 Water Act 1987

Catchment Management Authorities have statutory responsibilities under Section 67 of the Water Act to monitor, manage, enforce, and administer control over all works which may impact upon designated waterways to ensure works undertaken do not adversely affect the health of those waterways.

A permit is required to undertake works on a designated waterway and can include activities such as:

- Crossings – bridges, fords, culverts;
- Deviations – waterway realignments;
- Extractions – sand, silt or gravel;
- Stabilisation – bank protection, retaining structures;
- Vegetation – fallen timber and vegetation removal, revegetation projects;
- Works – stormwater outlets, service crossings; and
- Other – jetty, river mouth opening, boardwalks.

### 4.4.1 Implications

There are no designated waterways within the site.

## 4.5 Wildlife Act 1979

The Wildlife Act 1975 provides the primary legislation for the protection and management of wildlife, the purposes of this Act are:

- To establish procedures in order to promote the protection and conservation of wildlife, the prevention of taxa of wildlife from becoming extinct and the sustainable use of and access to wildlife; and
- To prohibit and regulate the conduct of persons engaged in activities concerning or related to wildlife.

### 4.5.1 Implications

Persons engaged to remove, salvage, hold or relocate any native fauna species during any management, monitoring or other activities must have a permit under this Act to undertake such actions and ensure any actions to manage wildlife must be undertaken in accordance with the requirements of the Act or at the direction of DEECA.

## 4.6 Environmental Effects Act 1978

In Victoria, environmental impact assessments of proposed development projects are conducted through the Environmental Effects Statement (EES) process under the *Environment Effects Act 1978*

(EE Act). The Minister for Planning (the Minister) administers the EES process through the *Ministerial Guidelines for Assessment of Environmental Effects* (Ministerial Guidelines), whilst DELWP manages this process (Victorian Auditor Generals Report, 2017).

A proponent should ask the Minister administering the Act whether an EES is required for projects or amended projects that could have a significant effect on the environment. If the Minister decides that an Environment Effects Statement (EES) is required, the project proponent is responsible for preparing the EES and undertaking the necessary investigations (Victorian Government, the Department of Sustainability and Environment, 2006).

Referral criteria is based on either individual potential environmental effects or a combination of potential environmental effects.

#### 4.6.1 Implications

There are no proposed impacts at the site that would warrant further consideration under the Environmental Effects Act.

### 4.7 Planning and Environment Act 1987

The site is covered by a number of zones, overlays and other encumbrances. These specify certain permit requirements for certain actions across the Site. Any proposed construction, ground disturbance or clearing activity would require consideration of these encumbrances under the Greater Geelong Planning Scheme.

#### ENVIRONMENTAL SIGNIFICANCE OVERLAY

In the City of Geelong, "Schedule 2 to clause 42.01 Environmental Significance Overlay - High value wetlands and associated habitat protection" refers to a specific area within the planning scheme that is designated as highly important wetland habitat, requiring special protection from development due to its environmental significance. Any development within these wetland areas, including construction, vegetation removal or land subdivision would need a planning permit and would be subject to strict regulations to minimize impacts on the ecosystem.

#### LAND SUBJECT TO INUNDATION OVERLAY

"Schedule 2 to clause 44.04 land subject to inundation overlay – Coastal inundation and hazard" protects land vulnerable to coastal inundation (including from projected sea level rise) from inappropriate development. Permits may be required and strict regulations may be imposed on proposals in these areas.

#### AREA OF ABORIGINAL CULTURAL HERITAGE SENSITIVITY

The Aboriginal Heritage Regulations 2018 define areas of cultural heritage sensitivity. These areas include: Registered Aboriginal cultural heritage places, Landforms, and Land categories that are more likely to contain Aboriginal cultural heritage.



If a high impact activity is planned in an area of cultural heritage sensitivity, a Cultural Heritage Management Plan (CHMP) is required. Planning permits, licenses, and work authorities can't be issued until a CHMP has been approved.

#### DESIGNATED BUSHFIRE PRONE AREA

The City of Greater Geelong has designated bushfire prone areas (BPAs) and Bushfire Management Overlays (BMOs). Designated BPAs are areas that are subject to or likely to be subject to bushfires and as a result, new buildings must meet a minimum Bushfire Attack Level (BAL) construction standard.

## 5 Values

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Based on the assessments and legislative implications, the Site has the following ‘Values’:

### 5.1 The Southern Wetland

The Southern Wetland is Protected by an ESO which aims to protect high-value wetlands and their surrounding habitats. Furthermore, literature sources confirm the presence of nationally threatened species including the Growling Grass Frog, Australasian Bittern, Sharp-tailed Sandpiper, Latham’s Snipe, and a number of other species protected by international treaties. The Southern Wetland is also habitat for a range of other species not found, but with potential to occur on site. It also includes five unique wetland vegetation types not found elsewhere on the site.

The Southern Wetland faces a number of threats:

- Direct impacts from increase stormwater flow into the wetland. This includes changes to the natural hydrological cycle of the wetland, dilution of brackish water and brackish vegetation types and increased pollutants (including chemical pollutants, sediments and litter), all which have the potential to alter the character of the site.
- Indirect impacts from increase stormwater flow into the wetland such as vegetation changes resulting from the changes to hydrology (most obvious being the increased dominance of Common Reed which is out-competing other vegetation types and impeding on threatened species habitat), and increased propensity for pathogens and disease such as chytrid fungus.
- Invasive species such as weeds.
- Climate change altering the natural cycles of the wetland.

### 5.2 The Growling Grass Frog population

There are a number of threatened fauna species on the site, however these are mostly birds whose presence is transitory. Their habitat is the Southern Wetland which is identified as a value (above). However, the Growling Grass Frogs are resident on site and are listed as Vulnerable under the EPBC Act, and the FFG Act. Although their core habitat is the Southern Wetland, they have the potential to occur in other locations of the site (however briefly or rarely). Therefore, they are treated separately from the Southern Wetland.

The threats identified for the Growling Grass Frogs are:

- Habitat degradation, most notably through the Common Reed dominance listed above.
- Altered hydrological regimes impacting feeding and breeding cycles.
- Chytrid fungus and other pathogens.
- Chemical pollutants in water bodies.
- Climate change impacting the species or their habitat.
- Predation by pest animals.

### 5.3 Native vegetation and biodiversity

In Victoria, all native vegetation is protected and within the Study Area, only approximately 12% of the original extent of native vegetation remains. This puts higher significance on the native vegetation present at the Site. Furthermore, there are five threatened flora species known to occur on site, 10 threatened fauna species who depend on the habitat they provide, 2 endangered EVCs, 5 vulnerable EVCs, 1 Depleted EVC, and an array of other species who are considered locally significant for the region, all of which have requisite legislative implications.

The native vegetation on site is also habitat to other threatened species that may not have been recorded on Site but have the potential to utilise the site in the future.

Native vegetation and biodiversity face a range of threats:

- Unnatural fire regimes (altered frequency and intensity of fires) resulting in the loss of biodiversity.
- Invasive plants (including overabundant native species) outcompeting native species.
- Pest animals impacting on wildlife (in the case of cats and foxes) or native flora species recruitment (in the case of rabbits).
- Climate change resulting in rapid changes to the ecology of the site.

### 5.4 Cultural values

The entirety of the site is an 'area of cultural heritage sensitivity'. Beyond the physical evidence of cultural heritage, the site also holds intangible cultural values that are significant to the Wadawurrung people (see Wadawurrung – Place of Significance, page 55). These values encompass the spiritual, historical, and cultural connections that Traditional Owners have with the landscape, which may not be immediately visible but are deeply embedded in their traditions and knowledge systems. The Site's natural features may hold particular meaning, serving as places of cultural practice, oral storytelling, or connection to ancestral pathways.

The threats to Wadawurrung cultural values are:

- Impacts from uncontrolled use or development of the Site.
- Looting or vandalism of known cultural artefacts.
- Lack of consultation and recognition.
- Impacts to food species
- Lack of awareness and understanding about cultural values and systems.

## 5.5 Assets and infrastructure

The site has a significant network of access tracks, signage, fencing and recreational facilities like picnic tables and seats. These assets help manage the site, maintain critical emergency access and help users of the reserve enjoy the site without impacting on site values. This infrastructure represents a significant investment in the Site of which, replacing or altering these would be costly as additional planning restrictions may prevent such assets from being reinstated. However, directional signage and interpretive signage requires updating.

The threats to the assets of the reserve are:

- Uncontrolled wildfire.
- Vandalism.
- Lack of maintenance, such as weed encroachment, resulting in degradation of fixed assets or overgrowth of paths.
- Unauthorised use of the reserve including informal access points.

## 5.6 Engaged local community

Feedback has highlighted the importance of the reserve to the local community. There are also many formal and informal groups known to use the reserve of which some even provide valuable conservation work within the reserve.

The threats to the engagement with the reserve are:

- Lack of recognition, support, recruitment and volunteer fatigue.
- Lack of access due to land use change or new regulations impacting on public use of the reserve.
- Lack of facilities to support preferred uses of the reserve.

## 6 Threats

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Based on the assessments and legislative implications, the Site has the following ‘Threats’:

### 6.1 Stormwater impacts on the Southern Wetland

The natural processes of the southern wetland are likely being altered by stormwater flows. The increased water flows are likely impacting the natural hydrological cycle of the wetland, changing the natural salinity levels causing siltation and degrading water quality.

These changes are reported to be resulting in an increase to the extent of Common Reed in the wetland, a macrophyte which becomes locally dominant and can be allelopathic. The dominance of Common Reed has the potential to invade and out-compete other wetland communities (thus reducing habitat complexity) and occupying important niches for wildlife such as amphibian basking habitat and water bird marsh and open water habitat.

### 6.2 Loss of biodiversity from invasive plants

Invasive species, environmental weeds and overabundant native species all have the potential to impact on native vegetation and reduce native biodiversity. This loss of biodiversity can occur through direct competition, where invasive plants outcompete native species for resources such as light, water, and nutrients, often leading to the decline or local extinction of more vulnerable flora. Invasive species can also alter soil chemistry, fire regimes, and hydrology, creating conditions that favour their own persistence while suppressing native plant regeneration. The displacement of native vegetation can have cascading effects on the broader ecosystem, disrupting habitat availability and food sources for native fauna, ultimately leading to a decline in overall ecosystem resilience and function. Furthermore, some invasive plants form dense monocultures that out shade or smother native groundcover, reducing plant diversity and limiting opportunities for recruitment of indigenous species.

### 6.3 Loss of biodiversity from inappropriate fire regimes

Inappropriate fire regimes have the potential to impact on biodiversity or create the conditions for higher than usual severity wildfires. Fire regimes that are too frequent, too infrequent, or occur at inappropriate intensities can disrupt ecological processes and lead to biodiversity loss. Frequent fires may prevent slow-growing or fire-sensitive species from reaching maturity, reducing plant diversity and altering habitat structure for dependent fauna. Conversely, fire exclusion or significantly delayed fire intervals can lead to the dominance of fire-intolerant species, excessive fuel accumulation, and a loss of species that rely on periodic burning for regeneration. High-severity wildfires, often exacerbated by long periods without fire, can cause widespread habitat destruction, soil degradation, and the loss of seed banks, making recovery difficult for native ecosystems. Additionally, shifts in fire patterns can favour fire-adapted invasive species, which may outcompete native vegetation and further degrade habitat quality.

## 6.4 Impacts on wildlife from pest animals

Left unmanaged, foxes and cats can have a significant impact on wildlife at the site and also be vectors for the spread of weeds and diseases. These predators can cause severe declines in populations of small mammals, birds, reptiles, and amphibians through direct predation, often targeting species that are already vulnerable. The Site has a low diversity of ground dwelling fauna which may be a result of historical management, but could be exacerbated by foxes and cats.

Foxes and cats can contribute to the spread of invasive plants by dispersing seeds through their fur or droppings, further altering native vegetation communities. They can also act as carriers of diseases such as toxoplasmosis, which poses a serious threat to native wildlife, particularly marsupials.

## 6.5 Impacts on biodiversity from pest herbivores

Rabbits and hares have the potential to browse understorey species and inhibit recruitment of woody plants. Excessive browsing pressure from rabbits and hares can lead to a decline in plant diversity, as they selectively feed on palatable native species, often favouring seedlings and young plants, thus impacting recruitment. This can also result in an altered plant composition that favours unpalatable or invasive species. The suppression of woody plant recruitment can have cascading effects on habitat structure, reducing shelter and food availability for native fauna, particularly ground-dwelling birds, small mammals, and insects.

Additionally, their burrowing activities contribute to soil erosion and creating conditions that further degrade native ecosystems. In areas with high rabbit densities, this ongoing disturbance can prevent ecosystem recovery, leading to long-term habitat degradation and loss of biodiversity.

## 6.6 Disturbance to unknown cultural heritage

Disturbing unknown cultural heritage sites can lead to the irreversible loss of significant historical, archaeological, or spiritual values. Ground disturbance from activities like excavation, construction, or fire management may damage or destroy artifacts, burial sites, or culturally significant landscapes. This loss not only erases important connections to the past but can also impact cultural identity and legal protections associated with heritage sites. Additionally, unintentional disturbance may lead to legal consequences and require costly mitigation or restoration efforts.

## 6.7 Poorly maintained infrastructure and tracks

The Site has a variety of pre-existing infrastructure that represents years of investment. Poor maintenance of these assets would result in accelerated degradation and requirement for

significant re-investment. Furthermore, poorly planned or maintained tracks could result in the inability for emergency services to adequately address an issue in a timely manner.

## 6.8 Failure to maintain engagement with the community

The community is the Site's biggest asset, providing substantial value in care and maintenance. There is the potential for community disengagement, which would result in the loss of this value. Ongoing and meaningful engagement is essential to maintain volunteer interest, build local stewardship, and foster a shared sense of responsibility. A breakdown in communication or lack of visible outcomes from community input can lead to apathy or mistrust. Without regular outreach, education, and involvement opportunities, community support may diminish, leaving the Site more vulnerable to neglect, vandalism, and decreased advocacy during times of need.

## 6.9 Climate change impacting on the sites character

Climate change can alter ecosystems within the reserve by increasing temperatures, reducing soil moisture, increasing sea levels and shifting rainfall patterns. Prolonged drought can lead to tree stress and dieback, reducing habitat quality for wildlife and increasing the risk of bushfire. Soil drying may also affect seed germination and plant recruitment, leading to long-term changes in vegetation composition. Sea level rise may affect coastal vegetation health and shift species composition over time (BBCM, 2019), and contribute to changes in groundwater conditions such as rising water tables or increased salinity. More frequent extreme weather events, such as storms or heatwaves, can further degrade habitats, disrupt wildlife populations, and accelerate erosion. These changes can reduce ecosystem resilience, making it harder for the reserve to recover from disturbances.

## 7 Management

### 7.1 Risk Assessment

The threats listed in Section 6 all pose different levels of likelihood of occurring and associated consequences. To help substantiate these, a risk assessment was undertaken using a risk assessment matrix (Appendix 8 – Risk assessment matrix). It identified the risks with the most significant outcomes as:

1. Climate change, overabundant native species and wildlife predation by foxes.
2. Woody weeds, wetland weeds and wildlife predation by cats.
3. Herbivory by rabbits or hares.
4. Grassy and herbaceous environmental weeds and stormwater impacts on the southern wetland.
5. Limited emergency vehicle access.

The remaining risks, and the details of the assessment can be seen in Appendix 8 – Risk assessment matrix.

### 7.2 SWOT

Table 14 – SWOT analysis of the Site

| STRENGTHS                                                                                                                                                                                                                                                                            | WEAKNESSES                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biodiversity refuge in a largely cleared terrestrial landscape.<br>Engaged local community.<br>Threatened species.<br>Consistent funding/revenue stream.<br>Recreational value.<br>Existing track network and infrastructure.                                                        | Limited on ground resources.<br>Limited formal monitoring programs.<br>Limited infrastructure (parking, outdoor recreation).                                                                                                                                                                                                                                              |
| OPPORTUNITIES                                                                                                                                                                                                                                                                        | THREATS                                                                                                                                                                                                                                                                                                                                                                   |
| Integrate Wadawurrung into the reserves management.<br>Improve the visitor experience.<br>Improve access for a wider variety of users.<br>Research, education and community engagement opportunities.<br>Improve habitat quality to improve ecosystem function and benefit wildlife. | Climate change.<br>Overabundant native species.<br>Wildlife predation by foxes and cats.<br>Herbivory by rabbits.<br>Invasive plants.<br>Stormwater.<br>Disease.<br>Lack of woody species recruitment.<br>Inappropriate fire regimes.<br>Unknown cultural heritage.<br>Unauthorised use of the reserve.<br>Coastal Acid Sulphate Soils.<br>Failure to comply with policy. |

## 7.3 Management Zones

Dividing a site into management units/zones allows for more precise record-keeping, making it easier to track changes, interventions, and ecological trends over time. It also helps allocate resources efficiently by prioritizing areas based on specific management needs, such as weed control, habitat restoration, or fire risk reduction. Additionally, zoning enables better project tracking by clearly defining work areas, ensuring targeted actions, and improving coordination among stakeholders.

Management units/zones have already been defined by Bellarine Bayside for the site however were described as being preliminary in nature and not heavily utilised to date. Therefore, there is scope to revise them without significant loss of historical record.



*Figure 18 – Existing Management Zones of the Site*

The existing zones include 12 zones with some general trends. There are generally three zones in the east/west direction, four zones in the north/south direction and they generally utilise tracks as boundaries (where present).

The following management zones are proposed. They are based on these principles:

- Keeping a similar number of zones to those that already exist.
- Consideration of like ecological requirements.
- Consideration of planning zones and overlays.
- Using tracks or easily recognisable features as boundaries.
- Where no tracks or easily recognisable features are present, use historic tracks or future planned tracks as a basis for dividing the zones.
- Where neither are present, use straight lines and cardinal directions as boundaries.



Despite these principles, it is inevitable that some zone boundaries will occur in locations where there is no discernible feature on the ground. In these situations, it is recommended that boundary markers are used in strategically located places so management staff can geolocate themselves.



0 50 100 200  
m

Imagery source: Nearmap (04/09/2024)

Spatial Reference  
Name: GDA2020 Vicgrid  
PCS: GDA2020 Vicgrid  
GCS: GDA2020  
Datum: GDA2020  
Projection: Lambert Conformal Conic



Figure 19 – Recommended management zones for the Site.

There are 12 recommended management zones for the reserve. These are labelled A-C from west to east, and 1-4 from north to south. The smallest zone is 2.6 hectares, the largest is 9.1 hectares and the mean is 5.1 hectares.

## 7.4 Management of the Site

The information from this document will form the basis of the Point Richards Strategic Management Plan (SMP), which will have a 20 year period of relevance. The SMP will include a Vision, which will highlight the target state of the reserve at the end of the SMP, Objectives which focus on key areas and Strategies, which are actions to be implemented to achieve the Objectives.

Following the SMP are Operational Plans which have a five-year horizon and focus on the allocation of resources to specific tasks, to achieve each strategy. These are to be updated on an annual, rolling basis.

## 8 Conclusion and Recommendations

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The Point Richards Flora and Fauna Reserve represents a significant ecological asset within the Bellarine Peninsula, providing critical habitat for native vegetation, fauna, and culturally significant features. The findings of this background report highlight the Reserve's diverse landscape, encompassing both terrestrial and wetland ecosystems, and the vital role it plays in supporting regional biodiversity.

The assessment of values has identified key ecological, cultural, and community assets that contribute to the Reserve's importance. Notably, the presence of diverse Ecological Vegetation Classes (EVCs), including the Damp Sands Herb-rich Woodland and multiple wetland communities, underscores the ecological richness of the site. These habitats support a range of flora and fauna, including species of conservation significance. Additionally, the Reserve holds cultural value for the Wadawurrung people and serves as a recreational and educational space for the broader community.

Despite its ecological and cultural significance, the Reserve faces a number of threats that require active management. Among the primary concerns are the impacts of stormwater on the Southern Wetland, which have contributed to shifts in hydrology and the encroachment of invasive species such as *Phragmites australis* (Common Reed). Other threats include the spread of invasive plant species, fire regime alterations, pest animal impacts on native biodiversity, and potential degradation of cultural heritage sites. Climate change further compounds these issues by influencing hydrological patterns and altering habitat conditions.

A strategic and adaptive management approach is essential to mitigate these threats while enhancing the Reserve's ecological integrity and community value. Management priorities should focus on controlling invasive species, maintaining the ecological character of the wetlands, and ensuring the protection of significant flora and fauna. Community engagement and collaborative stewardship will be critical in sustaining the Reserve's long-term health, fostering an appreciation for its unique environmental and cultural features.

### 8.1 Recommendations

The project necessitates a Strategic Management Plan with a 20-year scope, along with Operational Plans covering five-year periods. Additionally, based on the database and literature review, field surveys, and an assessment of relevant legislation, the following recommendations are proposed:

- Opportunities to incorporate traditional practices into the management of the reserve are investigated.
- Any flora or fauna considered significant (under legislation or at a local level) should have a commensurate monitoring program to detect changes to their ecology.
- Threats should be monitored to document their change over time. The ecological value that they impact should also be monitored to evaluate the realised impact on the value.

- A specific weed monitoring program should be commenced that not only evaluates the cover and type of weeds, but tracks them over time.
- Periodic infrastructure condition assessments should be undertaken so that asset replacement can be forecast and budgeted.
- All work conducted in the reserve that may have lasting impacts to the reserve (weed control, revegetation, maintenance, installation of infrastructure, etc.) should be spatially recorded in a long-term database maintained by the land manager and attributed with relevant details such as date and type of work (refer to the DEECA output data standards (DELWP, 2021))
- Significant ground disturbance should be avoided in the reserve. If required, a cultural heritage advisor should be consulted.
- An ecological burning program should be initiated to help maintain biodiversity.
- Degraded areas of the site should be restored through revegetation following guidance of the Revegetation Planting Standards (DSE, 2006).
- Select areas of the reserve should have low densities of canopy trees reinstated. This should be guided by a site plan.
- Opportunities to use the reserve for educational purposes are investigated.

The Point Richards Flora and Fauna Reserve stands as a vital ecological and cultural site that warrants careful, informed, and ongoing management. Addressing existing threats through targeted conservation measures will help safeguard its biodiversity, ensure resilience against environmental pressures, and maintain its value as a natural and community asset for future generations. By integrating scientific assessments with sustainable management practices, the Reserve can continue to serve as a model for coastal conservation and ecological restoration efforts in Victoria.

## 9 References

- Aboriginal Victoria. (2019). *Aboriginal Cultural Heritage Register and Information Systems (ACHRIS) Online Map Tool*. Retrieved from Aboriginal Victoria Heritage: <https://achris.vic.gov.au/#/onlinemap>
- ACHRIS. (2024). *Aboriginal Cultural Heritage Register and Information System*. Retrieved from <https://achris.vic.gov.au/#/dashboard>
- Agriculture Victoria. (2020). *Victorian Resources Online*. Retrieved from 6.2 Sedimentary plains (Plains on unconsolidated (sedimentary) deposits): [https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform\\_geomorphological\\_framework\\_6.2](https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/landform_geomorphological_framework_6.2)
- Agriculture Victoria. (2020). *Victoria's consolidated lists of declared noxious weeds and pest animals*. Retrieved January 14, 2020, from Agriculture Victoria: [http://agriculture.vic.gov.au/\\_\\_data/assets/pdf\\_file/0009/365094/Victorian-noxious-weeds-list-by-common-name-20-July-2017.pdf](http://agriculture.vic.gov.au/__data/assets/pdf_file/0009/365094/Victorian-noxious-weeds-list-by-common-name-20-July-2017.pdf)
- Arthur Rylah Institute. (2023). *WetMAP Stage 4 Vegetation - Tall Marsh management*. Retrieved from [https://www.ari.vic.gov.au/\\_\\_data/assets/pdf\\_file/0028/685126/Tall-Marsh-management-WetMAP-Fact-sheet.pdf](https://www.ari.vic.gov.au/__data/assets/pdf_file/0028/685126/Tall-Marsh-management-WetMAP-Fact-sheet.pdf)
- Australian Government. (2020, September). *Parks Australia*. Retrieved from Australian Government Parks Australia: <https://parksaustralia.gov.au/>
- Barwick, D. (1984a). Mapping the Past: An Atlas of Victorian Clans 1835 - 1904. *Aboriginal History*, 100-131.
- Barwick, D. E. (1984b). Mapping the Past: An Atlas of Victorian Clans 1835-1904. *Aboriginal History* 8.
- BBCM. (2012). *A coastal management plan for the northern Bellarine foreshore*. Bellarine Bayside Foreshore Committee of Management.
- BBCM. (2013). *A Master Plan to support the implementation of the Northern Bellarine Foreshore Plan 2013*. Bellarine Bayside Coastal Management.
- BBCM. (2013). *Point Richards Reserve - Fauna Survey*.
- BBCM. (2019). *Northern Bellarine Coastal and Marine Management Plan (2020-2025)*. Portarlington: Bellarine Bayside Foreshore Committee of Management Incorporated.
- BBCM. (2023). *DEECA Fire Management 'catch up' with Brooke Bailey and David Roberts 12th Oct 2023*. Bellarine Bayside Coastal Management.
- BBCM. (2023, November). *Flora Masterlist November 2023*. Portarlington, Victoria, Australia: Bellarine Bayside Foreshore Committee of Management.
- BBCM. (2023). *Point Richards Flora and Fauna Reserve. Priority 1: Entrance Information Signage*. Bellarine Bayside Coastal Management.

- BBCM. (2024). *Point Richards fox map: trap & sign locations*. Bellarine Bayside Coastal Management.
- BBCM. (2024). *Work Records and Revegetation Efforts 2019 to 2024*. Bellarine Bayside Coastal Management.
- BBCM. (2024a). *Point Richards Flora and Fauna Reserve Strategic Management Plan and Priority Operational Plans - Consultant Brief*. Bellarine Bayside Coastal Management.
- BBCM. (2024b). *Birds of Point Richards Flora and Fauna Reserve WIP*. Bellarine Bayside Coastal Management.
- BBCM. (2024c). *Sightings Database*. Bellarine Bayside Coastal Management.
- BBCM. (2024d). *Pest Animal Control Strategy at Bellarine Bayside: Rabbits, Foxes and Cats*.
- BBCM. (2025). *Dog Walking Regulations*. Retrieved from <https://www.bellarinebayside.com.au/coastal-management/dog-walking-regulations/>
- BBCM. (2025). *Point Richards Flora and Fauna Reserve*. Retrieved from <https://www.bellarinebayside.com.au/2021/08/16/point-richards-flora-and-fauna-reserve/>
- BBCM. (n.d.). *This is Wadawurrung*. Bellarine Bayside Coastal Management.
- Bird, E. (2011). *Changes to the Coastline of Port Phillip Bay*. Office of the Environmental Monitor. Victoria: Department of Sustainability and Environment. Retrieved from Office of the Environmental Monitor.
- BirdLife Bellarine Bayside Peninsula. (2016). *Portarlington Flora and Fauna Reserve*. BirdLife Bellarine Bayside Peninsula.
- Broom, R. (2005). *Aboriginal Victorians: A History since 1800*. Melbourne: Allen & Unwin.
- Brownhill, W. R. (1955). *The History of Geelong & Corio Bay*. Geelong, Victoria: The Geelong Advertiser.
- Bureau of Meteorology. (2025). Retrieved from Australian Government Bureau of Meteorology.
- Campell, J. (2018). A timeline of dates and happenings: Point Richards Reserve and its Friends. Bellarine Bayside Coastal Management.
- Campell, J. (2024). Making 'The Reserve' Prominent (MTPR project): Part 1. Bellarine Bayside Coastal Management.
- Cannon, M. (1998). *Historical Records of Victoria (HRV), vol. 7*. Melbourne.
- Cesar Pty Ltd. (2024, May). *Chytrid Bellarine Bayside*. Brunswick, Victoria, Australia: Cesar Pty Ltd.
- Cesar Pty Ltd. (2024). *Chytrid Bellarine Bayside Negative*. Brunswick, Victoria, Australia: Cesar Pty Ltd.

- Cheal, D. (2010). *Growth stages and tolerable fire intervals for Victoria's native vegetation data sets. Fire and Adaptive*. East Melbourne, Victoria, Australia.: Department of Sustainability and Environment.
- City of Geelong. (2020). *Map of stormwater drainage in Portarlington, adjacent to Point Richards F&F Reserve*. Geelong: City of Geelong.
- Clark, I. D. (1990). *Aboriginal Languages and Clans: An Historical Atlas of Western and Central Victoria, 1800-1900*. Issue 37 of Monash Publications in Geography.
- CoA. (2010). *Gippsland Red Gum Grassy Woodland and Associated Grassland. A nationally threatened ecological community Environment Protection and Biodiversity Conservation Act 1999 Policy Statement 3.22*. ACT: Commonwealth of Australia.
- Cole, V. (1984). *Western Port Chronology 1798–1839: Exploration to Settlement*. Hastings: Shire of Hastings Historical Society.
- Collins, D., & Ford, A. (2017). Northern Bellarine Foreshore Management CHMP 10464. Dig International Ltd.
- Cook, D. (2020). *Control of Common Reed (Phragmites australis) and the impact of stormwater discharge at Point Richards Flora and Fauna Reserve*. Chewton: Rakali Ecological Consulting.
- Cotter, R. (2006). *Boon Wurrung: People of the Port Phillip District*. Red Hill South: Lavender Hill Multimedia.
- DAFF. (2025, March 25). *Established weeds*. Retrieved from Australian Government Department of Agriculture, Fisheries and Forestry: <https://www.agriculture.gov.au/biosecurity-trade/pests-diseases-weeds/pest-animals-and-weeds/established-weeds>
- DCCEEW. (2024). *Protected Matters Search Tool*. Retrieved from DCCEEW: <https://pmst.awe.gov.au/>
- DEECA. (2023c). *Flora and Fauna Guarantee Act 1988 – Threatened List - Characteristics of Threatened Communities*. Victorian Government.
- DEECA. (2024). *Bioregions and EVC benchmark*. Retrieved from Department of Energy, Environment and Climate Action: [https://www.environment.vic.gov.au/\\_\\_data/assets/pdf\\_file/0033/48696/GipP\\_EVCs\\_combined.pdf](https://www.environment.vic.gov.au/__data/assets/pdf_file/0033/48696/GipP_EVCs_combined.pdf)
- DEECA. (2024). *Bioregions and EVC benchmarks*. Retrieved from <https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>
- DEECA. (2024). *Fire History Records of Fires across Victoria showing the fire scars*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/fire-history-records-of-fires-across-victoria-showing-the-fire-scars1>
- DEECA. (2024). *Historic Aerial Photo Maps*. Retrieved from <https://mapshare.vic.gov.au/webmap/historical-photomaps/>

- DEECA. (2024). *Native Vegetation - Flora and Fauna Guarantee Act Listed Communities*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/native-vegetation-flora-and-fauna-guarantee-act-listed-communities>
- DEECA. (2024). *Native Vegetation - Modelled 1750 Ecological Vegetation Classes*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/native-vegetation-modelled-1750-ecological-vegetation-classes>
- DEECA. (2024). *Native Vegetation - Modelled 2005 Ecological Vegetation Classes (with Bioregional Conservation Status)*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/native-vegetation-modelled-2005-ecological-vegetation-classes-with-bioregional-conservation-sta>
- DEECA. (2024). *Vicmap Hydro*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/vicmap-hydro>
- DEECA. (2024). *VicPlan*. Retrieved from <https://mapshare.vic.gov.au/vicplan/>
- DEECA. (2024). *Victorian Biodiversity Atlas*. Retrieved from DEECA: <https://vba.biodiversity.vic.gov.au/vba/#/>
- DEECA. (2025). *NatureKit*. Retrieved from Victorian State Government Department of Energy, Environment and Climate Action: <https://www.environment.vic.gov.au/biodiversity/naturekit>
- DEECA. (2025). *Ramsar Wetland Areas in Victoria at 1:25 000*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/ramsar-wetland-areas-in-victoria-at-1-25-000>
- DELWP. (2009). *Advisory List of Threatened Invertebrate Fauna in Victoria*. Department of Environment, Land, Water and Planning.
- DELWP. (2013). *Advisory List of Threatened Vertebrate Fauna in Victoria*. East Melbourne: The Department of Environment, Land, Water and Planning.
- DELWP. (2014). *Advisory list of rare or threatened plants in Victoria- 2014*. Department of Environment, Land, Water and Planning State of Victoria.
- DELWP. (2017). *Guidelines for the removal, destruction or lopping of native vegetation*. State of Victoria Department of Environment, Land, Water and Planning.
- DELWP. (2018). *Assessor's handbook: Applications to remove, destroy or lop native vegetation*. Melbourne: Victorian Government.
- DELWP. (2019a). *Wellington Planning Scheme*. Retrieved from Planning Schemes Online: <http://planning-schemes.delwp.vic.gov.au/schemes/wellington/maps>
- DELWP. (2020a). *Protected flora controls*. Retrieved January 14, 2020, from Department of Environment Land Water and Planning: [https://www.environment.vic.gov.au/\\_\\_data/assets/pdf\\_file/0020/50438/Application-for-Permit-to-Take-Protected-Flora.pdf](https://www.environment.vic.gov.au/__data/assets/pdf_file/0020/50438/Application-for-Permit-to-Take-Protected-Flora.pdf)
- DELWP. (2020e). *Protected flora controls*. Retrieved May 13, 2020, from Department of Environment and Primary Industries:

[http://www.depi.vic.gov.au/\\_\\_data/assets/pdf\\_file/0014/315401/201510-FFG-protected-flora-list.pdf](http://www.depi.vic.gov.au/__data/assets/pdf_file/0014/315401/201510-FFG-protected-flora-list.pdf)

DELWP. (2021). *DELWP Output Data Standard*. Victoria State Government Department of Environment, Land, Water and Planning.

DELWP. (2022). *Benchmarks for wetland Ecological Vegetation Classes in Victoria*. Melbourne: Victorian Government.

DELWP. (2022). *Flora and Fauna Guarantee Act 1988 – Potentially Threatening Processes List*. Melbourne: Victorian Government.

DJISR. (2024). *Coastal Acid Sulphate Soils*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/coastal-acid-sulphate-soils>

DJISR. (2024). *Geological units represented as two dimensional polygons (1:250,000)*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/geological-units-represented-as-two-dimensional-polygons-1-250000>

DJISR. (2024). *Geomorphology of Victoria*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/geomorphology-of-victoria>

DJISR. (2024). *Victorian Soil type mapping*. Retrieved from Data Vic: <https://discover.data.vic.gov.au/dataset/victorian-soil-type-mapping>

DoECCW\_NSW. (2011). *White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and Derived Native Grassland Information Guide*. Department of Environment, Climate Change and Water NSW. 2010.

DSE. (2004). *EVC/Bioregion Benchmark for Vegetation Quality Assessment, Otway Plain*. Retrieved from Victorian Government Department of Sustainability and Environment.

DSE. (2004). *Vegetation Quality Assessment Manual - Guidelines for applying the habitat hectare scoring method, version 1.3*. Melbourne: DSE.

DSE. (2006). *Native Vegetation Revegetation Planting Standards - Guidelines for establishing native vegetation for net gain accounting*. Victoria Government Department of Sustainability and Environment.

DTP. (2025). *SMES - Survey Mark Enquiry Service*. Retrieved from <https://maps.land.vic.gov.au/lassi/SmesUI.jsp>

DTP. (2025). *Vicmap Transport*. Retrieved from Data Vic: <https://datashare.maps.vic.gov.au/search?q=uuid%3D8970aa3a-c4af-55bb-afeb-63d3e89bbd69>

EnviroDNA. (2024). *Fox scat diet analysis using eDNA*. EnviroDNA.

Environmental compliance report for protection of Point Richards Flora and Fauna Reserve wetland - March 2024 - Report No. 1057-1, Version 1, to ThinkSolve Development Solutions. (2024). Bio2Lab Environmental Intelligence.

- EPA Victoria. (2024). *Priority Sites Register- Victoria Unearthed*. Retrieved from <https://mapshare.vic.gov.au/victoriaunearthed/>
- Flinders, M. (1814). *A Voyage to Terra Australis*. G. and W. Nicol.
- Forest Fire Management Victoria. (2023). *Joint Fuel Management Program 2023/24 – 2025/2026 Barwon South West FFMVic Region South West CFA Region*. Melbourne: Victorian Government.
- Frood, D., & Papas, P. (2016). *A guide to water regime salinity ranges and bioregional conservation status of Victorian wetland ecological vegetation classes*. Heidelberg, Victoria: Arthur Rylah Institute for Environmental Research.
- Gazzard, T., McLeod, C., Medlin, C., Baker, M., Martin, H., & Rourke, D. (2020). *Barwon South West Bushfire Management Strategy 2020 - Fuel Management Bushfire Risk Engagement Areas*. Melbourne: Victorian Government.
- Geelong Field Naturalists. (2024). *Point Richards Flora and Fauna Reserve Fauna Survey April 13th 2024*. Geelong Field Naturalists.
- Geoscience Australia. (2024). *Historical Aerial Photography*. Retrieved from <https://www.ga.gov.au/scientific-topics/national-location-information/historical-aerial-photography>
- Gordon Tafe. (2022, July). Gordon Tafe Asset Survey.
- Gottwald, E. (2024). *Native vegetation removal regulations - Conservation work exemption for the removal of overabundant native plants*. Melbourne: Victorian Government.
- Hines, F., Tolhurst, K., Wilson, A., & McCarthy, G. (2010). *Overall fuel hazard assessment guide 4th edition*. Melbourne: Victorian Government.
- Hiscock, P. (2008). *Archeology of Ancient Australia*. London and New York: Routledge.
- Hopely, D., & Thom, B. (1983). Australian Sea Levels in the Last 15,000 Years: An Introductory Review. *Department of Geography, James Cook University of North Queensland, Monograph Series Occasional Paper*, 3-26.
- Kershaw, P. (1995). Environmental Change in Greater Australia. *Antiquity*, 69, 656-75.
- Land Conservation Council. (1991). *Melbourne Area District Review: Descriptive Report*. Melbourne: Land Conservation Council.
- LCC. (1991). *Melbourne Area District Review: Descriptive Report*. Melbourne: Land Conservation Council.
- Marshall, S. (2023). *Panorama Property Development Water Quality Monitoring Plan*. Bio2Lab Environmental Intelligence.
- Marshall, S., & Sharley, D. (2023). *Environmental compliance report for protection of Point Richards Flora and Fauna Reserve wetland - Draft report No. 1057-1, Version 1, to ThinkSolve Development Solutions*. Bio2Lab Environmental Intelligence.

- Mexted Rimmer Associates. (1988). Point Richards Nature Reserve: Planting Plan. Mexted Rimmer Associates.
- Moulton, P. &. (2005). *Fire Management Plan: Point Richards Flora and Fauna Reserve and Portarlington Recreation Reserve Portarlington*. City of Greater Geelong.
- Murphy, S. (2021). Steve Murphy (Aussie Bird Counts 2021).
- Nearmap. (2025). *Nearmap*. Retrieved from Nearap: [https://www.nearmap.com/au/legal/copyright?utm\\_source=google&utm\\_medium=organic](https://www.nearmap.com/au/legal/copyright?utm_source=google&utm_medium=organic)
- Peel, J. L. (1974). *Rural industry in the Port Phillip region, 1835-1880*. Carlton, Victoria: Melbourne University Press.
- Pescott, T. (2024). Point Richards: harp trapping (email). GFNC Fauna Group.
- Port Phillip Ferries. (2025). *Bike & Walking Trails*. Retrieved from <https://www.portphillipferries.com.au/bike-walking-trails/>
- Prescott, T. (1988). *Point Richards Reserve Portarlington: Botanical Report*.
- Presland, G. (1994). *Aboriginal Melbourne: the Lost Land of the Kulin People*. Ringwood, Victoria: McPhee Gribble.
- Presland, G. (2006). *Aboriginal Melbourne: The Lost Land of the Kulin People*. Melbourne: McPhee Gribble.
- Presland, G. (2010). *First people : the Eastern Kulin of Melbourne, Port Phillip and Central Victoria*. Melbourne: Museum Victoria Publishing.
- Rhoads, J. W. (1986). *Bellarine Peninsula: Archeological Site Assessment and Management Study, Report 22*.
- Richards, T., & Jordan, J. (1999). *Aboriginal Archeological Investigations in the Barwon Drainage Basin, Report 856*.
- Robinson, G. A. (1846). *Letterbook of the Port Phillip Protectorate*. A7046-8 MLS.
- Rosengren, N. (1988). *Sites of Geological and Geomorphological Significance on the Coast of Port Phillip Bay. Report Prepared for Ministry for Planning and Environment*. Victoria: Ministry for Planning and Environment.
- Rowe, D., & Jacobs, W. (2013). *Lara Heritage Review – Thematic Environmental History*. Geelong: City of Greater Geelong.
- Salmi, B. (2020). *Portarlington Development Plan – Integrated Water Management Plan*. Notting Hill: Water Technology.
- Salmi, B. (2020). *Portarlington DPO36 - Integrated Water Management Plan, Ecological Assessment*. Notting Hill: Water Technology.
- Shearer, J. (Unknown). *Project Initiation Brief: Pt Richards Flora and Fauna Reserve Signage and interpretation*. Portarlington: Bellarine Bayside Coastal Management.

- Smith, P. (2015). Site Stormwater Management Plan. Insight Planning Consultants Pty Ltd.
- Soil Science Australia. (2024). *The Australian Soil Classification*. Retrieved from Podosols: <https://www.soilscienceaustralia.org.au/asc/po/podosols.htm>
- State Library Victoria. (2024). Retrieved from <https://www.slv.vic.gov.au/>
- Stokes, L. (2007a). *Point Richards Flora and Fauna Reserve*. Portarlington History Group, 2007.
- Stokes, L. (2007b). *Discovering Portarlington's History - A driving trail*. Portarlington History Group.
- Thomson, L. (2023). *Environmental compliance report for protection of Point Richards Flora and Fauna Reserve wetland*. Melbourne: Bio2Lab.
- Thomson, L. (2024). *Environmental compliance report for protection of Point Richards Flora and Fauna Reserve wetland*. Melbourne: Bio2Lab.
- Trengove, M. (2004). Portarlington Recreation Reserve and PT Richards Flora and Fauna Reserve. Thompson Berrill Landscape Design Pty Ltd (TBLD).
- Trengove, M. (2004). Vegetation Communities Plan: Point Richards & Portarlington Reserves (map). City of Greater Geelong.
- Trengove, M. (2013). *Indigenous Plant Species, Significance and Distribution by EVC*. Geelong: Mark Trengove Ecological Services.
- Trengove, M. (2015). *Bellarine Bayside Vegetation Management Plan*. Mark Trengove Ecological Services.
- Trengove, M. (2023). *Bellarine Bayside Northern Bellarine Rehabilitation Plan 2023-2028*. Geelong: Mark Trengove Ecological Services.
- Unearthed Heritage Australia Pty Ltd (UHA). (2024). Aboriginal Cultural Heritage Due Diligence Trailhead and Interpretive Signage, Point Richards. Bellarine Bayside Coastal Management.
- Victorian Auditor General's Report. (2017). *Effectiveness of the Environmental Effects Statement Process*. Melbourne: Victorian Government.
- Victorian Government. (2024). *Water Act 1989*. Retrieved from Victorian Legislation: <https://www.legislation.vic.gov.au/in-force/acts/water-act-1989/142>
- Victorian Government, the Department of Sustainability and Environment. (2006). *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978*. East Melbourne: Department of Sustainability and Environment.
- Victorian Resources Online. (2025). Retrieved from Coastal acid sulphate soils: [https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/soil\\_acid\\_sulfate\\_soils](https://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/soil_acid_sulfate_soils)
- VVG. (2024). *Corangamite CMA GFS 1*. Retrieved from Visualising Victoria's Groundwater: [https://www.vvg.org.au/cb\\_pages/CCMA\\_GFS1.php](https://www.vvg.org.au/cb_pages/CCMA_GFS1.php)

- VVG. (2024). *Visualising Victoria's Groundwater*. Retrieved from [https://www.vvg.org.au/vvg\\_map.php?agreement=Agree+and+Continue](https://www.vvg.org.au/vvg_map.php?agreement=Agree+and+Continue)
- Wadawurrung Traditional Owners Aboriginal Corporation (2020) Paleert Tjaara Dja - let's make Country good together 2020-2030 - Wadawurrung Country Plan. Geelong, Victoria.
- Webb, C. (1995). *The identification and documentation of silcrete quarries. A Report to AAV. Funded by the National Estates Program and the Heritage Commission*.
- Welch, S., Higgins, D., & Callaway, G. (2011). *Surface geology of Victoria 1:250,000*. Retrieved from Geological Survey of Victoria.
- White, C. (2024). *Asbestos Identification Report*. Environmental Health Solutions.
- White, M., Cheal, D., Carr, G., Adair, R., Blood, K., & Meagher, D. (2018). *Advisory list of environmental weeds in Victoria*. Melbourne: Arthur Rylah Institute of Environmental Research.
- Wilson, A. (1894). *The Geelong Naturalist*. E.JHall & Sons.
- Zola, N., & Gott, B. (1990). *Koorie Plant Koorie People: Traditional Aboriginal Food, Fibre and Healing Plants of Victoria*. Melbourne: Koorie Heritage Trust.
- Zola, N., & Gott, B. (1992). *Koorie Plants Koorie People: Traditional Aboriginal Food, Fibre and Healing Plants of Victoria*. Melbourne: Koorie Heritage Trust.



## Appendices

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Appendices commence on the next page

## Appendix 1 – Literature Review Sources

| Author                       | Year | Title                                                                                                                          | Publisher                                                    |
|------------------------------|------|--------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------|
| Bertrand Salmi               | 2020 | Final Report Portarlington Development Plan - Integrated Water Management Plan                                                 | Water Technology Pty Ltd                                     |
| Bertrand Salmi               | 2020 | Portarlington DPO36 - Integrated Water Management Plan, Ecological Assessment                                                  | Water Technology Pty Ltd                                     |
| A. B. F. Wilson              | 1894 | The Geelong naturalist.                                                                                                        | E.J.Hall & Sons                                              |
| BBCM                         | 2013 | Point Richards Reserve - Fauna Survey                                                                                          | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2013 | A Master Plan to support the implementation of the Northern Bellarine Foreshore Plan 2013                                      | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2023 | DEECA Fire Management Catch up with Brooke Bailey and David Roberts 12th Oct 2023                                              | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2024 | Work Records and Revegetation Efforts 2019 to 2024                                                                             | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2024 | Pest Animal Control Strategy at Bellarine Bayside: Rabbits, Foxes and Cats                                                     | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2024 | Point Richards fox map: trap & sign locations                                                                                  | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2023 | Point Richards Flora and Fauna Reserve. Priority 1: Entrance Information Signage                                               | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2012 | A coastal management plan for the northern Bellarine foreshore                                                                 | Bellarine Bayside Foreshore Committee of Management          |
| BBCM                         | 2019 | Northern Bellarine Coastal and Marine Management Plan (2020-2025)                                                              | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2023 | Flora Masterlist Nov 2023                                                                                                      | Bellarine Bayside Foreshore Committee of Management          |
| BBCM                         | 2024 | Sightings Database                                                                                                             | Bellarine Bayside Coastal Management                         |
| BBCM                         | 2024 | Birds of Point Richards Flora and Fauna Reserve WIP                                                                            | Bellarine Bayside Coastal Management                         |
| BBCM                         | n.d  | This is Wadawurrung                                                                                                            | Bellarine Bayside Coastal Management                         |
| BirdLife Bellarine Peninsula | 2016 | Portarlington Fauna and Flora Reserve                                                                                          | BirdLife Bellarine Peninsula                                 |
| Bertrand Salmi               | 2020 | Final Report Portarlington Development Plan - Integrated Water Management Plan                                                 |                                                              |
| Bertrand Salmi               | 2020 | Portarlington DPO36 - Integrated Water Management Plan, Ecological Assessment                                                  |                                                              |
| Haylo Roberts & Andrew Weeks | 2024 | Chytrid Bellarine Bayside Negative                                                                                             | Cesar Pty Ltd                                                |
| Haylo Roberts & Andrew Weeks | 2024 | Chytrid Bellarine Bayside                                                                                                      | Cesar Pty Ltd                                                |
| Christie White               | 2024 | Asbestos Identification Report                                                                                                 | Environmental Health Solutions                               |
| Damien Cook                  | 2020 | Control of Common Reed (Phragmites australis) and the impact of stormwater discharge at Point Richards Flora and Fauna Reserve | Rakali Consulting Pty Ltd                                    |
| Emmalene Gottwald            | 2024 | Native Vegetation Removal Regulations - Conservation Work Exemption for the Removal of Overabundant Native Plants              | Department of Energy, Environment and Climate Change (DEECA) |
| EnviroDNA                    | 2024 | Fox scat diet analysis using eDNA                                                                                              | EnviroDNA                                                    |
| Geelong Field Naturalists    | 2024 | Point Richards Flora and Fauna Reserve Fauna Survey April 13th 2024                                                            | Geelong Field Naturalists                                    |

| Author                                     | Year | Title                                                                                                                                                                             | Publisher                            |
|--------------------------------------------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Jane Shearer                               | 2020 | Pt Richards Flora and Fauna Reserve Signage and interpretation                                                                                                                    | Bellarine Bayside Coastal Management |
| Janet Campbell                             | 2024 | Making 'The Reserve' Prominent (MTRP project): Part 1                                                                                                                             | Bellarine Bayside Coastal Management |
| Janet Campbell                             | 2018 | A timeline of dates and happenings: Point Richards Reserve and its Friends                                                                                                        | Bellarine Bayside Coastal Management |
| Lorraine Stokes                            | 2007 | Point Richards Flora and Fauna Reserve                                                                                                                                            | Portarlington History Group          |
| Mark Trengove                              | 2004 | Vegetation Communities Plan: Point Richards & Portarlington Reserves (map)                                                                                                        | City of Greater Geelong              |
| Mark Trengove                              | 2004 | Portarlington Recreation Reserve and PT Richards Flora and Fauna Reserve                                                                                                          |                                      |
| Mark Trengove                              | 2013 | Indigenous Plant Species, Significance and Distribution by EVC                                                                                                                    |                                      |
| Mark Trengove                              | 2015 | Bellarine Bayside Vegetation Management Plan                                                                                                                                      | Mark Trengove Ecological Services    |
| Mark Trengove Ecological Services          | 2023 | Bellarine Bayside Northern Bellarine Rehabilitation Plan 2023-2028                                                                                                                | Mark Trengove Ecological Services    |
| Matthew Flinders                           | 1814 | A Voyage to Terra Australis                                                                                                                                                       | G. and W. Nicol                      |
| Mexted Rimmer Associates                   | 1988 | Point Richards Nature Reserve: Planting plan                                                                                                                                      | Mexted Rimmer Associates             |
| Peter Moulton & Mark Trengove              | 2005 | Fire Management Plan: Point Richards Flora and Fauna Reserve and Portarlington Recreation Reserve Portarlington                                                                   |                                      |
| Peter Smith                                | 2015 | Site Stormwater Management Plan                                                                                                                                                   | Insight Planning Consultants Pty Ltd |
| Sarah Collins & Adam Ford                  | 2017 | Northern Bellarine Foreshore Management CHMP 10464                                                                                                                                | Dig International Pty Ltd            |
| Steve Marshall                             | 2023 | Panorama Property Development Water Quality Monitoring Plan                                                                                                                       | Bio2Lab Environmental Intelligence   |
| Steve Marshall & David Sharley             | 2023 | Environmental compliance report for protection of Point Richards Flora and Fauna Reserve wetland – Draft report No. 1057-1, Version 1, to ThinkSolve Development Solutions        | Bio2Lab Environmental Intelligence   |
| Steve Marshall & David Sharley             | 2024 | Environmental compliance report for protection of Point Richards Flora and Fauna Reserve wetland – March 2024 - Report No. 1057-2, Version 1, to ThinkSolve Development Solutions | Bio2Lab Environmental Intelligence   |
| Steve Murphy                               | 2021 | Steve Murphy (Aussie Bird Counts 2021)                                                                                                                                            |                                      |
| Trevor Pescott                             | 2023 | Point Richard: harp trapping (email)                                                                                                                                              | GFNC Fauna Group                     |
| Trevor Prescott                            | 1988 | Point Richards Reserve Portarlington: Botanical Report                                                                                                                            |                                      |
| Unearthed Heritage Australia Pty Ltd (UHA) | 2024 | Aboriginal Cultural Heritage Due Diligence Trailhead and Interpretive Signage, Point Richards                                                                                     | Bellarine Bayside Coastal Management |

## Appendix 2 – Rare and threatened species recorded in the study area by the VBA

Search date: 18/12/2024

| Taxon ID | Scientific Name                                            | Common Name               | FFGStatus            | Conservation Status | Count of Sightings | Last Record |
|----------|------------------------------------------------------------|---------------------------|----------------------|---------------------|--------------------|-------------|
| 10112    | <i>Hydroprogne caspia</i>                                  | Caspian Tern              | Vulnerable           | vu                  | 2                  | 22/12/2015  |
| 10117    | <i>Sternula albifrons</i>                                  | Little Tern               | CriticallyEndangered | cr                  | 3                  | 27/12/1999  |
| 10118    | <i>Sternula nereis</i>                                     | Fairy Tern                | CriticallyEndangered | VU cr               | 1                  | 27/12/1999  |
| 10129    | <i>Arenaria interpres</i>                                  | Ruddy Turnstone           | Endangered           | VU en               | 11                 | 27/12/2017  |
| 10149    | <i>Numenius madagascariensis</i>                           | Eastern Curlew            | CriticallyEndangered | CR cr               | 1                  | 1/11/1969   |
| 10158    | <i>Tringa nebularia</i>                                    | Common Greenshank         | Endangered           | EN en               | 1                  | 1/01/1972   |
| 10160    | <i>Xenus cinereus</i>                                      | Terek Sandpiper           | Endangered           | VU en               | 1                  | 12/03/2008  |
| 10161    | <i>Calidris ferruginea</i>                                 | Curlew Sandpiper          | CriticallyEndangered | CR cr               | 2                  | 12/03/2008  |
| 10163    | <i>Calidris acuminata</i>                                  | Sharp-tailed Sandpiper    | .                    | VU                  | 5                  | 14/02/1992  |
| 10168    | <i>Gallinago hardwickii</i>                                | Latham's Snipe            | .                    | VU                  | 12                 | 2/01/2018   |
| 10185    | <i>Egretta garzetta</i>                                    | Little Egret              | Endangered           | en                  | 1                  | 22/12/2015  |
| 10197    | <i>Botaurus poiciloptilus</i>                              | Australasian Bittern      | CriticallyEndangered | EN cr               | 1                  | 22/10/1976  |
| 10212    | <i>Spatula rhynchotis</i>                                  | Australasian Shoveler     | Vulnerable           | vu                  | 1                  | 26/05/2005  |
| 10214    | <i>Stictonetta naevosa</i>                                 | Freckled Duck             | Endangered           | en                  | 2                  | 6/03/2018   |
| 10216    | <i>Oxyura australis</i>                                    | Blue-billed Duck          | Vulnerable           | vu                  | 2                  | 22/11/2014  |
| 10220    | <i>Accipiter novaehollandiae</i>                           | Grey Goshawk              | Endangered           | en                  | 4                  | 10/07/2019  |
| 10225    | <i>Hieraaetus morphnoides</i>                              | Little Eagle              | Vulnerable           | vu                  | 2                  | 1/07/2001   |
| 10226    | <i>Haliaeetus leucogaster</i>                              | White-bellied Sea-Eagle   | Endangered           | en                  | 3                  | 7/12/2016   |
| 10238    | <i>Falco subniger</i>                                      | Black Falcon              | CriticallyEndangered | cr                  | 1                  | 12/03/2008  |
| 10306    | <i>Neophema chrysostoma</i>                                | Blue-winged Parrot        | .                    | VU                  | 1                  | 9/07/2016   |
| 10334    | <i>Hirundapus caudacutus</i>                               | White-throated Needletail | Vulnerable           | VU vu               | 1                  | 3/03/2019   |
| 11617    | <i>Tursiops australis</i>                                  | Burrunan Dolphin          | CriticallyEndangered | cr                  | 1                  | 10/10/2010  |
| 11830    | <i>Arctophoca tropicalis</i>                               | Subantarctic Fur Seal     | .                    | EN                  | 1                  | 14/08/1996  |
| 13207    | <i>Litoria raniformis</i>                                  | Growling Grass Frog       | Vulnerable           | VU vu               | 8                  | 24/11/2009  |
| 15253    | <i>Athanopsis australis</i>                                | Southern Hooded Shrimp    | Endangered           | en                  | 1                  | 3/04/1995   |
| 61092    | <i>Isodon obesulus obesulus</i>                            | Southern Brown Bandicoot  | Endangered           | EN en               | 2                  | 15/05/1975  |
| 500148   | <i>Lachnagrostis adamsonii</i>                             | Adamson's Blown-grass     | Endangered           | EN en               | 2                  | 24/10/2002  |
| 500326   | <i>Atriplex paludosa</i> subsp. <i>paludosa</i>            | Marsh Saltbush            | Endangered           | en                  | 1                  | 01/02/1888  |
| 501271   | <i>Eucalyptus diversifolia</i> subsp. <i>megacarpa</i>     | Coast Gum                 | Vulnerable           | vu #                | 1                  | 14/09/1992  |
| 501295   | <i>Corymbia maculata</i>                                   | Spotted Gum               | Vulnerable           | vu #                | 2                  | 14/09/1992  |
| 501660   | <i>Heterozostera tasmanica</i>                             | Eelgrass                  | Endangered           | en                  | 1                  | 24/10/2002  |
| 502275   | <i>Nicotiana suaveolens</i>                                | Austral Tobacco           | Endangered           | en                  | 1                  | 30/06/1995  |
| 502982   | <i>Rutidosis leptorhynchoides</i>                          | Button Wrinklewort        | Endangered           | EN en               | 1                  | 1/03/1921   |
| 504210   | <i>Acacia uncifolia</i>                                    | Coast Wirilda             | Endangered           | en                  | 1                  | 1/02/2014   |
| 504222   | <i>Lachnagrostis semibarbata</i> var. <i>filifolia</i>     | Purple Blown-grass        | Endangered           | en                  | 1                  | 24/10/2002  |
| 504223   | <i>Lachnagrostis robusta</i>                               | Salt Blown-grass          | Endangered           | en                  | 5                  | 8/01/2008   |
| 504696   | <i>Malva preissiana</i> s.s. (white-flowered coastal form) | Coast Hollyhock           | Endangered           | en                  | 2                  | 14/09/1992  |



| Taxon ID | Scientific Name                              | Common Name          | FFGStatus            | Conservation Status | Count of Sightings | Last Record |
|----------|----------------------------------------------|----------------------|----------------------|---------------------|--------------------|-------------|
| 505213   | Cyanothamnus anemonifolius subsp. variabilis | Coast Boronia        | CriticallyEndangered | cr                  | 1                  | 01/01/1870  |
| 505308   | Salsola tragus subsp. pontica                | Coast Saltwort       | Endangered           | en                  | 1                  | 1/02/1921   |
| 505337   | Geranium solanderi var. solanderi s.s.       | Austral Crane's-bill | Endangered           | en                  | 1                  | 24/10/2002  |



## Appendix 3 – PMST search report for the study area

Commence on the next page



## EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 25-Feb-2025

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)

## Summary

### Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

|                                                               |      |
|---------------------------------------------------------------|------|
| <a href="#">World Heritage Properties:</a>                    | None |
| <a href="#">National Heritage Places:</a>                     | None |
| <a href="#">Wetlands of International Importance (Ramsar)</a> | 1    |
| <a href="#">Great Barrier Reef Marine Park:</a>               | None |
| <a href="#">Commonwealth Marine Area:</a>                     | None |
| <a href="#">Listed Threatened Ecological Communities:</a>     | 4    |
| <a href="#">Listed Threatened Species:</a>                    | 79   |
| <a href="#">Listed Migratory Species:</a>                     | 44   |

### Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <https://www.dcceew.gov.au/parks-heritage/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

|                                                                     |      |
|---------------------------------------------------------------------|------|
| <a href="#">Commonwealth Lands:</a>                                 | None |
| <a href="#">Commonwealth Heritage Places:</a>                       | None |
| <a href="#">Listed Marine Species:</a>                              | 56   |
| <a href="#">Whales and Other Cetaceans:</a>                         | 7    |
| <a href="#">Critical Habitats:</a>                                  | None |
| <a href="#">Commonwealth Reserves Terrestrial:</a>                  | None |
| <a href="#">Australian Marine Parks:</a>                            | None |
| <a href="#">Habitat Critical to the Survival of Marine Turtles:</a> | None |

### Extra Information

This part of the report provides information that may also be relevant to the area you have

|                                                         |      |
|---------------------------------------------------------|------|
| <a href="#">State and Territory Reserves:</a>           | 2    |
| <a href="#">Regional Forest Agreements:</a>             | 1    |
| <a href="#">Nationally Important Wetlands:</a>          | None |
| <a href="#">EPBC Act Referrals:</a>                     | 10   |
| <a href="#">Key Ecological Features (Marine):</a>       | None |
| <a href="#">Biologically Important Areas:</a>           | 5    |
| <a href="#">Bioregional Assessments:</a>                | None |
| <a href="#">Geological and Bioregional Assessments:</a> | None |

## Details

### Matters of National Environmental Significance

| Wetlands of International Importance (Ramsar Wetlands)                       |                            | [ Resource Information ] |
|------------------------------------------------------------------------------|----------------------------|--------------------------|
| Ramsar Site Name                                                             | Proximity                  | Buffer Status            |
| <a href="#">Port phillip bay (western shoreline) and bellarine peninsula</a> | Within 10km of Ramsar site | In feature area          |

| Listed Threatened Ecological Communities                                                                                                                                                                                                                                                                                                                                                                                                           | [ Resource Information ] |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.<br>Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act. |                          |

| Community Name                                                                                      | Threatened Category   | Presence Text                         | Buffer Status   |
|-----------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------|-----------------|
| <a href="#">Grassy Eucalypt Woodland of the Victorian Volcanic Plain</a>                            | Critically Endangered | Community known to occur within area  | In feature area |
| <a href="#">Natural Damp Grassland of the Victorian Coastal Plains</a>                              | Critically Endangered | Community may occur within area       | In feature area |
| <a href="#">Natural Temperate Grassland of the Victorian Volcanic Plain</a>                         | Critically Endangered | Community may occur within area       | In feature area |
| <a href="#">White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland</a> | Critically Endangered | Community likely to occur within area | In feature area |

| Listed Threatened Species                                                                                       | [ Resource Information ] |                                                                    |                 |
|-----------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------------------------------|-----------------|
| Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.<br>Number is the current name ID. |                          |                                                                    |                 |
| Scientific Name                                                                                                 | Threatened Category      | Presence Text                                                      | Buffer Status   |
| BIRD                                                                                                            |                          |                                                                    |                 |
| <a href="#">Anthochaera phrygia</a><br>Regent Honeyeater [82338]                                                | Critically Endangered    | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#">Aphelocephala leucopsis</a><br>Southern Whiteface [529]                                             | Vulnerable               | Species or species habitat may occur within area                   | In feature area |
| <a href="#">Ardenna grisea</a><br>Sooty Shearwater [82651]                                                      | Vulnerable               | Species or species habitat may occur within area                   | In feature area |

| Scientific Name                                                                                           | Threatened Category   | Presence Text                                                      | Buffer Status   |
|-----------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------|-----------------|
| <a href="#"><u><i>Botaurus poiciloptilus</i></u></a><br>Australasian Bittern [1001]                       | Endangered            | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u><i>Calidris acuminata</i></u></a><br>Sharp-tailed Sandpiper [874]                          | Vulnerable            | Species or species habitat known to occur within area              | In feature area |
| <a href="#"><u><i>Calidris canutus</i></u></a><br>Red Knot, Knot [855]                                    | Vulnerable            | Species or species habitat known to occur within area              | In feature area |
| <a href="#"><u><i>Calidris ferruginea</i></u></a><br>Curlew Sandpiper [856]                               | Critically Endangered | Species or species habitat known to occur within area              | In feature area |
| <a href="#"><u><i>Callocephalon fimbriatum</i></u></a><br>Gang-gang Cockatoo [768]                        | Endangered            | Species or species habitat known to occur within area              | In feature area |
| <a href="#"><u><i>Charadrius leschenaultii</i></u></a><br>Greater Sand Plover, Large Sand Plover [877]    | Vulnerable            | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u><i>Climacteris picumnus victoriae</i></u></a><br>Brown Treecreeper (south-eastern) [67062] | Vulnerable            | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u><i>Diomedea antipodensis</i></u></a><br>Antipodean Albatross [64458]                       | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u><i>Diomedea epomophora</i></u></a><br>Southern Royal Albatross [89221]                     | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u><i>Diomedea exulans</i></u></a><br>Wandering Albatross [89223]                             | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name                                                                                                            | Threatened Category   | Presence Text                                                      | Buffer Status   |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------|-----------------|
| <a href="#"><u>Diomedea sanfordi</u></a><br>Northern Royal Albatross [64456]                                               | Endangered            | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Falco hypoleucos</u></a><br>Grey Falcon [929]                                                               | Vulnerable            | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u>Gallinago hardwickii</u></a><br>Latham's Snipe, Japanese Snipe [863]                                        | Vulnerable            | Species or species habitat known to occur within area              | In feature area |
| <a href="#"><u>Grantiella picta</u></a><br>Painted Honeyeater [470]                                                        | Vulnerable            | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u>Hirundapus caudacutus</u></a><br>White-throated Needletail [682]                                            | Vulnerable            | Species or species habitat known to occur within area              | In feature area |
| <a href="#"><u>Lathamus discolor</u></a><br>Swift Parrot [744]                                                             | Critically Endangered | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u>Limosa lapponica baueri</u></a><br>Nunivak Bar-tailed Godwit, Western Alaskan Bar-tailed Godwit [86380]     | Endangered            | Species or species habitat known to occur within area              | In feature area |
| <a href="#"><u>Macronectes giganteus</u></a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]                        | Endangered            | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Macronectes halli</u></a><br>Northern Giant Petrel [1061]                                                   | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Melanodryas cucullata cucullata</u></a><br>South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093] | Endangered            | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Neophema chrysogaster</u></a><br>Orange-bellied Parrot [747]                                                | Critically Endangered | Migration route likely to occur within area                        | In feature area |

| Scientific Name                                                                                                | Threatened Category   | Presence Text                                          | Buffer Status   |
|----------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|-----------------|
| <a href="#"><u>Neophema chrysostoma</u></a><br>Blue-winged Parrot [726]                                        | Vulnerable            | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Numenius madagascariensis</u></a><br>Eastern Curlew, Far Eastern Curlew [847]                   | Critically Endangered | Species or species habitat likely to occur within area | In feature area |
| <a href="#"><u>Pachyptila turtur subantarctica</u></a><br>Fairy Prion (southern) [64445]                       | Vulnerable            | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Pedionomus torquatus</u></a><br>Plains-wanderer [906]                                           | Critically Endangered | Species or species habitat may occur within area       | In feature area |
| <a href="#"><u>Phoebastria fusca</u></a><br>Sooty Albatross [1075]                                             | Vulnerable            | Species or species habitat likely to occur within area | In feature area |
| <a href="#"><u>Pterodroma leucopetera leucopetera</u></a><br>Gould's Petrel, Australian Gould's Petrel [26033] | Endangered            | Species or species habitat may occur within area       | In feature area |
| <a href="#"><u>Rostratula australis</u></a><br>Australian Painted Snipe [77037]                                | Endangered            | Species or species habitat likely to occur within area | In feature area |
| <a href="#"><u>Stagonopleura guttata</u></a><br>Diamond Firetail [59398]                                       | Vulnerable            | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Sternula nereis nereis</u></a><br>Australian Fairy Tern [82950]                                 | Vulnerable            | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Thalassarche bulleri</u></a><br>Buller's Albatross, Pacific Albatross [64460]                   | Vulnerable            | Species or species habitat may occur within area       | In feature area |
| <a href="#"><u>Thalassarche bulleri platei</u></a><br>Northern Buller's Albatross, Pacific Albatross [82273]   | Vulnerable            | Species or species habitat may occur within area       | In feature area |

| Scientific Name                                                                                                | Threatened Category | Presence Text                                                      | Buffer Status   |
|----------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------|-----------------|
| <a href="#"><u>Thalassarche carteri</u></a><br>Indian Yellow-nosed Albatross [64464]                           | Vulnerable          | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u>Thalassarche cauta</u></a><br>Shy Albatross [89224]                                             | Endangered          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Thalassarche chrysostoma</u></a><br>Grey-headed Albatross [66491]                               | Endangered          | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Thalassarche impavida</u></a><br>Campbell Albatross, Campbell Black-browed Albatross [66459]    | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Thalassarche melanophris</u></a><br>Black-browed Albatross [66472]                              | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Thalassarche salvini</u></a><br>Salvin's Albatross [64463]                                      | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Thalassarche steadi</u></a><br>White-capped Albatross [64462]                                   | Vulnerable          | Foraging, feeding or related behaviour known to occur within area  | In feature area |
| <a href="#"><u>Thinornis cucullatus cucullatus</u></a><br>Eastern Hooded Plover, Eastern Hooded Plover [90381] | Vulnerable          | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Tringa nebularia</u></a><br>Common Greenshank, Greenshank [832]                                 | Endangered          | Species or species habitat known to occur within area              | In feature area |
| <b>FISH</b>                                                                                                    |                     |                                                                    |                 |
| <a href="#"><u>Nannoperca obscura</u></a><br>Yarra Pygmy Perch [26177]                                         | Endangered          | Species or species habitat may occur within area                   | In feature area |

| Scientific Name                                                                                                                                                               | Threatened Category    | Presence Text                                                      | Buffer Status       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------------|---------------------|
| <a href="#"><u>Prototroctes maraena</u></a><br>Australian Grayling [26179]                                                                                                    | Vulnerable             | Species or species habitat likely to occur within area             | In feature area     |
| <a href="#"><u>Seriolella brama</u></a><br>Blue Warehou [69374]                                                                                                               | Conservation Dependent | Species or species habitat known to occur within area              | In feature area     |
| <b>FROG</b>                                                                                                                                                                   |                        |                                                                    |                     |
| <a href="#"><u>Litoria raniformis</u></a><br>Southern Bell Frog, Growling Grass Frog, Green and Golden Frog, Warty Swamp Frog, Golden Bell Frog [1828]                        | Vulnerable             | Species or species habitat known to occur within area              | In feature area     |
| <b>MAMMAL</b>                                                                                                                                                                 |                        |                                                                    |                     |
| <a href="#"><u>Antechinus minimus maritimus</u></a><br>Swamp Antechinus (mainland) [83086]                                                                                    | Vulnerable             | Species or species habitat may occur within area                   | In feature area     |
| <a href="#"><u>Dasyurus maculatus maculatus (SE mainland population)</u></a><br>Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184] | Endangered             | Species or species habitat may occur within area                   | In feature area     |
| <a href="#"><u>Eubalaena australis</u></a><br>Southern Right Whale [40]                                                                                                       | Endangered             | Species or species habitat known to occur within area              | In feature area     |
| <a href="#"><u>Petaurus australis australis</u></a><br>Yellow-bellied Glider (south-eastern) [87600]                                                                          | Vulnerable             | Species or species habitat may occur within area                   | In buffer area only |
| <a href="#"><u>Pseudomys novaehollandiae</u></a><br>New Holland Mouse, Pookila [96]                                                                                           | Vulnerable             | Species or species habitat may occur within area                   | In feature area     |
| <a href="#"><u>Pteropus poliocephalus</u></a><br>Grey-headed Flying-fox [186]                                                                                                 | Vulnerable             | Foraging, feeding or related behaviour likely to occur within area | In feature area     |
| <b>PLANT</b>                                                                                                                                                                  |                        |                                                                    |                     |
| <a href="#"><u>Amphibromus fluitans</u></a><br>River Swamp Wallaby-grass, Floating Swamp Wallaby-grass [19215]                                                                | Vulnerable             | Species or species habitat may occur within area                   | In feature area     |

| Scientific Name                                                                                                               | Threatened Category   | Presence Text                                          | Buffer Status       |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|---------------------|
| <a href="#"><u>Dianella amoena</u></a><br>Matted Flax-lily [64886]                                                            | Endangered            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#"><u>Dodonaea procumbens</u></a><br>Trailing Hop-bush [12149]                                                       | Vulnerable            | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Glycine latrobeana</u></a><br>Clover Glycine, Purple Clover [13910]                                            | Vulnerable            | Species or species habitat likely to occur within area | In feature area     |
| <a href="#"><u>Lachnagrostis adamsonii</u></a><br>Adamson's Blown-grass, Adamson's Blowngrass [76211]                         | Endangered            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#"><u>Lepidium aschersonii</u></a><br>Spiny Peppercress [10976]                                                      | Vulnerable            | Species or species habitat likely to occur within area | In feature area     |
| <a href="#"><u>Lepidium hyssopifolium</u></a><br>Basalt Pepper-cress, Peppercress, Rubble Pepper-cress, Pepperweed [16542]    | Endangered            | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Leucochrysum albicans subsp. tricolor</u></a><br>Hoary Sunray, Grassland Paper-daisy [89104]                   | Endangered            | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Pimelea spinescens subsp. spinescens</u></a><br>Plains Rice-flower, Spiny Rice-flower, Prickly Pimelea [21980] | Critically Endangered | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Prasophyllum spicatum</u></a><br>Dense Leek-orchid [55146]                                                     | Vulnerable            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#"><u>Pterostylis chlorogramma</u></a><br>Green-striped Greenhood [56510]                                            | Vulnerable            | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Pterostylis cucullata</u></a><br>Leafy Greenhood [15459]                                                       | Vulnerable            | Species or species habitat likely to occur within area | In feature area     |

| Scientific Name                                                                                   | Threatened Category   | Presence Text                                          | Buffer Status       |
|---------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|---------------------|
| <a href="#"><u>Senecio macrocarpus</u></a><br>Large-fruit Fireweed, Large-fruit Groundsel [16333] | Vulnerable            | Species or species habitat likely to occur within area | In feature area     |
| <a href="#"><u>Senecio psilocarpus</u></a><br>Swamp Fireweed, Smooth-fruited Groundsel [64976]    | Vulnerable            | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#"><u>Thelymitra epipactoides</u></a><br>Metallic Sun-orchid [11896]                     | Endangered            | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Thelymitra matthewsii</u></a><br>Spiral Sun-orchid [4168]                          | Endangered            | Species or species habitat may occur within area       | In buffer area only |
| <a href="#"><u>Thelymitra orientalis</u></a><br>Hoary Sun-orchid [88011]                          | Critically Endangered | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Xerochrysum palustre</u></a><br>Swamp Everlasting, Swamp Paper Daisy [76215]       | Vulnerable            | Species or species habitat likely to occur within area | In feature area     |
| <b>REPTILE</b>                                                                                    |                       |                                                        |                     |
| <a href="#"><u>Caretta caretta</u></a><br>Loggerhead Turtle [1763]                                | Endangered            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#"><u>Chelonia mydas</u></a><br>Green Turtle [1765]                                      | Vulnerable            | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Delma impar</u></a><br>Striped Legless Lizard, Striped Snake-lizard [1649]         | Vulnerable            | Species or species habitat may occur within area       | In feature area     |
| <a href="#"><u>Dermochelys coriacea</u></a><br>Leatherback Turtle, Leathery Turtle, Luth [1768]   | Endangered            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#"><u>Lissolepis coventryi</u></a><br>Swamp Skink, Eastern Mourning Skink [84053]        | Endangered            | Species or species habitat may occur within area       | In feature area     |
| <b>SHARK</b>                                                                                      |                       |                                                        |                     |

| Scientific Name                                                                                                      | Threatened Category    | Presence Text                                         | Buffer Status       |
|----------------------------------------------------------------------------------------------------------------------|------------------------|-------------------------------------------------------|---------------------|
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]                                     | Vulnerable             | Species or species habitat known to occur within area | In feature area     |
| <a href="#">Galeorhinus galeus</a><br>School Shark, Eastern School Shark, Snapper Shark, Tope, Soupfin Shark [68453] | Conservation Dependent | Species or species habitat may occur within area      | In buffer area only |

| Listed Migratory Species                                                                        |                     | [ Resource Information ]                                           |                 |
|-------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------|-----------------|
| Scientific Name                                                                                 | Threatened Category | Presence Text                                                      | Buffer Status   |
| <b>Migratory Marine Birds</b>                                                                   |                     |                                                                    |                 |
| <a href="#">Anous stolidus</a><br>Common Noddy [825]                                            |                     | Species or species habitat likely to occur within area             | In feature area |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]                                       |                     | Species or species habitat likely to occur within area             | In feature area |
| <a href="#">Ardenna carneipes</a><br>Flesh-footed Shearwater, Fleishy-footed Shearwater [82404] |                     | Species or species habitat likely to occur within area             | In feature area |
| <a href="#">Ardenna grisea</a><br>Sooty Shearwater [82651]                                      | Vulnerable          | Species or species habitat may occur within area                   | In feature area |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                           | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                         | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                                 | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                           | Endangered          | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name                                                                                             | Threatened Category | Presence Text                                                      | Buffer Status   |
|-------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------|-----------------|
| <a href="#"><u>Macronectes giganteus</u></a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]         | Endangered          | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Macronectes halli</u></a><br>Northern Giant Petrel [1061]                                    | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Phoebastria fusca</u></a><br>Sooty Albatross [1075]                                          | Vulnerable          | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u>Sternula albifrons</u></a><br>Little Tern [82849]                                            |                     | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Thalassarche bulleri</u></a><br>Buller's Albatross, Pacific Albatross [64460]                | Vulnerable          | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Thalassarche carteri</u></a><br>Indian Yellow-nosed Albatross [64464]                        | Vulnerable          | Species or species habitat likely to occur within area             | In feature area |
| <a href="#"><u>Thalassarche cauta</u></a><br>Shy Albatross [89224]                                          | Endangered          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Thalassarche chrysostoma</u></a><br>Grey-headed Albatross [66491]                            | Endangered          | Species or species habitat may occur within area                   | In feature area |
| <a href="#"><u>Thalassarche impavida</u></a><br>Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#"><u>Thalassarche melanophrys</u></a><br>Black-browed Albatross [66472]                           | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |

| Scientific Name                                                                                                 | Threatened Category | Presence Text                                                      | Buffer Status   |
|-----------------------------------------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------|-----------------|
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]                                              | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area | In feature area |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                           | Vulnerable          | Foraging, feeding or related behaviour known to occur within area  | In feature area |
| <b>Migratory Marine Species</b>                                                                                 |                     |                                                                    |                 |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                                                     |                     | Foraging, feeding or related behaviour may occur within area       | In feature area |
| <a href="#">Carcharias taurus</a><br>Grey Nurse Shark [64469]                                                   |                     | Species or species habitat may occur within area                   | In feature area |
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]                                | Vulnerable          | Species or species habitat known to occur within area              | In feature area |
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                                                     | Endangered          | Species or species habitat known to occur within area              | In feature area |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                                           | Vulnerable          | Species or species habitat may occur within area                   | In feature area |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768]                        | Endangered          | Species or species habitat known to occur within area              | In feature area |
| <a href="#">Eubalaena australis</a> as <a href="#">Balaena glacialis australis</a><br>Southern Right Whale [40] | Endangered          | Species or species habitat known to occur within area              | In feature area |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]                                                   |                     | Species or species habitat may occur within area                   | In feature area |

| Scientific Name                                                                                 | Threatened Category   | Presence Text                                          | Buffer Status   |
|-------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|-----------------|
| <a href="#"><u>Lamna nasus</u></a><br>Porbeagle, Mackerel Shark [83288]                         |                       | Species or species habitat likely to occur within area | In feature area |
| <a href="#"><u>Megaptera novaeangliae</u></a><br>Humpback Whale [38]                            |                       | Species or species habitat may occur within area       | In feature area |
| <b>Migratory Terrestrial Species</b>                                                            |                       |                                                        |                 |
| <a href="#"><u>Hirundapus caudacutus</u></a><br>White-throated Needletail [682]                 | Vulnerable            | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Motacilla flava</u></a><br>Yellow Wagtail [644]                                  |                       | Species or species habitat likely to occur within area | In feature area |
| <b>Migratory Wetlands Species</b>                                                               |                       |                                                        |                 |
| <a href="#"><u>Actitis hypoleucos</u></a><br>Common Sandpiper [59309]                           |                       | Species or species habitat likely to occur within area | In feature area |
| <a href="#"><u>Calidris acuminata</u></a><br>Sharp-tailed Sandpiper [874]                       | Vulnerable            | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Calidris canutus</u></a><br>Red Knot, Knot [855]                                 | Vulnerable            | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Calidris ferruginea</u></a><br>Curlew Sandpiper [856]                            | Critically Endangered | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Calidris melanotos</u></a><br>Pectoral Sandpiper [858]                           |                       | Species or species habitat likely to occur within area | In feature area |
| <a href="#"><u>Calidris ruficollis</u></a><br>Red-necked Stint [860]                            |                       | Species or species habitat known to occur within area  | In feature area |
| <a href="#"><u>Charadrius leschenaultii</u></a><br>Greater Sand Plover, Large Sand Plover [877] | Vulnerable            | Species or species habitat likely to occur within area | In feature area |

| Scientific Name                                                                       | Threatened Category   | Presence Text                                          | Buffer Status       |
|---------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|---------------------|
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]          | Vulnerable            | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                           |                       | Species or species habitat known to occur within area  | In feature area     |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847] | Critically Endangered | Species or species habitat likely to occur within area | In feature area     |
| <a href="#">Pandion haliaetus</a><br>Osprey [952]                                     |                       | Species or species habitat likely to occur within area | In buffer area only |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]               | Endangered            | Species or species habitat known to occur within area  | In feature area     |

#### Other Matters Protected by the EPBC Act

| Listed Marine Species                                                                                                |                     | [ Resource Information ]                                                   |                 |
|----------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------|-----------------|
| Scientific Name                                                                                                      | Threatened Category | Presence Text                                                              | Buffer Status   |
| <b>Bird</b>                                                                                                          |                     |                                                                            |                 |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]                                                       |                     | Species or species habitat likely to occur within area                     | In feature area |
| <a href="#">Anous stolidus</a><br>Common Noddy [825]                                                                 |                     | Species or species habitat likely to occur within area                     | In feature area |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]                                                            |                     | Species or species habitat likely to occur within area overfly marine area | In feature area |
| <a href="#">Ardenna carneipes as Puffinus carneipes</a><br>Flesh-footed Shearwater, Fleshy-footed Shearwater [82404] |                     | Species or species habitat likely to occur within area                     | In feature area |

| Scientific Name                                                                                  | Threatened Category   | Presence Text                                                              | Buffer Status   |
|--------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------|-----------------|
| <a href="#"><u>Ardenna grisea as Puffinus griseus</u></a><br>Sooty Shearwater [82651]            | Vulnerable            | Species or species habitat may occur within area                           | In feature area |
| <a href="#"><u>Bubulcus ibis as Ardea ibis</u></a><br>Cattle Egret [66521]                       |                       | Species or species habitat may occur within area overfly marine area       | In feature area |
| <a href="#"><u>Calidris acuminata</u></a><br>Sharp-tailed Sandpiper [874]                        | Vulnerable            | Species or species habitat known to occur within area                      | In feature area |
| <a href="#"><u>Calidris canutus</u></a><br>Red Knot, Knot [855]                                  | Vulnerable            | Species or species habitat known to occur within area overfly marine area  | In feature area |
| <a href="#"><u>Calidris ferruginea</u></a><br>Curlew Sandpiper [856]                             | Critically Endangered | Species or species habitat known to occur within area overfly marine area  | In feature area |
| <a href="#"><u>Calidris melanotos</u></a><br>Pectoral Sandpiper [858]                            |                       | Species or species habitat likely to occur within area overfly marine area | In feature area |
| <a href="#"><u>Calidris ruficollis</u></a><br>Red-necked Stint [860]                             |                       | Species or species habitat known to occur within area overfly marine area  | In feature area |
| <a href="#"><u>Chalcites osculans as Chrysococcyx osculans</u></a><br>Black-eared Cuckoo [83425] |                       | Species or species habitat likely to occur within area overfly marine area | In feature area |
| <a href="#"><u>Charadrius leschenaultii</u></a><br>Greater Sand Plover, Large Sand Plover [877]  | Vulnerable            | Species or species habitat likely to occur within area                     | In feature area |
| <a href="#"><u>Charadrius ruficapillus</u></a><br>Red-capped Plover [881]                        |                       | Species or species habitat known to occur within area overfly marine area  | In feature area |

| Scientific Name                                                                      | Threatened Category   | Presence Text                                                              | Buffer Status   |
|--------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------|-----------------|
| <a href="#"><u>Diomedea antipodensis</u></a><br>Antipodean Albatross [64458]         | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area         | In feature area |
| <a href="#"><u>Diomedea epomophora</u></a><br>Southern Royal Albatross [89221]       | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area         | In feature area |
| <a href="#"><u>Diomedea exulans</u></a><br>Wandering Albatross [89223]               | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area         | In feature area |
| <a href="#"><u>Diomedea sanfordi</u></a><br>Northern Royal Albatross [64456]         | Endangered            | Foraging, feeding or related behaviour likely to occur within area         | In feature area |
| <a href="#"><u>Gallinago hardwickii</u></a><br>Latham's Snipe, Japanese Snipe [863]  | Vulnerable            | Species or species habitat known to occur within area overfly marine area  | In feature area |
| <a href="#"><u>Haliaeetus leucogaster</u></a><br>White-bellied Sea-Eagle [943]       |                       | Species or species habitat known to occur within area                      | In feature area |
| <a href="#"><u>Himantopus himantopus</u></a><br>Pied Stilt, Black-winged Stilt [870] |                       | Species or species habitat known to occur within area overfly marine area  | In feature area |
| <a href="#"><u>Hirundapus caudacutus</u></a><br>White-throated Needletail [682]      | Vulnerable            | Species or species habitat known to occur within area overfly marine area  | In feature area |
| <a href="#"><u>Lathamus discolor</u></a><br>Swift Parrot [744]                       | Critically Endangered | Species or species habitat likely to occur within area overfly marine area | In feature area |
| <a href="#"><u>Limosa lapponica</u></a><br>Bar-tailed Godwit [844]                   |                       | Species or species habitat known to occur within area                      | In feature area |

| Scientific Name                                                                                     | Threatened Category   | Presence Text                                                              | Buffer Status       |
|-----------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------------------------------------|---------------------|
| <a href="#"><u>Macronectes giganteus</u></a><br>Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered            | Species or species habitat may occur within area                           | In feature area     |
| <a href="#"><u>Macronectes halli</u></a><br>Northern Giant Petrel [1061]                            | Vulnerable            | Foraging, feeding or related behaviour likely to occur within area         | In feature area     |
| <a href="#"><u>Merops ornatus</u></a><br>Rainbow Bee-eater [670]                                    |                       | Species or species habitat may occur within area overfly marine area       | In feature area     |
| <a href="#"><u>Motacilla flava</u></a><br>Yellow Wagtail [644]                                      |                       | Species or species habitat likely to occur within area overfly marine area | In feature area     |
| <a href="#"><u>Myiagra cyanoleuca</u></a><br>Satin Flycatcher [612]                                 |                       | Species or species habitat likely to occur within area overfly marine area | In feature area     |
| <a href="#"><u>Neophema chrysogaster</u></a><br>Orange-bellied Parrot [747]                         | Critically Endangered | Migration route likely to occur within area overfly marine area            | In feature area     |
| <a href="#"><u>Neophema chrysostoma</u></a><br>Blue-winged Parrot [726]                             | Vulnerable            | Species or species habitat known to occur within area overfly marine area  | In feature area     |
| <a href="#"><u>Numenius madagascariensis</u></a><br>Eastern Curlew, Far Eastern Curlew [847]        | Critically Endangered | Species or species habitat likely to occur within area                     | In feature area     |
| <a href="#"><u>Pachyptila turtur</u></a><br>Fairy Prion [1066]                                      |                       | Species or species habitat known to occur within area                      | In feature area     |
| <a href="#"><u>Pandion haliaetus</u></a><br>Osprey [952]                                            |                       | Species or species habitat likely to occur within area                     | In buffer area only |

| Scientific Name                                                                                                                       | Threatened Category | Presence Text                                                              | Buffer Status   |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------|-----------------|
| <a href="#"><u>Phoebastria fusca</u></a><br>Sooty Albatross [1075]                                                                    | Vulnerable          | Species or species habitat likely to occur within area                     | In feature area |
| <a href="#"><u>Rhipidura rufifrons</u></a><br>Rufous Fantail [592]                                                                    |                     | Species or species habitat likely to occur within area overfly marine area | In feature area |
| <a href="#"><u>Rostratula australis as Rostratula benghalensis (sensu lato)</u></a><br>Australian Painted Snipe [77037]               | Endangered          | Species or species habitat likely to occur within area overfly marine area | In feature area |
| <a href="#"><u>Sterna striata</u></a><br>White-fronted Tern [799]                                                                     |                     | Foraging, feeding or related behaviour likely to occur within area         | In feature area |
| <a href="#"><u>Sternula albifrons as Sterna albifrons</u></a><br>Little Tern [82849]                                                  |                     | Species or species habitat may occur within area                           | In feature area |
| <a href="#"><u>Thalassarche bulleri</u></a><br>Buller's Albatross, Pacific Albatross [64460]                                          | Vulnerable          | Species or species habitat may occur within area                           | In feature area |
| <a href="#"><u>Thalassarche bulleri platei as Thalassarche sp. nov.</u></a><br>Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable          | Species or species habitat may occur within area                           | In feature area |
| <a href="#"><u>Thalassarche carteri</u></a><br>Indian Yellow-nosed Albatross [64464]                                                  | Vulnerable          | Species or species habitat likely to occur within area                     | In feature area |
| <a href="#"><u>Thalassarche cauta</u></a><br>Shy Albatross [89224]                                                                    | Endangered          | Foraging, feeding or related behaviour likely to occur within area         | In feature area |
| <a href="#"><u>Thalassarche chrysostoma</u></a><br>Grey-headed Albatross [66491]                                                      | Endangered          | Species or species habitat may occur within area                           | In feature area |

| Scientific Name                                                                                                                                     | Threatened Category | Presence Text                                                             | Buffer Status   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------------------------------------------------------------|-----------------|
| <a href="#"><u>Thalassarche impavida</u></a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]                                         | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area        | In feature area |
| <a href="#"><u>Thalassarche melanophris</u></a><br>Black-browed Albatross [66472]                                                                   | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area        | In feature area |
| <a href="#"><u>Thalassarche salvini</u></a><br>Salvin's Albatross [64463]                                                                           | Vulnerable          | Foraging, feeding or related behaviour likely to occur within area        | In feature area |
| <a href="#"><u>Thalassarche steadi</u></a><br>White-capped Albatross [64462]                                                                        | Vulnerable          | Foraging, feeding or related behaviour known to occur within area         | In feature area |
| <a href="#"><u>Thinornis cucullatus as Thinornis rubricollis</u></a><br>Hooded Plover, Hooded Dotterel [87735]                                      |                     | Species or species habitat may occur within area overfly marine area      | In feature area |
| <a href="#"><u>Thinornis cucullatus cucullatus as Thinornis rubricollis rubricollis</u></a><br>Eastern Hooded Plover, Eastern Hooded Plover [90381] | Vulnerable          | Species or species habitat may occur within area overfly marine area      | In feature area |
| <a href="#"><u>Tringa nebularia</u></a><br>Common Greenshank, Greenshank [832]                                                                      | Endangered          | Species or species habitat known to occur within area overfly marine area | In feature area |
| <b>Mammal</b>                                                                                                                                       |                     |                                                                           |                 |
| <a href="#"><u>Arctocephalus forsteri</u></a><br>Long-nosed Fur-seal, New Zealand Fur-seal [20]                                                     |                     | Species or species habitat may occur within area                          | In feature area |
| <a href="#"><u>Arctocephalus pusillus</u></a><br>Australian Fur-seal, Australo-African Fur-seal [21]                                                |                     | Species or species habitat may occur within area                          | In feature area |
| <b>Reptile</b>                                                                                                                                      |                     |                                                                           |                 |

| Scientific Name                                                                          | Threatened Category | Presence Text                                         | Buffer Status   |
|------------------------------------------------------------------------------------------|---------------------|-------------------------------------------------------|-----------------|
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                              | Endangered          | Species or species habitat known to occur within area | In feature area |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                    | Vulnerable          | Species or species habitat may occur within area      | In feature area |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered          | Species or species habitat known to occur within area | In feature area |

#### Whales and Other Cetaceans [ Resource Information ]

| Current Scientific Name                                                                                 | Status     | Type of Presence                                             | Buffer Status   |
|---------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------|-----------------|
| <b>Mammal</b>                                                                                           |            |                                                              |                 |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                                             |            | Foraging, feeding or related behaviour may occur within area | In feature area |
| <a href="#">Delphinus delphis</a><br>Common Dolphin, Short-beaked Common Dolphin [60]                   |            | Species or species habitat may occur within area             | In feature area |
| <a href="#">Eubalaena australis</a><br>Southern Right Whale [40]                                        | Endangered | Species or species habitat known to occur within area        | In feature area |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]                                           |            | Species or species habitat may occur within area             | In feature area |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]                                           |            | Species or species habitat may occur within area             | In feature area |
| <a href="#">Tursiops aduncus</a><br>Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418] |            | Species or species habitat likely to occur within area       | In feature area |
| <a href="#">Tursiops truncatus s. str.</a><br>Bottlenose Dolphin [68417]                                |            | Species or species habitat may occur within area             | In feature area |

## Extra Information

| State and Territory Reserves         |                             |       | [ Resource Information ] |
|--------------------------------------|-----------------------------|-------|--------------------------|
| Protected Area Name                  | Reserve Type                | State | Buffer Status            |
| Drakes B.R.                          | Natural Features Reserve    | VIC   | In buffer area only      |
| Portarlington (Point Richard) F.F.R. | Nature Conservation Reserve | VIC   | In feature area          |

| Regional Forest Agreements                                                                                                                                                                    | [ Resource Information ] |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information. |                          |

| RFA Name                          | State    | Buffer Status   |
|-----------------------------------|----------|-----------------|
| <a href="#">West Victoria RFA</a> | Victoria | In feature area |

| EPBC Act Referrals                                                                              |           |                       | [ Resource Information ] |                     |
|-------------------------------------------------------------------------------------------------|-----------|-----------------------|--------------------------|---------------------|
| Title of referral                                                                               | Reference | Referral Outcome      | Assessment Status        | Buffer Status       |
| <b>Controlled action</b>                                                                        |           |                       |                          |                     |
| <a href="#">Basalt Quarry Extension (Mountainview Quarry)</a>                                   | 2004/1329 | Controlled Action     | Completed                | In buffer area only |
| <a href="#">Mosquito Control</a>                                                                | 2005/2132 | Controlled Action     | Post-Approval            | In feature area     |
| <a href="#">Viva Energy Gas Terminal Project</a>                                                | 2020/8838 | Controlled Action     | Assessment Approach      | In buffer area only |
| <b>Not controlled action</b>                                                                    |           |                       |                          |                     |
| <a href="#">Bluff Heights Estate Stages 2 to 4</a>                                              | 2003/1047 | Not Controlled Action | Completed                | In buffer area only |
| <a href="#">Expansion and upgrade of Biogas Utilisation Facilities at the Western Treatment</a> | 2005/2183 | Not Controlled Action | Completed                | In buffer area only |
| <a href="#">Extension of Mountain View basalt quarry by 113 hectares (stage one)</a>            | 2004/1591 | Not Controlled Action | Completed                | In buffer area only |

| Title of referral                                                                                            | Reference | Referral Outcome                          | Assessment Status | Buffer Status       |
|--------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------|-------------------|---------------------|
| <b>Not controlled action</b>                                                                                 |           |                                           |                   |                     |
| <a href="#">Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia</a> | 2015/7522 | Not Controlled Action                     | Completed         | In feature area     |
| <a href="#">INDIGO Central Submarine Telecommunications Cable</a>                                            | 2017/8127 | Not Controlled Action                     | Completed         | In feature area     |
| <b>Not controlled action (particular manner)</b>                                                             |           |                                           |                   |                     |
| <a href="#">Corio Bay Channel Safety Adjustment Program</a>                                                  | 2011/6208 | Not Controlled Action (Particular Manner) | Post-Approval     | In buffer area only |
| <a href="#">INDIGO Marine Cable Route Survey (INDIGO)</a>                                                    | 2017/7996 | Not Controlled Action (Particular Manner) | Post-Approval     | In feature area     |

| <b>Biologically Important Areas</b>      |  | <b>[ Resource Information ]</b> |                 |                 |
|------------------------------------------|--|---------------------------------|-----------------|-----------------|
| Scientific Name                          |  | Behaviour                       | Presence        | Buffer Status   |
| <b>Seabirds</b>                          |  |                                 |                 |                 |
| <a href="#">Ardenna tenuirostris</a>     |  |                                 |                 |                 |
| Short-tailed Shearwater [82652]          |  | Foraging                        | Known to occur  | In feature area |
| <a href="#">Morus serrator</a>           |  |                                 |                 |                 |
| Australasian Gannet [1020]               |  | Foraging                        | Known to occur  | In feature area |
| <a href="#">Pelagodroma marina</a>       |  |                                 |                 |                 |
| White-faced Storm-petrel [1016]          |  | Foraging                        | Known to occur  | In feature area |
| <a href="#">Pelecanoides urinatrix</a>   |  |                                 |                 |                 |
| Common Diving-petrel [1018]              |  | Foraging                        | Known to occur  | In feature area |
| <a href="#">Thalassarche cauta cauta</a> |  |                                 |                 |                 |
| Shy Albatross [82345]                    |  | Foraging likely                 | Likely to occur | In feature area |

# Caveat

## 1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

## 2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

## 3 DATA SOURCES

### Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

### Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

## 4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

## Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [Office of Environment and Heritage, New South Wales](#)
- [Department of Environment and Primary Industries, Victoria](#)
- [Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [Department of Environment, Water and Natural Resources, South Australia](#)
- [Department of Land and Resource Management, Northern Territory](#)
- [Department of Environmental and Heritage Protection, Queensland](#)
- [Department of Parks and Wildlife, Western Australia](#)
- [Environment and Planning Directorate, ACT](#)
- [Birdlife Australia](#)
- [Australian Bird and Bat Banding Scheme](#)
- [Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [Museum Victoria](#)
- [Australian Museum](#)
- [South Australian Museum](#)
- [Queensland Museum](#)
- [Online Zoological Collections of Australian Museums](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Canberra](#)
- [University of New England](#)
- [Ocean Biogeographic Information System](#)
- [Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [Geoscience Australia](#)
- [CSIRO](#)
- [Australian Tropical Herbarium, Cairns](#)
- [eBird Australia](#)
- [Australian Government – Australian Antarctic Data Centre](#)
- [Museum and Art Gallery of the Northern Territory](#)
- [Australian Government National Environmental Science Program](#)
- [Australian Institute of Marine Science](#)
- [Reef Life Survey Australia](#)
- [American Museum of Natural History](#)
- [Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.



Please feel free to provide feedback via the [Contact us](#) page.

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## Appendix 4 – Flora Survey Results

| Species Name                               | Common Name           | Quadrat 1 | Quadrat 2 | Quadrat 3 | Quadrat 4 | Quadrat 5 | Quadrat 6 | Quadrat 7 | Quadrat 8 | Quadrat 9 | Quadrat 10 | Quadrat 11 | Quadrat 12 |
|--------------------------------------------|-----------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| <i>Acacia implexa</i>                      | Lightwood             |           |           |           | +         |           |           |           |           |           |            |            |            |
| <i>Acacia longifolia</i>                   | Sallow Wattle         |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Acacia longifolia subsp. sophorae</i>   | Coast Wattle          |           |           |           |           |           | 2         |           |           |           |            |            |            |
| <i>Acacia pycnantha</i>                    | Golden Wattle         |           |           |           |           |           | 2         |           |           |           |            |            |            |
| <i>Asparagus asparagoides</i>              | Bridal Creeper        |           |           |           |           |           | 1         |           |           |           |            |            |            |
| <i>Asparagus officinalis</i>               | Asparagus             |           |           |           |           |           | r         |           |           |           |            |            |            |
| <i>Atriplex cinerea</i>                    | Coast Saltbush        |           |           |           |           |           |           | 1         |           |           |            |            |            |
| <i>Atriplex prostrata</i>                  | Hastate Orache        |           |           |           |           |           |           |           | 1         | 1         |            | 1          |            |
| <i>Austrostipa flavescent</i>              | Coast Spear-grass     |           |           |           |           |           | 1         |           |           |           |            |            |            |
| <i>Azolla rubra</i>                        | Pacific azolla        |           |           |           |           |           |           |           |           | 1         | 2          |            | 3          |
| <i>Banksia integrifolia</i>                | Asparagus             |           |           |           |           |           | 3         |           |           |           |            |            |            |
| <i>Banksia marginata</i>                   | Silver Banksia        |           |           |           | r         |           |           |           |           |           |            |            |            |
| <i>Baumea arthropphylla</i>                | Fine twig sedge       | 2         | 3         |           |           |           |           |           |           |           |            |            |            |
| <i>Baumea juncea</i>                       | Bare Twig-Sedge       | 3         | 2         | 3         | 1         |           |           |           |           |           |            |            |            |
| <i>Bolboschoenus caldwellii</i>            | Salt Club-sedge       |           |           |           |           |           |           | 1         | 1         |           |            |            |            |
| <i>Briza maxima</i>                        | Large Quaking-grass   |           |           |           |           |           | +         |           |           |           |            |            |            |
| <i>Cenchrus clandestinus</i>               | Kikuyu                |           |           |           |           |           |           |           | 1         |           |            |            |            |
| <i>Chenopodium glaucum</i>                 | Glaucous Goosefoot    |           |           |           |           |           |           | 1         |           | +         |            |            |            |
| <i>Cirsium arvense</i>                     | Perennial thistle     | 3         | r         | 1         |           |           |           |           |           |           |            |            |            |
| <i>Cirsium vulgare</i>                     | Spear Thistle         | 1         | r         |           |           |           |           |           |           |           |            |            |            |
| <i>Clematis microphylla s.l</i>            | Small-leaved Clematis |           |           |           |           | +         | 1         |           |           |           |            |            |            |
| <i>Coprosma repens</i>                     | Mirror Bush           |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Cotula coronopifolia</i>                | Water Buttons         |           |           |           |           |           |           | 1         | 1         |           |            |            |            |
| <i>Cynodon dactylon</i>                    | Couch                 |           |           |           |           |           |           |           | 1         |           |            |            |            |
| <i>Dichondra repens</i>                    | Kidney-weed           |           |           |           |           | 1         |           |           |           |           |            |            |            |
| <i>Distichlis distichophylla</i>           | Australian Salt-grass | 1         |           |           |           |           |           | 1         | 1         |           |            | 1          |            |
| <i>Ehrharta calycina</i>                   | Perennial Veldt-grass |           |           | 1         | 1         | 1         | 1         |           |           |           |            |            |            |
| <i>Erigeron bonariensis</i>                | Flaxleaf Fleabane     |           |           |           |           | 1         |           |           |           |           |            |            |            |
| <i>Eucalyptus ovata</i>                    | Swamp Gum             |           |           |           |           |           | r         |           |           |           |            |            |            |
| <i>Eucalyptus viminalis ssp. pryoriana</i> | Coast Manna-gum       |           |           | r         | r         |           |           |           |           |           |            |            |            |
| <i>Ficinia nodosa</i>                      | Knobby Club-sedge     | 1         | r         | 1         |           | 1         | 1         |           |           |           |            |            |            |
| <i>Frankenia pauciflora</i>                | Common Sea-heath      |           |           |           |           |           |           | 1         |           |           |            | 1          |            |
| <i>Fumaria spp.</i>                        | Fumitory              |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Gahnia filum</i>                        | Chaffy Saw-sedge      |           |           |           |           |           |           |           |           | 3         |            |            |            |
| <i>Galenia pubescens</i>                   | Galenia               |           |           |           |           |           |           |           | 1         |           |            |            |            |
| <i>Genista linifolia</i>                   | Flax-leaf Broom       |           |           |           |           | +         |           |           |           |           |            |            |            |
| <i>Helminthotheca echioides</i>            | Ox-tongue             | +         | +         |           |           |           |           |           |           |           |            |            |            |
| <i>Hematuria ansenata</i>                  | Matt grass            | +         |           |           |           |           |           |           |           |           |            |            |            |
| <i>Holcus lanatus</i>                      | Yorkshire Fog         | 1         |           | r         | 1         |           |           |           |           |           |            |            |            |
| <i>Hordeum spp.</i>                        | Barley Grass          |           |           |           |           |           |           |           | 1         |           |            |            |            |
| <i>Hypochoeris radicata</i>                | Flatweed, cat's ear   |           |           | r         | r         | +         |           |           |           |           |            |            |            |
| <i>Imperata cylindrica</i>                 | Blady Grass           |           |           |           |           | 3         |           |           |           |           |            |            |            |
| <i>Isolepis cernua</i>                     | Low bulrush           |           |           |           |           |           |           |           | 1         |           |            |            |            |
| <i>Juncus acutus</i>                       | Spiny Rush            |           |           |           |           |           |           | 1         |           |           |            |            |            |
| <i>Juncus kraussii ssp. australiensis</i>  | Sea Rush              | r         | r         | r         |           |           |           | +         | +         | 1         |            | 2          |            |
| <i>Juncus pallidus</i>                     | Pale Rush             |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Lachnagrostis filiformis</i>            | Common Blown-grass    |           |           |           |           |           |           | 1         | 1         |           |            | r          |            |
| <i>Lactuca serriola</i>                    | Prickly Lettuce       |           | r         |           |           |           |           |           |           |           |            |            |            |
| <i>Lemna disperma</i>                      | Common Duckweed       |           |           |           |           |           |           |           | 2         | 2         | 2          |            | 1          |
| <i>Lemna trisulca</i>                      | Ivy-leaved Duckweed   |           |           |           |           |           |           |           |           | 1         | 1          |            | 1          |
| <i>Leontodon saxatilis</i>                 | Hairy hawkbit         |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Leptospermum laevigatum</i>             | Coast Tea Tree        |           |           |           |           | r         |           |           |           |           |            |            |            |
| <i>Leucopogon parviflorus</i>              | Coast Beard-heath     |           |           |           |           |           | 1         |           |           |           |            |            |            |
| <i>Lilaeopsis polyantha</i>                | Australian Lilaeopsis |           |           |           |           |           |           | 1         |           |           |            | 1          |            |
| <i>Lobelia anceps</i>                      | Angled Lobelia        | 1         |           | 2         |           |           |           |           |           |           |            |            |            |
| <i>Lomandra longifolia</i>                 | Spiny-headed Mat-rush |           |           | r         | +         | 3         | 2         |           |           |           |            |            |            |
| <i>Lysimachia arvensis</i>                 | Pimpernel             | 1         |           |           |           |           |           |           |           |           |            |            |            |

| Species Name                                         | Common Name                | Quadrat 1 | Quadrat 2 | Quadrat 3 | Quadrat 4 | Quadrat 5 | Quadrat 6 | Quadrat 7 | Quadrat 8 | Quadrat 9 | Quadrat 10 | Quadrat 11 | Quadrat 12 |
|------------------------------------------------------|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|------------|
| <i>Myoporum insulare</i>                             | Common Boobialla           |           |           |           |           |           |           |           | r         |           |            |            |            |
| <i>Boronia parviflora</i>                            | Swamp boronia              |           |           |           |           |           |           | 1         | 1         |           |            |            |            |
| <i>Paspalum dilatatum</i>                            | Paspalum                   |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Persicaria decipiens</i>                          | Knot weed                  |           |           |           |           |           |           | 1         | 1         |           |            |            |            |
| <i>Phragmites australis</i>                          | Common Reed                |           |           |           |           |           |           | 2         | 2         | 2         |            | 4          |            |
| <i>Pittosporum undulatum</i>                         | Sweet Pittosporum          |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Poa labillardierei</i> var. <i>labillardierei</i> | Common Tussock-grass       |           |           | 1         |           | +         | 1         |           |           |           |            |            |            |
| <i>Potamogeton crispus</i>                           | Crisp-leaved Pondweed      |           |           |           |           |           |           |           |           |           | 1          |            | 4          |
| <i>Pteridium esculentum</i>                          | Austral Bracken            |           |           |           | 3         |           | r         |           |           |           |            |            |            |
| <i>Pteridium esculentum</i> subsp. <i>esculentum</i> | Austral Bracken            |           |           |           | 3         | 1         |           |           |           |           |            |            |            |
| <i>Puccinellia stricta</i>                           | Australian Saltmarsh-grass |           |           |           |           |           |           | 1         |           |           |            |            |            |
| <i>Ranunculus anthrotripus</i>                       | Buttercup                  | +         | 1         |           |           |           |           |           |           |           |            |            |            |
| <i>Rumex crispus</i>                                 | Curled Dock                |           |           |           |           |           |           | 1         | 1         |           |            |            |            |
| <i>Rytidosperma racemosum</i> var. <i>racemosum</i>  | Slender Wallaby-grass      |           |           |           |           | 1         |           |           |           |           |            |            |            |
| <i>Salicornia quinqueflora</i>                       | Beaded Glasswort           |           |           |           |           |           |           | 3         | 1         |           |            |            |            |
| <i>Samolus repens</i>                                | Creeping Brookweed         |           | r         |           |           |           |           | 2         | 2         | 1         |            | 1          |            |
| <i>Senecio angulatus</i>                             | Creeping Groundsel         | r         |           |           |           |           |           |           |           |           |            |            |            |
| <i>Senecio glomeratus</i>                            | Annual Fireweed            | 1         |           |           |           |           |           |           |           |           |            |            |            |
| <i>Senecio odoratus</i>                              | Scented Groundsel          |           |           | r         |           |           |           |           |           |           |            |            |            |
| <i>Senecio pinnatifolius</i> var. <i>lanceolatus</i> | Swamp Groundsel            |           |           |           |           |           | r         |           |           |           |            |            |            |
| <i>Senecio quadridentatus</i>                        | Cotton Fireweed            |           |           |           | r         |           |           |           |           |           |            |            |            |
| <i>Sonchus hydrophilus</i>                           | Native Sow-thistle         | 1         |           |           |           |           |           |           |           |           |            |            |            |
| <i>Sonchus oleraceus</i>                             | Common Sow-thistle         |           | 1         |           |           | r         |           |           | +         | r         |            |            |            |
| <i>Spergularia marina</i>                            | Salt Sandspurry            |           |           |           |           |           |           | 1         |           |           |            |            |            |
| <i>Stuckenia pectinata</i>                           | Fennel Pondweed            |           |           |           |           |           |           |           |           |           | 5          |            | 2          |
| <i>Suaeda australis</i>                              | Austral Seablite           |           |           |           |           |           |           |           | 2         |           |            |            |            |
| <i>Symphytotrichum subulatum</i>                     | Aster-weed                 |           | r         |           |           |           |           | 1         | 1         | +         |            | 1          |            |
| <i>Tetragonia implexicoma</i>                        | Bower Spinach              |           |           |           |           |           | 3         |           | 1         |           |            |            |            |
| <i>Thyridia repens</i>                               | Creeping monkeyflower      |           |           |           |           |           |           |           |           | 1         |            | 1          |            |
| <i>Tricoryne elatior</i>                             | Yellow Rush-lily           |           |           |           | r         |           |           |           |           |           |            |            |            |
| <i>Triglucom striatum</i>                            | Streaked arrow grass       | 1         |           |           |           |           |           | 1         | 1         |           |            |            |            |
| <i>Typha domingensis</i>                             | Narrow-leaf Cumbungi       | 1         | 2         |           |           |           |           |           | r         |           |            |            |            |
| <i>Ulex europaeus</i>                                | Gorse                      |           |           | r         |           |           |           |           |           |           |            |            |            |

r individual (<5)  
 + few (<5)  
 1 many (<5)  
 2 many (5-25)  
 3 many (25-50)  
 4 many (50-75)  
 5 many (75-100)

## Appendix 5 – Fauna identified on site during the site survey

| Scientific Name                 | Common Name              | Date Entered | Breeding Activity    | Sighting Notes         |
|---------------------------------|--------------------------|--------------|----------------------|------------------------|
| <i>Porzana fluminea</i>         | Australian Spotted Crane | 8/01/2025    | None                 |                        |
| <i>Zapornia tabuensis</i>       | Spotless Crane           | 7/01/2025    | None                 |                        |
| <i>Gallinula tenebrosa</i>      | Dusky Moorhen            | 7/01/2025    | None                 |                        |
| <i>Porphyrio porphyrio</i>      | Purple Swamphen          | 7/01/2025    | Young out of nest    | 4 young                |
| <i>Fulica atra</i>              | Eurasian Coot            | 7/01/2025    | None                 |                        |
| <i>Microcarbo melanoleucos</i>  | Little Pied Cormorant    | 7/01/2025    | None                 |                        |
| <i>Pelecanus conspicillatus</i> | Australian Pelican       | 7/01/2025    | None                 | Flying over            |
| <i>Larus novaehollandiae</i>    | Silver Gull              | 7/01/2025    | None                 |                        |
| <i>Vanellus miles</i>           | Masked Lapwing           | 7/01/2025    | None                 |                        |
| <i>Elseya melanops</i>          | Black-fronted Dotterel   | 8/01/2025    | None                 |                        |
| <i>Himantopus leucocephalus</i> | Pied Stilt               | 8/01/2025    | None                 |                        |
| <i>Gallinago hardwickii</i>     | Latham's Snipe           | 8/01/2025    | None                 |                        |
| <i>Threskiornis moluccus</i>    | Australian White Ibis    | 8/01/2025    | None                 |                        |
| <i>Threskiornis spinicollis</i> | Straw-necked Ibis        | 7/01/2025    | None                 |                        |
| <i>Platalea flavipes</i>        | Yellow-billed Spoonbill  | 8/01/2025    | None                 |                        |
| <i>Egretta novaehollandiae</i>  | White-faced Heron        | 7/01/2025    | None                 |                        |
| <i>Ardea pacifica</i>           | White-necked Heron       | 7/01/2025    | None                 |                        |
| <i>Nycticorax caledonicus</i>   | Nankeen Night-Heron      | 7/01/2025    | None                 |                        |
| <i>Cygnus atratus</i>           | Black Swan               | 7/01/2025    | Young out of nest    | 1 cygnet               |
| <i>Anas superciliosa</i>        | Pacific Black Duck       | 7/01/2025    | Young out of nest    | 8 ducklings            |
| <i>Anas castanea</i>            | Chestnut Teal            | 7/01/2025    | None                 |                        |
| <i>Anas gracilis</i>            | Grey Teal                | 8/01/2025    | None                 |                        |
| <i>Circus approximans</i>       | Swamp Harrier            | 8/01/2025    | None                 |                        |
| <i>Accipiter cirrocephalus</i>  | Collared Sparrowhawk     | 9/01/2025    | None                 |                        |
| <i>Haliastur sphenurus</i>      | Whistling Kite           | 8/01/2025    | None                 |                        |
| <i>Elanus axillaris</i>         | Black-shouldered Kite    | 7/01/2025    | None                 |                        |
| <i>Trichoglossus moluccanus</i> | Rainbow Lorikeet         | 7/01/2025    | None                 |                        |
| <i>Glossopsitta concinna</i>    | Musk Lorikeet            | 7/01/2025    | None                 |                        |
| <i>Cacatua galerita</i>         | Sulphur-crested Cockatoo | 8/01/2025    | None                 |                        |
| <i>Cacatua tenuirostris</i>     | Long-billed Corella      | 8/01/2025    | None                 |                        |
| <i>Eolophus roseicapilla</i>    | Galah                    | 7/01/2025    | None                 |                        |
| <i>Platycercus elegans</i>      | Crimson Rosella          | 9/01/2025    | None                 |                        |
| <i>Platycercus eximius</i>      | Eastern Rosella          | 7/01/2025    | None                 |                        |
| <i>Psephotus haematonotus</i>   | Red-rumped Parrot        | 8/01/2025    | None                 |                        |
| <i>Hirundo neoxena</i>          | Welcome Swallow          | 7/01/2025    | None                 |                        |
| <i>Rhipidura albiscapa</i>      | Grey Fantail             | 7/01/2025    | None                 |                        |
| <i>Pachycephala rufiventris</i> | Rufous Whistler          | 7/01/2025    | None                 |                        |
| <i>Grallina cyanoleuca</i>      | Magpie-lark              | 7/01/2025    | None                 |                        |
| <i>Acanthiza pusilla</i>        | Brown Thornbill          | 7/01/2025    | None                 |                        |
| <i>Sericornis frontalis</i>     | White-browed Scrubwren   | 9/01/2025    | None                 |                        |
| <i>Poodytes gramineus</i>       | Little Grassbird         | 7/01/2025    | None                 |                        |
| <i>Acrocephalus australis</i>   | Australian Reed-Warbler  | 7/01/2025    | Suggestive behaviour | Carrying nest material |

| Scientific Name                     | Common Name              | Date Entered | Breeding Activity | Sighting Notes |
|-------------------------------------|--------------------------|--------------|-------------------|----------------|
| <i>Cisticola exilis</i>             | Golden-headed Cisticola  | 7/01/2025    | None              |                |
| <i>Malurus cyaneus</i>              | Superb Fairy-wren        | 7/01/2025    | None              |                |
| <i>Zosterops lateralis</i>          | Silvereye                | 7/01/2025    | None              |                |
| <i>Caligavis chrysops</i>           | Yellow-faced Honeyeater  | 9/01/2025    | None              |                |
| <i>Ptilotula penicillata</i>        | White-plumed Honeyeater  | 7/01/2025    | None              |                |
| <i>Phylidonyris novaehollandiae</i> | New Holland Honeyeater   | 7/01/2025    | None              |                |
| <i>Anthochaera carunculata</i>      | Red Wattlebird           | 7/01/2025    | None              |                |
| <i>Acanthagenys rufogularis</i>     | Spiny-cheeked Honeyeater | 7/01/2025    | None              |                |
| <i>Strepera graculina</i>           | Pied Currawong           | 7/01/2025    | None              |                |
| <i>Cracticus torquatus</i>          | Grey Butcherbird         | 7/01/2025    | None              |                |
| <i>Gymnorhina tibicen</i>           | Australian Magpie        | 7/01/2025    | None              |                |
| <i>Anthochaera chrysoptera</i>      | Little Wattlebird        | 9/01/2025    | None              |                |
| <i>Corvus mellori</i>               | Little Raven             | 7/01/2025    | None              |                |
| <i>Spilopelia chinensis</i>         | Spotted Dove             | 7/01/2025    | None              |                |
| <i>Turdus merula</i>                | Common Blackbird         | 7/01/2025    | None              |                |
| <i>Passer domesticus</i>            | House Sparrow            | 9/01/2025    | None              |                |
| <i>Acridotheres tristis</i>         | Common Myna              | 9/01/2025    | None              |                |

All records recorded by Damien Cook.

## Appendix 6 – Flora assessment photos



Quadrat 1



Quadrat 2



Quadrat 3



Quadrat 4



Quadrat 5



Quadrat 6



Quadrat 7



Quadrat 8



Quadrat 9



Quadrat 10



Quadrat 11



Quadrat 12

## Appendix 7 – Flora and Fauna known to occur on Site

| Species Name                               | Common Name              | EPBC | FFG Status | Conservation Status | Pescott 1988 | Bellarine Bayside Coastal Management 2024b | Bellarine Bayside Coastal Management 2024c | Bellarine Bayside Coastal Management 2023 | BirdLife 2016 | Bellarine Bayside Coastal Management 2013 | Geelong Field Naturalists 2024 | Trengrove 2004 | Pescott 2023 | Damien Cook 2020 | TerraLab 2025 |
|--------------------------------------------|--------------------------|------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Acacia implexa</i>                      | Lightwood                |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Acacia iteaphylla</i>                   | Flinders Range wattle    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Acacia longifolia</i>                   | Sallow Wattle            |      |            | #                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Acacia longifolia subsp. longifolia</i> | Sallow Wattle            |      |            | #                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Acacia longifolia subsp. sophorae</i>   | Coast Wattle             |      |            | #                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Acacia mearnsii</i>                     | Black Wattle             |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Acacia melanoxylon</i>                  | Blackwood                |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Acacia paradoxa</i>                     | Hedge Wattle             |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Acacia pycnantha</i>                    | Golden Wattle            |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Acacia saligna</i>                      | Golden Wreath Wattle     |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Acacia uncifolia</i>                    | Coast Wirilda            |      | Endangered | en                  |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Acaena echinata</i>                     | Sheep's Burr             |      |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Acaena novae-zelandiae</i>              | Bidgee-widgee            |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Acaena sp.</i>                          | Sheep's Burr             |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Acanthagenys rufogularis</i>            | Spiny-cheeked Honeyeater |      |            |                     | Y            | Y                                          |                                            |                                           | Y             | Y                                         |                                |                |              |                  | Y             |
| <i>Acanthiza chrysorrhoa</i>               | Yellow-rumped Thornbill  |      |            |                     | Y            | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Acanthiza lineata</i>                   | Striated Thornbill       |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Acanthiza nana</i>                      | Yellow Thornbill         |      |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  |               |
| <i>Acanthiza pusilla</i>                   | Brown Thornbill          |      |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Acanthorhynchus tenuirostris</i>        | Eastern Spinebill        |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Accipiter cirrocephalus</i>             | Collared Sparrowhawk     |      |            |                     |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  | Y             |
| <i>Accipiter fasciatus</i>                 | Brown Goshawk            |      |            |                     |              | Y                                          | Y                                          |                                           | Y             |                                           |                                |                |              |                  |               |
| <i>Accipiter novaehollandiae</i>           | Grey Goshawk             |      | Endangered | en                  |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Acetosella vulgaris</i>                 | Sheep Sorrel             |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Acridotheres tristis</i>                | Common Myna              |      |            | *                   |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  | Y             |
| <i>Acrocephalus australis</i>              | Reed-Warbler             |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Adriana quadripartita</i>               | Coast Bitter-bush        |      | Endangered |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Aglaosoma variegata</i>                 | Boisduval's Autumn Moth  |      |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Aira praecox</i>                        | Early Hair-grass         |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Aizoon pubescens</i>                    | Galenia                  |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Alauda arvensis</i>                     | Eurasian Skylark         |      |            | *                   | Y            | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Allocastraria sp.</i>                   | Sheoak                   |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Allocastraria verticillata</i>          | Drooping Sheoak          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |



| Species Name                                    | Common Name              | EPBC       | FFG Status            | Conservation Status | Pescott 1988 | Bellarine Bayside Coastal Management 2024b | Bellarine Bayside Coastal Management 2024c | Bellarine Bayside Coastal Management 2023 | BirdLife 2016 | Bellarine Bayside Coastal Management 2013 | Geelong Field Naturalists 2024 | Trengrove 2004 | Pescott 2023 | Damien Cook 2020 | TerraLab 2025 |
|-------------------------------------------------|--------------------------|------------|-----------------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Aloe spp.</i>                                | Aloe                     |            |                       |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Amyema preissi</i>                           | Wireleaf mistletoe       |            |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Anas castanea</i>                            | Chestnut Teal            |            |                       |                     | Y            |                                            |                                            |                                           | Y             | Y                                         |                                |                |              |                  | Y             |
| <i>Anas gracilis</i>                            | Grey Teal                |            |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Anas superciliosa</i>                        | Pacific Black Duck       |            |                       |                     |              | Y                                          | Y                                          |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Anthochaera carunculata</i>                  | Red Wattlebird           |            |                       |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Anthochaera chrysoptera</i>                  | Little Wattlebird        |            |                       |                     |              |                                            |                                            |                                           | Y             |                                           |                                |                |              |                  | Y             |
| <i>Anthus australis</i>                         | Australian Pipit         |            |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Apus pacificus</i>                           | Fork-tailed Swift        |            |                       |                     |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Arctotheca calendula</i>                     | Cape Weed                |            |                       | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Ardea alba</i>                               | Great Egret              |            |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Ardea pacifica</i>                           | White-necked Heron       |            |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Artamus superciliosus</i>                    | White-browed Woodswallow |            |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Asparagus asparagoides</i>                   | Bridal Creeper           |            |                       | *                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Asparagus officinalis</i>                    | Asparagus                |            |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Asplenium flabellifolium</i>                 | Necklace fern            |            |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Atriplex cinerea</i>                         | Coast Saltbush           |            |                       |                     | Y            |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Atriplex prostrata</i>                       | Hastate Orache           |            |                       | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Austrostipa flavescens</i>                   | Coast Spear-grass        |            |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Austrostipa scabra subsp. scabra</i>         | Rough Spear-grass        |            |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Avena fatua</i>                              | Wild Oat                 |            |                       | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Aythya australis</i>                         | Hardhead                 |            |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Azolla rubra</i>                             | Pacific azolla           |            |                       |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              | Y                | Y             |
| <i>Banksia integrifolia subsp. integrifolia</i> | Coast banksia            |            |                       |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Banksia marginata</i>                        | Silver Banksia           |            |                       |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Berkheya rigida</i>                          | African Thistle          |            |                       | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Biziura lobata</i>                           | Musk duck                |            | Vulnerable            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Bolboschoenus caldwellii</i>                 | Salt Club-sedge          |            |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Boronia parviflora</i>                       | Swamp boronia            |            |                       |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Botaurus poiciloptilus</i>                   | Australasian Bittern     | Endangered | Critically Endangered | EN cr               |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Brassica fruticulosa</i>                     | Twiggy Turnip            |            |                       | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Briza maxima</i>                             | Large Quaking-grass      |            |                       | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Bromus catharticus var. catharticus</i>      | Prairie Grass            |            |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Bromus diandrus</i>                          | Great Brome              |            |                       | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Bromus hordeaceus</i>                        | Soft Brome               |            |                       | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |



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|------------------------------------------------------|--------------------------------|------------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Bromus spp.</i>                                   | Brome                          |            |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Bubulcus coromandus</i>                           | Eastern Cattle Egret           |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Bulbine bulbosa</i>                               | Bulbine Lily                   |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Bursaria spinosa</i>                              | Sweet Bursaria                 |            |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Cacatua galerita</i>                              | Sulphur-crested Cockatoo       |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Cacatua sanguinea</i>                             | Little Corella                 |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Cacatua tenuirostris</i>                          | Long-billed Corella            |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Cacomantis flabelliformis</i>                     | Fan-tailed Cuckoo              |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Cacomantis pallidus</i>                           | Pallid cuckoo                  |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Calamanthus fuliginosus</i>                       | Striated Fieldwren             |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Calandrinia eremaea</i>                           | Small Purslane                 |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Calidris acuminata</i>                            | Sharp-tailed Sandpiper         | Vulnerable |            | VU                  |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Calidris melanotos</i>                            | Pectoral Sandpiper             |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Caligavis chrysops</i>                            | Yellow-faced Honeyeater        |            |            |                     |              | Y                                          |                                            |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Calyptorhynchus funereus</i>                      | Yellow-tailed Black-Cockatoo   |            |            |                     |              | Y                                          |                                            |                                           | Y             |                                           | Y                              |                |              |                  |               |
| <i>Campylopus introflexus</i>                        | Heath star moss                |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Canis familiaris</i>                              | Dog                            |            |            |                     |              |                                            | Y                                          |                                           |               |                                           |                                |                |              |                  |               |
| <i>Carduelis carduelis</i>                           | European Goldfinch             |            |            | *                   |              | Y                                          |                                            |                                           | Y             | Y                                         |                                |                |              |                  |               |
| <i>Cassinia sifton</i>                               | Drooping Cassinia              |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Cenchrus clandestinus</i>                         | Kikuyu                         |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Cenchrus longisetus</i>                           | Feathertop                     |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Centaurium erythraea</i>                          | Common Centaury                |            |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Centella cordifolia</i>                           | Swamp pennywort/Arthritis herb |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Charadrius ruficapillus</i>                       | Red-capped Plover              |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Chenopodium glaucum</i>                           | Glaucous Goosefoot             |            |            | #                   |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Chloris chloris</i>                               | European Greenfinch            |            |            | *                   | Y            | Y                                          | Y                                          |                                           | Y             |                                           |                                |                |              |                  |               |
| <i>Chroicocephalus novaehollandiae</i>               | Silver Gull                    |            |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  |               |
| <i>Chrysanthemoides monilifera</i>                   | Boneseed                       |            |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Chrysanthemoides monilifera subsp. monilifera</i> | Boneseed                       |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Chrysococcyx basalis</i>                          | Horsfield's Bronze-Cuckoo      |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Chrysococcyx lucidus</i>                          | Shining Bronze-Cuckoo          |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Circus approximans</i>                            | Swamp Harrier                  |            |            |                     |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  | Y             |

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|----------------------------------------------------|---------------------------|------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Circus assimilis</i>                            | Spotted Harrier           |      |            |                     |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Cirsium arvense</i> var. <i>arvense</i>         | Perennial thistle         |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Cirsium vulgare</i>                             | Spear Thistle             |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Cisticola exilis</i>                            | Golden-headed Cisticola   |      |            |                     | Y            | Y                                          |                                            |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Clematis microphylla</i> s.l.                   | Small-leaved Clematis     |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Colluricincla harmonica</i>                     | Grey Shrike-thrush        |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Columba livia</i>                               | Domestic Pigeon           |      |            | *                   |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Comesperma volubile</i>                         | love creeper              |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Conium maculatum</i>                            | Hemlock                   |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Convolvulus arvensis</i>                        | Field bindweed            |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Coprosma repens</i>                             | Mirror Bush               |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Coracina novaehollandiae</i>                    | Black-faced Cuckoo-shrike |      |            |                     | Y            | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Cortaderia selloana</i> subsp. <i>jubata</i>    | Pink Pampas-grass         |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Cortaderia selloana</i> subsp. <i>selloana</i>  | Pampas Grass              |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Corvus coronoides</i>                           | Australian raven          |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Corvus mellori</i>                              | Little Raven              |      |            |                     | Y            | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Corybas incurvus</i>                            | Slaty helmet orchid       |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Cotula coronopifolia</i>                        | Water Buttons             |      |            | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Cracticus torquatus</i>                         | Grey Butcherbird          |      |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Crinia signifera</i>                            | Common Eastern Froglet    |      |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Cygnus atratus</i>                              | Black Swan                |      |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  | Y             |
| <i>Cynodon dactylon</i>                            | Couch                     |      |            | #                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Cynoglossum australe</i>                        | Australian Hound's-tongue |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Cyperus</i> spp.                                | Flat Sedge                |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Dactylis glomerata</i>                          | Cocksfoot                 |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Daviesia latifolia</i>                          | Hop Bitter Pea            |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Delena cancerides</i>                           | Victorian Huntsman Spider |      |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Dianella brevicaulis</i>                        | Small-flower Flax-lily    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Dianella revoluta</i> s.l.                      | Black-anther Flax-lily    |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Dianella</i> spp.                               | Flax Lily                 |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Dicaeum hirundinaceum</i>                       | Mistletoebird             |      |            |                     |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Dichanthium sericeum</i> subsp. <i>sericeum</i> | Silky Blue-grass          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |



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|----------------------------------------------------------|----------------------------------------------------------|------|-----------------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Dichelachne crinita</i>                               | Long-hair Plume-grass                                    |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Dichondra repens</i>                                  | Kidney-weed                                              |      |                       |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Disa bracteata</i>                                    | bract disa, leek orchid or the South African weed orchid |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Disphyma crassifolium</i> subsp. <i>clavellatum</i>   | Rounded Noon-flower                                      |      |                       |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              | Y                |               |
| <i>Distichlis distichophylla</i>                         | Australian Salt-grass                                    |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Diuris</i> spp.                                       | Diuris                                                   |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Ehrharta calycina</i>                                 | Perennial Veldt Grass                                    |      |                       | *                   |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Ehrharta erecta</i>                                   | Panic Veldt-grass                                        |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Einadia nutans</i>                                    | Nodding Saltbush                                         |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Egretta novaehollandiae</i>                           | White-faced Heron                                        |      |                       |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Elanus axillaris</i>                                  | Black-shouldered Kite                                    |      |                       |                     | Y            | Y                                          |                                            |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Eleocharis acuta</i>                                  | Common Spike-sedge                                       |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Elseornis melanops</i>                                | Black-fronted Dotterel                                   |      |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Eolophus roseicapilla</i>                             | Galah                                                    |      |                       |                     | Y            | Y                                          |                                            |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Epilobium billardiareanum</i>                         | Variable Willow-herb                                     |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Epilobium hirtigerum</i>                              | Hairy Willow-herb                                        |      |                       |                     |              |                                            |                                            |                                           |               |                                           |                                |                | Y            |                  |               |
| <i>Ephianura albifrons</i>                               | White-fronted Chat                                       |      |                       |                     | Y            | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Eragrostis brownii</i>                                | Common Love-grass                                        |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Erigeron bonariensis</i>                              | Flaxleaf Fleabane                                        |      |                       | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Erigeron primulifolius</i>                            | Rough Fleabane                                           |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Erigeron sumatrensis</i>                              | Tall Fleabane                                            |      |                       | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Eriophora</i> sp.                                     | Garden Orb Weaver                                        |      |                       |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Erythronys cinctus</i>                                | Red-kneed Dotterel                                       |      |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Eucalyptus leucoxyton</i> subsp. <i>bellarinensis</i> | Bellarine Yellow-gum                                     |      | Critically Endangered |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Eucalyptus leucoxyton</i> subsp. <i>megalocarpa</i>   | Large-fruit Yellow-gum                                   |      | Critically Endangered |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Eucalyptus ovata</i>                                  | Swamp Gum                                                |      |                       |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Eucalyptus viminalis</i>                              | Manna Gum                                                |      |                       |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Eucalyptus viminalis</i> ssp. <i>pryoriana</i>        | Coast Manna-gum                                          |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Euchiton japonicus</i> s.s.                           | Creeping Cudweed                                         |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Euphorbia lathyris</i>                                | Caper spurge                                             |      |                       |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Falco berigora</i>                                    | Brown Falcon                                             |      |                       |                     |              | Y                                          |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Falco cenchroides</i>                                 | Nankeen Kestrel                                          |      |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Falco longipennis</i>                                 | Australian Hobby                                         |      |                       |                     | Y            | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  |               |
| <i>Falco peregrinus</i>                                  | Peregrine Falcon                                         |      |                       |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Falco subniger</i>                                    | Black Falcon                                             |      | Critically Endangered | cr                  |              | Y                                          |                                            |                                           |               |                                           | Y                              |                |              |                  |               |



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|------------------------------------------------------|-------------------------------------------------------|------------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Felis catus</i>                                   | Cat                                                   |            |            |                     |              |                                            | Y                                          |                                           |               |                                           |                                |                |              |                  |               |
| <i>Ficinia nodosa</i>                                | Knobby Club-sedge                                     |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Foeniculum vulgare</i>                            | Fennel                                                |            |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Frankenia pauciflora</i> var. <i>gunnii</i>       | Southern Sea-heath                                    |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              | Y                | Y             |
| <i>Freesia leichtlinii</i>                           | Freesia                                               |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Fulica atra</i>                                   | Eurasian Coot                                         |            |            |                     | Y            | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Fumaria bastardii</i>                             | Fumitory, tall ramping fumitory or bastard's fumitory |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Fumaria capreolata</i>                            | White Fumitory                                        |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Fumaria muralis</i> subsp. <i>muralis</i>         | Wall Fumitory                                         |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Fumaria</i> spp.                                  | Fumitory                                              |            |            | *                   |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Gahnia filum</i>                                  | Chaffy Saw-sedge                                      |            |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Galium aparine</i>                                | Cleavers                                              |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Gallinago hardwickii</i>                          | Latham's Snipe                                        | Vulnerable |            | VU                  |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Gallinula tenebrosa</i>                           | Dusky Moorhen                                         |            |            |                     | Y            | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Gaudium laevigatum</i>                            | Coast Tea-tree                                        |            |            | #                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Gaudium myrsinoides</i>                           | Heath Teatree                                         |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Gavialis virescens</i>                            | Singing honeyeater                                    |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Gazania linearis</i>                              | Gazania                                               |            |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Genista linifolia</i>                             | Flax-leaf Broom                                       |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Genista monspessulana</i>                         | Montpellier Broom                                     |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Geranium solanderi</i> s.l.                       | Austral Crane's-bill                                  |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Geranium solanderi</i> var. <i>solanderi</i> s.s. | Austral Crane's-bill                                  |            | Endangered | en                  |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Glossopsitta concinna</i>                         | Musk Lorikeet                                         |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Gnaphalium</i> spp.                               | Cudweeds                                              |            |            |                     |              |                                            |                                            |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Goodenia ovata</i>                                | Hop Goodenia                                          |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Goodenia radicans</i>                             | Shiny Swamp-mat                                       |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Grallina cyanoleuca</i>                           | Maggie-lark                                           |            |            |                     |              | Y                                          | Y                                          |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Gymnorhina tibicen</i>                            | Australian Magpie                                     |            |            |                     |              | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Haliastur sphenurus</i>                           | Whistling Kite                                        |            |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  | Y             |
| <i>Hedera helix</i> s.l.                             | Common ivy                                            |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Helminthotheca echioides</i>                      | Ox-tongue                                             |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Hemarthria uncinata</i> var. <i>uncinata</i>      | Mat Grass                                             |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Heteronychus arator</i>                           | African Black Beetle                                  |            |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Hibbertia riparia</i>                             | Erect Guinea-flower                                   |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Hieraaetus morphnoides</i>                        | Little Eagle                                          |            | Vulnerable | vu                  |              | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  |               |



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|-------------------------------------------------------|----------------------|------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Himantopus himantopus</i>                          | Black-winged stilt   |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Himantopus leucocephalus</i>                       | Pied Stilt           |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Hirundo neoxena</i>                                | Welcome Swallow      |      |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| fam. Lycosidae gen. Hoggicosa                         | Wolf Spider          |      |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Holcus lanatus</i>                                 | Yorkshire Fog        |      |            | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Hordeum leporinum</i>                              | Barley Grass         |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Hordeum spp.</i>                                   | Barley Grass         |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Hydrocotyle laxiflora</i>                          | Stinking Pennywort   |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Hydrocotyle spp.</i>                               | Pennywort            |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Hypericum gramineum</i>                            | Small St John's Wort |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Hypochaeris radicata</i>                           | Flatweed/Cat's ear   |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Hypotaenidia philippensis</i>                      | Buff-banded Rail     |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Imperata cylindrica</i>                            | Blady Grass          |      |            | #                   | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Isolepis cernua s.l.</i>                           | Low bulrush          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Isolepis spp.</i>                                  | Club Sedge           |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Juncus acutus subsp. acutus</i>                    | Spiny Rush           |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Juncus articulatus subsp. articulatus</i>          | Jointed Rush         |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Juncus kraussii subsp. australiensis</i>           | Sea Rush             |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Juncus pallidus</i>                                | Pale Rush            |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Juncus spp.</i>                                    | Rush                 |      |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Juncus subsecundus</i>                             | Finger Rush          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Kennedia prostrata</i>                             | Running Postman      |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Lachnagrostis aemula s.l.</i>                      | Leafy Blown-grass    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Lachnagrostis billardierei subsp. billardierei</i> | Coast Blown-grass    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Lachnagrostis filiformis s.l.</i>                  | Common Blown-grass   |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Lactuca serriola</i>                               | Prickly Lettuce      |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Lagenophora stipitata s.s.</i>                     | Blue Bottle-daisy    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Lagurus ovatus</i>                                 | Hare's-tail Grass    |      |            | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Lampropholis delicata</i>                          | Metallic Cool Skink  |      |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Lampropholis sp.</i>                               | Skink                |      |            |                     |              |                                            | Y                                          |                                           |               |                                           |                                |                |              |                  |               |
| <i>Laphangium luteoalbum</i>                          | Jersey Cudweed       |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |

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|------------------------------------------------------|-----------------------------------|------------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Larus pacificus</i>                               | Pacific Gull                      |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Lemna disperma</i>                                | Common Duckweed                   |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              | Y                | Y             |
| <i>Lemna trisulca</i>                                | Ivy-leaved Duckweed               |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Leontodon saxatilis</i> subsp. <i>saxatilis</i>   | Hairy Hawkbit                     |            |            | *                   |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Lepidosperma gladiatum</i>                        | Coast Sword Sedge                 |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Leucopogon parviflorus</i>                        | Coast Beard-heath                 |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Lilaeopsis polyantha</i>                          | Australian Lilaeopsis             |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Larus novaehollandiae</i>                         | Silver Gull                       |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Limnodynastes dumerilii</i>                       | Southern Bullfrog (ssp. unknown)  |            |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                | Y            |                  |               |
| <i>Limnodynastes tasmaniensis</i>                    | Spotted Marsh Frog (race unknown) |            |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Litoria ewingii</i>                               | Southern Brown Tree Frog          |            |            |                     |              |                                            |                                            |                                           |               | Y                                         | Y                              |                |              |                  |               |
| <i>Litoria raniformis</i>                            | Growing Grass Frog                | Vulnerable | Vulnerable | VU vu               |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Lobelia anceps</i>                                | Angled Lobelia                    |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Lolium perenne</i>                                | Perennial Rye-grass               |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Lolium spp.</i>                                   | Rye Grass                         |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Lomandra longifolia</i>                           | Spiny-headed Mat-rush             |            |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Lonicera japonica</i>                             | Japanese honeysuckle              |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Lycium ferocissimum</i>                           | African Box-thorn                 |            |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Lysimachia arvensis</i>                           | Pimpernel                         |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Lythrum hyssopifolia</i>                          | Small Loosestrife                 |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Machaerina arthropophylla</i>                     | Fine Twig-sedge                   |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              | Y                | Y             |
| <i>Machaerina juncea</i>                             | Bare Twig-sedge                   |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              | Y                | Y             |
| <i>Macropus giganteus</i>                            | Eastern grey kangaroo             |            |            |                     |              |                                            | Y                                          |                                           |               |                                           |                                |                |              |                  |               |
| <i>Malurus cyaneus</i>                               | Superb Fairy-wren                 |            |            |                     | Y            | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Malus sp.</i>                                     | Apple                             |            |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Manorina melanocephala</i>                        | Noisy Miner                       |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Medicago sp.</i>                                  | Medic                             |            |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Medicago polymorpha</i>                           | Burr Medic                        |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Meionectes brownii</i>                            | Swamp Raspwort                    |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Melaleuca armillaris</i> subsp. <i>armillaris</i> | Giant Honey-myrtle                |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Melaleuca lanceolata</i>                          | Moonah                            |            |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Melilotus indicus</i>                             | Sweet Melilot                     |            |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Melithreptus lunatus</i>                          | White-naped honeyeater            |            |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Microcarbo melanoleucos</i>                       | Little Pied Cormorant             |            |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  | Y             |

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|--------------------------------------------------|-------------------------|------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Milvus migrans</i>                            | Black Kite              |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Mirafra javanica</i>                          | Singing bush lark       |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Muehlenbeckia adpressa</i>                    | Climbing Lignum         |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Mus musculus</i>                              | House Mouse             |      |            | *                   |              |                                            | Y                                          |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Myoporum insulare</i>                         | Common Boobialla        |      |            | #                   | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Nassella trichotoma</i>                       | Serrated Tussock        |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Neochmia temporalis</i>                       | Red-browed Finch        |      |            |                     |              | Y                                          |                                            |                                           |               | Y                                         | Y                              |                |              |                  |               |
| <i>Ninox boobook</i>                             | Australian Boobook      |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Nycticorax caledonicus</i>                    | Nankeen Night-Heron     |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Ocyphaps lophotes</i>                         | Crested Pigeon          |      |            |                     |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Oenothera stricta subsp. stricta</i>          | Common evening-primrose |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Opuntia robusta</i>                           | Wheel Cactus            |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Oryctolagus cuniculus</i>                     | European Rabbit         |      |            | *                   | Y            |                                            | Y                                          |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Oxalis corniculata s.l.</i>                   | Yellow Wood-sorrel      |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Oxalis pes-caprae</i>                         | Soursob                 |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Ozothamnus ferrugineus</i>                    | Tree Everlasting        |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Pachycephala pectoralis</i>                   | Golden Whistler         |      |            |                     | Y            | Y                                          |                                            |                                           | Y             | Y                                         | Y                              |                |              |                  |               |
| <i>Pachycephala rufiventris</i>                  | Rufous Whistler         |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Paraserianthes lophantha subsp. lophantha</i> | Cape Wattle             |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Pardalotus punctatus</i>                      | Spotted Pardalote       |      |            |                     |              | Y                                          | Y                                          |                                           | Y             |                                           | Y                              |                |              |                  |               |
| <i>Paspalum dilatatum</i>                        | Paspalum                |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Passer domesticus</i>                         | House Sparrow           |      |            | *                   | Y            | Y                                          |                                            |                                           | Y             | Y                                         |                                |                |              |                  | Y             |
| <i>Pelargonium australe</i>                      | Austral Stork's-bill    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Pelecanus conspicillatus</i>                  | Australian Pelican      |      |            |                     | Y            | Y                                          |                                            |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Persicaria decipiens</i>                      | Slender Knotweed        |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Petrochelidon ariel</i>                       | Fairy Martin            |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Petroica boodang</i>                          | Scarlet Robin           |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Petroica phoenicea</i>                        | Flame Robin             |      |            |                     | Y            | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Phalacrocorax sulcirostris</i>                | Little Black Cormorant  |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Phalacrocorax varius</i>                      | Pied Cormorant          |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Phalaris aquatica</i>                         | Toowoomba Canary-grass  |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Phaps chalcoptera</i>                         | Common Bronzewing       |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Phragmites australis</i>                      | Common Reed             |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Phylidonyris novaehollandiae</i>              | New Holland Honeyeater  |      |            |                     | Y            | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |

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|------------------------------------------------------|--------------------------|------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Pimelea humilis</i>                               | Common Rice-flower       |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Pimelea linifolia</i>                             | Slender Rice-flower      |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Pimelea</i> spp.                                  | Rice Flower              |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Pinus radiata</i>                                 | Radiata Pine             |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Pittosporum undulatum</i>                         | Sweet Pittosporum        |      |            | #                   | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Plantago coronopus</i> subsp. <i>coronopus</i>    | Buck's-horn Plantain     |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Plantago lanceolata</i>                           | Ribwort                  |      |            | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Platalea flavipes</i>                             | Yellow-billed Spoonbill  |      |            |                     |              | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  | Y             |
| <i>Platalea regia</i>                                | Royal Spoonbill          |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Platycercus elegans</i>                           | Crimson Rosella          |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Platycercus eximius</i>                           | Eastern Rosella          |      |            |                     |              | Y                                          |                                            |                                           | Y             |                                           |                                |                |              |                  | Y             |
| <i>Platylobium obtusangulum</i>                      | Common Flat-pea          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Poa labillardierei</i>                            | Common Tussock-grass     |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Poa labillardierei</i> var. <i>labillardierei</i> | Common Tussock-grass     |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Poa poiformis</i>                                 | Coast Tussock-grass      |      |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Poa poiformis</i> var. <i>poiformis</i>           | Coast Tussock-grass      |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Poa sieberiana</i>                                | Grey Tussock-grass       |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Poa</i> sp.                                       | Tussock Grass            |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Podargus strigoides</i>                           | Tawny Frogmouth          |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Poliocephalus poliocephalus</i>                   | Hoary-headed Grebe       |      |            |                     | Y            | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Poodytes gramineus</i>                            | Little Grassbird         |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Porphyrio melanotus</i>                           | Purple Swamphen          |      |            |                     |              | Y                                          |                                            |                                           | Y             | Y                                         | Y                              |                |              |                  |               |
| <i>Portulaca oleracea</i>                            | Common Purslane          |      |            | #                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Porphyrio porphyrio</i>                           | Purple Swamphen          |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Porzana fluminea</i>                              | Australian Spotted Crake |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Porzana tabuensis</i>                             | Spotless Crake           |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Potamogeton crispus</i>                           | Crisp-leaved Pondweed    |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Prasophyllum</i> spp.                             |                          |      |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Prunus</i> sp.                                    | Prunus                   |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Psephotus haematonotus</i>                        | Red-rumped Parrot        |      |            |                     |              | Y                                          | Y                                          |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Pteridium esculentum</i> subsp. <i>esculentum</i> | Austral Bracken          |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Pteropus poliocephalus</i>                        | Grey-headed Flying Fox   | vu   | Vulnerable |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Pterostylis concinna</i>                          | Trim Greenhood           |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Pterostylis curta</i>                             | Blunt Greenhood          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |

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| <i>Ptilotula penicillata</i>                              | White-plumed Honeyeater     |      |            |                     |              | Y                                          |                                            |                                           |               |                                           | Y                              |                |              |                  | Y             |
| <i>Puccinellia stricta</i> s.s.                           | Australian Saltmarsh-grass  |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Ranunculus amphitrichus</i>                            | Small River Buttercup       |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Rattus norvegicus</i>                                  | Brown Rat                   |      |            | *                   |              |                                            |                                            |                                           |               | Y                                         | Y                              |                |              |                  |               |
| <i>Rattus rattus</i>                                      | Black Rat                   |      |            | *                   |              |                                            | Y                                          |                                           |               |                                           |                                |                |              |                  |               |
| <i>Rhagodia candolleana</i> subsp. <i>candolleana</i>     | Seaberry Saltbush           |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Rhipidura albiscapa</i>                                | Grey Fantail                |      |            |                     | Y            | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Rhipidura leucophrys</i>                               | Willie Wagtail              |      |            |                     | Y            | Y                                          |                                            |                                           | Y             | Y                                         | Y                              |                |              |                  |               |
| <i>Rhipidura rufifrons</i>                                | Australian Rufous Fantail   |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Romulea rosea</i>                                      | Onion Grass                 |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Romulea rosea</i> var. <i>australis</i> s.s.           | Common Onion-grass          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Rubus fruticosus</i> spp. <i>agg.</i>                  | Blackberry                  |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Rubus parvifolius</i>                                  | Native Raspberry            |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Rubus</i> spp.                                         | Bramble                     |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Rumex conglomeratus</i>                                | Clustered Dock              |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Rumex crispus</i>                                      | Curled Dock                 |      |            | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Rytidosperma racemosum</i> var. <i>racemosum</i>       | Slender Wallaby-grass       |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Rytidosperma setaceum</i>                              | Bristly Wallaby-grass       |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Rytidosperma</i> spp.                                  | Wallaby Grass               |      |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Salicornia quinqueflora</i>                            | Beaded Glasswort            |      |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Salicornia quinqueflora</i> subsp. <i>quinqueflora</i> | Beaded Glasswort            |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Samolus repens</i>                                     | Creeping Brookweed          |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Schoenus apogon</i>                                    | Common Bog-sedge            |      |            |                     | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Schoenus nitens</i>                                    | Shiny Bogrush               |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Senecio angulatus</i>                                  | Creeping Groundsel/Cape Ivy |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Senecio biserratus</i>                                 | Jagged Fireweed             |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Senecio glomeratus</i>                                 | Annual Fireweed             |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Senecio glomeratus</i> subsp. <i>glomeratus</i>        | Annual Fireweed             |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Senecio hispidulus</i> s.l.                            | Rough Fireweed              |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Senecio odoratus</i>                                   | Scented Groundsel           |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |

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|---------------------------------------------------------|--------------------------------------------------------------|------|------------|---------------------|--------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------------------------------|--------------------------------|----------------|--------------|------------------|---------------|
| <i>Senecio pinnatifolius</i> var. <i>lanceolatus</i>    | Swamp Groundsel                                              |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Senecio quadridentatus</i>                           | Cotton Fireweed                                              |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Sericornis frontalis</i>                             | White-browed Scrubwren                                       |      |            |                     |              | Y                                          | Y                                          |                                           |               |                                           | Y                              |                |              |                  | Y             |
| <i>Setaria verticillata</i>                             | Hooked bristlegrass, rough bristle-grass and bristly foxtail |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Solanum laciniatum</i>                               | Large Kangaroo Apple                                         |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Solanum linnaeanum</i>                               | Apple of Sodom                                               |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Solanum nigrum</i> s.l.                              | Black Nightshade                                             |      |            | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Sonchus asper</i> s.l.                               | Rough Sow-thistle                                            |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Sonchus hydrophilus</i>                              | Native Sow-thistle                                           |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Sonchus oleraceus</i>                                | Common Sow-thistle                                           |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Spatula rhynchotis</i>                               | Australasian Shoveler                                        |      | Vulnerable | vu                  |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Spergularia marina</i> s.s.                          | Lesser Sea-spurrey                                           |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Spilopelia chinensis</i>                             | Spotted Dove                                                 |      |            | *                   |              | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Sporobolus africanus</i>                             | Rat-tail Grass                                               |      |            | *                   |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Stenotaphrum secundatum</i>                          | Buffalo Grass                                                |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  |               |
| <i>Strepera graculina</i>                               | Pied Currawong                                               |      |            |                     |              | Y                                          |                                            |                                           |               | Y                                         |                                |                |              |                  | Y             |
| <i>Strepera versicolor</i>                              | Grey Currawong                                               |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Stuckenia pectinata</i>                              | Fennel pondweed                                              |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              | Y                | Y             |
| <i>Sturnus vulgaris</i>                                 | Common Starling                                              |      |            | *                   | Y            | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  |               |
| <i>Suaeda australis</i>                                 | Austral Seablite                                             |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Symphyotrichum subulatum</i>                         | Aster-weed                                                   |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  | Y             |
| <i>Synoicus ypsilophorus</i>                            | Brown Quail                                                  |      |            |                     |              | Y                                          | Y                                          |                                           |               | Y                                         | Y                              |                |              |                  |               |
| <i>Tachybaptus novaehollandiae</i>                      | Australasian Grebe                                           |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Tadorna tadornoides</i>                              | Australian Shelduck                                          |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Taraxacum</i> spp.                                   | Dandelion                                                    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Tetragonia implexicoma</i>                           | Bower Spinach                                                |      |            |                     | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Thalasseus bergii</i>                                | Crested Tern                                                 |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Thelymitra pauciflora</i> s.l.                       | Slender Sun-orchid                                           |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Themeda triandra</i>                                 | Kangaroo Grass                                               |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Threskiornis molucca</i>                             | Australian White Ibis                                        |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Threskiornis spinicollis</i>                         | Straw-necked Ibis                                            |      |            |                     |              |                                            |                                            |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Thyridia repens</i>                                  | Creeping monkeyflower                                        |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              | Y                | Y             |
| <i>Thysanotus patersonii</i>                            | Twining Fringe Lily                                          |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Todiramphus sanctus</i>                              | Sacred Kingfisher                                            |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Tragopogon porrifolius</i> subsp. <i>porrifolius</i> | Salsify                                                      |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |



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| <i>Trichoglossus moluccanus</i>                   | Rainbow Lorikeet                     |      |            |                     |              | Y                                          |                                            |                                           | Y             |                                           | Y                              |                |              |                  | Y             |
| <i>Nephila edulis</i>                             | Australian Golden Orb-weaving Spider |      |            |                     |              |                                            |                                            |                                           |               |                                           | Y                              |                |              |                  |               |
| <i>Tricoryne elatior</i>                          | Yellow Rush-lily                     |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Trifolium arvense</i> var. <i>arvense</i>      | Hare's-foot Clover                   |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Trifolium campestre</i> var. <i>campestre</i>  | Hop Clover                           |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Trifolium repens</i> var. <i>repens</i>        | White Clover                         |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Trifolium</i> spp.                             | Clover                               |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Triglochin striata</i>                         | Streaked Arrowgrass                  |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Tropaeolum majus</i>                           | Nasturtium                           |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Turdus merula</i>                              | Common Blackbird                     |      |            | *                   | Y            | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Typha domingensis</i>                          | Narrow-leaf Cumbungi                 |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  | Y             |
| <i>Tyto alba</i>                                  | Barn Owl                             |      |            |                     |              | Y                                          |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Ulex europaeus</i>                             | Gorse                                |      |            | *                   | Y            |                                            |                                            | Y                                         |               |                                           |                                | Y              |              |                  | Y             |
| <i>Vanellus miles</i>                             | Masked Lapwing                       |      |            |                     |              | Y                                          | Y                                          |                                           | Y             | Y                                         | Y                              |                |              |                  | Y             |
| <i>Vellereophyton dealbatum</i>                   | White Cudweed                        |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Vespadelus vulturnus</i>                       | Little Forest Bat                    |      |            |                     |              |                                            |                                            |                                           |               | Y                                         | Y                              |                | Y            |                  |               |
| <i>Vicia sativa</i>                               | Common Vetch                         |      |            | *                   | Y            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Viminaria juncea</i>                           | Golden Spray                         |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Viola hederacea</i>                            | Ivy Leaf Violet                      |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Vulpes vulpes</i>                              | Red Fox                              |      |            | *                   | Y            |                                            | Y                                          |                                           |               | Y                                         |                                |                |              |                  |               |
| <i>Vulpia bromoides</i>                           | Squirrel-tail Fescue                 |      |            | *                   |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Vulpia myuros</i>                              | Rat's-tail Fescue                    |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Wahlenbergia gracilis</i>                      | Sprawling Bluebell                   |      |            |                     |              |                                            |                                            | Y                                         |               |                                           |                                |                |              |                  |               |
| <i>Wahlenbergia stricta</i> subsp. <i>stricta</i> | Tall Bluebell                        |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                | Y              |              |                  |               |
| <i>Watsonia meriana</i> var. <i>bulbillifera</i>  | Bulbil Watsonia                      |      |            |                     | ?            |                                            |                                            |                                           |               |                                           |                                |                |              |                  |               |
| <i>Zapornia tabuensis</i>                         | Spotless Crane                       |      |            |                     |              |                                            |                                            |                                           |               |                                           |                                |                |              |                  | Y             |
| <i>Zosterops lateralis</i>                        | Silvereye                            |      |            |                     | Y            | Y                                          | Y                                          |                                           | Y             |                                           | Y                              |                |              |                  | Y             |

\* introduced

# Native but some strands may be alien

## Appendix 8 – Risk assessment matrix

| LEVEL OF CONSEQUENCE | Health and safety                                        | Environment                                                           | Financial                  | Cultural                                                                                                                                                                                               | LIKELIHOOD OF EVENT OCCURRING |            |              |              |          |
|----------------------|----------------------------------------------------------|-----------------------------------------------------------------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|------------|--------------|--------------|----------|
|                      |                                                          |                                                                       |                            |                                                                                                                                                                                                        | Almost certain (5)            | Likely (4) | Possible (3) | Unlikely (2) | Rare (1) |
| Catastrophic (5)     | Fatality or permanent disability.                        | Significant environmental impact with international implications.     | Very high financial loss.  | Irreversible destruction of a highly significant cultural site, artefact, or intangible cultural history. No mitigation can restore the cultural loss.                                                 | 25                            | 20         | 15           | 10           | 5        |
| High (4)             | Long-term illness or serious injury.                     | Significant environmental impact with federal implications.           | High financial loss.       | Significant impact on a culturally important site, artefact, or area, leading to loss or degradation of cultural heritage value. Mitigation is possible but does not fully restore cultural integrity. | 20                            | 16         | 12           | 8            | 4        |
| Moderate (3)         | Medical treatment requiring up to several days off work. | Moderate environmental impact with State implications                 | Medium financial loss.     | Disturbance to a site or artefact of cultural significance, requiring formal mitigation (e.g., salvage, relocation, or documentation). May result in some loss of cultural value.                      | 15                            | 12         | 9            | 6            | 3        |
| Low (2)              | Minor injury requiring first aid.                        | Minor environmental impact with local or regional level implications. | Low financial loss.        | Slight disturbance to a culturally insignificant area or artefact, with no lasting damage. The impact is easily mitigated or reversed through consultation and appropriate management measures.        | 10                            | 8          | 6            | 4            | 2        |
| Insignificant (1)    | No injuries or first aid only.                           | Minor environmental impact, with no legislative outcome.              | Negligible financial loss. | No impact or disturbance to known or potential cultural heritage values. Any interaction is incidental and fully reversible with no lasting effects.                                                   | 5                             | 4          | 3            | 2            | 1        |



## Maps

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Maps commence on next page.

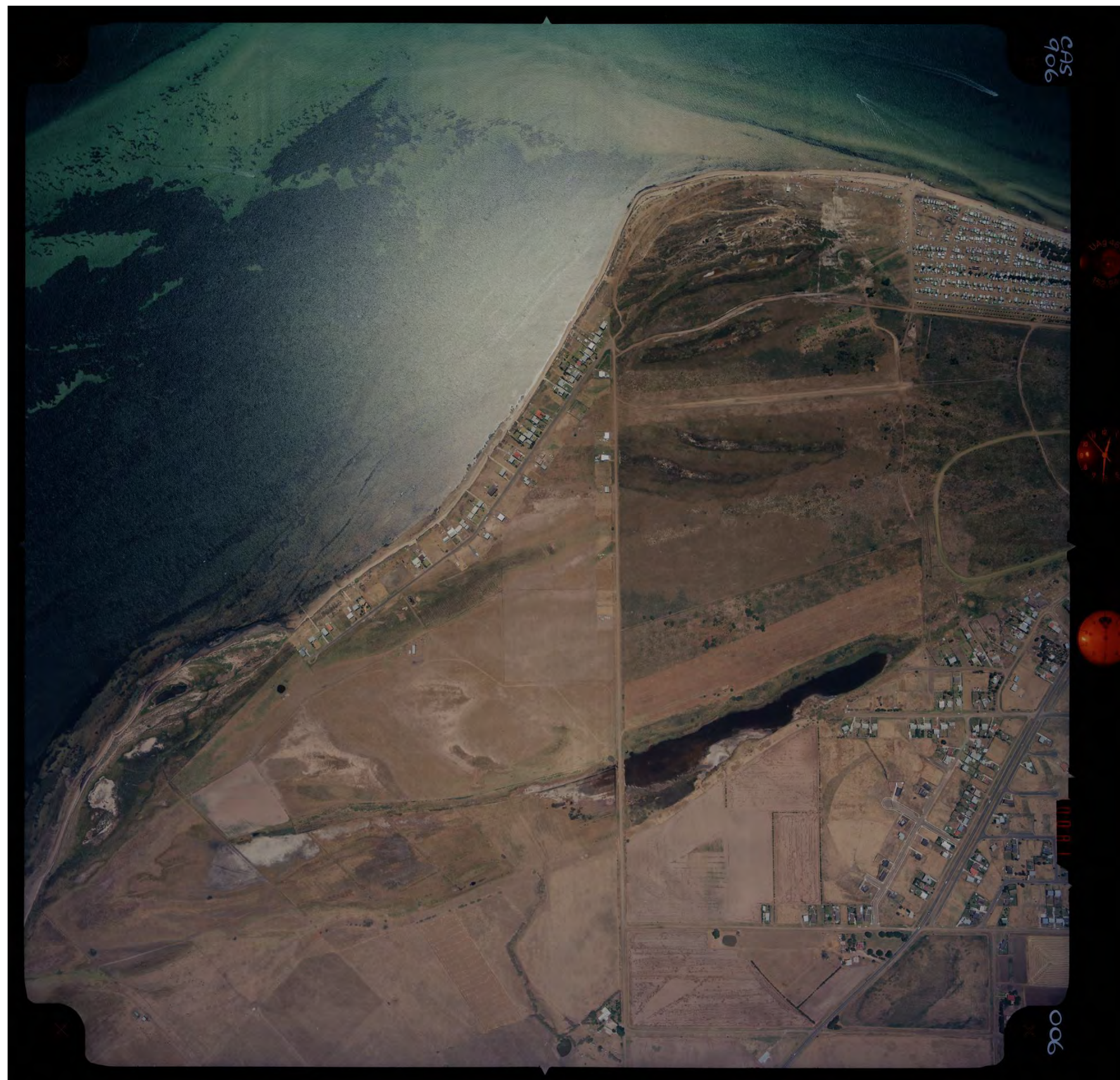
Map 1 – Historic imagery, 10/10/1946



Map 2 – Historic imagery, 1950



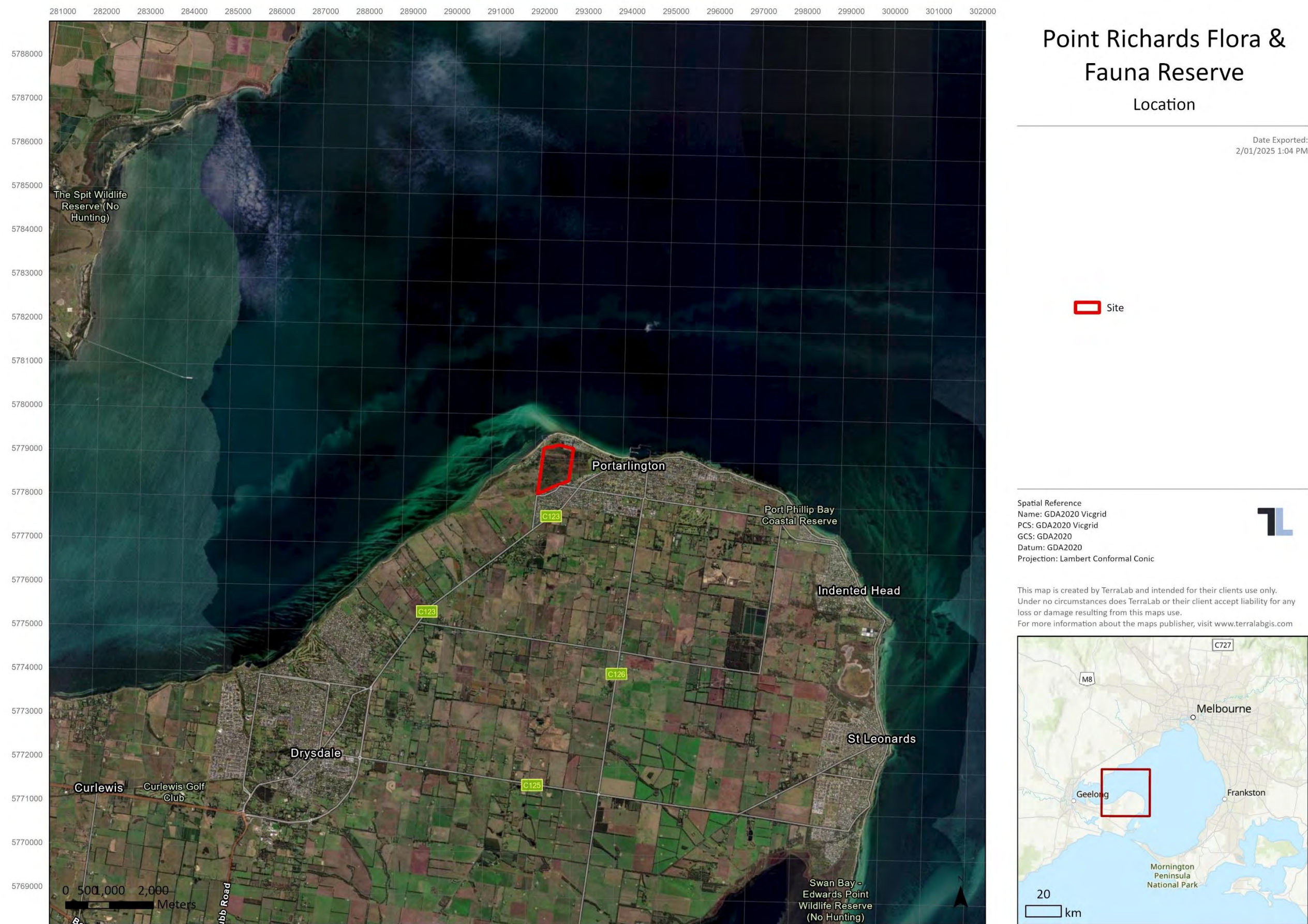
Map 3 – Historic imagery, 19/02/1975



Map 4 – Historic imagery, 2014



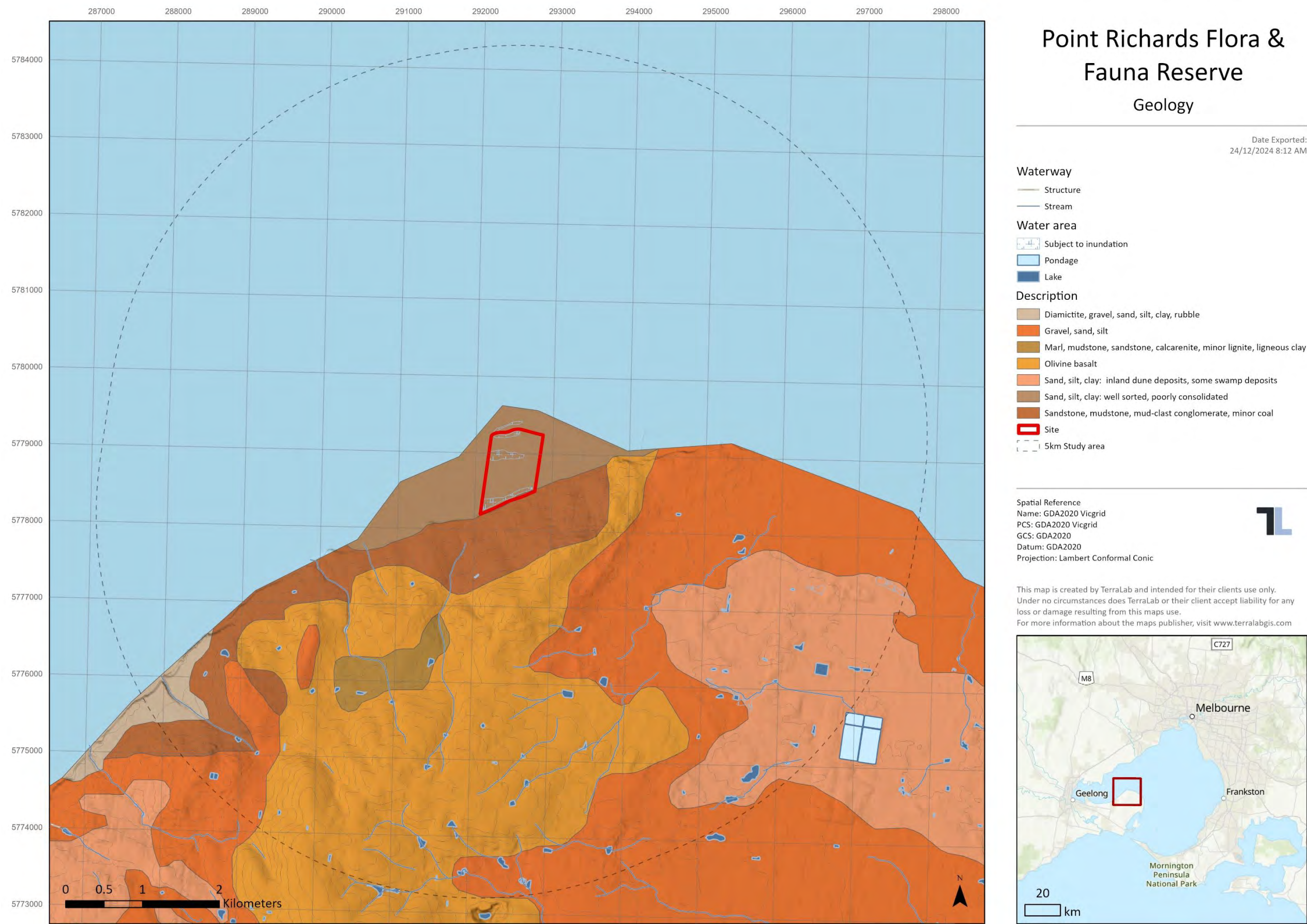
Map 5 – Location map of Point Richards Flora and Fauna Reserve



Map 6 – Existing Conditions map of Point Richards Flora and Fauna Reserve



Map 7 – Geologic map of Point Richards Flora and Fauna Reserve and its surrounds



## Map 8 – Geomorphological map of Point Richards Flora and Fauna Reserve and its surrounds



# Point Richards Flora & Fauna Reserve

## Geomorphology

Date Exported:  
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- Waterway**

  -  Structure
  -  Connector or drain
  -  River
  -  Stream

**Water area**

  -  Subject to inundation
  -  Pondage
  -  Lake

**GMU T3 Description**

  -  3.3.1: Plateau (Bellarine Peninsula, Cape Liptrap, Moorooduc Plains; including Mt. Martha and Mt. Eliza)
  -  3.3.2: Hills and low hills (Barwon Downs, French Island)
  -  3.3.4: Terraces and floodplains (Aire River, Barham, Birregurra, Carlisle and Gellibrand Rivers, Fosters Creek, Upper Bass, Lang Lang, Tarwin, Morwell and Tarago, Birregurra Rivers)
  -  6.2.5: Terraces and floodplains, and coastal plains (Barwon River, Moolap sunklands, Cape Otway)
  -  8.4: Coastal barriers (Ninety Mile Beach)
  -  Site
  -  5km Study area

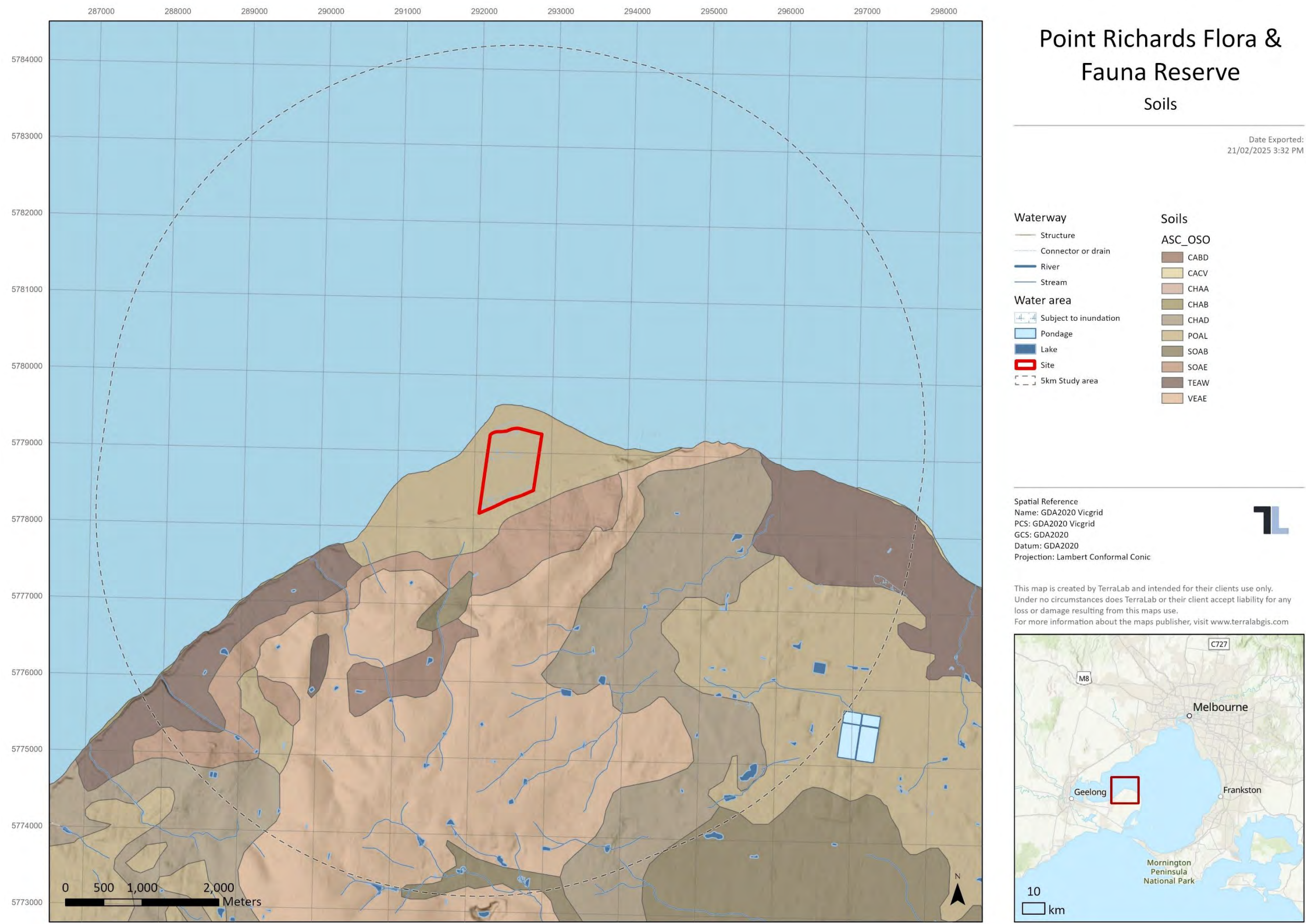
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PCS: GDA2020 Vicgrid  
GCS: GDA2020  
Datum: GDA2020  
Projection: Lambert Conformal Conic



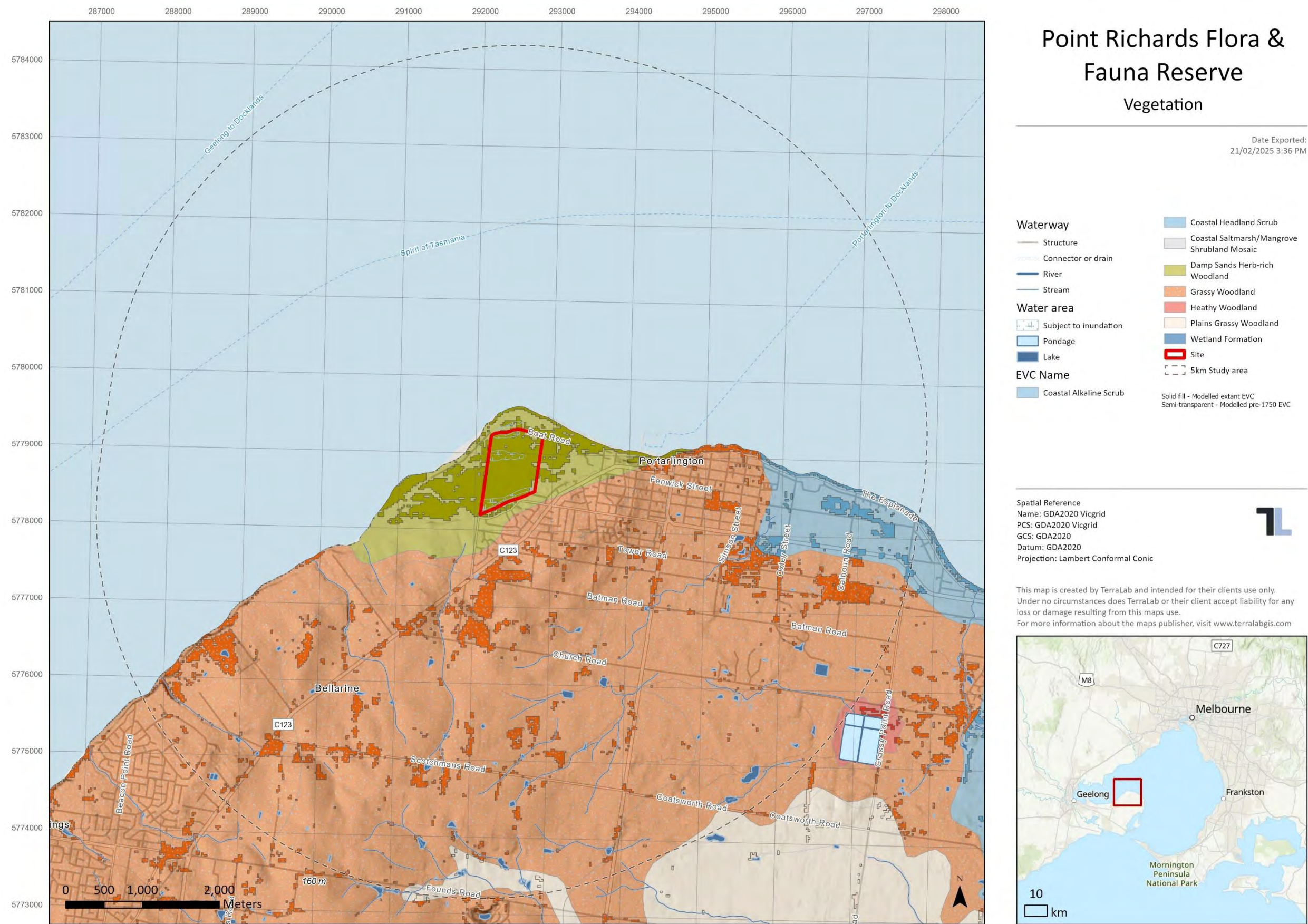
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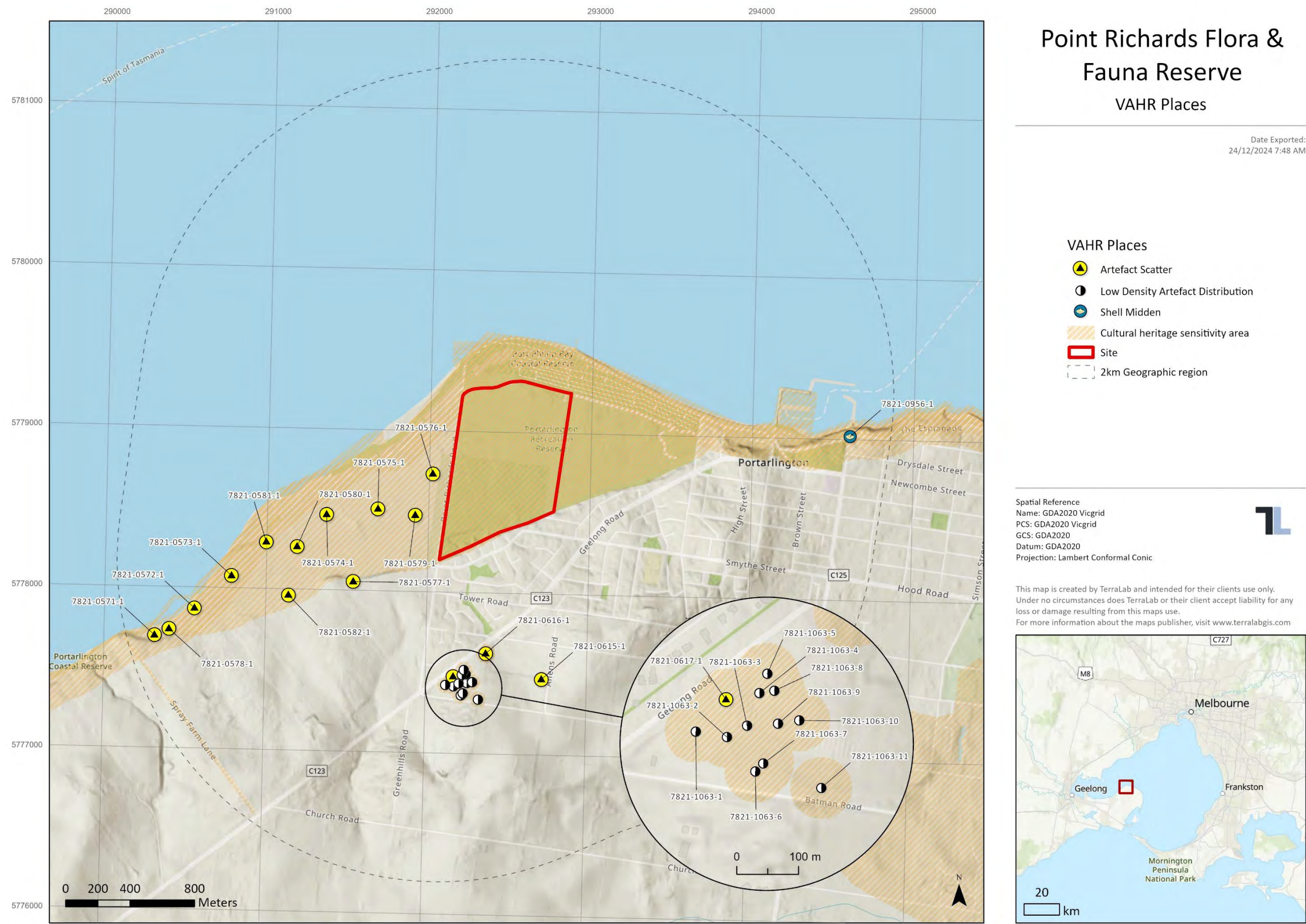
Map 9 – Soils map of Point Richards Flora and Fauna Reserve and its surrounds

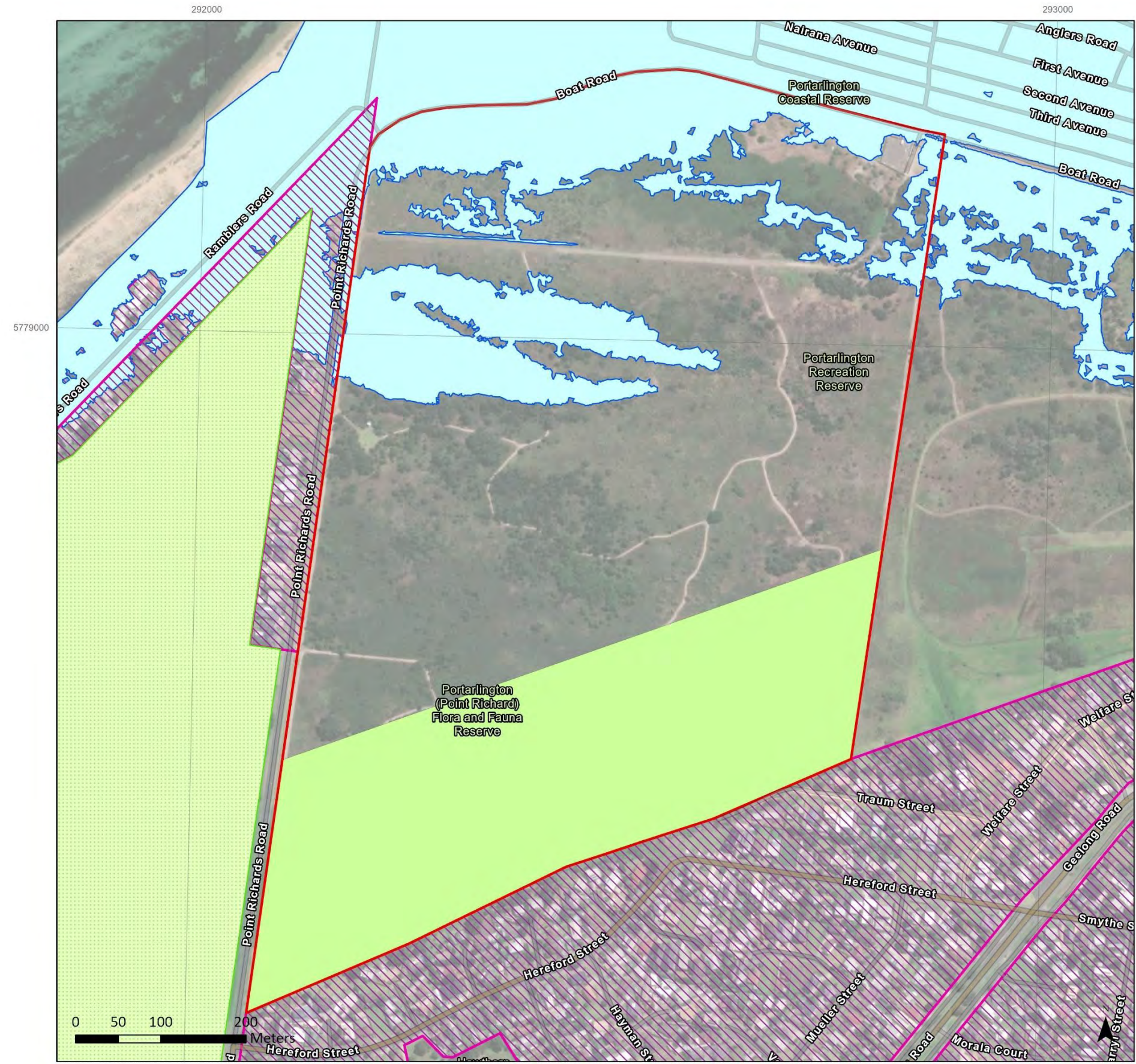


Map 10 – Modelled Ecological Vegetation Classes of Point Richards Flora and Fauna Reserve and its surrounds



Map 11 – Victorian Aboriginal Heritage Register Places of Point Richards Flora and Fauna Reserve and its surrounds





# Point Richards Flora & Fauna Reserve

## Planning

Date Exported:  
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- DDO - Design and Development
- ESO - Environmental Significance
- LSIO - Land Subject to Inundation
- SLO - Significant Landscape
- Site

Spatial Reference  
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PCS: GDA2020 Vicgrid  
GCS: GDA2020  
Datum: GDA2020  
Projection: Lambert Conformal Conic



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Map 13 – Survey locations including Weed mapping points, fuel hazard assessments, VQAs & flora survey

