

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

Otway Plain bioregion

EVC 3: Damp Sands Herb-rich Woodland

Description:

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

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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 obliqua | Messmate Stringybark |

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

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| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia melanoxylon | **Common Name**  Blackwood |
| MS | Leptospermum continentale | Prickly Tea-tree |
| MS | Acacia verticillata | Prickly Moses |
| MS | Bursaria spinosa ssp. spinosa | Sweet Bursaria |
| MS | Ozothamnus ferrugineus | Tree Everlasting |
| PS | Bossiaea prostrata | Creeping Bossiaea |
| LH | Senecio glomeratus | Annual Fireweed |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Geranium solanderi s.l. | Austral Cranesbill |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| SH | Kennedia prostrata | Running Postman |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| LTG | Poa labillardierei | Common Tussock-grass |
| LNG | Tetrarrhena juncea | Forest Wire-grass |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Lepidosperma gladiatum | Coast Sword-sedge |
| MNG | Ficinia nodosa | Knobby Club-sedge |
| GF | Pteridium esculentum | Austral Bracken |
| SC | Glycine clandestina | Twining Glycine |

Ecological Vegetation Class bioregion benchmark

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| EVC 3: Damp Sands Herb-rich Woodland - Otway Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  40 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MH Hypochoeris radicata Cat's Ear high low MH Centaurium erythraea Common Centaury high low MH Anagallis arvensis Pimpernel high low  MH Medicago lupulina Black Medic high low MH Acetosella vulgaris Sheep Sorrel high low  LNG Ammophila arenaria Marram Grass high high  LNG Holcus lanatus Yorkshire Fog high high  MNG Lagurus ovatus Hare's-tail Grass high low MNG Stenotaphrum secundatum Buffalo Grass high high  MNG Dactylis glomerata Cocksfoot high high  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 6: Sand Heathland

Description:

Treeless heathland (or with scattered emergent mallee-form eucalypts) occurring on deep infertile sands. Consists of a low, dense heathy shrub layer and a number of sedges and sedge-like species.

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| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 6 | 30% | MS |
| Small Shrub | 8 | 20% | SS |
| Prostrate Shrub | 3 | 5% | PS |
| Medium Herb | 3 | 5% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 6 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Ground Fern | 1 | 1% | GF |
| Scrambler or Climber | 3 | 5% | SC |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  MS |  | **Species typical of at least part of EVC range**  Banksia marginata | **Common Name**  Silver Banksia |
| MS |  | Epacris impressa | Common Heath |
| MS |  | Leptospermum myrsinoides | Heath Tea-tree |
| MS |  | Leptospermum continentale | Prickly Tea-tree |
| SS |  | Platylobium obtusangulum | Common Flat-pea |
| SS |  | Isopogon ceratophyllus | Horny Cone-bush |
| SS |  | Pimelea humilis | Common Rice-flower |
| SS |  | Tetratheca ciliata | Pink-bells |
| PS |  | Acrotriche serrulata | Honey-pots |
| PS |  | Gompholobium ecostatum | Dwarf Wedge-pea |
| PS |  | Astroloma humifusum | Cranberry Heath |
| MH |  | Goodenia geniculata | Bent Goodenia |
| MH |  | Drosera peltata ssp. auriculata | Tall Sundew |
| SH |  | Viola cleistogamoides | Hidden Violet |
| LTG |  | Xanthorrhoea australis | Austral Grass-tree |
| LTG |  | Austrostipa mollis | Supple Spear-grass |
| LNG |  | Gahnia radula | Thatch Saw-sedge |
| MTG |  | Lomandra filiformis | Wattle Mat-rush |
| MTG |  | Schoenus apogon | Common Bog-sedge |
| MTG | r | Lepidosperma canescens | Hoary Rapier-sedge |
| MTG |  | Austrodanthonia setacea | Bristly Wallaby-grass |
| MNG |  | Hypolaena fastigiata | Tassel Rope-rush |
| TTG |  | Schoenus breviculmis | Matted Bog-sedge |
| GF |  | Lindsaea linearis | Screw Fern |
| SC |  | Cassytha pubescens s.s. | Downy Dodder-laurel |
| SC |  | Cassytha glabella | Slender 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 6: Sand Heathland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain bioregion

EVC 7: Clay Heathland

Description:

Occurs on sites with impeded drainage, often on duplex soils. A variable shrubby EVC dominated by heath species. Occasional emergent eucalypts may be present. The ground layer is dense and diverse with a variety of lifeforms.

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| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 8 | 40% | MS |
| Small Shrub | 5 | 10% | SS |
| Prostrate Shrub | 3 | 5% | PS |
| Medium Herb | 7 | 10% | MH |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 6 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 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**  Banksia marginata | **Common Name**  Silver Banksia |
| MS | Leptospermum myrsinoides | Heath Tea-tree |
| MS | Persoonia juniperina | Prickly Geebung |
| MS | Allocasuarina misera/paradoxa | Slender/Green Sheoak |
| SS | Dillwynia glaberrima | Smooth Parrot-pea |
| SS | Platylobium obtusangulum | Common Flat-pea |
| SS | Leucopogon virgatus | Common Beard-heath |
| SS | Hibbertia riparia | Erect Guinea-flower |
| PS | Xanthosia pusilla spp. agg. | Heath Xanthosia |
| PS | Astroloma humifusum | Cranberry Heath |
| PS | Acrotriche serrulata | Honey-pots |
| MH | Comesperma calymega | Blue-spike Milkwort |
| MH | Platysace heterophylla | Slender Platysace |
| MH | Goodenia geniculata | Bent Goodenia |
| SH | Opercularia varia | Variable Stinkweed |
| LNG | Gahnia radula | Thatch Saw-sedge |
| MTG | Lepidosperma laterale | Variable Sword-sedge |
| MTG | Austrostipa semibarbata | Fibrous Spear-grass |
| MTG | Tricostularia pauciflora | Needle Bog-sedge |
| MTG | Lomandra filiformis | Wattle Mat-rush |
| MNG | Hypolaena fastigiata | Tassel Rope-rush |

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 7: Clay Heathland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway 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 by a range of sedges, grasses and shrubs.

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| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 40% | MS |
| Small Shrub | 3 | 5% | SS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 2 | 5% | MH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Medium to Small Tufted Graminoid | 1 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 20% | MNG |
| Ground Fern | 2 | 1% | GF |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 20% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum continentale | **Common Name**  Prickly Tea-tree |
| MS | Melaleuca squarrosa | Scented Paperbark |
| MS | Sprengelia incarnata | Pink Swamp-heath |
| MS | Epacris impressa | Common Heath |
| SS | Epacris lanuginosa | Woolly-style Heath |
| SS | Bauera rubioides | Wiry Bauera |
| SS | Tetratheca ciliata | Pink-bells |
| MH | Selaginella uliginosa | Swamp Selaginella |
| MH | Gonocarpus tetragynus | Common Raspwort |
| LTG | Xanthorrhoea australis | Austral Grass-tree |
| LTG | Gahnia sieberiana | Red-fruit Saw-sedge |
| MNG | Empodisma minus | Spreading Rope-rush |
| GF | Lindsaea linearis | Screw Fern |
| SC | Cassytha glabella | Slender 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 - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain bioregion

EVC 9: Coastal Saltmarsh

Description:

Occurs on and immediately above marine and estuarine tidal flats and contains distinct floristic communities as bands or zones in the same location, depending on the positioning of the various floristic communities in relation to the saline environment. Consists of a range of life forms including succulent herbs, low succulent shrubs, rushes and sedges.

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| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 1 | 10% | MS |
| Small Shrub | 1 | 5% | SS |
| Prostrate Shrub | 1 | 5% | PS |
| Medium Herb | 3 | 15% | MH |
| Small or Prostrate Herb | 1 | 5% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 1 | 1% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **65%** |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  MS |  | **Species typical of at least part of EVC range**  Sclerostegia arbuscula | **Common Name**  Shrubby Glasswort |
| MS | r | Avicennia marina ssp. australasica | White Mangrove |
| SS |  | Suaeda australis | Austral Seablite |
| SS |  | Frankenia pauciflora var. gunnii | Southern Sea-heath |
| PS |  | Wilsonia humilis | Silky Wilsonia |
| MH |  | Sarcocornia quinqueflora | Beaded Glasswort |
| MH |  | Samolus repens | Creeping Brookweed |
| MH |  | Hemichroa pentandra | Trailing Hemichroa |
| LNG |  | Juncus kraussii ssp. australiensis | Sea Rush |
| MNG |  | Triglochin striatum | Streaked Arrowgrass |
| MNG |  | Distichlis distichophylla | Australian Salt-grass |

Recruitment:

Continuous

Organic Litter:

10% cover

Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

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| EVC 9: Coastal Saltmarsh - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway 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 Woolly Tea-tree Leptospermum lanigerum at the landward edge.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 1 | 10% | MS |
| Large Herb | 3 | 10% | LH |
| Medium Herb | 4 | 10% | MH |
| Small or Prostrate Herb | 4 | 15% | SH |
| Large Tufted Graminoid | 1 | 10% | LNG |
| Large Non-tufted Graminoid | 1 | 25% | LNG |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Scrambler or Climber | 1 | 5% | SC |
| **Total understorey projective foliage cover** |  | **90%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS MS LH | **Species typical of at least part of EVC range**  Leptospermum lanigerum Melaleuca squarrosa Persicaria decipiens | **Common Name** Woolly Tea-tree Scented Paperbark Slender Knotweed |
| MH | Samolus repens | Creeping Brookweed |
| MH | Lobelia anceps | Angled Lobelia |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Crassula helmsii | Swamp Crassula |
| SH | Mimulus repens | Creeping Monkey-flower |
| SH | Leptinella reptans s.l. | Creeping Cotula |
| LTG | Poa labillardierei | Common Tussock-grass |
| LNG | Phragmites australis | Common Reed |
| MNG | Triglochin striatum | Streaked Arrowgrass |
| SC | Calystegia sepium | Large Bindweed |

Recruitment:

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

Organic Litter:

10% cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  LH LH MH MH MH MH MTG MNG | Aster subulatus  Plantago lanceolata Rumex crispus Ranunculus repens Lotus uliginosus Cotula coronopifolia Atriplex prostrata Agrostis stolonifera Polypogon viridis | Aster-weed  Ribwort Curled Dock  Creeping Buttercup Greater Bird's-foot Trefoil Water Buttons  Hastate Orache Creeping Bent Water Bent | high  high high high high high high high high | low  low low high low high high high high |

Ecological Vegetation Class bioregion benchmark

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

Otway 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 obliqua  Eucalyptus baxteri s.l. Eucalyptus radiata ssp. radiata | Messmate Stringybark  Brown Stringybark Narrow-leaf Peppermint |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 6 | 35% | MS |
| Small Shrub | 4 | 10% | SS |
| Prostrate Shrub | 2 | 1% | PS |
| Medium Herb | 4 | 5% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 2 | 10% | LNG |
| Medium to Small Tufted Graminoid | 3 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Ground Fern | 2 | 10% | GF |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Banksia marginata | **Common Name**  Silver Banksia |
| MS | Leptospermum continentale | Prickly Tea-tree |
| MS | Epacris impressa | Common Heath |
| MS | Persoonia juniperina | Prickly Geebung |
| SS | Tetratheca ciliata | Pink-bells |
| SS | Platylobium obtusangulum | Common Flat-pea |
| SS | Amperea xiphoclada var. xiphoclada | Broom Spurge |
| SS | Dillwynia glaberrima | Smooth Parrot-pea |
| PS | Acrotriche serrulata | Honey-pots |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| SH | Goodenia lanata | Trailing Goodenia |
| LTG | Xanthorrhoea australis | Austral Grass-tree |
| LNG | Gahnia radula | Thatch Saw-sedge |
| LNG | Tetrarrhena juncea | Forest Wire-grass |
| MTG | Lomandra filiformis | Wattle Mat-rush |
| MNG | Tetrarrhena distichophylla | Hairy Rice-grass |
| MNG | Empodisma minus | Spreading Rope-rush |
| GF | Pteridium esculentum | Austral Bracken |
| GF | Lindsaea linearis | Screw Fern |

Ecological Vegetation Class bioregion benchmark

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| --- | --- |
| EVC 16: Lowland Forest - Otway Plain bioregion | |
|  | **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 April 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**

Otway Plain bioregion

EVC 21: Shrubby Dry Forest

Description:

Occurs on a range of geologies on exposed aspects such as ridge-lines and medium to steep upper slopes, often in high rainfall areas and on shallow infertile soils. The overstorey is a low, open forest to 20 m tall characterised by the diversity and variability of the eucalypts. The understorey often lacks a secondary tree layer but contains a well-developed medium to low shrub layer. The ground layer is often very sparse with tussock-forming graminoids being the dominant life form.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  60 cm | **#/ha**  20 / ha |

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 30% | Eucalyptus tricarpa  Eucalyptus cypellocarpa Eucalyptus obliqua | Red Ironbark  Mountain Grey-gum Messmate Stringybark |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 5 | 25% | MS |
| Small Shrub | 2 | 1% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Medium Herb | 3 | 5% | MH |
| Small or Prostrate Herb | 2 | 1% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Medium to Small Tufted Graminoid | 4 | 10% | MTG |
| Ground Fern | 1 | 1% | GF |
| Scrambler or Climber | 3 | 5% | SC |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **70%** |  |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 21: Shrubby Dry Forest - Otway Plain bioregion | |
|  | **LF Code Character Species Common Name**  T Exocarpos cupressiformis Cherry Ballart  MS Pultenaea daphnoides Large-leaf Bush-pea  MS Acacia verticillata Prickly Moses  MS Goodenia ovata Hop Goodenia  MS Acacia verniciflua Varnish Wattle  SS Pimelea humilis Common Rice-flower  SS Platylobium obtusangulum Common Flat-pea  SS Hibbertia stricta s.l. Upright Guinea-flower  PS Acrotriche serrulata Honey-pots  PS Bossiaea prostrata Creeping Bossiaea  MH Hypericum gramineum Small St John's Wort  MH Plantago varia Variable Plantain  MH Gonocarpus tetragynus Common Raspwort  MH Helichrysum scorpioides Button Everlasting  SH Goodenia lanata Trailing Goodenia  SH Kennedia prostrata Running Postman  SH Opercularia varia Variable Stinkweed  SH Drosera whittakeri ssp. aberrans Scented Sundew  LTG Lomandra longifolia Spiny-headed Mat-rush  LNG Gahnia radula Thatch Saw-sedge  LNG Tetrarrhena juncea Forest Wire-grass  MTG Joycea pallida Silvertop Wallaby-grass  MTG Lomandra filiformis Wattle Mat-rush  MTG Austrodanthonia geniculata Kneed Wallaby-grass  MTG Lomandra multiflora ssp. multiflora Many-flowered Mat-rush  MNG Microlaena stipoides var. stipoides Weeping Grass  GF Pteridium esculentum Austral Bracken  SC Cassytha melantha Coarse Dodder-laurel  SC Cassytha glabella Slender Dodder-laurel  SC Billardiera scandens Common Apple-berry  SC Thysanotus patersonii Twining Fringe-lily  SC Comesperma volubile Love Creeper  SC Clematis aristata Mountain Clematis  **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 20 years.  **Organic Litter:**  20 % 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 April 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**

Otway 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.

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

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 40% | Eucalyptus obliqua  Eucalyptus cypellocarpa Eucalyptus viminalis  Eucalyptus radiata s.l. | Messmate Stringybark  Mountain Grey-gum Manna Gum  Narrow-leaf Peppermint |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 4 | 20% | MS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 12 | 20% | MH |
| Small or Prostrate Herb | 4 | 10% | SH |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Large Tufted Graminoid | 2 | 20% | LTG |
| Medium to Small Tufted Graminoid | 3 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Ground Fern | 1 | 5% | GF |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 20% | BL |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 23: Herb-rich Foothill Forest - Otway Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Acacia melanoxylon Blackwood  MS Ozothamnus ferrugineus Tree Everlasting  MS Acacia mucronata ssp. longifolia Narrow-leaf Wattle  MS Leptospermum continentale Prickly Tea-tree  MS Coprosma quadrifida Prickly Currant-bush  SS k Olearia speciosa Netted Daisy-bush  LH Senecio glomeratus Annual Fireweed  LH Epilobium billardierianum Variable Willow-herb  LH Senecio hispidulus Rough Fireweed  MH Geranium solanderi s.l. Austral Cranesbill  MH Stellaria pungens Prickly Starwort  MH Viola hederacea sensu Willis (1972) Ivy-leaf Violet  SH Lobelia pedunculata s.l. Matted Pratia  SH Oxalis corniculata s.l. Yellow Wood-sorrel  SH Hydrocotyle sibthorpioides Shining Pennywort  SH Cymbonotus preissianus Austral Bear's-ear  LTG Poa labillardierei Common Tussock-grass  LTG Deyeuxia quadriseta Reed Bent-grass  LNG Tetrarrhena juncea Forest Wire-grass  MTG Poa morrisii Soft Tussock-grass  MTG Dichelachne sciurea spp. agg. Short-hair Plume-grass  MTG Arthropodium strictum s.l. Chocolate Lily  MNG Poa tenera Slender Tussock-grass  GF Pteridium esculentum Austral Bracken  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**  LH Senecio jacobaea Ragwort high high  LH Plantago lanceolata Ribwort 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 Lotus corniculatus Bird's-foot Trefoil high low MH Medicago lupulina Black Medic high low  MH Prunella vulgaris Self-heal high low  MH Cerastium spp. Mouse-ear Chickweed high low MTG Anthoxanthum odoratum Sweet Vernal-grass high high  MNG Dactylis glomerata Cocksfoot high high  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 30: Wet Forest

Description:

Grows on fertile, well-drained loamy soils on a range of geologies and elevation levels. It is largely restricted to protected sites in gullies and on southern aspects of hills and mountains where rainfall is high and cloud cover at ground level is frequent. Characterised by a tall eucalypt overstorey 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.

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

Tree Canopy Cover:

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 4 | 30% | T |
| Medium Shrub | 5 | 20% | MS |
| Medium Herb | 2 | 5% | MH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 2 | 1% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Ground Fern | 3 | 35% | GF |
| Tree Fern | 1 | 5% | TRF |
| Scrambler or Climber | 2 | 5% | SC |
| Bryophytes/Lichens | na | 20% | BL |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 30: Wet Forest - Otway Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Pomaderris aspera Hazel Pomaderris  T Notelaea ligustrina Privet Mock-olive  T Acacia melanoxylon Blackwood  MS Pimelea axiflora Bootlace Bush  MS Olearia lirata Snowy Daisy-bush  MS Hedycarya angustifolia Austral Mulberry  MS Coprosma quadrifida Prickly Currant-bush  LH Senecio minimus Shrubby Fireweed  MH Viola hederacea sensu Willis (1972) Ivy-leaf Violet  MH Hydrocotyle hirta Hairy Pennywort  MH Gratiola peruviana Austral Brooklime  SH Lobelia pedunculata s.l. Matted Pratia  LTG Lepidosperma laterale var. majus Variable Sword-sedge  LTG Lepidosperma elatius Tall Sword-sedge  LTG Carex appressa Tall Sedge  LNG Tetrarrhena juncea Forest Wire-grass  MTG Dianella tasmanica Tasman Flax-lily  MTG r Isolepis wakefieldiana Tufted Club-sedge  MNG Poa tenera Slender Tussock-grass  MNG Echinopogon ovatus Common Hedgehog-grass  GF Polystichum proliferum Mother Shield-fern  GF Blechnum wattsii Hard Water-fern  GF Blechnum nudum Fishbone Water-fern  TRF Dicksonia antarctica Soft Tree-fern  EP Hymenophyllum cupressiforme Common Filmy Fern  SC Parsonsia brownii Twining Silkpod  SC Clematis aristata Mountain Clematis  **Recruitment:**  Continuous  **Organic Litter:**  50 % cover  **Logs:**  30 m/0.1 ha.  **Weediness:**  There are no consistent weeds in this EVC.  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 45: Shrubby Foothill Forest

Description:

Occurs on ridges and mainly on southern and eastern slopes in association with Damp Forest or Wet Forest on moderately fertile soils and at a range of elevations. The overstorey is a medium eucalypt forest to 25 m tall over an understorey 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.

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

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 40% | Eucalyptus obliqua  Eucalyptus radiata s.l. Eucalyptus baxteri s.l. | Messmate Stringybark  Narrow-leaf Peppermint Brown Stringybark |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 1 | 10% | T |
| Medium Shrub | 8 | 40% | MS |
| Small Shrub | 1 | 1% | SS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 1 | 1% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 15% | LNG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Ground Fern | 3 | 15% | GF |
| Tree Fern | 1 | 1% | TRF |
| Scrambler or Climber | 2 | 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 | Acacia mucronata ssp. longifolia | Narrow-leaf Wattle |
| MS | Leptospermum continentale | Prickly Tea-tree |
| MS | Goodenia ovata | Hop Goodenia |
| MS | Acacia verticillata | Prickly Moses |
| SS | Tetratheca ciliata | Pink-bells |
| LH | Mentha laxiflora | Forest Mint |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Viola hederacea sensu Entwisle (1996) | Ivy-leaf Violet |
| SH | Goodenia lanata | Trailing Goodenia |
| LTG | Gahnia sieberiana | Red-fruit Saw-sedge |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| LTG | Lepidosperma laterale var. majus | Variable Sword-sedge |
| LTG | Lepidosperma elatius | Tall Sword-sedge |
| LNG | Tetrarrhena juncea | Forest Wire-grass |
| MTG | Dianella tasmanica | Tasman Flax-lily |
| GF | Pteridium esculentum | Austral Bracken |
| GF | Blechnum nudum | Fishbone Water-fern |
| TRF | Cyathea australis | Rough Tree-fern |
| SC | Billardiera scandens | Common Apple-berry |
| SC | Clematis aristata | Mountain Clematis |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 45: Shrubby Foothill Forest - Otway Plain bioregion | |
|  | **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 30 years.  **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 April 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**

Otway 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  Eucalyptus baxteri s.l. | Messmate Stringybark  Brown Stringybark |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 7 | 30% | MS |
| Small Shrub | 7 | 20% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Medium Herb | 5 | 5% | 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 | 4 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Ground Fern | 1 | 5% | GF |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 48: Heathy Woodland - Otway Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  MS Banksia marginata Silver Banksia  MS Epacris impressa Common Heath  MS Leptospermum continentale Prickly Tea-tree  MS Leptospermum myrsinoides Heath Tea-tree  SS Platylobium obtusangulum Common Flat-pea  SS Tetratheca ciliata Pink-bells  SS Hibbertia riparia Erect Guinea-flower  SS Dillwynia glaberrima Smooth Parrot-pea  PS Acrotriche serrulata Honey-pots  PS Xanthosia pusilla spp. agg. Heath Xanthosia  PS Gompholobium ecostatum Dwarf Wedge-pea  MH Gonocarpus tetragynus Common Raspwort  MH Drosera peltata ssp. auriculata Tall Sundew  MH Goodenia geniculata Bent Goodenia  SH Drosera whittakeri ssp. aberrans Scented Sundew  SH Goodenia lanata Trailing Goodenia  SH Opercularia varia Variable Stinkweed  LTG Xanthorrhoea australis Austral Grass-tree  LNG Gahnia radula Thatch Saw-sedge  MTG Lomandra filiformis Wattle Mat-rush  MTG Lepidosperma semiteres Wire Rapier-sedge  MTG Lepidosperma filiforme Common Rapier-sedge  MNG Hypolaena fastigiata Tassel Rope-rush  GF Lindsaea linearis Screw Fern  GF Pteridium esculentum Austral Bracken  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 April 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

Otway 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 Woolly Tea-tree Leptospermun lanigerum which often forms a dense impenetrable thicket, out- competing other species. Emergent trees (eg. 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 |
| 60% | Leptospermum lanigerum | Woolly Tea-tree |
|  | Melaleuca squarrosa | Scented Paperbark |
|  | Acacia melanoxylon | Blackwood |

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

|  |  |  |
| --- | --- | --- |
| LF Code | Species typical of at least part of EVC range | Common Name |
| MS | Coprosma quadrifida | Prickly Currant-bush |
| MS | Leptospermum continentale | Prickly Tea-tree |
| LH | Lycopus australis | Australian Gipsywort |
| LH | Lythrum salicaria | Purple Loosestrife |
| LH | Persicaria praetermissa | Spotted Knotweed |
| MH | Hydrocotyle pterocarpa | Wing Pennywort |
| MH | Stellaria angustifolia | Swamp Starwort |
| MH | Lobelia anceps | Angled Lobelia |
| SH | Crassula helmsii | Swamp Crassula |
| LTG | Juncus procerus | Tall Rush |
| LTG | Juncus gregiflorus | Green Rush |
| LNG | Phragmites australis | Common Reed |
| LNG | Gahnia radula | Thatch Saw-sedge |
| LNG | Schoenoplectus tabernaemontani | River Club-sedge |
| LNG | Baumea rubiginosa s.l. | Soft Twig-rush |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| MNG | Eleocharis acuta | Common Spike-sedge |
| GF | Blechnum cartilagineum | Gristle Fern |
| SC | Calystegia sepium | Large Bindweed |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 53: Swamp Scrub - Otway Plain bioregion | |
|  | Recruitment:  Continuous  Organic Litter:  40 % cover  Weediness:  LF Code Typical Weed Species Common Name Invasive Impact  LNG Holcus lanatus Yorkshire Fog high high  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**

Otway Plain Bioregion

EVC 53\_62: Estuarine Swamp Scrub

###### Description:

Closed scrub to 6 m tall growing on the edge of estuarine waterbodies such as creeks, rivers and lagoons with intermediate salinity and poor drainage conditions. Dominated by Swamp Paperbark Melaleuca ericifolia with a halophytic (succulent) ground layer dominated by graminoids and herbs. Often occurs in close association with Estuarine Wetland.

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 50% | *Melaleuca ericifolia* | Swamp Paperbark |

**Understorey: Lifeform** Medium Shrub Medium Herb

Small or Prostrate Herb

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

###### #Spp %Cover LF Code

1. 10% MS
2. 20% MH

2 5% SH

2 10% MTG

2 15% MNG

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  *Atriplex cinerea* | **Common Name**  Coast Saltbush |
| MS | *Rhagodia candolleana subsp. candolleana* | Seaberry Saltbush |
| MH | *Chenopodium glaucum* | Glaucous Goosefoot |
| MH | *Samolus repens* | Creeping Brookweed |
| MH | *Sarcocornia quinqueflora* | Beaded Glasswort |
| SH | *Apium prostratum subsp. prostratum* | Sea Celery |
| SH | *Selliera radicans* | Shiny Swamp-mat |
| MTG | *Poa labillardierei* | Common Tussock-grass |
| MTG | *Poa poiformis* | Coast Tussock-grass |
| MNG | *Distichlis distichophylla* | Australian Salt-grass |
| MNG | *Ficinia nodosa* | Knobby Club-sedge |

###### Recruitment:

Continuous.

###### Organic Litter:

20 % cover

###### Weediness:

**LF Code Typical Weed Species Common Name Invasive Impact**

LNG

*Holcus lanatus*

Yorkshire Fog

high high



Ecological Vegetation Class Bioregion Benchmark

### EVC 53\_62: Estuarine Swamp Scrub

###### Weediness:

**LF Code Typical Weed Species Common Name Invasive Impact**

MH *Hypochoeris radicata*

Cat's Ear

high low

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

Otway Plain bioregion

EVC 55: Plains Grassy Woodland

Description:

An open, eucalypt woodland to 15 m tall occurring on a number of geologies and soil types. 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**  10 / ha |

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover**  20% | **Character Species**  Eucalyptus ovata | **Common Name**  Swamp Gum |
|  | Eucalyptus camaldulensis | River Red-gum |
|  | Eucalyptus melliodora | Yellow Box |
|  | Eucalyptus viminalis | Manna Gum |
|  | Eucalyptus leucoxylon | Yellow Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Small Shrub | 1 | 1% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Large Herb | 1 | 5% | LH |
| Medium Herb | 10 | 20% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 9 | 35% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Allocasuarina littoralis | **Common Name**  Black Skeoak |
| T | Acacia melanoxylon | Blackwood |
| T | Banksia marginata | Silver Banksia |
| MS | Acacia paradoxa | Hedge Wattle |
| SS | Pimelea humilis | Common Rice-flower |
| PS | Bossiaea prostrata | Creeping Bossiaea |
| PS | Astroloma humifusum | Cranberry Heath |
| MH | Hypericum gramineum | Small St John's Wort |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| SH | Dichondra repens | Kidney-weed |
| SH | Poranthera microphylla | Small Poranthera |
| LTG | Austrostipa rudis | Veined Spear-grass |
| LNG | Gahnia radula | Thatch Saw-sedge |
| MTG | Themeda triandra | Kangaroo Grass |
| MTG | Carex breviculmis | Common Grass-sedge |
| MTG | Lomandra filiformis | Wattle Mat-rush |
| MTG | Schoenus apogon | Common Bog-sedge |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 55: Plains Grassy Woodland - Otway 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  MH Hypochoeris radicata Cat's Ear high low MH Centaurium erythraea Common Centaury high low  LNG Holcus lanatus Yorkshire Fog high high  MTG Anthoxanthum odoratum Sweet Vernal-grass high high MNG Romulea rosea Onion Grass high low  MNG Briza maxima Large Quaking-grass high low  MNG Briza minor Lesser Quaking-grass high low  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 56: Floodplain Riparian Woodland

Description:

An open eucalypt woodland to 15 m tall over a medium to large shrub layer with a ground layer consisting of amphibious and aquatic herbs and sedges. Occurs along the banks and floodplains of the larger meandering rivers and major creeks, often in conjunction with one or more floodplain wetland communities. Elevation and rainfall are relatively low and soils are fertile alluviums subject to periodic flooding and inundation.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  80 cm | **#/ha**  15 / ha |

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 20% | Eucalyptus camaldulensis  Eucalyptus ovata | River Red-gum  Swamp Gum |

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

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Bursaria spinosa ssp. spinosa | **Common Name**  Sweet Bursaria |
| MS | Acacia pycnantha | Golden Wattle |
| MS | Myoporum sp. 1 | Sticky Boobialla |
| LH | Senecio glomeratus | Annual Fireweed |
| MH | Rumex brownii | Slender Dock |
| SH | Dichondra repens | Kidney-weed |
| SH | Crassula helmsii | Swamp Crassula |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Hydrocotyle sibthorpioides | Shining Pennywort |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| LTG | Poa labillardierei | Common Tussock-grass |
| LNG | Phragmites australis | Common Reed |
| MTG | Lachnagrostis filiformis | Common Blown-grass |
| MTG | Austrodanthonia penicillata | Slender Wallaby-grass |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Bulbine bulbosa | Bulbine Lily |
| MNG | Triglochin striatum | Streaked Arrowgrass |
| MNG | Schoenus nitens | Shiny Bog-sedge |
| MNG | Distichlis distichophylla | Australian Salt-grass |
| SC | Cassytha melantha | Coarse Dodder-laurel |
| SC | Calystegia sepium | Large Bindweed |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 56: Floodplain Riparian Woodland - Otway Plain bioregion | |
|  | **Recruitment:**  Episodic/Flood. Desirable period between disturbances is 10 years.  **Organic Litter:**  40 % cover  **Logs:**  30 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Rosa rubiginosa Sweet Briar low high  LH Rumex conglomeratus Clustered Dock high high LH Sonchus oleraceus Common Sow-thistle high low  LH Rumex crispus Curled Dock high high  LH Helminthotheca echioides Ox-tongue high high  LH Aster subulatus Aster-weed high low  LH Cirsium vulgare Spear Thistle high high LH Sonchus asper s.l. Rough Sow-thistle high low  LH Plantago lanceolata Ribwort high high  MH Hypochoeris radicata Cat's Ear high low MH Plantago major Greater Plantain high low  MH Brassica fruticulosa Twiggy Turnip high high  MH Atriplex prostrata Hastate Orache high high  LTG Phalaris aquatica Toowoomba Canary-grass high high  LNG Holcus lanatus Yorkshire Fog high high MTG Cyperus eragrostis Drain Flat-sedge high high  MTG Bromus catharticus Prairie Grass high low  MTG Lolium perenne Perennial Rye-grass high high MNG Paspalum distichum Water Couch high high  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 68: Creekline Grassy Woodland

Description:

Eucalypt-dominated woodland to 15 m tall with occasional scattered shrub layer over a mostly grassy/sedgy to herbaceous ground-layer. Occurs on low-gradient ephemeral to intermittent drainage lines, typically on fertile colluvial/alluvial soils, on a wide range of suitably fertile geological substrates. These minor drainage lines can include a range of graminoid and herbaceous species tolerant of waterlogged soils, and are presumed to have sometimes resembled a linear wetland or system of interconnected small ponds.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  80 cm | **#/ha**  15 / ha |

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus camaldulensis | River Red-gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 2 | 15% | T |
| Medium Shrub | 5 | 10% | MS |
| Small Shrub | 1 | 1% | SS |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 10 | 30% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 10% | MNG |
| Scrambler or Climber | 3 | 10% | SC |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia melanoxylon | **Common Name**  Blackwood |
| T | Acacia retinodes | Wirilda |
| MS | Hymenanthera dentata s.l. | Tree Violet |
| SS | Rubus parvifolius | Small-leaf Bramble |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| SH | Azolla filiculoides | Pacific Azolla |
| SH | Lemna disperma | Common Duckweed |
| LTG | Austrostipa bigeniculata | Kneed Spear-grass |
| LTG | Poa labillardierei | Common Tussock-garss |
| LNG | Phragmites australis | Common Reed |
| MTG | Austrodanthonia racemosa var. racemosa | Stiped Wallaby-grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |
| SC | Glycine clandestina | Twining Glycine |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 68: Creekline Grassy Woodland - Otway Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  40 % cover  **Logs:**  20 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Salix fragilis Crack Willow high high  MS Lycium ferocissimum African Box-thorn low high MS Genista monspessulana Montpellier Broom high high  MS Rosa rubiginosa Sweet Briar low high  MS Rubus sp. aff. armeniacus Blackberry high high  LH Plantago lanceolata Ribwort high low  LH Sonchus oleraceus Common Sow-thistle high low  LH Hirschfeldia incana Buchan Weed high high LH Verbena bonariensis s.l. Purple-top Verbena high high  LH Rumex crispus Curled Dock high high  LH Rumex conglomeratus Clustered Dock high high  LH Conium maculatum Hemlock high high  LH Helminthotheca echioides Ox-tongue high low  LH Aster subulatus Aster-weed high low  LH Sonchus asper s.l. Rough Sow-thistle high low LH Solanum nigrum sensu Willis (1972) Black Nightshade high high  MH Brassica fruticulosa Twiggy Turnip high high  MH Hypochoeris radicata Cat's Ear high low  MH Foeniculum vulgare Fennel high high  SH Modiola caroliniana Red-flower Mallow high low  LTG Phalaris aquatica Toowoomba Canary-grass high high  LTG Piptatherum miliaceum Rice Millet high high MTG Ehrharta erecta var. erecta Panic Veldt-grass high high  MTG Paspalum dilatatum Paspalum high high  MTG Bromus catharticus Prairie Grass high low  MTG Romulea rosea Onion Grass high low  MTG Bromus diandrus Great Brome high low  MTG Briza maxima Large Quaking-grass high low  MTG Agrostis capillaris s.l. Brown-top Bent high high  MNG Dactylis glomerata Cocksfoot high high  MNG Paspalum distichum Water Couch high high SC Tradescantia fluminensis Wandering Jew high high  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 83: Swampy Riparian Woodland

Description:

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** |
| 10% | Eucalyptus ovata | Swamp Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 3 | 10% | MS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 9 | 15% | MH |
| Small or Prostrate Herb | 4 | 5% | SH |
| Large Tufted Graminoid | 5 | 25% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 8 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | 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 |  | 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 |
| MH |  | Acaena novae-zelandiae | Bidgee-widgee |
| SH |  | Leptinella reptans s.l. | Creeping Cotula |
| SH |  | Hydrocotyle sibthorpioides | Shining Pennywort |
| SH | R r | Lobelia beaugleholei | Showy Lobelia |
| 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 |
| MNG |  | Empodisma minus | Spreading Rope-rush |
| GF |  | Pteridium esculentum | Austral Bracken |
| TRF |  | Cyathea australis | Rough Tree-fern |
| SC |  | Calystegia sepium | Large Bindweed |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 83: Swampy Riparian Woodland - Otway 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 suaveolens Hairy Bird's-foot Trefoil high high  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 high 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 April 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**

Otway Plain bioregion

EVC 104: Lignum Swamp

Description:

Shrubland to 3 m tall or open woodland to 15 m tall, with an understorey that can be rich in herbaceous species. Occurs on inundation-prone heavy grey soils in depressions or floodways in low rainfall areas.

+ woodland only components (ignore when assessing treeless areas and standardise final score as appropriate)

Large trees+:

|  |  |  |
| --- | --- | --- |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp. | 80 cm |  |

**Tree Canopy Cover+:**

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

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

**LF Code Species typical of at least part of EVC range Common Name**

|  |  |  |
| --- | --- | --- |
| MS | Muehlenbeckia florulenta | Lignum |
| LH | Brachyscome basaltica var. gracilis | Woodland Swamp-daisy |
| LH | Rumex brownii | Slender Dock |
| MH | Marsilea drummondii | Common Nardoo |
| MH | Alternanthera denticulata s.l. | Lesser Joyweed |
| MH | Myriophyllum muelleri | Hooded Water-milfoil |
| SH | Eryngium vesiculosum | Prickfoot |
| SH | Lobelia pratioides | Poison Lobelia |
| SH | Lobelia concolor | Poison Pratia |
| LTG | Amphibromus nervosus | Common Swamp Wallaby-grass |
| MTG | Lachnagrostis filiformis | Common Blown-grass |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |
| MTG | Juncus subsecundus | Finger Rush |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eleocharis pusilla | Small Spike-sedge |

**Recruitment:**

Episodic/Flood - Desirable period between disturbances is 10 years.

Organic Litter:

10 % cover

Logs+:

5 m/0.1 ha.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 104: Lignum Swamp - Otway 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 Helminthotheca echioides Ox-tongue high high LH Cynara cardunculus Spanish Artichoke high high  LH Sonchus asper s.l. Rough Sow-thistle high low  LH Aster subulatus Aster-weed high low  MH Hypochoeris radicata Cat's Ear high low MH Cerastium glomeratum s.l. Common Mouse-ear Chickweed high low MTG Nassella trichotoma Serrated Tussock high high  MTG Lolium rigidum Wimmera Rye-grass high low MTG Bromus hordeaceus ssp. hordeaceus Soft Brome high low MTG Vulpia bromoides Squirrel-tail Fescue high low  Published by the Victorian Government Department of Sustainability and Environment October 2005  © 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**

Otway Plain bioregion

EVC 128: Grassy Forest

Description:

Low growing forest to 20 m tall with an understorey of small and medium shrubs and a rich diversity of herbs. Large shrubs and understorey trees may also be conspicuous. Often grows in areas transitional between drier box stringybark forests and taller herb-rich forests typical of more favourable environments.

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

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 30% | Eucalyptus obliqua  Eucalyptus radiata s.l. | Messmate Stringybark  Narrow-leaf Peppermint |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 3 | 10% | MS |
| Small Shrub | 4 | 5% | SS |
| Prostrate Shrub | 2 | 1% | PS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 10 | 15% | MH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Medium to Small Tufted Graminoid | 9 | 30% | MTG |
| Scrambler or Climber | 2 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **80%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Epacris impressa | **Common Name**  Common Heath |
| MS | Daviesia leptophylla | Narrow-leaf Bitter-pea |
| MS | Pultenaea gunnii | Golden Bush-pea |
| SS | Hovea heterophylla | Common Hovea |
| SS | Dillwynia cinerascens s.l. | Grey Parrot-pea |
| SS | Leucopogon virgatus | Common Beard-heath |
| SS | Tetratheca ciliata | Pink-bells |
| PS | Acrotriche serrulata | Honey-pots |
| PS | Platylobium formosum | Handsome Flat-pea |
| LH | Senecio tenuiflorus | Slender Fireweed |
| LH | Senecio glomeratus | Annual Fireweed |
| LH | Wahlenbergia gymnoclada | Naked Bluebell |
| MH | Helichrysum scorpioides | Button Everlasting |
| MH | Poranthera microphylla | Small Poranthera |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Gonocarpus tetragynus | Common Raspwort |
| SH | Opercularia varia | Variable Stinkweed |
| MTG | Poa sieberiana | Grey Tussock-grass |
| MTG | Lomandra filiformis | Wattle Mat-rush |
| MTG | Dichelachne sciurea spp. agg. | Short-hair Plume-grass |
| MTG | Stylidium graminifolium s.l. | Grass Trigger-plant |
| GF | Pteridium esculentum | Austral Bracken |
| SC | Hardenbergia violacea | Purple Coral-pea |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 128: Grassy Forest - Otway Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20 % cover  **Logs:**  20 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Pinus radiata Radiata Pine low high MH Hypochoeris radicata Cat's Ear high low MTG Anthoxanthum odoratum Sweet Vernal-grass high high MTG Agrostis capillaris s.l. Brown-top Bent high high  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 132: Plains Grassland

Description:

Treeless vegetation dominated by largely graminoid and herb life forms. Shrubs and trees may be also occasionally present.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** Large Herb | **#Spp**  3 | **%Cover**  10% | **LF code**  LH |
| Medium Herb | 10 | 20% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 13 | 40% | MTG |
| Medium to Tiny Non-tufted Graminoid | 4 | 10% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  LH | **Species typical of at least part of EVC range**  Eryngium ovinum | **Common Name**  Blue Devil |
| LH | Senecio quadridentatus | Cottony Fireweed |
| MH | Calocephalus citreus | Lemon Beauty-heads |
| MH | Acaena echinata | Sheep's Burr |
| MH | Leptorhynchos squamatus | Scaly Buttons |
| MH | Geranium retrorsum s.l. | Grassland Crane’s-bill |
| SH | Solenogyne dominii | Smooth Solenogyne |
| SH | Lobelia pratioides | Poison Lobelia |
| LTG | Austrostipa bigeniculata | Kneed Spear-grass |
| MTG | Themeda triandra | Kangaroo Grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MTG | Elymus scaber var. scaber | Common Wheat-grass |
| MTG | Schoenus apogon | Common Bog-sedge |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |

Recruitment:

Episodic/Fire or Grazing. Desirable period between disturbances is 5 years.

Organic Litter:

10% cover

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 132: Plains Grassland - Otway Plain bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Plantago lanceolata Ribwort high low  LH Cirsium vulgare Spear Thistle high high  LH Sonchus oleraceus Common Sow-thistle high low  MH Hypochoeris radicata Cat's Ear high high MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low  MH Trifolium subterraneum Subterranean Clover high low  MH Plantago coronopus Buck's-horn Plantain high high  MH Trifolium striatum Knotted Clover high low  MH Trifolium dubium Suckling Clover high low  LTG Phalaris aquatica Toowoomba Canary-grass high high  LNG Holcus lanatus Yorkshire Fog high high  MTG Romulea rosea Onion Grass high low  MTG Vulpia bromoides Squirrel-tail Fescue high low  MTG Briza minor Lesser Quaking-grass high low MTG Bromus hordeaceus ssp. hordeaceus Soft Brome high low  MTG Briza maxima Large Quaking-grass high low  MTG Lolium rigidum Wimmera Rye-grass high low  MTG Lolium perenne Perennial Rye-grass high high  MTG Nassella neesiana Chilean Needle-grass high high  MNG Cynosurus echinatus Rough Dog's-tail high low  MNG Juncus capitatus Capitate Rush high low  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 140: Mangrove Shrubland

Description:

Shrubland to 2 m tall. Confined to protected low energy coastal environments where there is sufficient shelter from strong wave action and currents to allow the accumulation of fine sediments, generally on mud flats within the tidal zone.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms:** |  | | |
| **Life form**  Medium Shrub | **#Spp**  1 | **%Cover**  40% | **LF code**  MS |
| Medium to Tiny Non-tufted Graminoid | 1 | 5% | MNG |
| **Total understorey projective foliage cover** |  | **25%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code** | **Species typical of at least part of EVC range** | **Common Name** |
| MS  MNG | Avicennia marina ssp. australasica  Zostera muelleri | White Mangrove  Dwarf Grass-wrack |

Recruitment:

Continuous

Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 140: Mangrove Shrubland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain bioregion

EVC 154: Bird Colony Shrubland

Description:

A shrubland to 2.2 m tall dominated by Coast Hollyhock and confined to sand dunes on Mutton Bird Island, Port Phillip Bay. The poorly structured sandy soils are subject to intense trampling and tunnelling by sea bird breeding colonies.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 3 | 40% | SS |
| Large Herb | 1 | 10% | LH |
| Medium Non-Tufted Graminoid | 1 | 5% | MNG |
| **Total understorey projective foliage cover** |  | **30%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Malva sp. aff. australiana | **Common Name**  Coast Hollyhock |
| MS | Solanum laciniatum | Large Kangaroo Apple |
| MS | Atriplex cinerea | Coast Saltbush |
| LH | Epilobium hirtigerum | Hairy Willow-herb |
| MNG | Ficinia nodosa | Knobby Club-sedge |

Recruitment:

Continuous

Organic Litter:

10% cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| MTG  MTG MTG LH LH LH LH MH MH SH | Critesion murinum  Ehrharta longiflora Poa annua Solanum furcatum  Solanum nigrum s.s. Sonchus oleraceus Urtica urens  Atriplex prostrata Arctotheca calendula Malva nicaeensis | Barley-grass  Annual Veldt-grass Annual Meadow-grass Broad Nightshade Black Nightshade Common Sow-thistle Small Nettle  Hastate Orache Cape Weed Mallow of Nice | high  high high high high high high high high high | high  high high high high high high high high high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 154: Bird Colony Shrubland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway 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 area subject to high levels of saltspray and continuous disturbance from onshore winds.

**Understorey: Lifeform** Medium Shrub Small Shrub Large Herb Medium Herb

Small or Prostrate Herb

Medium to Small Tufted Graminoid Medium to Tiny Non-Tufted Graminoid Scrambler or Climber

###### #Spp %Cover LF Code

7 50% MS

1 1% SS

3 5% LH

7 15% MH

3 10% SH

2 15% MTG

1. 5% MNG
2. 5% SC

Bryophytes/Lichens 10% BL



|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  *Atriplex cinerea* | **Common Name**  Coast Saltbush |
| MS | *Leucopogon parviflorus* | Coast Beard-heath |
| MS | *Rhagodia candolleana subsp. candolleana* | Seaberry Saltbush |
| SS | *Suaeda australis* | Austral Seablite |
| LH | *Senecio pinnatifolius* | Variable Groundsel |
| MH | *Lagenophora stipitata* | Common Bottle-daisy |
| MH | *Senecio spathulatus s.l.* | Dune Groundsel |
| SH | *Apium prostratum subsp. prostratum* | Sea Celery |
| SH | *Carpobrotus rossii* | Karkalla |
| SH | *Threlkeldia diffusa* | Coast Bonefruit |
| MTG | *Lachnagrostis billardierei subsp. billardierei* | Coast Blown-grass |
| MTG | *Poa australis spp. agg.* | Tussock Grass |
| MNG | *Ficinia nodosa* | Knobby Club-sedge |
| SC | *Clematis microphylla var. microphylla* | Small-leaved Clematis |
| SC | *Tetragonia implexicoma* | Bower Spinach |

###### Recruitment:

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

###### Organic Litter:

40 % cover

Ecological Vegetation Class Bioregion Benchmark

|  |  |
| --- | --- |
| EVC 160: Coastal Dune Scrub | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH *Senecio elegans* Purple Groundsel high high  MS *Rhamnus alaternus* Italian Buckthorn high high SC *Asparagus asparagoides* Bridal Creeper high high LNG *Ammophila arenaria* Marram Grass high high  MS *Lycium ferocissimum* African Box-thorn high high  MH *Galium murale* Small Goosegrass high low  MNG *Lagurus ovatus* Hare's-tail Grass high low  MTG *Catapodium rigidum* Fern Grass high low  LH *Sonchus asper s.l.* Rough Sow-thistle high low MH *Cerastium glomeratum s.l.* Common Mouse-ear high low  Chickweed  MH *Hypochoeris radicata* Cat's Ear high low  LH *Melilotus indicus* Sweet Melilot high low  LH *Sonchus oleraceus* Common Sow-thistle high low  Published by the Victorian Government Department of Sustainability and Environment November 2009  © 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**

Otway Plain bioregion

EVC 161: Coastal Headland Scrub

Description:

Scrub or low shrubland to 2 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 along rocky sections of the coast.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 8 | 60% | MS |
| Small Shrub | 1 | 1% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Medium Herb | 2 | 5% | MH |
| Medium Tufted Graminoid | 1 | 5% | LTG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **65%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum continentale | **Common Name**  Prickly Tea-tree |
| MS | Epacris impressa | Common Heath |
| MS | Correa reflexa | Common Correa |
| MS | Leptospermum scoparium | Manuka |
| SS | Isopogon ceratophyllus | Horny Cone-bush |
| PS | Astroloma humifusum | Cranberry Heath |
| PS | Acrotriche serrulata | Honey-pots |
| MH | Veronica calycina | Hairy Speedwell |
| MH | Daucus glochidiatus | Australian Carrot |
| MTG | Lomandra longifolia | Spiny-headed Mat-rush |
| SC | Cassytha melantha | Coarse Dodder-laurel |

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  LH MH MH MH SH MNG MNG SC | Lycium ferocissimum  Cirsium vulgare Hypochoeris radicata  Centaurium erythraea Trifolium dubium  Trifolium repens var. repens Lagurus ovatus  Dactylis glomerata Vicia sativa | African Box-thorn  Spear Thistle Cat's Ear  Common Centaury Suckling Clover  White Clover Hare's-tail Grass  Cocksfoot Common Vetch | high  high high high high high high high high | high  high low low low low low high low |

Ecological Vegetation Class bioregion benchmark

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

Otway 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 | 3 | 10% | MS |
| Small Shrub | 1 | 5% | SS |
| Large Herb | 1 | 10% | LH |
| Medium Herb | 3 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 4 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **90%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leucopogon parviflorus | **Common Name**  Coast Beard-heath |
| MS | Correa alba | White Correa |
| LH | Epilobium billardierianum ssp. billardierianum | Smooth Willow-herb |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Samolus repens | Creeping Brookweed |
| MH | Asperula conferta | Common Woodruff |
| MH | Sarcocornia quinqueflora | Beaded Glasswort |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Mimulus repens | Creeping Monkey-flower |
| SH | Leptinella reptans s.l. | Creeping Cotula |
| LTG | Austrostipa stipoides | Prickly Spear-grass |
| LTG | Dichelachne crinita | Long-hair Plume-grass |
| MTG | Isolepis cernua | Nodding Club-sedge |
| MTG | Poa poiformis | Coast Tussock-grass |
| MTG | Lachnagrostis filiformis | Common Blown-grass |
| MTG | Dianella brevicaulis | Coast Flax-lily |
| MNG | Distichlis distichophylla | Australian Salt-grass |
| MNG | Triglochin striatum | Streaked Arrowgrass |
| MNG | Ficinia nodosa | Knobby Club-sedge |

Recruitment:

Continuous

Organic Litter:

20% Cover

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 163: Coastal Tussock Grassland - Otway Plain bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Rubus sp. aff. armeniacus Blackberry high high LH Sonchus oleraceus Common Sow-thistle high low  LH Plantago lanceolata Ribwort high low  LH Sonchus asper s.l. Rough Sow-thistle high low  LH Centaurium tenuiflorum Slender Centaury high low  MH Lotus suaveolens Hairy Bird's-foot Trefoil high low  MH Plantago coronopus Buck's-horn Plantain high low  MH Anagallis arvensis Pimpernel high low MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low  LTG Ammophila arenaria Marram Grass high high  LNG Holcus lanatus Yorkshire Fog high high  MTG Polypogon monspeliensis Annual Beard-grass high low  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 165: Damp Heath Scrub

Description:

Scrub or shrubland to 5 m tall on flat to gently sloping terrain subject to seasonal waterlogging. Dominated by a dense shrub layer and numerous graminoids on generally sandy soils.

Life forms

|  |  |  |  |
| --- | --- | --- | --- |
| **Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 7 | 50% | MS |
| Small Shrub | 2 | 5% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 2 | 5% | MH |
| Small or Prostrate Herb | 1 | 1% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Ground Fern | 1 | 1% | GF |
| Bryophytes/Lichens | na | 20% | 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 | Melaleuca squarrosa | Scented Paperbark |
| MS | Allocasuarina paludosa | Scrub Sheoak |
| MS | Epacris impressa | Common Heath |
| SS | Platylobium obtusangulum | Common Flat-pea |
| SS | Epacris lanuginosa | Woolly-style Heath |
| PS | Bossiaea prostrata | Creeping Bossiaea |
| PS | Xanthosia pusilla spp. agg. | Heath Xanthosia |
| PS | Acrotriche serrulata | Honey-pots |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Selaginella uliginosa | Swamp Selaginella |
| SH | Goodenia lanata | Trailing Goodenia |
| LTG | Xanthorrhoea australis | Austral Grass-tree |
| MTG | Lepidosperma filiforme | Common Rapier-sedge |
| MNG | Tetrarrhena distichophylla | Hairy Rice-grass |
| MNG | Empodisma minus | Spreading Rope-rush |
| MNG | Poa tenera | Slender Tussock-grass |
| 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

Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

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

Otway Plain bioregion

EVC 175: Grassy Woodland

Description:

A variable open eucalypt woodland to 15 m tall or occasionally Sheoak woodland to 10 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** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Allocasuarina spp. | 70 cm  40 cm | 15 / ha |

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus radiata s.l.  e Eucalyptus leucoxylon ssp. bellarinensis Allocasuarina verticillata | Narrow-leaf Peppermint  Bellarine Yellow-gum Drooping Sheoak |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 6 | 20% | MS |
| Small Shrub | 2 | 5% | SS |
| Prostrate Shrub | 2 | 1% | PS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 8 | 15% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 10 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Ground Fern | 1 | 5% | GF |
| Scrambler or Climber | 2 | 5% | SC |
| Bryophytes/Lichens | na | 10% | BL |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 175: Grassy Woodland - Otway Plain bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T Acacia mearnsii Black Wattle  T Allocasuarina littoralis Black Sheoak  MS Leptospermum continentale Prickly Tea-tree  MS Epacris impressa Common Heath  MS Cassinia aculeata Common Cassinia  SS Pimelea humilis Common Rice-flower  SS Hibbertia riparia Erect Guinea-flower  PS Bossiaea prostrata Creeping Bossiaea  PS Astroloma humifusum Cranberry Heath  PS Acrotriche serrulata Honey-pots  LH Pterostylis longifolia s.l. Tall Greenhood  MH Gonocarpus tetragynus Common Raspwort  MH Drosera peltata ssp. auriculata Tall Sundew  SH Dichondra repens Kidney-weed  SH Opercularia varia Variable Stinkweed  SH Drosera whittakeri ssp. aberrans Scented Sundew  LTG Deyeuxia quadriseta Reed Bent-grass  LTG Xanthorrhoea minor ssp. lutea Small Grass-tree  LNG Gahnia radula Thatch Saw-sedge  MTG Lomandra filiformis Wattle Mat-rush  MTG Themeda triandra Kangaroo Grass  MTG Poa sieberiana Grey Tussock-grass  MTG Lepidosperma laterale Variable Sword-sedge  MNG Microlaena stipoides var. stipoides Weeping Grass  GF Pteridium esculentum Austral Bracken  SC Comesperma volubile Love Creeper  SC Billardiera scandens Common Apple-berry  **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 T Pittosporum undulatum Sweet Pittosporum high high  MS Chrysanthemoides monilifera Boneseed high high  MH Hypochoeris radicata Cat's Ear high low MTG Anthoxanthum odoratum Sweet Vernal-grass high high  MTG Briza maxima Large Quaking-grass high low  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 196: Seasonally Inundated Sub-saline Herbland

Description:

Dominated by low-growing succulents and estuarine species. Occupies broad shallow basins that fill for several months following major floods. The geology is recent aeolian estuarine sands and the rainfall is approximately 600 mm per annum. Soils are grey silty clays.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Prostrate Shrub | 2 | 20% | PS |
| Medium Herb | 2 | 30% | MH |
| Medium Non-tufted Graminoid | 1 | 5% | MNG |
| Soil Crust | na | 10 % | S/C |
| **Total understorey projective foliage cover** |  | **65%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  PS | **Species typical of at least part of EVC range**  Wilsonia humilis | **Common Name**  Silky Wilsonia |
| PS | Wilsonia backhousei | Narrow-leaf Wilsonia |
| MH | Sarcocornia quinqueflora | Beaded Glasswort |
| MH | Apium annuum | Annual Celery |
| MNG | Triglochin striatum | Streaked Arrowgrass |

Recruitment:

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

Organic Litter:

10 % cover

Logs:

15 m/0.1 ha.

Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 196: Seasonally Inundated Sub-saline Herbland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway 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** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 10% | T |
| Medium Shrub | 5 | 20% | MS |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 3 | 25% | LTG |
| Large Non-tufted Graminoid | 2 | 15% | LNG |
| Medium to Small Tufted Graminoid | 3 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Ground Fern | 2 | 10% | GF |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum continentale | **Common Name**  Prickly Tea-tree |
| MS | Acacia verticillata ssp. verticillata | Prickly Moses |
| MS | Melaleuca squarrosa | Scented Paperbark |
| MS | Coprosma quadrifida | Prickly Currant-bush |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Viola hederacea sensu Willis (1972) | Ivy-leaf Violet |
| MH | Hydrocotyle hirta | Hairy Pennywort |
| SH | Oxalis exilis | Shady Wood-sorrel |
| SH | Lobelia pedunculata s.l. | Matted Pratia |
| LTG | Lepidosperma laterale var. majus | Variable Sword-sedge |
| LTG | Gahnia sieberiana | Red-fruit Saw-sedge |
| LTG | Carex appressa | Tall Sedge |
| LNG | Gahnia radula | Thatch Saw-sedge |
| LNG | Tetrarrhena juncea | Forest Wire-grass |
| MTG | Dianella tasmanica | Tasman Flax-lily |
| MTG | Juncus planifolius | Broad-leaf Rush |
| MNG | Poa tenera | Slender Tussock-grass |
| MNG | Tetrarrhena distichophylla | Hairy Rice-grass |
| GF | Pteridium esculentum | Austral Bracken |
| GF | Blechnum nudum | Fishbone Water-fern |
| GF | Blechnum minus | Soft Water-fern |
| EP | Amyema pendula | Drooping Mistletoe |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 198: Sedgy Riparian Woodland - Otway Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  30 % 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 LNG Holcus lanatus Yorkshire Fog high high  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway 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 - Otway 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**

Otway 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 | 8 | 15% | MH |
| Small or Prostrate Herb | 4 | 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 | Ranunculus sessiliflorus | Annual Buttercup |
| MH | Parietaria debilis s.l. | Shade Pellitory |
| SH | Oxalis exilis | Shady Wood-sorrel |
| 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 - Otway 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 high  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**

Otway Plain bioregion

EVC 233: Wet Sands Thicket

Description:

Dense, impenetrable heathy scrub to 5 m tall with occasional emergent eucalypts. Occurs on Tertiary outwash geology on deep sandy grey loams to sands.

Lifeforms:

|  |  |  |  |
| --- | --- | --- | --- |
| **Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 50% | MS |
| Small Shrub | 4 | 10% | SS |
| Medium Herb | 2 | 1% | MH |
| Small or Prostrate Herb | 1 | 1% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Medium to Small Tufted Graminoid | 1 | 1% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Ground Fern | 1 | 1% | GF |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  MS |  | **Species typical of at least part of EVC range**  Acacia verticillata | **Common Name**  Prickly Moses |
| MS |  | Leptospermum continentale | Prickly Tea-tree |
| MS |  | Pimelea linifolia | Slender Rice-flower |
| MS | r | Monotoca glauca | Currant-wood |
| SS |  | Leucopogon australis | Spike Beard-heath |
| SS |  | Dillwynia glaberrima | Smooth Parrot-pea |
| SS |  | Bauera rubioides | Wiry Bauera |
| SS |  | Amperea xiphoclada var. xiphoclada | Broom Spurge |
| MH |  | Selaginella uliginosa | Swamp Selaginella |
| SH |  | Mitrasacme pilosa var. pilosa | Hairy Mitrewort |
| LTG |  | Gahnia sieberiana | Red-fruit Saw-sedge |
| MTG |  | Patersonia fragilis | Short Purple-flag |
| MNG |  | Tetrarrhena distichophylla | Hairy Rice-grass |
| GF |  | Lindsaea linearis | Screw Fern |
| SC |  | Cassytha glabella | Slender Dodder-laurel |

**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  MH MH MH LNG MTG MTG SC | Coprosma repens  Hypochoeris radicata Lotus uliginosus  Centaurium erythraea Holcus lanatus  Briza minor  Anthoxanthum odoratum Rubus sp. aff. armeniacus | Mirror Bush  Cat's Ear  Greater Bird's-foot Trefoil Common Centaury  Yorkshire Fog  Lesser Quaking-grass Sweet Vernal-grass  Blackberry | high  high high high high high high high | high  low low low low low low high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 233: Wet Sands Thicket - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain bioregion

EVC 311: Berm Grassy Shrubland

Description:

Low shrubland to 1.5 m tall occurring in sheltered coastal areas where sand deposits have formed as a result of low energy wave action. Contains a number of halophytic species over a ground layer of grasses and herbs.

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

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Atriplex cinerea | **Common Name**  Coast Saltbush |
| MS | Rhagodia candolleana ssp. candolleana | Seaberry Saltbush |
| SS | Frankenia pauciflora var. gunnii | Southern Sea-heath |
| LH | Senecio pinnatifolius | Variable Groundsel |
| LH | Senecio glomeratus | Annual Fireweed |
| MH | Sarcocornia quinqueflora ssp. quinqueflora | Beaded Glasswort |
| MH | Pseudognaphalium luteoalbum | Jersey Cudweed |
| MH | Actites megalocarpa | Coast Sow-thistle |
| SH | Disphyma crassifolium ssp. clavellatum | Rounded Noon-flower |
| SH | Dichondra repens | Kidneyweed |
| LTG | Dichelachne crinita | Long-hair Plume Grass |
| MTG | Poa poiformis | Coast Tussock-grass |
| MTG | Austrofestuca littoralis | Coast Fescue |
| MNG | Distichlis distichophylla | Australian Salt-grass |
| MNG | Ficinia nodosa | Knobby Club-sedge |

Recruitment:

Continuous

Organic Litter:

10% Cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| MS LH  LH MH  MH MH  MNG MNG | Chrysanthemoides monilifera ssp. monilifera Sonchus oleraceus  Conyza albida Polycarpon tetraphyllum  Hypochoeris radicata Anagallis arvensis  Vulpia myuros Lagurus ovatus | Boneseed  Common Sow-thistle Tall Fleabane  Four-leaved Allseed  Cat's Ear Pimpernel  Rat's-tail Fescue Hare's-tail Grass | high high  high high  high high  high high | high low  low low  low low  low low |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 311: Berm Grassy Shrubland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway 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 - Otway Plain bioregion | |
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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway 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 |
| Large Non-tufted Graminoid | 2 | 40% | LNG |
| Medium to Tiny Non-tufted Graminoid | 2 | 1% | MNG |
| Total understorey projective foliage cover |  | 80% |  |

|  |  |  |
| --- | --- | --- |
| LF Code  LH | Species typical of at least part of EVC range  Myriophyllum verrucosum | Common Name  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 |
| LTG | Triglochin procerum s.l. | Water Ribbons |
| LNG | Typha orientalis | Broad-leaf Cumbungi |
| LNG | Schoenoplectus tabernaemontani | River Club-sedge |
| LNG | Phragmites australis | Common Reed |
| 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  MH MNG | Typical Weed Species Cotula coronopifolia Paspalum distichum | Common Name Water Buttons Water Couch | Invasive  high high | Impact high high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 300: Tall Marsh - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain bioregion

EVC 851: Stream Bank Shrubland

Description:

Rivers and major streams where the watercourse consists of either rocky banks, a flat rocky stream bed or broad gravel banks which are often dry but are also regularly flooded by fast flowing waters. There is a sparse overstorey of trees to 15 m tall, a dominant tall shrub layer and a ground layer of sedges and herbs.

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

Tree Canopy Cover:

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 2 | 10% | T |
| Medium Shrub | 4 | 20% | MS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 12 | 25% | MH |
| Small or Prostrate Herb | 4 | 10% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Large Non-tufted Graminoid | 3 | 10% | LNG |
| Medium to Small Tufted Graminoid | 12 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 5 | 10% | MNG |
| Scrambler or Climber | 2 | 5% | SC |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia mearnsii | **Common Name**  Black Wattle |
| T | Acacia melanoxylon | Blackwood |
| MS | Leptospermum lanigerum | Woolly Tea-tree |
| MS | Hymenanthera dentata s.l. | Tree Violet |
| MS | Bursaria spinosa ssp. spinosa | Sweet Bursaria |
| MS | Callistemon sieberi | River Bottlebrush |
| LH | Persicaria decipiens | Slender Knotweed |
| LH | Epilobium billardierianum | Variable Willow-herb |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| MH | Hydrocotyle verticillata | Shield Pennywort |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| SH | Crassula helmsii | Swamp Crassula |
| SH | Dichondra repens | Kidney-weed |
| SH | Apium prostratum ssp. prostratum | Sea Celery |
| SH | Hydrocotyle verticillata | Shield Pennywort |
| LTG | Poa labillardierei | Common Tussock-grass |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| LNG | Phragmites australis | Common Reed |
| LNG | Schoenoplectus tabernaemontani | River Club-sedge |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |
| MNG | Ficinia nodosa | Knobby Club-sedge |
| SC | Calystegia sepium | Large Bindweed |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 851: Stream Bank Shrubland - Otway Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  40 % cover  **Logs:**  10 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Crataegus monogyna Hawthorn low high  MS Rosa rubiginosa Sweet Briar low high  MS Ulex europaeus Gorse low high  LH Plantago lanceolata Ribwort high low  LH Rumex crispus Curled Dock high low  LH Sonchus oleraceus Common Sow-thistle high low  LH Rumex conglomeratus Clustered Dock high low  LH Sonchus asper s.l. Rough Sow-thistle high low LH Helminthotheca echioides Ox-tongue high low  LH Aster subulatus Aster-weed high low  MH Hypochoeris radicata Cat's Ear high low MH Trifolium angustifolium var. angustifolium Narrow-leaf Clover high low MH Trifolium dubium Suckling Clover high low  MH Plantago major Greater Plantain high low SH Trifolium repens var. repens White Clover high low  LTG Phalaris aquatica Toowoomba Canary-grass high high  LNG Holcus lanatus Yorkshire Fog high high  MTG Vulpia bromoides Squirrel-tail Fescue high low MTG Bromus hordeaceus ssp. hordeaceus Soft Brome high low  MTG Nassella neesiana Chilean Needle-grass high high  MTG Bromus diandrus Great Brome high low  MTG Lolium perenne Perennial Rye-grass high low  MTG Romulea rosea Onion Grass high low  MTG Bromus catharticus Prairie Grass high low  MTG Briza maxima Large Quaking-grass high low  MTG Briza minor Lesser Quaking-grass high low  MNG Cynosurus echinatus Rough Dog's-tail high low  MNG Dactylis glomerata Cocksfoot high high  MNG Avena barbata Bearded Oat high low  MNG Paspalum distichum Water Couch high high  SC Galium aparine Cleavers high low  SC Vicia sativa ssp. sativa Common Vetch high low  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 858: Coastal Alkaline Scrub (syn. Calcarenite Dune Woodland)

Description:

Near-coastal, deep calcareous (alkaline) and largely stable sand dunes and swales commonly dominated by Moonah Melaleuca lanceolata ssp. lanceolata. It occurs at low elevations of 20-60 m above sea level, average annual rainfall is approximately 550- 950 mm, and it occurs on a variety of geologies and soil types. Low woodland or tall shrubland to 8 m tall, typically with a

medium shrub layer, small shrub layer and sedges, grasses and herbs in the ground layer.

Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 30% | Melaleuca lanceolata ssp. lanceolata  Allocasuarina verticillata Leptospermum laevigatum  Bursaria spinosa ssp. spinosa | Moonah  Drooping Sheoak Coast Tea-tree  Sweet Bursaria |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 3 | 20% | MS |
| Small Shrub | 1 | 1% | SS |
| Prostrate Shrub | 1 | 5% | PS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Medium to Small Tufted Graminoid | 4 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 5% | MNG |
| Scrambler or Climber | 2 | 1% | SC |
| Bryophytes/Lichens | na | 20% | BL |
| **Total understorey projective foliage cover** |  | **85%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Acacia longifolia ssp. sophorae | **Common Name**  Coast Wattle |
| MS | Leucopogon parviflorus | Coast Beard-heath |
| MS | Acacia retinodes var. uncifolia | Coast Wirilda |
| SS | Hibbertia sericea s.l. | Silky Guinea-flower |
| PS | Acrotriche prostrata | Trailing Ground-berry |
| MH | Lagenophora stipitata | Common Bottle-daisy |
| MH | Geranium potentilloides | Cinquefoil Cranesbill |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| SH | Dichondra repens | Kidney-weed |
| SH | Oxalis exilis | Shady Wood-sorrel |
| LTG | Lomandra longifolia | Spiny-headed Mat-rush |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Carex breviculmis | Common Grass-sedge |
| MTG | Elymus scaber var. scaber | Common Wheat-grass |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MNG | Ficinia nodosa | Knobby Club-sedge |
| SC | Clematis microphylla | Small-leaved Clematis |
| SC | Comesperma volubile | Love Creeper |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 858: Coastal Alkaline Scrub (syn. Calcarenite Dune Woodland) - Otway Plain bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  40 % cover  **Logs:**  5 m/0.1 ha. (note: large log class does not apply)  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Rhamnus alaternus Italian Buckthorn low high MS Chrysanthemoides monilifera Boneseed high high LNG Holcus lanatus Yorkshire Fog high high MTG Catapodium rigidum Fern Grass high low MNG Lagurus ovatus Hare's-tail Grass high low  MNG Vulpia spp. Fescue high low  Published by the Victorian Government Department of Sustainability and Environment April 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**

Otway Plain bioregion

EVC 863: Floodplain Reedbed

Description:

A closed to open grassland to 2–3 m tall, dominated by Common Reed. Small aquatic and semi-aquatic species occur amongst the reeds. It occurs on swamps on river plains, especially the lower reaches of the floodplain. Soils are Quaternary stream alluvium with floodplain and low level terrace deposits consisting of silt, clay and peat. Swamp Paperbark frequently fringes the margins of these reed beds.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 1 | 5% | MS |
| Large Herb | 2 | 10% | LH |
| Medium Herb | 2 | 5% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Medium to Small Tufted Graminoid | 1 | 5% | MTG |
| Large Non-tufted Graminoid | 2 | 30% | LNG |
| Scrambler or Climber | 1 | 1% | SC |
| **Total understorey projective foliage cover** |  | **60%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Solanum aviculare | **Common Name**  Kangaroo Apple |
| MH | Myriophyllum crispatum | Upright Water-milfoil |
| LH | Lycopus australis | Australian Gipsywort |
| LH | Urtica incisa | Scrub Nettle |
| SH | Mimulus repens | Creeping Monkey-flower |
| LNG | Phragmites australis | Common Reed |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| SC | Calystegia sepium | Large Bindweed |

Recruitment:

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

Organic Litter:

10% cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  MH | Aster subulatus  Cotula coronopifolia | Aster-weed  Water Buttons | high  high | low  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 863: Floodplain Reedbed - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain Bioregion

EVC 879: Coastal Dune Grassland

###### Description:

Consists of grasses and halophytes (succulents) that colonise the foredunes of ocean beaches. Soils are siliceous sands that have a very low humus content.

**Understorey: Lifeform** Medium Shrub Small Shrub Large Herb Medium Herb

Small or Prostrate Herb

Medium to Small Tufted Graminoid Medium to Tiny Non-Tufted Graminoid Scrambler or Climber

###### #Spp %Cover LF Code

1 5% MS

1. 5% SS
2. 5% LH

4 5% MH

3 10% SH

3 10% MTG

2 25% MNG

1. 1% SC

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  *Atriplex cinerea* | **Common Name**  Coast Saltbush |
| SS | *Suaeda australis* | Austral Seablite |
| LH | *Senecio pinnatifolius* | Variable Groundsel |
| MH | *Acaena novae-zelandiae* | Bidgee-widgee |
| MH | *Actites megalocarpa* | Dune Thistle |
| MH | *Apium annuum* | Annual Celery |
| SH | *Carpobrotus rossii* | Karkalla |
| SH | *Crassula sieberiana s.l.* | Sieber Crassula |
| MTG | *Dianella brevicaulis* | Small-flower Flax-lily |
| MNG | *Ficinia nodosa* | Knobby Club-sedge |
| MNG | *Spinifex sericeus* | Hairy Spinifex |
| SC | *Clematis microphylla* | Small-leaved Clematis |

###### Recruitment:

Continuous.

###### Organic Litter:

10 % cover

###### Weediness:

**LF Code Typical Weed Species Common Name Invasive Impact**

MNG

*Thinopyrum junceiforme*

Sea Wheat-grass

high high



Ecological Vegetation Class Bioregion Benchmark

|  |  |
| --- | --- |
| EVC 879: Coastal Dune Grassland | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  SC *Asparagus asparagoides* Bridal Creeper high high LH *Sonchus oleraceus* Common Sow-thistle high high MH *Leontodon taraxacoides subsp.* Hairy Hawkbit high low  *taraxacoides*  LNG *Ammophila arenaria* Marram Grass high low  MH *Hypochoeris radicata* Cat's Ear high low  Published by the Victorian Government Department of Sustainability and Environment November 2009  © 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

Otway Plain bioregion

EVC 891: Plains Brackish Sedge Wetland (syn. with EVC 656: Brackish Wetland)

Description:

Treeless EVC dominated by sedges and herbs that are generally indicative of saline conditions. True halophytic species such as samphires, if present, only occur with very low cover. Occurs in estuaries and along poorly defined drainage lines or associated with shorelines of brackish lakes.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Large Herb | 1 | 5% | LH |
| Medium Herb | 3 | 15% | MH |
| Small or Prostrate Herb | 3 | 10% | SH |
| Large Tufted Graminoid | 1 | 10% | LTG |
| Large Non-tufted Graminoid | 2 | 10% | LNG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 15% | MNG |
| Scrambler or Climber | 1 | 1% | SC |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **80%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  LH | **Species typical of at least part of EVC range**  Persicaria decipiens | **Common Name**  Slender Knotweed |
| LH | Epilobium billardierianum ssp. billardierianum | Smooth Willow-herb |
| MH | Sarcocornia quinqueflora | Beaded Glasswort |
| MH | Samolus repens | Creeping Brookweed |
| MH | Suaeda australis | Austral Seablite |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Crassula helmsii | Swamp Crassula |
| SH | Mimulus repens | Creeping Monkey-flower |
| LTG | Gahnia filum | Chaffy Saw-sedge |
| LNG | Juncus kraussii ssp. australiensis | Sea Rush |
| LNG | Phragmites australis | Common Reed |
| MTG | Poa poiformis | Coast Tussock-grass |
| MTG | Lachnagrostis filiformis | Common Blown-grass |
| MNG | Bolboschoenus caldwellii | Salt Club-sedge |
| MNG | Distichlis distichophylla | Australian Salt-grass |
| MNG | Schoenoplectus pungens | Sharp Club-sedge |
| MNG | Triglochin striatum | Streaked Arrowgrass |
| 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

|  |  |
| --- | --- |
| EVC 891: Plains Brackish Sedge Wetland (syn. with EVC 656: Brackish Wetland) – Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain bioregion

EVC 898: Cane Grass-Lignum Halophytic Herbland

Description:

Occurs within shallow depressions on otherwise flat terrain, where annual rainfall is approximately 600 mm. Geology is Quaternary sedimentary estuarine sands, and soils are silty clays, subject to periodic freshwater flooding. Varies from an open shrubland to grassland/sedgeland or herbland depending on site characteristics.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 1 | 10% | MS |
| Medium Herb | 4 | 5% | MH |
| Small or Prostrate Herb | 5 | 20% | SH |
| Large Non-tufted Graminoid | 1 | 10% | LNG |
| Medium to Tiny Non-tufted Graminoid | 3 | 20% | MNG |
| Soil Crust | na | 10 % | S/C |
| **Total understorey projective foliage cover** |  | **70%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Muehlenbeckia florulenta | **Common Name**  Tangled Lignum |
| MH | Rumex bidens | Mud Dock |
| MH | Sarcocornia quinqueflora | Beaded Glasswort |
| MH | Stellaria angustifolia | Swamp Starwort |
| SH | Crassula helmsii | Swamp Crassula |
| SH | Mimulus repens | Creeping Monkey-flower |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Neopaxia australasica | White Purslane |
| LNG | Eragrostis australasica | Cane-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Distichlis distichophylla | Australian Salt-grass |

Recruitment:

Continuous

Organic Litter:

10 % cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  LH LH MH MH MTG MNG | Rumex conglomeratus  Sonchus oleraceus Rumex crispus  Cotula coronopifolia Atriplex prostrata  Polypogon monspeliensis Paspalum distichum | Clustered Dock  Common Sow-thistle Curled Dock  Water Buttons Hastate Orache  Annual Beard-grass Water Couch | high  high high high high high high | high  low high high high low high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 898: Cane Grass-Lignum Halophytic Herbland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain bioregion

EVC 899: Plains Freshwater Sedge 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 |  | Crassula helmsii | Swamp Crassula |
| 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 |
| LTG |  | Triglochin procerum s.l. | Water Ribbons |
| 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** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  MTG | Rumex crispus  Juncus bulbosus | Curled Dock  Bulbous Rush | high  high | high  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 899: Plains Freshwater Sedge Wetland - Otway Plain bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Otway Plain Bioregion

EVC 952: Estuarine Reedbed

###### Description:

Estuarine Reedbed occurs in areas that are semi-permanently inundated by moderately saline water, on anaerobic silts and clays. It is strongly dominated by Common Reed, often with very few, if any, other species. Where present, these include a range of salt-tolerant herbs, sedges and rushes. Estuarine Reedbed commonly borders estuarine wetland, which is dominated by Sea Rush.

**Understorey: Lifeform** Medium Herb

Small or Prostrate Herb Large Non-Tufted Graminoid

###### #Spp %Cover LF Code

1. 5% MH

1 5% SH

1 50% LNG

###### LF Code Species typical of at least part of EVC range Common Name

|  |  |  |
| --- | --- | --- |
| MH | *Samolus repens* | Creeping Brookweed |
| MH | *Sarcocornia quinqueflora* | Beaded Glasswort |
| SH | *Apium prostratum subsp. prostratum* | Sea Celery |
| LNG | *Bolboschoenus caldwellii* | Salt Club-sedge |
| LNG | *Phragmites australis* | Common Reed |

**Recruitment:**

Continuous.

###### Weediness:

**LF Code Typical Weed Species Common Name Invasive Impact**

LH *Chenopodium album*

LH *Aster subulatus*

MH *Atriplex prostrata*

Fat Hen Aster-weed

Hastate Orache

low low

low low

low low



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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 953: Estuarine Scrub

Description:

Closed scrub to 6 m tall growing on the edge of estuarine waterbodies such as creeks, rivers and lagoons with intermediate salinity and poor drainage conditions. Dominated by Woolly Tea-tree Leptospermum lanigerum with a halophytic (succulent) ground layer dominated by graminoids and herbs. Often occurs in close association with Estuarine Wetland.

Canopy Cover:

|  |  |  |
| --- | --- | --- |
| %cover | Character Species | Common Name |
| 50% | Leptospermum lanigerum | Woolly Tea-tree |

|  |  |  |  |
| --- | --- | --- | --- |
| Understorey: Life form | #Spp | %Cover | LF code |
| Medium Shrub | 2 | 10% | MS |
| Medium Herb | 3 | 20% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 15% | MNG |
| Total understorey projective foliage cover |  | 60% |  |

|  |  |  |
| --- | --- | --- |
| LF Code  MS | Species typical of at least part of EVC range  Rhagodia candolleana ssp. candolleana | Common Name  Seaberry Saltbush |
| MS | Atriplex cinerea | Coast Saltbush |
| MH | Samolus repens | Creeping Brookweed |
| MH | Chenopodium glaucum | Glaucous Goosefoot |
| MH | Sarcocornia quinqueflora | Beaded Glasswort |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Apium prostratum ssp. prostratum | Sea Celery |
| MTG | Poa poiformis | Blue Tussock-grass |
| MTG | Poa labillardierei | Common Tussock-grass |
| MNG | Ficinia nodosa | Knobby Club-sedge |
| MNG | Distichlis distichophylla | Australian Salt-grass |

Recruitment:

Continuous

Organic Litter:

20 % cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Weediness: |  | | | |
| LF Code  MH LNG | Typical Weed Species  Hypochoeris radicata Holcus lanatus | Common Name  Cat's Ear Yorkshire Fog | Invasive  high high | Impact  low high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 53: Estuarine Scrub - Otway Plain bioregion | |
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