



## **SURF COAST SHIRE - Biodiversity Mapping Project, 2014**



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DEPI



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# EXECUTIVE SUMMARY

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In 2003, the Department of Environment, Land, Water and Planning (DELWP) completed Biodiversity Action Plans (BAP's) for the three bioregions covering the Surf Coast Shire (Otway Ranges, Otway Plain and Victorian Volcanic Plain bioregions). These plans directly translate *Victoria's Biodiversity Strategy* into regional and subsequently local action plans through the Strategic Overviews and a series of localised Landscape plans.

The BAP's highlighted the major attributes and key threats to the biodiversity within the Surf Coast Shire including the mapping deficiencies that currently inform the application of overlay schedules relating to biodiversity protection within the Surf Coast Planning Scheme.

As a result the DELWP undertook biodiversity mapping for the Surf Coast Shire in 2007 outlining all of the sites of biodiversity significance within the municipality. The department provided biodiversity mapping to all local government areas across the south west of Victoria. The intent of the project was specifically to provide local governments with improved mapping that could be directly translated into local planning schemes thereby implementing one of the key priority actions from the BAP's.

The Surf Coast Shire currently has a suite of overlay schedules that seek to protect local biodiversity. In the rural parts of the Shire the application of schedules is based on mapping undertaken by Ecology Australia in 1995 and within the townships it was based on vegetation assessments undertaken as part of neighbourhood character studies.

The mapping undertaken by the DELWP in 2007 was based on source data ranging from 1:100,000 – 1:25,000 which proved to be problematic at a property (overlay application) scale. The Surf Coast Shire continued to modify the mapping to improve its localised application, in consultation with the Department, and this revised mapping was completed in 2014.

Eleven waterways were included in the 2007 mapping and extensive protection buffers were suggested, based on best practice biodiversity conservation principles. Through the project steering committee (which included members from the DELWP and the CCMA) revised methodology for the inclusion of additional waterways was developed that also completed a review of suitable waterway setbacks.

# 1. SITES OF BIODIVERSITY SIGNIFICANCE (DELWP)

## Sites of Biodiversity Significance - Surf Coast Shire

In 2007, the Department of Environment, Land, Water and Planning (DELWP, previously DELWP) provided the Surf Coast Shire with mapping outlining all of the sites of biodiversity significance within the municipality, shown in figure 1 below.

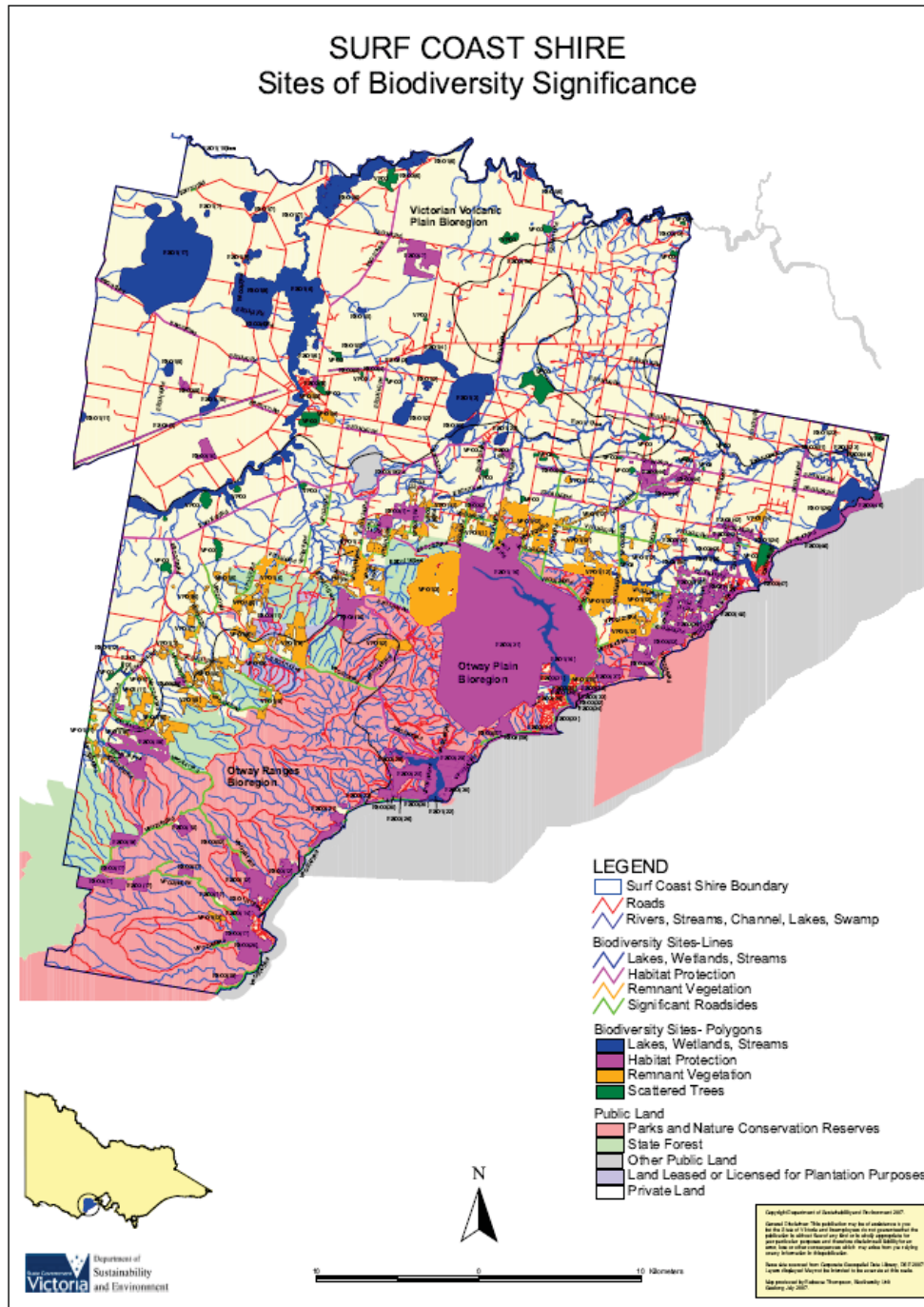







Figure 1: Map of biodiversity assets, DELWP (2007)

## Biodiversity mapping project

The project took two years to complete and compiled all current literature and data sources available to the department. The mapping part of the project also involved a thorough interrogation of GIS data layers, aerial photo interpretation, field checking and consultation with local staff and naturalists. The project was delivered to the Surf Coast Shire in two parts, the biodiversity mapping and associated data part of the project was delivered in 2007 and the identified priority sites for revegetation programs was delivered in 2009.

### **Biodiversity Asset Themes**

The mapping divided all of the biodiversity assets within the Surf Coast Shire into five biodiversity themes as follows;

-  Aquatic systems – significant wetlands and waterways
-  Habitat protection – key habitat areas for priority threatened species and communities.
-  Remnant vegetation – significant vegetation remnants
-  Roadside vegetation – significant vegetation on roadsides
-  Significant scattered trees – significant remnant trees.

Each asset was mapped and given a mapping reference relating it to a table of values that included a description of the asset, details of the species found within the asset and the current conservation status of specific species under Victorian and Federal legislation, International treaty or state listings. The assets were also given a biodiversity or biodiversity linkage value. The table of values for each mapped asset is located at Appendix 1 to this report.

#### Aquatic systems

The mapping part of the project included 12 wetlands (some of which are clusters of smaller wetlands) and 11 waterways, all of which have high biodiversity values within the Surf Coast Shire. The project highlighted the importance of waterways and wetlands for the role they play in providing habitat for threatened species (breeding and flocking sites for threatened waterbirds) and important habitat linkages within the landscape.

The Department recognised that the waterways included in the 2007 mapping project were not reflective of their biodiversity status within a local context and had been selected through the Index of Stream condition study which was a state wide study undertaken to provide a snap shot of the condition of Victoria's waterways. As such many waterways of local significance could have been overlooked.

The Biodiversity mapping project 2014, undertaken by the Surf Coast Shire in conjunction with the department (DELWP) and the Corangamite Catchment Management Authority (CCMA) completed a review of all waterways to determine those warranting greater protection through the planning scheme, discussed under Section 2 of this report.

#### Habitat protection

Remnant vegetation was divided into four categories, habitat protection, remnant vegetation, remnant vegetation within the road reserve and scattered trees. Vegetation mapped as 'habitat protection' is very high quality vegetation - deemed to form an

important habitat for threatened flora and fauna, such as stronghold locations for Flora and Fauna Guarantee Act 1988 listed species, endangered or Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) listed species or communities, edge of range species or significant relatively unmodified vegetation and potential habitat of threatened species.

#### Remnant vegetation

The vegetation mapped as 'remnant vegetation' contains threatened Ecological Vegetation Classes, areas with high structural and floristic diversity and vegetation forming linkages for the movement and dispersal of animals and plants.

#### Roadside vegetation

The roadsides mapped are those that contain significant vegetation, have structural diversity and include threatened species. Roadsides mapped as being of 'high conservation' in the Surf Coast Shire Remnant Roadside Vegetation Report (1997) was the key source for this mapping. The mapping also included roadsides that formed corridors linking significant patches of vegetation (mapped as either habitat protection or remnant vegetation) to one another.

#### Scattered trees

The mapped stands of scattered trees (or living food trees) were recognised as often containing exotic understorey but the trees themselves are mapped for their significance as they may be the only stand of habitat in an otherwise treeless environment, particularly important for bird life. Stands of scattered trees also may include mature dead trees with hollows which provide habitat for significant or threatened fauna.

### **General Principles to Guide Biodiversity Conservation Works**

The *Sites of Biodiversity Significance* Project was completed by the Department in three major stages. The first stage was the compilation of the biodiversity mapping and associated biodiversity data. The second stage was the testing of the data within the community and the third stage prioritised areas for revegetation works. The final stage included the general principles to guide biodiversity conservation works to assist in the implementation of the project.

The principles set out some benchmarks for conservation and provide guidance on where to focus revegetation works to ensure multiple benefits are achieved for biodiversity. The principles are shown in Table 1 below.

<b>GENERAL PRINCIPLES TO GUIDE BIODIVERSITY CONSERVATION WORKS</b>
<b>Priority attributes identified in Stage 1 Surf Coast Shire Biodiversity Mapping:</b>
<b>Threatened Species and Communities - ESO Habitat Protection</b>
<ul style="list-style-type: none"> <li>Threatened flora and fauna species &amp; habitat, and threatened vegetation communities are a priority</li> <li>Priority taxa &amp; communities = those with existing recovery plans, and keystone species</li> <li>All other factors considered equal, ESO patches and roadsides are considered higher priority than VPO and VPO patches and roadsides</li> </ul>
<b>Large Old Trees- VPO Scattered Trees</b>
<ul style="list-style-type: none"> <li>Revegetate around/within Large Old Trees patches with ≥10 Large Old Trees</li> </ul>
<b>Waterways – ESO1 Aquatic Systems</b>
<ul style="list-style-type: none"> <li>Waterways and Wetlands are priority sites</li> <li>Buffers on River ≥ 100m either side</li> <li>Buffers on Creeks and small gullies ≥ 50m either side</li> <li>Remnant vegetation associated with waterways or wetlands provides a diverse habitat and gives multiple benefits</li> </ul>
<b>Priority Attributes identified in Stage 3 Surf Coast Shire Biodiversity Mapping:</b>
<b>Large Patches</b>
<ul style="list-style-type: none"> <li>Patches ≥ 20 Ha</li> </ul>
<b>Small Patches</b>
<ul style="list-style-type: none"> <li>5 Ha is the threshold size for below which woodland bird biodiversity rapidly declines. Bird diversity begins to decline in patches &lt;10 Ha.</li> <li>Revegetation in areas with ≥ 10% vegetation cover</li> <li>Woodland patches ≥ 10 ha have the greatest value for woodland birds</li> <li>Build 5 Ha Patches to 10 Ha</li> <li>Build 10 Ha Patches to 20 Ha</li> </ul>
<b>Corridors</b>
<ul style="list-style-type: none"> <li>Minimum corridor width 50 m</li> <li>Corridors strategically placed to give multiple benefits</li> <li>Roadsides- buffer to one side to minimise disturbance and edge effects of road</li> </ul>
<b>Keystone Species</b>
<ul style="list-style-type: none"> <li>Actions that protect and enhance keystone species habitat and are likely benefit other species</li> </ul>
<b>Other Priorities</b>
<ul style="list-style-type: none"> <li>Connectivity with Public Land, wetlands and waterways, or other assets</li> <li>Strategically place work to give multiple benefits</li> </ul>
<b>General Principles</b>
<ul style="list-style-type: none"> <li>Increase patch size</li> <li>Increase connectivity using corridors and stepping stones</li> <li>Increase tree cover</li> <li>Priority to sites in best condition</li> <li>Buffer patches</li> </ul>

**Table 1: General Principles to guide biodiversity conservation works**

The buffers suggested under Waterways (of 100m either side to rivers and 50m either side for creeks and small gullies) could potentially be applied as a planning scheme overlay schedule (such as the ESO1) however the remainder of the principles specifically relate to revegetation works and are therefore more pertinent when considering where to focus off set planting. At present the Surf Coast Shire does not provide over the counter off setting and bush broker is managed through the DELWP but these principles should be considered when an off setting scheme is developed in the future. The general principles have been incorporated into the draft overlay schedules, draft schedules are located at Appendix 5 to this report.

## 2. CHANGES TO THE MAPPING

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The mapping provided by the DELWP was based on source data ranging from 1:100,000 – 1:250,000, standard mapping scale when mapping regional areas. When the Surf Coast Shire received the mapping it was considered that the scale of the mapping would be problematic at a property scale. When the mapping was viewed at a scale of 1:5000 the mapping covered houses and other infrastructure and similarly excluded sections of biodiversity assets. Accuracy of the mapping would be particularly important when directly translated into planning scheme overlay schedules and it was therefore considered prudent for Surf Coast officers to adjust the mapping from the previous scale of 1:100,000 to 1:5000.

Figure 2 provides an example of the inaccuracies of the DELWP 2007 mapping when viewed at a property scale (1:5,000). The mapping is shown in green and overlaps the 2013 aerial photographs of a property which show biodiversity mapping covering dwellings and some vegetated areas not covered by the mapping.





SCS officers set up a steering committee (located at Appendix 2 to this report) to oversee all mapping adjustments made by SCS to the DELWP 2007 biodiversity mapping, with officers from the SCS's strategic planning unit and environment unit, biodiversity officers from DELWP and waterways officer from the CCMA. It was agreed that removing obvious anomalies would improve confidence in the mapping and would also ensure assets were more accurately mapped and subsequently protected. It would also ensure the need for a planning permit was not unnecessarily required when the mapping was ultimately translated into planning scheme controls.

### **Community Engagement**

In May 2014 SCS wrote to 113 landowners affected by the biodiversity mapping as a pilot to test the accuracy of the mapping and to introduce the concept of extending and improving the protection of the Surf Coast Shires biodiversity assets through the planning scheme. These landowners were provided with an information brochure about the project and the potential future implications of the review; the brochure is located at Appendix 3 to this report. Only properties that are not currently covered by any overlay schedule were sent a letter and brochure. General information about the project was available through the SCS web site and an article was included in *Groundswell*, Surf Coast's quarterly newsletter that is mailed to all rateable property owners.

Properties already covered by an overlay schedule were not individually notified as it was considered that the impacts to these property owners would be less significant compared with those mapped for the first time. Those already covered by an overlay schedule would experience a readjustment on their property, with the mapped asset either increasing or decreasing in size. These landowners should already be aware of the implications of having an overlay schedule on their property and it was determined that the formal public exhibition process (undertaken as part of a planning scheme amendment) would be an adequate forum to engage with these property owners and make any final adjustments to the extent of the coverage of any overlay schedule resulting from community input.

Land owners containing stands of scattered trees or native grasslands, for example, have never been covered by an overlay schedule within the SCS and focusing on these land owners provided officers with an opportunity to validate the accuracy of the mapping and engage with land owners in a less formal manner - discussing the implications of introducing additional planning scheme controls as a result of the biodiversity mapping project.

Community feedback to the brochure and a description of the resulting mapping changes is located at Appendix 4 to this report. *Note: all personal details relating to the landowner has been removed.*

### **Wetlands and Waterways**

#### Wetlands

Wetlands were mapped by the Department (DELWP) using the Hydro100 layer (linear hydrological features) which delineates streams and their boundaries and water bodies including lakes and wetlands. The Hydro100 layer was produced for the whole of

Victoria between 1989 – 1994, at a scale of 1:100,000 with a potential horizontal inaccuracy of up to 25m.

The Victorian State wide rivers project 2009 – 2010 produced LiDAR survey data which is more accurate than the Hydro100 layer, with a reduced horizontal inaccuracy margin of 0.3m. The CCMA utilises this data when undertaking flood and inundation mapping for the Surf Coast Shire and subsequent changes to the SC planning scheme. For consistency all changes to the wetland layer were undertaken using the same LiDAR survey data to ensure all overlay schedules (relating to wetlands) in the Surf Coast Planning scheme are based on the same source data.

The revised mapping of wetlands was also cross referenced with Surf Coast Shire aerial photographs (utilising photographs from various years depending on annual rainfall and time of year when aerial photographs were taken). All of the mapping changes undertaken by SCS were overseen by the steering committee but were relatively minor in nature, resulting in slight wetland boundary adjustments.

### Waterways

#### *Data source*

Waterways were mapped by the Department using the HY\_watercourse layer from Vicmap Hydro, which is also produced Victoria wide. The HY\_watercourse layer is more current than the Hydro100 layer and is undertaken at a reduced scale of 1:25,000. The worst case error for the data is estimated to be 30m.

As with wetlands, LiDAR survey data is utilised by the CCMA and forms the base data for flood and inundation mapping (associated with waterways) in the Surf Coast Planning Scheme. The mapping changes undertaken in 2014 resulted in the removal of all previously mapped waterways from the 2007 biodiversity mapping and reinsertion of the waterways using LiDAR survey data. The revised locations of the waterways was further adjusted using 2013 aerial photography and mapped at a scale of 1:500 within all settlement boundaries. Primarily this mapping was undertaken by the CCMA with additional minor adjustments made by the Surf Coast project officer.

#### *Waterways Included Through the 2014 Mapping Project*

DELWP mapped 11 waterways, 9 of which came from the Index of Stream Condition (ISC) reports undertaken by the DELWP in 1999, 2004 and 2010. The ISC selected various waterways from each catchment located in different environmental conditions to ascertain an overall picture of river health across Victoria. The ISC provides important biodiversity data for each waterway included in that project and that information is contained within the tables located at Appendix 1 to this report. The DELWP 2007 mapping included three additional waterways (not included in the ISC report) but a number of locally significant waterways were not mapped.

Four of the waterways mapped by DELWP in 2007 are covered by an overlay schedule (Environmental Significance Overlay Schedule 1 [ESO1]) in the Surf Coast planning scheme at present. Surf Coast worked with the CCMA and DELWP to bridge the information gap and ensure all locally significant waterways were included in the revised mapping completed in 2014.

## Biodiversity mapping project

Surf Coast mapped an addition 22 waterways, 10 of these are named waterways and 12 are named and unnamed tributaries to major waterways included for either their importance as a habitat corridor within an often devoid landscape or as a significant source to a major waterway. The following table provides a summary of the waterways included in the 2014 biodiversity mapping project. All of the waterways currently covered by an ESO1 in the planning scheme and those mapped through the 2007 mapping project have been retained.

Retreat Creek and Pennyroyal Creek were remapped to ensure the higher order reaches of the waterway were covered and sections of the waterway fully contained within crown land were removed, to be managed through other more appropriate legislation. As a result of the 2014 mapping project the number of waterways suggested to be covered by an ESO1 will be increased from 4 waterways to 21 waterways all of which either support significant flora or fauna, are locally significant or are a significant tributary to a waterway known to have high biodiversity values.

Name of waterway	Currently covered by SC Planning Scheme	Mapped by DELWP in 2007	Included in SC Biodiversity mapping project 2014	Stream order 1-4 (or higher)
Anglesea River		√ (ref 16)	√ (includes 2 tributaries – one named as Salt Creek)	4
Barwon River	√	√ (ref 6)	√ (includes 3 tributaries)	4
Painkalac Creek	√	√ (ref 22)	(includes 2 tributaries – one named as Distillery Creek)	4
Spring Creek	√	√ (ref 18)	√	4
Thompsons Creek	√	√ (ref 1)	√ (includes 4 tributaries)	4
Warrambine Creek		√ (ref 19)	√	4
Wormbete Creek		√ (ref 15)	√ (includes 1 tributary)	4
Erskine River		√ (ref 21)	√	3
Pennyroyal Creek		√ (ref 20)	√	3
Retreat Creek		√ (ref 14)	√	3
Deep Creek		√ (ref 24)	√	2
Raven Creek			√	4
Brickmakers Creek			√	3
Deans Marsh Creek			√	3
Cumberland River			√	3
Grassy Creek			√	3
Mathews Creek			√	3
Merrijig Creek			√	3
Saint George River			√	3
Waurm Ponds Creek			√	3
Yan Yan Gurt Creek			√	3

**Table 2: Mapped waterways in the Surf Coast Shire**

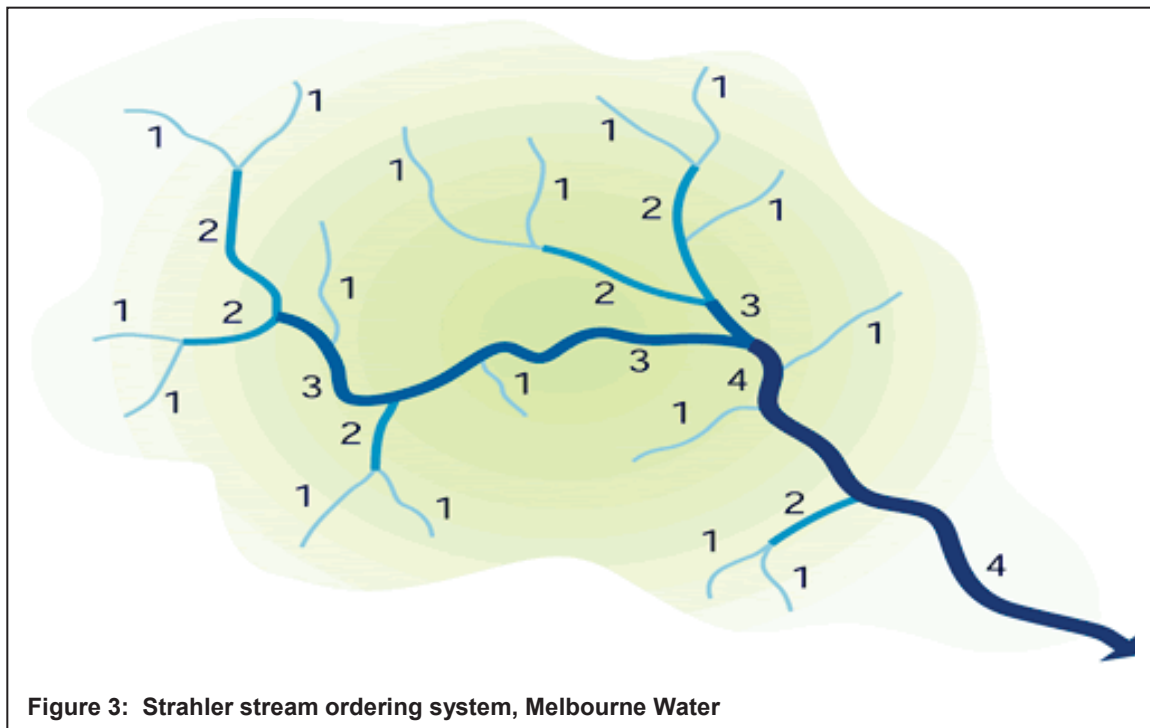
The current ESO1 in the Surf Coast Planning scheme affects 394 properties (waterways and wetlands). This will be increase to 621 properties if the ESO1 is extended to cover the waterways mapped through the biodiversity mapping project 2014. The properties

abutting the Barwon River, Thompsons Creek, Painkalac Creek and Spring Creek (currently covered by an ESO1) will have the overlay significantly reduced on their property due to proposed buffer reductions, as discussed below.

### *Stream Ordering*

DELWP suggested a different protection buffer width for rivers and creeks based on the assumption that creeks are smaller in size, however, this is not always the case in the Surf Coast Shire. Spring Creek and Thompsons Creek for example are major waterways in the SCS. The Barwon River is the only higher order waterway in the SCS that is named as a 'river' and not a 'creek'. Prior to determining the appropriate buffer for each waterway, the waterways had to be ordered, which was undertaken by the CCMA.

The Strahler stream order system was applied, which is a simple method of defining stream size based on a hierarchy of tributaries. A small stream with no tributaries is defined as a first order stream. When two first order streams come together, they form a second order stream. When two second order streams come together, they form a third order stream and so on, as shown in figure 3 below.



The majority of waterways in the SCS are first order streams, represented in red in figure 4 below. Second order streams are represented in green, third order in blue and fourth order or major waterways in pink.

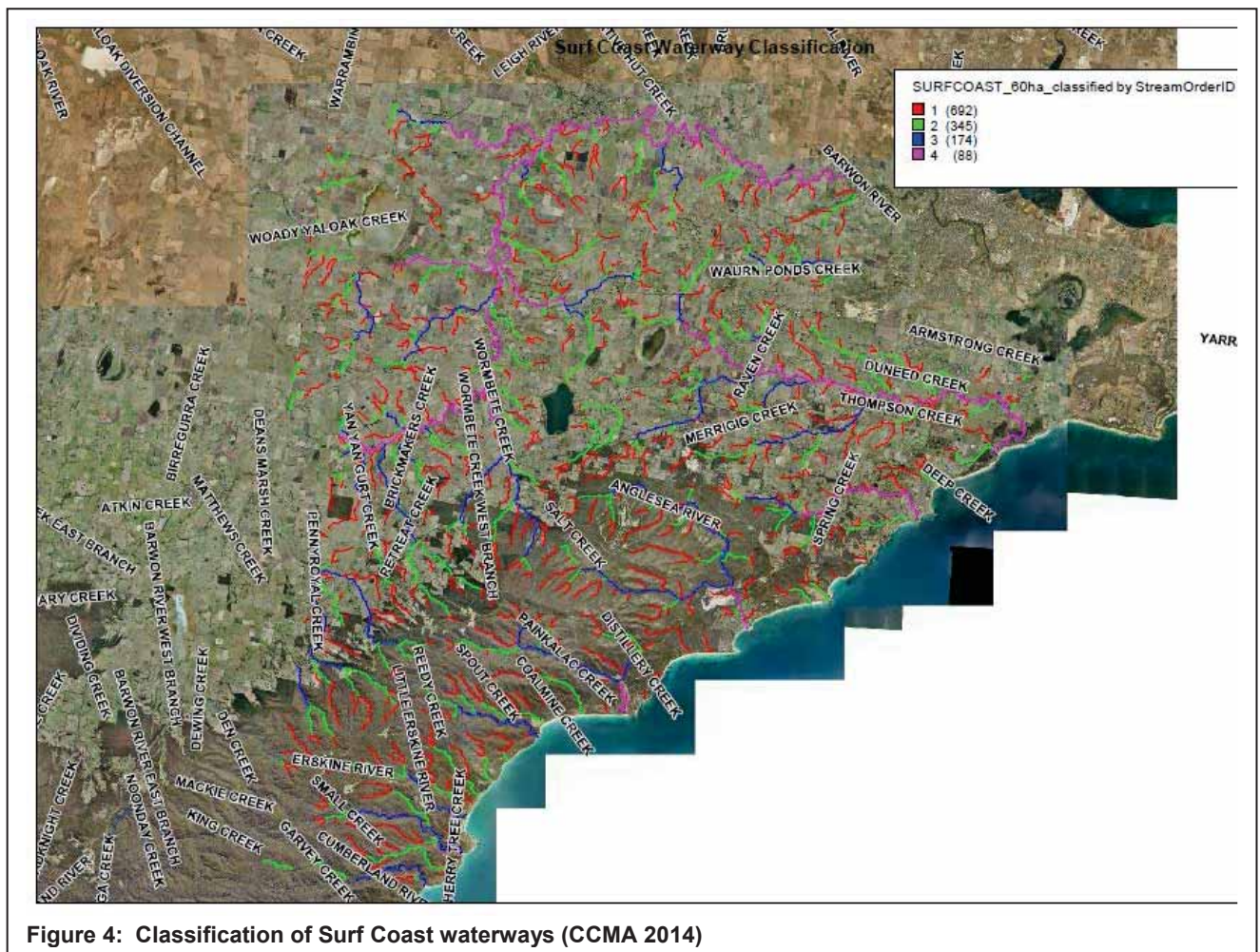
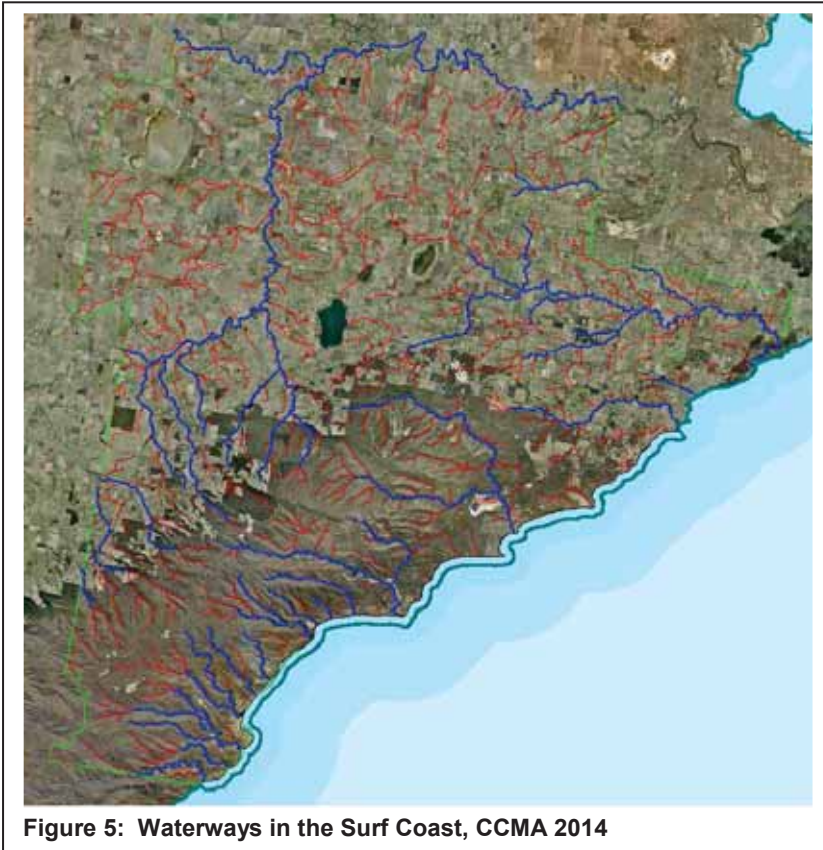


Figure 4: Classification of Surf Coast waterways (CCMA 2014)

Although all waterways in the Surf Coast are significant for the role they play in providing habitat for flora and fauna and regulating flows that feed into the broader waterway system, the network of drainage lines and minor streams covering the municipality is too extensive and would be overly cumbersome to council and the land owner if a permit was triggered for development and potential impacts to every small stream.

As part of the mapping project the SCS undertook an engagement process that targeted landowners containing a waterway mapped through the 2014 biodiversity mapping project (but only those who are not currently affected by an ESO1 at present as mentioned above). When the waterways were initially mapped all first and second ordered streams were removed with the exception of named waterways including locally significant waterways such as Moggs Creek and Spout Creek which are located on the nationally significant Great Ocean Road as shown in figure 5 below.

All named waterways are shown in blue and all other waterways in red. It should be noted that four tributaries to the Barwon River are not shown in blue in the map below (as they are unnamed tributaries) but they are third ordered streams and included in the final version of the biodiversity mapping located in figure 6 below.

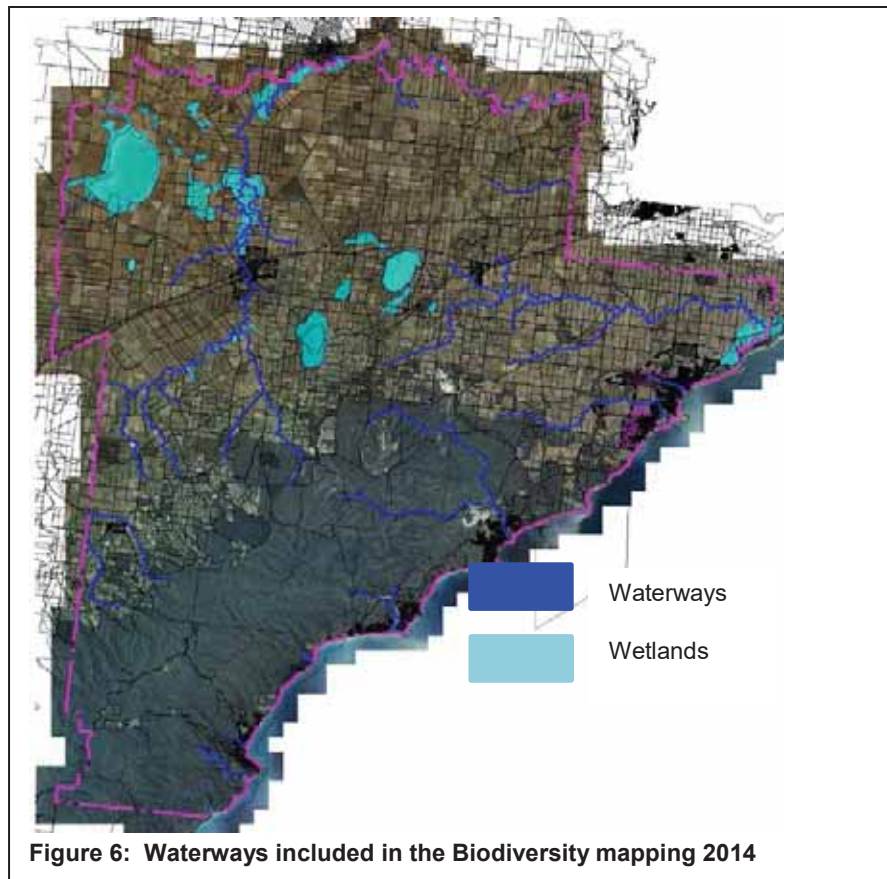


**Figure 5: Waterways in the Surf Coast, CCMA 2014**

Landowner consultation undertaken in 2014 led the steering committee to reconsider including named second order streams, as some smaller order creeks such as the Duneed Creek, proved to be nothing more than drainage lines in rural areas and the inclusion of a significant buffer on either side of a minor waterway could prove too restrictive to genuine farming activities and unwarranted based on the size of the creek.

The only exception was the retention of Deep Creek in Torquay, which is a named second order stream. Deep Creek was included in the 2007 DELWP mapping as a waterway containing rare and threatened species, supporting significant riparian habitat and being a high biodiversity link. Deep Creek is subject to increasing pressures from encroaching urban development within Torquay, the designated growth centre of the Surf Coast Shire, and therefore worthy of inclusion.

The waterways (third and fourth order streams) included in the biodiversity mapping project 2014 are shown in figure 6 below.



**Figure 6: Waterways included in the Biodiversity mapping 2014**

#### *Waterway Buffers*

The 2007 DELWP mapping provided the waterway location only and buffers were not mapped. DELWP assumed SCS would add the buffer at the planning overlay implementation stage. The general principles for biodiversity conservation works table (included as Table 1 above) suggested a buffer of 100m either side of rivers and 50m either side of creeks. However that is a suggested buffer for conservation works that would enhance the biodiversity values of the waterway and not necessarily an appropriate guide for the application of an overlay schedule.

An overlay schedule could potentially trigger a planning permit for all buildings and works within 100m of all waterways included in the mapping which could prove onerous to a landowner and could significantly increase work loads for council with potentially limited value gained as a result. The planning scheme at Clause 14.02-1 requires the retention of;

*'...natural drainage corridors with vegetation buffer zones at least 30m wide along each side of a waterway to maintain the natural drainage function, stream habitat and wildlife corridors and landscape values, to minimise erosion of stream banks and verges and to reduce polluted surface runoff from adjacent land uses.'*

A 30m wide buffer zone along each side of a waterway is the minimum requirement for protection of waterways within the planning scheme at Clause 14.02-1 of the State Planning Policy Framework. This is substantially less than the DELWP suggested 100m either side for larger waterways and 50m either side for smaller waterways (or creeks); therefore the steering committee deemed it worthy of further investigation and review.

At present 4 major waterways in the Surf Coast, the Barwon River, Thompsons Creek, Painkalac Creek and Spring Creek are covered by an overlay schedule in the planning scheme. The Environmental Significance Overlay Schedule 1 (ESO1) covers these waterways and triggers a permit for all buildings and works and vegetation removal within the area covered by the schedule. The mapped coverage of the ESO1 fluctuates quite significantly and ranges from 60 – 100m either side of the waterway and would appear to be closer to 100m in rural areas and 60m in urban areas. When the ESO1 was initially applied, the overlay schedule would have been hand drawn and then translated into planning scheme maps resulting in the variations seen in the mapping.

DELWP had specified different buffer widths based on the size of the waterway (a larger buffer for rivers and a lesser for creeks) but as mentioned above naming conventions don't always reflect the size of the waterway and therefore the stream ordering was relied upon instead. The rationale of applying different sized buffers to larger and smaller waterways was retained, with larger buffers to apply to fourth ordered streams (or greater) and a lesser buffer to be applied to third ordered streams.

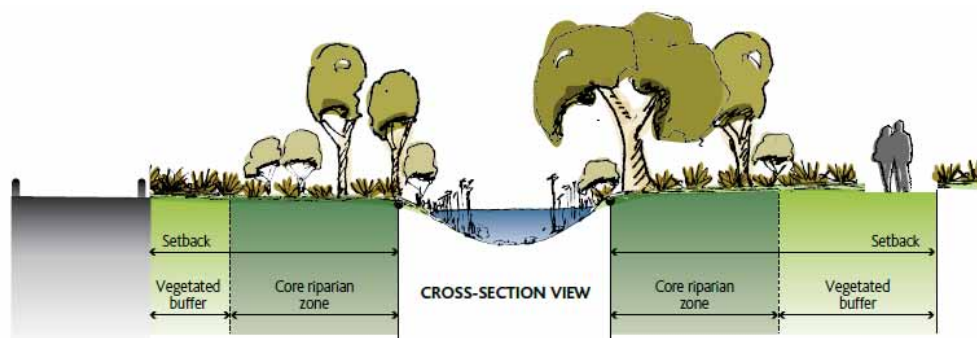
The steering committee determined to adopt the buffer widths recommended by Melbourne Water in the document 'Waterway Corridor Guidelines' which is based on best practice waterway management. This applies a buffer of 50m either side of major waterways (fourth order streams or greater) and 30m either side of third order streams. The 30m buffer for smaller waterways is consistent with the minimum vegetated buffer zone specified in Clause 14 of the planning scheme and the 50m buffer provides additional space for the protection of higher order waterways.

The recommended waterway buffers in the *waterway corridor guidelines* contains an overall setback width which includes a 'core riparian zone' (which abuts the waterway) and outer 'vegetated buffer' which protects the 'core riparian zone' but is an area that may include low impact activities such as pathways etc. The width of the inner and outer zones differs depending on the width of the stream buffer as follows;

STREAM ORDER	OVERALL SETBACK WIDTH	CORE RIPARIAN ZONE WIDTH	VEGETATED BUFFER WIDTH
Fourth order (and greater)	50m	40m	10m
Third order	30m	20m	10m

**Table 3: Waterway buffers (Melbourne Water)**

The waterway buffer is shown in cross section view in figure 7 below;



**Figure 7: Cross section of recommended waterway buffers (Melbourne Water)**







The intended implementation of the 'waterway corridor' guidelines is to be applied in residential subdivision in the greater Melbourne area and was not necessarily intended as a guide for the application for overlay schedules. However the guidelines provide a reasonable balance between the expectations of enhancing and protecting a waterway through recommended protection widths whilst enabling development within the vicinity of a waterway.

A proposed ESO1 applied to 25 waterways across the Surf Coast Shire (increased from the current 4) will provide a trigger for a permit only and the role of the ESO1 will be to guide decision makers as to what activities may or may not be compatible within the vicinity of a waterway with targeted enhancement areas. These revised buffers will ensure the application of the ESO1 is more consistently applied and will ensure that the strategies for catchment management at Clause 14.02-1 are considered and applied.

### **Remnant vegetation and habitat**

The 2007 DELWP mapping split remnant vegetation into four themes as follows;





-  Habitat protection – key habitat areas for priority threatened species and communities.
-  Remnant vegetation – significant vegetation remnants
-  Roadside vegetation – significant vegetation on roadsides
-  Significant scattered trees – significant remnant trees.

The Department noted that mapped areas of 'habitat protection' have a higher biodiversity score compared with mapped areas of 'remnant vegetation' due to the conservation status of the species contained within those mapped areas. This information will be important when the Surf Coast Shire, in consultation with DELWP, develops off set requirements for vegetation removal and in the interim for planning officers determining the significance of vegetation loss. However, for the purposes of applying an overlay schedule the vegetation score is not so relevant and as a result the 2014 mapping grouped vegetation types so that they could be more easily transitioned into the planning scheme with the focus being on potential land use and development pressures.

'Habitat protection' and 'remnant vegetation' on private land and along roadsides were mapped as one layer named 'habitat protection and significant vegetation'. 'Habitat protection and significant vegetation' were geographically split between urban settlements and rural areas to enable specific requirements to be included in overlay schedules dealing with urban pressures such as subdivision and development intensification consistent with the zoning of the land.

Grasslands were mapped separately due to their protection under Federal law within the Victoria Volcanic Plains and the likelihood of impacts resulting from agricultural activities rather than development. Scattered trees were unchanged from the DELWP mapping. The 2014 mapping of native vegetation is as follows;

Biodiversity mapping project

-  Significant habitat and remnant vegetation – rural areas.
-  Significant habitat and remnant vegetation - settlements.
-  Native grasslands
-  Significant scattered trees.

The 2014 biodiversity mapping project is represented below in three maps below depicting the northern, south western and south eastern parts of the Surf Coast Shire, shown in Figures 8, 9 and 10

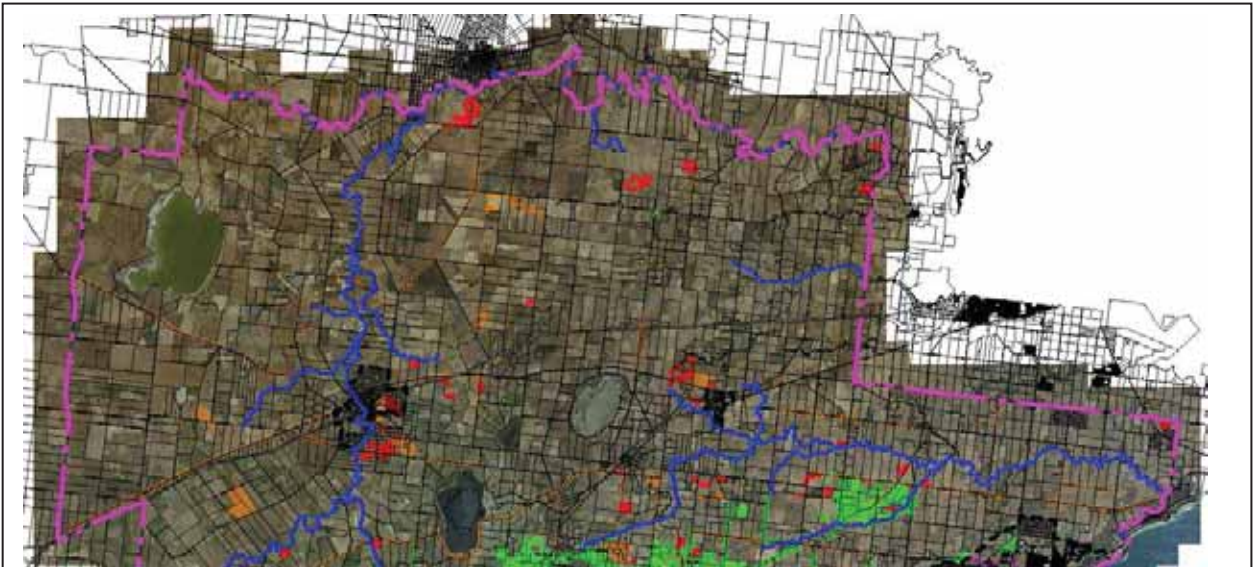
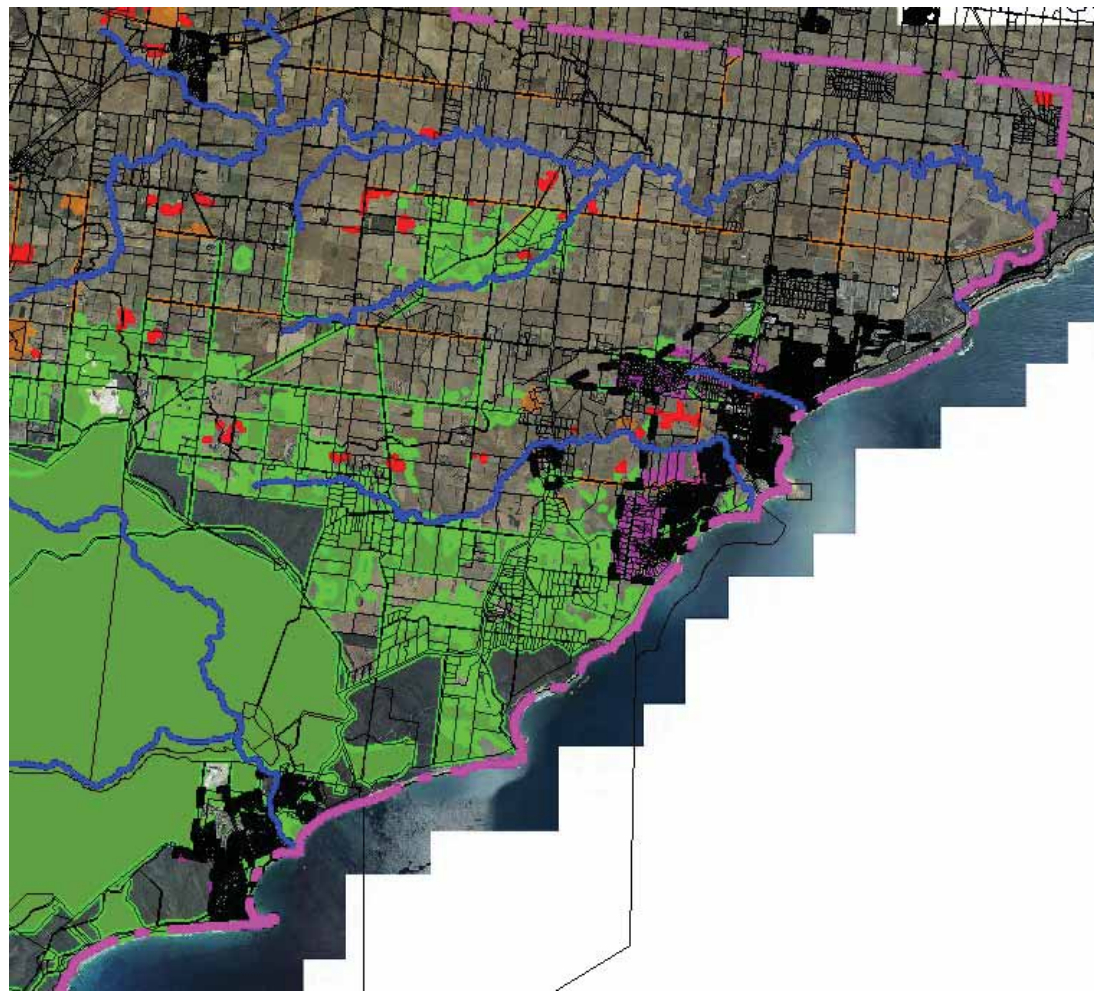


Figure 8: Biodiversity mapping 2014 (Surf Coast Shire north)



Figure 9: Biodiversity mapping 2014 (Surf Coast Shire south west)



**Figure 10: Biodiversity mapping 2014 (Surf Coast Shire south east)**

Adjustments to the vegetation layer were undertaken at a scale of 1:5000 (compared with the 2007 mapping which was mapped at a scale of 1:100,000). The changes were primarily undertaken through aerial photography interrogation with the biodiversity mapping layer overlapping the 2013 aerial photographic layer and adjusted accordingly.

As mentioned previously all property owners affected by the mapping (not currently covered by an overlay schedule) were notified of the mapping to test the map's accuracy and to open up discussions with landowners relating to the potential of future overlays being applied to their property. Seventeen property owners, with remnant vegetation on their property, contacted the project officer and acknowledged the existence of significant vegetation on their property.

A number of landowners identified minor mapping errors, all of which were investigated and the mapping was adjusted accordingly. This undertaking demonstrated the accuracy of the mapping and although the community engagement exercise only represented a small proportion of those affected by the mapping project, it highlighted that those that were inspected were accurate.

The mapping of native grasslands provided by DELWP was not modified through the 2014 biodiversity mapping project (which was primarily a desk top project utilising aerial photography) with the exception of one rural property. A series of planning permits were approved by the Surf Coast Shire for the removal of native grasslands from a property in Gnarwarre Road, following the completion of the 2007 mapping. The 2014 mapping

project utilised the information on the endorsed plans to remap the extent of the remaining grasslands. The changes were confirmed by DELWP officers who had been part of the planning permit process and had mapped the grasslands on site.

### How the mapping will work

The original intention of the mapping project undertaken in 2007 was that the biodiversity mapping would be translated into overlay schedules within the SC planning scheme. This intention has not changed and the tables of values prepared by DELWP that provide the description and value of each individual mapped asset will form the basis of decision making where a schedule is applied. The tables provide the background data required by planning officers and referral authorities when assessing the impacts that subdivision, buildings or works or vegetation removal may have on a particular asset including, habitat, vegetation loss or the natural functions of a wetland or waterway.

This report including the tables located at Appendix 1 will be a reference document within the planning scheme to be referenced wherever relevant. A link has been created within the SCS GIS program that will directly link each property containing an overlay schedule to the relevant table of value, shown in the example below. This will enable council officers to check the asset from their desktop in addition to looking up the asset in hard copy. It is envisaged that ultimately the mapping system will be available directly to the public but in the interim land owners will have to obtain the information from council.

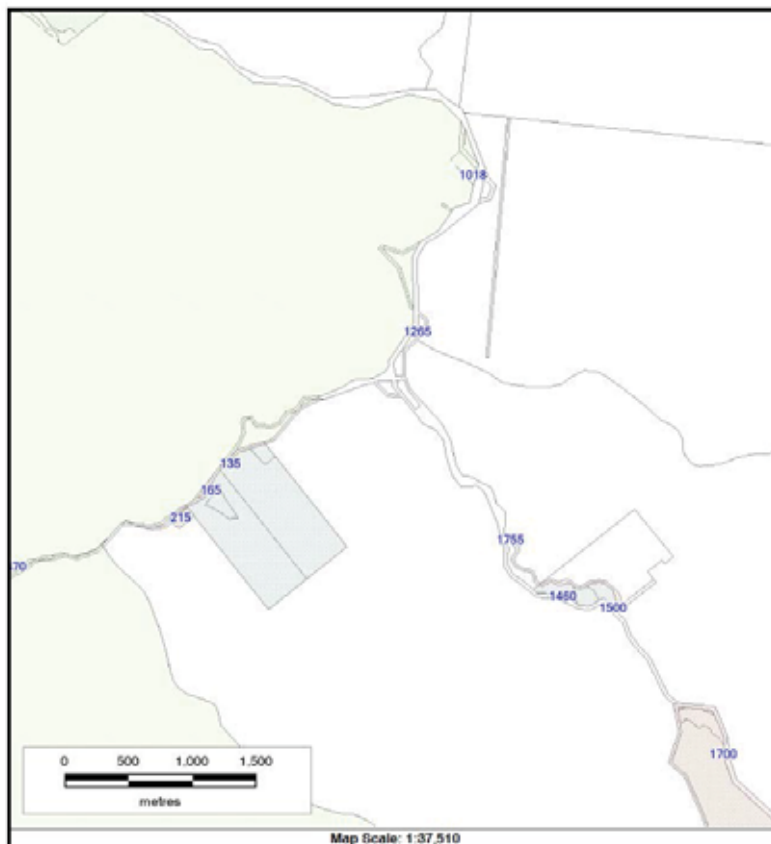


Figure 11: Map of Lorne hinterland with example property selected in blue

Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Flora/Fauna/Asset Description
Yes	No	Yes	EVC Shrubby Wet Forest (201)(least concern) contains Brookers Gum (Eucalyptus brookeriana)(r). Surrounded by Great Otway National Park.

Conservation Status Abbreviations

National Flora and Fauna		DSE		DSE		FFG		International Treaty	
EBPC		State Flora		State Fauna		FFG		Migratory Bird Agreement	
EX	extinct	ex	extinct	cr	Critically endangered	L	Listed	J	JAMBA
CR	critically endangered	e	endangered	e	Endangered	N	Nominated	C	CAMBA
EN	endangered	v	vulnerable	v	Vulnerable	I	Invalid/ineligible		
VU	vulnerable	r	rare	nt	Near threatened				
		k	poorly known	dd	Data deficient				

Please note: Conservation status of Ecological Vegetation Classes and rare and threatened species may be subject to change.

Table 4: Example of asset description (with conservation reference table) for selected property

## 3. INCORPORATING THE MAPPING INTO THE PLANNING SCHEME

### Current Overlay Schedules

The biodiversity assets within the Surf Coast Shire are protected through a range of planning scheme tools including the Municipal Strategic Statement (MSS), local policy and a number of overlays including the Vegetation Protection Overlay (VPO), Environmental Significance Overlay (ESO) and Significant Landscape Overlay. Local policy and the application of overlays are directed by the Municipal Strategic Statement which outlines the importance of and contains strategies for the protection and enhancement of the biodiversity and landscape assets of the Surf Coast Shire.

The current coverage of the VPO1 and SLO1 in the rural parts of the Shire are based on the *Rural Environmental Study: Report on Environmental Resources (1996)* which provided the mapping and conservation status for all of the sites of environmental significance in the rural parts of the Surf Coast Shire. The mapping of remnant vegetation within the townships was undertaken through individual township studies and associated vegetation assessments and overlay schedules were applied to implement those.

At present there are five schedules to the Environmental Significance Overlay, three schedules to the Vegetation Protection Overlay and seven schedules to the Significant Landscape Overlay (SLO) all of which have a role in the protection of native vegetation through the Surf Coast Planning Scheme. The ESO's and VPO's cover the highest value vegetation within the Surf Coast Shire with the exception of the SLO1 which was applied to significant vegetation in the coastal hinterland from Bells Beach to Lorne

Table 5 below outlines the current application of overlay schedules, relating to native vegetation protection within the Surf Coast Shire, where they apply and the type of asset they protect.

OVERLAY SCHEDULE	LOCATION	ASSET TYPE
ESO1	Wetlands Shire wide. Barwon River, Thompsons Creek, Spring Creek and Painkalac Creek.	Wetland and associated dryland habitat protection
ESO2	Pennyroyal creek, Mathews Creek, Dewings Creek, St George River, Erskine River and Painkalac Creek catchments	Special Water supply catchment areas
ESO3	Anglesea	Coastal moonah woodland
ESO4	Aireys Inlet, Fairhaven and Moggs Creek	Significant vegetation and habitat
ESO5	Aireys Inlet to Eastern View	Significant vegetation and habitat
VPO1	Shire wide	Significant native vegetation
VPO2	Anglesea	Anglesea heathland vegetation
VPO3	Torquay/Jan Juc	Bellarine Yellow Gum
SLO1	Great Ocean Road and coastal environs – Bells Beach, Point Addis, Big Hill and Lorne hinterland	Landscape character and significant vegetation and habitat
Coastal Development Policy	Great Ocean Road and coastal environs – Bells Beach, Point Addis, Big Hill and Lorne hinterland	Landscape character and significant vegetation and habitat
SLO3	Anglesea	Landscape character and native vegetation
SLO4	Lorne	Landscape character and native vegetation
SLO5	Winchelsea	Barwon River environs
SLO6	Torquay/Jan Juc	Landscape character and native vegetation
SLO7	Bellbrae	Landscape character and native vegetation

**Table 5: Overlay schedules that protect the biodiversity values of the Surf Coast Shire**

The extensive number of overlay schedules applying to vegetation protection in the Surf Coast Shire relates to the timing and geographic undertaking of planning scheme amendments, being township based, implementing a variety of neighbourhood character studies and associated vegetation assessments. A review of the current array of overlay schedules, Shire wide, with an opportunity to streamline these controls, assessing their role in protecting biodiversity protection, has not been undertaken since the planning scheme rewrite was completed as part of the introduction of the Victoria Planning Provisions.

The Significant Landscape Overlay has the capability to recognise the importance of native vegetation as a key contributor to the landscape character, however, the focus of this overlay is not biodiversity protection, although it may achieve this end as part of enhancing the broader landscape values. The SLO1 was historically applied to land with high biodiversity values (that also contains high landscape values) with a local policy outlining the significance of the vegetation through the inclusion of purpose designed 'habitation envelopes' within the schedule that seeks to protect significant vegetation in a completely natural state beyond a designated development area.

In the past the SLO1 was more broadly applied along the coast but a series of township amendments has removed this schedule and it now only applies in the hinterland. In areas with higher biodiversity values (such as Aireys Inlet to Eastern View) the SLO1 was replaced with an ESO with clear objectives and decision guidelines that recognises the value of the vegetation.

### Environmental Significance Overlay

#### *Environmental Significance Overlay Schedule 1 (ESO1)*

The ESO1 applies to wetlands and waterways within the Surf Coast Shire and the biodiversity mapping undertaken by DELWP in 2007 and the SC in 2014 has continued to utilise the ESO1.

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### *Environmental Significance Overlay Schedule 2 (ESO2)*

The ESO2 applies to drinking water catchments and is not affected by this the project as the protection of native vegetation in these areas relates to protecting the quality of drinking water and is as directed by the relevant water authority (Barwon Water).

### *Environmental Significance Overlay Schedule 3 (ESO3)*

The ESO3 applies to Coastal Moonah Woodland in Anglesea and should be reviewed as it is applied alongside the SLO3 that also recognises the importance of protecting Moonah woodland and is therefore repetitious. The *environmental objectives to be achieved* through the ESO3 are;

- To protect and ensure the long term future of the Coastal Moonah Woodland vegetation community.
- To minimise the impact of residential development on Coastal Moonah Woodland vegetation and its habitat value.

And similarly the *statement of nature and key elements of landscape* within the SLO3 recognises the importance of;

- Isolated areas of Coastal Moonah Woodland in Point Roadknight and around the Anglesea River which is listed as threatened under the *Flora and Fauna Guarantee Act 1988*.

And seeks:

- To protect and enhance the native indigenous vegetation cover... from the effects of urban development.

The sites in Anglesea currently covered by the ESO3 are shown in figure 12 below and their location corresponds to the description outlined above in the SLO3 (in Point Roadknight and close to the river). The key advantage of the ESO3 over the SLO3 in protecting moonah woodland is that it can also consider the impacts a subdivision and subsequently the impact that increasing development densities can have on significant stands of vegetation. However the sites where the ESO3 has been applied are standard urban blocks that are not capable of further subdivision under current policy and therefore the SLO3 is sufficient.

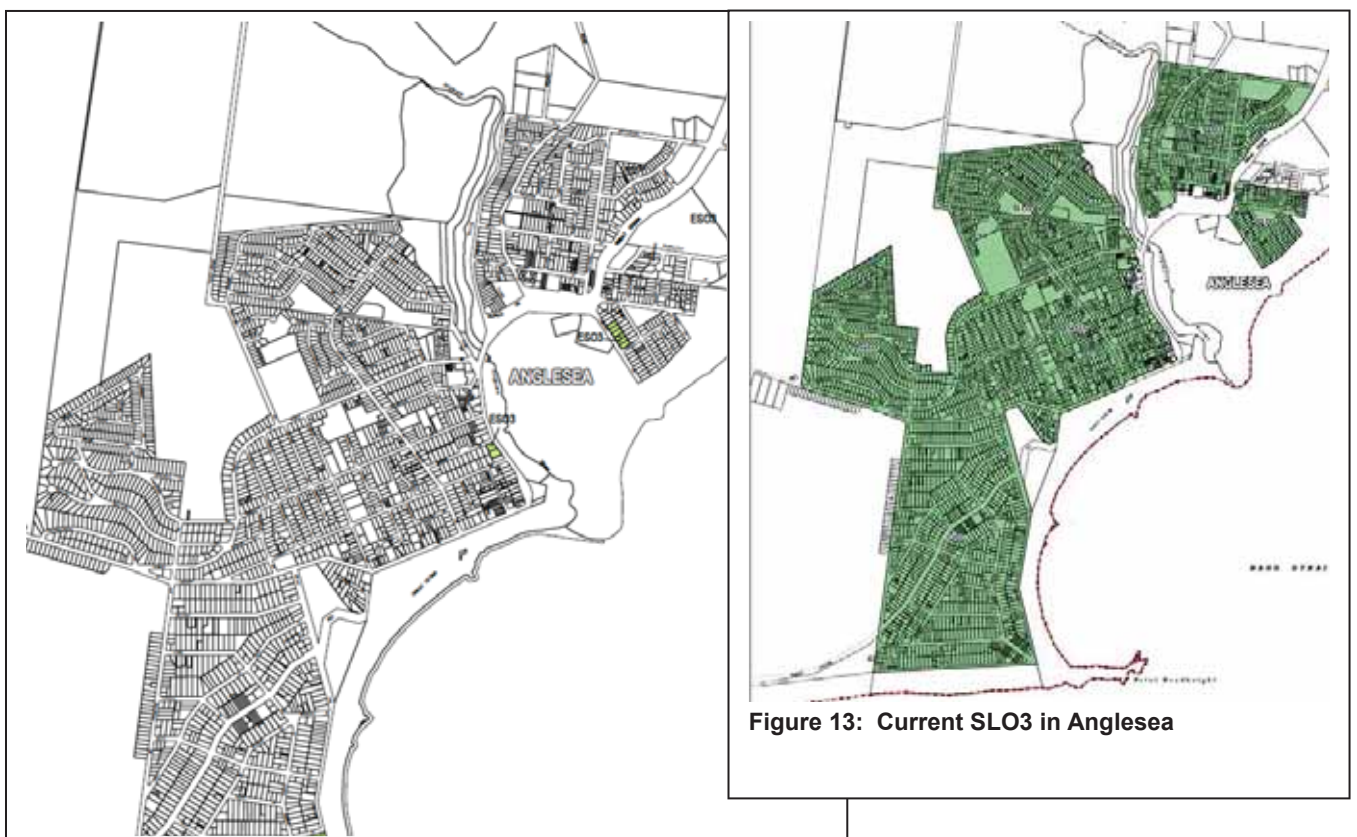


Figure 13: Current SLO3 in Anglesea

## Biodiversity mapping project

An ESO (replacing the current SLO3) should be considered though on a large property in McDougall Road at the northern edge of the Anglesea township which is 24,325 sqm and has been mapped as containing significant vegetation and habitat. This block could potentially be further subdivided into approximately 40 new lots, at a density of 1:550sqm. The application of standard infill densities without proper consideration of how this may impact on the high biodiversity values on this site could be highly detrimental to those assets.

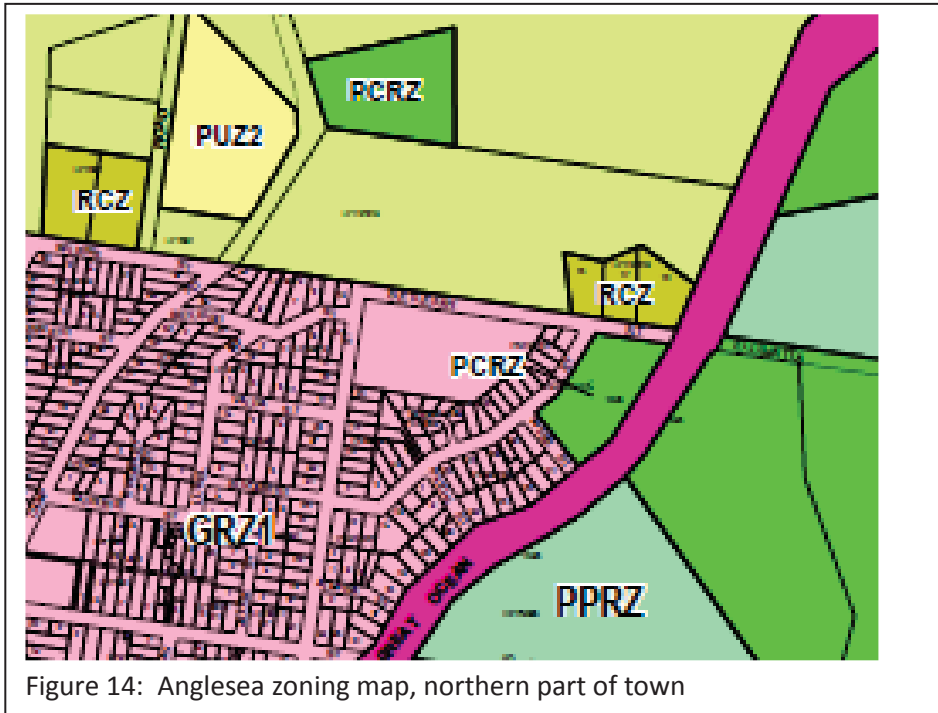


Figure 14: Anglesea zoning map, northern part of town

### *Environmental Significance Overlay Schedule 4 and 5 (ESO4/ ESO5)*

Aireys Inlet to Eastern View are the only settlements within the Surf Coast Shire that are covered by an ESO rather than an SLO. The settlements of Aireys to Eastern View have historically experienced a lesser rate of development and at lower densities comparative with other coastal towns and as such has retained a greater coverage of remnant vegetation within the urban and urban fringe areas, warranting its current coverage with an ESO. Two ESO schedules apply to the settlements, the ESO4 and the ESO5, with the ESO4 generally applying to more urbanised areas and the ESO5 applying to the urban fringe.

Reviewing the application of the ESO4 and ESO5 is warranted as part of the rationalisation of reducing the number of overlay schedules managing biodiversity within the coastal towns provided the integrity of both schedules can be retained. The two major differences between the ESO4 and the ESO5 is that the vegetation covered by the ESO4 is more modified than than the vegetation covered by the ESO5 and the treatment of fencing.

There is an expectation that properties covered by the ESO5, which are located on the fringe of the town (abutting the national park and coastal reserves) will have no fences or fencing that prevent native fauna moving from private land to public land uninhibited. These differences can be overcome by including wording in a revised schedule that recognises the values of the vegetation from both schedules and through the inclusion of wording within the decision guidelines specific to the movement of native fauna.



## Biodiversity mapping project

Landscape character in Aireys Inlet is separately considered under the Neighbourhood Character Overlay Schedule 1 and the ESO4 and ESO5 relate to the protection of significant vegetation recognising how development and subdivision can impact on the values of that vegetation. The NCO recognises the importance of vegetation as a neighbourhood character attribute (similar to the SLO which considers landscape value) but only protects trees over 5m in height which is not relevant in the coastal townships of the Surf Coast Shire where the understorey is often unmodified and highly significant and in some areas such as Moggs Creek can have a relatively low tree canopy ranging between 2m – 3m in height.

### Vegetation Protection Overlay

#### *Vegetation Protection Overlay Schedule 1 (VPO1)*

The VPO1 applies to significant vegetation and habitat primarily in the rural parts of the shire but also in some areas of Torquay, Jan Juc and Anglesea. The application of the VPO1 was guided by the *Rural Environmental Study: Report on Environmental Resources* (1996) and its coverage needs to be modified and reviewed with the mapping changes made through the biodiversity mapping project 2014 incorporated.

#### *Vegetation Protection Overlay Schedule 2 (VPO2)*

The VPO2 applies to a pocket of urban allotments on the western edge of Anglesea directly abutting and originally forming part of the Nationally listed *Anglesea Heathland Estate*. The VPO2 is applied in conjunction with the Special Use Zone Schedule 3 – Anglesea Heath (SUZ3) which requires a permit for subdivision and all buildings and works. The intention is that the two controls work together to enable the construction of a dwelling (specific controls apply under the SUZ3) with all vegetation (including ground covers) then being protected beyond a designated development area through the VPO2. The SUZ3 will remain unchanged and the vegetation components from the VPO2 could be incorporated into a revised schedule as suggested for the ESO3, ESO4 and ESO5.

#### *Vegetation Protection Overlay Schedule 3 (VPO3)*

The VPO3 applies to isolated stands of Bellarine Yellow Gums in Torquay and Jan Juc. The VPO3 requires a permit for vegetation removal although the overlay (VPO) requires that consideration be given to the impacts that a subdivision or buildings and works may have on the vegetation. The VPO3 is applied in conjunction with the General Residential Zone and the Farming Zone. The vegetation components from the VPO3 could be incorporated into a revised schedule as suggested for the ESO3, ESO4 and ESO5. As an ESO would only be applied to land containing vegetation, there will be a stronger link and clearer criteria for the consideration of impacts that development (or subdivision) may have on vegetation removal.

### Significant Landscape Overlay

#### *Significant Landscape Overlay Schedules 1 – 7 (SLO1-7)*

SLO schedules have been applied to the towns of Anglesea (SLO3), Lorne (SLO4), Winchelsea (SLO5), Torquay/Jan Juc (SLO6) and Bellbrae (SLO7) and the SLO1 applies in the coastal hinterland from Bells Beach to Lorne in conjunction with the Coastal Development Policy. All of the SLO's consider vegetation protection in conjunction with development and how the two interact within the landscape setting. Within the towns the use of an SLO to protect native vegetation is an appropriate planning scheme tool.

However a number of larger allotments in the townships of Lorne, Anglesea, Torquay and Jan Juc were mapped through the biodiversity mapping project 2014 as containing significant vegetation and habitat and these sites should be considered for inclusion in a

Biodiversity mapping project

schedule specifically written for significant vegetation in urban areas. As discussed above under the ESO3, VPO1 and VPO2, this would require the removal of the respective SLO and it's replacement with a modified schedule.

The table included at appendix 6 provides a more detailed analysis of the current controls with recommendations for modified schedules.

### **Review of the Current Overlay Schedules**

As discussed previously, the coverage of the current overlay schedules within the Surf Coast Planning Scheme is based on historic mapping which has now been updated and the coverage of the overlay schedules needs to reflect these updates.

The 2014 biodiversity review has also reviewed the appropriateness of the current planning scheme controls applying in the Surf Coast Shire and recommends a series of changes. As stated above, a combination of overlay schedules and local policy are utilised for the protection of biodiversity within the Surf Coast Shire at present.

The Biodiversity Action plans (BAP's) recognise the use of ESO's and VPO's within the Surf Coast Planning scheme 'as being adequate tools' but notes that they need to be updated as 'further information is now available on sites which provide critical habitat to threatened species' (BAP, Otway Plain Bioregion, DELWP, 2003).

The 2007 mapping project undertaken by DELWP consolidated this 'further information' and provided the data to the Surf Coast Shire as part of the completion of the following priority for the BAP Victorian Volcanic Plain bioregion, to;

*Identify all sites of biological significance in the rural landscape in conjunction with local government and encourage appropriate use of this information in local planning schemes*

The 2014 mapping project further refined the mapping and in this section reviews the appropriateness of the application of overlay schedules thereby also completing the following priority actions within the Spring Creek Catchment plan (2003);

- Review the appropriateness of the applied Vegetation Protection Overlay in the Surf Coast shire Planning Scheme, and revise boundaries where inappropriately applied
- Update maps of biologically significant remnant indigenous sites at a useful scale for local use.

### The Victoria Planning Provision Planning Practice notes

The 2007 biodiversity mapping prepared by DELWP mapped each asset as either a potential future VPO or ESO and the 2014 mapping re- grouped the assets to be consistent with the Victoria Planning Provision Planning Practice notes, as follows.

Selecting the most appropriate planning scheme tool to protect biodiversity assets is based on the following VPP Planning Practice notes;

- Biodiversity and
- Vegetation Protection in Urban Areas

The VPP Planning Practice Note *Biodiversity* provides guidance for local councils about when to apply overlay schedules to biodiversity assets;

*The native vegetation provisions (Clause 52.17) and decision guidelines (Clause 65) are the minimum 'baseline conservation provisions' for limiting the loss of biodiversity on a State wide basis. They should not be regarded as adequate and effective in meeting all biodiversity conservation objectives and more specific provisions may need to be applied.*

The practice note highlights that

*If the protection or enhancement of a biodiversity asset requires the use of an overlay, the appropriate overlays are the ESO and the VPO.*

In the Surf Coast Shire the ESO and VPO are the primary tools utilised for biodiversity protection although the SLO is also utilised to protect some sites with high biodiversity values in conjunction with a local policy (Coastal Development Policy) as discussed above.

The Practice Note 'Vegetation Protection in Urban Areas' provides additional guidance on when to use the MSS, local policy and schedules based on the asset type and level of information available to Council. *Note: Although the practice note has been drafted specifically for urban areas it contains clear guidance on when to apply different tools within the VPP's and this generic guidance has also been applied in non urban areas.*

The practice note provides the following summary of how a local council can best manage environmental assets in their locale and the most appropriate VPP tools to use;

- The MSS and local policies should provide the strategic basis for the application of vegetation provisions.
- Overlays are the principal tool in the VPP to protect vegetation.
- The VPO specifically protects vegetation.
- The ESO protects vegetation and wider environmental values.
- The SLO may protect vegetation in the broader landscape context.
- The HO may protect trees and gardens of State, Regional and Local heritage significance.
- Clause 54, 55 and 56 requires vegetation on sites and in the neighbourhood to be considered.
- Local variations must demonstrate special character.
- Section 173 agreements under the Planning and Environment Act may be a suitable tool in some circumstances.
- The DDO is not an appropriate tool to protect vegetation.

Clause 21.03 Environmental Management within the MSS provides the strategic justification for the application of overlay schedules within the Surf Coast Shire and highlights the key environmental values and threats. The completion of the Biodiversity Review will result in some minor wording changes to the MSS that incorporates the recommendations from this report, included at Appendix 5 to this report. 'Implementation' Clause 21.03-4 highlights the need to review the current application of the ESO and VPO which has been undertaken through this review.

The Practice Note highlights that the overlays are the 'principal tool in the VPP to protect vegetation' with the VPO specifically protecting vegetation and the ESO protecting vegetation and wider environmental values.

The practice Note outlines the most appropriate circumstances for the application of the VPO stating that;

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*The VPO does not include buildings and works or subdivision requirements. It is, therefore, the appropriate tool for identifying and protecting vegetation where buildings and works or subdivision are not important considerations.*

And goes on to say that;

*The ESO has broader applicability than the VPO. The ESO may contain requirements for the construction of buildings and the carrying out of works as well as fence construction. It can also include requirements for subdivision and the removal, destruction or lopping of vegetation.*

In urban areas development and pressures from additional subdivision are highlighted as the greatest threats to biodiversity in the BAP. The ESO has been applied in the towns of Aireys Inlet to Moggs Creek for this reason and that rationale should also be applied to the pockets of high value vegetation in the other townships as suggested above.

The practice note highlights that the function of the SLO is to 'conserve the character of a significant landscape' and that it is the appropriate tool to use where:

*Vegetation is primarily of aesthetic or visual importance in the broader landscape and should be used where vegetation is identified as an important contributor to the character of an area*

This is certainly the case in the coastal townships of Lorne, Anglesea and Torquay Jan Juc and the current management of native vegetation within the context of the landscape character is appropriate. The SLO as applied in these towns only requires a permit to remove native vegetation over 2m in height recognising the value canopy trees have within the landscaped form through its role of softening development and adding to the streetscape character.

However, some areas such as Aireys Inlet to Moggs Creek, the Anglesea Heathland, Heathy woodland in Anglesea, communities of Bellarine Yellow Gum and potential habitat for Wrinkle Buttons in Lorne have been mapped as having high biodiversity values within the understorey as well as the tree canopy going beyond just having aesthetic value and worthy of protection at all layers.

The Biodiversity practice note states that;

*The rationale for applying additional planning controls needs to be informed by knowledge of the local biodiversity assets, values and threats.'*

The application of overlay schedules within the Surf Coast Shire will be based on the mapping and values provided by the DELWP in 2007 (updated in 2014) which mapped all of the local biodiversity assets within the Surf Coast Shire utilising a range of local and state sources and databases. The mapping includes a table of values (located at Appendix 1) providing a detailed description of each asset and its conservation status.

The threats to biodiversity in the Surf Coast Shire is outlined in the Municipal Strategic Statement and the relevant Biodiversity Action Plans that includes a number of threats potentially resulting from land use planning, such as;

- Clearing of remnant vegetation,
- Residential subdivisions and tourism development in ecologically sensitive areas,
- Weed invasion,
- Drainage of wetlands,
- Alterations of natural flow regimes
- Impacts from recreational use of forests, wetlands and coastal areas,

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- Lack of regeneration in remnant vegetation due to grazing,
- Fragmentation of habitats through incremental clearing,
- Loss of mature and hollow bearing trees.

The content and proposed overlay schedules has been determined through;

- the completion of the mapping of biodiversity assets (2007 and 2014),
- an understanding of the key threats to biodiversity, outlined in the MSS and BAP's,
- the content of the VPP practice notes,
- the content of the existing schedules (ESO's, VPO's and SLO1) and
- land use trends and their associated activities (urban and rural areas).

### Recommended changes

#### Environmental Significance Overlay Schedule 1 (ESO1)

The existing Environmental Significance Overlay Schedule 1 will be modified to ensure the mapping changes to waterways and wetlands undertaken through the Biodiversity mapping project 2014 are incorporated and the ESO1 will also be updated as shown in appendix 5.

#### Environmental Significance Overlay Schedule 4 (new urban schedule)

A new Environmental Significance Overlay Schedule 4 (ESO4) will be applied to sites within the coastal townships containing significant vegetation and habitat, enabling vegetation removal to be considered in conjunction with new buildings, works or subdivision. The ESO4 and ESO5 currently applied in the townships of Aireys Inlet and Fairhaven will be consolidated into this one schedule, shown in Appendix 5, with the objectives and values of the existing schedules incorporated.

Sites currently covered by the VPO1, VPO2 and VPO3 in the towns of Torquay, Jan Juc and Anglesea will be replaced and also consolidated into the new urban schedule ESO4 (public land will be covered by the proposed ESO6) with the specific biodiversity values from the preceding schedules incorporated. The superseded schedules will be deleted. The ESO3 will be deleted from Anglesea but the current SLO3 will still apply as illustrated in diagram 1.

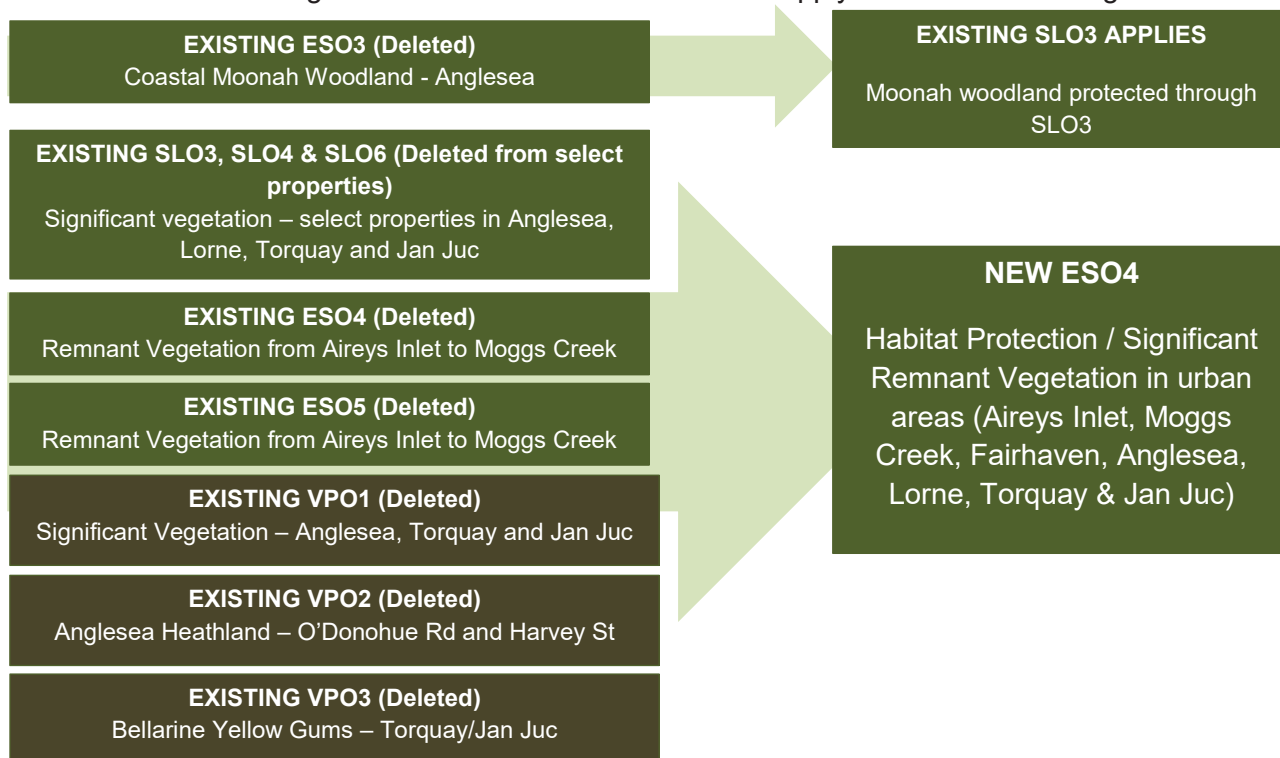
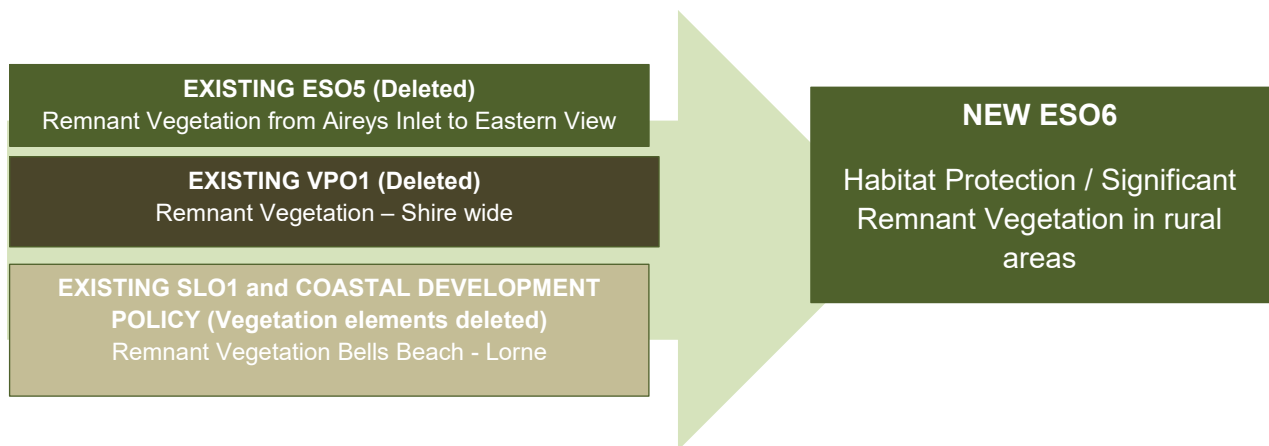


Diagram 1: Streamlining current schedules into a consolidated schedule (urban areas)

The SLO3, SLO4 and SLO6 will remain as the dominant schedules protecting native vegetation (and landscape character) in the towns of Anglesea, Lorne and Torquay / Jan Juc but larger sites containing significant vegetation and habitat will be covered by the new ESO schedule recognising the value of the vegetation and enabling the impacts of subdivision and appropriate densities to be better considered.

Environmental Significance Overlay Schedule 6 (new rural schedule)

A new Environmental Significance Overlay Schedule 6 (ESO6) will be applied in the rural parts of the shire containing significant vegetation and habitat, enabling vegetation removal to be considered in conjunction with new buildings, works or subdivision, although the decision guidelines will be more reflective of the rural / urban fringe setting, as shown in Appendix 5, replacing the current ESO5, VPO1 and SLO1. The permit trigger for vegetation removal and reference to habitation envelopes will be removed from the SLO1 and Coastal Development Policy as shown in shown in Appendix 5 and the ESO5 and VPO1 will be deleted.



**Diagram 2: Streamlining current schedules into one consolidated schedule (rural areas)**

Environmental Significance Overlay Schedule 7 (new schedule for native grasslands)

A new Environmental Significance Overlay Schedule 7 (ESO7) will be applied to native grasslands where agricultural activities are predominant. This schedule will also make reference to the EPBC Act that applies to the native grasslands within the Victorian Volcanic Plains as shown in Appendix 5.

Vegetation Protection Overlay Schedule 4 (new schedule for scattered trees)

A new Vegetation Protection Overlay Schedule 4 (VPO4) will be applied to stands of isolated paddock trees containing a modified understorey where buildings, works or subdivision should not be as relevant a consideration as shown in Appendix 5.

Table 6 below (utilises the table provided in the *Biodiversity* practice note) summarises the recommended changes.

VPP Practice Note 'Biodiversity' – Example asset type	VPP Practice Note – Recommended Overlay	Recommended Schedules
sites of biological significance	Environmental Significance Overlay	<b>ESO6</b>
subdivision (leading to subsequent loss or degradation of native vegetation)	Environmental Significance Overlay	<b>ESO4</b>
the presence of significant relatively unmodified biodiversity assets	Environmental Significance Overlay	<b>ESO6</b>
large relatively intact natural area where land use under the existing zone provisions may result in the loss of important biodiversity qualities	Environmental Rural Zone	<b>To be reviewed</b>
hollows in mature dead trees dispersed on private land which provide important nesting sites for significant species	Vegetation Protection Overlay	<b>VPO4</b>
scattered living food trees with an exotic understorey that does not conform to the 'native vegetation' definition in planning schemes	Vegetation Protection Overlay	<b>VPO4</b>
threatened vegetation classes that are highly fragmented and occur on private land, for example, grasslands	Environmental Significance Overlay	<b>ESO7</b>
unknown locations of biodiversity assets or insufficient information on biodiversity assets to prepare an overlay	Local planning policy	N/A
highly modified areas, such as salt works and treatment plants, whose features are relied on by significant migratory and nomadic species	Local planning policy	N/A
threatened species habitat that is highly modified (and therefore does not qualify as 'native vegetation'), but retains structural or other components that allow species to survive	Vegetation Protection Overlay Environmental Significance Overlay	N/A
areas of likely biodiversity significance	Environmental Significance Overlay	N/A
riparian and coastal habitats	Environmental Significance Overlay Local planning policy	<b>ESO1</b>

**Table 6: Proposed application of environmental overlays**

All of the proposed schedules will include requirements for off set planting where removal of native vegetation cannot be avoided, with the exception of the ESO4 (to be applied to urban areas) where requiring off set planting within the property could potentially conflict with the retention of defensible space in areas at risk from bushfire.

The modified ESO1 directs revegetation works to the core riparian zone to assist in the implementation of the *priorities for management* outlined in the Biodiversity Action Plans (BAP's), DELWP 2003;

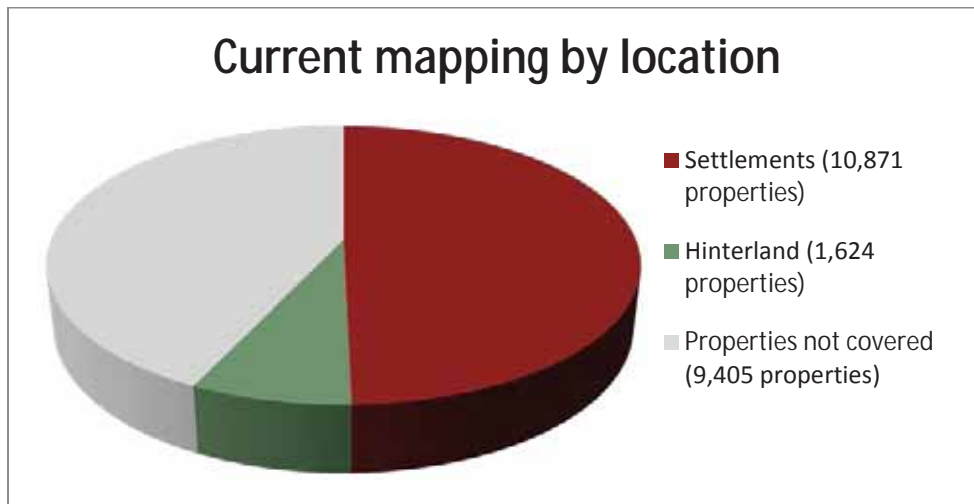
- To focus revegetation and rehabilitation efforts on the riparian environments,
- Protect important habitat of migratory waders and species listed on JAMBA and CAMBA,

## Biodiversity mapping project

- Maintenance of appropriate water regimes for freshwater wetlands,
- Enhancement of significant wetlands, including Ramsar wetlands (through management plans).

### Changes to property coverage

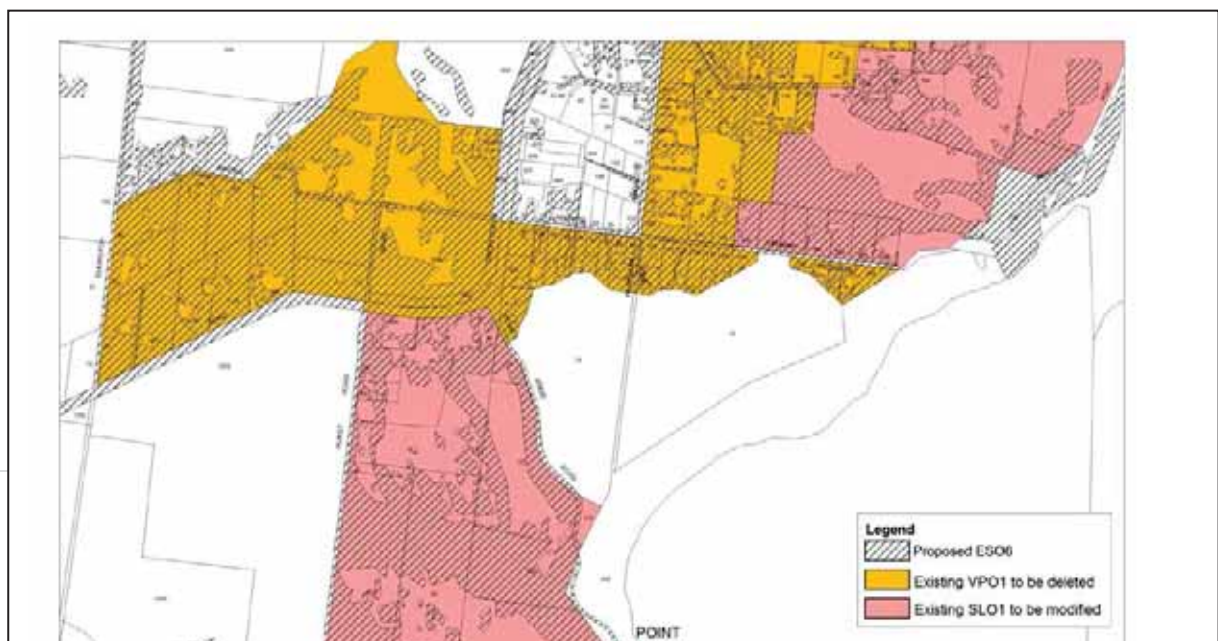
There are currently 21,900 properties within the Surf Coast Shire and over half (57%) of these are covered by an overlay that triggers a planning permit to remove native vegetation (12,495 properties). The vast majority of these are located within the coastal towns (10,871 properties) and the remainder are located in the hinterland (1,624 properties). Chart 1 below shows the proportion of properties currently covered by an overlay, in urban and rural areas.



**Chart 1: Number of properties currently covered by an overlay schedule (for vegetation protection)**

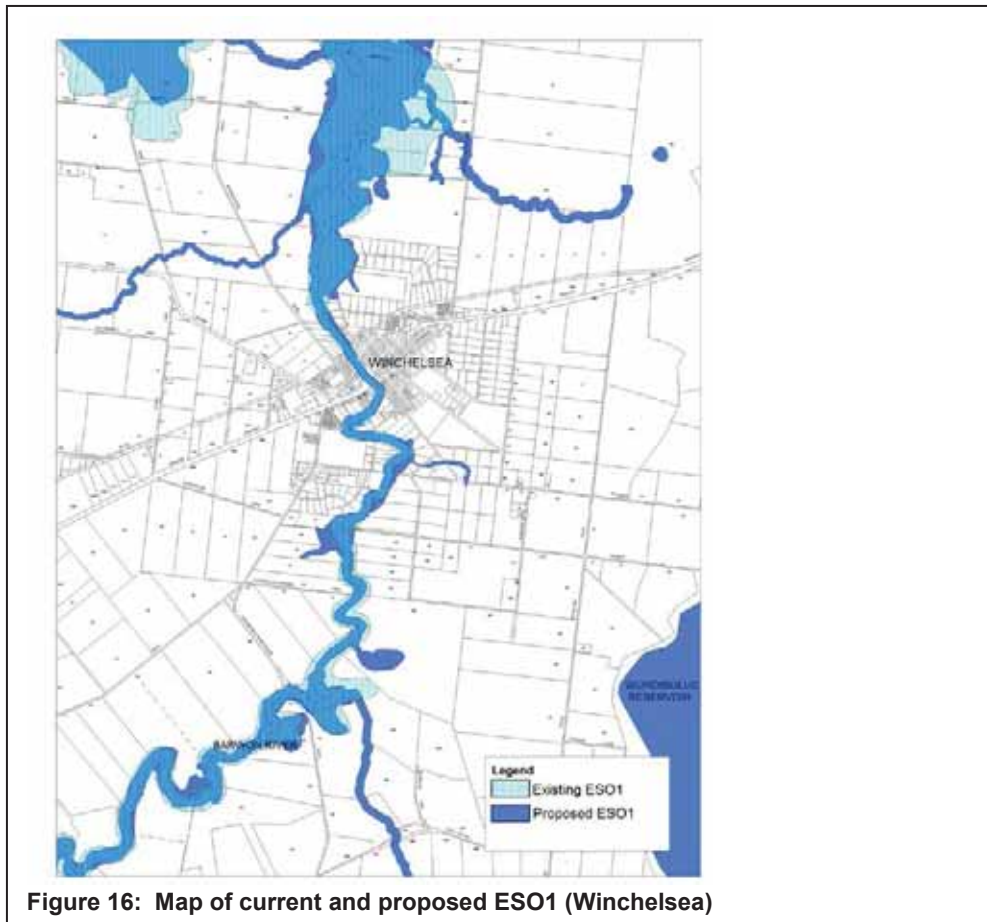
The 2014 mapping will greatly improve the accuracy of the mapping which will result in the removal of a number of a number of overlays on properties that are current covered but will extend the coverage in other areas. *Note: The mapping covers vegetated areas only and all cleared areas including buildings have not been mapped.*

The example below in Figure 15 shows the 2014 mapping overlapped with the current VPO1 and SLO1 applying in the Coastal hinterland around Point Addis. This is an example of the current mapping inaccuracies. The 2014 mapping is represented as a proposed ESO6 and is hatched. The map highlights extensive areas covered by current the VPO1 and SLO1 that do not contain any vegetation and similarly vegetated areas that are not covered. *Note: The SLO1 also applies to significant landscapes and will not be removed from these areas, only the vegetation protection element will be removed as outlined above.*





The second comparison highlights the significant reduction to the application of the ESO1 as it applies to the Barwon River running through Winchelsea, shown in figure 16 below.



#### Changes to the coverage of the ESO1

The biodiversity mapping will result in an increase in the number of properties covered by an overlay schedule through the planning scheme although it will also result in overlay schedules being reduced or removed from many properties.

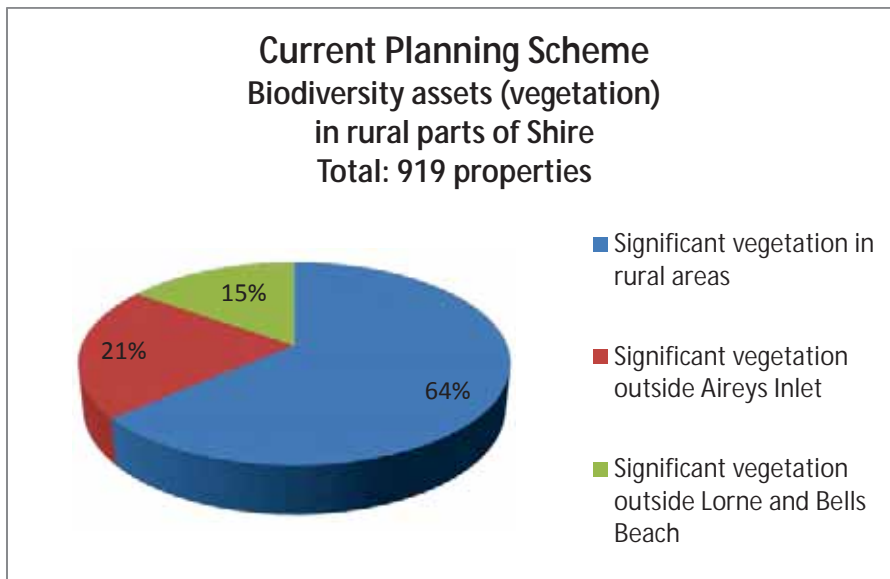
At present 394 properties are covered by the ESO1, covering four major waterways and all significant wetlands with the exception of the Wurdiboluc reservoir (shown in figure 16). The 2014 biodiversity mapping will increase the coverage of the ESO1 by 252 properties, affecting a total of 646 properties. The 394 properties currently affected by the ESO1 will see the coverage significantly reduced as wetlands are more accurately mapped and buffers along waterways will be reduced from 100m either side to 50m as discussed under 'wetlands and waterways' in section 2 above and shown in figure 17.

#### Changes to the coverage of significant vegetation in rural areas

Currently 919 properties in the rural parts of the Shire (outside township settlement boundaries) are covered by either a VPO1 (586 properties), ESO5 (194 properties) or SLO1 (139 properties) that seeks to protect significant native vegetation. Chart 2 represents the

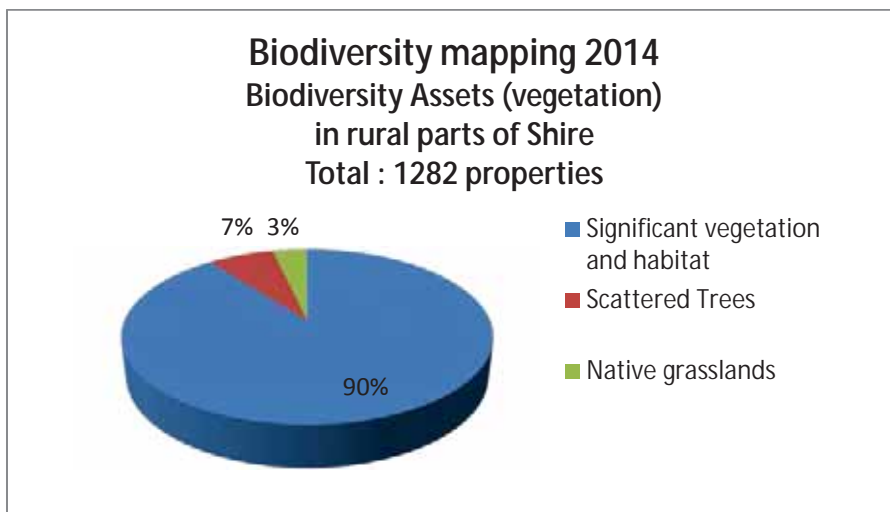
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proportion of properties covered by these schedules, with blue representing the current VPO1, red representing the current ESO5 and green representing the current SLO1.



**Chart 2: Overlay schedule coverage in the rural parts of the Shire**

The 2014 mapping will increase the coverage by 363 properties, affecting a total of 1282 properties. The 2014 mapping separates the assets into 'significant vegetation and habitat', 'scattered trees' and 'native grasslands', shown in chart 3 below. 1149 properties contain 'significant vegetation and habitat', 87 contain 'scattered trees' and 46 contain 'native grasslands'.



**Chart 3: Biodiversity assets in rural parts of the Shire**

### Changes to the coverage of significant vegetation in urban areas

Within the coastal settlements of Lorne, Aireys Inlet to Eastern View and Anglesea the 2014 biodiversity mapping does not increase the coverage of properties affected by an overlay as all properties are currently covered by an overlay that triggers a planning permit for native vegetation removal. An additional 64 properties in Anglesea are currently covered by an ESO3 and this schedule will be removed from these properties as discussed above.

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134 properties in Torquay and Jan Juc are currently covered by a VPO1. The 2014 biodiversity mapping will adjust this coverage with minor adjustments occurring in the Jan Juc area and more substantial changes occurring in the Torquay north west area (in the Ocean Acres/Frog Hollow/Briody Drive Estates) with a number of properties being covered for the first time.

The following town comparison maps show the current coverage of overlays and the recommended changes resulting from the biodiversity asset review.

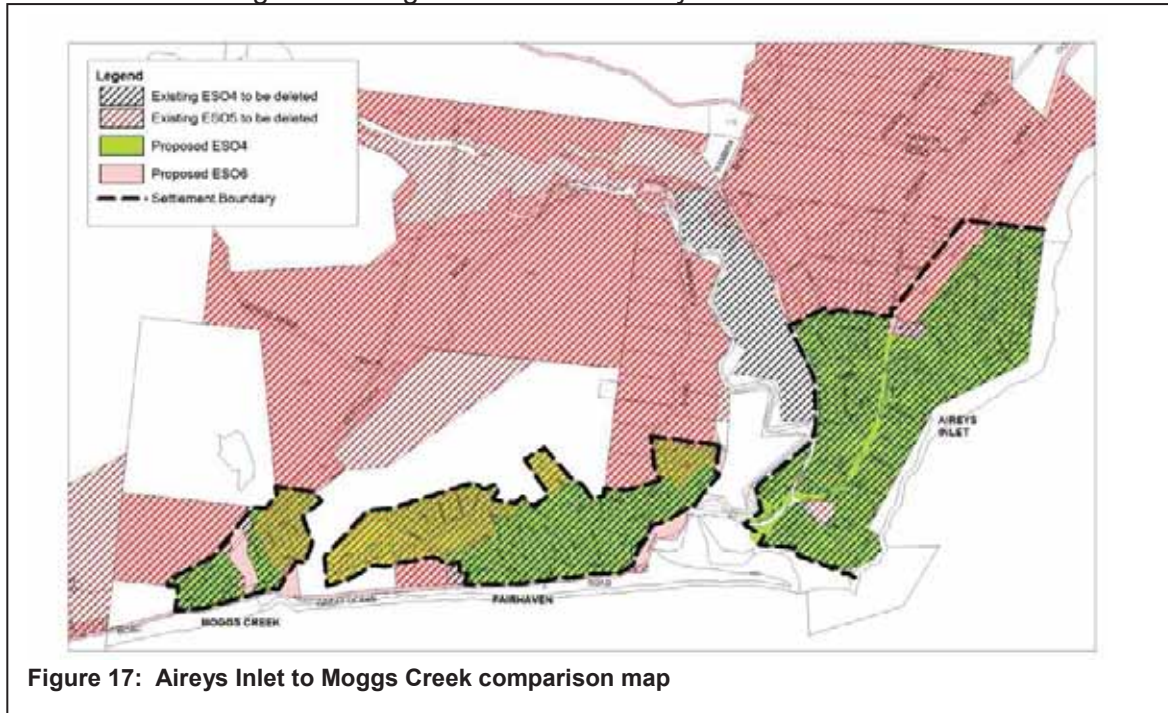


Figure 17: Aireys Inlet to Moggs Creek comparison map

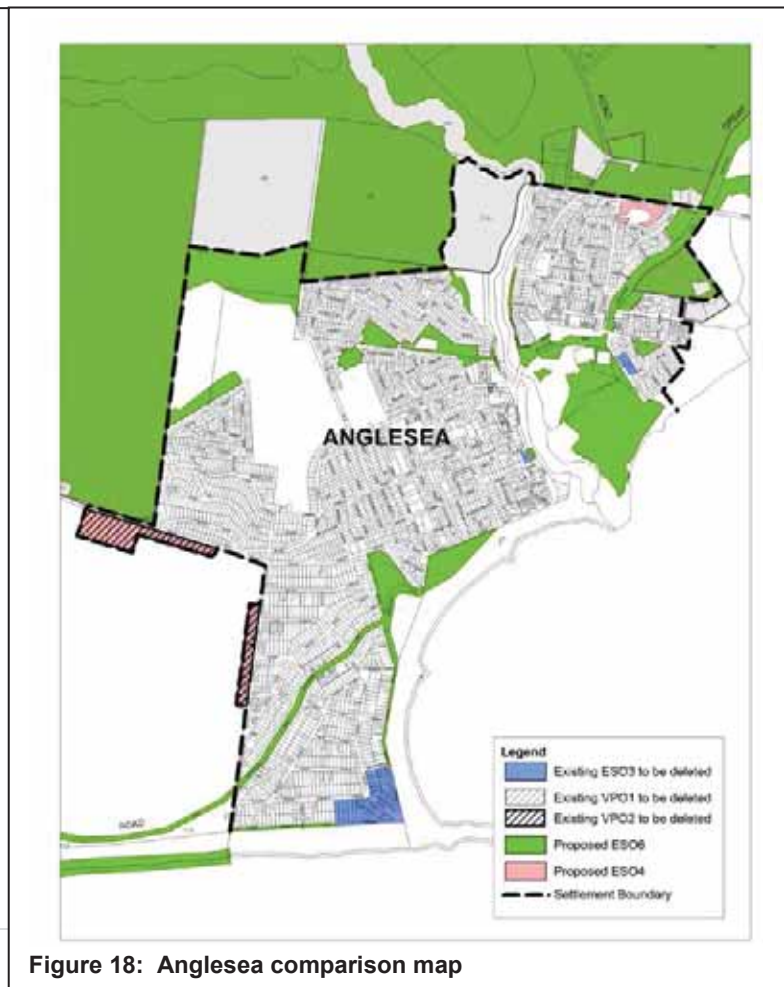


Figure 18: Anglesea comparison map

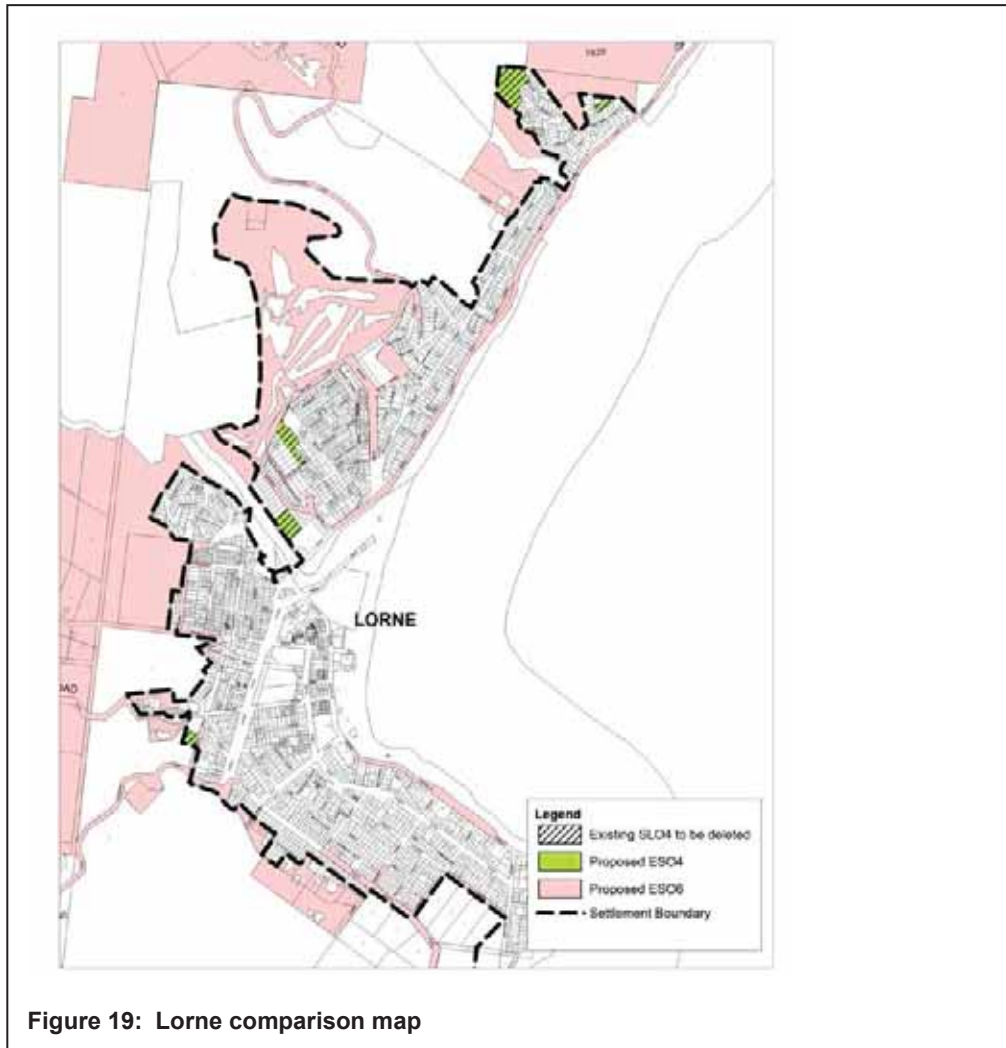


Figure 19: Lorne comparison map

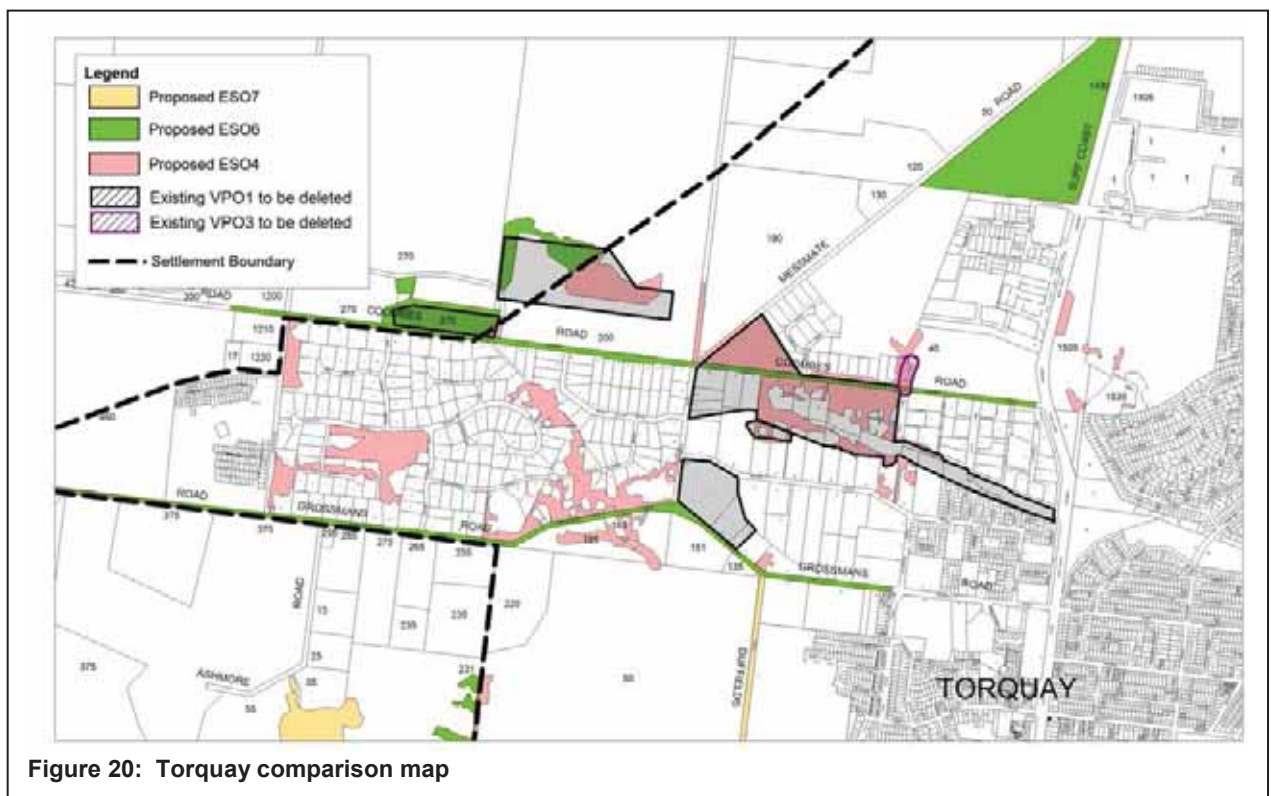


Figure 20: Torquay comparison map



Figure 21: Jan Juc / Torquay comparison map

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## Abbreviations

DELWP	Department of Environment, Land, Water and Planning
CCMA	Corangamite Catchment Management Authority
SPPF	State Planning Policy Framework
LPPF	Local Planning Policy Framework
MSS	Municipal Strategic Statement
VPP	Victoria Planning Provisions
PN	Practice Note
SCS	Surf Coast Shire
SCPS	Surf Coast Planning Scheme
ESO	Environmental Significance Overlay
VPO	Vegetation Protection Overlay
SLO	Significant Landscape Overlay
EVC	Ecological Vegetation Classes



## APPENDIX 1

### Tables of biodiversity data (DELWP 2007)

- **Watercourse, waterbody and wetlands**
- **Habitat protection**
- **Habitat protection roadsides**
- **Vegetation protection**
- **Vegetation protection roadsides**
- **Scattered trees**

### TABLE OF VALUES TO THE WATERCOURSE, WATERBODY AND WETLANDS

Shown on the DELWP biodiversity map as ESO1 (number)

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet	Info Source /Additional Notes
ESO1(1)	Thompsons Creek	Yes	No	Yes	Yes	Yes	Yarra Pygmy Perch ( <i>Nannoperca obscura</i> ) (VU, nt, L), Shortfinned Eel ( <i>Anguilla australis</i> ), Spotted Galaxias ( <i>Galaxias truttaceus</i> ), Common Galaxias ( <i>Galaxias maculatus</i> ), Australian Smelt ( <i>Retropinna semoni</i> ), Southern Pygmy Perch ( <i>Nannoperca australis</i> ), Flat-headed Gudgeon ( <i>Philyponodon grandiceps</i> ), Tupong ( <i>Pseudaphritis urvilli</i> ). Beyond the weir/fishway estuarine/marine fish only occur including Small- mouth Hardyhead ( <i>Atherinosoma microstoma</i> ), Black Bream ( <i>Acanthopagrus butcheri</i> ), Australian Salmon ( <i>Arripis trutta</i> ), Yelloweye Mullet ( <i>Aldrichetta forsteri</i> ), Sandy Sprat ( <i>Hyperlophus vittatus</i> ), Blue-spot Goby ( <i>Pseudogobius olorum</i> ), Growing Grass Frog <i>Litoria reniformis</i> (EN) Associated wetlands	Wormbete Connewarre Torquay Paraparap	Index of Stream Condition Distribution of Yarra Pigmy Perch in the Thompsons Creek Catchment and preliminary assessment of a rockramp fishway, (ARI 2001)  Moriac Environmental Assets Assessment (Beacon Ecological 2009)

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DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1(2)	Lake Gherang-BROLOGA 51	No	Yes	Yes	Yes	Yes	Breeding site for Brolga ( <i>Grus rubicunda</i> ) (v, L), also present Musk Duck ( <i>Biziura lobata</i> )(v), Hardhead ( <i>Aythya australis</i> )(v), Australasian Shoveler ( <i>Anas rhynchosotis</i> ) (v), Great Egret ( <i>Ardea alba</i> )(v, L), Royal Spoonbill ( <i>Platalea regia</i> )(v). Significant Wetland in Victorian Volcanic Plain Bioregion. Currently a wildlife reserve.	Wormbete Winchelsea	Biosites(775, 4262), Significant wetland database
ESO1(3)	Lake Modewarre	No	No	Yes	Yes	Yes	Significant wetland in Victorian Volcanic Plain Bioregion. Flocking site for Australian Shoveler ( <i>Anas rhynchosotis</i> ) (v), Blue-billed Duck ( <i>Oxyura australis</i> )(e, L), Musk Duck ( <i>Biziura lobata</i> )(v), Hardheads ( <i>Aythya australis</i> )(v), and Freckled Duck ( <i>Stictometta naevosa</i> )(e, L) , also present are Black Flacon ( <i>Falco subniger</i> ) (v), Spotted Harrier ( <i>Circus assimilis</i> )(nt), Great Egret ( <i>Ardea alba</i> )(v, L), Caspian Tern ( <i>Sterna caspia</i> (nt, L, J, C),	Wormbete	Biosite(776, 1335), Significant Wetland Database

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1(3) (cont'd)							Royal Spoonbill ( <i>Platalea regia</i> )(v), Brolga ( <i>Grus rubicunda</i> ) (v, L), Eastern Curlew ( <i>Numenius madagascariensis</i> )(nt, C, J), Cape Barren Goose ( <i>Cereopsis novaehollandiae</i> )(nt). Brackish Plains Buttercup (r) at the north end of wetland		
ESO1(4)	Lake Dubin	No	Yes	Yes	Yes	Yes	Lake Dubin is a significant wetland in Victorian Volcanic Plain Bioregion. Habitat for range of threatened water birds including Whiskered Tern ( <i>Chlidonias hybridus javanicus</i> )(nt), Musk Duck ( <i>Biziura lobata</i> )(v), Caspian Tern ( <i>Sterna caspia</i> )(nt, L, J, C), Brolga ( <i>Grus rubicunda</i> )(v, L), Lathams Snipe ( <i>Gallinago hardwickii</i> )(nt, C, J), Australasian Shoveler ( <i>Anas rhynchos</i> )(v), Hardhead ( <i>Aythya australis</i> )(v) flocking nearby, Great Egret( <i>Ardea alba</i> )(v, L, C, J), Royal Spoonbill (v), Pied Cormorant)(nt)	Mount Pollock	Aerial photo, VFD, Wetlands layer, Corrick Classification Biosites (338, 4261)

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland/ Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1(5)	Barwon Wetlands	No	No	No	Yes	Yes	Scattered wetlands, significant within Bioregion, depleted wetland type.	Mount Pollock	Corrick Classification, Wetlands Layer
ESO1(6)	Barwon River	No	No	Yes	Yes	Yes	Riparian habitat, EVC Floodplain Riparian Woodland (56) (Endangered), Stream-bank Shrubland (851) (Endangered). Instream habitat for aquatic fauna. Index of Stream Condition Medium. Overlay includes series of wetlands that are significant in the Bioregion.  Assemblage of threatened water birds including Australasian Shoveler ( <i>Anas rhynchos</i> ) (V), Latham's Snipe ( <i>Gallinago hardwickii</i> )(nt, C, J) and Royal Spoonbill ( <i>Platalea regia</i> )(V).	Bambra/ Bannockburn/ Geelong/ Mount Moriac/ Mount Pollock/ Teesdale/ Winchelsea	Biosites (769, 687, 1348) EVC mapping, aerial photos
ESO1(7)	Barwon Park Road Wetland	No	No		Yes	Yes	Scattered wetlands, significant within Bioregion, depleted wetland type. Broilga habitat. Flocking site for Australasian Shoveler ( <i>Anas rhynchos</i> ) (V), and Hardhead ( <i>Aythya australis</i> )(V). Assemblage of threatened water birds including	Winchelsea	Biosite (690)

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland/ Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1(7) (cont'd)							Royal Spoonbill ( <i>Platalea regia</i> )(v), Whiskered Tern ( <i>Chlidonias hybridus javanicus</i> )(nt), Musk Duck ( <i>Biziura lobata</i> )(v).		
ESO1(8)	Wetlands East of Lake Murdeduke	No	No	Yes	Yes	Yes	Critical Broлга habitat in Victoria. One of two core populations for the Broлга ( <i>Grus rubicunda</i> )(v, L). Site consists of several brackish and freshwater wetlands, extensive shallow water zones, providing diverse range of habitats. Adjacent grasslands. Significant wetlands in the Victorian Volcanic Plains Bioregion. EVC Plains Grassy wetland (125)(Depleted), Brackish Sedgeland (13)(vulnerable).	Winchelsea	Biosites (771) Corrick Classification Wetlands layer Biosites (771), previously BROLGA 40, VPO2(3)Sheiford Rd and VPO2(4)McCallums Lane(both from 2002)  Winchelsea Strategy Review Environmental Assets Survey (Trengove 2004)
ESO1(9)	Kelly's Swamp	No	No	Yes	Yes	No	Semi-saline wetland. Habitat for Great Egret ( <i>Ardea alba</i> )(v, L) and other threatened water birds. Broлга ( <i>Grus rubicunda</i> )(v, L), have used this site but unknown to what extent.	Winchelsea	Biosite (694) Corrick Classification Wetlands layer

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1 (10)	South of Murdeduke	No	No	Yes	Yes	Yes	Wetlands significant within Bioregion, depleted wetland type.	Bambra	Aerial photos, EVC maps. Biosites (425)
ESO1 (11)	Prices Lane Brolga	No	No	Yes	Yes	No	Brolgas ( <i>Grus rubicunda</i> )(v, L), have used this site and surrounding area.	Birregurra	Wetlands layer, VFD
ESO1 (12)	Deans Marsh Creek wetland	No	No	No	No	No	EVC Plains Freshwater Sedge Wetland (899)(vulnerable) Moderate quality relatively intact vegetation.	Pennyroyal	EVC maps, aerial photo. Deans Marsh Pennyroyal Valley Environmental Assets Survey 2006
ESO1 (13)	Pennyroyal Valley Road	No	No	No	No	Yes	EVC Plains Freshwater Sedge Wetland (899) (vulnerable) Moderate quality relatively intact vegetation.	Pennyroyal/ Boonah	Deans Marsh Pennyroyal Valley Environmental Assets Survey 2006
ESO1 (14)	Retreat Creek	No	No	No	No	Yes	Index of Stream Condition Moderate.	Boonah	ISC
ESO1 (15)	Wormbete Creek	No	No	No	Yes	No	Riparian vegetation. North and east sections have Moderate index of Stream Condition.	Bambra Boonah	EVC mapping, Aerial photo, ISC
ESO1 (16)	Anglesea River	No	No	Yes	Yes	No	Moderate Index of Stream Condition, Riparian Vegetation. EVC Coastal Saltmarsh/Mangrove	Wormbete Anglesea Paraparap	EVC mapping, Aerial photo, ISC Biosites (702)

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1 (16) (cont'd)							Shrubland Mosaic (302)(endangered), Riparian Scrub Complex (17)(depleted), Lowland Forest (16)(depleted), Damp Sands Herb-rich Woodland (3)(vulnerable), Heathy Woodland (48)(least concern). Listed under the Ramsar Convention and Directory of Important Wetlands. It is an extremely important site for waterbirds. Large populations of international migratory species occur here. The lake has diverse aquatic habitats on and around the lake which contributes to the diversity of waterbirds. Permanent freshwater lake with marginal swamps, aquatic meadows and extensive shallow water zones and mudflats. Breeding site for threatened water birds, FFG Act Critical habitat, FFG listed species. Freckled Duck ( <i>Stictonetta naevosa</i> )(e, L), and many other rare and threatened waterbird species including international		
ESO1 (17)	Lake Murdeduke	Yes	Yes	Yes	Yes	Yes		Winchelsea	Ramsar Wetland layer, DIR layer, VFD records, Biosite(772)Brologa 82



Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1 (17) cont'd							migratory species. Lake Murdeduke is a State Game Reserve		
ESO1 (18)	Spring Creek	No	Yes	Yes	Yes	No	EVC Swampy Riparian woodland (83) (Endangered), Grassy woodland (175) (endangered). Contains Bellarine Yellow-gum ( <i>Eucalyptus leucoxylo</i> n subsp. <i>Bellarinensis</i> ) (e, L) in very high densities and Moonah (FFG listed community) in the upper Spring Creek (Torquay map). In the upper tidal zone of Spring Creek on Torquay Map Moonah Coastal Woodland (FFG Listed) with indigenous understorey. Lower Spring Creek is Saltmarsh Complex confined to lower tidal areas, consisting of low halophytic shrubs and succulents. Riparian habitat forms a link with adjacent remnant vegetation. Index of Stream condition moderate. Assemblage of threatened water birds. Growing Grass Frog ( <i>Litoria raniformis</i> )(VU,c, L)	Torquay Paraparap	EVC Maps, aerial photo. EVC BCS FIS Atlas Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001). Torquay- Jan Juc Neighbourhood Character Study, 2003 (Trengove, 2003). Biosites (1337) Index of Stream Condition

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1 (18) cont'd							Breeding site for Nankeen night Heron ( <i>Nycticorax caledonicus hillii</i> )(nt). Assemblage of threatened water birds.		
ESO1 (19)	Warrambine Creek	No	No	No	Yes	No	Index of Stream Condition moderate.	Shelford	Index of Stream Condition
ESO1 (20)	Pennyroyal Creek	No	No	No	Yes	No	Index of stream Condition Good. Riparian Vegetation	Pennyroyal Boonah	ISC, Aerial photo, EVC mapping
ESO1 (21)	Erskine River	No	No	No	Yes	No	Index of stream Condition Good. Instream habitat and riparian Vegetation. River extends onto private land from adjacent Great Otway National Park	Lorne	ISC, Aerial photo, EVC mapping, Biosite (692)
ESO1 (22)	Painkalac Creek	No	No	Yes	Yes	No	Riparian vegetation, high estuarine values. EVC Estuarine Wetland (10) (endangered), Coastal Saltmarsh (9) (endangered), Brackish Sedgeland (13) (vulnerable), Grassy Woodland (175) (endangered). Vegetation is mostly intact and is relatively diverse.	Aireys Inlet	EVC maps, aerial photo. ARI EVC mapping (2006-2007). Biosites (693) Aireys Inlet to Eastern View Neighborhood Character Study Vegetation Report (Tregrove, 2003). Steve McDougall (pers. com.) Surf Coast Coastal Resources Atlas: Descriptive Report. (1998) Ball, D and Patterson, E

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species recorded	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1 (22) cont'd							Corridor Population of Rufous Bristlebird ( <i>Dasyornis broadbenti caryochrous</i> ) (nt, L). Supports an extremely diverse array of threatened water birds including, White-bellied Sea-Eagle ( <i>Haliaeetus leucogaster</i> ) (v, L) Great Egret ( <i>Ardea alba</i> ) (v, L), Royal Spoonbill ( <i>Platalea regia</i> ) (v), and assemblage of many other threatened water birds. Salt Lawrencia ( <i>Lawrencia spicata</i> ) (r), Salt Blown-grass ( <i>Lachnagrostis robusta</i> ) (r).		
ESO1 (23)	Lower Duneed Road	No	No	No	Yes	Yes	EVC Plains Sedgy Wetland (647) (endangered). Significant Wetlands	Torquay/Connewarre	EVC maps, aerial photo. Significant Wetlands Layer
ESO1 (24)	Deep Creek	No	No	Yes	Yes	No	EVC Grassy Woodland (175) (endangered). Riparian habitat. Relatively intact. Manna Gum woodland, Drooping Sheoake near coast and Bellarine Yellow Gum <i>Eucalyptus leucoxydon</i> subsp. <i>bellarinensis</i> (e, L) inland. Fairy Prion (v, VU), Great Egret (v, L)	Torquay	EVC Maps, aerial photo. Torquay- Jan Juc Neighborhood Character Study (Tregrove 2003)  Bellarine Yellow Gums in the Surf Coast Shire (Tregrove 2001),

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Ramsar Wetland / Directory of Important Wetlands	Wildlife Reserve	Victorian rare or threatened species records	High biodiversity values / links.	Depleted wetland type	Comments	Mapsheet(s)	Info Source /Additional Notes
ESO1 (24) cont'd							Biodiversity link supporting an assemblage of threatened water birds		
ESO1 (25)	Browns Swamp	Yes	Yes	Yes	Yes	Yes	Significant Wetland, assemblage of threatened waterfowl	Paraparap	Aerial Photo, EVC, Atlas of Victorian Wildlife. Significant Wetland Database
ESO1 (26)	Point Impossible	No	No	Yes	Yes	Yes	EVC Coastal Saltmarsh/Mangrove Shrubland Mosaic (302) (endangered), Calcarenite Dune Woodland (858) (endangered). Orange Bellied Parrot ( <i>Neophema chrysoaster</i> ) (EN, c, L, J), Spiny Peppercreep ( <i>Lepidium aschersonii</i> ) (VU, e, L) Altona skipper ( <i>Hesperilla flavescens flavescens</i> ) (1995). Regionally significant wetland. Assemblages of threatened water birds.	Connewarre/ Torquay	EVC maps, aerial photo. Biosites (1257, 1302). Semi-saline permanent wetlands Surf Coast Coastal Resource Atlas Significant Wetland Database
ESO1 (27)	Allen Noble Sanctuary	No	Yes	Yes	Yes	No	EVC Wetland Formation (74). Freshwater body with emergent macrophytes – Tall Spike Rush and riparian vegetation – Water Ribbins, Rush, Water milfoil, Running Marsh Flower and Swamp Crassula. Habitat for Rufous Bristlebird (Dayornis broadbenti)(nt, L) and assemblage of waterfowl.		Aireys Inlet to Eastern View Neighborhood Character Study Vegetation Report (Tregrove, 2003).

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ESO1 (28)	Torquay North Dam	No	No	No	No	No	No	No	No	EVC Sand Heathland (6) (rare). Species present Blackwood, Prickly Tea-tree, Thatch Sawj-sedge, Variable Sword-sedge, Balrush and Tassel Rope-rush.		Torquay North Structure Plan Flora and Fauna Assessment (BL&A 2008)
ESO1 (29)	Waurm Ponds Creek	No	No	No	No	No	No	No	No			
ESO1( 30) <i>Moriac</i> <i>Ref</i> /ESO1 (2)	Ravens Creek	No	No	No	No	No	Yes	No	No	Vegetation of poor to good quality, regional significance. Species include Sea Rush, Sea Club-rush, Australian Salt-grass, Common Reed, Mimulus, Creeping Brookweed, Arrow Grass, Common Tussock-grass		Moriac Environmental Assets Assessment (Beacon Ecological 2009)
ESO1 (31)	Merrijig Creek	No	No	No	No	No	Yes	No	No			
ESO1 (32)	Grassy Creek	No	No	No	No	No	Yes	No	No			
ESO1 (33)	St Georges Rivers	No	No	No	No	No	Yes	No	No			
ESO1 (34)	Cumberland River	No	No	No	No	No	Yes	No	No			
ESO1 (35)	Mathews Creek	No	No	No	No	No	Yes	No	No			
ESO1 (36)	Deans Marsh Creek	No	No	No	No	No	Yes	No	No			
ESO1 (37)	Yan Yan Gurt	No	No	No	No	No	Yes	No	No			

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ESO1 (38)	Brickmakers Creek	No	No	No	Yes	No		
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**Key to Abbreviations**

**EVC-** Name (number)(bioregional conservation status)

**Threatened Species Conservation Status** - (EPBC, DELWP, FFG, Migratory Bird)

**Conservation Status Abbreviations**

EBPC		DEL WP		DEL WP		FFG		International Treaty	
National Flora and Fauna		State Flora		State Fauna		FFG		Migratory Bird Agreement	
EX	extinct	ex	extinct	cr	Critically endangered	L	Listed	J	JAMBA
CR	critically endangered	e	endangered	e	Endangered	N	Nominated	C	CAMBA
EN	endangered	v	vulnerable	v	Vulnerable	I	Invalid/ineligible		
VU	vulnerable	r	rare	nt	Near threatened				
		k	poorly known	dd	Data deficient				

**Please note:** Conservation status of Ecological Vegetation Classes and rare and threatened species are valid at time of printing and may be subject to change.

**TABLE OF VALUES FOR HABITAT PROTECTION**

Shown on the DELWP biodiversity map as **ESO3 (number)**

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(1)	Wurdiboluc- Powerful Owl habitat	Yes	Yes	Yes	EVC Lowland Forest (16)(depleted), Messmate Stringybark ( <i>Eucalyptus obliqua</i> ) forms part of the Powerful Owl ( <i>Ninox strenua</i> ) (v, L) habitat	Wormbete	EVC maps, aerial photo. Biosites(704)
ESO3(2)	Guys Road	No	No	Yes	EVC Grassy Woodland (175)(endangered). Forms an important link between larger remnants.	Wormbete	EVC maps, aerial photo. Biosites (766)
ESO3(3)	Buckley Sheoakes	No	No	No	EVC Plains Grassy Woodland (55) (endangered). Sheoake overstorey trees.	Mount Pollock	EVC maps, aerial photo. Biosites (689)
ESO3(4)	Buckley School Road	No	No	Yes	EVC Plains Grassy Woodland (55)(endangered). Dominated by Drooping Sheoake. The most extensive stand of Drooping Sheoake remaining in the Shire.	Mount Pollock	EVC maps, aerial photo. Biosites (777)
ESO3(5)	Winchelsea Rail Reserve	No	No	Yes	EVC Plains Grassland (132) (endangered). Remnants of Kangaroo grass ( <i>Themeda triandra</i> ) with overstorey of Golden Wattle and Drooping Sheoake and various grassland herbs and grasses.	Mount Pollock	EVC maps, aerial photo. Environmental Assets and Landscape Values: Winchelsea Structure Plan (Trenrove 2004). Biosites (4398)
ESO3(6)	Winchelsea-Inverleigh Rd Grassland	No	No	Yes	EVC Plains Grassy Woodland (55)(endangered).	Mount Pollock	Steve McDougall pers comm. Field Inspection
ESO3(7)	Mount Pollock Grasslands	Yes	No	Yes	EVC Stony Knoll Shrubland (649) (endangered), Plains Grassland (132)(endangered) and Plains Grassy Woodland (55) (endangered). Small Scurf-pea ( <i>Cullen parvum</i> ) (EN, e, L), Basalt Tussock-grass ( <i>Poa labillardierei</i> ) var. (Volcanic Plains)(K), Purple Blown-grass ( <i>Lachnagrostis purpurea</i> subsp. <i>purpurea</i> ) (r).	Mount Pollock	EVC maps, aerial photo. Proposed wind farm site inspection. Site inspection from road

**HABITAT PROTECTION**

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(8)	Winchelsea Common	No	Yes	Yes	EVC Grassy Woodland (175) (endangered). Potential habitat for Striped Legless Lizard ( <i>Delma impar</i> ) (VU, e, L) Themeda understorey, one of the largest grassland remnant in the area.	Winchelsea Mount Pollock	EVC maps, aerial photo. Biosites (380)
ESO3(9)	Ondit Road North South	No	No	Yes	EVC Plains Grassland (132) (endangered). Potential habitat for Striped Legless Lizard ( <i>Delma impar</i> ) (VU, e, L).	Winchelsea	EVC maps, aerial photo. Winchelsea Environmental Assets Survey (Trengove 2004)
ESO3(10)	Ingelby Road	No	No	Yes	EVC Plains Grassland (132) (endangered), diverse range of native grasses and herbs. Contains basalt floaters and a section of rocky knoll. Potential Legless Lizard ( <i>Delma impar</i> ) (VU, e, L) habitat.	Bambra	EVC maps, aerial photo. Winchelsea Environmental Assets Survey (Trengove 2004), Surf Coast Shire Rural Study 2001
ESO3(11)	Paddys Swamp	Yes	Yes	Yes	EVC Heathy Woodland (48)(least concern), Lowland Forest (16)(depleted). Powerful Owl ( <i>Ninox strenua</i> )(L), Grey Goshawk ( <i>Accipiter novaehollandiae novaehollandiae</i> )(v), Long-nosed Bandicoot ( <i>Perameles nasuta</i> ), Red-necked Wallaby ( <i>Macropus rufogriseus</i> ). Large tree hollows provide nesting habitat for Powerful Owl. Adjacent to Forest Park	Bambra	EVC maps, aerial photo. Biosites (765).
ESO3(12)	Deans Marsh- Lorne Road	Yes	No	Yes	EVC Shrubby Foothill Forest (45) (least concern). Wrinkled Buttons ( <i>Leiocarpa gatesii</i> ) (VU, v, L) Rufous Bristlebird (NT, FFG)	Lorne	EVC maps, aerial photo. Biosites (756, 362, 368)
ESO3(13)	Georges Road Grasslands	Yes	No	Yes	Grassland	Mount Moriac	Peter Moulton(pers.comm.)
ESO3(14)	Toorak Terrace	Yes	No	Yes	EVC Shrubby Wet Forest (201) (least concern), Grassy Dry Forest (22)(depleted), Southern Blue-gum ( <i>Eucalyptus globulus</i> subsp. <i>globulus</i> )(r), Wrinkled Buttons ( <i>Leiocarpa gatesii</i> )(VU,v,L), Rufous Bristlebird nt, L).	Lorne	EVC maps, aerial photo. Biosites (660)



Biodiversity mapping project

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(14)	Toorak Terrace	Yes	No	Yes	EVC Shrubby Wet Forest (201)(least concern) and Grassy Dry Forest (22)(depleted). Southern Blue-gum ( <i>Eucalyptus globulus</i> subsp. <i>globulus</i> )(r), Wrinkled Buttons ( <i>Leiocarpa gatesii</i> )(VU, v, L), Rufous Bristlebird ( <i>Dayornis broadbentii</i> )(nt, L).	Lorne	EVC maps, aerial photo. Biosites (660)
ESO3(15)	Babbingtons	Yes	No	Yes	EVC Shrubby Wet Forest (201)(least concern) contains Brookers Gum ( <i>Eucalyptus brookeriana</i> )(r). Surrounded by Great Otway National Park	Boonah	EVC maps, aerial photo. Biosites (683)
ESO3(16)	Hammonds Road	Yes	No	Yes	EVC Lowland Forest (16)(depleted) Anglesea Grevillea ( <i>Grevillea infecunda</i> )(VU, v, L) along road.	Wormbete	EVC maps, aerial photo. Biosites (788)
ESO3(17)	Erskine Falls Road	No	No	Yes	EVC Shrubby Wet Forest (201) (least concern), Wet Forest (30) (least concern). Surrounded by Great Otway National Park. Brooker's Gum ( <i>Eucalyptus brookeriana</i> )(r), Rufous Bristlebird ( <i>Dayornis broadbentii</i> )(nt, L), Wrinkled Buttons ( <i>Leiocarpa gatesii</i> )(VU, v, L), Long-nosed Potoroo ( <i>Potorous tridactylus</i> )(VU, e, L), Southern Brown Bandicoot ( <i>Isoodon obesulus</i> )(EN, nt), Masked Owl ( <i>Tyto novaehollandiae novaehollandiae</i> )(e, L).	Boonah	EVC maps, aerial photo. Biosites (753)
ESO3(18)	Wymbooliel	No	No	Yes	EVC Shrubby Wet Forest (201) (least concern). Surrounded by Great Otway National Park	Boonah/ Mount Cowley/ Lorne	EVC maps, aerial photo. Biosites (2095)
ESO3(19)	The Brothers	No	No	Yes	EVC Shrubby Wet Forest (201) (least concern), Surrounded by Great Otway National Park. Rufous Bristlebird ( <i>Dayornis broadbentii</i> ) (nt, L), Powerful Owl ( <i>Ninox strenua</i> ) (v, L), Masked Owl	Lorne	EVC maps, aerial photo. Biosites (655)

Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(19) cont.					( <i>Tyto novaehollandiae novaehollandiae</i> (e, L) has also been recorded here, the extent to which the area is used by the species is unknown. High quality natural vegetation.		
ESO3(20)	Lorne	Yes	No	Yes	EVC Shrubby Wet Forest (201) (least concern), Surrounded by Great Otway National Park. Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt,L)	Lorne	EVC maps, aerial photo. VFD
ESO3(21)	Big Hill	Yes	Yes	Yes	EVC Damp Sands Herb-rich Woodland (3)(Vulnerable), Shrubby Dry forest (21)(Least Concern), Coastal Headland Scrub (161)(Depleted). Link between National Park and Coastal Reserve. Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L) records.	Aireys Inlet	EVC maps, aerial photo. Biosites Database (657)
ESO3(22)	Clarkes Spur	Yes	No	Yes	EVC Shrubby Foothill Forest (45) (Least Concern) adjacent to National Park. Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L), Wrinkled Buttons ( <i>Leiocarpa gatesii</i> ) (VU, v, L)	Aireys Inlet	EVC maps, aerial photo. Biosites (697)
ESO3(23)	Eastern View	Yes	No	Yes	EVC Coastal Headland Scrub (161)(Depleted). Link between National Park and Coastal Reserve. Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L) Barking Owl ( <i>Ninox connivens connivens</i> )(e, L).	Aireys Inlet	EVC maps, aerial photo. VFD
ESO3(24)	Aireys Inlet Coastal Complex	Yes	Yes	Yes	EVC Coastal Headland Scrub (161)(Depleted), Coastal Dune Scrub Mosaic (1)(Depleted). Mosaic of open to closed shrubland to woodland, and grassland to heathland. Dominant species include Moonah (FFG listed community), Drooping Sheoake, woody shrubs, and coast tussock-	Aireys Inlet	EVC maps, aerial photo. Aireys Inlet Neighbourhood Character Study, (Trenrove, 2003).

Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(24) cont.					grass, sedges and grasses and prostrate herbs. Fauna recorded include White-footed Dunnart ( <i>Sminthopsis leucopus</i> )(v), Swamp Antechinus ( <i>Antechinus minimus maritimus</i> )(nt, L), Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L), White-bellied Sea-Eagle ( <i>Haliaeetus leucogaster</i> )(v, L), Cape Barron Goose ( <i>Cereopsis novaehollandiae</i> )(nt), Hooded Plover ( <i>Thinornis rubricollis rubricollis</i> )(v, L).		
ESO3(25)	Moggs Creek	Yes	No	Yes	EVC Sedgy Riparian Woodland (198)(depleted), Lowland Forest (16)(depleted), Heathy Woodland (48)(least concern), Shrubby Dry Forest (21)(depleted), Shrubby Foothill Forest (45)(least concern), Hoary Rapiet-sedge ( <i>Lepidosperma canescens</i> )(r), Rosy Baeckea ( <i>Euryomyrtus ramosissima</i> subsp. <i>prostrata</i> )(r), Winter Sun-orchid ( <i>Thelymitra hiemalis</i> )(e, L), Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L), Powerful Owl ( <i>Ninox strenua</i> )( v, L) at Tullwillia Guide Camp.	Aireys Inlet	Trevor Pescott- Powerful Owl (pers.comm) EVC maps, aerial photo. Biosites (746).
ESO3(26)	Timbara Estate	Yes	No	Yes	EVC Riparian Scrub Complex (17) (depleted), Heathy Woodland (48) (least concern), Merran's Sun Orchid ( <i>Thelymitra X merraniae</i> ) (e, L), Red Beard-orchid ( <i>Calochilus paludosus</i> ), Anglesea Grevillea ( <i>Grevillea infecunda</i> )(VU, v, L)	Aireys Inlet	EVC maps, aerial photo, Biosites (696)  BAP- Landscape Plan for Gherang Zone (2003)
ESO3(27)	Merran's Reserve/Yandanah Road	Yes	No	Yes	EVC Heathy Woodland (48)(least concern), Merran's Sun Orchid ( <i>Thelymitra X merraniae</i> ) Anglesea grevillea ( <i>Grevillea infecunda</i> )(VU, v, L)	Aireys Inlet	EVC maps, aerial photo, Biosites (435) BAP- Landscape Plan for Gherang Zone (2003)

Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(28)	Aireys Inlet Moonah Woodland	No	Yes	Yes	EVC Coastal Dune Scrub Mosaic (1)(depleted). Open to closed woodland dominated by Moonah, FFG listed community. Other species include Drooping Sheoake, understory of woody and succulent shrubs and climbers. Habitat for Rufous Bristlebird ( <i>Dayornis broadbentii</i> )(nt, L).	Aireys Inlet	EVC maps, aerial photo. Aireys Inlet Neighbourhood Character Study (Trengove, 2003)
ESO3(29)	Aireys Inlet township Mixed Eucalypt	Yes	Yes (partially)	Yes	EVC Lowland Forest (16)(depleted), Heathy Woodland (48)(least concern), Shrubby Dry Forest (21)(least concern), Sedgy Riparian Woodland (198)(depleted), Riparian Scrub Complex (17)(depleted), Damp Sands Herb-rich Woodland (3)(vulnerable). Mixed Eucalypt woodland, Messmate, Stringybark and Ironbark with scattered other Eucalyptus species. Rufous Bristlebird ( <i>Dayornis broadbentii</i> )(nt, L), Hoary Rapiersedge ( <i>Lepidosperma canescens</i> )(r), Winter Sun-orchid ( <i>Thelymitra hiemalis</i> )(e, L), (Paper Flower ( <i>Thomasia petalocalyx</i> )(r), Anglesea Slender Sun Orchid ( <i>Thelymitra sp. aff. Pauciflora</i> )(v), Merrans Sun Orchid ( <i>Thelymitra x merraniae</i> )(e, L). The most southerly known occurrence of Otway Grey Gum ( <i>Eucalyptus sp. aff. cypellocarpa</i> )(v)	Aireys Inlet	EVC maps, aerial photo. Aireys Inlet Neighbourhood Character Study, (Trengove, 2003) Biosites (693)  Aireys Inlet Oval Study (Ecology Australia)
ESO3(30)	Aireys Inlet township	Yes	No	Yes	Rufous Bristlebird recorded ( <i>Dayornis broadbentii</i> )(nt, L) Remnant mixed Eucalypt Woodland, scattered trees understory mixture of Natives and exotic.	Aireys Inlet	EVC maps, aerial photo. VFD, Aireys Inlet Neighbourhood Character Study (Trengove, 2003).

Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(31)	Anglesea Heath- Alcoa Lease	Yes	Yes	Yes	<p>EVC Lowland Forest (16)(depleted), Riparian Scrub Complex (17)(depleted), Sedgy Riparian Woodland (198)(depleted) and Heathy Woodland (48)(least concern). Very high level of flora and fauna biodiversity. Highly intact vegetation. Recorded threatened species include:</p> <p><u>Fauna:</u>            Southern toadlet (<i>Pseudophryne semimarmorata</i>)(v), New Holland Mouse (<i>Pseudomys novaehollandiae</i>)(e, L), White footed Dunnart (<i>Sminthopsis leucopus</i>)(v), Southern Brown Bandicoot (<i>Isodon obesulus obesulus</i>)(EN, nt), Swamp Antechinus (<i>Antechinus minimus maritimus</i>)(nt, L, Rufous Bristlebird (<i>Dayornis broadbenti</i>)(nt, L), Lewins Rail (<i>Rallus pectoralis pectoralis</i>) (v, L), Spotted Harrier (<i>Circus assimilis</i>)(nt), Great Egret (<i>Ardea alba</i>)(v, L) assemblage of threatened water birds, Chestnut-rumped Heathwren (<i>Hylacola pyrrhopygia</i>)(v,L), Elegant Parrot (<i>Neophema elegans</i>)(v), Brown Quail (<i>Coturnix ypsilophora australis</i>)(nt), Long-nosed Potoroo (<i>Potorous tridactylus tridactylus</i>)(VU, e, L), Hooded Plover (<i>Thinornis rubricollis rubricollis</i>)(v, L) Grey Goshawk (<i>Accipiter novaehollandiae novaehollandiae</i>)(v), Swamp Skink (<i>Egernia coventryi</i>)(v, L), Bearded Dragon (<i>Pogona barbatus</i>)(dd), Black-browed Albatross (<i>Diomedea melanophris melanophris</i>)(e).</p>	Aireys Inlet/ Anglesea/ Parapatrap	EVC maps, aerial photo.  Gibson et al (2004), Gibson et al (2003), Wilson et al (1986), Wilson, B. (1991), Lock & Wilson (1999)  Biosites (662, 670, 661, 674, 7678, 700, 671, 7055, 768)

Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(31) (cont'd)					<p><b>Flora:</b>                      Anglesea Grevillea (<i>Grevillea infecunda</i>)(VU, v, L) West Coast Peppermint (<i>Eucalyptus aff. willisii</i>)(r), Southern Plume-orchid (<i>Pterostylis tasmanica</i>)(k), Plum Orchid (<i>Thelymitra mucida</i>)(v), Clustered Lily (<i>Theilionema umbellatum</i>)(r), Small Milkwort (<i>Comesperma polygaloides</i>)(v, L), Dense Leek-orchid (<i>Prasophyllum spicatum</i>)(VU, e), Lizard Orchid (<i>Burnettia cuneata</i>)(r), Spotted Quail Thrush (nt), Rosy Baeckea (<i>Euryomyrtus ramosissima</i> ssp. <i>Prostrata</i>)(r), Wrinkled Buttons (<i>Leiocarpa gatesii</i>) (VU, v, L), Coast Stork's-bill (<i>Pelargonium littorale</i>)(k), Hoary Rapier-sedge (<i>Lepidosperma canescens</i>)(r), Fringed Midge-orchid (<i>Corunastylis ciliate</i>)(k), Greencomb Spider-orchid (<i>Caladenia dilatata</i> s.s.)(k), Southern Spider-orchid (<i>Caladenia australis</i>)(k), Bluebeard Wax-lip Hybrid Orchid (X <i>Glossadenia tutelata</i>)(r), Blotched Sun-orchid (<i>Thelymitra benthamiana</i>)(v), Pallid Sun-orchid <i>Thelymitra</i> sp. aff. <i>pauciflora</i> (Coastal)(e, L), Otway Grey-gum (<i>Eucalyptus</i> sp. aff. <i>cypellocarpa</i>)(v, L), Large White Spider-orchid (<i>Caladenia venusta</i>)(r), Summer Spider-orchid (<i>Caladenia flavovirens</i>)(r), Top Bog-sedge (<i>Schoenus turbinatus</i>)(r), Paper Flower (<i>Thomasia petalocalyx</i>)(r), Spiral Sun-orchid (<i>Thelymitra matthewsii</i>)(VU, v, L), Shiny Tea-tree (<i>Leptospermum turbinatum</i>)(r).</p>		

Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(32)	Edna Bowman Reserve	Yes	No	Yes	EVC Calcarenite Dune Woodland (858)(endangered) and Heathy Woodland (48)(least concern). Messmate Stringybark Woodland. Intact vegetation of high conservation significance. Swamp Antechinus ( <i>Antechinus minimus</i> ) (nt, L), Robust Spider Orchid ( <i>Caladenia valida</i> )(e, L) records.	Anglesea	EVC maps, aerial photo. Anglesea Neighbourhood Character Study, Trengove, 2003) Biosites (677)
ESO3(33)	Anglesea Coastal Complex	Yes	Yes	Yes	EVC Coastal Dune Scrub Moasiac (1)(depleted), Heathy Woodland (48)(least concern), Sand Heathland (6)(rare). Coastal Moonah woodland (FFG Listed) relatively intact vegetation. Heathy Woodlands east of Anglesea River are Potential habitat for Mountain Dragon Anglesea form (Tymanocryptis <i>diemensis</i> Anglesea) (dd). Rufous Bristlebird ( <i>Dayornis broadbentii</i> )(nt, L), Hooded Plover ( <i>Thinornis rubricollis</i> rubricollis)(v, L), Powerful Owl ( <i>Ninox strenua</i> )(v, L).	Anglesea	EVC maps, aerial photo. Anglesea Neighbourhood Character Study (Trengove, 2003). Biosites (7677)  Nick Clemman ARI pers.comm
ESO3(34)	Anglesea Moonah	Yes	No	Yes	EVC Heathy Woodland (48)(least concern), Coastal Moonah Woodlands dominated by <i>Melaleuca lanceolata</i> (FFG Listed).	Anglesea	EVC maps, aerial photo. Anglesea Neighbourhood Character Study (Trengove, 2003)
ESO3(35)	Fairyland	No	No	Yes	EVC Damp Sands Herb-rich woodland (3)(vulnerable), Calcarenite Dune Woodland (858) (endangered).	Anglesea	EVC maps, aerial photo. ARI Mapping 2006
ESO3(36)	Anglesea Remnants	Yes	No	Yes	EVC Heathy Woodland (48)(Least Concern), Damp Sands Herb-rich Woodland (3)(vulnerable), Lowland Forest (16)(depleted), Calcarenite Dune Woodland (858)(endangered). Messmate Stringybark Woodlands, West Coast Peppermint ( <i>Eucalyptus aff. willisii</i> (Sth-western Victoria)(r).	Anglesea	EVC maps, aerial photo. Anglesea Neighbourhood Character Study, Trengove, 2003)

HABITAT PROTECTION

Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(37)	Eumeralla	Yes	Yes	Yes	EVC Heathy Woodland (48)(least concern). Mountain Dragon Anglesea form ( <i>Tympanocryptis diemensis Anglesea</i> ) (dd). Southern Brown Bandicoot ( <i>Isodon obesulus obesulus</i> )(EN, nt), Swamp Antechinus ( <i>Antechinus minimus maritimus</i> )(nt, L), White-footed Dunnart ( <i>Sminthopsis leucopus</i> )(v), Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L).	Anglesea	EVC maps, aerial photo. Nick Clemman ARI (Anglesea Dragon)
ESO3(38)	Point Addis	Yes	No	Yes	EVC Heathy Woodland (48)(least concern), Coastal Headland Scrub (161)(vulnerable), Shrubby Dry Forest (21)(least concern), Lowland Forest (16)(depleted), Paper Flower ( <i>Thomasia petalocalyx</i> )(r), Velvet Daisy-bush ( <i>Olearia pannosa</i> subsp. <i>cardiophylla</i> )(v, L). Adjacent to National Park and Marine Park.	Anglesea	EVC maps, aerial photo. Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001).
ESO3(39)	Bells Beach Bellarine Yellow Gum	Yes	No	Yes	EVC Grassy Woodland (175)(endangered), Lowland Forest (16)(depleted), Coastal Headland Scrub (161)(vulnerable), Heathy Woodland (48)(least concern), Shrubby Dry Forest (21)(least concern). Bellarine Yellow Gum ( <i>Eucalyptus leucoxylon</i> subsp. <i>bellarensis</i> )(e,L) in very high densities. Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L), Southern Toadlet ( <i>Pseudophryne semimarmorata</i> )(v)	Torquay	EVC maps, aerial photo. Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001). Torquay- Jan Juc Neighbourhood Character Study, 2003 (Trengove, 2003)
ESO3(40)	Jan Juc Foreshore	Yes	No	Yes	EVC Coastal Tussock Grassland (163)(vulnerable), Coastal Headland Scrub (161)(vulnerable), Grassy Woodland (175)(endangered). Swamp Diuris ( <i>Diuris palustris</i> )(v, L)	Torquay	Biosites (1340, 1343, 1349, 1366) EVC maps, aerial photo. Jan Juc Coast Action, ANOS, Bellarine Yellow Gums in the Surf Coast Shire

HABITAT PROTECTION



Biodiversity mapping project

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(40) cont.					outlier, only specimen recorded in Surf Coast Shire. Bellarine Yellow Gum ( <i>Eucalyptus leucoxyton</i> subsp. <i>bellarensis</i> )(e,L). <i>Olearia</i> sp. regionally significant. Includes Coastal Dune, Coastal Cliff and Coastal Heathland Vegetation. Scattered Moonah (FFG listed community).		(Trengove 2001), Graeme Stockton (pers. comm), Geoff Carr-Ecology Australia pers.comm.
ESO3(41)	Torquay Bellarine Yellow Gum	Yes	No	Yes	EVC Grassy Woodland (175) (endangered), Shrubby Dry Forest (21)(least concern). Contains mixed age Bellarine Yellow Gum ( <i>Eucalyptus leucoxyton</i> subsp. <i>bellarensis</i> )(e,L) in very high densities. Messmate Ironbark woodland.	Torquay	Torquay- Jan Juc Neighbourhood Character Study (Trengove, 2003) EVC maps, aerial photo. Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001), Biosites (1339). Torquay- Jan Juc Neighbourhood Character Study (Trengove, 2003)
ESO3(42)	Coombes Road Remnants	Yes	No	Yes	EVC Grassy Woodland (175)(endangered), Heathy Woodland/Sand Heath Mosaic (892) (least concern). Bellarine Yellow Gum ( <i>Eucalyptus leucoxyton</i> subsp. <i>bellarensis</i> )(e,L)	Torquay	EVC maps, aerial photo. Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001). Torquay- Jan Juc Neighbourhood Character Study (Trengove 2003) Donna Burns pers.com.
ESO3(43)	Ashmore Road	No	No	Yes	EVC Grassy Woodland (175)(endangered)	Torquay	EVC maps, aerial photo.
ESO3(44)	Loutitt Bay Road	Yes	Yes	Yes	EVC Grassy Woodland (175) (endangered) and Swampy Riparian Woodland (83)(endangered), Damp Sands Herb-rich Woodland (3) (vulnerable). Records of Long nosed Bandicoot ( <i>Perameles nasuta</i> ), Spotted Quail Thrush ( <i>Cinclusoma punctatum</i> )(nt) and breeding pair Powerful Owl ( <i>Ninox strenua</i> )(v, L). Large Hollows in messmate woodland have supported a breeding pair of powerful owls.	Torquay/ Parapatrap	EVC maps, aerial photo. Biosites (1345), Ecology Australia Report?

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(45)	Layards Road	No	Yes	Yes	Common Tussock Grass Remnant ( <i>Poa labillardierei</i> ) (endangered).	Paraparap	Aerial photo, Biosite (801)
ESO3(46)	Point Impossible	Yes	Yes	Yes	EVC Coastal Saltmarsh/Mangrove Shrubland Mosaic (302) (endangered), Coastal Dune Scrub Mosaic (1) (depleted), Moonah Coastal Woodland (L) <i>Melaleuca lanceolata</i> , relatively intact. Coast Wirilda ( <i>Acacia retinoides</i> var. <i>uncifolia</i> ) (r) in large numbers. Coast Fescue ( <i>Austrofestuca littoralis</i> )(r). Hooded Plover ( <i>Thinornis rubricollis rubricollis</i> ) (v, L) nesting site. Variety of threatened sea birds.	Connewarre Torquay	EVC maps, aerial photo. Flora survey and Management Recommendations for the Point Impossible Dunes, (Stockton Feb 2006). Surf Coast Coastal Resource Atlas. Torquay-Jan Juc Neighbourhood Character Study (Tregrove, 2003). Biosites (1322, 1323)
ESO3(47)	Point Danger	Yes	No	Yes	Scattered Moonah Coastal Woodland (L) <i>Melaleuca lanceolata</i> .	Torquay	Aerial photo. Torquay-Jan Juc Neighbourhood Character Study (Tregrove 2003)
ESO3(48)	Dans Reserve	Yes	No	Yes	EVC Plains grassland (132)(endangered), Grassy Woodland (175)(endangered) Floodplain Riparian Woodland (56)(endangered). Site contains Glenelg Pomaderris ( <i>Pomaderris halmaturina</i> subsp. <i>continentis</i> )(r)	Connewarre	EVC maps, aerial photo. Surf Coast Shire Bio-mapping: Flora and Fauna of Nine Priority Reserves, 2006-07 (ARI, 2007). Dans Nature Reserve: Draft Action Plan (Surf Coast Shire 1999).
ESO3(49)	Giddings Reserve	No	No	Yes	EVC Grassy Woodland (175) (endangered). Diverse range of species including <i>Themeda</i> and <i>Poa</i> species.	Paraparap	EVC maps, aerial photo. Surf Coast Shire Bio-mapping: Flora and Fauna of Nine Priority Reserves, 2006-07 (ARI, 2007). Giddings Nature Reserve: Draft action Plan (Surf Coast Shire 1999)
ESO3(50)	Menzels Reserve	No	No	Yes	EVC Grassy Woodland (175)(endangered). Diverse number of species for its size includes <i>Themeda</i> grass. Orchids	Torquay	EVC maps, aerial photo. Surf Coast Shire Bio-mapping: Flora and Fauna of Nine Priority

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(50) cont.					( <i>Thelymitra</i> sp.) have been noted in the reserve (SCS, 1999).		Reserves, 2006-07 (ARI, 2007) Menzels Nature Reserve: Draft action Plan (Surf Coast Shire, 1999)
ESO3(51)	Rice Reserve	No	No	Yes	EVC Floodplain Riparian Woodland (56)(endangered), Plains Grassland (132) (endangered) and Creeklime Grassy Woodland (68) (endangered). Range of species including <i>Themeda</i> and <i>Poa</i> grasses.	Torquay	EVC maps, aerial photo. Surf Coast Shire Bio-mapping: Flora and Fauna of Nine Priority Reserves, 2006-07 (ARI, 2007) Rice Nature Reserve: Draft Action Plan (Surf Coast Shire, 1999)
ESO3(52)	Stoney Creek	No	No	Yes	EVC Shrubby Wet Forest (201)(least concern). Surrounded by Great Otway National Park. Very high quality vegetation.	Boonah	EVC maps, aerial photo. Biosites (682)
ESO3(53)	Ironbark Basin/ Point Addis Reserve	Yes		Yes	EVC Shrubby Dry Forest (21)(least concern), Heathy Woodland (48) (least concern), Lowland Forest (16) (depleted), Bellarine Yellow Gum ( <i>Eucalyptus leucoxylon</i> ssp. <i>Bellarensis</i> )(e,L), Rufous Bristlebird ( <i>Dayornis broadbenti</i> )(nt, L), Brown Toadlet ( <i>Pseudophryne bibronii</i> )(e), Southern Brown Bandicoot ( <i>Isodon obesulus obesulus</i> )(En, nt). Swamp Antechinus ( <i>Antechinus minimus maritimus</i> )(nt, L), Spotted Quail-thrush ( <i>Cinlosoma punctatum</i> )(nt), Elegant Parrot ( <i>Neophema elegans</i> )(v). Powerful Owl ( <i>Ninox strenua</i> )(v, L), White-footed Dunnart ( <i>Sminthopsis leucopus</i> )(v), Speckled Warbler ( <i>Chthonicola sagittata</i> )(v, L). Red Iron Bark forest and coastal woodlands. Good condition, native ground cover, habitat.		EVC maps, aerial photo. EMU (1999) Vol.99:p9-14  Tilley, S. 1982, The diet of the powerful owl <i>Ninox strenua</i> , in Victoria. <i>Australian Wildlife Research</i> . <b>9</b> , 157-175.  Bells Beach to Red Rocks Coast Action Plan Draft fire management plan for Ironbark Basin.  Biosites (726, 1344)

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(55)	Willowite Road Rail Reserve	No	Yes	Yes	EVC Grassy Woodland (175)(endangered).	Mount Moriac	EVC maps, aerial photo. Biosites (1266)
ESO3(56)	Gnarwarre	No	No	Yes	Remnant Vegetation	Mount Moriac	Peter Moulton pers comm.
ESO3(57)	Anglesea Heathlands	Yes	No	Yes	EVC Heathy Woodland (48)(Least Concern), Sand Heathland (6)(rare). Wrinkled Buttons ( <i>Leiocarpa gatesii</i> ) (VU, v, L) White-footed Dunnart ( <i>Sminthopsis leucopus</i> ) (V), Swamp Antechinus ( <i>Antechinus minimus maritimus</i> ) (nt, L), Southern Brown Bandicoot ( <i>Isodon obesulus obesulus</i> ) (EN, nt).	Anglesea Lorne	EVC mapping, aerial photo, Margaret McDonald pers.comm. The site may be under a covenant
ESO3(58)	East of Urquhart's Bluff	Yes	Yes	Yes	Hooded Plover ( <i>Thinornis rubricollis</i> ) (v, L) nesting / flocking site.	Anglesea	Biosites (656) Surf Coast Coastal Resource Atlas Atlas of Victorian Wildlife
ESO3(59)	Deans Marsh	No	No	Yes	EVC Lowland Forest (16)(depleted), Riparian Scrub Complex (17) (depleted), Herb-rich Foothill Forest/Shrubby Foothill Forest Complex (178)(depleted) & Riparian Forest (18) (least concern). Mod to high vegetation quality, structurally intact & diverse vegetation.	Pennyroyal – Boonah	EVC maps, aerial photo. Deans Marsh Pennyroyal Valley Environmental Assets Study (2006). Biosites (684, 725)

**Key to Abbreviations**

**EVC-** Name (number)(bioregional conservation status)

**Threatened Flora Status** - (EPBC, DELWP, FFG, Migratory Bird)

**Conservation Status Abbreviations**

National Flora and Fauna		DEL WP State Flora		DEL WP State Fauna		FFG		International Treaty	
EX extinct	ex extinct	cr critically endangered	cr critically endangered	L Listed	J JAMBA				
CR critically endangered	e endangered	e endangered	e endangered	N Nominated	C CAMBA				
EN endangered	v vulnerable	v vulnerable	v vulnerable	I Invalid/ineligible					
VU vulnerable	r rare	r rare	r rare						
	k poorly known	dd Data deficient	dd Data deficient						

**Please note:** Conservation status of Ecological Vegetation Classes and rare and threatened species are valid at time of printing and may be subject to change.

### TABLE OF VALUES FOR HABITAT PROTECTION ON ROADS

Shown on the DELWP biodiversity map as ESO3 (*number*)Rd.

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
ESO3(1)Rd	McIntyres Road	Yes	No	No	High conservation status, EVC Plains Grassy Woodland (55)(endangered) (Moulton et al 1997). Roadside contains Spiny Rice Flower ( <i>Pimelea spinescens</i> )(CR, v. L).	Winchelsea	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (715)
ESO3(2)Rd	Shelford Road	No	Yes	Yes	High conservation status, EVC Brackish Wetland (656) (endangered) (Moulton et al 1997). On the verge of semi-saline wetland which supports a variety of national and state rare and threatened species.	Winchelsea	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (771) Winchelsea Strategy Review: Environmental Assets Survey (Tregrove 2004)
ESO3(3)Rd	McCallums Lane	No	Yes	No	High conservation status, EVC Estuarine Wetland (10) (endangered) (Moulton et al 1997). Within the margins of semi-saline wetland. Remnant vegetation consists of grasses, sedges and herbs.	Winchelsea	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Winchelsea Strategy Review: Environmental Assets Survey (Tregrove 2004)
ESO3(4)Rd	Blacks Road	No	Yes	Yes	High conservation status, EVC Plains Grassy Woodland (55) (endangered) (Moulton et al 1997). On the verge of semi-saline wetland.	Winchelsea	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Winchelsea Strategy Review: Environmental Assets Survey (Tregrove 2004)
ESO3(5)Rd	Cressy Road	No	Yes	Yes	High conservation status, EVC Brackish Wetland (656)	Ombersley Winchelsea	Remnant Roadside Vegetation of the Surf

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(5)Rd cont.					(Endangered) and Plains Grassy Woodland (55)(endangered) (Moulton et al 1997). On the verge of semi-saline wetland which supports a variety of national and state rare and threatened species.		Coast Shire (Moulton et al 1997), Biosites (438)
ESO3(6)Rd	Menzels Road	No	No	Yes	High conservation status, EVC Plains Grassy Woodland (55) (endangered) (Moulton et al 1997).	Winchelsea	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
ESO3(7)Rd	Peels Road	Yes	No	No	Medium conservation status, EVC Plains Grassy Woodland (55) (endangered) and Plains Grassland (132)(endangered)(Moulton et al 1997). Contains Small-flower Mat-rush ( <i>Lomandra micrantha subsp. Tuberculata</i> )(r), patches of remnant grasses.	Mount Pollock	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
ESO3(8)Rd	Thomas Road	Yes	No	No	Medium conservation status, EVC Plains Grassland (132)(endangered) (Moulton et al 1997). Contains Spiny Rice Flower ( <i>Pimelea spinescens</i> )(CR, V, L). Note: this site was on Gnawarre Rd in report.	Mount Pollock	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (749)
ESO3(9)Rd	Buckley School Road	No	No	No	High and low conservation status, EVC Plains Grassy Woodland (55)(endangered) (Moulton et al 1997). Drooping She-oak dominated woodland.	Mount Pollock	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (777)
ESO(10) Rd	Wainerights Lane	No	No	Yes	High conservation status, EVC Plains Grassy Woodland (55)(endangered) (Moulton et al 1997). Red Gum/Drooping She-oak/Acacia dominated woodland.	Mount Pollock	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (737)

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(11) Rd	Nobles Road	Yes	No	Yes	Medium to high conservation status, EVC Plains Grassy Woodland (55) (endangered) (Moulton et al 1997). Contains Small –flower Mat-rush ( <i>Lomandra micrantha</i> subsp. <i>tuberculata</i> )(r) and diverse <i>Themeda</i> grassland.	Mount Moriac	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
ESO3(12) Rd	Pollocksford Bridge Road	No	No	Yes	High conservation status, EVC's Plains Grassy Woodland (55) (endangered) and Grassy Woodland (175) (endangered) (Moulton et al 1997). Drooping She-oak Woodland with diverse understorey.	Mount Moriac	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites(1371)
ESO3(13) Rd	Barrabool Road	No	No	Yes	High conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997). Only recorded community of a disjunct combination of heathland, woody grasslands and plains grassland. High diversity (Moulton et al 1997).	Mount Moriac	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites(1350)
ESO3(14) Rd	Considines Road	No	No	Yes	High conservation status, EVC Plains Grassy Woodland (55) (endangered). Contiguous tree canopy consisting mostly of Swamp Gum with diverse understorey (Moulton et al 1997).	Mount Moriac	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites(1356)
ESO3(15) Rd	Reservoir Road	No	No	Yes	High Conservation status, EVC Grassy Woodland (175) (endangered) Manna Gum/Swamp Gum woodland with Tea-tree/Acacia mid-storey and an intact and diverse ground layer (Moulton et al 1997).	Mount Moriac	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites(1372)



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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(16) Rd	Mount Duneed Road	No	No	Yes	High conservation status, EVC Grassy Woodland (175) (endangered), intact and diverse Themedra grassland (Moulton et al 1997).	Mount Moriac	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites(1369)
ESO3(17) Rd	McDonalds Road	Yes	No	Yes	Medium conservation status, EVC Plains Grassy Woodland (55)(endangered) (Moulton et al 1997). Roadside contains Pale Swamp Everlasting ( <i>Helichrysum aff. rutidolepis</i> )(v) and remnant plains grassland flora.	Bambra	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997),
ESO3(18) Rd	Cape Otway Road	Yes	No	No	High conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997). Roadside contains Yarra Gum (r).	Birregurra/ Bambra/ Wormbete	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997),
ESO3(19) Rd	Fultons Lane	Yes	No	No	Medium conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997). Roadside contains Yarra Gum (r)	Bambra	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Gerangamite BAP
ESO3(20) Rd	Swabys Lane	No	No	Yes	High conservation status, EVC Plains Grassy Woodland (55) (endangered). <i>Themeda</i> dominated grassland	Wormbete	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (732)
ESO3(21) Rd	Gherang Road	Yes	No	No	High conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997). Contains Yarra Gum ( <i>Eucalyptus yarraensis</i> ) (r). Southern section EVC Lowland Forest (16) (depleted) contains Spiny Rice-flower ( <i>Pimelea spinescens</i> ) (CR, v, L)	Wormbete	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (750)

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(22) Rd	Crafters Lane	Yes	No	No	High conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997). Contains Yarra Gum ( <i>Eucalyptus yarraensis</i> ) (r).	Wormbete	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosite (758)
ESO3(23) Rd	Dangers Lane	Yes	No	Yes	High and medium conservation status, EVC Swampy Riparian Woodland (83) and Grassy Woodland (175) (both endangered) (Moulton et al 1997). Contains Yarra Gum ( <i>Eucalyptus yarraensis</i> ) (r) Anglesea Grevillea ( <i>Grevillea infecunda</i> )(VU,v) and Snow Gum ( <i>Eucalyptus paucifolia</i> var. <i>paucifolia</i> ) (k).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (342), Gherang BAP
ESO3(24) Rd	Wensleydale Station Road	No	No	Yes	High and medium conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (738)
ESO3(25) Rd	Tanners Lane	Yes	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Contains Anglesea Grevillea ( <i>Grevillea infecunda</i> )(VU, v, L)	Wormbete/ Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (734)
ESO3(26) Rd	Gumflats Road	Yes	No	Yes	EVC Lowland Forest (16)(depleted) and Heathy Woodland (48)(least concern) (Moulton et al 1997). Roadside contains Anglesea Grevillea ( <i>Grevillea infecunda</i> )(VU,v,L) West Coast Peppermint ( <i>Eucalyptus</i> aff. <i>willisii</i> )(r) and Spiral Sun-Orchid ( <i>Thelymitra matthewsii</i> )(VU,v,L).	Wormbete/ Paraparap	EVC mapping, FIS, Biosites (7674)

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(27) Rd	Dickins Road	No	No	Yes	High conservation status, EVC Grassy Woodland (175) and Plains Grassy Woodland (55) (both endangered) (Moulton et al 1997).	Paraparap/ Torquay	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1357)
ESO3(28) Rd	Nobles Road (Primary)	No	No	Yes	High and medium conservation status, EVC Plains Grassy Woodland (55)(endangered) (Moulton et al 1997). Contains <i>Themeda</i> grassland, Yarra Gums ( <i>Eucalyptus yarraensis</i> )	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (719)
ESO3(29) Rd	Blackgate Road	Yes	No	Yes	High conservation significance, EVC Grassy Woodland (175) and Coastal Saltmarsh (9) (both endangered) (Moulton et al 1997). Contains Spiny Peppergrass (VU, e, L).	Paraparap/ Torquay/ Connewarre	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1345, 1352)
ESO3(30) Rd	Grays Road	No	No	Yes	High conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997)	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (748)
ESO3(31) Rd	Hendy Main Road	No	No	Yes	High conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997). Continuous mature Manna Gum Woodland.	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1363)
ESO3(32) Rd	Loutitt Bay Road	No	No	Yes	High conservation status, EVC Grassy Woodland (175)(endangered) (Moulton et al 1997). Mixed Eucalypt Woodland, relatively dense mid-storey of tea-tree and Acacia.	Torquay	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (800)
ESO3(33) Rd	Williams Road	No	No	Yes	High conservation status, EVC Plains Grassy Woodland (55)(endangered) (Moulton et al 1997. Drooping She-oak Woodland.	Torquay	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1373)

HABITAT PROTECTION-ROADS

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(34) Rd	Ghazapore Road	No	No	No	High conservation status, EVC Grassy Woodland (175)(endangered) (Moulton et al 1997). Drooping She-oak Woodland with grassland species ground layer.	Torquay	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1360)
ESO3(35) Rd	Fishers Lane	No	No	Yes	High conservation status, EVC Grassy Woodland (175)(endangered) (Moulton et al 1997). Drooping She-oak Woodland with scattered remnant ground cover patches.	Torquay	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1359)
ESO3(36) Rd	Kurzmanns Road	No	No	Yes	High and medium conservation status, EVC Grassy Woodland (175)(endangered) (Moulton et al 1997). Roadside contains mixed age Messmate/Red Ironbark woodland with diverse understory.	Torquay	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1366)
ESO3(37) Rd	Duffields Road	Yes	No	Yes	High and medium conservation status, EVC Grassy Woodland (175)(endangered) (Moulton et al 1997). Roadside contains Bellarine Yellow Gum ( <i>Eucalyptus leucoxylon</i> ssp. <i>Bellarensis</i> )(e.L).	Torquay	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1358)
ESO3(38) Rd	Bells Beach Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16) and Coastal Dune Scrub Mosaic (1)(both depleted) (Moulton 1997). Sections contain Moonah Coastal Woodland Community (L).	Torquay	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1351), Torquay-Jan Juc Neighbourhood Character Study (2003)
ESO3(39) Rd	Coombes Road	Yes	No	Yes	Roadside contains Bellarine Yellow Gums ( <i>Eucalyptus leucoxylon</i> ssp. <i>Bellarensis</i> )(e.L)	Torquay	Bellarine Yellow Gums in the Surf Coast Shire (Tregrove 2001)

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(40) Rd	Horseshoe Bend Road	No	No	Yes	High conservation status, EVC Grassy Woodland (175) (endangered) (Moulton et al 1997). Open and mixed woodland, southern portion dominated by Acacia woodland.	Torquay	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1364)
ESO3(41) Rd	Bells Boulevard Road	Yes	No	Yes	Roadside contains Bellarine Yellow Gums ( <i>Eucalyptus leucoxylon</i> ssp. <i>Bellarensis</i> )(e,L)	Torquay	Torquay-Jan Juc Neighbourhood Character Study (2003), Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001)
ESO3(42) Rd	Ocean Boulevard	Yes	No	Yes	Roadside contains Bellarine Yellow Gums ( <i>Eucalyptus leucoxylon</i> ssp. <i>Bellarensis</i> )(e,L)	Torquay	Torquay-Jan Juc Neighbourhood Character Study (2003), Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001)
ESO3(43) Rd	Sunset Strip	Yes	No	No	Roadside contains Bellarine Yellow Gums ( <i>Eucalyptus leucoxylon</i> ssp. <i>Bellarensis</i> )(e,L)	Torquay	Torquay-Jan Juc Neighbourhood Character Study (2003), Bellarine Yellow Gums in the Surf Coast Shire (Trengove 2001)
ESO3(44) Rd	Pennyroyal Valley Road	Yes	No	Yes	High conservation status, EVC Grassy Woodland (175) (endangered). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r). Note: Rated as low in Deans Marsh Pennyroyal Valley EAS (2006)	Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (724)
ESO3(45) Rd	Bambra Road	Yes	No	Yes	EVC Lowland Forest (16)(depleted) Swampy Riparian Woodland (83)(endangered) and Heathy	Aireys Inlet	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/link	Comments	Mapsheet	Source Info/ Additional information
ESO3(45) Rd (cont'd)					Woodland (48)(least concern). Roadside contains records of Anglesea Grevillea ( <i>Grevillea infecunda</i> )(VU, v), West Coast Peppermint ( <i>Eucalyptus</i> aff. <i>Willisii</i> )(r), Paper Flower ( <i>Thomasia petalocalyx</i> )(r) and Southern Brown Bandicoot ( <i>Isodon obesulus obesulus</i> )(En, nt).		al 1997), Biosite (664, 695), and Aireys Inlet of Eastern View Neighbourhood Character Study (2003)
ESO3(46) Rd	Breakfast Creek Road	Yes	No	Yes	EVC Lowland Forest (16)(depleted), Sedgy Riparian Woodland (198)(depleted) and Heathy Woodland (48)(least concern). Roadside contains records of Anglesea Grevillea ( <i>Grevillea infecunda</i> )(VU, v) and West Coast Peppermint ( <i>Eucalyptus</i> aff. <i>Willisii</i> )(r).	Wormbete/ Aireys Inlet	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosite (664)
ESO3(47) Rd	Great Ocean Road	Yes	No	Yes	EVC Calcarenite Dune Woodland (858)(endangered), Grassy Woodland (175)(endangered), Estuarine Wetland (10)(endangered) Roadside contains Bellarine Yellow Gum ( <i>Eucalyptus leucoxyton</i> ssp. <i>bellarensis</i> )(e,L).	Torquay/ Paraparap/ Anglesea	EVC mapping, FIS, Wildlife Atlas
ESO3(48) Rd	Elkington Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) and Heathy Woodland (48)(least concern). Contains Merrans Sun Orchid ( <i>Thelymitra xmerraniae</i> )(e, L). Diverse heathy ground flora.	Paraparap/ Anglesea	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (754)

**Key to Abbreviations**

**EVC-** Name (number)(bioregional conservation status)

**Threatened Flora Status** - (EPBC, DELWP, FFG, Migratory Bird)

**Conservation Status Abbreviations**

EBPC		DEL WP State Flora		DEL WP State Fauna		FFG		International Treaty	
National Flora and Fauna		State Flora		State Fauna		FFG		Migratory Bird Agreement	
EX	extinct	ex	extinct	cr	Critically endangered	L	Listed	J	JAMBA
CR	critically endangered	e	endangered	e	Endangered	N	Nominated	C	CAMBA
EN	endangered	v	vulnerable	v	Vulnerable	I	Invalid/ineligible		
VU	vulnerable	r	rare	nt	Near threatened				
		k	poorly known	dd	Data deficient				

**Please note:** Conservation status of Ecological Vegetation Classes and rare and threatened species are valid at time of printing and may be subject to change.

## TABLE OF VALUES FOR SIGNIFICANT AND REMNANT VEGETATION

Shown on the DELWP biodiversity map as **VPO1 (number)**

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Rare or threatened Vegetation Community	High biodiversity values / links.	Comments	Mapsheet(s)	Info Source/ Additional Notes
VPO1(1)	Wombete	Yes	No	Yes	EVC Lowland Forest (16)(depleted), Riparian Scrub Complex (17)(depleted), Records of Anglesea grevillea ( <i>Grevillea infecunda</i> ) (VU, v, L). Remnants in close proximity to State Forest.	Wombete	EVC maps, aerial photo, Flora & fauna assessment of <i>Ingleside</i> property, Gum Flats Rd, Wensleydale, Victoria (Miller, 2004). Biosites (665, 688, 710, 738, 739, 759, 788)
VPO1(2)	Breakfast Creek	No	No	Yes	EVC Lowland Forest 16 (depleted)	Aireys Inlet	EVC maps, aerial photo, Biosites(789)
VPO1(3)	Vehicle Testing Ground	No	No	Yes	EVC Lowland Forest (16) (depleted)	Wombete	EVC maps, aerial photo, Biosites (341)
VPO1(4)	Atkins Road	No	Yes	Yes	EVC Plains Grassy Woodland (55)(endangered). Remnant River Red gums	Wombete	EVC maps, aerial photo, Biosites (686), Tree25 layer
VPO1(5)	Barwon Terrace	No	Yes	Yes	EVC Plains Grassy Woodland (55)(endangered). Remnant River Red gums	Winchelsea/ Mount Pollock	EVC maps, aerial photo, Biosites (687), EVC
VPO1(6)	Bambra	Yes	No	Yes	EVC Lowland Forest (16)(depleted) Sedgy Riparian Forest (198) (depleted) and Heathy Woodland (48)(least concern)	Bambra	EVC maps, aerial photo Biosites (658, 703, 741)
VPO1(7)	Deans Marsh East	No	No	Yes	EVC predominantly Lowland Forest (16)(least concern). Majority of remnants isolated islands. One remnant adjacent to Crown Land Forest Park.	Boonah	EVC maps, aerial photo East Otway Landcare Group: Local Area Biodiversity Plan. Biosites (765)



Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Rare or threatened Vegetation Community	High biodiversity values / links.	Comments	Mapsheet(s)	Info Source/ Additional Notes
VPO1(8)	Bambra-Aireys Inlet Road	No	No	Yes	EVC Shrubby Foothill Forest (45)(least concern), Lowland Forest (16)(depleted), Riparian Forest (17)(least concern), Sedgy Riparian Woodland (198) (vulnerable), Wet Forest (30) (least concern). Important biolink between private property and adjacent Forest Park.	Boonah	EVC maps, aerial photo Biosites (685)
VPO1(9)	Boonah	No	No	No	EVC Shrubby Foothill Forest (45) (least concern), Shrubby Wet Forest (201) (least concern), and related complexes. Remnants adjacent to Forest Park	Boonah	EVC maps, aerial photo, East Otway Landcare Group: Local Area Biodiversity Plan. Biosites (659, 764)
VPO1(10)	Pennyroyal	Yes	Yes	Yes	EVC Lowland Forest (16)(depleted), Riparian Scrub Complex (17) (depleted), Herb-rich Foothill Forest/Shrubby Foothill Forest Complex (178)(depleted) & Riparian Forest (18) (least concern). Mod to high vegetation quality, structurally intact & diverse vegetation.	Pennyroyal – Boonah	EVC maps, aerial photo. Deans Marsh Pennyroyal Valley Environmental Assets Study (2006). Biosites (684, 725)
VPO1(11)	Pennyroyal lowland forest	No	Yes	Yes	EVC Lowland Forest (16) (depleted)	Pennyroyal	EVC maps, aerial photo. Deans Marsh Pennyroyal Valley Environmental Assets Study (2006). Biosites (722)
VPO1(12)	Remnants to Bells Beach	Yes	Yes	Yes	EVC Lowland Forest (16)(depleted), Grassy Woodland (175) (endangered), Heathy Woodland (48)(least concern). Records of New Holland Mouse (e, l), White-footed Dunnart (v, l), Rufous Bristlebird (nt, l), Speckled Warbler (v, l).	Paraparap, Torquay	EVC maps, aerial photo, Biosites (698, 774, 767, 1346, 7675)

SIGNIFICANT AND REMNANT VEGETATION

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DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Rare or threatened Vegetation Community	High biodiversity values / links.	Comments	Mapsheet(s)	Info Source/ Additional Notes
VPO1(13)	Allan Dam	No	No	Yes	EVC Shrubby Wet Forest (201) (Least concern), Shrubby Foothill Forest (45)(least concern), Riparian forest (18)(least concern). Surrounded by Great Otway NP	Lorne	EVC maps, aerial photo
VPO1(14)	Grasstree Park	Yes	No	Yes	EVC Heathy Woodland/Sand Heath Mosaic (892) (least concern)	Torquay	EVC maps, aerial photo Biosites (1338)
VPO1(15)	Anglesea Woodland	No	No	Yes	EVC Heathy Woodland (48) (least concern)	Anglesea	EVC maps, aerial photo

**Key to Abbreviations**

**EVC-** Name (number)(bioregional conservation status)

**Threatened Flora Status** - (EPBC, DELWP, FFG, Migratory Bird)

**Conservation Status Abbreviations**

	National Flora and Fauna	DEL WP		DEL WP		FFG	International Treaty
		State Flora	State Fauna	State Flora	State Fauna		
EX	extinct	ex	extinct	cr	Critically endangered	L Listed	J JAMBA
CR	critically endangered	e	endangered	e	Endangered	N Nominated	C CAMBA
EN	endangered	v	vulnerable	v	Vulnerable	I Invalid/ineligible	
VU	vulnerable	r	rare	nt	Near threatened		
		k	poorly known	dd	Data deficient		

**Please note:** Conservation status of Ecological Vegetation Classes and rare and threatened species are valid at time of printing and may be subject to change.

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## TABLE OF VALUES FOR SIGNIFICANT AND REMNANT ROADSIDE VEGETATION

Shown on the DELWP biodiversity map as VPO2 (number)Rd

DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/ links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(1)Rd	Brickmakers Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> ) (r).	Bambra	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Gerangamite BAP, Biosite (761)
VPO2(2)Rd	Winchelsea-Deans Marsh Road	No	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Records of Brown Treecreeper (nt). Runs through State Park and links remnants to large public land blocks.	Bambra	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Gerangamite BAP, Biosite (741)
VPO2(3)Rd	Fords Outlet Road	Yes	No	No	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r).	Bambra/ Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Gerangamite BAP
VPO2(4)Rd	Coalmine Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r), abuts native forest.	Bambra	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Gerangamite BAP
VPO2(5) Rd	Wurdale Road	Yes	No	No	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> ) (r) and Brookers Gum ( <i>Eucalyptus brookeriana</i> )(r)	Bambra/ Wormbete	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (745)

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DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(6)Rd	Gherang Road	No	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Contains stands of Snow Gum ( <i>Eucalyptus paucifolia</i> var. <i>paucifolia</i> ) (k).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (750)
VPO2(7)Rd	Prices Road	No	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Right roadside with intact understorey, including leaf litter and logs.	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (729)
VPO2(8)Rd	Dangers Lane	Yes	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997)	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (342), Gherang BAP
VPO2(9)Rd	Thielmans Road	No	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997).	Wormbete/ Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (735)
VPO2(10)Rd	Wensleydale Station Road	No	No	Yes	High and medium conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (738)
VPO2(11)Rd	Wormbete Station Road	Yes	No	Yes	High to medium conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (744)
VPO2(12)Rd	Knights Road	No	No	Yes	High and medium conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (710)

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(13)Rd	Casbaults Road	No	No	Yes	High and medium conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997)
VPO2(14)Rd	Clarkes Road	No	No	Yes	High and medium conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997).	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (665)
VPO2(15)Rd	West Road	No	No	Yes	High and medium conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Contains Snow Gums ( <i>Eucalyptus paucifolia</i> var. <i>paucifolia</i> )(k)	Wormbete	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (739)
VPO2(16)Rd	Nobles Road (primary)	No	No	Yes	High conservation status, EVC Lowland Forest(16)(depleted) (Moulton et al 1997).	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (719)
VPO2(17)Rd	Nobles Road (secondary)	No	Yes	Yes	High and medium conservation status, EVC Lowland Forest(16)(depleted) (Moulton et al 1997). Contains <i>Themeda</i> grassland.	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (719)
VPO2(18)Rd	Louitt Bay Road	No	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Mixed Eucalypt Woodland, mid-storey of tea-tree and Acacia.	Paraparap/ Torquay	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (800)
VPO2(19)Rd	Flaxbournes Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) and Heathy Woodland (48)(least concern) (Moulton et al 1997). Contains Yarra Gum ( <i>Eucalyptus yarraensis</i> ).	Paraparap/ Anglesea	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (681)

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(20)Rd	Nortons Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Records of Barking Owl ( <i>Ninox connivens</i> ) (e,L) and Hardhead ( <i>Aythya australis</i> )(v). Supports Heathy woodland & Eucalypt Woodland.	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (720)
VPO2(21)Rd	Brushfields Road (South)	No	No	Yes	High conservation status, EVC Lowland Forest (16) (depleted) (Moulton et al 1997). Open Eucalypt Woodland.	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites(1354)
VPO2(22)Rd	Vickers Road	No	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Floristic and structural complexity. Orchid diversity at Gundrys Road .	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosite (736)
VPO2(23)Rd	Brushfields Road (North)	No	No	Yes	High & medium conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997).	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites(1354)
VPO2(24)Rd	Forest Road	No	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) & Heathy Woodland (48)(least concern) (Moulton et al 1997). Records of White-Footed Dunnart ( <i>Sminthopsis leucopus</i> )(v,L), Blotched Sun Orchid ( <i>Thelymitra benthamiana</i> )(v) Slender Sun Orchid ( <i>Thelymitra paucifolia</i> sp. Aff.)(v), Green-comb Spider ( <i>Arachnorchis dilatata</i> ss.)(k) and Rayless Daisy-Bush ( <i>Olea tubu</i> )(r).	Paraparap/ Anglesea	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997).

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DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(25)Rd	Portreath Road	No	No	Yes	High (south) and low (north) conservation status, EVC Lowland Forest (16)(depleted). Floristic and structurally diverse heathy woodland community.	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997).
VPO2(26)Rd	Gundrys Road	No	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Mixed Eucalypt forest with heathy understorey. High diversity of orchids at intersection of Vickers Road.	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1362)
VPO2(27)Rd	Minter Drive	No	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Diverse remnant flora.	Paraparap	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (716)
VPO2(28)Rd	Jarosite Road				High and medium conservation status, EVC Lowland Forest (16)(depleted), Heathy Woodland (48)(least concern) and Shrubby Dry Forest (21)(least concern) (Moulton et al 1997).	Paraparap/ Torquay	Remnant Roadside vegetation of the Surf Coast Shire (Moulton et al 1997)
VPO2(29)Rd	Grossmans Road	No	No	Yes	High conservation status, EVC Heathy Woodland/ Sand Heath Mosaic (892)(least concern) (Moulton et al 1997).	Torquay	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1361)
VPO2(30)Rd	Addiscott Road	No	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Supports Messmate heathy woodland.	Torquay	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1349)

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DELWP Map Ref.	Map Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(31)Rd	Bones Road	No	No	Yes	High and medium conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Mixed Eucalypt woodland, a relic Koori scar tree located on roadside.	Torquay	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (1353)
VPO2(32)Rd	Pennyroyal Valley Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) and Herb-rich Foothill Forest/Shrubby Foothill Forest Complex (178)(vulnerable) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r) and Brookers Gum ( <i>Eucalyptus brookeriana</i> )(r). (Note: Rated low in Deans Marsh Pennyroyal Valley EAS (2006)	Pennyroyal/ Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (724)
VPO2(33)Rd	Pennyroyal School Road	Yes	No	No	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Contains Brookers Gum ( <i>Eucalyptus brookeriana</i> ) (r). Note: Rated low in Deans Marsh Pennyroyal Valley EAS (2006).	Pennyroyal	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (722)
VPO2(34)Rd	Pennyroyal-Wymbooliel Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r) and Brookers Gum ( <i>Eucalyptus brookeriana</i> ). Note: Low rating in Deans Marsh Pennyroyal Valley EAS (2006).	Pennyroyal	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (725)



Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(35)Rd	Dunce Track	No	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Dry closed Eucalypt woodland. Note: Medium rating in Deans Marsh Pennyroyal Valley EAS (2006).	Pennyroyal/ Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (755)
VPO2(36)Rd	Bambra-Aireys Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) and Heathy Woodland (48)(least concern) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r).	Boonah/ Aireys Inlet	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
VPO2(37)Rd	Swaynes Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r).	Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (733)
VPO2(38)Rd	Parkers Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r).	Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (721)
VPO2(39)Rd	Bambra- Cemetery Road	No	No	Yes	High conservation status, EVC Shrubby Foothill Forest (45)(least concern) (Moulton et al 1997). Mixed Eucalypt dominated stands.	Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
VPO2(40)Rd	Bambra- Boonah Road	Yes	No	Yes	High conservation status, EVC Shrubby Foothill Forest (45)(least concern) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r).	Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (764)

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DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(41)Rd	Deans Marsh-Lorne Road	Yes	No	Yes	High conservation status, EVC Lowland Forest (16)(depleted), Shrubby Foothill Forest (45)(Least concern) and Shrubby Wet Forest (201)(Least Concern) (Moulton et al 1997). Roadside contains Brookers Gum ( <i>Eucalyptus brookeriana</i> )(r). Note: Low rating in Deans Marsh Pennyroyal Valley EAS (2006)	Boonah/ Lorne	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (362, 368, 426 and 756)
VPO2(42)Rd	Pennyroyal Station Road	Yes	No	No	High conservation status, EVC Lowland Forest (16)(depleted) (Moulton et al 1997). Roadside contains Yarra Gum ( <i>Eucalyptus yarraensis</i> )(r).	Pennyroyal/ Boonah	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (723)
VPO2(43)Rd	Benwerrin- Mt Sabine Road	Yes	No	Yes	High conservation status, EVC Shrubby Wet Forest (201)(least concern) (Moulton et al 1997). Mature Eucalypt forest which contains Brookers Gum ( <i>Eucalyptus brookeriana</i> )(r).	Boonah/ Lorne/ Mount Cowley	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
VPO2(44)Rd	Erskine Falls Road	Yes	No	Yes	High conservation status, EVC Shrubby Foothill Forest (45)(least concern) and Shrubby Wet Forest (201)(least concern) (Moulton et al 1997). Roadside contains Brookers Gum ( <i>Eucalyptus brookeriana</i> )(r), Madeira Moss ( <i>Echinodium hispidum</i> )(r) and Forest Weft-moss ( <i>Thuidium laeviusculum</i> s.s.)(v).	Mount Cowley/ Lorne	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)

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DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(45)Rd	Erskine Falls Access Road	No	No	Yes	High conservation status, EVC Shrubby Wet Forest (201)(least concern) (Moulton et al 1997). Roadside contains wet Eucalypt forest with dense understorey.	Lorne	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
VPO2(46)Rd	Allenvale Road	Yes	No	Yes	High conservation status, EVC Wet forest (30)(least concern) and Shrubby Foothill Forest (45)(least concern) (Moulton et al 1997). Roadside contains Brookers Gum ( <i>Eucalyptus brookeriana</i> )(r).	Lorne	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997)
VPO2(47)Rd	Great Ocean Road	Yes	Yes	Yes	EVC Coastal Sand Dune Mosaic (1)(depleted), Lowland Forest (16)(depleted), Sand Heathland (6)(Rare), Riparian Scrub Complex (17)(depleted), Coastal Heathland Scrub (161)(vulnerable), Coastal Tussock Grassland (163)(vulnerable), Damp Sand Heath Rich Woodland (3)(vulnerable). Roadside contains Coast Wirrida ( <i>Acacia retinoides</i> var. <i>unicifolia</i> ), Hoary Rapier-sedge ( <i>Lepidosperma canescens</i> )(r).	Torquay/ Paraparap/ Anglesea	EVC mapping, FIS, Wildlife Atlas, Aireys Inlet to Eastern View Neighbourhood Character Study (Tregrove 2003)

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Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(48)Rd	Bimbadeen Drive	Yes	No	No	State significance (Trengove 2003). EVC Sedgy Riparian Woodland (198)(depleted), Riparian Forest (18)(vulnerable), Shrubby Dry Forest (21)(least concern) and Heathy Woodland (48)(least concern). Vegetation includes Paper Flower ( <i>Thomasia petalocalyx</i> )(r). Records of White Footed Dunnart ( <i>Sminthopsis leucopus</i> )(v, L) and Southern Brown Bandicoot ( <i>Isodon obesulus obesulus</i> )(EN, r).	Aireys Inlet	Aireys Inlet to Eastern View Neighbourhood Character Study (Trengove 2003)
VPO2(49)Rd	Distillery Creek Road	No	No	Yes	State significance (Trengove 2003). EVC Lowland Forest (16)(depleted) and Shrubby Dry Forest(21)(least concern)	Aireys Inlet	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997) and Aireys Inlet of Eastern View Neighbourhood Character Study (2003)
VPO2(50)Rd	Melba Parade	No	No	No	State significance, relatively intact Coastal Complex (Trengove 2003). EVC Heathy Woodland (48)(least concern).	Anglesea	Anglesea Neighbourhood Character Study (Trengove 2003)
VPO2(51)Rd	Harvey Street	No	No	No	State significance reserve along road, Heathy Woodland (Trengove 2003). EVC Heathy Woodland (48)(least concern).	Anglesea	Anglesea Neighbourhood Character Study (Trengove 2003)

Biodiversity mapping project

Surf Coast Shire Biodiversity Mapping

DELWP Map Ref.	Location	Rare or threatened species/communities	Remnant native grasslands	High biodiversity values/links	Comments	Mapsheet(s)	Source Info/ Additional Notes
VPO2(52)Rd	River Reserve Road	No	No	NO	State significance, part of river reserve, Swamp Gum Riparian Complex (Trengove, 2003). EVC Estuarine Wetland (10)(endangered), Damp Sands Herb-rich Woodland (3)(vulnerable) and Heathy Woodland (48)(least concern).	Anglesea	Anglesea Neighbourhood Character Study (Trengove 2003), Surf Coast Shire Bio-mapping: Flora and Fauna of Nine Priority Reserves, 2006-07 (ARI, 2007).
VPO2(53)Rd	Bingley Parade	No	No	No	State significance, part of river reserve, Swamp gum Riparian Complex (Trengove 2003), EVC Heathy Woodland (48)(least concern)	Anglesea	Anglesea Neighbourhood Character Study (Trengove 2003)
VPO2(54)Rd	Point Addis Road	Yes	No	Yes	High conservation status, EVC Heathy Woodland (48)(least concern) (Moulton et al 1997). Roadside contains Paper Flower ( <i>Thomasia petalocalyx</i> )(r), Velvet Daisy Bush ( <i>Olea parnosa</i> subsp. <i>cardiophylla</i> )(v,L) and Coast Bush-pea ( <i>Pultenaea canaliculata</i> )(r). Records of Brown Toadlet ( <i>Pseudophryne bibronii</i> )(e), Southern Brown Bandicoot ( <i>Isodon obesulus obesulus</i> )(EN, r), Rufous Bristlebird ( <i>Dasyornis broadbenti</i> )(nt, L), Shy Albatross ( <i>Diomedea cauta</i> )(VU, v, L), Fairy Prion ( <i>Pachyptila turtur</i> )(VU,v) and Sooty Albatross ( <i>Phoebastria fusca</i> )(VU,v,L).	Paraparap/ Anglesea/ Point Addis	Remnant Roadside Vegetation of the Surf Coast Shire (Moulton et al 1997), Biosites (726)

**Key to Abbreviations**

**EVC-** Name (number)(bioregional conservation status)

**Threatened Flora Status** - (EPBC, DELWP, FFG, Migratory Bird)

**Conservation Status Abbreviations**

	EBPC		DEL WP		DEL WP		FFG		International Treaty	
	National Flora and Fauna		State Flora		State Fauna		FFG		Migratory Bird Agreement	
EX extinct	ex	extinct	cr	Critically endangered	L	Listed	J	JAMBA		
CR critically endangered	e	endangered	e	Endangered	N	Nominated	C	CAMBA		
EN endangered	v	vulnerable	v	Vulnerable	I	Invalid/ineligible				
VU vulnerable	r	rare	nt	Near threatened						
	k	poorly known	dd	Data deficient						

**Please note:** Conservation status of Ecological Vegetation Classes and rare and threatened species are valid at time of printing and may be subject to change.

**TABLE OF VALUES FOR SCATTERED TREES**

Shown on the DELWP biodiversity map as VPO3

DELWP Map Ref.	Location	Victorian rare or threatened species recorded	Breeding site	High Biodiversity values/ link	Comments	Mapsheet	Source Info/ Additional information
VPO3	Scattered Trees	Yes/Potential	Yes/Potential	Yes/Potential	Scattered paddock trees, various rare/threatened species, fauna breeding site potential, biodiversity values and links. Characteristics vary for each location. FFG listed community (Moonah), Remnants of EVC Plains Grassy Woodland (55) (endangered) remnants.	Mount Moriac Geelong Mount Pollock Torquay Pennyroyal Teesdale Connewarre Paraparap Wombete Bambra	Peter Moulton pers. comm., Steve McDougall pers. comm., Tree 25 layer, Aerial Photo EVC mapping

**Key to Abbreviations**

**EVC-** Name (number) (bioregional conservation status)

**Threatened Flora Status -** (EPBC, DELWP, FFG)

**Please note:** Conservation status of Ecological Vegetation Classes and rare and threatened species are valid at time of printing and may be subject to change.

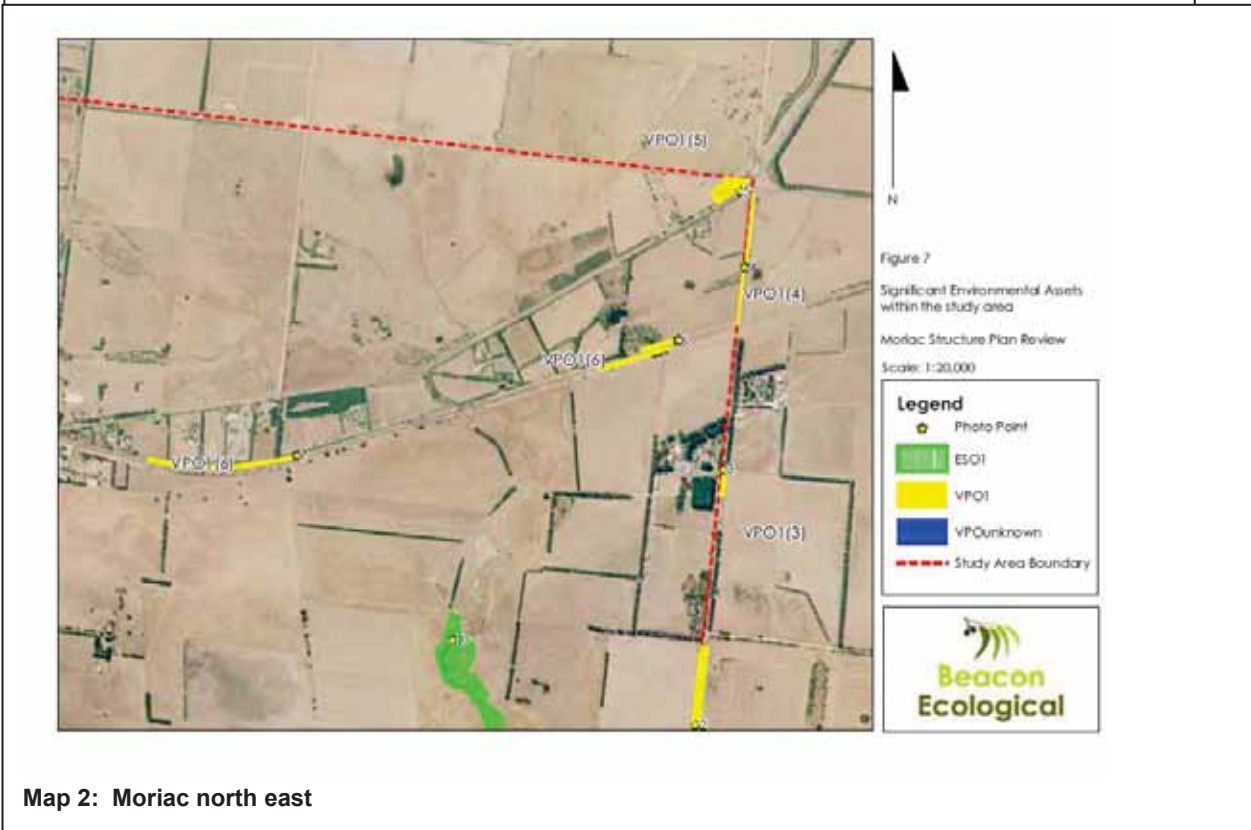
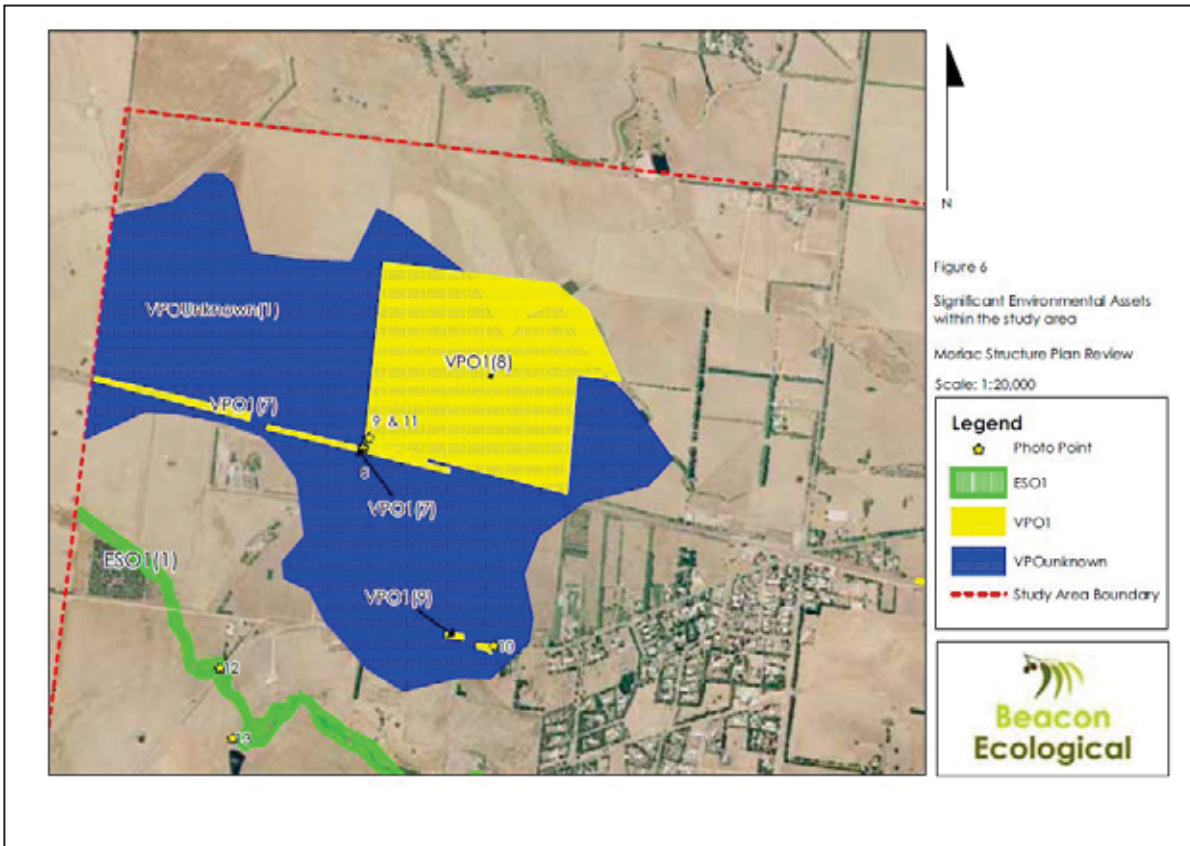
SCATTERED TREES

## APPENDIX 2

### Moriac Environmental assets assessment (Beacon Ecological, 2009)



Beacon Ecological mapped 12 sites of biodiversity significance in the Moriac area as part of the Moriac Structure plan. The sites are shown on the following 4 maps and the table of values, located below, provides the description of each mapped assets.



Map 2: Moriac north east

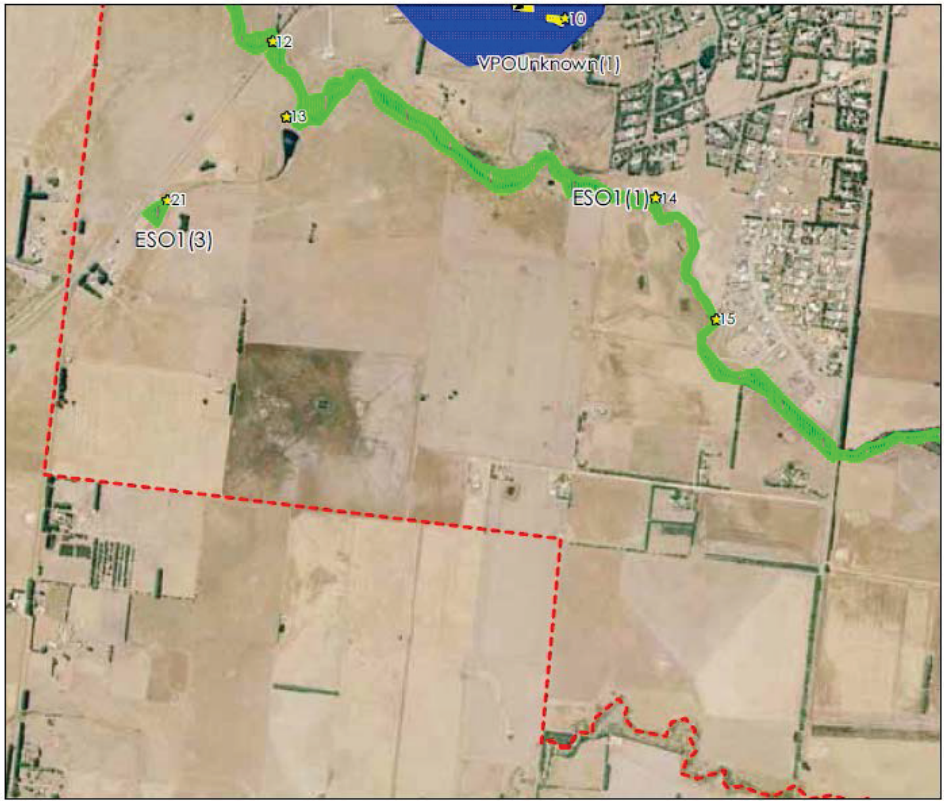


Figure 8  
 Significant Environmental Assets  
 within the study area  
 Moriac Structure Plan Review  
 Scale: 1:20,000

**Legend**

- Photo Point
- ESO1
- VPO1
- VPUnknown
- Study Area Boundary



Map 2: Moriac south west

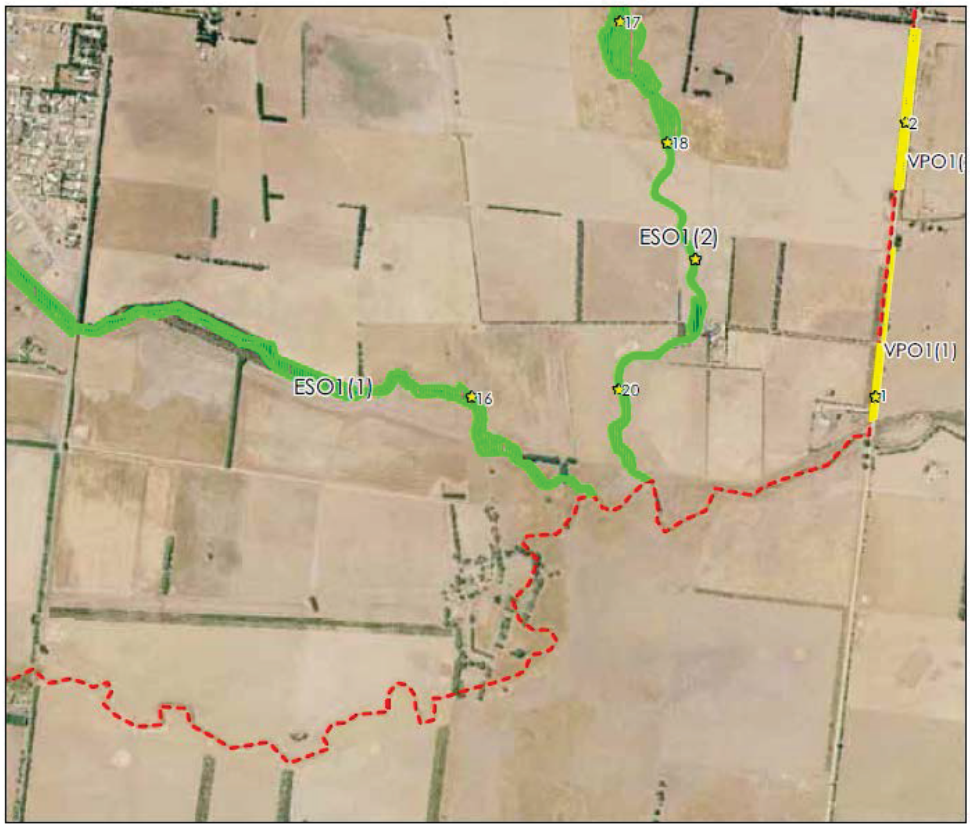


Figure 9  
 Significant Environmental Assets  
 within the study area  
 Moriac Structure Plan Review  
 Scale: 1:20,000

**Legend**

- Photo Point
- ESO1
- VPO1
- VPUnknown
- Study Area Boundary



Map 2: Moriac south east

Ref		
VPO1(1)	Hunts Road	EVC 132 (Plains Grassland). Vegetation of State significance, moderate condition. Species include Kangaroo Grass <i>Themeda triandra</i> , Golden Wattle <i>Acacia pycnantha</i> , Swamp Gum <i>Eucalyptus ovata</i> , Drooping Sheok <i>Allocasuarina verticillata</i> and Flax lily <i>Dianella admixta</i>
VPO1(2)	Hunts Road	EVC 132 (Plains Grassland). Vegetation of National significance, good condition. Species include Kangaroo Grass <i>Themeda triandra</i> , Sweet Bursaria <i>Bursaria spinosa</i> , Manna Gum <i>Eucalyptus viminalis</i> , Wallaby Grass <i>Austodanthonia spp.</i> , Raspwort <i>Gonocarpus tetragynus</i> , Spear Grass <i>Austrostipa spp.</i> , Golden Wattle, Flax Lily and Yellow Rush Lily <i>Tricoryne elatior</i> . Includes scattered Swamp Gum <i>Eucalyptus ovata</i> , Drooping Sheok <i>Allocasuarina verticillata</i>
VPO1(3)	Hunts Road	EVC 175 (Grassy Woodland). Vegetation of Regional significance, relatively intact. Overstorey comprises Manna Gums with an understorey of Austral Bracken <i>Pteridium esculentum</i> . Vegetation is of poor to moderate condition due to lack of diversity.
VPO1(4)	Hunts Road	EVC 132 (Plains Grassland). Vegetation of State significance, good condition. Species include Kangaroo Grass <i>Themeda triandra</i> and Wallaby Grass <i>Austodanthonia spp</i> with scattered Manna Gum <i>Eucalyptus viminalis</i>
VPO1(5)	Cape Otway Road	EVC 175 (Grassy Woodland). Vegetation of Regional significance, moderate condition. Species include Hedge Wattle <i>Acacia paradoxa</i> , a large Manna Gum, Kangaroo Grass, Spear Grass, Common Tussock Grass <i>Poa labillardierei</i> , Wattle Mat-rush <i>Lomandra filiformis</i> . Dam located at the mapped site supports native aquatic flora.
VPO1(6)	Rail line	EVC 132 (Plains Grassland). Vegetation of State significance, poor to moderate condition. Species include Kangaroo Grass, Paspalum, Wallaby Grasses, Raspwort, Flax Lily and Yellow Rush Lily.
VPO1(7)	Rail line	EVC 132 (Plains Grassland). Vegetation of State significance, poor to good condition. Species include Kangaroo Grass, Wallaby Grasses, Windmill Grass <i>Chloris truncata</i> , Common Everlasting <i>Chrysocephalum apiculatum</i> , Common Wheat-grass <i>Elymus scaber</i> , Flax Lily, Raspwort, Spear Grass, Yellow Rush Lily and Golden Wattle.
VPO1(8)		EVC 132 (Plains Grassland). Vegetation of State significance, moderate condition. Species include Kangaroo Grass, Wallaby Grass, Grey tussock grass <i>Poa sieberiana</i> , Yellow Rush Lily and Leptorhynchos <i>Leptorhynchos spp.</i> , River Red Gum, Swamp Gum and Manna Gum.
VPO1(9)	Cape Otway Road	EVC 55 (Plains Grassy Woodland).

		Vegetation of Regional significance, poor to moderate condition. Species include River Red Gums and Hedge Wattle.
VPOUnknown		Scattered Eucalypts of Regional significance, with a modified understorey. Species include River Red Gum, Manna Gum, Swamp Gum, Kangaroo Grass and Wallaby Grass.
ESO1(1)	Thompsons Creek	Creek of Regional Significance. Vegetation of poor to moderate condition. Species include Common Tussock Grass, Sea Rush <i>Juncus Kraussii</i> , Sea Club-rush <i>Bolboschoenus caldwelii</i> , Arrow Grass <i>Triglochin striatum</i> , Common Spike-rush <i>Eleocharis acuta</i> , Common Bog-rush <i>Schoenus apogon</i> , Blown Grass <i>Lachnagrostis spp.</i> , Australian Salt-grass <i>Distichlis distichophylla</i> , Swampweed <i>Selliera radicans</i> and Round-leaf Wilsonia <i>Wilsonia rotundifolia</i>
ESO1(2)	Ravens Creek	Vegetation of poor to good quality. Drainage line of Regional significance. Species include Sea Rush, Sea Club-rush, Australian Salt-grass, Common Reed, Mimulus, Creeping Brookweed, Arrow Grass, Common Tussock-grass
ESO1(3)	Cape Otway wetland	Small degraded wetland of local significance. Species include native Sea Rush, Swampweed, Round leaf Wilsonia, Common Tussock Grass and Australian Salt Grass.

## APPENDIX 3

### Steering committee

Project role	Organisation	Name/title
Project manager	Surf Coast Shire (SC)	Barb Noelker (Senior Strategic Planner)
EMT representative	SC	Kate Sullivan (Director Planning)
Community engagement	SC	Robyn Lucas (Community Engagement Facilitator)
Planning advise	Regional Development Victoria	Mark Gregory (Senior Regional Planner)
Biodiversity advise	DEPI	Donna Burns (Senior Biodiversity Officer)
Biodiversity advise	DEPI	Nathan Macdonald (Biodiversity Officer)
Waterway advise	CCMA	Darren Wilkie (Waterway Officer)
Biodiversity advise	SC	Leanne Rolfe (Biodiversity Officer)
Biodiversity advise	SC	Gabrielle O'Shea (Biodiversity Officer)
Tree species id	SC	Jason Eales (Parks Maintenance Supervisor)

## **APPENDIX 4**

### **Community engagement brochure 2014**



**Will the new mapping project make it harder for me to remove vegetation on my property?**

Council will consider how best to protect and enhance native vegetation once the mapping project is complete. It is probable that the mapping changes will evolve into new controls on some properties but the relaxing of controls on others.



**When will the mapping project be finished and what will happen then?**

Council officers will be discussing the draft mapping with the community until June 2014. Once the mapping has been completed it is expected that a Planning Scheme Amendment process will commence (around August 2014). A letter will be sent to all affected landowners, information will be available on our website and a notice will be in the local newspaper.



# Mapping Project 2014



*Preserving and enhancing  
our natural environment*

**Do you want to know more?**

**Do you have any information you would like to share with us?**

For more information check out our website at [www.surfcoast.vic.gov.au](http://www.surfcoast.vic.gov.au) and our on line forum or contact:

**Barbara Noelker**, Senior Strategic Planner  
Surf Coast Shire

**Phone:** 03 5261 0697

**Email:** [bnoelker@surfcoast.vic.gov.au](mailto:bnoelker@surfcoast.vic.gov.au)

All written feedback should be mailed to  
**Barbara Noelker**, Senior Strategic Planner at  
[info@surfcoast.vic.gov.au](mailto:info@surfcoast.vic.gov.au)



# Preserving and enhancing our natural environment Mapping Project 2014



## The next step

Council is seeking feedback on the mapping from the local community and we want to hear from you if you know of any sites we may have missed or if we have represented the vegetation on your property inaccurately. Care has been taken to ensure that we accurately map assets but it can only be improved with your help.

## What should I do?

If you have any information that may assist Council please contact us. Contact details are located on the last page of this document.

## What does it mean for me as a farmer if my land is included within the mapping?

If your land is included in the mapping you can continue farming your land as you have been doing. The mapping project is not about stopping farm business or regulating day-to-day farming activities. Rather, it will ultimately be about protecting our unique plants and animals from new activities that may have a significant impact. In many cases, current supportive farming practices help to keep a patch of native vegetation in good condition.

## What if I know there is native vegetation on my property but I don't want to discuss this with Council officers?

If you wish to protect native vegetation on your property but don't want to discuss this with Council you may feel more comfortable discussing options with your local land care group or discussing conservation programs with the Corangamite Catchment Management Authority [www.ccma.vic.gov.au](http://www.ccma.vic.gov.au).

## What if I know the mapping on my property has not been mapped correctly but I don't want to discuss this with Council officers?

If the mapping is inaccurate and we don't hear from you we will assume the extent and coverage is correct.

## Will anybody come to my property if I want them to?

Yes. A council officer will visit your property if you want them to. The officer may be accompanied by a biodiversity officer from either the Council or State Government if assistance with identifying native species is required. You will be notified if this is to be the case.

## Can I currently remove native vegetation from my property if I want to?

It is important to always check with Council's Planning Enquiries line on **5261 0524** before removing any native vegetation. All native vegetation is protected in Victoria and native grasslands in the northern part of the Shire are also protected under National Law. The Surf Coast Planning Scheme triggers the need for a vegetation removal permit but many exceptions apply, including - where the clearing is required for bushfire protection or the routine management of a farm or property.

## Project Background

In 1995 the Surf Coast Shire Council engaged Ecology Australia to map areas of environmental significance within the rural parts of the Shire. Since then both township and Council reserves have been mapped, and numerous studies undertaken at a national, state and local level.

In 2007 the State Government (Department of Environment and Primary Industries) compiled the available information and up dated the Shire's biodiversity mapping.

Since then Council has been working in partnership with the State Government (Department of Environment and Primary Industries, [www.depi.vic.gov.au](http://www.depi.vic.gov.au)) and the Corangamite Catchment Management Authority, [www.ccma.vic.gov.au](http://www.ccma.vic.gov.au)) to ensure the map is relevant and accurate. It is envisaged that the biodiversity detail accompanying the mapping will evolve over time particularly as landowners and environmental groups provide valuable local knowledge.



## APPENDIX 5

## Community feedback and mapping changes

Mapping address	Asset refs/ description	Action taken/discussion	Mapping changes
Mt Duneed Road, Mt Duneed	ESO1 - Duneed Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner not concerned with potential overlay application.</li> <li>Site visit undertaken.</li> <li>Discussions with CCMA and development of new methodology has seen the removal of all second order streams (including named streams).</li> <li>Duneed Creek to be removed.</li> </ul>	Mapping modified 21.9.14
Mirnee School Road, Winchelsea	ESO7 (ESO3-9) native grasslands	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Project officer outlined implications of project and current laws relating to grasslands (EPBC Act)</li> </ul>	
Ondit Road, Winchelsea	ESO7 (ESO3-9) native grassland	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Project officer outlined implications of project and current laws relating to grasslands (EPBC Act)</li> <li>Landowner concerned with potential overlay application and fire.</li> </ul>	
Ingleby Road, Winchelsea	ESO7 (ESO3-10) native grassland	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner noted that grasslands are located on rocky outcrops with little impact on farming activities</li> </ul>	
Dickins Road, Mount Duneed	ESO1 – Duneed Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Duneed Creek to be removed.</li> </ul>	Mapping modified 21.9.14
Duffields Road, Jan Juc	ESO4 (ESO3-41) (Yellow gum woodland & moonah)	<ul style="list-style-type: none"> <li>Landowner advised that there are no Yellow Gums (Sugar gums).</li> <li>Site meeting 13.5.14 confirmed landowner comments.</li> </ul>	Mapping modified 15.5.14
Mapping address	Asset description	Info sent/discussion	Any mapping changes?
Dickins Road, Mount Duneed	ESO1 – Duneed Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Duneed Creek is a second order named creek and is to be removed from the mapping .</li> </ul>	Mapping modified 21.9.14
Smiths Lane, Deans Marsh	ESO1 – Deans Marsh Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner not concerned with potential overlay application.</li> <li>Deans Marsh Creek is a 3<sup>rd</sup> order creek and a 30m buffer has been applied through the mapped ESO1. The previously proposed buffer of 50m by DELWP has been reduced by 20m either side of the creek.</li> </ul>	Mapping modified 21.9.14
Bambra-Boonah Road, Bambra	ESO1(14) Retreat Creek	<ul style="list-style-type: none"> <li>Landowner thinks the creek buffer could be reduced on the eastern side due to the slope</li> <li>Site meeting on 30.5.14 (landowner was not present).</li> </ul>	Mapping modified 21.9.14

## Biodiversity mapping project

		<ul style="list-style-type: none"> <li>The land is very steep between the existing house and the creek to the north west. Discussions with the neighbour on site noted that there is an additional tributary of the Retreat creek to the east of the property that should also be protected.</li> <li>Due to the removal of all first and second order streams no ESO1 has been applied abutting this property as Retreat creek becomes a higher order stream on the northern side of the Winchelsea Deans Marsh Road. Likewise with the tributary mentioned by neighbour.</li> </ul>	
Vickers Road (480 Reservoir Rd, Mt Moriac 3240)	ESO6 (VPO1-12) Lowland forest/grassy woodland	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner not concerned with potential overlay application.</li> </ul>	
Portreath Rd, Bellbrae	ESO6 (VPO1-12) Lowland forest/grassy woodland	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner corrected mapping errors on site and mapped out additional areas with remnant vegetation.</li> <li>Landowner is not concerned with potential overlay application.</li> <li>Aerial photos were also interrogated and site inspection has confirmed.</li> </ul>	Mapping modified on 16.5.14
Mapping address	Asset description	Info sent/discussion	Any mapping changes?
2 Earl Court, Moriac	ESO1(1) Thompsons Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner not concerned with potential overlay application.</li> <li>Overlap on property is marginal (less than 50sqm linear) and has been removed from site.</li> </ul>	Mapping modified on 25.5.14
Barwon Tce, Winchelsea	ESO7 (VPO1-5) Native grassland with River Red Gums	<ul style="list-style-type: none"> <li>Project discussed with landowner at council offices.</li> <li>Project officer outlined implications of project and current laws relating to grasslands (EPBC Act).</li> <li>Landowner currently grazes grasslands and has no intention of changing this activities (ie cropping).</li> <li>No concern over potential overlay.</li> </ul>	
Anglesea Road, Freshwater Creek	ESO1 – Duneed Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Project officer advised landowner mapping is being modified to remove the creek from the mapping.</li> </ul>	As above
Ondit Road, Winchelsea	ESO1 (ESO1-10) wetland south of Murdeduke	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner doesn't believe his property is ever inundated and says there is only pasture grass on the property no vegetation type that would suggest a wetland.</li> <li>CCMA has checked the wetland and has confirmed it can be removed. DELWP has also confirmed.</li> </ul>	Mapping modified 30.5.14.
Parkers Road, Deans Marsh	ESO6 (VPO1-7) Lowland	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out. No concerns expressed.</li> </ul>	

Biodiversity mapping project

	Forest		
Parkers Road, Deans Marsh	ESO6 (VPO1-7) Lowland Forest	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out. No concerns expressed.</li> </ul>	
<b>Mapping address</b>	<b>Asset description</b>	<b>Info sent/discussion</b>	<b>Any mapping changes?</b>
Parkers Road, Deans Marsh	ESO6 (VPO1-7) Lowland Forest	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner noted trees overhang her property from neighbouring site (no veg on their property).</li> </ul>	Mapping modified on 22.5.14.
Cape Otway Road, Birregurra	ESO1, Yan Yan Gurt Creek & VPO4 Scattered trees	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Landowner confirmed creek on site and has enhanced veg along creek.</li> <li>Also confirmed stand of scattered trees are remnant.</li> <li>No concerns with potential overlays</li> <li>Yan Yan Gurt is a third order stream and a 30m buffer is to be applied through the mapped ESO1. The previously proposed buffer of 50m has been reduced by 20m either side of the creek.</li> </ul>	Mapping modified on 21.9.14
Williams Road, Mt Duneed 3217	ESO1 – Duneed Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out.</li> <li>Meeting held on site with landowner 30.5.14.</li> <li>Landowner concerned with extent of proposed buffer along Duneed Creek and the need to get a permit for buildings and works within 50m of the creek. Could impact on extensions to farm buildings.</li> <li>Creek was view and although present is little more than a drainage line this high up in the catchment.</li> <li>FO &amp; LSIO also discussed. Landowner has no concerns with mapping shown and agrees inundation does occur.</li> <li>Discussions with CCMA to revisit proposed DELWP buffer of 50m on smaller streams and also inclusion of lesser creeks. It was agreed by CCMA &amp; DELWP that new methodology be applied (based on Melbourne water guidelines) and all second order named streams be removed from the mapping project.</li> </ul>	Mapping modified on 21.9.14
<b>Mapping address</b>	<b>Asset description</b>	<b>Info sent/discussion</b>	<b>Any mapping changes?</b>
Winchelsea Deans Marsh Road, Bamba	ESO1(14) Retreat Creek / ESO6 (VPO1-6) lowland forest	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out. No concerns</li> <li>ESO1 removed from this property as Retreat Creek is a second order stream on the property (becomes third order on the northern side of the road).</li> </ul>	Mapping modified 21.9.14
Ingleby Rd, Winchelsea	ESO1(6) – Barwon River and wetland	<ul style="list-style-type: none"> <li>Project discussed with landowner and map showing FO, LSIO and ESO1 sent out.</li> <li>Landowner thinks the mapping is inaccurate and that the wetland shown in the mapping is not in the location shown.</li> <li>Advise from CCMA and DEPI that the wetland mapping can be removed as although the area does get inundated it drains too quickly to retain significant biodiversity values. There is an LSIO over the property</li> </ul>	Mapping modified 30/5/14

Biodiversity mapping project

		<ul style="list-style-type: none"> <li>The landowner was also advised that the changes to the mapping would reduce the coverage of the existing ESO1 - reduced from the current 100m setback to 50m</li> <li>Wetland to be removed from this property and further west and east along the Barwon</li> </ul>	
Parkers Road, Deans Marsh	ESO6 – VPO1(7)	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out. No concerns</li> </ul>	
Mapping address	Asset description	Info sent/discussion	Any mapping changes?
Greenfields Drive, Moriac 3240	ESO1(1) Thompsons Creek	<ul style="list-style-type: none"> <li>Project discussed with landowner and map sent out. No concerns</li> <li>Landowner advised there is an easement along the western edge of the property. The ESO1 extends beyond the easement approximately 12.5 at the South western corner and 4.5m at the north western corner. The easement is 4.5m wide.</li> </ul>	
Anglesea area		<ul style="list-style-type: none"> <li>Project discussed with members of ANGAIR 2.6.14. Members are very supportive of improved mapping.</li> </ul>	
Nortons Road	ESO3 (VPO1-12)	<ul style="list-style-type: none"> <li>Project discussed with landowner who is very supportive and confirmed accuracy of vegetation mapping on property..</li> </ul>	
Mapping address	Asset description	Info sent/discussion	Any mapping changes?
President Barrabool Hills Landcare group		<ul style="list-style-type: none"> <li>Project discussed with members of Barrabool Hills landcare group 4.6.14.</li> <li>Kaye concerned they wouldn't have time</li> <li>Group is very supportive of the mapping but also said that the financial impact on landowners also needed to be considered.</li> <li>Rates rebates were discussed as a potential solution and incentive for landowners to retain and enhance an asset – particularly native grasslands on agricultural land. It was discussed that if ½ of a property couldn't be farmed because it was 'locked up' for conservation then the rates should reflect this.</li> <li>The group provided feedback on adjustments that should be made to the mapping – modifications to extent of wetlands along Barwon River and inclusion of additional roadsides and a grassland site on private land as follows;               <ol style="list-style-type: none"> <li>Inclusion of additional scattered red gums at 35 &amp; 87 Nobles Road – from aerial the largest patch is covered beyond that the trees are quite separated.</li> <li>Removal of wetlands along southern side of the Barwon River</li> <li>Native grasslands at intersection of Nobles Road and Pollocksford Road (mapped as low conservation value in roadside layer).</li> <li>Grasslands at Georges Road</li> <li>Trees in Georges Road – shown as low conservation</li> <li>Grasses in Kahls Road – shown as medium &amp; low conservation.</li> <li>Sheeks in Barrabool Road</li> </ol> </li> </ul> <p>All sites were investigated utilising data on GIS layers</p>	Mapping modified 24.7.14

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		and aerial photography. CCMA and DELWP agreed to adjustments to the wetlands along the Barwon. Roadsides were included. Grasslands at Georges Road were not included as no data available.	
Mapping address	Asset description	Info sent/discussion	Any mapping changes?
Nortons Road & Brushfields Road	ESO3 (VPO1-12)	<ul style="list-style-type: none"> <li>• Project discussed with landowner and map sent out.</li> <li>• Site meeting with landowner confirmed accuracy of mapping.</li> </ul>	Minor adjustments made to mapping 25.6.14
Portreath Road, Bellbrae	ESO3 (VPO1-12)	<ul style="list-style-type: none"> <li>• Project discussed with landowner and map sent out. No concerns</li> </ul>	
Harding Road, Freshwater Creek 3217	ESO1 – Duneed Creek	<ul style="list-style-type: none"> <li>• Project discussed with landowner and map sent out.</li> <li>• Landowner noted creek is not flowing on the property.</li> <li>• Site inspection confirmed 30.5.14.</li> <li>• Duneed Creek removed from mapping.</li> </ul>	Mapping modified 21.8.14
Ondit Road, Winchelsea	ESO1 (10) wetland south of Murdeduke	<ul style="list-style-type: none"> <li>• Project discussed with landowner and map sent out.</li> <li>• Wetland removed from property as a result of feedback from adjoining property owner – discussed above</li> </ul>	Mapping modified 30.5.14.
Princes Hwy, Winchelsea	ESO3(5) Winchelsea Rail reserve grasslands	<ul style="list-style-type: none"> <li>• Property should not be covered. Grassland is located within rail reservation. Mapping anomaly has resulted in adjoining properties being covered by accident.</li> </ul>	Mapping modified 25.6.14

## APPENDIX 6

### Analysis of current overlay schedules and recommended changes

ESO4		ESO5		VPO1		VPO2		VPO3		SLO1	
Environmental Significance Overlay - Schedule 4		Environmental Significance Overlay - Schedule 5		Vegetation Protection Overlay - Schedule 1		Vegetation Protection Overlay - Schedule 2		Vegetation Protection Overlay - Schedule 3		Significant Landscape Overlay - Schedule 1	
<b>Current Application</b>	Aireys Inlet to Eastern View.	Aireys Inlet to Eastern View.	Shire wide.	Anglesea Heathland.	Yellow gums Torquay	Great Ocean Road – Bells Beach to Lorne.					
<b>Overlay Permit triggers by</b>	<p>Permit is required for:</p> <ul style="list-style-type: none"> <li>Buildings and works.</li> <li>Bicycle paths.</li> <li>Subdivision.</li> <li>Removal of vegetation.</li> </ul> <p>A schedule can exempt permit trigger for all of above (except bicycle path)</p> <p>A permit is only required for a fence if specified in the schedule.</p> <p>ESO includes decision guidelines relating to the need to create defensible space.</p>	<p>Permit is required for:</p> <ul style="list-style-type: none"> <li>Buildings and works.</li> <li>Bicycle paths.</li> <li>Subdivision.</li> <li>Removal of vegetation.</li> </ul> <p>A schedule can exempt permit trigger for all of above (except bicycle path)</p> <p>A permit is only required for a fence if specified in the schedule.</p> <p>ESO includes decision guidelines relating to the need to create defensible space.</p>	<p>Overlay does not trigger permit for vegetation removal.</p> <p>Permit is only required for vegetation removal where specified by a schedule.</p> <p>VPO includes decision guidelines relating to the need to create defensible space.</p> <p>Also requires consideration to be given to how use, buildings and works or subdivision will impact on veg removal although no permit trigger.</p>	<p>Overlay does not trigger permit for vegetation removal.</p> <p>Permit is only required for vegetation removal where specified by a schedule.</p> <p>VPO includes decision guidelines relating to the need to create defensible space.</p> <p>Also requires consideration to be given to how use, buildings and works or subdivision will impact on veg removal although no permit trigger.</p>	<p>Overlay does not trigger permit for vegetation removal.</p> <p>Permit is only required for vegetation removal where specified by a schedule.</p> <p>VPO includes decision guidelines relating to the need to create defensible space.</p> <p>Also requires consideration to be given to how use, buildings and works or subdivision will impact on veg removal although no permit trigger.</p>	<p>A permit is required for Buildings and works (a schedule can exempt).</p> <p>A permit is only required for:</p> <ul style="list-style-type: none"> <li>A fence</li> <li>Agricultural activities and</li> <li>Vegetation removal</li> </ul> <p>Where specified by a schedule.</p> <p>SLO includes decision guidelines relating to the need to create defensible space.</p>					
<b>Schedule permit triggers</b>	<p>ESO4 requires permit for fence (except post and wire 1.5m).</p> <p>Permit not required to remove:</p> <ul style="list-style-type: none"> <li>Weeds</li> <li>Any vegetation within 2m of a building</li> <li>Non natives</li> </ul>	<p>ESO5 requires permit for fence (except post and wire 1.5m with gaps wide enough to enable indigenous fauna movement).</p> <p>Permit not required to remove:</p> <ul style="list-style-type: none"> <li>Any vegetation within 2m of a</li> </ul>	<p>VPO1 requires a permit to remove vegetation unless;</p> <ul style="list-style-type: none"> <li>It is within 2m of a building</li> <li>A weed</li> <li>Is in accordance with a whole farm plan</li> </ul>	<p>VPO2 applies to:</p> <ul style="list-style-type: none"> <li>Lots 1- 6 in Harvey Street,</li> <li>Lots 7 – 54 O'Donohue Rd, Harvey Street and</li> <li>Lot 1 PS515290S (C/A Pt 20A) GOR, Lot 2 PS343484K (C/A</li> </ul>	<p>VPO3 requires a permit to remove Bellarine Yellow Gum.</p>	<p>SLO1 requires a permit for a fence (except post and wire 1.5m).</p> <p>SLO1 includes 'habitation envelopes' in the hinterland areas. A permit is required to create a habitation envelope and once created a permit would</p>					

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	<ul style="list-style-type: none"> <li>Natives less than 2m in height.</li> </ul> <p><i>Note: Permit required to remove any indigenous vegetation beyond 2m of a building.</i></p>	<ul style="list-style-type: none"> <li>building</li> <li>Any vegetation that is not indigenous</li> <li>Dead vegetation (unless it contains a hollow).</li> </ul>	<ul style="list-style-type: none"> <li>On Alcoa Lease hold and is permitted under Mines Act</li> </ul>	<p>Pt 20A &amp; 20B) GOR and Lot 2 PS338766D GOR (C/A 12A)</p> <p>VPO2 requires a permit to remove vegetation within a specified 'habitation envelope' on <u>lots 1 - 6</u> except if required for;</p> <ul style="list-style-type: none"> <li>Reticulated services</li> <li>A dwelling &amp; ancillary works (including fire breaks).</li> </ul> <p>VPO2 requires a permit to remove vegetation beyond the specified 'habitation envelope' on <u>lots 1 – 6</u>. A permit will only be granted if the removal is for;</p> <ul style="list-style-type: none"> <li>A driveway</li> <li>Reticulated services</li> <li>Boundary fencing and</li> <li>In accordance with a fire notice.</li> </ul> <p>VPO2 requires a permit for removal of native vegetation on <u>lots 7 – 54</u> except if required for;</p> <ul style="list-style-type: none"> <li>Reticulated services</li> <li>A dwelling &amp; ancillary works (including fire breaks) and</li> <li>In accordance with a fire notice.</li> </ul>	<p>be required to remove any native vegetation beyond the envelope.</p>
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<b>Statement of significance/Objectives</b>	<p>Environmental significance relates to:</p> <ul style="list-style-type: none"> <li>Habitat for rufous bristlebird</li> <li>Vegetation of local to high local significance including Moonah woodland and buffer to veg of regional to state significance.</li> </ul>	<p>Environmental significance relates to:</p> <ul style="list-style-type: none"> <li>Habitat for rufous bristlebird</li> <li>Vegetation of regional to high State significance including Moonah woodland and Merran's Sun-orchid.</li> <li>buffer to Great Otway National Park.</li> </ul>	<p>Statement of significance non-specific and relates generally to maintaining/protecting linkages and biodiversity values.</p> <p>Objective also relates to impact from use and development although not triggered by schedule.</p>	<p>VPO2 requires a permit for removal of native vegetation on <u>Lots 1, 1 &amp; 2 GOR.</u></p> <p>The statement of significance recognises the importance of the 'Anglesea heathland'. It also recognises the 'scenic landscape' values of the heathland and as a non urban break between settlements.</p>	<p>Statement of significance specifically relates to status of the Bellarine Yellow Gum.</p>	<p>Statement of landscape significance primarily relates to topography and natural features.</p> <p>The high conservation status of much of the vegetation is recognised and is linked to it's role in adding to the scenic values.</p>
<b>Referral</b>	Referral to DELWP required.	Referral to DELWP required.	Referral to DELWP required.	Referral to DELWP required.	Referral to DELWP required.	No referral requirement.
<b>Decision Guidelines</b>	<p>Decision guidelines relate to veg protection, buildings, works and subdivision.</p> <p>Replacement planting and vegetation enhancement required but setbacks from buildings and the layout and location of planting is to have regard to minimising fire hazards.</p>	<p>Decision guidelines relate to veg protection, buildings, works and subdivision.</p> <p>Replacement planting and vegetation enhancement required but setbacks from buildings and the layout and location of planting is to have regard to minimising fire hazards</p>	<p>Decision guidelines generally relate to preservation and maintaining the integrity of the vegetation.</p> <p>Note: some of the decision guidelines might be better placed in the statement or objectives.</p>	<p>Decision guidelines generally relate to preservation and maintaining the integrity of the vegetation.</p> <p>Note: some of the decision guidelines might be better placed in the statement or objectives.</p>	<p>Decision Guidelines relate to management strategies for the preservation of Bellarine Yellow Gums.</p>	<p>Specified local policy including the Coastal Development Policy.</p>
<b>Other PS controls applied with</b>	R1Z, NCO1 & DDO10	R1Z, NCO1 & DDO11	RCZ FZ	SUZ3 (Anglesea heath)	R1Z, FZ.	R1Z

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<b>schedule</b>	<p><u>Subdivision</u> R1Z, DDO10 require permit for subdivision.</p> <p><u>Buildings and works</u> R1Z – triggers permit for buildings and works in association with section 2 use (dwelling as of right and permit trigger only where lot smaller than 300sqm). DDO10 – triggers permit for buildings and works including fence (other than post &amp; wire 1.5m). NCO1 – trigger permit for buildings and works and removal of vegetation over 5m in height.</p>	<p><u>Subdivision</u> R1Z, DDO11 require permit for subdivision.</p> <p><u>Buildings and works</u> R1Z – triggers permit for buildings and works in association with section 2 use (dwelling as of right and permit trigger only where lot smaller than 300sqm). DDO11 – triggers permit for buildings and works including fence (other than post &amp; wire 1.5m with gaps for fauna movement). NCO1 – trigger permit for buildings and works and removal of vegetation over 5m in height.</p>	<p><u>RLZ</u> LDRZ SUZ1 (Alcoa) SUZ2 (Anglesea proving ground) PCRZ <u>Subdivision</u> All zones include permit trigger.</p> <p><u>Buildings and works</u> RCZ, FZ &amp; RLZ – include a number of exemptions for buildings and works (in assoc with section 1 use and minor buildings and works). A dwelling is a section 1 use in RLZ. LDRZ – permit if in assoc with section 2 use (dwelling is section 1). SUZ1 (Alcoa) – no permit required where in association with activities undertaken under the Mines Act. SUZ2 – permit required for all buildings and works. PCRZ – permit required for all buildings and works unless undertaken by public land manager.</p>	<p><u>Subdivision</u> A permit is required for a subdivision under the SUZ. SUZ3 states that subdivision can only be for the transfer of land into public ownership or for public infrastructure.</p> <p><u>Buildings and works</u> SUZ – permit required for all buildings and works.</p>	<p><u>Subdivision</u> R1Z &amp; FZ both include permit trigger.</p> <p><u>Buildings and works</u> R1Z – triggers permit for buildings and works in association with section 2 use (dwelling as of right and permit trigger only where lot smaller than 300sqm). FZ – includes a number of exemptions for buildings and works (in assoc with section 1 use and minor buildings and works).</p>	<p><u>Subdivision</u> R1Z includes a permit trigger.</p> <p><u>Buildings and works</u> R1Z – triggers permit for buildings and works in association with section 2 use (dwelling as of right and permit trigger only where lot smaller than 300sqm).</p>
<b>Implications of replacing current</b>	<p>No new permit triggers. The NCO1 &amp; DDO10 will continue to ensure</p>	<p>No new permit triggers. The NCO1 &amp; DDO11 will continue to ensure</p>	<p>Permit trigger introduced. The application of an</p>	<p>No new permit triggers. The SUZ3 includes requirements relating to</p>	<p>Permit trigger introduced. The application of</p>	<p>No new permit triggers. The SLO1 will continue to protect the landscape</p>

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<p><b>overlay schedule with ESO6/ ESO4</b></p>	<p>the character is protected. <u>Buildings and works</u> (including fencing) and subdivisions will still require a permit. The ESO4's main function was to protect indigenous vegetation less than 5m in height which will translate to the ESO4. Referral to DELWP will be removed at the request of the dept under Clause 66.04 (except on sites with known endangered species)</p>	<p>the character is protected. <u>Buildings and works</u> (including fencing) and subdivisions will still require a permit. The ESO5's main function was to protect indigenous vegetation less than 5m in height which will translate to the ESO4/ESO6.</p>	<p>ESO6 / ESO4 will introduce a permit requirement for buildings and works associated with a dwelling which is not currently triggered (by the RLZ, LDRZ or VPO1). However the VPO1 requires a permit for vegetation removal and the ESO4/ESO6 will only be applied to areas containing significant vegetation where it is appropriate that the impacts of new buildings, works and solid fencing (to enable the movement of fauna) are considered in conjunction with vegetation removal rather than in isolation. <i>Note: VPO already requires that the impact of the use/dev/sub on vegetation removal be considered.</i> A permit for a fence will be exempt in Torquay/Jan Juc under the ESO4 being an established urban area with limited connectivity opportunities for native fauna movement</p>	<p>built form and location. Post and wire fencing is required however the application of an ESO4 will build on this requirement specifying that fencing is to remain open for the movement of fauna. The main function of the VPO2 is to establish and retain land beyond 'habitation envelopes'. This can be translated into the ESO4.</p>	<p>an ESO4 will introduce a permit requirement for buildings and works associated with a dwelling which is not currently triggered (by the R1Z or VPO3). However the VPO3 requires a permit for vegetation removal and the ESO4 will only be applied to areas containing Bellarine Yellow Gums where it is appropriate that buildings, works and subdivision are considered in conjunction with vegetation removal rather than in isolation. <i>Note: VPO already requires that the impact of the use/dev/sub on vegetation removal be considered.</i> A permit for a fence will be exempt in Torquay/Jan Juc under the ESO4 as it is not required for the protection of Bellarine Yellow Gum.</p>	<p>character of the coastal towns however the vegetation component will be removed from areas of high conservation areas – generally on the periphery of the towns. The ESO6 will introduce a referral to DELWP and will recognise the high biodiversity values of the vegetation. The habitation envelopes maps and wording will be deleted from the SLO1 as they will become obsolete.</p>
<p><b>Specific detail from</b></p>	<p>In statement of significance, include</p>	<p>In statement of significance, include</p>	<p>An exemption for buildings and works will</p>	<p>In statement of significance, include</p>	<p>In statement of significance, include</p>	<p>The statement of significance will</p>

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<p><b>ESO4 to translate to ESO3</b></p>	<p>reference to;</p> <ul style="list-style-type: none"> <li>Rufous Bristlebird</li> <li>Coastal Moonah</li> <li>Vegetation of conservation significance</li> </ul> <p>Located from Aireys Inlet to Eastern View</p> <p>Include note how it contributes to the character.</p> <p>In decision guidelines include that fencing should enable movement of fauna.</p> <p>Reinforce that vegetation should be used for screening in res areas in accordance with 'landscaping in bushfire prone areas' booklet.</p>	<p>reference to;</p> <ul style="list-style-type: none"> <li>Rufous Bristlebird</li> <li>Coastal Moonah</li> <li>Vegetation of conservation significance</li> </ul> <p>Located from Aireys Inlet to Eastern View</p> <p>Include note how it contributes to the character.</p> <p>In decision guidelines include that fencing should enable movement of fauna.</p> <p>Reinforce that vegetation should be used for screening in res areas in accordance with 'landscaping in bushfire prone areas' booklet.</p>	<p>need to be included on;</p> <ul style="list-style-type: none"> <li>Alcoa Lease Area and in association with activities undertaken under the Mines Act.</li> <li>Public land where undertaken by public land manager.</li> </ul> <p>Statement of significance will need to provide overview of Shire wide biodiversity values including rare/threatened species and processes.</p>	<p>reference to the Anglesea Heathland.</p> <p>Relocate statement relating to the highly significant non urban break between Aireys and Anglesea of national significance as a primary vista on the GOR more suitable location in the planning scheme.</p> <p>Schedule will need to exempt permit trigger for veg removal where located within identified habitation envelopes in Harvey Street. Map showing envelopes will need to be included in schedule.</p>	<p>reference the Bellarine Yellow Gum in Torquay and their environmental status.</p>	<p>reference specific values taken from the tables and info provided by DELWP.</p>
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## APPENDIX 7

### Draft overlay schedules

- **Revised ESO1**
- **Proposed ESO4**
- **Proposed ESO6**
- **Proposed ESO7**
- **Proposed VPO4**

## **SCHEDULE 1 TO THE ENVIRONMENTAL SIGNIFICANCE OVERLAY**

Shown on the planning scheme map as **ESO1**

### **AQUATIC SYSTEMS – SIGNIFICANT WETLANDS AND WATERWAYS**

#### **1.0 Statement of environmental significance**

The mapped aquatic systems are considered significant because one or more of the following apply:

- The wetland is of regional or international significance and is protected under an international wetland agreement.
- The aquatic system supports nationally or state listed rare or threatened species.
- The aquatic system is a biodiversity link with significant biodiversity values providing high instream/aquatic and riparian habitat.
- The waterway and its environs contributes to the water quality and integrity of the broader catchment.
- The watercourse is a heritage river.

#### **2.0 Environmental objective to be achieved**

To protect and ensure the long term future of terrestrial and aquatic habitat for native flora and fauna.

To protect and ensure the long term future of threatened species of flora and fauna and meet any obligations set out under international agreements..

To protect water quality (including downstream water quality) and prevent water pollution in watercourses, water bodies, wetlands and groundwater through encouraging vegetation retention, buffers around all aquatic systems, water sensitive urban design and sustainable farming practices.

To encourage native vegetation retention and enhancement within 100m of all major waterways/wetlands (50m each side) and 60m of all smaller waterways (30m each side), to enhance river health and biodiversity and to prevent accelerated erosion and siltation or sedimentation.

To encourage ecological restoration, regeneration and revegetation with indigenous species and removal of all known weed species within the core riparian zone (40m either side of a major waterway and 20m either side of a smaller waterway).

To maintain the physical and biological integrity and functioning of aquatic systems including:

- the ability of watercourses to carry natural flows.
- the maintenance of natural flooding regimes.
- the natural opening and closing of coastal wetlands and estuaries.
- the filtering of nutrients and other pollutants.
- the recharge and discharge of ground waters.

To eradicate all weed species listed in the incorporated document 'Weeds of the Surf Coast'.

#### **3.0 Permit requirements**

##### **Vegetation**

A permit is not required to remove, destroy or lop any vegetation that is:

- within 3 meters of a building used for accommodation (or overhangs this area).

- listed as an environmental weed in the incorporated document, “Weeds of the Surf Coast Shire (2013).
- Not native to Victoria.
- in accordance with an approved Whole Farm Plan.
- 

### Fencing

A permit is required to construct a fence.

This does not apply to a post and wire fence that restricts livestock access to a wetland or waterway. Application requirements

A planning application must be accompanied by the following information, as appropriate:

- A vegetation assessment report that includes:
  - Identification of any native vegetation or other habitat components to be removed or disturbed,
  - The location of all environmental weeds listed in ‘Weeds of the Surf Coast Shire’ (2012) within the core riparian zone.
  - Recommended measures to suitably protect native vegetation from damage during the proposed works.
  - A vegetation offset plan that outlines how the loss of biodiversity will be compensated where removal is unavoidable.
- Scaled and dimensioned plans showing proposed,
  - Fencing,
  - Buildings and works and
  - Subdivision layout.

### Referral of application

Applications must be referred in accordance with Section 55 of the Act to the referral authority specified in Clause 66.04 or a schedule to that clause.

## 4.0 Decision guidelines

Before deciding on an application, the responsible authority must consider, as appropriate:

- The value and specific qualities of the effected biodiversity asset as defined in the reference document ‘Surf Coast Shire Biodiversity mapping project’ (2014).
- Any relevant Flora and Fauna Guarantee Action Statements and threatening processes.
- The results of any vegetation assessment or survey of the biodiversity assets contained on the site and whether the survey and assessment has been adequately completed under appropriate seasonal conditions and by a suitably qualified person, to the satisfaction of the Responsible Authority.
- The reason for removing any remnant vegetation and the practicality of any alternative options which do not require removal of remnant vegetation or other habitat components. Where alternatives exist which do not require the loss of native vegetation or other habitat values and will not have any adverse impacts on the aquatic system these alternatives should be favoured including the removal of vegetation with a lower ecological value (such as weeds, exotics or degraded vegetation).
- The purpose for the works and whether every effort to avoid impacts on aquatic systems has been explored with consideration given to;
  - alternative options for carrying out development on the site and,

- the availability of alternative land outside the overlay area.
- Appropriate offsets for vegetation removal (unless already stipulated by a referral authority), having regard to;
  - The value of the native vegetation in terms of physical and biological condition, rarity, variety and habitat quality.
  - The need to maintain viable examples of vegetation communities.
  - The likely effect removal of native vegetation will have on resident and migratory fauna and the need to retain mature trees (alive or dead) with hollows.
  - The need for regeneration and revegetation using species from the relevant Ecological Vegetation Class.
  - The merits in requiring wetlands or waterways to be fenced off.
  - The need to undertake environmental weed control.
  - Whether an agreement under section 173 of the Act is appropriate providing for on going vegetation protection, enhancement and/or management on the land.
  - the use of a conservation covenants or other similar control to ensure the long term viability of native vegetation.
- Whether adequate buffers can be retained around an aquatic system to reduce potential threats to the quality, life cycle processes or functioning of aquatic and terrestrial habitats such as;
  - 100m buffer between a septic wastewater disposal envelope and a wetland or watercourse.
  - 60m buffer between a septic wastewater disposal envelope and a drainage line/small creek.
  - 30m buffer between works causing soil disturbance and the need to increase this buffer to 60m where sites are prone to salinity or erosion.
- The means of protecting remnant vegetation during the construction of buildings and works and the on-going management of vegetation post construction.
- The need to control erosion and sedimentation during construction works and/or associated with the proposed use or development.
- The impact a proposed subdivision will have on the aquatic system including any remnant vegetation on the site.
- Any relevant catchment plan including;
  - Thompsons Creek Catchment Plan (1998).
  - Spring Creek Catchment Plan (2003)
  - Anglesea Estuary Management Plan (2005)
  - Painkalac Estuary Management Plan (2005)
  - Erskine River and Stony Creek Catchment Plan (2000)

### Reference documents

- Biodiversity Mapping Project, Surf Coast Shire, DEPI and CCMA (2014).
- Weeds of the Surf Coast, Surf Coast Shire (2013).
- Indigenous Planting Guide – Urban Coastal, Surf Coast Shire (2003).
- Indigenous planting Guide for rural areas within the Surf Coast Shire, (2003)



## **SCHEDULE 4 TO THE ENVIRONMENTAL SIGNIFICANCE OVERLAY**

Shown on the planning scheme map as **ESO4**

### **Habitat Protection and Significant Remnant Vegetation within the coastal settlements of Lorne, Moggs Creek, Fairhaven, Aireys Inlet, Anglesea, Torquay and Jan Juc.**

#### **1.0 Statement of environmental significance**

The coastal settlements are within the Otway Ranges and Otway Plain bioregions and are a major conservation and ecological resource containing a number of species listed under the *Flora and Fauna Guarantee Act 1988*. They contain remnant vegetation of very high conservation value due to;

- the high percentage of native vegetation cover remaining,
- The diverse vegetation communities, and
- the important habitat they provide for a diverse range of flora and fauna, including rare and threatened species.

The settlements from Lorne to Anglesea directly adjoin the Great Otways National Park providing additional habitat, habitat linkages and functioning as a significant buffer to the biodiversity assets within the park.

The major threats to the biodiversity assets within these settlements are:

- Clearance, fragmentation and lack of regeneration.
- Loss of habitat including the loss of hollow-bearing trees.
- Residential subdivision and increasing development.
- Invasion of native vegetation by environmental weeds.
- Predation by cats and foxes on native fauna.
- Increasing levels of clearance in response to management against bushfire.

The protection of native vegetation is intrinsic to the character and beauty of the coastal settlements and is highly valued by the community and visitors alike. All remnant vegetation is significant and removal should be avoided with a focus on removing weed species or exotics over natives in conjunction with reducing risks to persons and property from bushfire.

#### **2.0 Environmental objective to be achieved**

To protect and enhance all biodiversity assets, including;

- The quality and extent of all indigenous vegetation including trees, shrubs, heath and grasses.
- Patches of remnant vegetation that provide a buffer to the Great Otway National Park or conservation and nature reserves.
- Merrans Sun Orchid in Fairhaven (refer to map 1 of this schedule).
- Brookers Gum and Wrinkled Buttons in Lorne.
- The Anglesea Heathland (listed on the Register of the National Estate).
- Bellarine Yellow Gums in Torquay/Jan Juc.
- Moonah Woodland Community in Anglesea.
- Habitat for rare or threatened fauna; including Rufus Bristlebird, Powerful Owl, Masked Owl, Grey Goshawk, Swamp Antechinus, Southern Toadlet, New Holland Mouse, Spot-tailed Quoll.
- All rare or threatened flora including; Anglesea Grevillea, Red Beard-orchid, Southern Spider-orchid, Winter Sun-orchid, Anglesea Slender Sun-orchid and Otway Grey Gum,.

To achieve no overall losses to the biodiversity assets contained within the settlements.

To eradicate all weed species listed in the incorporated document 'Weeds of the Surf Coast'.

To discourage fencing to enable native fauna to move freely between habitat in urban areas into habitat in non-urban areas.

To encourage site responsive building design that minimises the need for excessive earth works.

To encourage subdivision layout that avoids the removal of indigenous vegetation.

To maintain a low density of development with sufficient space around dwellings for defensible space and the retention of a reasonable coverage of indigenous vegetation.

To maintain large lot sizes abutting or close to the Great Otway National park/settlement boundary.

To recognise the important contributions that biodiversity makes to the overall character and identity of the settlements.

To minimise the impacts of residential development on the biodiversity values within the Great Otway National Park.

To manage the retention and enhancement of indigenous vegetation in a manner that does not increase risks of bushfire to persons or property.

### 3.0 Permit requirement

#### Vegetation

A permit is not required to remove, destroy or lop any vegetation that is:

- within 3 metres of a building used for accommodation (or overhangs this area).
- listed as an environmental weed in the incorporated document, “Weeds of the Surf Coast Shire, (2013)”.
- not native to Victoria.
- dead.
- and is within the designated ‘habitation envelope’ area, shown in map 2 to this schedule, or is the minimum extent necessary for;
  - the construction of a vehicle access from the street to the ‘habitation envelope’ and
  - the construction and maintenance of reticulated services.

#### Fencing

A permit is required to construct a fence.

This does not apply in the settlements of Torquay and Jan Juc or to a post and wire fence:

- with a 200mm clearance from ground level and
- that is not more than 1.5m in height.

#### Application requirements

A planning application must be accompanied by the following information, as appropriate:

- A vegetation assessment report that includes:
  - Identification of any native vegetation or other habitat components on site to be retained and / or removed or disturbed,
  - The location of all environmental weeds listed in ‘Weeds of the Surf Coast Shire’ (2012) on the site.
  - Recommended measures to suitably protect native vegetation from damage during the proposed works.
- Scaled and dimensioned plans showing proposed,
  - Fencing,
  - Buildings and works and
  - Subdivision layout.

## Referral of application

Applications must be referred in accordance with Section 55 of the Act to the referral authority specified in Clause 66.04 or a schedule to that clause.

### 4.0 Decision guidelines

Before deciding on an application to remove any native vegetation, construct a building or carry out works, or subdivide land, the responsible authority must consider, as appropriate:

#### Vegetation removal

- The impact of the proposal on the biodiversity conservation values of the area.
- The value and specific qualities of the effected biodiversity asset as defined in the reference document 'Surf Coast Shire Biodiversity mapping project' (2014).
- Any relevant Flora and Fauna Guarantee Action Statements and threatening processes including No. 155 (Merran's Sun-orchid), No. 141 (Coastal Moonah Woodland), No. 49 (Rufous Bristelbird), No. 74 (New Holland Mouse), No 92 (Powerful Owl), No. 15 (Spot-tailed Quoll).
- The results of any vegetation assessment or survey of the biodiversity assets contained on the site and whether the survey and assessment has been adequately completed under appropriate seasonal conditions and by a suitably qualified person to the satisfaction of the Responsible Authority.
- The reason for removing any remnant vegetation and the practicality of any alternative options which do not require removal of remnant vegetation or other habitat components. Where alternatives exist which do not require the loss of native vegetation or other habitat values these alternatives should be favoured including the removal of vegetation with a lower ecological value (including weeds, exotics or degraded vegetation).
- Whether the retention and / or layout of new landscaping is appropriate and generally consistent with the reference document, 'Landscaping your Surf Coast garden for bush fire,' Surf Coast Shire (2015).
- The quality and extent of the vegetation that is to be removed and how preference has been given to enhancing the mapped patch of vegetation primarily through weed removal and / or revegetating within the patch using species from the relevant Ecological Vegetation Class.

#### Buildings and works

- The impact the proposed buildings or works will have on the biodiversity conservation values of the area and the practicality of siting buildings and works away from patches of native vegetation to ensure its ongoing protection.
- The means of protecting native vegetation during the construction of buildings and works and the on-going management of vegetation post construction.
- The need for a compact building design to reduce the defendable space footprint.

#### Subdivision

- The impact the proposed subdivision will have on the biodiversity conservation values on the site or adjacent sites particularly public land or nature reserves.
- Whether the subdivision will lead to an intensification of development abutting or within close proximity to the bushfire hazard interface and ultimately lead to inappropriate losses of native vegetation in response to bushfire mitigation measures.
- Whether the subdivision layout will;
  - create new lots that are capable of providing for a new dwelling with a 2-3m clear zone, free of all combustible materials including timber fencing, outside vegetated areas.
  - reduce impacts on the highest value vegetation.

## Biodiversity mapping project

- Limit vehicular access to a single crossover (if practical) to minimise any adverse impact on the vegetated appearance of the street.
- Provide for the placing of reticulated services in common trenches, using internal roads where practical, in order to minimise impacts on native vegetation.

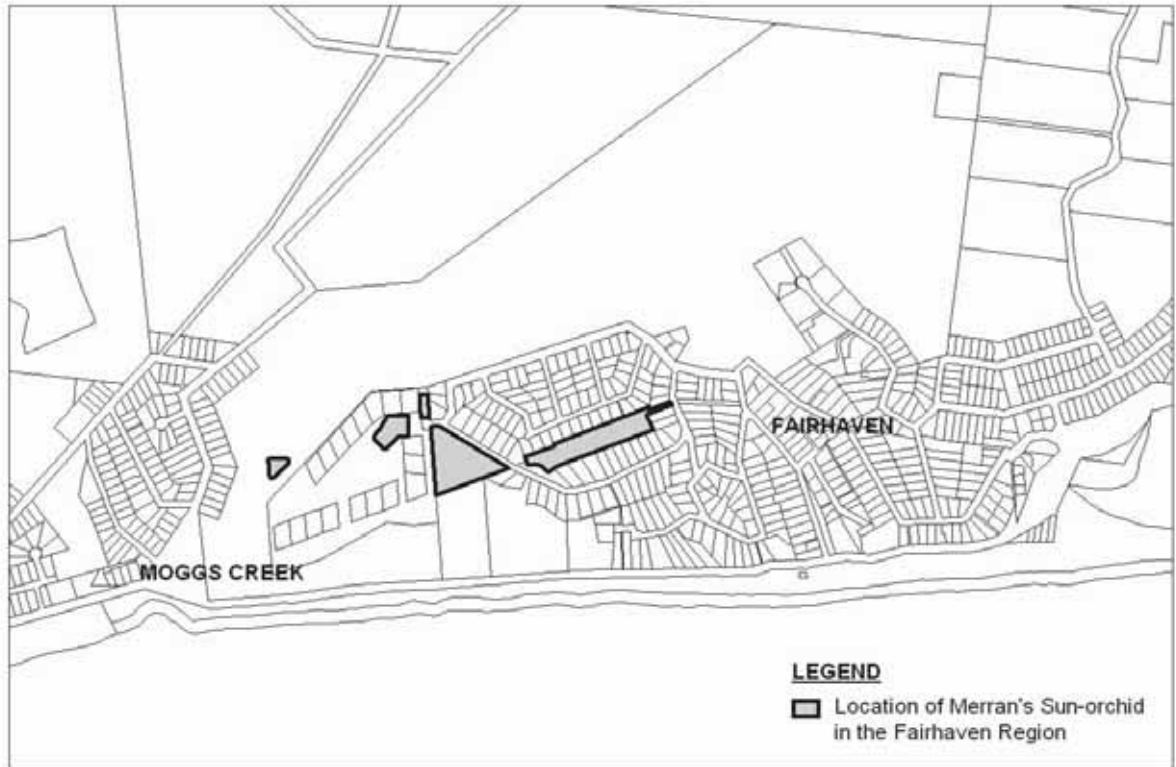
### Fencing

- Whether vegetation can be used as the primary means for achieving privacy between residential properties.
- Whether the layout of screen fencing or extensive areas of closely knit mesh fencing enables the continued passage of native fauna across the site, having regard to the habitat on site or connectivity to habitat on surrounding land, particularly public land.

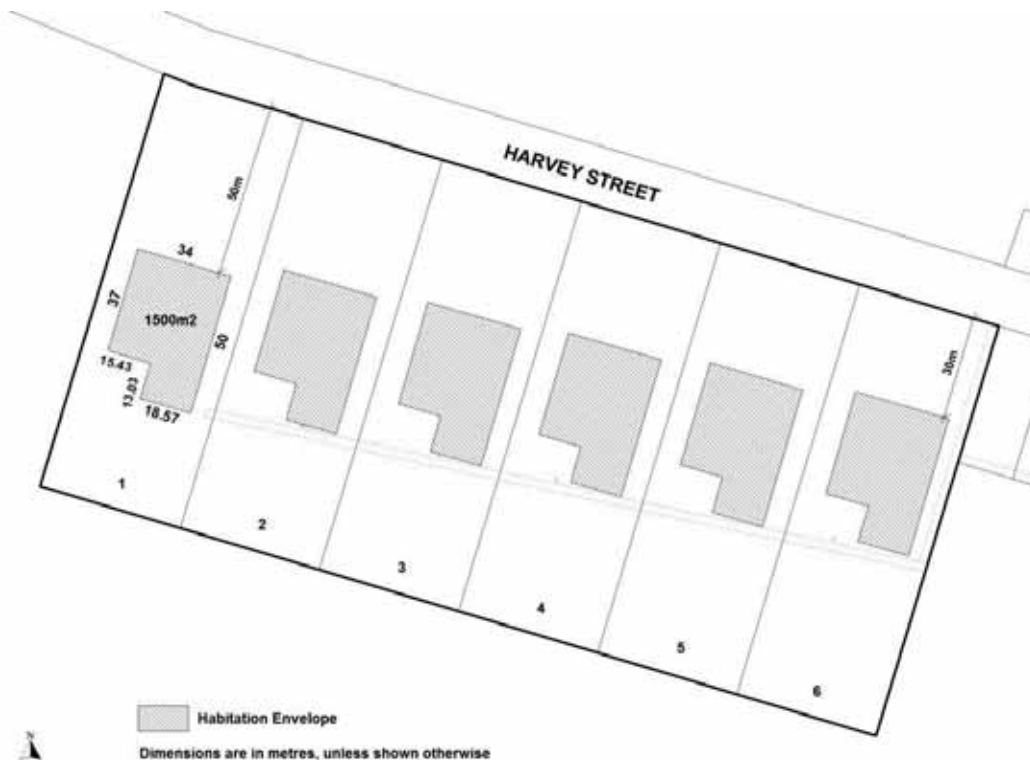
### Reference documents

- Surf Coast Shire Biodiversity Mapping Project, Surf Coast Shire, DEPI and CCMA (2014).
- Weeds of the Surf Coast, Surf Coast Shire (2013).
- Regional Bushfire Planning Assessment: Barwon South – West Region, DPCD (2012).
- Landscaping your Surf Coast garden for bush fire, Surf Coast Shire (2015).
- Aireys Inlet to Eastern View Neighbourhood Character Study and Vegetation Assessment (2004).
- Indigenous Planting Guide – Urban Coastal, Surf Coast Shire (2003).

Map 1 to Schedule 4 to Clause 42.01 –Known sites of Merran’s Sun-orchid in Fairhaven



Map 2 to Schedule 4 to Clause 42.01 – ‘Habitation envelopes’, Lots 1 – 6 Harvey Street, Anglesea Heathland



## **SCHEDULE 6 TO THE ENVIRONMENTAL SIGNIFICANCE OVERLAY**

Shown on the planning scheme map as **ESO6**

### **Habitat Protection and Significant Remnant Vegetation**

#### **1.0 Statement of environmental significance**

The Surf Coast Shire is within the Otway Ranges, Otway Plain and Victorian Volcanic Plain bioregions and contains remnant vegetation of very high conservation value due to;

- the high percentage of native vegetation cover remaining,
- The diverse vegetation communities, and
- the important habitat they provide for a diverse range of flora and fauna, including rare and threatened species.

Much of this vegetation is contained within the Great Otways National Park but a significant portion is also found on private land providing important habitat linkages and functioning as a significant buffer to the assets within the park.

The major threats to the biodiversity within the Surf Coast Shire are:

- Clearance, fragmentation and lack of regeneration.
- Loss of habitat including the loss of hollow-bearing trees.
- Farming practices and development including tourism development in ecologically sensitive areas.
- Urban or settlement expansion through rezonings into areas containing significant remnant vegetation.
- Invasion of native vegetation by environmental weeds.
- Predation by cats and foxes on native fauna.
- Increasing levels of clearance in response to managing the bushfire threat.

The protection of native vegetation is intrinsic to the character and beauty of the Surf Coast Shire and is highly valued by the community and visitors alike. All remnant vegetation is significant and removal should only be considered where retention is unavoidable and only then should offset planting be considered.

Fire management plays an important role in biodiversity conservation, as historically bushfire has been an important feature of these bioregions. However bushfire poses a constant threat to persons and property, particularly private land within close proximity to the Great Otways National Park.

#### **2.0 Environmental objective to be achieved**

To protect and enhance all biodiversity assets, including;

- The quality and extent of all indigenous vegetation including trees, shrubs, heath and grasses.
- Patches of remnant vegetation that provide a buffer to the Great Otway National Park or a conservation / nature reserve.
- The Anglesea Heathland (listed on the Register of the National Estate).
- Bellarine Yellow Gums around Torquay/Jan Juc, Brookers Gum and Wrinkled buttons around Lorne and Merans sun-orchid in the Fairhaven/Moggs Creek area.
- Habitat for rare or threatened fauna (including dead trees containing hollows), such as; Rufus Bristebird, Powerful, Masked and Barking Owl, New Holland Mouse, Spot-tailed Quoll and Swamp Antechinus.
- All rare or threatened flora, such as; Anglesea Grevillea, Red Beard-orchid, Southern Spider-orchid, Winter Sun-orchid, Anglesea Slender Sun-orchid, Otway Grey Gum, Moonah Woodland Community.

To achieve no overall losses to the biodiversity assets within the Surf Coast Shire.

To preserve fauna habitat and linkages.

To eradicate all weed species listed in the incorporated document 'Weeds of the Surf Coast'.

To enable the continued movement of native fauna through low density areas on the urban fringe.

To enable natural recolonisation of the Bellarine Yellow Gum adjacent to extant populations.

To recognise the important contributions that biodiversity makes to the overall character and identity of the Surf Coast Shire.

To protect scenic landscape vistas from disruption associated with vegetation clearance.

To maintain a substantial area of native vegetation as a physical buffer between townships along the Great Ocean Road.

To minimise the impacts of residential development on the biodiversity values within the Great Otway National Park and other nature reserves.

To manage the retention and enhancement of indigenous vegetation in a manner that does not increase risks of bushfire to persons or property.

### 3.0 Permit requirement

#### Buildings and works

A permit is not required for a building or works where;

- It is undertaken within the Alcoa Lease Area and is under the *Mines (Aluminium Agreement) Act 1961* and is consistent with a management plan approved by the Secretary to the Department Sustainability and Environment.
- It is undertaken by or on behalf of a public land manager.

#### Vegetation

A permit is not required to remove, destroy or lop any vegetation that is:

- within 3 meters of a building used for accommodation (or overhangs this area).
- listed as an environmental weed in the incorporated document, "Weeds of the Surf Coast Shire, (2013)".
- not native to Victoria.
- within the Alcoa Lease Area and is necessary to undertake any use, works and development allowed under the *Mines (Aluminium Agreement) Act 1961* and is consistent with a management plan approved by the Secretary to the Department Sustainability and Environment.
- within a nature reserve and is undertaken by or on behalf of a public land manager in accordance with an approved biodiversity enhancement plan.

#### Fencing

A permit is required to construct a fence. This does not apply to:

- a post and wire fence:
  - with a 200mm clearance from ground level and
  - that is not more than 1.5m in height.
- the Alcoa Lease Area and is allowed under the *Mines (Aluminium Agreement) Act 1961* and is consistent with a management plan approved by the Secretary to the Department Sustainability and Environment.
- A fence constructed in association with an agricultural use.

#### Application requirements

A planning application must be accompanied by the following information, as appropriate:

- A vegetation assessment report that includes:

- Identification of any native vegetation or other habitat components to be removed or disturbed,
- The location of all environmental weeds listed in ‘Weeds of the Surf Coast Shire’ (2012) on the site.
- Recommended measures to suitably protect native vegetation from damage during the proposed works.
- A vegetation offset plan that outlines how the loss of biodiversity will be compensated where removal is unavoidable or is not required for the creation of defensible space.
- Scaled and dimensioned plans showing proposed,
  - Fencing,
  - Buildings and works and
  - Subdivision layout.

### Referral of application

Applications must be referred in accordance with Section 55 of the Act to the referral authority specified in Clause 66.04 or a schedule to that clause.

## 4.0 Decision guidelines

Before deciding on an application the responsible authority must consider, as appropriate:

### Vegetation removal

- The impact of the proposal on the biodiversity conservation values of the area.
- The value and specific qualities of the effected biodiversity asset as defined in the reference document ‘Surf Coast Shire Biodiversity mapping project’ (2014).
- Any relevant Flora and Fauna Guarantee Action Statements and threatening processes.
- The results of any vegetation assessment or survey of the biodiversity assets contained on the site and whether the survey and assessment has been adequately completed under appropriate seasonal conditions and by a suitably qualified person to the satisfaction of the Responsible Authority.
- The reason for removing any remnant vegetation and the practicality of any alternative options which do not require removal of remnant vegetation or other habitat components. Where alternatives exist which do not require the loss of native vegetation or other habitat values these alternatives should be favoured including the removal of vegetation with a lower ecological value (such as weeds, exotics or degraded vegetation).
- The impact vegetation removal will have on scenic landscape vistas, particularly along the Nationally significant Great Ocean Road and within the coastal hinterland.
- The need to retain the connectivity of linear remnants (vegetation along roadsides, unused roads and railway lines), habitat corridors and biolinks.
- Whether the introduction of a conservation covenant or a detailed land management/vegetation management plan (including weed eradication and fencing) is appropriate.
- Whether the retention and / or layout of new landscaping is appropriate and consistent with the reference document, ‘Landscaping your Surf Coast garden for bush fire,’ Surf Coast Shire (2015).
- The quality and extent of the vegetation that is to be removed and how the losses will be offset (if required) with preference given to enhancing the mapped patch of vegetation primarily through weed removal and / or revegetating within the patch using species from the relevant Ecological Vegetation Class. Where enhancing the native vegetation will increase the risk to persons or property from bushfire, offsets should be located off site within the Corangamite Catchment Region or as directed by the Responsible Authority.



### Buildings and works

- The impact the proposed buildings or works will have on the biodiversity conservation values of the area and the development could reasonably be located on land outside of this overlay or away from patches of native vegetation to ensure its ongoing protection.
- The means of protecting remnant vegetation during the construction of buildings and works and the on-going management of vegetation post construction.
- The need for a compact building design to reduce the defendable space footprint.

### Subdivision

- The impact the proposed subdivision will have on the biodiversity conservation values of the area and how the layout seeks to;
  - retain the native vegetation covered by this overlay in one ownership, if practical, to ensure its ongoing preservation.
  - Locate the proposed subdivision outside of this overlay, if practical.
  - locate future dwellings and associated defendable space away from vegetated areas.
  - avoid development intensification abutting or within close proximity to the bushfire hazard interface.
  - reduce impacts on the highest value vegetation.
  - Provide for the placing of reticulated services in common trenches, using internal roads where practical, in order to minimise impacts on native vegetation.

### Fencing

- Whether vegetation can be used as the primary means for achieving privacy between dwellings.
- Whether the layout of screen fencing or extensive areas of closely knit mesh fencing enables the continued passage of native fauna across the site, having regard to the habitat on site or connectivity to habitat on surrounding land, particularly public land.

### Reference documents

- Surf Coast Shire Biodiversity Mapping Project, Surf Coast Shire, DEPI and CCMA (2014).
- Weeds of the Surf Coast, Surf Coast Shire (2013).
- Regional Bushfire Planning Assessment: Barwon South – West Region, DPCD (2012).
- Landscaping your Surf Coast garden for bush fire, Surf Coast Shire (2015).
- Indigenous Planting Guide – Urban Coastal, Surf Coast Shire (2003).
- Indigenous planting Guide for rural areas within the Surf Coast Shire, (2003)

## **SCHEDULE 7 TO THE ENVIRONMENTAL SIGNIFICANCE OVERLAY**

Shown on the planning scheme map as **ESO7**

### **Native grasslands**

#### **1.0 Statement of environmental significance**

The native grasslands and grassy woodlands mapped within the Victorian Volcanic Plain bioregion are nationally listed as critically endangered under the Environment Protection and Biodiversity Conservation Act (1999) due to their severe decline in extent and quality since European settlement and due to their future existence being severely threatened. Only small fragmented patches remain within the Victorian Volcanic Plain bioregion and their recovery and protection is required to ensure they are not lost forever.

The grasslands mapped within the Otway Plain Bioregion are relatively intact with a good coverage of native species and are of state significance.

#### **2.0 Environmental objective to be achieved**

To encourage farming and land management practices that will retain remaining grasslands and grassy woodlands in good condition.

To encourage changes in land use, detrimental to the preservation of native grasslands, in areas outside of this overlay.

To focus restoration works and the highest protection of grasslands where more than 25% of the patch supports native species.

To encourage land owners to seek funding to protect and restore grasslands on their property.

#### **3.0 Permit requirements**

##### **Vegetation**

A permit is not required to remove, destroy or lop any vegetation that is:

- within 3 meters of a building used for accommodation (or overhangs this area).
- listed as an environmental weed in the incorporated document, “Weeds of the Surf Coast Shire (2013)”.
- not native to Victoria.
- is in accordance with an approved Whole Farm Plan.

##### **Fencing**

A permit is required to construct a fence. This does not apply to:

- a post and wire fence to be erected to restrict livestock access to patches of native grasslands.
- Routine maintenance of an existing fence.
- A fence in association with a dwelling.

##### **Application requirements**

A planning application must be accompanied by the following information, as appropriate:

- A vegetation assessment report that includes:
  - Identification of any native vegetation or other habitat components to be removed or disturbed,
  - The location of all environmental weeds listed in ‘Weeds of the Surf Coast Shire’ (2012) on the site.

- Recommended measures to suitably protect native vegetation from damage during the proposed works.
- A vegetation offset plan that outlines how the loss of biodiversity will be compensated where removal is unavoidable or is not required for the creation of defensible space.
- Scaled and dimensioned plans showing proposed,
  - Fencing,
  - Buildings and works and
  - Subdivision layout.

### **Referral of application**

Applications must be referred in accordance with Section 55 of the Act to the referral authority specified in Clause 66.04 or a schedule to that clause.

## **4.0 Decision guidelines**

Before deciding on an application to remove any native vegetation, construct a building or carry out works, or subdivide land, the responsible authority must consider, as appropriate:

### Vegetation removal

- The value and specific qualities of the effected native grassland within the Victorian Volcanic Plain, and any obligations required under the EPBC Act (1999).
- The value and specific qualities of the effected biodiversity asset as defined in the reference document 'Surf Coast Shire Biodiversity mapping project' (2014).
- The value and specific qualities of the effected biodiversity asset as defined in the Moriac Environmental Assets Assessment, Beacon Ecological (2009).
- Any relevant action Statements for endangered species and communities and threatening processes.
- The results of any vegetation assessment or survey of the biodiversity assets contained on the site and whether the survey and assessment has been adequately completed under appropriate seasonal conditions and by a suitably qualified person to the satisfaction of the Responsible Authority.
- The reason for removing native grasslands and the practicality of any alternative options which do not require removal of native grasslands. Where alternatives exist which do not require the loss of native grasslands these alternatives should be favoured.
- Whether the proposal has made every effort to:
  - Avoid any adverse impacts on patches of native grasslands, particularly where coverage of native species exceeds 25%.
  - Minimise the removal of native grasslands where removal is unavoidable.
- The quality and extent of the vegetation that is to be removed and how the losses will be offset (unless already stipulated by a referral authority) having regard to;
  - The value of the native grassland in terms of physical and biological condition, rarity, variety and habitat quality.
  - The need to maintain viable examples of vegetation communities.
  - The need for regeneration and revegetation using species from the relevant Ecological Vegetation Class.
  - The merits in requiring native grasslands to be fenced off.
  - The need to undertake weed control.
  - Whether an agreement under section 173 of the Act, conservation covenant or other similar control is appropriate to ensure the long term viability of native grasslands on the land as part of an offsetting strategy.

## Biodiversity mapping project

### Buildings and works

- The impact the proposed buildings or works will have on the native grassland and the practicality of siting buildings and works away from the grassland to ensure its ongoing protection.
- The means of protecting native grasslands during the construction of buildings and works and the on-going management of grasslands post construction.

### Subdivision

- The impact the proposed subdivision will have on the native grasslands and the need to;
  - reduce impacts on the highest value vegetation.
  - Create future lots that will retain patches of grasslands within one ownership to assist its ongoing protection and management.

### Fencing

- Whether fencing can be located outside this overlay.

### Reference documents

- Surf Coast Shire Biodiversity Mapping Project, Surf Coast Shire, DEPI and CCMA (2014).
- Weeds of the Surf Coast, Surf Coast Shire (2013).
- Nationally Threatened Ecological Communities of the Victorian Volcanic Plain: Natural Temperate Grassland & Grassy Eucalypt Woodland, DELWPWPC (2011).
- Indigenous planting Guide for rural areas within the Surf Coast Shire, (2003)

## **SCHEDULE 4 TO THE VEGETATION PROTECTION OVERLAY**

Shown on the planning scheme map as **VPO4**

### **Scattered trees**

#### **1.0 Statement of nature and significance of vegetation to be protected**

Stands of scattered trees identified in this scheme are considered significant because one or more of the following apply:

- They provide food, habitat or refuge for native species including those classified as rare or threatened.
- They provide nesting sites for significant fauna.
- They provide an important biodiversity link or corridor between public land and small or large patches of native vegetation.
- They form part of a rare or threatened community.
- They are an isolated patch of trees in an otherwise modified environment.

#### **2.0 Vegetation protection objective to be achieved**

To protect and ensure the long term future of scattered trees through encouraging the incorporation of stands of scattered trees into whole farm management planning.

To preserve mature dead trees with hollows which provide nesting sites for native fauna.

To encourage regeneration and revegetation around and within patches of scattered trees using species from the relevant Ecological Vegetation Class.

To ensure siting of development and works avoids negative impacts on stands of scattered trees.

#### **3.0 Permit requirement**

A permit is required to remove, destroy or lop stands of native scattered trees, including native understorey (consisting of shrubs, herbs and grasses), except where the native vegetation is:

- within 3 meters of a building used for accommodation (or overhangs this area).
- listed as an environmental weed in the incorporated document, “Weeds of the Surf Coast Shire (2013)”.
- To be removed in accordance with an approved Whole Farm Management Plan.

#### **Application requirements**

A planning application to remove native vegetation must be accompanied by the following information, as appropriate:

- A vegetation assessment report that includes:
  - Identification of any native vegetation or other habitat components to be removed or disturbed,
  - The location of all environmental weeds listed in ‘Weeds of the Surf Coast Shire’ (2012) within the patch of vegetation.
  - Recommended measures to suitably protect native vegetation to be retained.
  - A vegetation offset plan that outlines how the loss of biodiversity will be compensated where removal is unavoidable or is not required for the creation of defensible space.

### **Referral of applications**

Applications must be referred in accordance with Section 55 of the Act to the referral authority specified in Clause 66.04 or a schedule to that clause.

#### **4.0 Decision guidelines**

Before deciding on an application, the responsible authority must consider, as appropriate:

- The value and specific qualities of the effected biodiversity asset as defined in the reference document ‘Surf Coast Shire Biodiversity mapping project’ (2014).
- Any relevant Flora and Fauna Guarantee Action Statements and threatening processes.
- The results of any vegetation assessment or survey of the biodiversity assets contained on the site and whether the survey and assessment has been adequately completed by a suitably qualified person, to the satisfaction of the Responsible Authority.
- The reason for removing any remnant vegetation and the practicality of any alternative options which do not require removal of remnant vegetation or other habitat components. Where alternatives exist which do not require the loss of native vegetation or other habitat values these alternatives should be favoured including the removal of vegetation with a lower ecological value (such as weeds, exotics or degraded vegetation).
- The need to retain remnant vegetation and conserve flora and fauna habitats including habitat corridors, dead trees with hollows and biolinks.
- Whether future activities resulting from the approval of a subdivision, use or development could impact on stands of scattered trees, in particular trees containing hollows and whether actions need to be taken to ensure preservation of these stands.
- The quality and extent of the vegetation that is to be removed and how the losses will be offset (unless already stipulated by a referral authority), having regard to;
  - The value of the native vegetation in terms of physical and biological condition, rarity, variety and habitat quality.
  - enhancing the mapped stand of scattered trees primarily through weed removal and / or revegetating within the patch using species from the relevant Ecological Vegetation Class
  - The need to maintain viable examples of vegetation communities.
  - The likely effect of removal, destruction or lopping of native vegetation on resident and migratory fauna and the need to retain trees (alive or dead) with hollows.
  - The merits in requiring fencing to be erected around native vegetation and regeneration areas and/or weed control as part of an offsetting strategy.
  - Whether an agreement under section 173 of the Act, a conservation covenant or other similar control is warranted to ensure the long term viability of native vegetation on the land.

#### **Reference documents**

- Surf Coast Shire Biodiversity Mapping Project, Surf Coast Shire, DEPI and CCMA (2014).
- Weeds of the Surf Coast, Surf Coast Shire (2013).
- Indigenous planting Guide for rural areas within the Surf Coast Shire, (2003)

## APPENDIX 8

### Existing overlay schedules and local policy

- Existing ESO1 (to be modified)
- Existing ESO3 (to be deleted)
- Existing ESO4 (to be deleted)
- Existing ESO5 (to be deleted)
- Existing VPO1 (to be deleted)
- Existing VPO2 (to be deleted)
- Existing VPO3 (to be deleted)
- Existing SLO1 (to be modified)
- Existing Coastal Development Policy (to be modified)