

### EVC/Bioregion Benchmark for Vegetation Quality Assessment

Warrnambool Plain bioregion

EVC 3: Damp Sands Herb-rich Woodland

##### Description:

A low, grassy or bracken-dominated eucalypt forest or open woodland to 15 m tall with a large shrub layer and ground layer rich in herbs, grasses, and orchids. Occurs mainly on flat or undulating areas on moderately fertile, relatively well-drained, deep sandy or loamy topsoils over heavier subsoils (duplex soils).

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| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  15 / ha |

##### Tree Canopy Cover:

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| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus viminalis  Eucalyptus ovata | Manna Gum  Swamp Gum |

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| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 1 | 10% | T |
| Medium Shrub | 3 | 10% | MS |
| Small Shrub | 1 | 1% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 7 | 15% | MH |
| Small or Prostrate Herb | 4 | 5% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Large Non-tufted Graminoid | 2 | 10% | LNG |
| Medium to Small Tufted Graminoid | 4 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Ground Fern | 1 | 10% | GF |
| Bryophytes/Lichens | na | 10 % | BL |

Ecological Vegetation Class bioregion benchmark

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| EVC 3: Damp Sands Herb-rich Woodland - Warrnambool Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Acacia melanoxylon Blackwood  MS Leptospermum continentale Prickly Tea-tree  MS Banksia marginata Silver Banksia  MS Epacris impressa Common Heath  MS Acacia verticillata Prickly Moses  SS Hibbertia stricta s.l. Upright Guinea-flower  PS Astroloma humifusum Cranberry Heath  PS Acrotriche serrulata Honey-pots  LH Senecio glomeratus Annual Fireweed  LH Wahlenbergia gymnoclada Naked Bluebell  MH Gonocarpus tetragynus Common Raspwort  MH Hypericum gramineum Small St John's Wort  MH Lagenophora stipitata Common Bottle-daisy  SH Oxalis exilis Shady Wood-sorrel  SH Hydrocotyle laxiflora Stinking Pennywort  SH Kennedia prostrata Running Postman  SH Solenogyne dominii Smooth Solenogyne  LTG Juncus procerus Tall Rush  LTG Deyeuxia quadriseta Reed Bent-grass  LNG Lepidosperma longitudinale Pithy Sword-sedge  LNG Baumea rubiginosa s.l. Soft Twig-rush  MTG Poa rodwayi Velvet Tussock-grass  MTG Lomandra filiformis Wattle Mat-rush  MTG Dianella tasmanica Tasman Flax-lily  MTG Themeda triandra Kangaroo Grass  MNG Microlaena stipoides var. stipoides Weeping Grass  SC Comesperma volubile Love Creeper  **Recruitment:**  Continuous  **Organic Litter:**  40 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Cirsium vulgare Spear Thistle high high MH Hypochoeris radicata Cat's Ear high low  MH Centaurium erythraea Common Centaury low low  MH Anagallis arvensis Pimpernel low low  LNG Holcus lanatus Yorkshire Fog high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 8: Wet Heathland

##### Description:

A low, generally treeless heathland, although sometimes emergent eucalypts may be present. Occurs on lower slopes, flats or depressions, which are infertile and subjected to prolonged water logging. Understorey is often dominated a range of sedges, grasses and shrubs.

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| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 7 | 40% | MS |
| Small Shrub | 6 | 15% | SS |
| Prostrate Shrub | 1 | 5% | PS |
| Medium Herb | 3 | 5% | MH |
| Small Herb | 2 | 1% | SH |
| Large Tufted Graminoid | 2 | 15% | LTG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 10% | MNG |
| Ground Fern | 2 | 5% | GF |
| Bryophytes/Lichens | na | 20% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Melaleuca squarrosa | **Common Name**  Scented Paperbark |
| MS | Leptospermum continentale | Prickly Tea-tree |
| MS | Banksia marginata | Silver Banksia |
| MS | Epacris impressa | Common Heath |
| SS | Leucopogon australis | Spike Beard-heath |
| SS | Tetratheca ciliata | Pink-bells |
| SS | Dillwynia glaberrima | Smooth Parrot-pea |
| SS | Amperea xiphoclada var. xiphoclada | Broom Spurge |
| PS | Xanthosia dissecta s.l. | Cut-leaf Xanthosia |
| PS | Acrotriche serrulata | Honey-pots |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Selaginella uliginosa | Swamp Selaginella |
| MH | Drosera peltata ssp. auriculata | Tall Sundew |
| MH | Acianthus spp. | Mosquito Orchid |
| SH | Goodenia lanata | Trailing Goodenia |
| LTG | Xanthorrhoea australis | Austral Grass-tree |
| LTG | Gymnoschoenus sphaerocephalus | Button Grass |
| LTG | Gahnia sieberiana | Red-fruit Saw-sedge |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| MTG | Lepidosperma filiforme | Common Rapier-sedge |
| MTG | Stylidium graminifolium s.s. | Grass Trigger-plant |
| MNG | Empodisma minus | Spreading Rope-rush |
| MNG | Schoenus lepidosperma | Slender Bog-sedge |
| MNG | Tetrarrhena distichophylla | Hairy Rice-grass |
| MNG | Hypolaena fastigiata | Tassel Rope-rush |
| GF | Lindsaea linearis | Screw Fern |
| GF | Pteridium esculentum | Austral Bracken |
| GF | Lycopodium deuterodensum | Bushy Clubmoss |
| SC | Cassytha pubescens s.s. | Downy Dodder-laurel |

##### Recruitment:

Episodic/Fire. Desirable period between disturbances is 30 years.

##### Organic Litter:

20% cover

##### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

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| EVC 8: Wet Heathland - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 10: Estuarine Wetland

##### Description:

Grows on anaerobic peat-rich muds on the edges of estuarine waterbodies such as creeks, rivers and lagoons with intermediate salinity conditions. Vegetation is determined by fluctuating salinity, which varies in time from occasionally fresh to brackish or occasionally saline according to river flood and marine tide events. Dominated by graminoids and halophytic herbs and often fringed by a tall scrub layer of Swamp Paperbark Melaleuca ericifolia at the landward edge.

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| **Life Forms: Life form** Medium Herb | **#Spp**  2 | **%Cover**  25% | **LF code**  MH |
| Small or Prostrate Herb | 1 | 10% | SH |
| Large Tufted Graminoid | 1 | 10% | LTG |
| Medium to Small Tufted Graminoid | 1 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 20% | MNG |
| **Total understorey projective foliage cover** |  | **70%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MH | **Species typical of at least part of EVC range**  Samolus repens | **Common Name**  Creeping Brookweed |
| MH | Sarcocornia quinqueflora ssp. quinqueflora | Beaded Glasswort |
| SH | Leptinella longipes | Coast Cotula |
| LTG | Gahnia filum | Chaffy Saw-sedge |
| LNG | Juncus kraussii ssp. australiensis | Sea Rush |
| MTG | Poa poiformis | Coast Tussock-grass |
| MNG | Distichlis distichophylla | Australian Salt-grass |
| MNG | Schoenoplectus pungens | Sharp Club-sedge |
| MNG | Apodasmia brownii | Coarse Twine-rush |
| MNG | Baumea juncea | Bare Twig-sedge |
| SC | Calystegia sepium | Large Bindweed |

##### Recruitment:

Episodic/Flood: desirable period of disturbance is every five years

##### Organic Litter:

10% cover

##### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

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| EVC 10: Estuarine Wetland - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 16: Lowland Forest

##### Description:

Open forest to 25 m tall characterised by the diversity of species and lifeforms in each stratum. Includes a variety of heathy understorey shrubs. It grows on a wide variety of geology and soils.

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| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  20 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 30% | Eucalyptus baxteri s.l.  Eucalyptus obliqua Eucalyptus ovata | Brown Stringybark  Messmate Stringybark Swamp Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 8 | 25% | MS |
| Small Shrub | 3 | 5% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Ground Fern | 2 | 10% | GF |
| Scrambler or Climber | 2 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **80%** |  |

Ecological Vegetation Class bioregion benchmark

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| --- | --- |
| EVC 16: Lowland Forest - Warrnambool Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Acacia melanoxylon Blackwood  MS Leptospermum continentale Prickly Tea-tree  MS Banksia marginata Silver Banksia  MS Acacia verticillata Prickly Moses  MS Acacia mucronata ssp. longifolia Narrow-leaf Wattle  SS Tetratheca ciliata Pink-bells  SS Amperea xiphoclada var. xiphoclada Broom Spurge  PS Acrotriche serrulata Honey-pots  LH Pterostylis longifolia s.l. Tall Greenhood  LH Dipodium punctatum s.l. Hyacinth Orchid  MH Viola hederacea sensu Willis (1972) Ivy-leaf Violet  MH Drosera peltata ssp. auriculata Tall Sundew  MH Gonocarpus tetragynus Common Raspwort  MH Helichrysum scorpioides Button Everlasting  SH Goodenia lanata Trailing Goodenia  LTG Lomandra longifolia Spiny-headed Mat-rush  LTG Gahnia sieberiana Red-fruit Saw-sedge  LTG Lepidosperma elatius Tall Sword-sedge  LNG Tetrarrhena juncea Forest Wire-grass  MTG Lomandra filiformis Wattle Mat-rush  MTG Poa sieberiana Grey Tussock-grass  MTG Lepidosperma laterale Variable Sword-sedge  MNG Microlaena stipoides var. stipoides Weeping Grass  GF Pteridium esculentum Austral Bracken  GF Lindsaea linearis Screw Fern  SC Cassytha pubescens s.s. Downy Dodder-laurel  SC Billardiera scandens Common Apple-berry  SC Clematis aristata Mountain Clematis  **Recruitment:**  Continuous  **Organic Litter:**  40% cover  **Logs:**  20 m/0.1 ha.  **Weediness:**  There are no consistent weeds in this EVC.  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 18: Riparian Forest

##### Description:

A tall forest to 30 m tall along river banks and associated alluvial terraces with occasional occurrences in the heads of gullies leading into creeks and rivers. Soils are fertile alluvium, regularly inundated and permanently moist. Dominated by tall eucalypts, but also has an open to sparse secondary tree layer of wattles and scattered dense patches of shrubs, ferns, grasses and herbs.

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| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  80 cm | **#/ha**  20 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 40% | Eucalyptus viminalis | Manna Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 3 | 15% | T |
| Medium Shrub | 4 | 15% | MS |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 4 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Ground Fern | 5 | 30% | GF |
| Tree Fern | 1 | 5% | TRF |
| Epiphyte | 2 | 1% | EP |
| Scrambler or Climber | 2 | 5% | SC |
| Bryophytes/Lichens | na | 20% | BL |

Ecological Vegetation Class bioregion benchmark

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| --- | --- |
| EVC 18: Riparian Forest - Warrnambool Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Acacia melanoxylon Blackwood  T Pomaderris aspera Hazel Pomaderris  T Pittosporum bicolor Banyalla  MS Coprosma quadrifida Prickly Currant-bush  MS Melaleuca squarrosa Scented Paperbark  MS Hedycarya angustifolia Austral Mulberry  MS Solanum aviculare Kangaroo Apple  LH Urtica incisa Scrub Nettle  LH Senecio minimus Shrubby Fireweed  MH Scutellaria humilis Dwarf Skullcap  MH Lobelia anceps Angled Lobelia  MH Australina pusilla ssp. muelleri Shade Nettle  MH Hydrocotyle hirta Hairy Pennywort  SH Lobelia pedunculata s.l. Matted Pratia  SH Oxalis exilis Shady Wood-sorrel  SH Dichondra repens Kidney-weed  SH Callitriche muelleri Round Water-starwort  LTG Gahnia sieberiana Red-fruit Saw-sedge  LTG Carex appressa Tall Sedge  LTG Lepidosperma laterale var. majus Variable Sword-sedge  LTG Baloskion tetraphyllum ssp. tetraphyllum Tassel Cord-rush  LNG Tetrarrhena juncea Forest Wire-grass  MTG Juncus pauciflorus Loose-flower Rush  MTG r Isolepis wakefieldiana Tufted Club-sedge  MNG Microlaena stipoides var. stipoides Weeping Grass  GF Blechnum nudum Fishbone Water-fern  GF Hypolepis rugosula Ruddy Ground-fern  GF Gleichenia microphylla Scrambling Coral-fern  GF Blechnum wattsii Hard Water-fern  TRF Todea barbara Austral King-fern  TRF Dicksonia antarctica Soft Tree-fern  EP Microsorum pustulatum ssp. pustulatum Kangaroo Fern  EP Hymenophyllum cupressiforme Common Filmy Fern  EP Amyema pendula Drooping Mistletoe  SC Parsonsia brownii Twining Silkpod  SC Clematis aristata Mountain Clematis  SC Calystegia marginata Forest Bindweed  **Recruitment:**  Continuous  **Organic Litter:**  50 % cover  **Logs:**  30 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Rubus fruticosus spp. agg. Blackberry high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 23: Herb-rich Foothill Forest

##### Description:

Occurs on relatively fertile, moderately well-drained soils on an extremely wide range of geological types and in areas of moderate to high rainfall. Occupies easterly and southerly aspects mainly on lower slopes and in gullies. A medium to tall open forest or woodland to 25 m tall with a small tree layer over a sparse to dense shrub layer. A high cover and diversity of herbs and grasses in the ground layer characterise this EVC.

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| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  20 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 40% | Eucalyptus obliqua  Eucalyptus ovata | Messmate Stringybark  Swamp Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 5 | 15% | MS |
| Small Shrub | 2 | 1% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 10 | 20% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Large Non-tufted Graminoid | 2 | 10% | LNG |
| Medium to Small Tufted Graminoid | 5 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Ground Fern | 3 | 10% | GF |
| Scrambler or Climber | 2 | 1% | SC |
| Bryophytes/Lichens | na | 20% | BL |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 23: Herb-rich Foothill Forest - Warrnambool Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Acacia melanoxylon Blackwood  MS Leptospermum continentale Prickly Tea-tree  MS Banksia marginata Silver Banksia  MS Acacia verticillata Prickly Moses  MS Acacia mucronata ssp. longifolia Narrow-leaf Wattle  SS Tetratheca ciliata Pink-bells  SS Amperea xiphoclada var. xiphoclada Broom Spurge  PS Acrotriche serrulata Honey-pots  PS Bossiaea prostrata Creeping Bossiaea  PS Acrotriche prostrata Trailing Ground-berry  LH Pterostylis longifolia s.l. Tall Greenhood  MH Gonocarpus tetragynus Common Raspwort  MH Drosera peltata ssp. auriculata Tall Sundew  MH Helichrysum scorpioides Button Everlasting  MH Viola hederacea sensu Entwisle (1996) Ivy-leaf Violet  SH Goodenia lanata Trailing Goodenia  SH Lobelia pedunculata s.l. Matted Pratia  SH Oxalis exilis Shady Wood-sorrel  SH Galium ciliare Hairy Bedstraw  LTG Lepidosperma laterale var. majus Variable Sword-sedge  LTG Austrostipa pubinodis Tall Spear-grass  LNG Tetrarrhena juncea Forest Wire-grass  MTG Dianella revoluta s.s. Black-anther Flax-lily  MTG Lomandra filiformis ssp. filiformis Wattle Mat-rush  MTG Poa sieberiana var. hirtella Grey Tussock-grass  MTG Lomandra filiformis ssp. coriacea Wattle Mat-rush  MNG Microlaena stipoides var. stipoides Weeping Grass  GF Pteridium esculentum Austral Bracken  GF Lindsaea linearis Screw Fern  GF Adiantum aethiopicum Common Maidenhair  SC Cassytha pubescens s.s. Downy Dodder-laurel  SC Billardiera scandens Common Apple-berry  SC Clematis aristata Mountain Clematis  **Recruitment:**  Continuous  **Organic Litter:**  40 % cover  **Logs:**  20 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MH Hypochoeris radicata Cat's Ear high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 45: Shrubby Foothill Forest

##### Description:

Open eucalypt forest to 25 m tall occurring on exposed aspects and slight to moderate slopes. The understorey is characterised by a distinctive middle strata dominated by a diversity of narrow-leaved shrubs and a paucity of ferns, graminoids and herbs in

the ground stratum.

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| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  20 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 40% | Eucalyptus obliqua  Eucalyptus baxteri s.l. Eucalyptus cypellocarpa  Eucalyptus ovata | Messmate Stringybark  Brown Stringybark Mountain Grey Gum  Swamp Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 7 | 40% | MS |
| Small Shrub | 2 | 10% | SS |
| Medium Herb | 4 | 5% | MH |
| Small or Prostrate Herb | 1 | 1% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 10% | LNG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Ground Fern | 3 | 10% | GF |
| Scrambler or Climber | 2 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |
| **LF Code**  T | **Species typical of at least part of EVC range**  Notelaea ligustrina | **Common Name**  Privet Mock-olive |
| MS | Goodenia ovata | Hop Goodenia |
| MS | Acacia verticillata | Prickly Moses |
| MS | Leptospermum continentale | Prickly Tea-tree |
| MS | Acacia mucronata ssp. longifolia | Narrow-leaf Wattle |
| SS | Amperea xiphoclada var. xiphoclada | Broom Spurge |
| SS | Pultenaea stricta | Rigid Bush-pea |
| SS | Tetratheca ciliata | Pink-bells |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Drosera peltata ssp. auriculata | Tall Sundew |
| MH | Gonocarpus humilis | Shade Raspwort |
| SH | Goodenia lanata | Trailing Goodenia |
| LTG | Gahnia sieberiana | Red-fruit Saw-sedge |
| LTG | Lepidosperma laterale var. majus | Variable Sword-sedge |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| LNG | Tetrarrhena juncea | Forest Wire-grass |
| MNG | Tetrarrhena distichophylla | Hairy Rice-grass |
| MNG | Poa tenera | Slender Tussock-grass |
| GF | Pteridium esculentum | Austral Bracken |
| GF | Calochlaena dubia | Common Ground-fern |
| GF | Lindsaea linearis | Screw Fern |
| SC | Cassytha pubescens s.s. | Downy Dodder-laurel |
| SC | Billardiera scandens | Common Apple-berry |
| SC | Clematis aristata | Mountain Clematis |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 45: Shrubby Foothill Forest - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 30 years.  **Organic Litter:**  40 % cover  **Logs:**  20 m/0.1 ha.  **Weediness:**  There are no consistent weeds in this EVC.  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 48: Heathy Woodland

##### Description:

Spans a variety of geologies but is generally associated with nutrient-poor soils including deep uniform sands (aeolian or outwash) and Tertiary sand/clay which has been altered to form quartzite gravel. Eucalypt-dominated low woodland to 10 m tall lacking a secondary tree layer and generally supporting a diverse array of narrow or ericoid-leaved shrubs except where frequent fire has reduced this to a dense cover of bracken. Geophytes and annuals can be quite common but the ground cover is normally fairly sparse.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  60 cm | **#/ha**  15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus obliqua | Messmate Stringybark |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Medium Shrub | 7 | 30% | MS |
| Small Shrub | 4 | 5% | SS |
| Prostrate Shrub | 2 | 1% | PS |
| Medium Herb | 4 | 10% | MH |
| Small or Prostrate Herb | 1 | 1% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 1% | LNG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 5% | MNG |
| Ground Fern | 2 | 5% | GF |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **75%** |  |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 48: Heathy Woodland - Warrnambool Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  MS Leptospermum continentale Prickly Tea-tree  MS Banksia marginata Silver Banksia  MS Epacris impressa Common Heath  MS Leptospermum myrsinoides Heath Tea-tree  SS Tetratheca ciliata Pink-bells  SS Platylobium obtusangulum Common Flat-pea  SS Dillwynia glaberrima Smooth Parrot-pea  SS Amperea xiphoclada var. xiphoclada Broom Spurge  PS Acrotriche serrulata Honey-pots  PS Xanthosia dissecta s.l. Cut-leaf Xanthosia  MH Gonocarpus tetragynus Common Raspwort  MH Viola hederacea sensu Willis (1972) Ivy-leaf Violet  MH Drosera peltata ssp. peltata Pale Sundew  MH Burchardia umbellata Milkmaids  SH Goodenia lanata Trailing Goodenia  LTG Xanthorrhoea australis Austral Grass-tree  LNG Tetrarrhena juncea Forest Wire-grass  MTG Poa sieberiana Grey Tussock-grass  MTG Patersonia fragilis Short Purple-flag  MTG Lepidosperma concavum Sandhill Sword-sedge  MTG Dianella revoluta s.l. Black-anther Flax-lily  MNG Empodisma minus Spreading Rope-rush  MNG Tetrarrhena distichophylla Hairy Rice-grass  MNG Hypolaena fastigiata Tassel Rope-rush  GF Pteridium esculentum Austral Bracken  GF Lindsaea linearis Screw Fern  SC Cassytha glabella Slender Dodder-laurel  **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 20 years.  **Organic Litter:**  40 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  There are no consistent weeds in this EVC.  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 53: Swamp Scrub

#### Description:

Closed scrub to 8 m tall at low elevations on alluvial deposits along streams or on poorly drained sites with high nutrient and water availability. Soils vary from organic loams to fine silts and peats which are inundated during the wetter months of the year and is dominated by either Woolly Tea-tree Leptospermun lanigerum and/or Paperbarks Melaleuca species which often form a dense impenetrable thicket, out-competing other species. Emergent trees (e.g. Swamp Gum Eucalyptus ovata) may some times be present. Where light penetrates to ground level, a moss/lichen/liverwort herbaceous ground cover is often present.

#### Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 50% | Leptospermum lanigerum  Melaleuca squarrosa Acacia melanoxylon | Woolly Tea-tree  Scented Paperbark Blackwood |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 2 | 10% | MS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 1 | 5% | MH |
| Small or Prostrate Herb | 1 | 5% | SH |
| Large Tufted Graminoid | 3 | 30% | LTG |
| Large Non-tufted Graminoid | 1 | 10% | LNG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Ground Fern | 2 | 5% | GF |
| Scrambler or Climber | 1 | 5% | SC |
| Bryophytes/Lichens | na | 20% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum scoparium | **Common Name**  Manuka |
| MS | Melaleuca decussata | Totem-poles |
| SS | Leucopogon virgatus | Common Beard-heath |
| LH | Persicaria decipiens | Slender Knotweed |
| LH | Urtica incisa | Scrub Nettle |
| LH | Senecio odoratus var. odoratus | Scented Groundsel |
| MH | Hydrocotyle pterocarpa | Wing Pennywort |
| SH | Dichondra repens | Kidney-weed |
| LTG | Gahnia trifida | Coast Saw-sedge |
| LTG | Gahnia sieberiana | Red-fruit Saw-sedge |
| LTG | Gahnia clarkei | Tall Saw-sedge |
| LTG | Carex appressa | Tall Sedge |
| LNG | Phragmites australis | Common Reed |
| MNG | Schoenus lepidosperma | Slender Bog-sedge |
| GF | Blechnum minus | Soft Water-fern |
| SC | Muehlenbeckia adpressa | Climbing Lignum |

**Recruitment:**

Continuous

#### Organic Litter:

40 % cover

#### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 53: Swamp Scrub - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 55: Plains Grassy Woodland

##### Description:

An open, eucalypt woodland to 15 m tall. Occupies poorly drained, fertile soils on flat or gently undulating plains at low elevations. The understorey consists of a few sparse shrubs over a species-rich grassy and herbaceous ground layer.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  80 cm | **#/ha**  8 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 10% | Eucalyptus camaldulensis | River Red Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 3 | 10% | MS |
| Small Shrub | 2 | 1% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 8 | 15% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Medium to Small Tufted Graminoid | 12 | 45% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Acacia pycnantha | **Common Name**  Golden Wattle |
| MS | Acacia paradoxa | Hedge Wattle |
| SS | Pimelea humilis | Common Rice-flower |
| PS | Astroloma humifusum | Cranberry Heath |
| PS | Bossiaea prostrata | Creeping Bossiaea |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Acaena echinata | Sheep's Burr |
| SH | Dichondra repens | Kidney-weed |
| SH | Hydrocotyle laxiflora | Stinking Pennywort |
| LTG | Austrostipa mollis | Supple Spear-grass |
| LTG | Austrostipa bigeniculata | Kneed Spear-grass |
| MTG | Themeda triandra | Kangaroo Grass |
| MTG | Elymus scaber var. scaber | Common Wheat-grass |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MTG | Austrodanthonia racemosa var. racemosa | Stiped Wallaby-grass |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |

**Recruitment:**

Continuous

##### Organic Litter:

10 % cover

##### Logs:

10 m/0.1 ha.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 55: Plains Grassy Woodland - Warrnambool Plain bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Lycium ferocissimum African Box-thorn high high LH Cirsium vulgare Spear Thistle high high  LH Sonchus oleraceus Common Sow-thistle high low  LH Plantago lanceolata Ribwort high low  MH Hypochoeris radicata Cat's Ear high low LNG Holcus lanatus Yorkshire Fog high high  MTG Vulpia bromoides Squirrel-tail Fescue high low  MTG Romulea rosea Onion Grass high low  MTG Briza minor Lesser Quaking-grass high low  MTG Briza maxima Large Quaking-grass high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 83: Swampy Riparian Woodland

Woodland to 15 m tall generally occupying low energy streams of the foothills and plains. The lower strata are variously locally dominated by a range of large and medium shrub species on the stream levees in combination with large tussock grasses and sedges in the ground layer.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  10 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus ovata | Swamp Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 2 | 5% | MS |
| Large Herb | 5 | 10% | LH |
| Medium Herb | 9 | 20% | MH |
| Small or Prostrate Herb | 4 | 10% | SH |
| Large Tufted Graminoid | 5 | 20% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 8 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 1% | MNG |
| Ground Fern | 1 | 1% | GF |
| Scrambler or Climber | 2 | 5% | SC |
| Bryophytes/Lichens | na | 20% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia melanoxylon | **Common Name**  Blackwood |
| T | Acacia mearnsii | Black Wattle |
| MS | Olearia glandulosa | Swamp Daisy-bush |
| MS | Acacia verticillata ssp. verticillata | Prickly Moses |
| MS | Leptospermum lanigerum | Woolly Tea-tree |
| MS | Ozothamnus rosmarinifolius | Rosemary Everlasting |
| LH | Senecio minimus | Shrubby Fireweed |
| LH | Persicaria praetermissa | Spotted Knotweed |
| LH | Epilobium billardierianum | Variable Willow-herb |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| MH | Geranium potentilloides | Cinquefoil Cranesbill |
| MH | Oxalis exilis | Shady Wood-sorrel |
| MH | Euchiton involucratus s.l. | Star Cudweed |
| SH | Leptinella reptans s.l. | Creeping Cotula |
| SH | Hydrocotyle sibthorpioides | Shining Pennywort |
| SH | Hydrocotyle hirta | Hairy Pennywort |
| SH | Dichondra repens | Kidneyweed |
| LTG | Juncus procerus | Tall Rush |
| LTG | Cyperus lucidus | Leafy Flat-sedge |
| LTG | Juncus pallidus | Pale Rush |
| LTG | Poa labillardierei | Common Tussock-grass |
| MTG | Juncus planifolius | Broad-leaf Rush |
| MTG | Juncus pauciflorus | Loose-flower Rush |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| MNG | Hemarthria uncinata var. uncinata | Mat Grass |
| MNG | Triglochin striatum | Streaked Arrowgrass |
| GF | Pteridium esculentum | Austral Bracken |
| SC | Calystegia sepium | Large Bindweed |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 83: Swampy Riparian Woodland - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20 % cover  **Logs:**  20 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Rubus sp. aff. armeniacus Blackberry high high LH Sonchus asper s.l. Rough Sow-thistle high low  LH Cirsium vulgare Spear Thistle high high  LH Plantago lanceolata Ribwort high low  LH Parentucellia viscosa Yellow Bartsia high low  MH Lotus corniculatus Bird's-foot Trefoil high low  MH Hypochoeris radicata Cat's Ear high low  MH Acetosella vulgaris Sheep Sorrel high low MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low  MH Anagallis arvensis Pimpernel high low SH Trifolium repens var. repens White Clover high low  LNG Holcus lanatus Yorkshire Fog high high MTG Anthoxanthum odoratum Sweet Vernal-grass high high  MTG Lolium perenne Perennial Rye-grass high low  MTG Juncus articulatus Jointed Rush high high MTG Bromus hordeaceus ssp. hordeaceus Soft Brome high low  MNG Vulpia spp. Fescue high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Warrnambool Plain bioregion

EVC 125: Plains Grassy Wetland

###### Description:

This EVC is usually treeless, but in some instances can include sparse River Red Gum Eucalyptus camaldulensis or Swamp Gum

Eucalyptus ovata. A sparse shrub component may also be present. The characteristic ground cover is dominated by grasses and small sedges and herbs. The vegetation is typically species-rich on the outer verges but is usually species-poor in the wetter central areas.

|  |  |  |  |
| --- | --- | --- | --- |
| Life Forms: Life form | #Spp | %Cover | LF code |
| Large Herb | 5 | 5% | LH |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 3 | 10% | SH |
| Large Tufted Graminoid | 3 | 15% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 8 | 30% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| LF Code | Species typical of at least part of EVC range | Common Name |
| LH | Epilobium billardierianum | Variable Willow-herb |
| LH | Villarsia reniformis | Running Marsh-flower |
| LH | Epilobium billardierianum ssp. cinereum | Grey Willow-herb |
| MH | Potamogeton tricarinatus s.l. | Floating Pondweed |
| MH | Lilaeopsis polyantha | Australian Lilaeopsis |
| MH | Utricularia dichotoma s.l. | Fairies' Aprons |
| SH | Eryngium vesiculosum | Prickfoot |
| SH | Neopaxia australasica | White Purslane |
| SH | Lobelia pratioides | Poison Lobelia |
| LTG | Juncus flavidus | Gold Rush |
| LTG | Deyeuxia quadriseta | Reed Bent-grass |
| LTG | Amphibromus nervosus | Common Swamp Wallaby-grass |
| LTG | Poa labillardierei | Common Tussock-grass |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| MTG | Glyceria australis | Australian Sweet-grass |
| MTG | Juncus holoschoenus | Joint-leaf Rush |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eleocharis pusilla | Small Spike-sedge |

###### Recruitment:

Episodic/Flood. Desirable period between disturbances is 5 years.

###### Organic Litter:

20% cover

###### Logs:

5 m/0.1 ha.(where trees are overhanging the wetland)

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 125: Plains Grassy Wetland - Warrnambool Plain bioregion | |
|  | Weediness:  LF Code Typical Weed Species Common Name Invasive Impact  LH Cirsium vulgare Spear Thistle high high MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low MH Hypochoeris radicata Cat's Ear high low  LTG Phalaris aquatica Toowoomba Canary-grass high high  LNG Holcus lanatus Yorkshire Fog high high  MTG Briza minor Lesser Quaking-grass high low  MTG Romulea rosea Onion Grass high low  TTG Cyperus tenellus Tiny Flat-sedge high low  Published by the Victorian Government Department of Sustainability and Environment November 2007  © The State of Victoria Department of Sustainability and Environment 2007  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 155: Bird Colony Succulent Herbland

##### Description:

A closed, succulent herbland (to open herbland during bird nesting season) occurring on coastal sand. Almost entirely restricted to offshore seabird breeding colonies. The nutrient enriched sandy substrates are dominated by the succulent herb Bower Spinach Tetragonia implexicoma and other succulent herbs.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 1 | 30% | MS |
| Medium Herb | 2 | 5% | MH |
| Small Herb | 2 | 20% | SH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Scrambler/Climber | 2 | 40% | SC |
| **Total understorey projective foliage cover** |  | **80%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Rhagodia candolleana ssp. candolleana | **Common Name**  Seaberry Saltbush |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| SH | Carpobrotus rossii | Karkalla |
| SH | Disphyma crassifolium ssp. clavellatum | Rounded Noon-flower |
| LTG | Austrostipa flavescens | Coast Spear-grass |
| SC | Tetragonia implexicoma | Bower Spinach |
| SC | Clematis microphylla | Small-leaved Clematis |

##### Recruitment:

Continuous

##### Organic Litter:

10% cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  LH MH MH MTG LNG | Sonchus oleraceus  Diplotaxis muralis Polycarpon tetraphyllum Arctotheca calendula Bromus diandrus Ammophila arenaria | Common Sow-thistle  Wall Rocket  Four-leaved Allseed Cape Weed  Great Brome Marram Grass | high  high high high high high | low  low low low high low |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 155: Bird Colony Succulent Herbland - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 160: Coastal Dune Scrub

##### Description:

Coastal Dune Scrub occupies the secondary dunes along ocean and bay beaches and lake shores. Closed scrub to 3 m tall with occasional emergent trees on siliceous and calcareous sands that are subject to high levels of saltspray and continuous disturbance from onshore winds.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 7 | 50% | MS |
| Small Shrub | 1 | 1% | SS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 7 | 15% | MH |
| Small or Prostrate Herb | 3 | 10% | SH |
| Medium to Small Tufted Graminoid | 2 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Scrambler or Climber | 3 | 5% | SC |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  MS |  | **Species typical of at least part of EVC range**  Rhagodia candolleana ssp. candolleana | **Common Name**  Seaberry Saltbush |
| MS |  | Acacia longifolia ssp. sophorae | Coast Wattle |
| MS |  | Leucopogon parviflorus | Coast Beard-heath |
| MS |  | Olearia axillaris | Coast Daisy-Bush |
| LH |  | Senecio pinnatifolius | Variable Groundsel |
| MH | k | Stackhousia spathulata | Coast Stackhousia |
| SH |  | Carpobrotus rossii | Karkalla |
| SH |  | Apium prostratum ssp. prostratum | Sea Celery |
| SH |  | Threlkeldia diffusa | Coast Bonefruit |
| MTG |  | Lachnagrostis billardierei ssp. billardierei | Coast Blown-grass |
| MNG |  | Ficinia nodosa | Knobby Club-sedge |
| MNG |  | Schoenus nitens | Shiny Bog-sedge |
| SC |  | Tetragonia implexicoma | Bower Spinach |
| SC |  | Clematis microphylla var. microphylla | Small-leaved Clematis |

##### Recruitment:

Episodic/Fire. Desirable period between disturbances is 30 years.

##### Organic Litter:

40 % cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| MS MS  LH LH  LH LH MH  MH MH  LNG MTG  MNG SC | Lycium ferocissimum Rhamnus alaternus  Sonchus oleraceus Sonchus asper s.l.  Senecio elegans Melilotus indicus Hypochoeris radicata  Cerastium glomeratum s.l.  Galium murale Ammophila arenaria  Catapodium rigidum  Lagurus ovatus Asparagus asparagoides | African Box-thorn Italian Buckthorn  Common Sow-thistle Rough Sow-thistle  Purple Groundsel Sweet Melilot Cat's Ear  Common Mouse-ear Chickweed Small Goosegrass  Marram Grass Fern Grass  Hare's-tail Grass Bridal Creeper | high high  high high  high high high  high high  high high  high high | high high  low low  high low low  low low  high low  low high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 160: Coastal Dune Scrub - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 161: Coastal Headland Scrub

##### Description:

Scrub or shrubland to 0.5 m tall on steep, rocky coastal headlands often associated with cliffs exposed to the stresses of extreme salt-laden winds and salt spray from the south west. Occurs on shallow sands in association with rocky sections of the coast.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 50% | MS |
| Small Shrub | 2 | 10% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 4 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 1% | LNG |
| Medium to Small Tufted Graminoid | 5 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leucopogon parviflorus | **Common Name**  Coast Beard-heath |
| MS | Leptospermum scoparium | Manuka |
| MS | Banksia marginata | Silver Banksia |
| MS | Acacia verticillata | Prickly Moses |
| SS | Leucophyta brownii | Cushion Bush |
| SS | Acrotriche affinis | Ridged Ground-berry |
| SS | Pultenaea stricta | Rigid Bush-pea |
| PS | Acrotriche serrulata | Honey-pots |
| PS | Bossiaea prostrata | Creeping Bossiaea |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Gonocarpus tetragynus | Common Raspwort |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Oxalis corniculata s.l. | Yellow Wood-sorrel |
| LTG | Gahnia trifida | Coast Saw-sedge |
| MTG | Poa poiformis var. poiformis | Coast Tussock-grass |
| MTG | Schoenus apogon | Common Bog-sedge |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Carex breviculmis | Common Grass-sedge |
| MNG | Ficinia nodosa | Knobby Club-sedge |
| MNG | Distichlis distichophylla | Australian Salt-grass |

##### Recruitment:

Continuous

##### Organic Litter:

40 % cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH MH  MH MH  LNG | Sonchus oleraceus Hypochoeris radicata  Centaurium erythraea Anagallis arvensis  Holcus lanatus | Common Sow-thistle Cat's Ear  Common Centaury Pimpernel  Yorkshire Fog | high high  high high  high | low low  low low  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 161: Coastal Headland Scrub - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 163: Coastal Tussock Grassland

##### Description:

A tussock grassland that may contain emergent shrubs. Occurs on exposed coastal cliffs and bluffs. Soils are saline and the strong salt-laden winds preclude tree growth.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 20% | MS |
| Small Shrub | 2 | 15% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 1 | 10% | LTG |
| Medium to Small Tufted Graminoid | 5 | 25% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leucopogon parviflorus | **Common Name**  Coast Beard-heath |
| MS | Leptospermum scoparium | Manuka |
| MS | Banksia marginata | Silver Banksia |
| MS | Olearia axillaris | Coast Daisy-Bush |
| SS | Acrotriche affinis | Ridged Ground-berry |
| SS | Hibbertia aspera s.l. | Rough Guinea-flower |
| SS | Pultenaea stricta | Rigid Bush-pea |
| PS | Astroloma humifusum | Cranberry Heath |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Senecio spathulatus s.l. | Dune Groundsel |
| MH | Brachyscome parvula | Coast Daisy |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Oxalis corniculata s.l. | Yellow Wood-sorrel |
| SH | Dichondra repens | Kidney-weed |
| LTG | Gahnia trifida | Coast Saw-sedge |
| MTG | Poa poiformis | Coast Tussock-grass |
| MTG | Schoenus apogon | Common Bog-sedge |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Lepidosperma gladiatum | Coast Sword-sedge |
| MNG | Baumea juncea | Bare Twig-sedge |
| MNG | Distichlis distichophylla | Australian Salt-grass |

##### Recruitment:

Continuous

##### Organic Litter:

20% cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  LH MH MH MH MH MH | Sonchus oleraceus  Cirsium vulgare Hypochoeris radicata  Anagallis arvensis Centaurium erythraea  Leontodon taraxacoides ssp. taraxacoides Plantago coronopus | Common Sow-thistle  Spear Thistle Cat's Ear Pimpernel  Common Centaury Hairy Hawkbit  Buck's-horn Plantain | high  high high high high high high | low  high low low low low high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 163: Coastal Tussock Grassland - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 165: Damp Heath Scrub

##### Description:

Shrubland to 3 m tall with occasional emergent eucalypts. Occurs on flat to gently sloping terrain, on or near coastal sites. Generally high rainfall and lack of drainage combine to retain high levels of moisture throughout the year.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 6 | 50% | MS |
| Small Shrub | 3 | 5% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Medium Herb | 4 | 5% | MH |
| Small or Prostrate Herb | 2 | 1% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Medium to Small Tufted Graminoid | 4 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum continentale | **Common Name**  Prickly Tea-tree |
| MS | Banksia marginata | Silver Banksia |
| MS | Allocasuarina paludosa | Scrub Sheoak |
| MS | Acacia verticillata | Prickly Moses |
| SS | Isopogon ceratophyllus | Horny Cone-bush |
| SS | Pultenaea stricta | Rigid Bush-pea |
| SS | Hibbertia stricta s.l. | Upright Guinea-flower |
| SS | Tetratheca ciliata | Pink-bells |
| PS | Bossiaea prostrata | Creeping Bossiaea |
| PS | Acrotriche serrulata | Honey-pots |
| PS | Xanthosia dissecta s.l. | Cut-leaf Xanthosia |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Drosera peltata ssp. auriculata | Tall Sundew |
| MH | Selaginella uliginosa | Swamp Selaginella |
| LTG | Xanthorrhoea australis | Austral Grass-tree |
| LTG | Gahnia trifida | Coast Saw-sedge |
| MTG | Lepidosperma laterale | Variable Sword-sedge |
| MTG | Patersonia fragilis | Short Purple-flag |
| MTG | Lepidosperma filiforme | Common Rapier-sedge |
| MTG | Schoenus apogon | Common Bog-sedge |
| MNG | Schoenus lepidosperma | Slender Bog-sedge |
| MNG | Empodisma minus | Spreading Rope-rush |
| GF | Lindsaea linearis | Screw Fern |

##### Recruitment:

Episodic/Fire. Desirable period between disturbances is 30 years.

##### Organic Litter:

40% cover

##### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 165: Damp Heath Scrub - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 175: Grassy Woodland

##### Description:

A variable open eucalypt woodland to 15 m tall over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on sites with moderate fertility on gentle slopes or undulating hills on a range of geologies.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus ovata  Eucalyptus radiata s.l.  Eucalyptus viminalis | Swamp Gum  Narrow-leaf Peppermint Manna Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 2 | 10% | MS |
| Small Shrub | 2 | 1% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 8 | 20% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 8 | 45% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 5% | MNG |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Allocasuarina verticillata | **Common Name**  Drooping Sheoak |
| T | Acacia mearnsii | Black Wattle |
| MS | Bursaria spinosa | Sweet Bursaria |
| MS | Cassinia arcuata | Drooping Cassinia |
| MS | Acacia pycnantha | Golden Wattle |
| SS | Pimelea humilis | Common Rice-flower |
| PS | Atriplex semibaccata | Berry Saltbush |
| MH | Acaena echinata | Sheep's Burr |
| MH | Einadia nutans ssp. nutans | Nodding Saltbush |
| SH | Crassula sieberiana | Sieber Crassula |
| SH | Dichondra repens | Kidney-weed |
| MTG | Lomandra filiformis | Wattle Mat-rush |
| MTG | Austrostipa scabra | Rough Spear-grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |
| SC | Clematis microphylla | Small-leaved Clematis |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 175: Grassy Woodland - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Lycium ferocissimum African Box-thorn high high MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low MH Hypochoeris radicata Cat's Ear high low  MH Arctotheca calendula Cape Weed high low  MTG Briza maxima Large Quaking-grass high low  MTG Romulea rosea Onion Grass high low MTG Ehrharta erecta var. erecta Panic Veldt-grass high high  MTG Ehrharta longiflora Annual Veldt-grass high low  MTG Nassella neesiana Chilean Needle-grass high high  MTG Nassella trichotoma Serrated Tussock high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 181: Coast Gully Thicket

##### Description:

Occurs along drainage lines and small creeks close to the coast. The soils are shallow sands grading to clay over limestone. Shrubland/thicket with occasional eucalypts wind pruned to 3 m tall. This EVC is subject to prevailing south-west winds that restrict its height.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 50% | MS |
| Small Shrub | 1 | 5% | SS |
| Medium Herb | 2 | 1% | MH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Ground Fern | 2 | 5% | GF |
| Scrambler or Climber | 2 | 5% | SC |
| Bryophytes/Lichens | na | 10 % | BL |
| **Total understorey projective foliage cover** |  | **60%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum scoparium | **Common Name**  Manuka |
| MS | Leucopogon parviflorus | Coast Beard-heath |
| MS | Leptospermum continentale | Prickly Tea-tree |
| SS | Hibbertia aspera s.l. | Rough Guinea-flower |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Gonocarpus tetragynus | Common Raspwort |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| LTG | Gahnia trifida | Coast Saw-sedge |
| MTG | Poa labillardierei | Common Tussock-grass |
| MTG | Lepidosperma laterale | Variable Sword-sedge |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| GF | Pteridium esculentum | Austral Bracken |
| SC | Cassytha pubescens s.s. | Downy Dodder-laurel |
| SC | Muehlenbeckia adpressa | Climbing Lignum |
| SC | Clematis aristata | Mountain Clematis |

##### Recruitment:

Continuous

##### Organic Litter:

40 % cover

##### Logs:

5 m/0.1 ha. (note: large log class does not apply)

##### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 181: Coast Gully Thicket - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 198: Sedgy Riparian Woodland

##### Description:

Eucalypt forest or woodland to 15 m tall with sedge-dominated understorey. Occurs on flats along low gradient creeks and drainage lines subject to seasonal inundation and waterlogging in moderately fertile habitats.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 20% | Eucalyptus ovata  Eucalyptus obliqua | Swamp Gum  Messmate Stringybark |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 5 | 30% | MS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 7 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 3 | 30% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 1 | 1% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 10% | MNG |
| Ground Fern | 2 | 10% | GF |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 20% | BL |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Melaleuca squarrosa | **Common Name**  Scented Paperbark |
| MS | Bursaria spinosa ssp. spinosa | Sweet Bursaria |
| MS | Coprosma quadrifida | Prickly Currant-bush |
| MS | Ozothamnus ferrugineus | Tree Everlasting |
| SS | Pultenaea stricta | Rigid Bush-pea |
| LH | Villarsia reniformis | Running Marsh-flower |
| LH | Senecio minimus | Shrubby Fireweed |
| MH | Hypericum gramineum | Small St John's Wort |
| MH | Hydrocotyle hirta | Hairy Pennywort |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Lagenophora stipitata | Common Bottle-daisy |
| SH | Leptostigma reptans | Dwarf Nertera |
| SH | Lobelia pedunculata s.l. | Matted Pratia |
| SH | Oxalis exilis | Shady Wood-sorrel |
| SH | Dichondra repens | Kidney-weed |
| LTG | Lepidosperma laterale var. majus | Variable Sword-sedge |
| LTG | Gahnia sieberiana | Red-fruit Saw-sedge |
| LTG | Lomandra longifolia ssp. longifolia | Spiny-headed Mat-rush |
| LNG | Tetrarrhena juncea | Forest Wire-grass |
| MTG | Tetraria capillaris | Hair Sedge |
| MTG | Poa clelandii | Noah's Ark |
| MNG | Tetrarrhena distichophylla | Hairy Rice-grass |
| MNG | Poa tenera | Slender Tussock-grass |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |
| MNG | Empodisma minus | Spreading Rope-rush |
| GF | Lindsaea linearis | Screw Fern |
| GF | Pteridium esculentum | Austral Bracken |
| GF | Adiantum aethiopicum | Common Maidenhair |
| SC | Clematis aristata | Mountain Clematis |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 198: Sedgy Riparian Woodland - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  30 % cover  **Logs:**  20 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Rubus fruticosus spp. agg. Blackberry high high MH Hypochoeris radicata Cat's Ear high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 201: Shrubby Wet Forest

##### Description:

Tall eucalypt forest to 30 m tall with scattered understorey trees over a tall broad-leaved shrubby understorey and a moist, shaded, fern-rich ground layer that is usually dominated by tree-ferns. Herbs may also be abundant where light penetrates the ground layer.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  90 cm | **#/ha**  20 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 40% | Eucalyptus obliqua  Eucalyptus viminalis | Messmate Stringybark  Manna Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 9 | 20% | MS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 10% | LNG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Ground Fern | 3 | 20% | GF |
| Tree Fern | 1 | 15% | TRF |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 20% | BL |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 201: Shrubby Wet Forest - Warrnambool Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Olearia argophylla Musk Daisy-bush  T Notelaea ligustrina Privet Mock-olive  MS Ozothamnus ferrugineus Tree Everlasting  MS Acacia verticillata Prickly Moses  MS Olearia lirata Snowy Daisy-bush  MS Goodenia ovata Hop Goodenia  SS Tetratheca ciliata Pink-bells  SS Pultenaea stricta Rigid Bush-pea  PS Acrotriche serrulata Honey-pots  LH Mentha laxiflora Forest Mint  LH Senecio glomeratus Annual Fireweed  LH Pterostylis longifolia s.l. Tall Greenhood  LH Wahlenbergia gracilis s.l. Sprawling Bluebell  MH Gonocarpus humilis Shade Raspwort  MH Viola hederacea sensu Willis (1972) Ivy-leaf Violet  MH Acaena novae-zelandiae Bidgee-widgee  MH Daucus glochidiatus Australian Carrot  SH Oxalis corniculata s.l. Yellow Wood-sorrel  SH Leptostigma reptans Dwarf Nertera  SH Goodenia lanata Trailing Goodenia  LTG Lomandra longifolia Spiny-headed Mat-rush  LTG Lepidosperma elatius Tall Sword-sedge  LTG Carex appressa Tall Sedge  LNG Tetrarrhena juncea Forest Wire-grass  MTG Stylidium graminifolium s.l. Grass Trigger-plant  MTG Poa sieberiana Grey Tussock-grass  MTG Dianella tasmanica Tasman Flax-lily  MTG Dianella revoluta s.l. Black-anther Flax-lily  MNG Poa tenera Slender Tussock-grass  GF Pteridium esculentum Austral Bracken  GF Calochlaena dubia Common Ground-fern  GF Blechnum nudum Fishbone Water-fern  GF Adiantum aethiopicum Common Maidenhair  TRF Cyathea australis Rough Tree-fern  SC Clematis aristata Mountain Clematis  SC Billardiera scandens Common Apple-berry  SC Billardiera longiflora var. longiflora Purple Apple-berry  **Recruitment:**  Continuous  **Organic Litter:**  50 % cover  **Logs:**  30 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MH Hypochoeris radicata Cat's Ear high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 203: Stony Rises Woodland

##### Description:

Eucalypt woodland to 15 m tall on stony rises (highly irregular terrain on recent basalt flows). Soils are fertile and well-drained but shallow or skeletal. Limited soil development outside of rock-cracks and dry summers promote annuals and deep-rooted perennials.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus viminalis ssp. viminalis | Manna Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 10% | T |
| Medium Shrub | 1 | 5% | MS |
| Small Shrub | 1 | 5% | SS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 9 | 20% | MH |
| Small or Prostrate Herb | 3 | 10% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Medium to Small Tufted Graminoid | 4 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 5% | MNG |
| Ground Fern | 2 | 20% | GF |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia melanoxylon | **Common Name**  Blackwood |
| MS | Cassinia longifolia | Shiny Cassinia |
| SS | Rubus parvifolius | Small-leaf Bramble |
| LH | Epilobium billardierianum ssp. cinereum | Grey Willow-herb |
| LH | Senecio pinnatifolius | Variable Groundsel |
| LH | Rumex brownii | Slender Dock |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| MH | Geranium solanderi s.l. | Austral Cranesbill |
| MH | Oxalis exilis | Shady Wood-sorrel |
| MH | Parietaria debilis s.l. | Shade Pellitory |
| SH | Crassula sieberiana | Sieber Crassula |
| SH | Dichondra repens | Kidney-weed |
| MTG | Austrodanthonia racemosa var. racemosa | Stiped Wallaby-grass |
| MTG | Dichelachne rara | Common Plume-grass |
| MTG | Poa ensiformis | Sword Tussock-grass |
| GF | Pteridium esculentum | Austral Bracken |
| GF | Asplenium flabellifolium | Necklace Fern |
| GF | Cheilanthes austrotenuifolia | Green Rock Fern |
| SC | Clematis microphylla | Small-leaved Clematis |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 203: Stony Rises Woodland - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Sonchus oleraceus Common Sow-thistle high low LH Carduus pycnocephalus Slender Thistle high high LH Sonchus asper s.l. Rough Sow-thistle high low  LH Cirsium vulgare Spear Thistle high high LH Solanum nigrum sensu Willis (1972) Black Nightshade high low  MH Cerastium glomeratum s.l. Common Mouse-ear Chickweed high low MH Hypochoeris radicata Cat's Ear high low  MH Veronica persica Persian Speedwell high low MH Trifolium subterraneum Subterranean Clover high low  MH Trifolium dubium Suckling Clover high low  MH Acetosella vulgaris Sheep Sorrel high low  LNG Holcus lanatus Yorkshire Fog high high  MTG Vulpia bromoides Squirrel-tail Fescue high low MTG Anthoxanthum odoratum Sweet Vernal-grass high high  MTG Bromus diandrus Great Brome high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 642: Basalt Shrubby Woodland

##### Description:

Eucalypt-dominated woodland to 15 m tall with an understorey of shrubs and grasses, presumed originally quite species-rich. Occurs on well-drained to seasonally damp fertile soils in higher rainfall areas of volcanic plain.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  70 cm | **#/ha**  15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus ovata  Eucalyptus viminalis | Swamp Gum  Manna Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 2 | 5% | MS |
| Prostrate Shrub | 2 | 1% | PS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 10 | 15% | MH |
| Small or Prostrate Herb | 5 | 10% | SH |
| Large Tufted Graminoid | 3 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 10 | 25% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 10% | MNG |
| Ground Fern | 1 | 15% | GF |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia melanoxylon | **Common Name**  Blackwood |
| T | Acacia mearnsii | Black Wattle |
| MS | Leptospermum continentale | Prickly Tea-tree |
| MS | Acacia verticillata | Prickly Moses |
| PS | Bossiaea prostrata | Creeping Bossiaea |
| PS | Astroloma humifusum | Cranberry Heath |
| LH | Senecio glomeratus | Annual Fireweed |
| MH | Drosera peltata ssp. auriculata | Tall Sundew |
| MH | Lagenophora stipitata | Common Bottle-daisy |
| SH | Oxalis exilis | Shady Wood-sorrel |
| SH | Kennedia prostrata | Running Postman |
| SH | Lobelia pedunculata s.l. | Matted Pratia |
| SH | Leptostigma reptans | Dwarf Nertera |
| LTG | Austrostipa pubinodis | Tall Spear-grass |
| LTG | Lepidosperma elatius | Tall Sword-sedge |
| LTG | Deyeuxia quadriseta | Reed Bent-grass |
| MTG | Dichelachne rara | Common Plume-grass |
| MTG | Lomandra filiformis ssp. filiformis | Wattle Mat-rush |
| MTG | Dichelachne crinita | Long-hair Plume-grass |
| MTG | Austrodanthonia pilosa | Velvet Wallaby-grass |
| MNG | Poa tenera | Slender Tussock-grass |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |
| GF | Pteridium esculentum | Austral Bracken |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 642: Basalt Shrubby Woodland - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Pinus radiata Radiata Pine high high  LH Centaurium tenuiflorum Slender Centaury high low  LH Plantago lanceolata Ribwort high low  LH Sonchus oleraceus Common Sow-thistle high low  LH Cirsium vulgare Spear Thistle high high  MH Hypochoeris radicata Cat's Ear high low  MH Centaurium erythraea Common Centaury high low MH Gamochaeta purpurea s.s. Spiked Cudweed high low MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low  LNG Holcus lanatus Yorkshire Fog high high  MTG Vulpia bromoides Squirrel-tail Fescue high low  MTG Briza minor Lesser Quaking-grass high low  MTG Briza maxima Large Quaking-grass high low MTG Anthoxanthum odoratum Sweet Vernal-grass high high  MNG Aira elegantissima Delicate Hair-grass high low  MNG Cynosurus echinatus Rough Dog's-tail high low  SNG Sisyrinchium iridifolium Blue Pigroot high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 647: Plains Sedgy Wetland

##### Description:

Occurs in seasonally wet depressions on volcanic and sedimentary plains, typically associated with fertile, silty, peaty or heavy clay paludal soils. Primarily sedgy-herbaceous vegetation, sometimes with scattered or fringing eucalypts or tea-tree/paperbark shrubs in higher rainfall areas. A range of aquatic herbs can be present, and species-richness is mostly relatively low to moderate, but higher towards drier margins.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 5 | 40% | MH |
| Small or Prostrate Herb | 5 | 10% | SH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 4 | 25% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  LH |  | **Species typical of at least part of EVC range**  Epilobium billardierianum | **Common Name**  Variable Willow-herb |
| MH |  | Potamogeton tricarinatus s.l. | Floating Pondweed |
| MH |  | Myriophyllum simulans | Amphibious Water-milfoil |
| MH |  | Stellaria angustifolia | Swamp Starwort |
| MH |  | Lilaeopsis polyantha | Australian Lilaeopsis |
| SH |  | Neopaxia australasica | White Purslane |
| SH |  | Lobelia pratioides | Poison Lobelia |
| SH | v | Helichrysum aff. rutidolepis (Lowland Swamps) | Pale Swamp Everlasting |
| SH |  | Eryngium vesiculosum | Prickfoot |
| LTG |  | Carex tereticaulis | Hollow Sedge |
| MTG | k | Lachnagrostis filiformis (perennial variety) | Wetland Blown-grass |
| MTG |  | Lachnagrostis filiformis | Common Blown-grass |
| MTG |  | Glyceria australis | Australian Sweet-grass |
| MNG |  | Eleocharis acuta | Common Spike-sedge |
| MNG | v | Amphibromus sinuatus | Wavy Swamp Wallaby-grass |

##### Recruitment:

Episodic/Flood. Desirable period between disturbances is 5 years.

##### Organic Litter:

10% cover

##### Logs:

5 m/0.1 ha.(where trees are overhanging the wetland)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code**  MTG | **Typical Weed Species**  Juncus bulbosus | **Common Name**  Bulbous Rush | **Invasive**  high | **Impact**  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 647: Plains Sedgy Wetland - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 651: Plains Swampy Woodland

##### Description:

Eucalypt woodland to 15 m tall with ground layer dominated by tussock grasses, sedges and herbs. Shrubs are often scattered throughout. Occurs on poorly drained, seasonally waterlogged heavy soils.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  80 cm | **#/ha**  10 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 10% | Eucalyptus ovata | Swamp Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 3 | 15% | MS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 8 | 20% | MH |
| Small or Prostrate Herb | 5 | 5% | SH |
| Large Tufted Graminoid | 3 | 30% | LTG |
| Large Non-tufted Graminoid | 1 | 1% | LNG |
| Medium to Small Tufted Graminoid | 7 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Bryophytes/Lichens | na | 20% | BL |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  T |  | **Species typical of at least part of EVC range**  Acacia melanoxylon | **Common Name**  Blackwood |
| MS |  | Leptospermum continentale | Prickly Tea-tree |
| MS |  | Ozothamnus ferrugineus | Tree Everlasting |
| MS |  | Allocasuarina paludosa | Scrub Sheoak |
| LH |  | Senecio tenuiflorus | Slender Fireweed |
| LH |  | Villarsia reniformis | Running Marsh-flower |
| MH |  | Asperula conferta | Common Woodruff |
| MH |  | Centella cordifolia | Centella |
| MH |  | Lobelia anceps | Angled Lobelia |
| MH |  | Acaena novae-zelandiae | Bidgee-widgee |
| SH |  | Eryngium vesiculosum | Prickfoot |
| SH |  | Oxalis exilis | Shady Wood-sorrel |
| SH | R r | Lobelia beaugleholei | Showy Lobelia |
| SH |  | Hypericum japonicum | Matted St John's Wort |
| LTG |  | Gahnia trifida | Coast Saw-sedge |
| LTG |  | Carex appressa | Tall Sedge |
| LTG |  | Poa labillardierei var. labillardierei | Common Tussock-grass |
| MTG |  | Poa clelandii | Noah's Ark |
| MTG |  | Lomandra filiformis | Wattle Mat-rush |
| MTG |  | Themeda triandra | Kangaroo Grass |
| MNG |  | Poa tenera | Slender Tussock-grass |
| MNG |  | Hemarthria uncinata var. uncinata | Mat Grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 651: Plains Swampy Woodland - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  10 % cover  **Logs:**  10 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Plantago lanceolata Ribwort high low  LH Sonchus oleraceus Common Sow-thistle high low  LH Sonchus asper s.l. Rough Sow-thistle high low  LH Cirsium vulgare Spear Thistle high high  MH Trifolium dubium Suckling Clover high low  MH Hypochoeris radicata Cat's Ear high low  MH Prunella vulgaris Self-heal high low MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low LTG Festuca arundinacea Tall Fescue high high  LNG Holcus lanatus Yorkshire Fog high high  MTG Briza minor Lesser Quaking-grass high low  MTG Romulea rosea Onion Grass high low  MTG Vulpia bromoides Squirrel-tail Fescue high low MTG Anthoxanthum odoratum Sweet Vernal-grass high high  MNG Holcus setosus Annual Fog high low  MNG Juncus capitatus Capitate Rush high low  TTG Cyperus tenellus Tiny Flat-sedge high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 653: Aquatic Herbland

##### Description:

Herbland of permanent to semi-permanent wetlands, dominated by sedges (especially on shallower verges) and/or aquatic herbs. Occurs on fertile paludal soils, typically heavy clays beneath organic accumulations.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Herb | 3 | 20% | MH |
| Large Tufted Graminoid | 1 | 25% | LTG |
| Medium to Small Tufted Graminoid | 4 | 25% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| **Total understorey projective foliage cover** |  | **70%** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  MH |  | **Species typical of at least part of EVC range**  Utricularia australis | **Common Name**  Yellow Bladderwort |
| MH |  | Myriophyllum simulans | Amphibious Water-milfoil |
| MH |  | Potamogeton tricarinatus s.l. | Floating Pondweed |
| LTG |  | Baumea articulata | Jointed Twig-sedge |
| MTG |  | Triglochin procerum s.l. | Water Ribbons |
| MTG |  | Isolepis fluitans | Floating Club-sedge |
| MTG | k | Lachnagrostis filiformis (perennial variety) | Wetland Blown-grass |
| MTG |  | Lachnagrostis filiformis | Common Blown-grass |
| MNG | v | Amphibromus sinuatus | Wavy Swamp Wallaby-grass |

##### Recruitment:

Episodic/Flood. Desirable period between disturbances is 5 years.

##### Organic Litter:

10% cover

##### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 653: Aquatic Herbland - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain Bioregion

## EVC 705: Basalt Creekline Shrubby Woodland

#### Description:

Shrub-dominated low eucalypt woodland to 10 m tall, with a range of grasses, sedges and herbs in the understorey. Occurs on heavy soils along low-gradient boggy drainage lines on relatively high rainfall volcanic plains.

#### Large Trees:

**Species DBH(cm) #/ha**

*Eucalyptus spp.*

70 cm

10 / ha

#### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 10% | *Eucalyptus ovata* | Swamp Gum |

**Understorey: Lifeform**

**#Spp %Cover LF Code**

Immature Canopy Tree 5% IT

Understorey Tree or Large Shrub Medium Shrub

Large Herb Medium Herb

Small or Prostrate Herb Large Tufted Graminoid

Medium to Small Tufted Graminoid Medium to Tiny Non-Tufted Graminoid

1 10% T

4 15% MS

2 5% LH

8 15% MH

5 10% SH

2 15% LTG

7 20% MTG

2 10% MNG

Bryophytes/Lichens 10% BL



|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  *Acacia melanoxylon* | **Common Name**  Blackwood |
| MS | *Acacia verticillata* | Prickly Moses |
| MS | *Coprosma quadrifida* | Prickly Currant-bush |
| MS | *Leptospermum continentale* | Prickly Tea-tree |
| MS | *Ozothamnus ferrugineus* | Tree Everlasting |
| LH | *Epilobium billardierianum* | Variable Willow-herb |
| LH | *Villarsia reniformis* | Running Marsh-flower |
| MH | *Centella cordifolia* | Centella |
| MH | *Lilaeopsis polyantha* | Australian Lilaeopsis |
| MH | *Utricularia dichotoma s.l.* | Fairies' Aprons |
| SH | *Eryngium vesiculosum* | Prickfoot |
| SH | *Hypericum japonicum* | Matted St John's Wort |
| SH | *Lobelia pratioides* | Poison Lobelia |
| SH | *Neopaxia australasica* | White Purslane |
| LTG | *Amphibromus nervosus* | Common Swamp Wallaby-grass |
| LTG | *Juncus flavidus* | Gold Rush |
| LTG | *Poa labillardierei* | Common Tussock-grass |

Ecological Vegetation Class Bioregion Benchmark

|  |  |
| --- | --- |
| EVC 705: Basalt Creekline Shrubby Woodland | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  MTG *Austrodanthonia duttoniana* Brown-back Wallaby-grass  MTG *Glyceria australis* Australian Sweet-grass  MTG *Juncus holoschoenus* Joint-leaf Rush  MNG *Eleocharis acuta* Common Spike-sedge  MNG *Eleocharis pusilla* Small Spike-sedge  **Recruitment:**  Continuous.  **Organic Litter:**  20 % cover  **Logs:**  20 m/0.1ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact** LH *Cirsium vulgare* Spear Thistle high high MTG *Anthoxanthum odoratum* Sweet Vernal-grass high high  LNG *Holcus lanatus* Yorkshire Fog high high  LTG *Festuca arundinacea* Tall Fescue high high  MH *Prunella vulgaris* Self-heal high high  MNG *Holcus annuus* Annual Fog high low  MTG *Vulpia bromoides* Squirrel-tail Fescue high low  MTG *Briza minor* Lesser Quaking-grass high low MH *Leontodon taraxacoides subsp.* Hairy Hawkbit high low  *taraxacoides*  MH *Hypochoeris radicata* Cat's Ear high low  MH *Trifolium dubium* Suckling Clover high low  TTG *Cyperus tenellus* Tiny Flat-sedge high low  LH *Sonchus asper s.l.* Rough Sow-thistle high low  MTG *Romulea rosea* Onion Grass high low  LH *Sonchus oleraceus* Common Sow-thistle high low  LH *Plantago lanceolata* Ribwort high low  MNG *Juncus capitatus* Capitate Rush high low  Published by the Victorian Government Department of Sustainability and Environment  © The State of Victoria Government Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-comercial is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson St, East Melbourne, Victoria 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss, of other consequences which may arise from you relying on any information in this publication.  [**www.dse.vic.gov.au**](http://www.dse.vic.gov.au/) |



EVC/Bioregion Benchmark for Vegetation Quality Assessment

Warrnambool Plain bioregion

EVC 821: Tall Marsh

###### Description:

Occurs on Quaternary sedimentary geology of mainly estuarine sands, soils are peaty, silty clays, and average annual rainfall is approximately 600 mm. Requires shallow water (to 1 m deep) and low current-scour, and can only tolerate very low levels of salinity. Closed to open grassland/sedgeland to 3 m tall, dominated by Common Reed and Cumbungi. Small aquatic and semi- aquatic species occur amongst the reeds, however they are generally not visible during inundation.

|  |  |  |  |
| --- | --- | --- | --- |
| Life Forms: Life form | #Spp | %Cover | LF code |
| Large Herb | 3 | 10% | LH |
| Medium Herb | 3 | 5% | MH |
| Small or Prostrate Herb | 5 | 20% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Large Non-tufted Graminoid | 3 | 40% | LNG |
| Medium to Tiny Non-tufted Graminoid | 2 | 1% | MNG |
| Total understorey projective foliage cover |  | 85% |  |

|  |  |  |
| --- | --- | --- |
| LF Code | Species typical of at least part of EVC range | Common Name |
| LH | Myriophyllum verrucosum | Red Water-milfoil |
| LH | Myriophyllum salsugineum | Lake Water-milfoil |
| LH | Villarsia reniformis | Running Marsh-flower |
| MH | Rumex bidens | Mud Dock |
| MH | Lilaeopsis polyantha | Australian Lilaeopsis |
| MH | Lepilaena bilocularis | Small-fruit Water-mat |
| SH | Crassula helmsii | Swamp Crassula |
| SH | Wolffia australiana | Tiny Duckweed |
| SH | Mimulus repens | Creeping Monkey-flower |
| SH | Lemna disperma | Common Duckweed |
| LNG | Typha orientalis | Broad-leaf Cumbungi |
| LNG | Schoenoplectus tabernaemontani | River Club-sedge |
| LNG | Phragmites australis | Common Reed |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| MNG | Lepilaena cylindrocarpa | Long-fruit Water-mat |
| MNG | Eleocharis acuta | Common Spike-sedge |

###### Recruitment:

Episodic/Flood. Desirable period between disturbances is 5 years.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Weediness: |  | | | |
| LF Code | Typical Weed Species | Common Name | Invasive | Impact |
| MH MNG | Cotula coronopifolia Paspalum distichum | Water Buttons Water Couch | high high | high high |

Ecological Vegetation Class bioregion benchmark

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| --- | --- |
| EVC 821: Tall Marsh - Warrnambool Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Warrnambool Plain bioregion

EVC 894: Scoria Cone Woodland

##### Description:

Eucalypt woodland to 15 m tall or non-eucalypt woodland to 10 m tall over a grassy to bracken-dominated understorey with a range of herbs. Occurs on the slopes of freely-draining scoria cones and spatter areas of more coarse boulder-forming flow sources. Soils are fertile but often skeletal.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Allocasuarina spp. | 70 cm  50 cm | 15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus viminalis  Allocasuarina verticillata | Manna Gum  Drooping Sheoak |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 2 | 10% | MS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 1 | 15% | LTG |
| Medium to Small Tufted Graminoid | 4 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 5% | MNG |
| Ground Fern | 2 | 20% | GF |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia melanoxylon | **Common Name**  Blackwood |
| MS | Bursaria spinosa | Sweet Bursaria |
| LH | Senecio pinnatifolius | Variable Groundsel |
| LH | Rumex brownii | Wiry Dock |
| LH | Senecio quadridentatus | Cotton Fireweed |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| MH | Geranium potentilloides | Cinquefoil Cranesbill |
| MH | Acaena echinata | Sheep’s Burr |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| SH | Dichondra repens | Kidney-weed |
| SH | Oxalis exilis | Shady Wood-sorrel |
| LTG | Poa labillardierei | Common Tussock-grass |
| MTG | Lomandra filiformis | Wattle Mat-rush |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Carex breviculmis | Short-stem Sedge |
| MTG | Austrodanthonia pilosa | Velvet Wallaby-grass |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |
| GF | Pteridium esculentum | Austral Bracken |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 894: Scoria Cone Woodland - Warrnambool Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20 % cover  **Logs:**  10 m/0.1 ha  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Lycium ferocissimum African Box-thorn high high MH Hypochoeris radicata Cat's Ear high low MTG Briza maxima Large Quaking-grass high low  MTG Romulea rosea Onion Grass high low  MTG Holcus lanatus Yorkshire Fog high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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