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Dromana Foreshore  
DRAFT Vegetation Quality Assessment  
(Quality, EVCs, Significant Flora & Weed Species)  
Updated June 2021

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**Dromana Foreshore - Vegetation Quality Assessment**

<b>Submitted by</b>	Ranges Environmental Consulting	
<b>Authors and Contributors</b>	Katherine Smedley - fieldwork, mapping and report writing Gidja Walker - fieldwork, mapping and report review Greg James - Mapping and report review	
<b>Contact</b>	Greg James Ph: 0459 020 061 <a href="mailto:info@rangesconsulting.com.au">info@rangesconsulting.com.au</a>	Katherine Smedley Ph: 0491 711 899 <a href="mailto:ksmedleyenvconsulting@gmail.com">ksmedleyenvconsulting@gmail.com</a>
<b>Submitted to</b>	Andrew Robertson Dromana Foreshore Committee of Management <a href="mailto:arobertson2065@gmail.com">arobertson2065@gmail.com</a> 0418 442046	

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# 1 Introduction

The Dromana Foreshore Committee of Management have been managing a 3.5 km section of the Dromana beach and foreshore reserve, since 1891. They are involved in several management activities including: the boatsheds maintenance and works programs, managing remnant bushland within the adjacent 19ha Latrobe Reserve, managing foreshore vegetation, managing the Dromana foreshore caravan park, and managing the Dromana section of the Bay Trail.

The focus of this report and its associated mapping is on the indigenous vegetation management that have been undertaken along the foreshore and in Latrobe Reserve for many years.

Vegetation management along the foreshore and in Latrobe Reserve is concerned with managing and enhancing the remnant bushland vegetation. Along the foreshore the focus is on maintaining and enhancing the remnant indigenous vegetation and undertaking foreshore planting works that are based on utilising indigenous species and recreating/enhancing the original foreshore vegetation. In Latrobe Reserve the management focus is on restoring the reserve to its natural habitat.

Over the years numerous reports have been prepared that document the ecological/biodiversity values (flora, fauna and bushland vegetation) existing within the foreshore and Latrobe Reserves, and how to manage these values. Some of these reports include:

- *Latrobe Reserve Weed Strategy* (Walker and Greening, 1996)
- *Fauna Survey and Management Prescriptions for Latrobe Reserve* (Legg, 2001)
- *Habitat Restoration and Management Plan for a Selected Area of Latrobe Reserve* (Bennett and Carter, 2003)
- *Latrobe Reserve Fern Gully Management Plan* (Isbister and Shilson, 2003)
- *Fauna Survey of Dromana Foreshore Reserve and Latrobe Reserve, Dromana, May 2009 to August 2010* (Legg, 2010)
- *An Assessment of the Vegetation with a View to the Enhancement of Biodiversity on Dromana Foreshore* (Walker and Douglas, 2009).

This current report has been prepared to update, and provide comparative data, on the extent and quality of the indigenous vegetation/bushland within both reserves, as per the Scope of Works outlined in Section 1.1.

The vegetation and mapping assessments undertaken in 2020 provide updated data on the extent and quality of the indigenous vegetation/bushland within both reserves refers to the flora and vegetation data provided in these older reports. This data has also been utilised where appropriate in this report to provide comparative data that documents the indigenous bushland management improvements and declines that have occurred across both reserves since the first report and mapping data was prepared in 1996.

What was apparent during the 2020 assessments was that both the foreshore and Latrobe Reserve were actively managed and that a lot of resources and hard work had been put into managing the vegetation and controlling weeds. Both reserves were well managed, and many improvements had been made in the extent and quality (as measured by the percentage cover of indigenous to exotic vegetation) of indigenous vegetation. This was confirmed when analysing and digitising the previous vegetation cover/quality mapping for Latrobe Reserve from 1996 and digitising the vegetation community and significant species data for both the foreshore and Latrobe Reserves (1996).

Unfortunately, the assessment also confirmed there has been a decline in some values, most notably, the decline of Rough Tree-ferns *Cyathea australis* that were first documented in two of the gullies in Latrobe Reserve in 1996.

## 1.1 Scope of Works

*Ranges Environmental Consulting* was commissioned by the Dromana Foreshore Committee to undertake vegetation mapping along the Dromana Foreshore and Latrobe Reserve, which included:

- Digitising the previous hand drawn 1996 vegetation quality and 2009 EVC data, so that it is in a GIS accessible format overlaid on aerial imagery.
- Undertaking indigenous vegetation cover mapping via a 10m x 10m grid based system overlaid on aerial imagery, to provide an update on the vegetation condition along the foreshore and in Latrobe Reserve.
- Mapping the Ecological Vegetation Classes (EVCs) that occur within the Foreshore and Latrobe Reserves and presenting them in digital format.
- Compiling and mapping an inventory of significant flora species that occur along the foreshore, and in Latrobe Reserve.
- Compiling all the data and presenting it in a brief report with accompanying maps, including: EVCs, significant species, and the 1996 (Latrobe only) and 2020 (foreshore and Latrobe) indigenous vegetation cover mapping.
- The provision of management recommendations based on observations made while undertaking the mapping fieldwork.

As a component of this project, the mapping data in the 1996 and 2009 reports prepared by Gidja Walker, along with Jon Greening and Imelda Douglas has been digitised and updated; and is presented in this current report. This report also presents current broad management recommendations based on the current vegetation conditions along the foreshore and in Latrobe Reserve. As a result of this current report, most of the previous reports (except the fauna report, which was not the focus of this project) prepared for the foreshore and Latrobe Reserve are now historical documents, that are no longer current.

## 1.2 Project Area

The area of the Dromana Foreshore managed by the Dromana Foreshore Committee extends for approximately 3.2 kms from near the intersection of the Nepean Highway and Port Nepean Road to approximately 240m west of the Anthony's Nose boat ramp. The Committee also manages the 19 hectare Latrobe Reserve, a large bushland area located on the cliffs above the western half of the foreshore reserve. The study area is part of a continuous area of foreshore reserves that extends along the eastern and southern sides of Port Phillip Bay.

The Dromana foreshore comprises a mix of uses and vegetation conditions including a foreshore camping areas, many boatsheds, and areas of remnant native vegetation. The foreshore varies from approximately 10 to 50 metres wide, narrowing at Anthony's Nose, and is traversed by the shared (pedestrian and bicycle) Bay Trail. There are several car parking areas, picnic areas, the Foreshore Committee's works depot and the Dromana Boatshed.

Latrobe Reserve is one block of remnant bushland that is traversed by several walking tracks. Latrobe Reserve encompasses cliffs and gullies; and is located above the foreshore reserve.

Figure 1 on the next page illustrates the extent of the study area including the foreshore and Latrobe Reserves from Anthony's Nose at the western end of the study area, to the intersection of the Nepean Highway/Point Nepean Road to the east. This map divides the study area into the management zones outlined below.

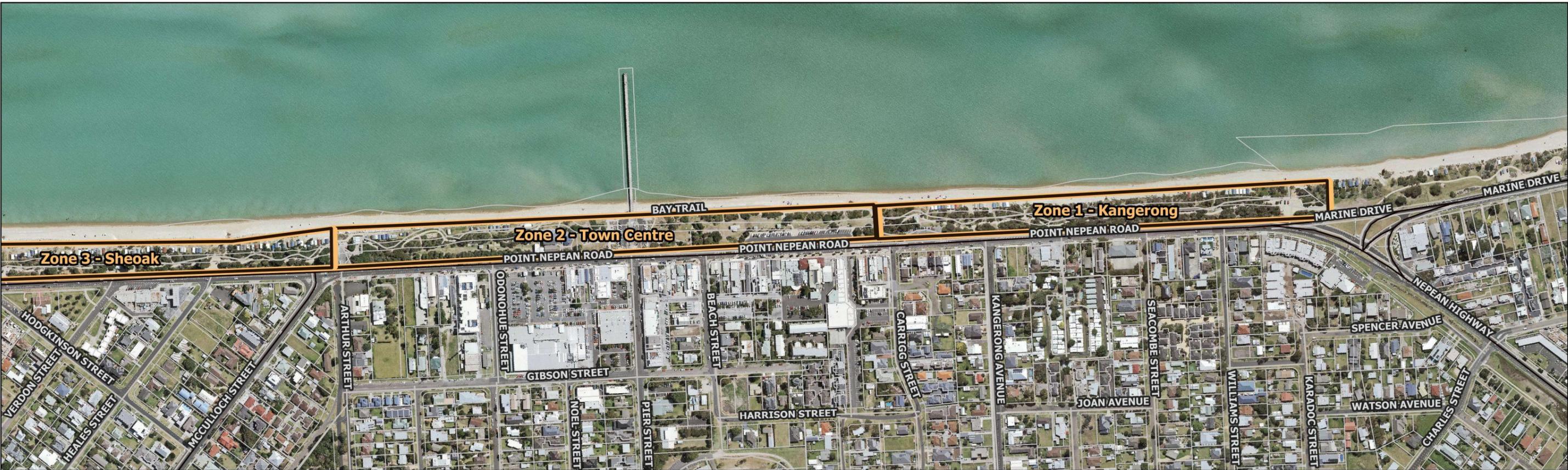
## 1.3 Management Zones along Dromana Foreshore Reserve

The *Dromana Foreshore Committee Coastal Management Plan 2014-2017* (Dromana Foreshore Committee of Management, 2014) is the current Management Plan under which management of the foreshore operates. In the Plan, the foreshore is divided into six management zones:

- Zone 1 - Kangerong
- Zone 2 - Town Centre
- Zone 3 - Sheoak
- Zone 4 - Caravan Park
- Zone 5 - Anthony's Nose
- Zone 6 - Latrobe

These management zones are referenced in this report, specifically in the mapping which divides the locations of the EVCs, weeds and significant species according to the six management zones. Any vegetation growing on the beach is presented and/or discussed in the adjacent management zone.

A brief description of each management zone is provided in Section 6.



**Project Overview**

Dromana Foreshore Biodiversity Mapping

Date: 04 March 2021

Created by: Greg James

Map Program: QGIS 3.14

 Management Zones (MZ)

0 100 200 m



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## 2 Assessment Methods

The main focus of the 2020 vegetation mapping was to record the vegetation condition, location of significant species and Ecological Vegetation Classes within the foreshore and Latrobe Reserves.

In addition, the 1996 hand drawn vegetation condition mapping of Latrobe Reserve was digitised and overlaid on aerial imagery, to provide comparative data with the 2020 vegetation condition mapping. There was no previous vegetation condition mapping for the foreshore reserve, so the 2020 vegetation condition mapping for the foreshore reserve is the baseline data for the foreshore.

The vegetation mapping fieldwork was undertaken by Gidja Walker and Katherine Smedley on the 12 and 13 October, and 7-8 November 2020.

Two previous reports prepared for the study area: *The Latrobe Reserve Weed Strategy* (Walker and Greening, 1996) and *An Assessment of the Vegetation with a View to the Enhancement of Biodiversity on Dromana Foreshore* (Walker and Douglas, 2009), was utilised extensively throughout the vegetation mapping fieldwork.

The following methods were employed to undertake the vegetation mapping work:

### 2.1 Flora

While a comprehensive flora survey was not undertaken during the course of the vegetation mapping fieldwork, records were made of significant flora species within the foreshore reserve and observations were made regarding general vegetation management recommendations.

The assessment of significant flora species along the foreshore reserve was undertaken by Gidja Walker based on her detailed knowledge of the Mornington Peninsula and the Dromana foreshore and Latrobe Reserve, and also utilised previous records from the 1996 and 2009 reports and accompanying maps highlighted above.

Plant taxonomy for common and scientific names used in this report are generally in accordance with the Victorian Biodiversity Atlas (DELWP 2019).

#### Significant Flora Species

The significant flora species recorded within this report and its accompanying maps, have been designated as significant based on detailed knowledge of the Mornington Peninsula and Port Phillip Bay foreshore, meaning that some flora species that are commonly recorded across Victoria ie: Manna Gums *Eucalyptus viminalis subsp pryoriana* and Black Wattles *Acacia mearnsii*, have been recorded as significant as they are in low numbers along the foreshore reserve. The significance ratings are based on extensive local knowledge, rather than the generic significance ratings that are frequently applied across Victoria.

The following categories have been utilised in defining significant flora species:

Category	Significant
EBPC	Conservation status under EPBC Act 1999: EX: Extinct, CR: Critically endangered, EN: Endangered, VU: Vulnerable and CD: Conservation dependent
FFG	Conservation status under FFG Act 1988: L: Listed, N: Nominated, I: Invalid or ineligible, R: Rejected and D: Delisted
VROTs	Conservation status of Threatened Flora in Victoria (DSE 2005) x: Presumed extinct, e: Endangered, v: Vulnerable, r: rare and k: poorly known
R	Regionally Significant
HL	High Local significance/few individuals along foreshore

### Limitations of Significant Flora Survey

The following considerations should be made regarding the limitations of the flora survey:

- As the survey was undertaken in late spring, past the orchid flowering species for orchid species known to occur in Latrobe Reserve; some species, particularly orchid, lily and other herbaceous species that can only be observed for a limited period of time may not have been recorded during the assessments,
- A one - off seasonal flora survey is never able to 'capture' the full suite of indigenous grassy and herbaceous species growing within a reserve, and
- With regard to these limitations, it is still considered that the majority of significant flora species within the foreshore and Latrobe Reserves were recorded based on previous surveys, maps and local knowledge.

## 2.2 Ecological Vegetation Class

Ecological Vegetation Classes (EVCs) are a method of systematic organisation of plant communities into common types that occur in similar environmental conditions throughout Victoria. Each vegetation type is identified on the basis of its floristic composition (the plant species present), vegetation structure (woodland, grassland, saltmarsh), landform (gully, foothill, plain) and environmental characteristics (soil type, climate).

DEPI EVC mapping (DEPI 2014a) was accessed to assess the EVC likely to occur on the study area. EVCs were then identified in the field according to observable attributes including dominant and characteristic species consistent with the benchmark descriptions (DEPI 2014b).

## 2.3 Vegetation Cover Mapping

Vegetation Cover mapping provides indicative data on the indigenous vegetation cover and quality in the mapped area of the foreshore and Latrobe reserves. The mapping assessed and categorised remnant vegetation along the foreshore and within Latrobe Reserves based on the upper (canopy and shrub) and lower (groundstorey) layers.

Vegetation Cover Mapping provides a useful guide for determining general vegetation management priorities along the foreshore reserve. Vegetation Cover Maps can also be utilised to monitor indigenous ground storey vegetation quality/cover across a reserve over time.

To undertake an assessment, both the indigenous upper and lower vegetation layers within an area are considered. The amount of 'indigenous' versus 'exotic' plant cover is then considered to determine the vegetation quality/cover category. Vegetation Cover Mapping along the Dromana Foreshore and in Latrobe Reserve was based on a four- colour coded rating system as presented in Table 1 below.

**Table 1. Indigenous Vegetation Quality Mapping Categories**

Colour	Indigenous Vegetation Quality
Red	<p>Less than 25% indigenous vegetation cover</p> <p>Revegetation Area- lowest priority</p> <ul style="list-style-type: none"> <li>• Low diversity of indigenous vegetation</li> <li>• High level of weed invasion and disturbance impacts</li> <li>• Aim to control weed seed production</li> <li>• May plant* in high profile areas (i.e. to create a buffer or to link higher quality areas)</li> <li>• Still may have habitat or buffer values, which weeds will be providing</li> </ul>
Orange	<p>25-50% indigenous vegetation cover</p> <p>Restoration Area- moderate priority</p> <ul style="list-style-type: none"> <li>• Moderate to low diversity of indigenous vegetation</li> <li>• Moderate to high weed invasion</li> <li>• Restore slowly</li> <li>• Aim to control weed population</li> <li>• Possible enrichment planting* after allowing time for natural regeneration</li> <li>• Semi-skilled workforce under skilled co-ordination</li> </ul>
Blue	<p>50-75% indigenous vegetation cover</p> <p>Retention area- high management priority</p> <ul style="list-style-type: none"> <li>• Moderate diversity of indigenous vegetation</li> <li>• Moderate weed invasion</li> <li>• Restore slowly</li> <li>• Aim to control weed populations</li> <li>• Possible enrichment planting* after allowing time for natural regeneration</li> <li>• Semi-skilled workforce under skilled co-ordination</li> </ul>

Colour	Indigenous Vegetation Quality
Green	<p>Greater than 75% indigenous vegetation cover</p> <p>Retention areas- highest management priority</p> <ul style="list-style-type: none"><li>• High diversity and level of structural integrity</li><li>• Aim to eliminate all weeds over time</li><li>• Retain what is left</li><li>• No planting, allow for natural regeneration/recruitment only</li><li>• Highly skilled bushland management workforce only to work in these areas- skilled in plant identification and targeted weed control works</li></ul>

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A 20m x 20m grid system was overlaid across the entire area of the foreshore reserve to ensure the accuracy of the 2020 mapping, and that each 20m x 20m grid was surveyed. It is envisaged the grid system will continue to be used as a reference in any future mapping undertaken along the foreshore reserve.

### Limitations

Issues with vegetation cover mapping include the subjectivity between different assessors and the time of year in which the mapping is undertaken. The amount of annual rainfall can influence the extent of indigenous versus exotic ground-storey vegetation present/mapped. Weeds generally prefer higher rainfall years, while less rainfall years can favour indigenous species. Over a 10 year re-assessment period it is difficult to factor in climatic influences.

## 2.4 Weed Mapping

High-risk or small patches of weeds were also mapped while traversing the foreshore and Latrobe Reserves. The observation and mapping of weed species was undertaken as incidental observations, rather than as a systematic survey of the reserves for weed species and/or patches.

## 3 Ecological Vegetation Classes

The EVC information presented within this report was obtained from the 2009 *An Assessment of the Vegetation with a View to the Enhancement of Biodiversity on Dromana Foreshore* (Walker and Douglas) report and accompanying maps for the foreshore reserve.

EVC information for Latrobe Reserve was obtained from the 1996 *The Latrobe Reserve Weed Strategy* (Walker and Greening). In 1996, vegetation was mapped as vegetation communities rather than as EVCs. The vegetation community descriptions provided in the 1996 report and its accompanying maps have been utilised to update the vegetation mapping for Latrobe reserve into EVCs.

The EVC mapping is based on topography and the vegetation present. This does mean that some previous plantings over the past 50 years may have been mapped as an EVC rather than left as unmarked revegetation beds. When planting within remnant bushland, over time it is difficult to discern remnant from planted vegetation, which can affect EVC mapping.

When maps are utilised on the ground, it is likely that some EVCs are mapped in areas where it appears that another EVC is dominant. This is where the mosaics or ecotones often occur. While remnants of the mapped EVCs were recorded in the two reserves, they were not always recorded as definite patches of one EVC, instead some mosaics/ecotones of EVCs were recorded due to the extent of modification/disturbance of the vegetation along the foreshore and Latrobe reserves.

Areas of vegetation that are not included in the EVC maps are dominated by revegetation or exotic species; or are mown open grassy areas.

The EVC maps are presented in Appendix 3 as maps 1A-1D.

### 3.1 Foreshore Reserve EVCs

The 2020 assessment determined that the EVCs along the foreshore were consistent with those that had been mapped in 2009, although the extent of some patches had increased since 2009.

The Dromana Foreshore Reserve EVC maps are presented in Appendix 3, and information on these EVCs is provided in Table 2 on the next page. The information includes the EVC benchmark descriptions/profiles prepared for the Mornington Peninsula (MP) Local Government Area by Jeff Yugovic (2002). These descriptions include vegetation structure, environment, distribution, bioregional conservation status, nearest EVC relatives, likely adjacent EVCs, a typical site, and informational notes. Some EVC benchmark descriptions from the former Department of Sustainability and Environment (DSE), now DELWP (Department of Environment, Water, Land and Planning) are also provided in Table 2.

The Conservation Status (CS) provided for each EVC is based on the significance of each EVC within the Mornington Peninsula Local Government Area. If the EVC has not been described for the Peninsula, the CS is then based on its Bioregional Conservation Status in the Gippsland Plan bioregion.

The 2009 EVC foreshore mapping also mapped a potential patch of EVC 132: Plains Grassland (as shown on Map 1C). This patch has not been re-mapped in 2020. Refer to Section 3.4 for a discussion regarding this patch.

**Table 2. Dromana Foreshore Reserve: Ecological Vegetation Class Descriptions**

EVC (and CS)	MP Benchmark Description (Yugovic 2002)	Site EVC Description (Walker and Douglas, 2009)
EVC 2: Coast Banksia Woodland (Vulnerable)	<p>Distinguished by dominant Coast Banksia; ground layer frequently has succulent creepers, these are fire retardant and tend to protect</p> <p>Banksias from fire damage; this community naturally develops from Coastal Dune Scrub (dominated by Coast Tea-tree) in the long absence of fire</p>	<p>Coast Banksia Woodland is the predominant EVC on the landward side of the Dromana Foreshore Reserve.</p> <p>The surface soils are sandy, and this vegetation develops successional over a long period of time on accreting dune systems.</p> <p>There are some localized areas of natural regeneration which are important to protect.</p>
EVC 9: Coastal Saltmarsh	<p>Usually distinguished by dominance by Shrubby Samphire or Beaded Samphire, several floristic communities comprise this EVC and planting lists must therefore be specific to each site.</p>	<p>The area behind the rock walls around Anthony's Nose is subject to salt spray and saltwater inundation due to crashing waves.</p> <p>This has created a niche for a number of Coastal Saltmarsh species. Although artificial, this EVC adds to the biodiversity and aesthetics of this section.</p> <p>Most of the area is Council Managed Land that is outside the bounds of the foreshore management committee. This zone is heavily impacted by the spraying regime around the road barriers. Changes to this regime will require negotiation with VicRoads.</p>
EVC 160: Coastal Dune Scrub (Vulnerable)	<p>Distinguished from Coastal Headland Scrub by different substrate (Yugovic 2002).</p> <p>Closed scrub to 5 m tall with occasional emergents occurring on secondary dunes along ocean and bay beaches and lake shores.</p> <p>Occupies siliceous and calcareous sands that are subject to high levels of salt spray and continuous disturbance from onshore winds (DSE 2004).</p>	<p>Coastal Dune Scrub forms a protective barrier on the seaward side of the Coast Banksia Woodland.</p> <p>The location of beach boxes and other infrastructure has fragmented much of this EVC.</p> <p>It forms on the front of the primary dune system and plays an important role in sand accretion and stabilization.</p> <p>It is characterized by its dense structure and its location on the Primary Dune. It is mostly dominated by Coast Tea-tree (<i>Leptospermum laevigatum</i>) or Coast Wattle (<i>Acacia sophorae</i>).</p>
EVC 311: Berm Grassy Shrubland (Endangered)	<p>Shrubland to 2 metres occurring on deep sand on beaches partially protected from wind.</p> <p>Distinguished by abundant Coast Saltbush <i>Atriplex cinerea</i>.</p>	<p>Occurs on the primary dune facing the Bay, in combination with EVC 160: Coastal Dune Scrub.</p> <p>Degraded patches of this vegetation type occur in patches along the foreshore on both artificial berms and those created by coastal processes.</p>

EVC (and CS)	MP Benchmark Description (Yugovic 2002)	Site EVC Description (Walker and Douglas, 2009)
		<p>It tends to be species poor in terms of plants species with Coast Salt-bush (<i>Atriplex cinerea</i>) dominating. It is however important habitat for Skinks and Butterflies, and important for Coastal processes.</p>
<p>EVC 656: Brackish Wetland (Vulnerable)</p>	<p>Distinguished by salt marsh and freshwater wetland species, often dominated by Sea Rush, Salt Club-sedge or Common Reed (DSE 2004).</p>	<p>This EVC occurs on estuarine drainage lines, subject to variable salinity.</p> <p>This vegetation type is at increasing risk, due to drainage works. A few small remnants exist on this section of the Dromana Foreshore Reserve.</p> <p>Wetland systems such as these are important in maintaining water quality.</p> <p>Wet areas are also important refugia for fauna during hot weather and a number of species may depend on them</p>
<p>EVC 879: Coastal Dune Grassland (Endangered)</p>	<p>Distinguished by dominance by beach grass Hairy Spinifex, habitat subject to invasion by introduced Marram Grass. (Yugovic 2002).</p> <p>Consists of grasses and halophytes (succulents) that colonise the fore dunes of ocean beaches (DSE 2004).</p>	<p>This EVC occurs on the strandline above the high tide mark and forms the first barrier to the marine environment and its effects.</p> <p>The species present determines the shape of the dune that will form with sand accretion.</p> <p>The introduced Marram grass (<i>Ammophila arenaria</i>) forms a steep dune front, which later becomes undermined through wave action and collapses.</p> <p>The indigenous Hairy Spinifex (<i>Spinifex sericeus</i>) produces a gentler gradient and due to its habit is ideally suited to colonizing these dune fronts.</p> <p>It also produces a perfect habitat for regeneration, leading to the succession into a primary dune system, supporting Coastal Dune Scrub and later, Coast Banksia Woodland.</p>

### 3.2 Latrobe Reserve EVCs

The 2020 assessment was utilised to confirm the previously mapped (in 1996) vegetation communities and to re-classify and map these communities into EVCs.

The Latrobe Reserve EVC maps are also presented in Appendix 3 (Map 1D), and information on these EVCs is provided in Tables 3 and 4. Mosaics/eco tones have also been mapped in Latrobe Reserve.

The information includes the EVC description as per the Mornington Peninsula descriptions (Yugovic 2002) and descriptions of the EVC as they occur within Latrobe reserve.

The Conservation Status (CS) provided for each EVC is based on the significance of each EVC within the Mornington Peninsula Local Government Area. If the EVC has not been described for the Peninsula, the CS is then based on its Bioregional Conservation Status in the Gippsland Plan bioregion.

**Table 3. Latrobe Reserve: 1996 vegetation Communities and 2020 EVC Descriptions**

1996 Description (Walker and Greening)	Corresponding EVC (and CS)	2020 Description
<b>1996 vegetation community: Banksia/Sheoak Woodlands</b>		
Located on the cliff tops, forming closed scrub to open woodland.	EVC 2: Coast Banksia Woodland (vulnerable)	Predominantly mapped as Grassy Woodland along the higher edge of the reserve, adjacent to Latrobe Parade. Contains eucalypts or Sheoaks in the overstorey.
The Coast Banksia prefers the south-westerly aspect of the gullies, while the Sheoak tolerates the more exposed cliff top areas.	EVC 175: Grassy Woodland (endangered)	Mapped as a mosaic of Coast Banksia Woodland/Coastal Dune Scrub along the lower edge of the reserve, adjacent to Point Nepean Road. This EVC is a mix of Coast Banksias, Coast Tea-tree or Coast Wattle in the overstorey layer; and is a mix of open areas and closed scrub.
<b>1996 vegetation community: Coastal Cliffs</b>		
This community occurs on skeletal soils that are highly alkaline due to of salt spray.	EVC 2: Coast Banksia Woodland (vulnerable)	Also mapped as either Grassy Woodland or the Coast Banksia Woodland/Coastal Dune Scrub mosaic.
Vegetation consists of espaliered shrubs (due to salt spray) lower down to grassy woodland higher up the cliff face.	EVC 175: Grassy Woodland (endangered)	Mostly occurring at the bottom of the cliff faces.
<b>1996 vegetation community: Coastal Manna Gum Open Forest</b>		
Located on the slopes and escarpment. An open forest with a grassy or layered understorey, or if frequently disturbed develops as a shrub woodland.	EVC 3: Damp Sands Herb-rich Woodland (vulnerable)	Mapped as Damp Sands Herb-rich Woodland along the top edge of the reserve, adjacent to Latrobe Parade.

1996 Description (Walker and Greening)	Corresponding EVC (and CS)	2020 Description
<p>Generally higher quality patches with an open canopy structure and lots of species diversity in the understorey. This EVC contains eucalypts in the overstorey.</p>		
<p><b>1996 vegetation community: Swamp Paperbark Scrub</b></p>		
<p>Occurs on consistently wet soils. Formation ranges from grassy woodland to closed scrub (possibly dependent on water availability and age of stand). Dominated by Swamp Paperbark (<i>Melaleuca ericifolia</i>). Included Common Reed (<i>Phragmites australis</i>) in wetter sites.</p>	<p>EVC 53: Swamp Scrub (endangered) Mosaic: Swamp Scrub/ Reed Swamp</p>	<p>Mapped as Swamp Scrub in the lower/wetter areas in the lower/wetter areas of the reserve. Patches dominated by Swamp Paperbark in the overstorey layer. Also mapped as a mosaic of Swamp Scrub/Reed Swamp in the area where the understorey is dominated by Common Reed.</p>
<p><b>1996 vegetation community: Wet Fern Gullies</b></p>		
<p>Gully bottoms with permanent stream flow and shelter from wind and high insolation. Determined by the presence of Rough Tree Ferns <i>Cyathea australis</i>. Most disturbed community in the study area with Blackberry invasion, loss of canopy cover and changes to drainage patterns. Community not previously recorded for the shores of Port Phillip Bay, likely occurred in some gullies around Mt Martha. Occurs in two gullies; some of the surviving tree ferns are quite tall (2-4m).</p>	<p>EVC 902: Gully Woodland (endangered)</p>	<p>Gullies and sheltered slopes, relatively well-drained soils. Includes the two gullies where Rough Tree Ferns were recorded previously. Gullies are no longer permanently wet due to changes to stormwater flow off Latrobe Parade. Immediate impact has been the decline of tree fern populations. Longer terms impacts could be erosion/crumbling of the cliff faces above Anthony's Nose.</p>

### 3.3 Latrobe Reserve- EVCs Mapped in 2020

Two additional EVCs have been recorded in Latrobe Reserve due to the 2020 vegetation mapping. Previously the vegetation in these EVCs was grouped in the Banksia/Sheoak Woodland community.

These two EVCs are outlined in Table 4 below.

**Table 4. Latrobe Reserve: 2020 Additional EVC Descriptions**

EVC (and CS)	MP Benchmark Description (Yugovic 2002)	Site EVC Description (Walker 2020)
EVC 48: Heathy Woodland (Vulnerable)	Distinguished by dominant Manna Gum or Narrow-leaf Peppermint with Heath Tea-tree or Austral Grass-tree prominent in understorey.	Within the reserve, the presence of this EVC is indicated by the presence of Black Sheoak ( <i>Allocasuarina littoralis</i> ) and Sand-hill Sword sedge ( <i>Lepidosperma sieberi</i> ).
EVC 160: Coastal Dune Scrub (Least Concern)	Distinguished from Coastal Headland Scrub by different substrate (Yugovic 2002). Closed scrub to 5 m tall with occasional emergents occurring on secondary dunes along ocean and bay beaches and lake shores. Occupies siliceous and calcareous sands that are subject to high levels of salt spray and continuous disturbance from onshore winds (DSE 2004).	Two patches characterized by a dense structure that are dominated by Coast Tea-tree ( <i>Leptospermum laevigatum</i> ) or Coast Wattle ( <i>Acacia sophorae</i> ). The patches include Kidney Weed ( <i>Dichondra repens</i> ), Coast Beard-heath ( <i>Leucopogon parvifolius</i> ) and Seaberry Saltbush <i>Rhagodia candolleana</i> . The smallest patch could be due to post-fire Tea-tree regeneration from the 1950s fire that occurred in the reserve.

### 3.4 Potential EPBC Act Listed Threatened Community

One modified patch of the potential Environment Protection and Biodiversity Conservation (EPBC) Act listed threatened ecological community: Natural Damp Grassland of the Victorian Coastal Plains, was identified at the eastern end of the foreshore reserve in Zone 1: Kangerong.

Natural Damp Grassland of the Victorian Coastal Plains is a type of grassland that is generally found on heavy grey silty-loamy soils and tends to occur on floodplains/areas that receive higher rainfall and have poor drainage, becoming seasonally waterlogged. The grassland has a variable floristic composition but generally is dominated by tussock grasses, notably *Themeda triandra* (Kangaroo grass) on the drier sites or *Poa labillardierei* (Tussock grass), on wetter sites. A range of other grasses and forbs occur, including forbs associated with damp sites. Species composition depends on season and moisture availability at a site. The community is limited to southern Victoria and has a disjunct distribution on the coastal plains, with known occurrences in the Mornington Peninsula (TSSC, 2014).

The potential patch has been overlaid on the EVC mapping, and currently the vegetation within the potential patch is a mix of EVC 160: Coastal Dune Scrub and unmapped patches of remnant vegetation.

These unmapped patches are not mapped as an EVC as there is no EVC description for the Gippsland Plain bioregion that fits this type of grassland. In the 2009 mapping, some of the patches of this grassland were mapped as EVC 132: Plains Grassland, which is the 'best fit'; however technically EVC 132: Plains Grassland does not occur in the Gippsland Plain bioregion. This is one of the limitations of EVC mapping, sometimes there are vegetation communities which do not fit/meet the EVC descriptions provided for a bioregion. Figure 2 below depicts the location of the potential patch.

The potential patch of Natural Damp Grassland of the Victorian Coastal Plains, (depicted by the red outlined polygon) overlaid over the mapped and unmapped EVC patches.



Figure 2. Potential Patch of the EPBC Listed Damp Grasslands Community

## 4 Significant Flora Species

A list of flora species in the study area, including the foreshore reserve and Latrobe Reserve is provided in Appendix 1.

A list of significant flora species recorded in the foreshore and Latrobe Reserves is provided in Table 5 below, which combines data from the 1996, 2009 and 2020 surveys. Significant species are considered to be those listed as State threatened, plus species occurring along the foreshore that are known to be of Regional and High Local significance, based on local knowledge of remnant vegetation within the Mornington Peninsula.

The locations of the species are depicted in Appendix 2 Maps 3A-3F

**Table 5. Significant Flora Species**

R- Regionally Significant    VROTS – Victorian Rare and Threatened Species  
HL- High Local significance/few individuals growing on foreshore or in Latrobe Reserve

Botanical Name	Common Name	Significance		Comments
		VROTS	Regional /Local	
<i>Acacia mearnsii</i>	Black Wattle		HL	
<i>Acacia melanoxylon</i>	Blackwood		HL	
<i>Acacia paradoxa</i>	Hedge Wattle		HL	
<i>Adriana quadripartita (pubescent)</i>		FFG listed		FFG Act listed
<i>Allocasuarina littoralis</i>			HL	Been impacted by power pole pruning along Latrobe Parade
<i>Allocasuarina verticillata</i>	Drooping Sheoak		HL	Locations not indicated in map- common in Latrobe especially along escarpment
<i>Alyxia buxifolia</i>	Sea Box		R	
<i>Arthropodium sp ?3</i>			R	
<i>Astroloma humifusum</i>			HL	
<i>Atriplex cinerea</i>			L	
<i>Banksia integrifolia</i>	Coast Banksia		R	Individual locations not mapped, apart from a few very large, old ones
<i>Baumea juncea</i>			HL	
<i>Billardiera scandens</i>			L	
<i>Blechnum nudum</i>			L	A large patch in Swamp Scrub under Bleeding heart Plant
<i>Blechnum wattsii</i>	Hard Water-fern		HL	Locations documented in Latrobe Reserve fern Gully Management Plan (Isbister and Shilson, 2003).
<i>Bossiaea prostrata</i>			L	
<i>Bursaria spinosa</i>	Sweet Bursaria		HL	Present- but locations not mapped

Botanical Name	Common Name	Significance		Comments
		VROTS	Regional /Local	
<i>Calocephalus lacteus</i>	Milky Beauty-heads		HL	
<i>Carpobrotus rossii</i>	Karkalla		R	
<i>Carex appressa</i>	Tall Sedge		L	
<i>Cassinia sp ?sifton plant</i>				Check status- weed or significant species?
<i>Chrysocephalum apiculatum</i>			HL	
<i>Comesperma volubile</i>	Love Creeper		HL	
<i>Correa alba</i>	White Correa		HL	Planted?
<i>Cyathea australis</i>	Rough Tree-fern		HL	Locations documented in Latrobe Reserve fern Gully Management Plan (Isbister and Shilson, 2003). Now many dead and population has declined
<i>Dianella brevicaulis</i>			L	
<i>Dianella longifolia</i>			HL	
<i>Dianella revoluta var revoluta</i>			HL	
<i>Deyeuxia sp</i>			L	
<i>Dichelachne crinita</i>			L	
<i>Distichlis distichophylla</i>	Australian Salt-grass		L	
<i>Disphyma crassifolium subsp. c lavellatum</i>	Rounded Noon-flower		L	
<i>Eucalyptus cephalocarpa</i>			HL	Big old tree. Potentially a hybrid
<i>Eucalyptus viminalis subsp. pryoriana</i>	Manna Gum		HL	Big old ones in Latrobe Reserve
<i>Frankenia pauciflora</i>			HL	
<i>Glycine clandestina</i>			L	
<i>Goodenia geniculata</i>			HL	
<i>Hemichroa pentandra</i>			HL	
<i>Hemarthria uncinata</i>			HL	
<i>Lepidosperma gladiatum</i>	Coast Sword - sedge		R	
<i>Lepidosperma ?laeve</i>	Sword-sedge		HL	
<i>Lobelia anceps</i>			L	
<i>Lomandra long</i>			L	
<i>Luzula sp</i>			HL	
<i>Melaleuca lanceolata subsp. lanceolata</i>	Moonah		R	Planted?
<i>Microtis spp</i>	Onion - orchid		R	Present- but locations not mapped
<i>Muehlenbeckia adpressa</i>	Climbing Lignum		R	

Botanical Name	Common Name	Significance		Comments
		VROTS	Regional /Local	
<i>Myoporum petiolatum</i>	Sticky Boobiolla		R	
<i>Olearia glutinosa</i>	Sticky Daisy - bush		R	Planted? Locations not mapped
<i>Olearia sp2 Morn Pen</i>	Peninsula Daisy - bush	r		? Planted
<i>Oxalis rubens</i>	Dune Wood - sorrel	r	HL	
<i>Ozothamnus ferrugineus</i>	Tree Everlasting		HL	Locations not mapped, but occur in Latrobe Reserve
<i>Oxalis thompsoniae</i>	Fluffy-fruit Wood-sorrel	k	HL	
<i>Pelargonium australe</i>	Austral Stork's - bill		R	Present- but locations not mapped
<i>Pelargonium inodorum</i>			R	
<i>Pomaderris paniculosa subsp. paralia</i>	Coast Pomaderris		R	Present- but locations not mapped
<i>Pterostylis nana</i>			R	
<i>Pterostylis nutans</i>	Nodding Greenhood		L	
<i>Pterostylis pedunculata</i>	Maroonhood		R	Present- but locations not mapped
<i>Pterostylis sp</i>			?	Need to confirm which species
<i>Rubus parvifolius</i>	Small - leaf Bramble		HL	Present- but locations not mapped
<i>Rytidosperma caespitosum</i>			HL	
<i>Samolus repens</i>			HL	
<i>Senecio quadridentatus</i>	Cotton Fireweed		L	
<i>Salsola tragus subsp. pontica</i>	Coast saltwort	r		
<i>Solanum ?vescum</i>			R	
<i>Sonchus hydrophilis</i>	Native Sow - thistle		R	
<i>Spergularia marina</i>	Lesser Sea-spurrey		R	New record for Mornington peninsula (ALA)
<i>Spinifex sericeus</i>	Hairy Spinifex		HL	
<i>Thelymitra rubra</i>	Salmon Sun-orchid		HL	
<i>Thelymitra spp.</i>	Sun - orchid		HL	
<i>Tricoryne elatior</i>			HL	
<i>Triglochin striata (broad form)</i>			R	The broad-leaf form is in the process of being separated taxonomically from the more common terete form
<i>Viminaria juncea</i>			HL	Planted?

## Summary of Significant Flora Species

All local species occurring on the foreshore and in Latrobe Reserve are considered to be significant due to the depletion of the remnant coastal vegetation along Port Phillip Bay, the on-going pressures from competing land use interests along the foreshore, and on-going urban development on the opposite side of the foreshore reserve/Nepean Highway.

## 5 Comparative Mapping

As outlined previously, the main focus of the 2020 project was to undertake current mapping and (where available) to digitise the hand drawn 1996 and 2009 mapping of:

- Ecological Vegetation Classes
- Vegetation Quality (extent of indigenous vegetation cover) and,
- Significant Flora Species.

In addition, information regarding specific management issues and/or weed species is also provided, that informs the management recommendations/issues observed during the site assessments.

As the Dromana Foreshore is divided into six management zones, Section 7 of this report outline the six management zones and present the mapping associated with each zone (vegetation quality/extent of indigenous vegetation cover, EVCs, significant flora species and/or management observations).

The aim of digitising and/or re-mapping these three aspects of indigenous vegetation along the foreshore and in Latrobe Reserve was to provide updated ecological condition data for the reserves, and to provide comparative data on changes in the extent of vegetation quality/the extent of indigenous vegetation cover for Latrobe Reserve.

A brief discussion on the three types of vegetation mapping undertaken for this project is provided below:

### 5.1 EVC Mapping 1996/2009 and 2020

Maps 1A-1D of Appendix 3 illustrates the EVC mapping across the project areas.

Due to the extent of modification, presence of indicator species were used to determine the original EVC's that are likely to have occurred in what is now a disturbed landscape. This is especially the case for the original EVCs that would have occurred along the foreshore dunes which now many populations of the introduced Marram Grass (ie: EVC 879: Coastal Dune Grassland).

With regard to biodiversity values, the ecotones (area along the border) between EVC's is where the biodiversity values are highest, and a number of ecotones interconnect where the nodes of highest biodiversity values occur.

#### Foreshore Reserve

The EVC mapping was primarily undertaken in 2009, with visual confirmation of the areas mapped in 2020. The 2009 hand drawn EVC mapping has been digitised and overlaid on aerial imagery of the foreshore reserve (as shown on Maps 1A-C).

During the 2020 assessments, the following observations were made regarding differences between the 2009 and 2020 vegetation condition and EVC mapping:

- The 2009 extent of some of the EVC patches have since extended, that is some patches had increased in area.
- In some areas, patches that were clearly revegetation in 2009, have now been mapped as EVC patches, as the extent of revegetation combined with natural regeneration has now recreated patches of bushland.
- Scattered trees (ie: the scattered Coast Banksias in the caravan park area) have now been mapped as EVC 2: Coast Banksia Woodland, as there was often some understorey associated with these trees (ie: Seaberry Saltbush *Rhagodia candolleana* or Bower Spinach *Tetragonia implexicoma*

### Latrobe Reserve

When the vegetation type mapping was undertaken in Latrobe Reserve in 1996, vegetation was mapped according to Vegetation Communities rather than as EVCs.

A component of the assessments undertaken in 2020 was to convert the 1996 vegetation communities into EVCs (as shown in Map 1D). During this process, two additional EVCs were identified in the reserve than had been originally mapped.

## 5.2 Vegetation Quality Mapping

### Foreshore Reserve

As outlined previously, there was only previous vegetation quality mapping available for Latrobe Reserve. The vegetation quality mapping undertaken in 2020 along the foreshore reserve is the first dataset for this type of mapping, as is considered to be the baseline data from which to record and compare any changes in vegetation quality/the extent of indigenous vegetation cover into the future.

### Latrobe Reserve

As shown in Appendix 3 (Maps 2A-2B), visual comparisons between the 1996 and 2020 vegetation quality mapping for Latrobe Reserve shows there has been general improvements in vegetation quality across the reserve. These changes are attributable to the 24 years of management works that have occurred in Latrobe Reserve since the 1996 maps were prepared. Table 6 shows the comparative cover between the 1996 and the 2020 surveys including total hectares and percentage of each vegetation category of the total hectares assessed.

**Table 6. Extent of Mapped Vegetation Cover**

Year of Vegetation Quality Mapping	Vegetation Quality Category								Total Hectares Mapped
	1996 Survey 0 - 40% indigenous vegetation cover		1996 Survey 40 - 60% indigenous vegetation cover		1996 Survey 60 - 80% indigenous vegetation cover		1996 Survey 75-100% indigenous vegetation cover		
	2020 Survey 0-25% indigenous vegetation cover		2020 Survey 25-50% indigenous vegetation cover		2020 Survey 50-75% indigenous vegetation cover		2020 Survey 75-100% indigenous vegetation cover		
1996 (Latrobe Reserve)	8.78ha	66.02%	2.89ha	21.77%	1.443 ha	10.77%	0.19 ha	1.44%	13.31ha
2020 (Latrobe Reserve)	1.06ha	11.39%	3.66ha	39.43%	3.38ha	36.35%	1.19ha	12.83%	9.20ha
Latrobe Reserve % Difference between 1996 and 2020	7.72 hectares less of lowest quality (RED)		0.77 Hectares more of low quality (Orange)		1.94 Hectares more moderate-high quality (Blue)		1 hectares more of the Highest Quality (Green)		
2020 Foreshore Reserve	0.245 ha	5.9%	1.475 ha	35.9%	2.22 ha	54.2%	0.164Ha	4%	4.11 ha

It is important to note that while there appears to be substantial improvements in Latrobe Reserve as indicated in the mapping and the table above, the 4 vegetation quality categories applied in 1996 (0-40%, 40-60%, 60-80%, 80-100%) differ marginally though not insignificantly from the 4 vegetation quality categories applied in 2020 (0-25%, 25-50%, 50-75%, 75-100%). However, the most important contrast between the survey periods is the significant increase in the highest vegetation quality category (Green). The difference in survey parameters is negligible (80-100% vs 75-100%), however, the extent of vegetation in this category has increased by 1 hectare.

Another factor to acknowledge is the difference in hectares surveyed. A total of 13.31 hectares of Latrobe reserve was surveyed in 1996 compared to 9.2 hectares in 2020. The difference is attributable to:

- Many areas on the fringes of the reserve were not mapped in 2020 as these areas are currently mown fire breaks or open space areas. All of these areas were mapped in 1996 and were assigned the lowest category (Red).
- The main paths and walking tracks were not included in the 2020 mapping whereas the 1996 mapping tended to incorporate these areas as a part of the broader areas of vegetation.
- Unlike the 1996 survey, the 2020 survey did not include mapping of a section in the north west corner of the reserve. The 2020 survey was limited to designated Crown land. The remaining areas of the reserve to the west is land owned and managed by Mornington Peninsula Shire.

## 5.3 Significant Flora Species Mapping

While incredibly detailed, the 1996 significant species data for Latrobe Reserve and the 2009 significant flora data for the foreshore reserve was difficult to read and decipher. Therefore, some valuable management information may have been lost over time.

Due to the level of detail in the 1996 and 2009 significant flora species maps, it was determined that it was best to re-do the significant flora mapping. Therefore, all significant flora species noted during the 2020 assessments have now been recorded with GPS technology and this data is available as spatial GIS layers (with GPS coordinates).

The one exception to this is that the approximate location of the two gullies in Latrobe Reserve where the Rough Tree-ferns (and Hard Water-fern *Blechnum wattsii*) were mapped in 1996 and 2009. These locations have been provided in the 2020 mapping.

As the mapping was re-done in 2020, no comparative data is available on the locations and numbers of flora species recorded as significant in 1996, 2009 and 2020 across the reserves. However, as the 2020 data is available digitally, it will now be easier for the Committee, Foreshore ranger and others to track the increase/decline in significant species (and in particular locations).

In addition, the 2020 mapping is a digital mapping layer that can now be utilised as an on-going mapping tool that can be added to over time if new locations/specimens of significant flora species are recorded.

Due to time constraints, a systematic survey of the foreshore reserve for significant flora species was not undertaken. The significant flora species recorded are those observed while using the 'random meander' survey method (ie: walking across a reserve rather than along transects) across the reserves.

Maps 3A-1F of Appendix 3 illustrates the significant flora species mapped across the project areas.

## 5.4 Weeds within the Foreshore and Latrobe Reserves

High-risk individual and/or small patches of weed species were mapped along the foreshore and Latrobe reserves. Maps illustrating significant weeds are provided in Appendix 3 (Maps 4A-G).

On-going weed control works along the reserves is one of the main management objectives that facilitate an increase in the area and quality of indigenous vegetation patches.

Weeds vary in their ability to invade and dominate indigenous vegetation. Some will disappear or be reduced overtime if the disturbance or threatening process is removed or management regimes are changed. Others have spread throughout the reserves over a long period of time and will require a long-term management approach to be controlled/eliminated. Others are new arrivals of varying risk but are the easiest to eliminate before they spread. Considerations in undertaking weed control works are:

- Whether a particular plant is actually an invasive weed?
  - Correct identification is an essential first step.

- If you are not sure, then don't remove it.

The second consideration is:

- How long has it been there and whether it is serving a function within the ecosystem?
- Is it providing habitat for fauna, shade for groundstorey ecosystems or erosion control on a primary dune system?

The responses to these questions may then determine the type of weed control required and may help guide weed control programs. Appendix 2 provides an example of a weed prioritisation system that can be utilised to assist in planning and prioritising weed management programs.

## 6 Management Zone Descriptions

Descriptions of the management zones are provided below from the *Dromana Foreshore Committee Coastal Management Plan 2014-2017* (DFCOM, 2014), along with images that depict the extent and location of each zone. The project area include 6 zones in total from east to west:

- Zone 1 - Kangerong
- Zone 2 - Town Centre
- Zone 3 - Sheoak
- Zone 4 - Caravan Park
- Zone 5 - Anthony's Nose
- Zone 6 - Latrobe

Maps in Appendix 3 illustrate the various management zones. Maps 5A-D also include specific management considerations within each of the zones.

### Zone 1: Kangerong

Zone 1- Kangerong is located at the eastern end of the foreshore reserve, beginning at the intersection of the Nepean Highway and Point Nepean Road. It is the eastern portion of the study area between the Nepean Highway intersections of Marine Drive and Carrigg Street.

It is managed for low key recreation facilities/activities and pedestrian access, to reinforce the coastal image at the gateway to Dromana, and to preserve and enhance the remnant indigenous vegetation.

Figure 3. Extent of Zone 1

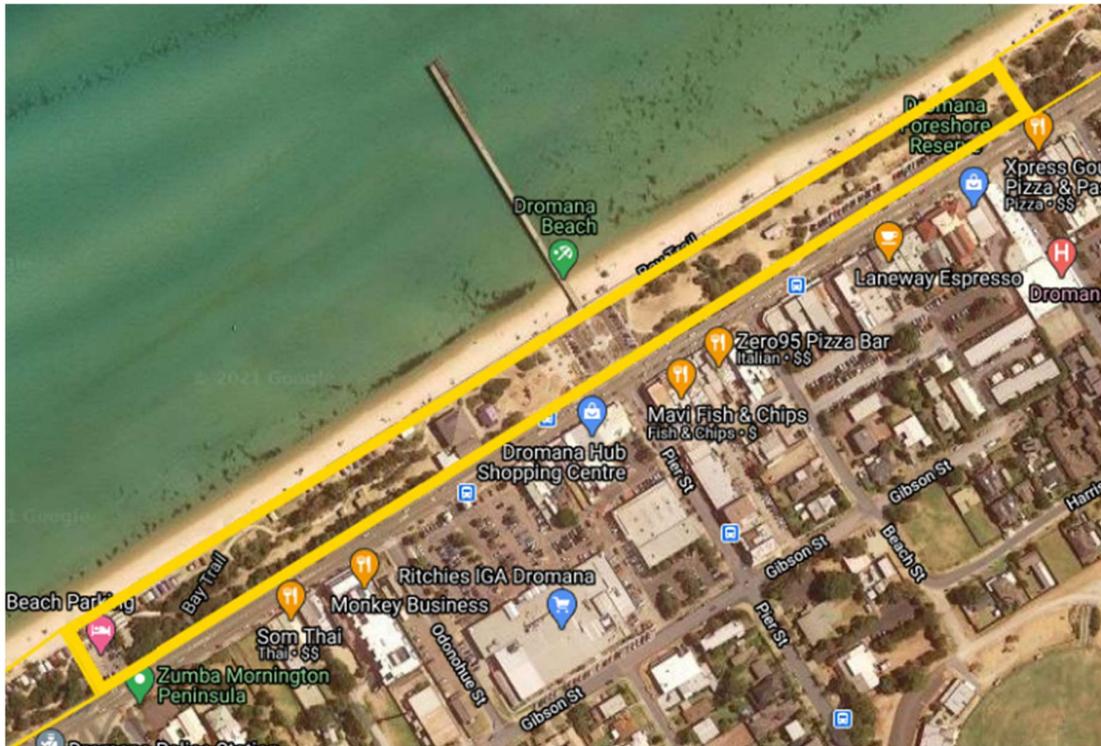


## Zone 2: Town Centre

Zone 2- Town Centre is located either side of the pier between the Nepean Highway intersections of Carrigg Street and Arthur Street. While the Committee does not manage the facilities in this area, they do manage some areas of (remnant) vegetation.

This area was not a high priority for the site assessments, and only limited data was collected.

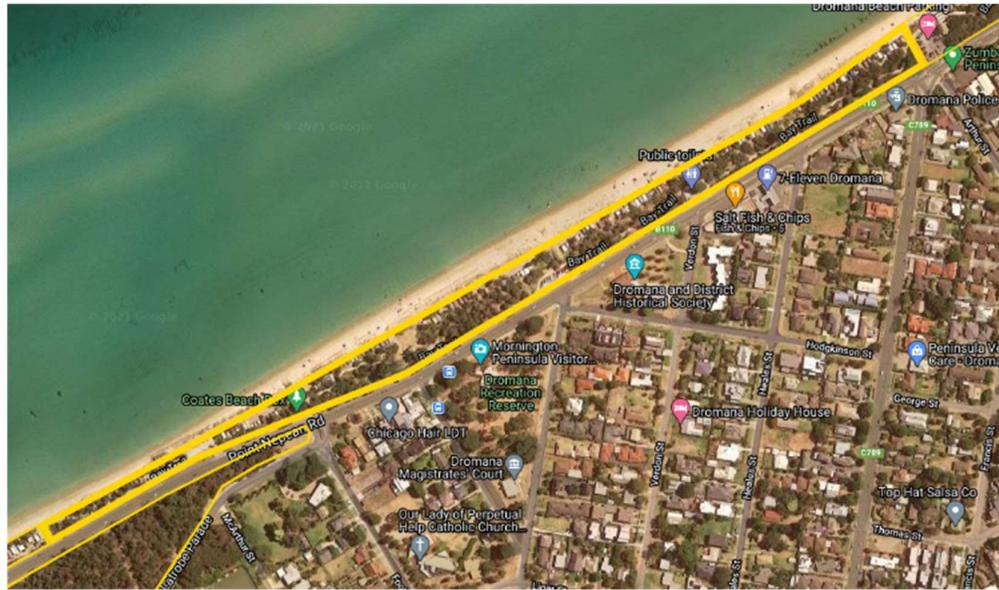
Figure 4. Extent of Zone 2



## Zone 3: Sheoak

Zone 3 – Sheoak is located to the west of Zone 2: Town Centre (west of McCulloch Street). This zone is managed for picnic facilities and to improve pedestrian access along the foreshore. It is also managed to preserve and enhance the remnant vegetation through formalising access and installing barriers to protect vegetation.

Figure 5. Extent of Zone 3



#### Zone 4: Caravan Park

Zone 4 – Caravan Park is located near Anthony’s Nose, and La Trobe Reserve, at the western end of the Reserve. Management of the Caravan Park requires ongoing maintenance and improvements to develop the facilities to a standard that provides access for Reserve users with disabilities, and to improve amenity and safety for Caravan Park patrons. Maintenance and improvement of native vegetation in this area is also important to maintain the natural landscape

Figure 6. Extent of Zone 4



### Zone 5: Anthony's Nose

Anthony's Nose is the western most zone in the Foreshore Reserve. The Committee manages this area to continue the tradition of boating at the Dromana, so the area must be maintained for car parking and boat launching, as well as safe vehicle and pedestrian access. There is a need to connect pedestrian access between Dromana and McCrae with completion of the Bay Trail along this section of the reserve. The area needs work to improve the visual impact of the car park area.

Figure 7. Extent of Zone 5



### Zone 6: Latrobe

Zone 6 – La Trobe refers to the La Trobe Reserve, located on the landward side of Point Nepean Road. It is the largest zone in the foreshore.

The La Trobe zone contains significant flora and fauna communities and is managed to protect these while still providing for pedestrian access and encouraging engagement, use, interaction and community participation, appreciation and education. There are some designated walking tracks through Latrobe that link with the Bay Trail, Two Bays walking track and Arthur's Seat.

Figure 8. Extent of Zone 6 – Latrobe Reserve



## 7 Management Discussion/Recommendations

In conjunction with the vegetation mapping, observations were made along the foreshore and in Latrobe Reserve of vegetation management concerns and/or issues. The maps are [provided in Appendix 3 (Maps 5A-D).

These issues/observations are either general management issues/observations that apply across the foreshore and Latrobe Reserves or they are specific to one (or several) of the management zones.

These management issues/observations are presented below, with a brief discussion and/or management recommendations provided for some of the topics. The discussion also differentiates whether the management issue is general to the study area (both the foreshore and Latrobe Reserves) or is specific to one of the six management zones.

While not a discussion point, it should be mentioned that some potential asbestos was observed in Latrobe Reserve (shown in Map 5B).

While not discussed as a topic, foreshore vegetation has an important role to play in managing beach side erosion and in mitigating the impacts of sea surges and shifting sand. Foreshore vegetation will be integral in managing the increasing impacts of sea level rises. Foreshore vegetation is the 'first line of defense' between the beach and development on the other side of Point Nepean Road. As such foreshore vegetation is a valuable asset for the entire Mornington Peninsula community. It is a theme among some of the topics discussed below that this asset is being impacted by the works of other authorities.

While beyond the scope of this project (and the Foreshore Committee), the increasingly important role that foreshore vegetation plays and the on-going impacts upon it by other factors needs to be recognised, and steps implemented that place a value on foreshore vegetation, which then leads to action/s being undertaken by everyone to minimise their impacts on this fragile ecosystem.

The management topics are discussed below and several of the topics/recommendations overlap.

### 7.1 Infrastructure Impacts (General)

Impacts from infrastructure were noted along the length of the foreshore and in Latrobe Reserve as discussed below:

#### Infrastructure Impacts- Foreshore Reserve

Impacts (cut, damaged and/or removed vegetation) were observed around road signs and the bus stops along the foreshore reserve. Most of the impacts were noted along the Point Nepean Roadside of the reserve. While it is other authorities causing these impacts to maintain their infrastructure, they are causing impacts to assets within the reserve.

While this is always going to be an issue in a narrow linear reserve located next to a major road, a value needs to be placed on vegetation, so that Committees who manage vegetation have negotiating power with other authorities so the impacts can be minimised and works undertaken in a more sensitive manner.

### Power-line Maintenance Latrobe Reserve

Maintenance of the power lines along Latrobe Parade is having an impact on the trees/shrubs that are growing under the power lines. The tops of them are being chopped off, and the pruning is not undertaken in a sensitive manner. While this is being undertaken by the power authority, it is impacting on one of the Foreshore Committees assets- the vegetation and larger trees/s.

It is unclear what negotiating ability the Committee would have (if any) with regard to the pruning method; but establishing a Large Tree Inventory would provide data on the number of trees being impacted and the number of trees (ie: Coast Manna Gums and Drooping Sheoaks within the reserves) and therefore the extent and significance of the impacts. This type of data can be utilised to potentially negotiate for more sensitive pruning.

In some areas, the pruned matter was left in-situ which is smothering the vegetation underneath.

### Recommendations

- Establish the Large Tree Inventory for use as a potential negotiating tool with the power (and other) authorities
- Consider discussing (with the power authority) how to manage the pruned material- can it be used by the Foreshore Committee, or should it all be removed by the power authorities?
- Methods for valuing bushland vegetation assets need to be established, in conjunction with other bushland management committees.



Figure 9. Result of power line pruning



Figure 10. Power line pruning impacts

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Figure 11. Dumped material from power line pruning



Figure 12. Power line pruning impacts

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## 7.2 Mowing along Top Edge (Latrobe Reserve)

Impacts to tree/shrub roots were also observed along the top edge of Latrobe Reserve between the vegetation and the adjacent open grassy areas. It is likely these impacts are being caused by the open space managers rather than the Foreshore Committee. This is a further example of how other authorities are impacting the Committees assets.

In areas along the edge between the bushland and the adjacent open space/edge of the road, a granitic path/edge has been established. The path was installed 12 years ago which has reduced mowing requirements and seed spread and as such, there are no longer impacts on the tree/shrubs roots.

### Recommendations

- Continue creating a granitic edge between the bushland vegetation and the top side of Latrobe Reserve.



Figure 13. Granitic edge between vegetation and Latrobe Parade



### 7.3 Rough Tree-ferns and Stormwater Run-off (Latrobe Reserve)

In 1996 and 2003, two populations of Rough Tree-ferns were recorded and mapped in two of the gullies within Latrobe Reserve. The recording and mapping of these two populations was significant, as only a few populations of Rough Tree-ferns had been mapped along the Port Phillip Bay coastline.

At the time of these two assessments, there was no guttering (kerb and channel) along the top edge of Latrobe Reserve. Rainwater flowed across Latrobe Parade and into Latrobe Reserve, where it then infiltrated into the escarpment or ran down the gullies.

Unfortunately, in this assessment, few Tree-ferns remain with many appearing dead. It is contended that the population has been reduced due to the guttering (kerb and channeling) that has been installed along the top edge of Latrobe Reserve (along Latrobe Parade) which directs rainfall flow into stormwater drains rather than flowing into Latrobe Reserve. It is noted that since the October and November 2020 surveys, a couple of live tree ferns have been found to the west of Park Grove (within the 2003 mapped population) as advised by Michael Everitt (Dromana Foreshore Manager). These ferns were discovered among tall stands of Bracken during a friends group working bee in early 2021 and have been included in the Map 3A.

While the short-term impacts of altering the surface run-off into Latrobe Reserve have led to the decline of a Regionally significant population of Rough Tree-ferns, there are potentially longer-term impacts that could occur through reduced water flow into the reserve. There is the potential that reduced water flow could eventually lead to erosion of the cliff faces above Anthony's Nose.

Without a source of increased water flow into Latrobe Reserve, the vegetation within the reserve will eventually transition into a drier vegetation type.

#### Recommendations

- The Committee should liaise with the Council regarding either removal of the guttering, or creating several breaks in the guttering which would allow some surface run-off to enter Latrobe Reserve
- A longer-term solution for increasing water flow into Latrobe Reserve is required, which requires expertise from water management specialists
- A geological/technical expert would be required to comment on the potential for cliff face erosion due to decreased surface water run-off
- Funding the specialists should be negotiated with Council, who installed the kerb and channel.

## 7.4 Stormwater Drains along the Foreshore (Zones 1 to 5)

Several stormwater drains were observed along the foreshore. Indigenous wetland species were recorded growing alongside/within some of these drains.

The drains are an opportunity to create wetland habitat in the drains, that can also act to filter stormwater before it enters Port Phillip Bay. It is noted that there are several management authorities responsible for these drains, and any works undertaken at their exit points would involve cooperation (and funding) from these authorities.

It was discussed with the foreshore ranger that the urban density surrounding the foreshore is leading to an increase in stormwater discharge (and increased pollution) entering the bay, which is impacting on the biodiversity of marine life (there is less coral in the Dromana section of the bay than there used to be) (pers comms Michael Everitt).

Tracking increased stormwater flows (and pollution/discharges) would provide data for the Committee to be able to potentially negotiate with the authorities responsible for stormwater discharge to fund the creation of coastal wetlands along the foreshore at the stormwater discharge points (or higher up the stormwater system) to filter stormwater and pollutants before they enter the bay.



Figure 14. Some of the stormwater drains along the foreshore

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### Recommendations

- Consider establishing monitoring points at some/all of the stormwater discharge points to monitor discharge and/or pollutants entering the bay.
- This project could be undertaken in collaboration with schools/volunteers who could gather and process the data once a monitoring protocol has been established.

## 7.5 Fauna and Habitat (General)

Several habitat features (Galah nesting in a Coast Banksia hollow, White Skink habitat and Swamp Rat habitat) were noted during the site assessments. While this is not a fauna and habitat report, there is a critical relationship between flora/vegetation and fauna and their habitat. The management of fauna habitat needs to be factored into all vegetation management works, including weed control works.

The Swamp Rats in Latrobe Reserve are mostly utilising areas covered in the weedy Pale Wood-sorrel *Oxalis incarnata*, which creates a dilemma between controlling the weed and potentially decreasing or losing the Swamp Rat habitat/population or maintaining a weedy species within the reserve. It was noted that the extent of the Swamp Rat population has decreased since previous assessment work in Latrobe Reserve (G Walker obs.).

This example of the Swamp Rats highlights one of the conflicting issues in bushland management, indigenous fauna frequently utilises weeds and the structure provided by weedy vegetation as habitat- as long as the habitat niche they require is available they will reside within and/or utilise an area. Most fauna species do not differentiate between indigenous and weedy vegetation, it is only humans that create the sharp divide.

### Recommendations

- Management of fauna and fauna habitat should be integrated into bushland management works
- Patches of fauna habitat should be mapped, and management decisions then made about whether to purposefully maintain weedy areas as habitat- if so, then buffers to control the spread of weeds need to be implemented and maintained



Figure 15. Galah nesting in Coast Banksia



Figure 16. Swamp Rat habitat in the Pale Wood-sorrel

## 7.6 Feral/Pest Animals- Rats/Mice (General)

While managing the impacts of feral/pest animals is difficult, especially in a long linear reserve, their impacts need to be considered.

The impacts from one group of pest animals are often less considered than others- rats and mice. Rats are known to predate on other fauna (baby birds, skinks, small lizards and potentially amphibians), plus they eat seedlings. They generally have more impacts than are often factored into bushland management. Since there is so little data, it is not known if the population densities of rats/mice increase/decrease with human proximity. It is likely that in areas with more humans (and hence rubbish) there is likely to be a higher rat/mice population.

There is some data on Council programs to control rats/mice in other areas of the Mornington Peninsula shire (Mothers Beach). An issue arising from this baiting program was the need to target exotic rats/mice, not indigenous species (ie: Swamp Rats).

While it is not known if they are a management issue along the foreshore, they are present; and their potential impacts should be considered. It is also likely they are also spreading seed along the foreshore- which could be good for indigenous species, but problematic for weed species.



Figure 17. Rat eating Seaberry Saltbush seeds along the foreshore

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## 7.7 Nest Box Maintenance

There are several nest boxes in Latrobe Reserve. Many of which are in disrepair or have been invaded by European bees. It has been well documented that nest boxes require frequent monitoring and maintenance. This has become more difficult with regulations on working from heights and insurance requirements.

### Recommendations

- If regular monitoring and maintenance of nest boxes cannot be achieved, then they should be removed.

## 7.8 Natural Springs and Wetter Areas (General)

Several wetter areas were noted along the foreshore and in Latrobe Reserve. These areas were usually indicated by the presence of patches of Common Reed. A potential natural spring was also noted in Latrobe Reserve along the roadside.

The location of these wetter areas can be utilised to provide wetland habitat along the foreshore. There is also the potential that if there are natural springs in Latrobe Reserve that the water flow can be diverted into the vegetation, providing a permanent water source for vegetation growing near it.

### Recommendations

- Investigate diverting natural springs so the water flows into Latrobe Reserve
- Investigate creating wetland patches around wetter areas along the foreshore reserve.



Figure 18. Potential natural spring along top edge of Latrobe Reserve



Figure 19. Drain along lower edge of Latrobe Reserve

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## 7.9 Pressure along the Foreshore and Vegetation Management

The use and therefore management pressures on the Dromana Foreshore are changing. Historically Dromana was a holiday destination. However, with the increased freeway access, Dromana beach is now becoming a day trip destination. Which is resulting in increased numbers of visitors and the resultant increases in pressure on facilities and resources (ie: amenities, car parking, rubbish removal), plus secondary pressures such as creating tracks through the vegetation, etc.

All these pressures are difficult to manage along such a narrow linear strip that protects the fragile coastal environment.

Management techniques such as the installation of fencing and blocking off of access tracks and planting along blocked tracks have proved to be effective strategies for managing impacts on vegetation, while also improving and increasing vegetation cover.

It is apparent that undertaking these works will be an on-going process. When available, funds should be diverted to fencing off vegetation areas, as fencing has shown to be a very effective strategy for preventing trampling, blocking off 'goat tracks' and increasing vegetation cover.

It was noted that some of the older fences are requiring maintenance, which is problematic in some areas as Bower Spinach has grown over the fencing.



Figure 20. Bower Spinach growing over fences



Figure 21. Example of fenced and rehabilitating vegetation

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### Recommendations

- Continue to utilise fencing to define patches/blocks of vegetation, and to encourage natural bushland regeneration or to undertake supplementary planting/revegetation within
- Fencing can also be utilised for the vegetation behind boat sheds- fencing of larger blocks of vegetation has been done successfully at Capel Sounds foreshore
- Investigate fencing materials that are more weather resistant and less likely to require maintenance- issue with Bower Spinach growing over fencing and longer term maintenance
- Utilise cut woody material from along the foreshore (or construct fencing) to continue to block off 'goat tracks'.

## 7.10 Human Pressure, Dogs and Wildlife

Along with the increased usage and associated pressures on the foreshore reserve, is the increasing numbers of dogs along the foreshore. Generally dogs and wildlife are incompatible, with dogs chasing wildlife when off the lead or the smell of dogs discouraging wildlife. As the foreshore is a narrow linear strip, only generalist fauna species are likely to utilise the habitat available; and then mainly only birds, reptiles and potentially amphibian species would utilise the habitat if they can access the strip.

As Latrobe Reserve is a larger block of vegetation, a larger diversity of fauna species could utilise that habitat including ground-dwelling mammals such as the Swamp Rats.

To maintain ground-dwelling populations of fauna, there needs to be management of dogs for fauna. This is very difficult to manage and is a highly contentious issue as dogs also need areas to be walked.

### Recommendations

- Concentrate any 'dog management' along the foreshore in areas of known fauna habitat ie: the area with the potential White Skink population
- The main focus for dog management should be Latrobe Reserve- dogs should be banned from Latrobe Reserve, including along the walking tracks.

## 7.11 Large Tree Management and Inventory

There are numerous large old Coast Banksias (and some other species ie: Common Boobialla, Drooping Sheoaks and Coast Manna Gums) growing along the foreshore and in Latrobe Reserve. Large old trees have many values- they are landscape features, they provide shade and shelter, and they usually provide more foraging resources as they are more reliable in flowering than smaller trees.

Without tracking these trees, it is difficult to know if the population of large trees in the reserves is stable or declining. Several threats were noted to these trees (many of which are discussed) including: excessive pruning under power lines, exposure to wind and other climatic impacts, and mowing impacts to their roots.

Using simple, easily accessible software to create a Large Tree Inventory would be the first step to managing large tree health in the reserve. Data to capture would include:

- Location
- Species
- Diameter at breast height (dbh)
- Any obvious adjacent management threats
- There is also the potential to photograph each tree.

Obtaining this information could then be utilised to track and manage large tree health across the reserve. The data could also be utilised to negotiate management practices with other authorities that are impacting tree health and potentially leading to their decline (ie: pruning of the large Coast Manna Gums under the power lines along the top edge of Latrobe Reserve).

### Recommendations

- Investigate simple mapping software options
- Create a mapping database on all the large trees within the two reserves
- Large tree definition should follow the Large Old Tree definition utilised in the relevant EVC benchmarks.



Figure 22. Large Coast Banksia along the beach front



Figure 23. Large Coast Manna Gums (Latrobe Reserve)

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## 7.12 Marram Grass Management (Zones 1 to 5)

Marram Grass was introduced into Victoria in 1883 at Port Fairy, to stabilise the dunes that were moving inland. Since then, it has been planted from translocated stolons along much of the Victorian coastline, where it now dominates large areas of the coastline. In many instances, the introduction of Marram Grass has displaced indigenous dune grassland species and has resulted in changes to dune formation by creating a steep dune profile, rather than the more gently undulating foredune environment created by indigenous species.

The primary dune facing the Bay along the length of the foreshore features some sections dominated by of Marram Grass. While it stabilises dunes and provides habitat, it does displace indigenous dune grassland species such as Spinifex.

As with most plant introductions, the negative effects of Marram Grass introduction were not immediately apparent, and current foreshore managers are now left with the challenge of managing large populations

in a sensitive coastal environment. Shifting the balance in Dune Grasslands from Marram Grass dominated cover to the indigenous Spinifex Grass cover, is an almost impossible task, without large on-going amounts of funding; plus also considering other issues including human use of dunes and erosion during storm events.

It is also thought that some opportunistic indigenous coastal species have travelled with the transplanted stolons, which may explain patches of uncharacteristic plants noted along foreshores, that are growing outside their range and/or soil type.

### Management of Marram Grass

Although Marram Grass is prolific in some areas of foreshore along the coast, removing it leaves foredunes open to erosion particularly during/after storm surge events. Due to its structure, people using the beach tend to avoid it, which does provide an opportunity for (indigenous) primary colonisers and secondary colonisers plant species to regenerate among it.

The best way to manage it is to use it as a "nursery" by placing sticks of seed laden Coast Tea Tree and Coast Wattle over the infestation and allow time for natural regeneration (the timing of any track pruning to coincide with this activity would be the most direct approach). Once these species have started to establish, direct seeding of Coast Banksia is possible, and the Marram Grass will slowly be shaded out overtime. Other succulent species such as Seaberry Saltbush and Bower Spinach will also re-colonise. This process has been observed to happen naturally in other areas such as Seaford foreshore (pers observation G Walker).

In areas of the foreshore where erosion is actively occurring and where Marram Grass does not dominate, a process of planting among seed bearing branches may be a useful approach. Appropriate indigenous species to plant would include Coast Saltbush, Spinifex, Knobby Club Rush, Salt Grass, Karkalla, Bower Spinach and Seaberry Saltbush.

### Recommendations

- Manage mapped patch of Spinifex to encourage its' spread in the local area of the patch- control Marram Grass around these patches and encourage the spread of the Spinifex
- Map the extent of the Spinifex cover prior to commencing management works and then map the extent of its' cover every 2 - 5 years, to monitor whether the management works have been successful in encouraging its' spread
  - The extent can be mapped via GPS every 2 - 5 years and then prepare comparative maps
- Consider a 'Marram Grass replacement' program in several small areas of the foreshore by utilising the 'nursery' method outlined above, or by planting small clumps of Spinifex in discrete areas along the foreshore and managing these planted areas to increase the extent of Spinifex, and to slowly reduce the extent of Marram Grass

- Either method would have to be managed via the monitoring outlined above for the Spinifex patch, to determine whether the programs are successful in reducing Marram Grass and increasing indigenous species cover
- For any replacement plants, lists of the species utilised and the numbers installed should be maintained, to determine if some species are more successful at colonising than others.
- Undertaking either method is a long-term management approach that will take many years to achieve a noticeable difference in the extent of Marram Grass versus Spinifex.

### 7.13 Hybridisation of indigenous *Carpobrotus*

The indigenous *Carpobrotus* species is Karkallo *Carpobrotus rossii*. There are two exotic forms which are common along coastal areas in the Mornington Peninsula:

- Hottentot Fig *Carpobrotus edulis*, and
- Angled Pigface *Carpobrotus aequilaterus*

These two exotic species started as nurse plants that were planted in coastal gardens (as the indigenous species), and as they were also then mistakenly planted along foreshores.

Both species have cross pollinated with the indigenous species, and now the hybridised species is more common than the indigenous species- which is becoming rare along many foreshores, including the Dromana foreshore.

There is a need to remove all the exotic and hybrid species along affected foreshores, before the indigenous species becomes locally extinct.

Capel Foreshore is in the process of mapping all their *Carpobrotus* patches, and then removing the weedy/hybrid species. In conjunction with the removal works, they are also taking divisions off the indigenous plants and planting the divisions in the areas where they are removing exotic/hybrid plants. In doing this, they are slowly shifting the balance from weedy/hybrid *Carpobrotus* species to indigenous species. They are also creating a source of the indigenous species that can then be utilised in adjacent foreshore reserves. This initiative provides a great opportunity for skill and knowledge sharing activity between foreshore committees

#### Recommendations

- Investigate undertaking a similar *Carpobrotus* management program to that being undertaken by Capel Foreshore Committee.

## 7.14 Photo Points/Monitoring (All Zones)

To capture data on the management of certain areas along the foreshore the introduction of basic monitoring is recommended via the use of photo points and potentially collecting basic cover/abundance data at the photo points. Ideally data should be collected seasonally, or at least annually in the same season/month. To ensure consistent data capture a capped star picket should be installed in the corner of each photo point and the same camera utilised to capture the photo point, which should also be taken at the same height (at the top of the star picket) and angle.

A useful spread of photos points would be six photo points distributed along the foreshore in the four vegetation quality categories.

### Recommendations

- Utilise the vegetation quality mapping and grid system to determine appropriate areas to undertake vegetation monitoring.
- Install a capped star picket at one corner of the monitoring plot (align with a corner of a grid to provide a repeatable monitoring area) and utilise the star picket as the photo point and to delineate a corner of the monitoring plot.

## 7.15 Training Sessions (General)

To facilitate the use and development of the vegetation data in this report, a couple of workshops on suitable methods of weed control and the use of the vegetation maps and overlays is recommended for the Foreshore Committee, in-house and/or contracted bushland managers and volunteers.

### Recommendations

- Investigate running 1 - 2 workshops to cover the purpose and data contained within this report so that it can be utilised as a 'living' document/mapping layer that can be added to over time.

## 7.16 Information Brochure Boat Shed Owners (Zones 1 to 5)

During the fieldwork it was noted that there was a variety of vegetation management treatments around the boat sheds located in the foreshore reserve. Some owners did not appear to 'touch' the surrounding vegetation, while other owners were actively removing the vegetation surrounding their sheds. It was noted that generally the higher the level of owner intervention towards the vegetation surrounding the boat sheds, the higher the level of weed invasion, the lower the surrounding mapped vegetation quality and the greater the risk of fore dune erosion during storm surge events.

### Recommendations

- Liaise with Council and the boat shed owners regarding the development of a vegetation management policy surrounding the boat sheds

- Produce a brochure that describes and demonstrates appropriate vegetation management
- Utilise visual imagery to clearly depict 'good' versus 'bad' vegetation management practices surrounding the boat sheds.



Figure 24. Boat sheds with no/minimal surrounding vegetation in the foreground; and sheds with surrounding vegetation in the background

Figure 25. Boat shed surrounded by vegetation

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## 7.17 Indigenous Grass Patches (Zones 1 to 4)

Several patches of Wallaby Grasses were mapped along the foreshore reserve (refer to Maps 3D-3E).

Indigenous Grasses can provide a good cover of indigenous vegetation, and they provide habitat for invertebrates and reptiles to bask in. The grasses in these areas should be managed to encourage their spread.

### Recommendations

- Manage the Wallaby Grass patches as small open grassland areas, to provide another type of habitat for smaller fauna species (invertebrates and small reptiles)

## 7.18 Division of Annual Vegetation Management Budgets (General)

The vegetation quality mapping clearly divides the foreshore into three vegetation management areas:

- Green and Blue- highest quality remnant areas, where the priority is to retain and increase the existing indigenous vegetation quality. Minimal to no planting works.
- Orange - a mix of regeneration and revegetation areas. Priority is to retain and increase the existing indigenous vegetation quality, and to selectively re-introduce 'missing' indigenous species to increase overall habitat and biodiversity values. Weed infestations should be mapped,

prioritised according to the system (refer to Appendix 3, Maps 4A-G) and managed to reduce weed cover and increase indigenous vegetation cover.

- Red - predominantly the revegetation beds and open space/caravan park areas. In these areas the main management focus is recreation, so the biodiversity priority is the management of existing large old trees; to protect them and to provide areas for them to recruit into.

Accordingly, the annual vegetation management budget, should be divided to adequately manage the biodiversity values in these four areas and to ensure at a minimum that all of the existing biodiversity values in these areas are conserved.

Management objectives for each of the vegetation quality categories have been defined above, however these objectives then need to be applied along the foreshore reserve for each mapped 'zone/area' (or groups of similar areas- ie: similar EVCs, vegetation quality and species present), which can then be utilised to guide future management decisions.

Local conditions and the presence of any significant flora species and/or habitat; also need to be considered, along with any other management functions of any specific foreshore area.

## 7.19 Management of Large Old Trees in the Caravan Park (Zone 4)

There are several large old remnant Coast Banksias in the caravan park. Currently mowing/slashing is occurring around the base of these trees, which is not ideal for longer-term tree health. The trees are also very exposed, with little understorey vegetation growing around them to protect them.

Unfenced the trees are vulnerable to the trunk being clipped by mowing, vehicles potentially knocking them and people being under and around them trampling and compacting their root zones.

### Recommendations

- Fencing should be installed around each linear group of trees to protect them
- Ideally the fencing would extend to their drip lines, however as space is limited in the caravan park; any width of fencing is preferable to no fencing
- A few shrubs (Coast saltbush, etc) should be planted in each fenced area to start to provide more protection for these Coast Banksias.



Figure 26. Unfenced Coast banksias in the Caravan park area (Zone 4)

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## 7.20 Weed Management

On-going weed management will always be required in the foreshore and Latrobe Reserves and will require an annual budget. From an ecological perspective the priorities for weed control are:

- In the green mapped/highest quality areas
- Of the high-risk weed species (green and blue mapped areas)
- Continuing to monitor for any new weed infestations and controlling them before they can spread (green, blue, orange and red mapped areas).

### Recommendations

- Prepare a weed management and prioritisation plan for the foreshore and Latrobe Reserves considering the vegetation quality categories, the presence of any significant flora species, the use of the area; and the types of weed species present and their potential impacts on the surrounding vegetation.

## 7.21 Potential Midden Sites (General)

During the fieldwork it was noted that there were several potential midden sites (see Map 5D) and one potential scar tree (See Map 5B) along the foreshore reserve.

### Recommendations

- Investigate undertaking a cultural heritage assessment of the foreshore and preparing a Cultural Heritage Management Plan (CHMP) to identify, conserve and manage cultural heritage values along the foreshore reserve.

## 7.22 Managing Orchid Patches (General) and Data Management

There are several patches of orchid species along the foreshore and in Latrobe Reserve. All orchids are at least of High Local significance. Small cages in areas were also observed among the ground litter in Latrobe Reserve, which were thought to mark the location of orchid patches. Some recommendations for managing these (and other significant species) are outlined below:

### Mapping and Monitoring Orchid Patches

The location of all orchid patches should be added to the significant species map. Monitoring should also be undertaken to track the numbers of orchids that emerge and flower annually. This would provide the Committee with data on the increase/decline in orchids species along the foreshore.

Monitoring should be a simple task, that is easy to repeat. The key to successful monitoring is the capture, storage and re-use of data. The use of a simple GPS enabled mapping program is recommended to capture data across the foreshore and Latrobe Reserves, where the rangers can capture data on their phones and the data is then available in real time/instantly in the office.

Simple spreadsheets and biodiversity data storage and management systems also need to be established that:

- Follow an accepted protocol/system
- Are easy to use and access
- Are easy to maintain and not easy to delete/alter

It is acknowledged that the priority is always on undertaking on-ground management works for biodiversity protection; however, some data management, storage and retrieval systems are vital to guide on-ground management works. To this end, there needs to be simple and effective systems for gathering, storing and then utilising management data.

### Marking of Orchid Patches along the Walking Trail

For management purposes, it would assist volunteers and bushland workers/contractors if the location of significant vegetation areas/species/patches (ie: orchid species) was discretely defined on the ground, as locating these areas is difficult just with maps and/or GPS references.

### Orchid Patches and Galvanised Wire

It has recently been documented that the moss layers surrounding caged and protected orchid colonies disappears under galvanised wire fencing, with the zinc used in galvanising causing the moss layer to die. Moss layers are critical nursery habitat for many orchid and newly germinating species.

While most of the caged orchids in Latrobe Reserve are not surrounded by moss, there should be a shift away from utilising galvanised wire as new cages are acquired/old cages are replaced.

### Recommendations

- Install discrete markers (ie: yellow lines) along the walking track/Bay Trail to define the location of significant flora species/patches to ensure bushland managers/workers are aware of the 'sensitivity' of these areas, especially in the seasons when these species are not evident (ie: summer when orchid species are dormant).
- Future orchid cages should be constructed of blue steel wire, which does not have a zinc coating. It will last longer and have less impact on the surrounding vegetation.
- Consider taller cages that are open at the top to allow for litter fall rather than a buildup of litter on the top of the cage

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### Personal Communications

Michael Everitt- Dromana Foreshore Ranger

## Appendix 1. Flora Survey Results

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
<b>INDIGENOUS SPECIES</b>					
* <i>Acacia longifolia subsp. longifolia</i>	Sallow Wattle				
<i>Acacia longifolia subsp. sophorae</i>	Coast Wattle				
<i>Acacia mearnsii</i>	Black Wattle				
<i>Acacia melanoxylon</i>	Blackwood			B	
<i>Acacia paradoxa</i>	Hedge Wattle				
* <i>Acacia pycnantha</i>	Golden Wattle				
<i>Acaena novae-zelandiae</i>	Bidgee-widgee				
<i>Adriana quadripartita (pubescent form)</i>	Coast Bitter-bush	v			?P
<i>Alisma plantago-aquatica</i>	Water Plantain				
<i>Allocasuarina littoralis</i>	Black Sheoak				
<i>Allocasuarina verticillata</i>	Drooping Sheoak			B	
<i>Alyxia buxifolia</i>	Sea Box				
<i>Arthropodium sp 3</i>	Vanilla Lily				
<i>Arthropodium strictum s.l.</i>	Chocolate Lily				2nd record for Mornington Peninsula
<i>Astroloma humifusum</i>	Cranberry Heath				
<i>Atriplex cinerea</i>	Coast Saltbush			B	
<i>Austrodanthonia caespitosa</i>	Common Wallaby-grass				
<i>Austrodanthonia racemosa var. racemosa</i>	Stiped Wallaby-grass				
<i>Austrodanthonia setacea</i>	Bristly Wallaby-grass				
<i>Austrodanthonia spp.</i>	Wallaby Grass				
<i>Austrostipa flavescens</i>	Coast Spear-grass				
<i>Austrostipa spp. X2</i>	Spear Grass				
<i>Austrostipa stipoides</i>	Prickly Spear-grass				? ?planted
<i>Banksia integrifolia subsp. integrifolia</i>	Coast Banksia			B	
<i>Baumea juncea</i>	Bare Twig-sedge				
<i>Billardiera scandens</i>	Common Apple-berry				
<i>Blechnum nudum</i>	Fishbone Water-fern				
<i>Bolboschoenus caldwellii</i>	Salt Club-sedge				
<i>Bossiaea prostrata</i>	Creeping Bossiaea				
<i>Bursaria spinosa ssp macrophylla</i>	Sweet Bursaria				
<i>Bursaria spinosa subsp. spinosa</i>	Sweet Bursaria				
<i>Calocephalus lacteus</i>	Milky Beauty-heads				
<i>Calystegia sepium subsp. roseata</i>	Large Bindweed				
<i>Carex appressa</i>	Tall Sedge				
<i>Carex fascicularis</i>	Tassel Sedge				
<i>Carex inversa</i>	Knob Sedge				

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
<i>Carpobrotus rossii</i>	Karkalla				
<i>Cassinia aculeata</i>	Common Cassinia				
<i>Cassinia arcuata</i>	Drooping Cassinia				Confirm status- weed or indig?
<i>Chrysocephalum apiculatum s.l.</i>	Common Everlasting				
<i>Clematis microphylla</i>	Small-leaved Clematis				
<i>Comesperma volubile</i>	Love Creeper				
<i>Correa alba</i>	White Correa			B	
<i>Cotula australis</i>	Common Cotula				
<i>Crassula spp. X3</i>	Crassula				
<i>Cyathea australis</i>	Rough Tree-fern				Declining population
<i>Deyeuxia spp.</i>	Bent-grass				
<i>Dianella brevicaulis</i>	Small-flower Flax-lily			B	
<i>Dianella longifolia s.l.</i>	Pale Flax-lily			B	
<i>Dianella revoluta s.l.</i>	Black-anther Flax-lily				
<i>Dichelachne crinita</i>	Long-hair Plume-grass				
<i>Dichelachne spp.</i>	Plume Grass				
<i>Dichondra repens</i>	Kidney-weed				
<i>Disphyma crassifolium subsp. clavellatum</i>	Rounded Noon-flower				
<i>Distichlis distichophylla</i>	Australian Salt-grass				
<i>Drosera peltata subsp. auriculata</i>	Tall Sundew				
<i>Einadia nutans subsp. nutans</i>	Nodding Saltbush				
<i>Epilobium spp.</i>	Willow Herb				
<i>Eucalyptus cephalocarpa hybrid ?</i>					
<i>Eucalyptus viminalis subsp. pryoriana</i>	Coast Manna-gum			B	
<i>Eutaxia microphylla</i>	Common Eutaxia				
<i>Exocarpos cupressiformis</i>	Cherry Ballart				
<i>Exocarpos strictus</i>	Pale-fruit Ballart				
<i>Ficinia nodosa</i>	Knobby Club-sedge				
<i>Frankenia pauciflora var. gunnii</i>	Southern Sea-heath				
<i>Gahnia radula</i>	Thatch Saw-sedge				
<i>Gahnia sieberiana</i>	Red-fruit Saw-sedge				P?
<i>Glycine clandestina</i>	Twining Glycine				
<i>Goodenia geniculata</i>	Bent Goodenia				
<i>Goodenia ovata</i>	Hop Goodenia				
<i>Hemarthria uncinata var. uncinata</i>	Mat Grass				
<i>Hemichroa pentandra</i>	Trailing Hemichroa				
<i>Histiopteris incisa</i>	Bat's Wing Fern				previously recorded see fern map

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
<i>Hypericum gramineum</i>	Small St John's Wort				previously recorded
<i>Isolepis spp.</i>	Club Sedge				
<i>Juncus bufonius</i>	Toad Rush				
<i>Juncus caespiticius</i>	Grassy Rush				
<i>Juncus pallidus</i>	Pale Rush				
<i>Juncus spp.</i>	Rush				
<i>Kennedia prostrata</i>	Running Postman				
<i>Lepidosperma concavum</i>	Sandhill Sword-sedge				
<i>Lepidosperma gladiatum</i>	Coast Sword-sedge				
<i>Leptospermum laevigatum</i>	Coast Tea-tree				
<i>Leucopogon parviflorus</i>	Coast Beard-heath				
<i>Lobelia anceps</i>	Angled Lobelia				
<i>Lomandra longifolia subsp. longifolia</i>	Spiny-headed Mat-rush				B
<i>Lomandra nana</i>	Dwarf Mat-rush				
<i>Lomandra spp.</i>	Mat-rush				
<i>Melaleuca ericifolia</i>	Swamp Paperbark				
<i>Microlaena stipoides var. stipoides</i>	Weeping Grass				
<i>Microseris walteri</i>	Murnong				planted 2020
<i>Microtis spp.</i>	Onion Orchid				
<i>Muehlenbeckia adpressa</i>	Climbing Lignum				
<i>Myoporum insulare</i>	Common Boobialla				B
<i>Myoporum petiolatum</i>	Sticky Boobialla				
<i>Olearia axillaris</i>	Coast Daisy-Bush				
<i>Olearia glutinosa</i>	Sticky Daisy-bush				?P
<i>Olearia ramulosa</i>	Twiggy Daisy-bush				
<i>Olearia sp. 2</i>	Peninsula Daisy-bush	r			?P
<i>Opercularia varia</i>	Variable Stinkweed				
<i>Oxalis perennans</i>	Grassland Wood-sorrel				
<i>Oxalis rubens</i>	Dune Wood-sorrel				
<i>Ozothamnus ferrugineus</i>	Tree Everlasting				
<i>Pelargonium australe</i>	Austral Stork's-bill				
<i>Pelargonium inodorum</i>	Kopata				
<i>Phragmites australis</i>	Common Reed				
<i>Plantago gaudichaudii</i>	Narrow Plantain				
<i>Poa labillardierei</i>	Common Tussock-grass				B
<i>Poa poiformis</i>	Coast Tussock-grass				B
<i>Pomaderris paniculosa subsp. paralia</i>	Coast Pomaderris				B
<i>Poranthera microphylla</i>	Small Poranthera				
<i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed				
<i>Pteridium esculentum</i>	Austral Bracken				
<i>Pterostylis nana</i>	Dwarf Greenhood				

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
<i>Pterostylis nutans</i>	Nodding Greenhood				
<i>Pterostylis pedunculata</i>	Maroonhood				
<i>Pterostylis spp.X2</i>	Greenhood				
<i>Rhagodia candolleana subsp. candolleana</i>	Seaberry Saltbush				
<i>Rubus parvifolius</i>	Small-leaf Bramble				
<i>Salsola tragus subsp. pontica</i>	Coast Saltwort	r			
<i>Samolus repens</i>	Creeping Brookweed				
<i>Sarcocornia quinqueflora</i>	Beaded Glasswort				
<i>Schoenus apogon</i>	Common Bog-sedge				
<i>Selliera radicans</i>	Shiny Swamp-mat				
<i>Senecio biserratus</i>	Jagged Fireweed				
<i>Senecio hispidulus s.l.</i>	Rough Fireweed				
<i>Senecio minimus</i>	Shrubby Fireweed				
<i>Senecio quadridentatus</i>	Cotton Fireweed				
<i>Solanum vescum</i>	Ganyang				P- can regenerate after fire/weed removal
<i>Sonchus hydrophilus</i>	Native Sow-thistle				
<i>Spergularia marina</i>	Lesser Sea-spurrey				new record for Mornington Peninsula
<i>Spinifex sericeus</i>	Hairy Spinifex				
<i>Tetragonia implexicoma</i>	Bower Spinach				
<i>Thelymitra rubra</i>	Salmon Sun-orchid				
<i>Thelymitra spp.X3</i>	Sun Orchid				
<i>Themeda triandra</i>	Kangaroo Grass				
<i>Tricoryne elatior</i>	Yellow Rush-lily				
<i>Triglochin striata</i>	Streaked Arrowgrass				broad-leaf form
<i>Typha domingensis</i>	Narrow-leaf Cumbungi				
<i>Viminaria juncea</i>	Golden Spray				
<i>Wahlenbergia ?gracilenta s.l.</i>	Annual Bluebell				
<i>Wahlenbergia gracilis</i>	Sprawling Bluebell				
<i>Wahlenbergia spp.</i>	Bluebell				
<b>Introduced Species</b>					
* <i>Agapanthus praecox subsp. orientalis</i>	Agapanthus				
* <i>Agonis flexuosa</i>	Willow Myrtle				
* <i>Agrostis capillaris s.s.</i>	Brown-top Bent				
* <i>Aira spp.</i>	Hair Grass				
* <i>Allium triquetrum</i>	Three-corner Garlic				
* <i>Aloe ciliata</i>	Climbing Aloe				
* <i>Ammophila arenaria</i>	Marram Grass				
<i>Amyema spp.</i>	Mistletoe				

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
* <i>Anthoxanthum odoratum</i>	Sweet Vernal-grass				
* <i>Arctotheca calendula</i>	Cape Weed				
* <i>Arum italicum</i>	Italian Cuckoo-pint				
* <i>Asparagus asparagoides</i>	Bridal Creeper				
* <i>Asparagus scandens</i>	Asparagus Fern				
* <i>Aster subulatus</i>	Aster-weed				
					new record for Mornington Peninsula
* <i>Avena sterilis</i>	Sterile Oat				
* <i>Avena spp.</i>	Oat				
* <i>Berkheya rigida</i>	African Thistle				
* <i>Briza maxima</i>	Large Quaking-grass				
* <i>Briza minor</i>	Lesser Quaking-grass				
* <i>Bromus catharticus</i>	Prairie Grass				
* <i>Bromus diandrus</i>	Great Brome				
* <i>Bromus hordeaceus subsp. hordeaceus</i>	Soft Brome				
* <i>Callistemon linearis</i>	Stiff bottlebrush				
* <i>Carpobrotus aequilaterus</i>	Angled Pigface				
* <i>Carpobrotus edulis</i>	Hottentot Fig				
	<i>Carpobrotus spp.hybrids</i>				Pigface
* <i>Centaurium erythraea</i>	Common Centaury				
* <i>Centaurium spp.</i>	Centaury				
					Common Mouse-ear
* <i>Cerastium glomeratum s.l.</i>	Chickweed				
* <i>Chasmanthe floribunda</i>	African Cornflag				
* <i>Chlorophytum comosum</i>	Spider Plant				
	<i>Chrysanthemoides monilifera subsp. monilifera</i>				African Boneseed
* <i>Coprosma repens</i>	Mirror Bush				
* <i>Coprosma robusta</i>	Karamu				
* <i>Cotoneaster spp.</i>	Cotoneaster				
* <i>Cupressus sp</i>	Cypress				
* <i>Cynosurus echinatus</i>	Rough Dog's-tail				
* <i>Cyperus eragrostis</i>	Drain Flat-sedge				
* <i>Dactylis glomerata</i>	Cocksfoot				
* <i>Delairea odorata</i>	Cape Ivy				
* <i>Dimorphotheca fruticosa</i>	Trailing African Daisy				
* <i>Dipogon lignosus</i>	Common Dipogon				
* <i>Ehrharta erecta var. erecta</i>	Panic Veldt-grass				
* <i>Ehrharta longiflora</i>	Annual Veldt-grass				
* <i>Erigeron karvinskianus</i>	Seaside Daisy				

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
#	<i>Eucalyptus botryoides</i>	Southern Mahogany			naturalised and hybridised with Coast Manna Gum
*	<i>Eucalyptus gomphocaphalus</i>	Tuart			?P
#	<i>Eucalyptus leucoxylon</i>	Yellow Gum			P
*	<i>Eucalyptus spp. (naturalised)</i>	Eucalypt			B
*	<i>Euphorbia paralias</i>	Sea Spurge			
*	<i>Euphorbia peplus</i>	Petty Spurge			
*	<i>Festuca arundinacea</i>	Tall Fescue			
*	<i>Freesia alba x Freesia leichtlinii</i>	Freesia			
*	<i>Fumaria spp.</i>	Fumitory			
*	<i>Galenia pubescens var. pubescens</i>	Galenia			
*	<i>Galium murale</i>	Small Goosegrass			
*	<i>Gamochaeta spp.</i>	American Cudweed			
*	<i>Gazania linearis</i>	Gazania			
*	<i>Gazania rigens</i>	Trailing Gazania			
*	<i>Geranium dissectum</i>	Cut-leaf Cranesbill			
*	<i>Gladiolus undulatus</i>	Wild Gladiolus			
*	<i>Hakea drupacea</i>	Sweet Hakea			
*	<i>Hedera helix</i>	English Ivy			
*	<i>Helminthotheca echioides</i>	Ox-tongue			
*	<i>Holcus lanatus</i>	Yorkshire Fog			
*	<i>Homalanthus populifolius</i>	Bleeding Heart			
*	<i>Hordeum spp.</i>	Barley Grass			
	<i>Hydrocotyle laxiflora</i>	Stinking Pennywort			
*	<i>Hypochoeris glabra</i>	Smooth Cat's-ear			
*	<i>Hypochoeris radicata</i>	Cat's Ear			
*	<i>Ipomoea indica</i>	Blue Morning-glory			
*	<i>Juncus articulatus</i>	Jointed Rush			
#	<i>Kennedia rubicunda</i>	Dusky Coral-pea			
*	<i>Lactuca serriola</i>	Prickly Lettuce			
*	<i>Lagurus ovatus</i>	Hare's-tail Grass			
	<i>Leontodon taraxacoides subsp.</i>				
*	<i>taraxacoides</i>	Hairy Hawkbit			
*	<i>Lolium spp.</i>	Rye Grass			
*	<i>Lomandra ?hystrix</i>				?P but naturalising
*	<i>Lonicera japonica</i>	Japanese Honeysuckle			
*	<i>Lotus subbiflorus</i>	Hairy Bird's-foot Trefoil			
*	<i>Malva spp.</i>	Mallow			
*	<i>Medicago spp.</i>	Medic			
*	<i>Melaleuca armillaris subsp. armillaris</i>	Giant Honey-myrtle	r		
*	<i>Melaleuca lanceolata subsp. lanceolata</i>	Moonah			P
*	<i>Melaleuca nesophila</i>				

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
* <i>Melaleuca spp.</i>	Honey-myrtle				P
* <i>Melilotus indicus</i>	Sweet Melilot				
* <i>Oxalis incarnata</i>	Pale Wood-sorrel				
* <i>Oxalis pes-caprae</i>	Soursob				
* <i>Oxalis purpurea</i>	Large-flower Wood-sorrel				
* <i>Paraserianthes lophantha subsp. lophantha</i>	Cape Wattle				
* <i>Pennisetum clandestinum</i>	Kikuyu				
* <i>Phoenix canariensis</i>	Phoenix Palm				
* <i>Pittosporum undulatum</i>	Sweet Pittosporum				
* <i>Pittosporum spp</i>					
* <i>Plantago coronopus</i>	Buck's-horn Plantain				
* <i>Plantago lanceolata</i>	Ribwort				
* <i>Poa bulbosa var. bulbosa</i>	Bulbous Meadow-grass				
* <i>Poa annua</i>	Annual Meadow-grass				
* <i>Polycarpon tetraphyllum</i>	Four-leaved Allseed				
* <i>Polygala myrtifolia var. myrtifolia</i>	Myrtle-leaf Milkwort				
* <i>Polypogon monspeliensis</i>	Annual Beard-grass				
* <i>Prunella vulgaris</i>	Self-heal				
* <i>Pseudoscleropodium purum</i>	Feather Moss				
* <i>Ranunculus repens</i>	Creeping Buttercup				
* <i>Romulea rosea</i>	Onion Grass				
* <i>Rosa rubiginosa</i>	Sweet Briar				
* <i>Rubus anglocandicans</i>	Blackberry				
* <i>Sagina maritima</i>	Sea Pearlwort				
* <i>Silene gallica var. quinquevulnera</i>	Spotted Catchfly				
* <i>Silene vulgaris</i>	Bladder Champion				
* <i>Solanum nigrum s.s.</i>	Black Nightshade				
* <i>Soliva sessilis</i>	Jo Jo				
* <i>Sonchus asper s.l.</i>	Rough Sow-thistle				
* <i>Sonchus oleraceus</i>	Common Sow-thistle				
* <i>Sporobolus africanus</i>	Rat-tail Grass				
* <i>Stenotaphrum secundatum</i>	Buffalo Grass				
* <i>Taraxacum officinale spp. agg.</i>	Garden Dandelion				
* <i>Thinopyrum junceiforme</i>	Sea Wheat-grass				
* <i>Tradescantia fluminensis</i>	Wandering Jew				
* <i>Trifolium repens var. repens</i>	White Clover				
* <i>Trifolium resupinatum</i>					
* <i>Trifolium spp.</i>	Clover				
* <i>Tropaeolum majus</i>	Nasturtium				
* <i>Ulex europaeus</i>	Gorse				

NAME	COMMON NAME	VROT	FFG	EPBC	Comments
* <i>Veronica spp.</i>	Speedwell				
* <i>Vicia sativa subsp. nigra</i>	Narrow-leaf Vetch				
* <i>Vicia sativa subsp. sativa</i>	Common Vetch				
* <i>Vinca major</i>	Blue Periwinkle				
* <i>Vulpia spp.</i>	Fescue				
* <i>Watsonia meriana var. bulbifera</i>	Bulbil Watsonia				
* <i>Watsonia meriana var. meriana</i>	Merian's Bugle-lily				
* <i>Zantedeschia aethiopica</i>	White Arum-lily				

## Appendix 2. Weed Prioritisation System

STATUS / RISK	CHARACTERISTICS	MANAGEMENT STRATEGY	EXAMPLES	PRIORITY	MEASURE OF SUCCESS	WORKPLAN NEEDS
<b>Keystone weeds</b>						
K	historical-introduced a long time ago = dominates both structurally and floristically	work slowly and systematically from high quality areas out	Polygala at Pt Nepean: habitat for bandicoots and buffer against grassy weed invasion. Pine, Pittosporum	Long-term management required - consider Biocontrol	%population contained (no propagules produced)males or young still present	vegetation quality mapping overlaid with weed distribution map to help prioritise site
	has potentially become habitat for indigenous species	maintain habitat and buffer areas remove mature fruiting individuals first (females)			% area eliminated (some seedling regeneration)	calendar of works based on species life cycle, site, control methods and skills/resources
					% area eliminated (no/little seedling regeneration)	Skilled supervision required for high quality areas
<b>Small Patch Weeds - Of variable risk but easiest to eliminate</b>						
S1 HIGH	High Risk weeds		Dolichos pea, Bridal Creeper		Number of high risk species eliminated from the site	GIS of weed distributions and densities/size of population
	Weeds that hybridise and pollute gene pools		Karamu, Mahogany, Wattles, Pigface		program in place for rapid response to any new species invading	calendar of works based on species life cycle, site, control methods and skills/resources
	Weeds that are known to be difficult to eradicate once established	<b>Eliminate across the site</b>	Oxalis, Gladiolus MPSC control of Chilean Needle Grass	<b>Highest Priority -</b>	Follow up monitoring of infestation sites is occurring at the appropriate season	
	Weeds that are directly hazardous to wildlife on site (and/or stock in e.g. Landcare situation)		Ox-tongue lethal for frogs			
	Weeds that are allelopathic (ie produce chemicals which inhibit other species)		Vulpia spp Pittosporum			
S2 Mod	Weeds that spread vegetatively	Eliminate from high quality areas first	Kikuyu (except in grasslands) Succulents; Ivy; Wandering Trad	moderate risk, moderate priority in high quality sites	Species contained and cover reducing on high quality retention sites	skilled supervision required for high quality sites Vegetation quality map
S3 Low	Species that are long lived few if any seedlings observed	Lowest priority no action needed	West Australian Flowering Gum	Lowest priority		
	May have been planted in the past					

STATUS / RISK	CHARACTERISTICS	MANAGEMENT STRATEGY	EXAMPLES	PRIORITY	MEASURE OF SUCCESS	WORKPLAN NEEDS
Ubiquitous Weeds	Scattered Weeds of disturbed areas	Hardest to eliminate / look at management regime to reduce seed production	Many from Daisy Family e.g. Sow Thistle, Cat's Ear, some annual grasses	Low priority except in the highest quality retention sites or to protect threatened species	Highest quality and threatened species sites maintained weed free	Need to be able to identify disturbance regenerated indigenous species some of which are our rarest species e.g. Bitterbush, Hollyhock Roly Poly
		Eliminate in High quality retention sites- low priority else where		ongoing management of e.g. track edges	Management regimes adapted to reduce weed seed production	Calendar of works based on understanding of ubiquitous species life cycle
KEY: K=Keystone weeds; S=Small Patch Weeds of variable risk S1=High Risk, S2=Moderate Risk, S4=Low Risk; U=Ubiquitous Weeds						
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## Appendix 3. Maps

The following maps were produced using QGIS software including:

- The results of data collection in the field
- Aerial photography available through Google Earth (AusMap) and Nearmap
- VicMap layers (parcel, roads, waterways and locality boundaries)

Map 1A – Ecological Vegetation Classes Dromana Foreshore West

Map 1B – Ecological Vegetation Classes Dromana Foreshore Latrobe to Arthur Street

Map 1C – Ecological Vegetation Classes Dromana Foreshore Arthur Street to Nepean Hwy

Map 1D – Ecological Vegetation Classes Latrobe Reserve

Map 2A - Comparative Vegetation Quality Categories - Latrobe Reserve West

Map 2B - Comparative Vegetation Quality Categories - Latrobe Reserve East

Map 3A Significant Flora

Map 3B Significant Flora

Map 3C Significant Flora

Map 3D Significant Flora

Map 3E Significant Flora

Map 3f Significant Flora

Map 4A Significant Weeds

Map 4B Significant Weeds

Map 4C Significant Weeds

Map 4D Significant Weeds

Map 4E Significant Weeds

Map 4F Significant Weeds

Map 4G Significant Weeds

Map 5A-Management Observations

Map 5B-Management Observations

Map 5C-Management Observations

Map 5D-Management Observations