

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Fans bioregion

EVC 56: Floodplain Riparian Woodland

###### Description:

An open eucalypt woodland or open forest to 20 m tall over a medium to tall 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 | River Red-gum |
|  | Eucalyptus melliodora | Yellow Box |

|  |  |  |  |
| --- | --- | --- | --- |
| Understorey: Life form | #Spp | %Cover | LF code |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 2 | 5% | MS |
| Small Shrub | 1 | 1% | SS |
| Medium Herb | 4 | 10% | MH |
| Small or Prostrate Herb | 2 | 1% | SH |
| Large Tufted Graminoid | 2 | 10% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 6 | 35% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Total understorey projective foliage cover |  | 90% |  |

|  |  |  |
| --- | --- | --- |
| LF Code  T | Species typical of at least part of EVC range  Acacia dealbata | Common Name  Silver Wattle |
| MS | Hymenanthera dentata s.l. | Tree Violet |
| MH | Sida corrugata | Variable Sida |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| MH | Persicaria decipiens | Slender Knotweed |
| SH | Chamaesyce drummondii | Flat Spurge |
| SH | Azolla filiculoides | Pacific Azolla |
| LTG | Carex appressa | Tall Sedge |
| LNG | Phragmites australis | Common Reed |
| LNG | Eleocharis sphacelata | Tall Spike-sedge |
| MTG | Poa labillardierei | Common Tussock-grass |
| MTG | Chloris truncata | Windmill Grass |
| MTG | Themeda triandra | Kangaroo Grass |
| MTG | Aristida behriana | Brush Wire-grass |
| MNG | Pseudoraphis spinescens | Spiny Mud-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |

Ecological Vegetation Class bioregion benchmark

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| --- | --- |
| EVC 56: Floodplain Riparian Woodland – Murray Fans 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  LH Cirsium vulgare Spear Thistle high high  SH Trifolium glomeratum Cluster Clover high low  Published by the Victorian Government Department of Sustainability and Environment November 2007  © The State of Victoria Department of Sustainability and Environment 2007  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Murray Fans bioregion

EVC 66: Low Rises Woodland

##### Description:

Eucalypt woodland to 15 m tall on elevated plains and low rises with a diverse shrub understorey and grassy field layer. Occurs in a range of environmental settings that have resulted in well-drained surface soils mantling clay sub-soils.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Allocasuarina spp.  Callitris spp. | 60 cm  40 cm  40 cm | 20/ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover**  20% | **Character Species**  Eucalyptus melliodora | **Common Name**  Yellow Gum |
|  | Eucalyptus microcarpa | Grey Box |
|  | Callitris gracilis ssp. murrayensis | Slender Cypress-pine |
|  | Callitris glaucophylla | White Cypress-pine |
|  | Allocasuarina luehmannii | Buloke |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 2 | 5% | T |
| Medium Shrub | 5 | 15% | MS |
| Small Shrub | 3 | 5% | SS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 3 | 5% | MH |
| Small or Prostrate Herb | 2 | 1% | SH |
| Medium to Small Tufted Graminoid | 7 | 25% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **70%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Pittosporum angustifolium | **Common Name**  Weeping Pittosporum |
| T | Myoporum platycarpum | Sugarwood |
| MS | Acacia pycnantha | Golden Wattle |
| MS | Hakea tephrosperma | Needlewood |
| MS | Bursaria spinosa | Sweet Bursaria |
| MS | Acacia oswaldii | Umbrella Wattle |
| SS | Eutaxia microphylla | Common Eutaxia |
| SS | Olearia pimeleoides | Pimelea Daisy-bush |
| MH | Vittadinia cuneata | Fuzzy New Holland Daisy |
| SH | Maireana enchylaenoides | Wingless Bluebush |
| SH | Goodenia pinnatifida | Cut-leaf Goodenia |
| SH | Oxalis perennans | Grassland Wood-sorrel |
| SH | Sida corrugata | Variable Sida |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Elymus scaber var. scaber | Common Wheat-grass |
| MTG | Enteropogon acicularis | Windmill Grass |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MNG | Austrostipa elegantissima | Feather Spear-grass |
| SC | Clematis microphylla | Small-leaved Clematis |

Ecological Vegetation Class bioregion benchmark

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| --- | --- |
| EVC 66: Low Rises Woodland - Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  15% cover  **Logs:**  20m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Olea europaea Olive high high  MS Lycium ferocissimum Boxthorn high high  LH Centaurium tenuiflorum Slender Centaury high low  LH Gazania linearis Gazania high high  LH Opuntia robusta Wheel Cactus high high  MH Hypochoeris radicata Cat's Ear high low  MH Hypochoeris glabra Smooth Cat's-ear high low MH Trifolium campestre var. campestre Hop Clover high low  MH Trifolium angustifolium var. angustifolium Narrow-leaf Clover high low MH Trifolium arvense var. arvense Hare's-foot Clover high low MH Petrorhagia velutina Velvety Pink high low  MH Oxalis pes-caprae Soursob high high  MTG Briza minor Lesser Quaking-grass high low  MTG Briza maxima Large Quaking-grass high low  MTG Romulea rosea Onion Grass high high  MTG Vulpia bromoides Squirrel-tail Fescue high high  MTG Lolium rigidum Wimmera Rye-grass high low  MNG Aira elegantissima Delicate Hair-grass high low  MNG Ehrharta calycina Perennial Veldt Grass high high  MNG Vulpia myuros f. myuros Rat's-tail Fescue high high  MNG Juncus capitatus Capitate Rush high low  MNG Bromus rubens Red Brome high high  TTG Poa bulbosa Bulbous Meadow-grass high high  SC Asparagus asparagoides Bridal Creeper high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Murray Fans bioregion

EVC 68: Creekline Grassy Woodland

##### Description:

Grass-dominated eucalypt woodland to 15 m tall with a range of amphibious herbs. Occurs along banks and adjacent wet flats of smaller intermittent creeks on coarse sands and stony alluvial soils and on the floodplains of larger rivers, in areas where annual rainfall is greater than 500 mm per annum.

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| **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 |
| Medium Shrub | 2 | 5% | MS |
| Small Shrub | 2 | 1% | SS |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 1 | 1% | SH |
| Large Tufted Graminoid | 2 | 15% | LTG |
| Medium to Small Tufted Graminoid | 7 | 25% | MTG |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **70%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Acacia retinodes var. retinodes | **Common Name**  Wirilda |
| MS | Acacia pycnantha | Golden Wattle |
| MS | Hymenanthera dentata s.l. | Tree Violet |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Acaena echinata | Sheep's Burr |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| LTG | Austrostipa bigeniculata | Kneed Spear-grass |
| LTG | Carex appressa | Tall Sedge |
| LTG | Carex tereticaulis | Sedge Rush |
| MTG | Cyperus gunnii ssp. gunnii | Flecked Flat-sedge |
| MTG | Poa labillardierei | Common Tussock-garss |
| MTG | Austrodanthonia racemosa var. racemosa | Stiped Wallaby-grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |

**Recruitment:**

Continuous

##### Organic Litter:

40% cover

##### Logs:

20m/0.1 ha

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 68: Creekline Grassy Woodland - Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Sonchus oleraceus Common Sow-thistle high low LH Cirsium vulgare Spear Thistle high low  LH Plantago lanceolata Ribwort high low  MH Hypochoeris radicata Cat's Ear low low  MH Anagallis arvensis Pimpernel low low LTG Phalaris aquatica Toowoomba Canary-grass low high  MNG Briza maxima Large Quaking-grass high low  MNG Romulea rosea Onion Grass high low  MNG Vulpia bromoides Squirrel-tail Fescue high low  MNG Briza minor Lesser Quaking-grass high low MNG Aira elegantissima Delicate Hair-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**

Murray Fans bioregion

EVC 86: Woorinen Sands Mallee

##### Description:

Mallee shrubland to 7 m tall, typically supporting a hummock grass (Triodia spp.) dominated understorey. This EVC could be considered intermediate between the heavier soil mallee woodlands and the lighter sandy soil mallee vegetation predominant on Lowan (siliceous) sand.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  15 cm | **#/ha**  30/ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 25% | Eucalyptus dumosa  Eucalyptus leptophylla Eucalyptus socialis | Dumosa Mallee  Slender-leaf Mallee Grey Mallee |

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

* Largely seasonal life form

##### Total understorey projective foliage cover 65%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Melaleuca lanceolata ssp. lanceolata | **Common Name**  Moonah |
| MS | Myoporum platycarpum | Sugarwood |
| MS | Dodonaea bursariifolia | Small Hop-bush |
| MS | Acacia wilhelmiana | Dwarf Nealie |
| SS | Sclerolaena parviflora | Mallee Copperburr |
| SS | Halgania cyanea | Rough Halgania |
| SS | Sclerolaena diacantha | Grey Copperburr |
| SS | Westringia rigida | Stiff Westringia |
| LH | Helichrysum leucopsideum | Satin Everlasting |
| LH | Waitzia acuminata var. acuminata | Orange Immortelle |
| MH | Podolepis capillaris | Invisible Daisy |
| MH | Goodenia willisiana | Sandhill Goodenia |
| MH | Vittadinia dissecta | Dissected New Holland Daisy |
| MH | Podotheca angustifolia | Sticky Long-heads |
| SH | Actinobole uliginosum | Flannel Cudweed |
| SH | Calotis hispidula | Hairy Burr-daisy |
| SH | Crassula sieberiana | Australian Stonecrop |
| SH | Ptilotus seminudis | Rabbit-tails |
| HG | Triodia scariosa | Porcupine Grass |
| MTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Lomandra effusa | Scented Mat-rush |
| MTG | Lomandra leucocephala ssp. robusta | Woolly Mat-rush |
| MTG | Austrostipa elegantissima | Feather Spear-grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 86: Woorinen Sands Mallee - Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  15% cover  **Logs:**  10m/0.1 ha (note: large log class does not apply)  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Olea europaea Olive high high LH Brassica tournefortii Mediterranean Turnip high high LH Opuntia spp. Prickly Pear high high  MH Gazania linearis Gazania high high  SC Asparagus asparagoides Bridal Creeper 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**

Murray Fans bioregion

EVC 91: Loamy Sands Mallee

##### Description:

Semi-arid low mallee shrubland to 5 m tall, typically supporting scattered shrubs above a hummock grass field layer. Typically occurs on deep drifts of Lowan sands in the lee of ridge systems or occupying dune crests and swales in the parabolic and irregularly arranged dune in the Central Mallee and Sunset Country.

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 25% | Eucalyptus incrassata  Eucalyptus leptophylla Eucalyptus socialis | Yellow Mallee  Slender-leaf Mallee Grey Mallee |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** Medium Shrub | **#Spp**  5 | **%Cover**  20% | **LF code**  MS |
| Small Shrub | 5 | 10% | SS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 2 | 1% | SH |
| Hummock Grass | 1 | 5% | HG |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **60%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Callitris verrucosa | **Common Name**  Scrub Cypress-pine |
| MS | Leptospermum coriaceum | Mallee Tea-tree |
| MS | Acacia ligulata | Sandhill Wattle |
| MS | Bertya mitchellii | Mitchell Bertya |
| SS | Hibbertia riparia | Erect Guinea-flower |
| SS | Hibbertia virgata | Twiggy Guinea-flower |
| SS | Halgania cyanea | Rough Halgania |
| SS | Brachyloma ericoides ssp. ericoides | Brush Heath |
| LH | Helichrysum leucopsideum | Satin Everlasting |
| MH | Podotheca angustifolia | Sticky Long-heads |
| MH | Millotia tenuifolia var. tenuifolia | Soft Millotia |
| MH | Glischrocaryon behrii | Golden Pennants |
| MH | Podolepis capillaris | Invisible Plant |
| SH | Actinobole uliginosum | Flannel Cudweed |
| SH | Millotia muelleri | Common Bow-flower |
| SH | Calotis hispidula | Hairy Burr-daisy |
| HG | Triodia scariosa | Porcupine Grass |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Lomandra leucocephala ssp. robusta | Woolly Mat-rush |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Lomandra collina | Pale Mat-rush |
| SC | Thysanotus patersonii | Twining Fringe-lily |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 91: Loamy Sands Mallee - Murray Fans bioregion | |
|  | **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 20 years.  **Organic Litter:**  15% cover  **Logs:**  5m/0.1 ha (note: large log class does not apply)  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Sonchus oleraceus Common Sow-thistle high low MH Hypochoeris glabra Smooth Cat's-ear high low MNG Ehrharta calycina Perennial Veldt Grass high high  MNG Vulpia myuros Rat’s-tail Fescue high low SC Asparagus asparagoides Bridal Creeper 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**

Murray Fans bioregion

EVC 96: Ridged Plains Mallee

##### Description:

Open, quite grassy mallee woodland to 10 m tall, typical of the gently undulating “plains” of the Wimmera and Southern Mallee. Soils are somewhat variable but are typically duplex with grey or brown sandy clay loam or clay loam topsoils of aeolian origin.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Allocasuarina luehmannii | 30 cm  40 cm | 15/ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 10% | Eucalyptus dumosa  Eucalyptus behriana Allocasuarina luehmannii | Dumosa Mallee  Bull Mallee Buloke |

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

* Largely seasonal lifeform

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Acacia melvillei | **Common Name**  Myall |
| MS | Acacia oswaldii | Umbrella Wattle |
| MS | Eremophila longifolia | Berrigan |
| SS | Maireana brevifolia | Short-leaf Bluebush |
| SS | Sclerolaena diacantha | Grey Copperburr |
| SS | Rhagodia spinescens | Hedge Saltbush |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| PS | Atriplex semibaccata | Berry Saltbush |
| MH | Einadia nutans ssp. nutans | Nodding Saltbush |
| MH | Maireana enchylaenoides | Wingless Bluebush |
| MH | Maireana excavata | Bottle Bluebush |
| MH | Maireana enchylaenoides | Wingless Bluebush |
| SH | Chenopodium desertorum | Frosted Goosefoot |
| SH | Oxalis perennans | Grassland Wood-sorrel |
| SH | Brachyscome lineariloba | Hard-head Daisy |
| SH | Hyalosperma spp. | Sunray |
| LTG | Austrostipa aristiglumis | Plains Grass |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MTG | Austrostipa scabra | Rough Spear-grass |
| LNG | Austrostipa platychaeta | Flat-awned Spear-grass |
| MNG | Austrostipa elegantissima | Feather Spear-grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 96: Ridged Plains Mallee – Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  5% cover  **Logs:**  5m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MTG Critesion murinum Barley-grass high low  MTG Bromus diandrus Great Brome high high  MNG Bromus rubens Red Brome high high  MH Marrubium vulgare Horehound high high  MNG Vulpia spp. Fescue high low  MS Lycium ferocissimum Boxthorn high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Murray Fans bioregion

EVC 97: Semi-arid Woodland

##### Description:

Non-eucalypt woodland or open forest to 12 m tall, of low rainfall areas. Occurs in a range of somewhat elevated positions not subject to flooding or inundation. The surface soils are typically light textured loamy sands or sandy loams.

##### Large trees:

|  |  |  |
| --- | --- | --- |
| **Species** | **DBH(cm)** | **#/ha** |
| Casuarina spp.  Allocasuarina spp.  Callitris spp.  Myoporum platycarpum | 40 cm  40 cm  40 cm  35 cm | 20/ha |

**Tree Canopy Cover:**

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 20% | Casuarina pauper  Allocasuarina luehmannii Callitris gracilis ssp. murrayensis  Myoporum platycarpum | Belah  Buloke  Slender Cypress-pine Sugarwood |

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

* Largely seasonal life form

##### Total understorey projective foliage cover 75%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Alectryon oleifolius ssp. canescens | **Common Name**  Cattle Bush |
| MS | Acacia oswaldii | Umbrella Wattle |
| MS | Hakea tephrosperma | Hooked Needlewood |
| MS | Hakea leucoptera ssp. leucoptera | Silver Needlewood |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| SS | Sclerolaena diacantha | Grey Copperburr |
| SS | Olearia pimeleoides | Pimelea Daisy-bush |
| SS | Rhagodia spinescens | Hedge Saltbush |
| MH | Einadia nutans ssp. nutans | Nodding Saltbush |
| MH | Vittadinia dissecta s.l. | Dissected New Holland Daisy |
| MH | Calandrinia eremaea | Small Purslane |
| MH | Crassula colorata | Dense Crassula |
| SH | Actinobole uliginosum | Flannel Cudweed |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MTG | Austrostipa spp. | Spear-grass |
| MNG | Austrostipa elegantissima | Feather Spear-grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 97: Semi-arid Woodland - Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20% cover  **Logs:**  20m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Brassica tournefortii Mediterranean Turnip high high  LH Reichardia tingitana Reichardia high low  MH Silene spp. Catchfly high high  SH Medicago minima Little Medic high high  MTG Schismus barbatus Arabian Grass high high MTG Pentaschistis airoides ssp. airoides False Hair-grass high high  MNG Bromus rubens Red Brome high high  MNG Vulpia myuros Rat's-tail Fescue high high MNG Critesion murinum subsp. glaucum Blue Barley-grass high high  SC Asparagus asparagoides Bridal Creeper 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**

Murray Fans bioregion

EVC 98: Semi-arid Chenopod Woodland

##### Description:

Sparse, low non-eucalypt woodland to 12 m tall of the arid zone with a tall open chenopod shrub-dominated understorey to a treeless, tall chenopod shrubland to 3 m tall. This EVC may occur as either a woodland (typically with a very open structure but tree cover >10%) or a shrubland (tree cover <10%) with trees as an occasional emergent.

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

##### Large trees+:

|  |  |  |
| --- | --- | --- |
| **Species** | **DBH(cm)** | **#/ha** |
| Casuarina pauper  Allocasuarina luehmannii Callitris gracilis Myoporum platycarpum | 40 cm  40 cm  40 cm  35 cm | 15/ha |

**Tree Canopy Cover**+**:**

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 15% | Casuarina pauper  Allocasuarina luehmannii Myoporum platycarpum  Callitris gracilis ssp. murrayensis | Belah  Buloke Sugarwood  Slender Native Pine |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree+ |  | 5% | IT |
| Understorey Tree or Large Shrub+ | 3 | 10% | T |
| Medium Shrub | 2 | 40% | MS |
| Small Shrub | 4 | 15% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb\* | 2 | 5% | LH |
| Medium Herb\* | 6 | 15% | MH |
| Small or Prostrate Herb\* | 8 | 15% | SH |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 30% | S/C |

\* Largely seasonal life form

|  |  |  |
| --- | --- | --- |
| **LF Code**  T+ | **Species typical of at least part of EVC range**  Alectryon oleifolius ssp. canescens | **Common Name**  Cattlebush |
| T+ | Acacia melvillei | Myall |
| T+ | Hakea leucoptera ssp. leucoptera | Silver Needlewood |
| MS | Maireana pyramidata | Shrubby Bluebush |
| MS | Maireana sedifolia | Pearl Bluebush |
| MS | Atriplex nummularia | Old Man Saltbush |
| MS | Nitraria billardierei | Nitre-bush |
| SS | Sclerolaena obliquicuspis | Limestone Copperburr |
| SS | Sclerolaena tricuspis | Three-spined Bassia |
| SS | Sclerolaena divaricata | Tangled Bassia |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| PS | Sclerochlamys brachyptera | Short-wing Saltbush |
| LH | Polycalymma stuartii | Poached-egg Daisy |
| MH | Brachyscome lineariloba | Hard-head Daisy |
| MH | Osteocarpum acropterum var. deminutum | Babbagia |
| MH | Zygophyllum crenatum | Hard-head Daisy |
| MH | Zygophyllum ammophilum | Sand Twin-leaf |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 98: Semi-arid Chenopod Woodland - Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  5% in shrubland  15% in woodland.  **Logs**+**:**  5m/0.1ha  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Sonchus oleraceus Common Sow-thistle high low  LH Brassica tournefortii Mediterranean Turnip high high  LH Salvia verbenaca Wild Sage high high LH Sisymbrium erysimoides Smooth Mustard high high MH Reichardia tingitana False Sow-thistle low low  MH Limonium spp. Sea-lavender high high MH Silene apetala var. apetala Sand Catchfly high high MH Erodium cicutarium Common Heron's-bill high low  MH Carrichtera annua Ward’s Weed high high  SH Medicago minima Little Medic high high  MTG Schismus barbatus Arabian Grass high high MTG Critesion murinum ssp. glaucum Blue Barley-grass high high MNG Bromus rubens Red Brome high high  MNG Vulpia spp. high high  Published by the Victorian Government Department of Sustainability and Environment December 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**

Murray Fans bioregion

EVC 101: Samphire Shrubland

##### Description:

Low open shrub layer to 0.5 m of succulent chenopods on saline clay pans. Found in association with the various halite salinas that have developed within evaporative basins or ‘boinkas’.

##### Life forms:

|  |  |  |  |
| --- | --- | --- | --- |
| **Life form** | **#Spp** | **%Cover** | **LF code** |
| Small Shrub | 4 | 20% | SS |
| Medium Herb | 7 | 5% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Medium to Small Tufted Graminoid | 2 | 1% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 1% | MNG |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **30%** |  |

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

|  |  |  |  |
| --- | --- | --- | --- |
| SS |  | Halosarcia pruinosa | Bluish Glasswort |
| SS |  | Halosarcia halocnemoides ssp. halocnemoides | Grey Glasswort |
| SS |  | Halosarcia pergranulata | Blackseed Glasswort |
| SS | r | Frankenia sessilis | Small-leaf Sea-heath |
| MH |  | Senecio glossanthus | Slender Groundsel |
| MH |  | Hymenolobus procumbens | Oval Purse |
| MH |  | Brachyscome lineariloba | Hard-head Daisy |
| MH | r | Brachyscome exilis | Finger-leaved Daisy |
| SH |  | Disphyma crassifolium ssp. clavellatum | Rounded Noon-flower |
| SH |  | Pogonolepis muelleriana | Stiff Cup-flower |
| SH |  | Crassula sieberiana | Sieber Crassula |
| SH |  | Millotia muelleri | Common Bow-flower |
| MTG |  | Triglochin calcitrapum s.l. | Spurred Arrowgrass |
| MNG |  | Triglochin nanum | Dwarf Arrowgrass |

**Recruitment:**

Continuous

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  LH MH MH MH MH SH SH MTG MNG MNG SNG SNG SNG SNG | Sonchus oleraceus  Brassica tournefortii Reichardia tingitana  Hypochoeris glabra Carrichtera annua  Spergularia diandra Medicago minima  Spergularia rubra s.l.  Critesion murinum subsp. glaucum Bromus rubens  Vulpia bromoides  Schismus barbata Lamarckia aurea  Parapholis incurva  Critesion murinum subsp. glaucum | Common Sow-thistle  Mediterranean Turnip Reichardia  Smooth Cat's-ear Ward’s Weed  Lesser Sand-spurrey Little Medic  Red Sand-spurrey Blue Barley-grass  Red Brome Rat’s-tail Fescue Arabian Grass  Golden-top Coast Barb-grass  Blue Barley-grass | high  high high high high high high high high high high high high high high | low  high low low high low high low high high high low low high high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 101: Samphire Shrubland – Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 103: Riverine Chenopod Woodland (syn. Black Box Chenopod Woodland)

##### Description:

Eucalypt woodland to 15 m tall with a diverse shrubby and grassy understorey occurring on most elevated riverine terraces. Confined to heavy clay soils on higher level terraces within or on the margins of riverine floodplains (or former floodplains), naturally subject to

only extremely infrequent incidental shallow flooding from major events if at all flooded.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus largiflorens | **DBH(cm)**  40 cm | **#/ha**  5/ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 10% | Eucalyptus largiflorens  Acacia stenophylla | Black Box  River Coobah |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 3 | 30% | MS |
| Small Shrub | 5 | 25% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Medium Herb | 5 | 5% | MH |
| Small or Prostrate Herb\* | 5 | 10% | SH |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |

* Largely seasonal life form

##### Total understorey projective foliage cover 50%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Atriplex nummularia | **Common Name**  Old-man Saltbush |
| MS | Chenopodium nitrariaceum | Nitre Goosefoot |
| MS | Eremophila divaricata ssp. divaricata | Spreading Emu-bush |
| SS | Sclerolaena tricuspis | Streaked Copperburr |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| SS | Atriplex lindleyi | Flat-top Saltbush |
| SS | Rhagodia spinescens | Hedge Saltbush |
| PS | Sclerochlamys brachyptera | Short-wing Saltbush |
| MH | Einadia nutans ssp. nutans | Nodding Saltbush |
| MH | Calocephalus sonderi | Pale Beauty-heads |
| MH | Senecio glossanthus | Slender Groundsel |
| MH | Brachyscome lineariloba | Hard-head Daisy |
| SH | Disphyma crassifolium ssp. clavellatum | Rounded Noon-flower |
| SH | Maireana pentagona | Hairy Bluebush |

**Recruitment:**

Continuous

##### Organic Litter:

5% cover

##### Logs:

5m/0.1 ha.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 103: Riverine Chenopod Woodland (syn. Black Box Chenopod Woodland) - Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Olea europaea subsp. europaea Olive low high  MS Lycium ferocissimum Boxthorn low high LH Sisymbrium erysimoides Smooth Mustard high high  LH Critesion spp. Barley-grass high low  LH Gazania linearis Gazania high high  LH Opuntia spp. Prickly Pear low high  LH Sisymbrium irio London Mustard high high LH Psilocaulon granulicaule Noon-flower high high  MH Limonium sinuatum Notch-leaf Sea-lavender high high MH Limonium lobatum Winged Sea-lavender high high  MH Trifolium arvense var. arvense Hare's-foot Clover high low MH Mesembryanthemum nodiflora Ice-plant high high  MH Carrichtera annua Ward’s Weed high high  MH Marrubium vulgare Horehound high high MH Carpobrotus aequilaterus Angled Pigface low high  MH Silene apetala var. apetala Sand Catchfly high low  MH Medicago spp. Medic high low  MH Oxalis pes-caprae Soursob high high  MH Silene gallica French Catchfly high low  MH Silene nocturna Mediterranean Catchfly high low SH Mesembryanthemum crystallinum Common Ice-plant high high  MTG Vulpia bromoides Squirrel-tail Fescue high high  MTG Lolium rigidum Wimmera Rye-grass high low MTG Asphodelus fistulosus Onion Weed high high  MNG Bromus rubens Red Brome high high  MNG Vulpia myuros Rat's-tail Fescue high low  MNG Bromus spp. Brome high high  MNG Schismus barbatus Arabian Grass high low  SC Asparagus asparagoides Bridal Creeper 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**

Murray Fans bioregion

EVC 104: Lignum Swamp

##### Description:

Typically treeless shrubland to 4 m, tall with robust (but sometimes patchy) growth of lignum. Widespread wetland vegetation type in low rainfall areas on heavy soils, subject to infrequent inundation resulting from overbank flows from rivers or local runoff.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 1 | 20% | MS |
| Large Herb\* | 4 | 5% | LH |
| Medium Herb\* | 8 | 25% | MH |
| Small or Prostrate Herb\* | 2 | 10% | SH |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid\* | 2 | 5% | MNG |
| Scrambler or Climber | 1 | 1% | SC |
| Soil crust\* | na | 10% | S/C |

\* Largely seasonal life form

##### Total understorey projective foliage cover 75%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Muehlenbeckia florulenta | **Common Name**  Tangled Lignum |
| MS | Chenopodium nitrariaceum | Nitre Goosefoot |
| SS | Sclerolaena tricuspis | Three-spined Bassia |
| SS | Sclerolaena muricata | Five-spined Bassia |
| LH | Rumex spp. | Dock |
| MH | Marsilea drummondii | Common Nardoo |
| MH | Goodenia spp. | Goodenia |
| MH | Ranunculus spp. | Buttercup |
| LNG | Eragrostis australasica | Cane Grass |
| MNG | Eragrostis infecunda | Barren Cane grass |
| MTG | Juncus spp. | Rush |
| MNG | Eleocharis spp. | Spike-sedge |
| SC | Asperula gemella | Twin-leaf Bedstraw |

**Recruitment:**

Continuous

##### Organic Litter:

5% cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| SH | Phyla canescens | Lippia | high | high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 104: Lignum Swamp - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 106: Grassy Riverine Forest

##### Description:

Occurs on the floodplain of major rivers, in a slightly elevated position where floods are infrequent, on deposited silts and sands, forming fertile alluvial soils. River Red Gum forest to 25 m tall with a groundlayer dominated by graminoids. Occasional tall shrubs present.

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

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 30% | Eucalyptus camaldulensis | River Red-gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 10% | T |
| Large Herb | 2 | 10% | LH |
| Medium Herb | 3 | 10% | MH |
| Medium to Small Tufted Graminoid | 3 | 25% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 10% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **75%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia stenophylla | **Common Name**  Eumong |
| LH | Wahlenbergia fluminalis | River Bluebell |
| LH | Senecio quadridentatus | Cotton Fireweed |
| MH | Goodenia fascicularis | Silky Goodenia |
| MH | Eclipta platyglossa | Yellow Twin-heads |
| MTG | Setaria jubiflora | Warrego Summer-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |

**Recruitment:**

Continuous

##### Organic Litter:

40 % cover

##### Logs:

30 m/0.1 ha.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness: LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  LH LH MH MH MH MH MTG MNG | Lactuca serriola  Sonchus oleraceus Centaurea melitensis  Hypochoeris glabra  Trifolium arvense var. arvense Reichardia tingitana  Phyla canescens  Vulpia bromoides Bromus rubens | Prickly Lettuce  Common Sow-thistle Malta Thistle Smooth Cat's-ear Hare's-foot Clover False Sow-thistle Fog-fruit  Squirrel-tail Fescue Red Brome | high  high high high high high high high high | low  low low low low low high low low |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 106: Grassy Riverine Forest - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 107: Lake Bed Herbland

##### Description:

Herbland or shrubland to 0.5 m tall dominated by species adapted to drying mud within lake beds. Some evade periods of prolonged inundation as seed, others as dormant tuber-like rootstocks. Occupies drying deep-cracking mud of lakes on floodplains. Floods are intermittent but water may be retained for several seasons leading to active growth at the ‘drying mud stage’.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms:** |  | | |
| **Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 2 | 5% | MS |
| Small Shrub | 2 | 5% | SS |
| Medium Herb\* | 3 | 25% | MH |
| Small or Prostrate Herb\* | 3 | 20% | SH |
| Medium to Small Tufted Graminoid | 2 | 5% | MTG |

* Largely seasonal life form

##### Total understorey projective foliage cover 60%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Malva australiana s.l. | **Common Name**  Southern Hollyhock |
| MS | Solanum simile | Oondoroo |
| SS | Glycyrrhiza acanthocarpa | Southern Liquorice |
| SS | Muehlenbeckia horrida ssp. horrida | Spiny Lignum |
| MH | Chenopodium pumilio | Clammy Goosefoot |
| MH | Chenopodium glaucum | Glaucous Goosefoot |
| SH | Glossostigma elatinoides | Small Mud-mat |
| SH | Glinus lotoides | Hairy Carpet-weed |
| SH | Mukia micrantha | Mallee Cucumber |

**Recruitment:**

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

##### Organic Litter:

5% cover

##### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 107: Lake Bed Herbland – Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 125: Plains Grassy Wetland

##### Description:

This EVC is usually treeless, but in some instances can include sparse Black Box Eucalyptus largiflorens or River Red Gum Eucalyptus camaldulensis. A sparse shrub component may also be present. The characteristic ground cover is dominated by grasses and small sedges and herbs. The vegetation is typically species-rich on the outer verges but is usually species-poor in the wetter central areas.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Large Herb | 5 | 5% | LH |
| Medium Herb | 11 | 20% | MH |
| Small or Prostrate Herb | 6 | 10% | SH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Medium to Small Tufted Graminoid | 7 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 30% | MNG |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  LH | **Species typical of at least part of EVC range**  Rumex dumosus | **Common Name**  Wiry Dock |
| LH | Brachyscome basaltica var. gracilis | Woodland Swamp-daisy |
| LH | Epilobium hirtigerum | Hairy Willow-herb |
| LH | Eryngium ovinum | Blue Devil |
| MH | Craspedia glauca spp. agg. | Common Billy-buttons |
| MH | Potamogeton tricarinatus s.l. | Floating Pondweed |
| MH | Marsilea drummondii | Common Nardoo |
| SH | Lobelia concolor | Poison Pratia |
| SH | Limosella australis | Austral Mudwort |
| SH | Myriocephalus rhizocephalus | Woolly-heads |
| SH | Neopaxia australasica | White Purslane |
| LTG | Amphibromus nervosus | Common Swamp Wallaby-grass |
| LTG | Juncus flavidus | Gold Rush |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |
| MTG | Juncus holoschoenus | Joint-leaf Rush |
| MTG | Carex inversa | Knob Sedge |
| MTG | Amphibromus macrorhinus | Long-nosed Swamp Wallaby-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eragrostis infecunda | Southern Cane-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)

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 125: Plains Grassy Wetland – Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Cirsium vulgare Spear Thistle high high  MH Hypochoeris radicata Cat's Ear high low  LNG Avena fatua Wild Oat high low  MTG Vulpia bromoides Squirrel-tail Fescue high low  MTG Critesion hystrix Mediterranean Barley-grass high low  MTG Briza minor Lesser Quaking-grass high low  Published by the Victorian Government Department of Sustainability and Environment May 2005  © The State of Victoria Department of Sustainability and Environment 2005  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**

Murray Fans bioregion

EVC 132: Plains Grassland

##### Description:

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Small Shrub | 2 | 5% | SS |
| Large Herb | 3 | 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 | 10 | 30% | MTG |
| Medium to Tiny Non-tufted Graminoid\* | 2 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 20% | S/C |

\* Largely seasonal life form

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Acacia oswaldii | **Common Name**  Umbrella Wattle |
| SS | Sclerolaena napiformis | Turnip Copperburr |
| SS | Sclerolaena diacantha | Grey Copperburr |
| SS | Maireana decalvans | Black Cotton-bush |
| SS | Pimelea curviflora s.s. | Curved Rice-flower |
| LH | Ptilotus exaltatus | Mulla Mulla |
| LH | Eryngium ovinum | Blue Devil |
| LH | Calocephalus citreus | Lemon Beauty-heads |
| MH | Calotis scabiosifolia | Rough Burr-daisy |
| MH | Goodenia pinnatifida | Cut-leaf Goodenia |
| MH | Sida corrugata | Variable Sida |
| MH | Ptilotus macrocephalus | Feather Heads |
| SH | Maireana pentagona | Hairy Bluebush |
| SH | Chamaesyce drummondii | Flat Spurge |
| SH | Pogonolepis muelleriana | Stiff Cup-flower |
| LTG | Austrostipa blackii | Crested Spear-grass |
| LTG | Austrostipa gibbosa | Spurred Spear-grass |
| LTG | Austrostipa aristiglumis | Plump Spear-grass |
| MTG | Austrostipa scabra | Rough Spear-grass |
| MTG | Austrostipa nodosa | Knotty Spear-grass |
| MTG | Whalleya proluta | Rigid Panic |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |
| SC | Convolvulus erubescens spp. agg. | Pink Bindweed |

##### 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 – Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Lycium ferocissimum Boxthorn high high  LH Helminthotheca echioides Ox-tongue high low LH Lepidium africanum Common Peppercress high low  LH Salvia verbenaca Wild Sage high high  LH Echium plantagineum Patterson’s Curse high high  LH Sisymbrium irio London Rocket high high  LH Marrubium vulgare Horehound high high  LNG Avena fatua Wild Oat high high  MH Limonium sinuatum Wild Oat high high  MH Arctotheca calendula Cape Weed high high  MH Hypochoeris glabra Smooth Cat's-ear high low  MH Hypochoeris radicata Cat's Ear high low  MH Oxalis pes-caprae Soursob high high  MH Plantago coronopus Buck's-horn Plantain high high  MH Spergularia rubra s.l. Red Sand-spurrey high low MH Trifolium angustifolium var. angustifolium Narrow-leaf Clover high high MH Trifolium arvense var. arvense Hare's-foot Clover high high MH Trifolium campestre var. campestre Hop Clover high high MH Trifolium striatum Knotted Clover high low  MH Trifolium subterraneum Subterranean Clover high low  MH Hedypnois cretica Cretan Hedypnois high high  MNG Aira cupaniana Quicksilver Grass high low  MNG Avena barbata Bearded Oat high high MNG Brachypodium distachyon False Brome high high MNG Juncus capitatus Capitate Rush high high  MNG Vulpia muralis Wall Fescue high high  MNG Vulpia myuros Rat's-tail Fescue high high  MTG Bromus diandrus Great Brome high high  MTG Critesion hystrix Mediterranean Barley-grass high high  MTG Critesion murinum Barley-grass high high  MTG Lolium rigidum Wimmera Rye-grass high high MTG Pentaschistis airoides ssp. airoides False Hair-grass high low MTG Poa bulbosa Bulbous Meadow-grass high high  MTG Romulea minutiflora Small-flower Onion-grass high high  MTG Romulea rosea Onion Grass high high  MTG Vulpia bromoides Squirrel-tail Fescue high high  SH Medicago minima Little Medic high high  SH Medicago polymorpha Burr Medic high high  SH Trifolium glomeratum Cluster Clover high low  Published by the Victorian Government Department of Sustainability and Environment December 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**

Murray Fans bioregion

EVC 158: Chenopod Mallee

##### Description:

Open to very open mallee woodland to 12 m tall (almost invariably dominated by Eucalyptus gracilis) supported by thin Woorinen deposits typically overlying gypsiferous and sodic clays. In undisturbed remnants this EVC is characterised by the dominance of saltbushes and semi-succulent understorey shrubs.

##### Large trees:

|  |  |  |
| --- | --- | --- |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp. | 20 cm | 20/ha |

**Tree Canopy Cover:**

**% cover Character Species Common Name**

|  |  |  |
| --- | --- | --- |
| 20% | Eucalyptus gracilis | Yorrell |
|  | Eucalyptus oleosa ssp. oleosa | Oil Mallee |
|  | Eucalyptus dumosa | Dumosa Mallee |

**Understorey:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Life form**  Medium Shrub | **#Spp**  1 | **%Cover**  5% | **LF code**  MS |
| Small Shrub | 9 | 45% | SS |
| Medium Herb | 3 | 5% | MH |
| Small or Prostrate Herb | 2 | 10% | SH |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 15% | S/C |
| **Total understorey projective foliage cover** |  | **65%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Maireana pyramidata | **Common Name**  Black Bluebush |
| SS | Atriplex lindleyi | Baldoo |
| SS | Atriplex vesicaria ssp. variabilis | Bladder Salt-bush |
| SS | Zygophyllum aurantiacum ssp. aurantiacum | Shrubby Twin-leaf |
| SS | Nitraria billardierei | Nitre-bush |
| MH | Eriochiton sclerolaenoides | Woolly-fruit Bluebush |
| MH | Zygophyllum apiculatum | Pointed Twin-leaf |
| MH | Zygophyllum crenatum | Notched Twin-leaf |
| SH | Calandrinia eremaea | Small Purslane |
| SH | Disphyma crassifolium ssp. clavellatum | Rounded Noon-flower |

**Recruitment:**

Continuous (excluding overstorey)

##### Organic Litter:

10% cover

##### Logs:

10m/0.1 ha (note: large log class does not apply)

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 158: Chenopod Mallee – Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Opuntia spp. Prickly Pear low high  LH Psilocaulon granulicaule Noon-flower high high  LH Gazania linearis Gazania high high  LH Salvia verbenaca var. vernalis Wild Sage high high LH Critesion murinum subsp. leporinum Wall Barley-grass high low  LH Sisymbrium erysimoides Smooth Mustard high high  MH Carpobrotus aequilaterus Angled Pigface low high  MH Brassica tournefortii Mediterranean Turnip high high MH Mesembryanthemum nodiflora Ice-plant high high  MH Carrichtera annua Ward’s Weed high high  MH Marrubium vulgare Horehound high high SH Mesembryanthemum crystallinum Common Ice-plant high high  MTG Lolium rigidum Wimmera Rye-grass high low  MNG Schismus barbatus Arabian Grass high high  MNG Bromus spp. Brome high high  SC Asparagus asparagoides Bridal Creeper 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**

Murray Fans bioregion

EVC 175: Grassy Woodland

##### Description:

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

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

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus microcarpa  Eucalyptus melliodora | Grey Box  Yellow Box |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 3 | 10% | MS |
| Small Shrub | 4 | 5% | SS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 12 | 20% | MH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 19 | 40% | MTG |
| Medium to Tiny Non-tufted Graminoid | 4 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  MS |  | **Species typical of at least part of EVC range**  Acacia pycnantha | **Common Name**  Golden Wattle |
| MS |  | Bursaria spinosa ssp. spinosa | Sweet Bursaria |
| MS |  | Acacia acinacea s.l. | Gold-dust Wattle |
| SS | r | Templetonia stenophylla | Leafy Templetonia |
| SS |  | Pimelea curviflora s.l. | Curved Rice-flower |
| SS |  | Eutaxia microphylla | Common Eutaxia |
| LH |  | Wahlenbergia stricta | Tall Bluebell |
| MH |  | Asperula conferta | Common Woodruff |
| MH |  | Einadia nutans ssp. nutans | Nodding Saltbush |
| MH |  | Gonocarpus tetragynus | Common Raspwort |
| LTG |  | Austrostipa mollis | Supple Spear-grass |
| MTG |  | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG |  | Themeda triandra | Kangaroo Grass |
| MTG |  | Bothriochloa macra | Red-leg Grass |
| MTG |  | Poa sieberiana | Grey Tussock-grass |
| MNG |  | Austrostipa elegantissima | Feather Spear-grass |
| SC |  | Convolvulus erubescens spp. agg. | Pink Bindweed |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 175: Grassy Woodland – Murray Fans 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 Plantago lanceolata Ribwort high low  LH Salvia verbenaca Wild Sage high high  LH Carduus tenuiflorus Winged Thistle high high  MH Petrorhagia velutina Velvety Pink high low MH Trifolium angustifolium var. angustifolium Narrow-leaf Clover high low  MH Hypochoeris radicata Cat's Ear high low  MH Parentucellia latifolia Red Bartsia high low  MH Spergularia rubra s.l. Red Sand-spurrey high low MH Trifolium campestre var. campestre Hop Clover high low  MH Anagallis arvensis Pimpernel high low  LNG Avena fatua Wild Oat high low  MTG Romulea minutiflora Small-flower Onion-grass high low MTG Bromus hordeaceus ssp. hordeaceus Soft Brome high low  MTG Lolium loliaceum Stiff Rye-grass high low  MTG Lolium perenne Perennial Rye-grass high low  MTG Ehrharta longiflora Annual Veldt-grass high low  MTG Briza maxima Large Quaking-grass high low  MNG Dactylis glomerata Cocksfoot high high  MNG Vulpia muralis Wall Fescue high low  MNG Vulpia myuros Rat's-tail Fescue high low  MNG Bromus rubens Red Brome high low  MNG Aira elegantissima Delicate Hair-grass high low  MNG Aira cupaniana Quicksilver Grass high low  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Murray Fans bioregion

EVC 264: Sand Ridge Woodland

##### Description:

Open pine-box woodland to 15 m tall with a small or medium shrub layer of variable density and including a range of annual herbs, grasses and geophytes, in the dense ground layer. Occupies distinctive sandy rises (or sand mounts) adjacent to major rivers and wetlands. Very sandy, deep, free draining, moderately fertile soil, developed on sand blown up by wind action from a prior stream bed.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Callitris glaucophylla Allocasuarina luehmannii | 70 cm  40 cm  40 cm | 15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus melliodora  Callitris glaucophylla Allocasuarina luehmannii | Yellow Box  White Cypress-pine Buloke |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 4 | 20% | MS |
| Small Shrub | 3 | 10% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 10 | 15% | MH |
| Small or Prostrate Herb | 5 | 5% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Medium to Small Tufted Graminoid | 8 | 15% | MTG |
| Ground Fern | 1 | 5% | GF |
| Scrambler or Climber | 1 | 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**  Dodonaea viscosa | **Common Name**  Sticky Hop-bush |
| MS | Banksia marginata | Silver Banksia |
| SS | Pultenaea tenuifolia | Slender Bush-pea |
| SS | Hibbertia riparia | Erect Guinea-flower |
| PS | Kennedia prostrata | Running Postman |
| LH | Senecio quadridentatus | Cottony Fireweed |
| LH | Senecio tenuiflorus | Narrow-leaf Groundsel |
| MH | Wahlenbergia gracilis s.l. | Sprawling Bluebell |
| MH | Wahlenbergia luteola | Tufted Bluebell |
| MH | Gonocarpus tetragynus | Common Raspwort |
| SH | Crassula sieberiana | Sieber Crassula |
| SH | Millotia tenuifolia var. tenuifolia | Soft Millotia |
| SH | Euchiton sphaericus | Annual Cudweed |
| SH | Stuartina muelleri | Spoon Cudweed |
| LTG | Austrostipa mollis | Supple Spear-grass |
| LTG | Dichelachne crinita | Long-hair Plume-grass |
| MTG | Poa sieberiana | Grey Tussock-grass |
| MTG | Elymus scaber var. scaber | Common Wheat-grass |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| GF | Pteridium esculentum | Austral Bracken |
| SC | Cassytha pubescens s.s. | Downy Dodder-laurel |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 264: Sand Ridge Woodland – Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  10 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Chrysanthemoides monilifera Boneseed high high MH Hypochoeris glabra Smooth Cat's-ear high low MH Hypochoeris radicata Cat's Ear high low  MTG Bromus diandrus Great Brome high low  MNG Vulpia bromoides Rat’s-tail Fescue high low  MNG Vulpia muralis Wall Fescue high low MNG Vulpia myuros f. myuros Rat's-tail Fescue high low  MNG Aira elegantissima Delicate Hair-grass high low  MNG Aira caryophyllea Silvery Hair-grass high low  MNG Ehrharta calycina Perennial Veldt-grass high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Murray Fans bioregion

EVC 292: Red Gum Swamp

##### Description:

Open woodland to 15 m tall with a diverse understorey dominated by sedgy or grassy-herbaceous aquatics and species tolerant of intermittent to seasonal inundation. Occurs on alluvial plains in the seasonally wet depressions of shallow drainage lines or prior stream meanders, typically associated with heavy paludal soils, sometimes with gilgai development. The annual rainfall across its distribution is generally below 700 mm, and the period of inundation may range from 2 to 6 months.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  80 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 | 1 | 10% | T |
| Medium Herb | 1 | 15% | MH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 40% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **90%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MH | **Species typical of at least part of EVC range**  Potamogeton tricarinatus s.l. | **Common Name**  Floating Pondweed |
| MH | Gratiola peruviana | Austral Brooklime |
| SH | Lobelia pratioides | Poison Lobelia |
| LTG | Juncus flavidus | Gold Rush |
| LTG | Carex tereticaulis | Hollow Sedge |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| MTG | Whalleya proluta | Rigid Panic |
| MTG | Lachnagrostis filiformis var. filiformis | Common Blown-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eragrostis infecunda | Southern Cane-grass |

**Recruitment:**

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

##### Organic Litter:

20 % cover

##### Logs:

15 m/0.1 ha.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code**  SH | **Typical Weed Species**  Callitriche hamulata | **Common Name**  Thread Water-starwort | **Invasive**  high | **Impact**  low |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 292: Red Gum Swamp – Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 295: Riverine Grassy Woodland

##### Description:

Occurs on the floodplain of major rivers, in a slightly elevated position where floods are rare, on deposited silts and sands, forming fertile alluvial soils. River Red Gum woodland to 20 m tall with a groundlayer dominated by graminoids and sometimes lightly shrubby or with chenopod shrubs.

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

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 20% | Eucalyptus camaldulensis  Eucalyptus largiflorens | River Red-gum  Black Box |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Small Shrub | 4 | 10% | SS |
| Large Herb | 4 | 10 | LH |
| Medium Herb | 2 | 10% | MH |
| Small or Prostrate Herb | 5 | 10% | SH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 5 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **75%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  SS | **Species typical of at least part of EVC range**  Sclerolaena muricata var. villosa | **Common Name**  Grey Roly-poly |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| SS | Maireana decalvans | Black Cotton-bush |
| SS | Chenopodium curvispicatum | Cottony Saltbush |
| LH | Wahlenbergia fuminalis | River Bluebell |
| LH | Rumex brownii | Slender Dock |
| LH | Senecio quadridentatus | Cotton Fireweed |
| MH | Einadia nutans ssp. nutans | Nodding Saltbush |
| MH | Atriplex semibaccata | Berry Saltbush |
| MH | Atriplex eardleyae | Small Saltbush |
| MH | Sida corrugata | Variable Sida |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MTG | Austrostipa scabra | Rough Spear-grass |
| MTG | Carex inversa | Knob Sedge |
| MTG | Juncus subsecundus | Finger Rush |

**Recruitment:**

Continuous

##### Organic Litter:

10 % cover

##### Logs:

20 m/0.1 ha.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 295: Riverine Grassy Woodland – Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact** MTG Bromus hordaceus ssp. hordaceus Soft Brome high high MTG Critesion murinum ssp. leporinum Wall Barley-grass high high MNG Bromus rubens Red Brome high high  Published by the Victorian Government Department of Sustainability and Environment December 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**

Murray Fans bioregion

EVC 641: Riparian Woodland

##### Description:

Occurs beside permanent streams, typically on narrow alluvial deposits. Woodland to 15 m tall generally dominated by Eucalyptus camaldulensis over a tussock grass-dominated understorey. Tall shrubs may be present and amphibious herbs may occur in occasional ponds and beside creeks. While flooding may be common, sites are rarely inundated for lengthy periods.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  80 cm | **#/ha**  15 / 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 | 2 | 10% | MS |
| Large Herb | 4 | 10% | LH |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 1 | 1% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Medium to Small Tufted Graminoid | 4 | 30% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Scrambler or Climber | 1 | 5% | SC |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia dealbata | **Common Name**  Silver Wattle |
| MS | Exocarpos strictus | Pale-fruit Ballart |
| LH | Wahlenbergia gracilis s.s. | Sprawling Bluebell |
| LH | Myriophyllum crispatum | Upright Water-milfoil |
| LH | Senecio quadridentatus | Cotton Fireweed |
| LH | Wahlenbergia fluminalis | River Bluebell |
| MH | Rumex brownii | Slender Dock |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| MH | Mentha australis | River Mint |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| SH | Dichondra repens | Kidney-weed |
| LTG | Cyperus gunnii ssp. gunnii | Flecked Flat-sedge |
| LTG | Carex appressa | Tall Sedge |
| LTG | Deyeuxia quadriseta | Reed Bent-grass |
| LTG | Carex tereticaulis | Hollow Sedge |
| MTG | Lachnagrostis filiformis var. filiformis | Common Blown-grass |
| MTG | Juncus amabilis | Hollow Rush |
| MTG | Poa labillardierei | Common Tussock-grass |
| MTG | Dichelachne crinita | Long-hair Plume-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Cynodon dactylon | Couch |
| SC | Calystegia sepium | Large Bindweed |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 641: Riparian Woodland – Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  30% cover  **Logs:**  20m / 0.1 ha  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Rosa rubiginosa Sweet Briar high high  LH Sonchus oleraceus Common Sow-thistle high low  LH Cirsium vulgare Spear Thistle high high  LH Plantago lanceolata Ribwort high low  LH Helminthotheca echioides Ox-tongue high low LH Rumex crispus Curled Dock high low  LH Aster subulatus Aster-weed high low  LH Rorippa palustris Marsh Yellow-cress high high MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low MH Hypochoeris radicata Cat's Ear high low  LTG Phalaris aquatica Toowoomba Canary-grass high high  LNG Holcus lanatus Yorkshire Fog high high MTG Bromus hordeaceus ssp. hordeaceus Soft Brome high low MTG Anthoxanthum odoratum Sweet Vernal-grass high high MNG Paspalum distichum Water Couch high high  MNG Paspalum distichum Water Couch high high  SC Galium aparine Cleavers high low  Published by the Victorian Government Department of Sustainability and Environment December 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**

Murray Fans bioregion

EVC 652: Lunette Woodland

##### Description:

An open, eucalypt woodland to 15 m tall with a grassy and herb-rich understorey. Occurs on generally fertile, relatively well- drained, clay-loam soils on source-bordering lunettes.

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

##### Tree Canopy Cover:

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

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

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia implexa | **Common Name**  Lightwood |
| MS | Acacia pycnantha | Golden Wattle |
| MS | Acacia paradoxa | Hedge Wattle |
| SS | Pimelea humilis | Common Rice-flower |
| LH | Wahlenbergia spp. | Bluebell |
| MH | Sida corrugata | Variable Sida |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| MH | Acaena echinata | Sheep's Burr |
| MH | Convolvulus erubescens spp. agg. | Pink Bindweed |
| SH | Dichondra repens | Kidney-weed |
| LTG | Austrostipa aristiglumis | Plump Spear-grass |
| MTG | Lomandra multiflora ssp. multiflora | Many-flowered Mat-rush |
| MTG | Themeda triandra | Kangaroo Grass |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MTG | Austrodanthonia racemosa var. racemosa | Stiped Wallaby-grass |
| MNG | Microlaena stipoides var. stipoides | Weeping Grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 652: Lunette Woodland – Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  10 % cover  **Logs:**  10 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Lycium ferocissimum African Box-thorn low high  LH Cirsium vulgare Spear Thistle high high  LH Sonchus oleraceus Common Sow-thistle high low  LH Plantago lanceolata Ribwort high low  MH Hypochoeris radicata Cat's Ear high low  LNG Holcus lanatus Yorkshire Fog high high  MTG Vulpia bromoides Squirrel-tail Fescue high low  MTG Romulea rosea Onion Grass high low  MTG Briza minor Lesser Quaking-grass high low  MTG Briza maxima Large Quaking-grass high low  Published by the Victorian Government Department of Sustainability and Environment December 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**

Murray Fans bioregion

EVC 803: Plains Woodland

##### Description:

Grassy or sedgy woodland to 15 m tall (typically dominated by Eucalyptus largiflorens in the north-western part of its range) with large inter-tussock spaces potentially supporting a range of annual or geophytic herbs adapted to low summer rainfall, with low overall biomass. Mostly occurs on terrain of low relief in areas receiving <600 mm rainfall per annum. Fertile, sometimes seasonally waterlogged, mostly silty, loamy or clay topsoils, with heavy subsoils, derived largely from recent (ie Quaternary) fluvial or alluvial deposits.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Allocasuarina luehmannii | 60cm  40cm | 15/ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus largiflorens  Allocasuarina luehmannii Eucalyptus microcarpa  Eucalyptus porosa | Black Box  Buloke Grey Box  Black Mallee-box |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Medium Shrub | 3 | 10% | MS |
| Small shrub | 1 | 5% | SS |
| Prostrate shrub | 2 | 10% | PS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 9 | 10% | MH |
| Small or Prostrate Herb | 5 | 10% | SH |
| Large tufted graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 6 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 1% | MNG |
| Scrambler or Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **80%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Pittosporum angustifolium | **Common Name**  Weeping Pittosporum |
| MS | Acacia pycnantha | Golden Wattle |
| MS | Acacia acinacea s.l. | Gold-dust Wattle |
| SS | Eutaxia microphylla var. microphylla | Common Eutaxia |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| SS | Sclerolaena diacantha | Grey Copperburr |
| LH | Senecio quadridentatus | Cotton Fireweed |
| MH | Einadia nutans ssp. nutans | Nodding Saltbush |
| MH | Calocephalus citreus | Lemon Beauty-heads |
| MH | Plantago gaudichaudii | Narrow Plantain |
| MH | Sida corrugata | Variable Sida |
| SH | Crassula sieberiana | Sieber Crassula |
| SH | Actinobole uliginosum | Flannel Cudweed |
| SH | Oxalis perennans | Grassland Wood-sorrel |
| SH | Calotis hispidula | Hairy Burr-daisy |
| LTG | Austrostipa aristiglumis | Plump Spear-grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MTG | Dianella revoluta s.l. | Common Wallaby-grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 803: Plains Woodland - Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  10 % cover  **Logs:**  10m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Lycium ferocissimum Boxthorn high high  LH Brassica tournefortii Mediterranean Turnip high high  LH Sonchus oleraceus Common Sow-thistle high low  LH Opuntia spp Prickly Pear high high  MH Gazania linearis Gazania high high  MH Spergularia rubra s.l. Red Sand-spurrey high low MH Silene apetala var. apetala Sand Catchfly high low MH Silene longicaulis Portuguese Catchfly high low  SH Medicago minima Little Medic high low  MTG Schismus barbatus Arabian Grass high low  MTG Poa bulbosa Bulbous Meadow-grass high high MTG Pentaschistis airoides subsp. airoides False Hair-grass high high MTG Romulea rosea Onion Grass high high  MNG Bromus rubens Red Brome high high  MNG Vulpia myuros Rat's-tail Fescue high low  MNG Bromus spp. Brome high high SC Asparagus asparagoides Bridal Creeper high high  Published by the Victorian Government Department of Sustainability and Environment January 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**

Murray Fans bioregion

EVC 809: Floodplain Grassy Wetland

#### Description:

Wetland dominated by floating aquatic grasses (which persist to some extent as turf during drier periods), occurring in the most flood-prone riverine areas. Typically treeless, but sometimes with thickets of saplings or scattered more mature specimens of Eucalyptus camaldulensis. Occupies temporary shallow lakes in the most flood-prone riverine areas, also occurs as a narrow intermediate band around some floodway ponds.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 4 | 60% | MNG |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MH | **Species typical of at least part of EVC range**  Myriophyllum crispatum | **Common Name**  Upright Milfoil |
| MH | Ludwigia peploides ssp. montevidensis | Clove-strip |
| MH | Nymphoides crenata | Wavy Marshwort |
| MH | Centipeda cunninghamii | Common Sneezeweed |
| SH | Azolla filiculoides | Pacific Azolla |
| SH | Persicaria prostrata | Creeping Knotweed |
| LTG | Juncus ingens | Giant Rush |
| MTG | Lachnagrostis filiformis | Common Blown Grass |
| MTG | Sporobolus mitchellii | Brown-back Wallaby-grass |
| MNG | Pseudoraphis spinescens | Spiny Mud-grass |
| MNG | Amphibromus fluitans | River Swamp Wallaby-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Cynodon dactylon var. pulchellus | Native Couch |

#### 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:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 809: Floodplain Grassy Wetland - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 810: Floodway Pond Herbland

##### Description:

Low herbland to < 0.3 m tall with occasional emergent life forms, usually with a high content of ephemeral species. Floors of ponds associated with floodway systems. Typically heavy deeply cracking clay soils. Characteristically smaller wetlands with a more regular flooding and drying cycle in comparison to sites supporting Lake Bed Herbland.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 5 | 20% | MH |
| Small or Prostrate Herb\* | 4 | 15% | SH |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 20% | MNG |

\* Largely seasonal life form

##### Total understorey projective foliage cover 65%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MH | **Species typical of at least part of EVC range**  Persicaria prostrata | **Common Name**  Creeping Knotweed |
| MH | Centipeda cunninghamii | Common Sneezeweed |
| MH | Alternanthera denticulata s.l. | Lesser Joyweed |
| SH | Polygonum plebeium | Small Knotweed |
| SH | Dysphania glomulifera ssp. glomulifera | Globular Pigweed |
| SH | Lemna disperma | Common Duckweed |
| MTG | Lachnagrostis filiformis | Common Blown-grass |
| MNG | Pseudoraphis spinescens | Spiny Mud Grass |
| MNG | Carex gaudichaudiana | Fen Sedge |
| MNG | Eleocharis acuta | Common Spike-sedge |

**Recruitment:**

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

##### Organic Litter:

5% cover

##### Logs:

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code**  MH | **Typical Weed Species**  Callitriche stagnalis | **Common Name**  Water Starwort | **Invasive**  high | **Impact**  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 810: Floodway Pond Herbland - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 813: Intermittent Swampy Woodland

##### Description:

Eucalypt woodland to 15 m tall with a variously shrubby and rhizomatous sedgy - turf grass understorey, at best development dominated by flood stimulated species in association with flora tolerant of inundation. Flooding is unreliable but extensive when it happens. Occupies low elevation areas on river terraces (mostly at the rear of point-bar deposits or adjacent to major floodways) and lacustrine verges (where sometimes localised to narrow transitional bands). Soils often have a shallow sand layer over heavy and frequently slightly brackish soils.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus camaldulensis  Eucalyptus largiflorens | 70 cm  50 cm | 15 / ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 20% | Eucalyptus camaldulensis  Eucalyptus largiflorens | River Red-gum  Black Box |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 1 | 5% | MS |
| Small Shrub | 1 | 5% | SS |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 1 | 5% | SH |
| Medium to Small Tufted Graminoid | 3 | 30% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| **Total understorey projective foliage cover** |  | **70%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia stenophylla | **Common Name**  River Coobah |
| MS | Muehlenbeckia florulenta | Tangled Lignum |
| SS | Cressa cretica | Rosinweed |
| LH | Stemodia florulenta | Blue Rod |
| LH | Wahlenbergia fluminalis | River Bluebell |
| MH | Haloragis aspera | Rough Raspwort |
| MH | Centipeda cunninghamii | Common Sneezeweed |
| MH | Calocephalus sonderi | Pale Beauty-heads |
| SH | Epaltes australis | Spreading Nut-heads |
| MTG | Sporobolus mitchellii | Rat-tail Couch |
| MTG | Cyperus gymnocaulos | Spring Flat-sedge |
| MTG | Lachnagrostis filiformis | Common Blown-grass |
| MNG | Cynodon dactylon var. pulchellus | Native Couch |

**Recruitment:**

Continuous

##### Organic Litter:

20 % cover

##### Logs:

20 m/0.1 ha.

##### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 813: Intermittent Swampy Woodland - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 814: Riverine Swamp Forest

##### Description:

Open eucalypt forest to 25 m tall with understorey dominated by obligate wetland species (or opportunistic annuals during sustained dry periods) and can range from closed sedgeland or herbland to grassy-herbaceous or extremely sparse and with cover primarily leaf-litter, black water or exposed alluvium. Occupies low-lying areas subject to reasonably regular flooding, typically flood-prone lower river terraces and low-lying areas adjacent to floodways through or within riverine forest.

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

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 30% | Eucalyptus camaldulensis | River Red-gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 6 | 15% | MH |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Small Tufted Graminoid | 1 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 30% | MNG |
| **Total understorey projective foliage cover** |  | **65%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  LH | **Species typical of at least part of EVC range**  Wahlenbergia fluminalis | **Common Name**  River Bluebell |
| LH | Senecio quadridentatus | Cotton Fireweed |
| MH | Alternanthera denticulata s.l. | Lesser Joyweed |
| MH | Ranunculus inundatus | River Buttercup |
| MH | Ranunculus pumilio var. pumilio | Fan-leaf Buttercup |
| MH | Centipeda cunninghamii | Common Sneezeweed |
| LNG | Phragmites australis | Common Reed |
| MTG | Lachnagrostis filiformis | Common Blown Grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Cynodon dactylon var. pulchellus | Native Couch |

**Recruitment:**

Continuous

##### Organic Litter:

20 % cover

##### Logs:

20 m/0.1 ha.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code**  MH | **Typical Weed Species**  Phyla canescens | **Common Name**  Fog-fruit | **Invasive**  high | **Impact**  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 814: Riverine Swamp Forest - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 815: Riverine Swampy Woodland

##### Description:

Eucalypt woodland to 15 m tall above a grassy to sedgy – herbaceous ground layer, with species indicative of periodic water- logging. Occupies areas subject to shallow inundation only from higher-level flooding on riverine flood plain. Soils are typically heavy, cracking mottled grey-brown clays/clay-loams and water-retentive, often with a gilgai profile which can be wet during winter.

##### Large trees:

|  |  |  |
| --- | --- | --- |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus camaldulensis  Eucalyptus largiflorens | 70 cm  50 cm | 15 / ha |

**Tree Canopy Cover:**

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 20% | Eucalyptus camaldulensis  Eucalyptus largiflorens | River Red-gum  Black Box |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Large Herb | 2 | 5% | LH |
| Medium Herb | 3 | 10% | MH |
| Small or Prostrate Herb | 1 | 5% | SH |
| Large Tufted Graminoid | 3 | 10% | LTG |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 20% | MNG |
| **Total understorey projective foliage cover** |  | **65%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  LH | **Species typical of at least part of EVC range**  Wahlenbergia fluminalis | **Common Name**  River Bluebell |
| LH | Brachyscome basaltica var. gracilis | Woodland Swamp-daisy |
| MH | Marsilea drummondii | Common Nardoo |
| SH | Lobelia concolor | Poison Pratia |
| LTG | Amphibromus nervosus | Common Swamp Wallaby-grass |
| LTG | Carex tereticaulis | Rush Sedge |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eleocharis pusilla | Small Spike-sedge |

**Recruitment:**

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

##### Organic Litter:

10% cover

##### Logs:

10 m/0.1 ha.

##### Weediness:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **LF Code**  LH | **Typical Weed Species**  Cirsium vulgare | **Common Name**  Spear Thistle | **Invasive**  high | **Impact**  high |
| MH | Hypochoeris radicata | Cat's Ear | high | low |
| LNG | Avena fatua | Wild Oat | high | low |
| MTG | Vulpia bromoides | Squirrel-tail Fescue | high | low |
| MTG | Critesion hystrix | Mediterranean Barley-grass | high | low |
| MTG | Briza minor | Lesser Quaking-grass | high | low |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 815: Riverine Swampy Woodland - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 816: Sedgy Riverine Forest

##### Description:

Eucalypt forest to 25 m tall with understorey dominated by larger sedges. Understorey composition indicative of at least occasional shallow flooding and a tolerance of gaps between floods of several years. Typically on heavy soils which can become wet in winter. Sedgy Riverine Forest has some floristic affinities to Red Gum Swamp. It is considered to occupy areas infrequently flooded and in which flood duration may be short, for example, higher ground surrounding the box ridges or occurring along the river levee in a position remote from the channels from which the forest first floods. These areas are therefore the last to flood and the first from which floods quickly recede. Soils are typically heavy clays. The major understorey species Carex tereticaulis is intolerant of total immersion (at least in turbid water).

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

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 30% | Eucalyptus camaldulensis | River Red-gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Medium Shrub | 1 | 10% | T |
| Medium Herb | 2 | 5% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 1 | 50% | LTG |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| **Total understorey projective foliage cover** |  | **90%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Exocarpos strictus | **Common Name**  Pale-fruit Ballart |
| LH | Wahlenbergia fluminalis | River Bluebell |
| LH | Senecio quadridentatus | Cotton Fireweed |
| LH | Brachyscome basaltica var. gracilis | Woodland Swamp-daisy |
| MH | Marsilea drummondii | Common Nardoo |
| SH | Lobelia concolor | Poison Pratia |
| SH | Chamaesyce drummondii | Flat Spurge |
| LTG | Carex tereticaulis | Rush Sedge |
| MTG | Setaria jubiflora | Warrego Summer-grass |
| MTG | Lachnagrostis filiformis | Common Blown Grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eleocahris pusilla | Small Spike-sedge |

**Recruitment:**

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

##### Organic Litter:

10 % cover

##### Logs:

20 m/0.1 ha.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 816: Sedgy Riverine Forest - Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Lactuca serriola Prickly Lettuce high low  LH Aster subulatus Aster Weed high low LH Helminthotheca echioides Prickly Ox-tongue high low  LH Cirsium vulgare Spear Thistle 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**

Murray Fans bioregion

EVC 818: Shrubby Riverine Woodland

##### Description:

Eucalypt woodland to open forest to 15 m tall of less flood-prone (riverine) watercourse fringes, principally on levees and higher sections of point-bar deposits. The understorey includes a range of species shared with drier floodplain habitats with a sparse shrub component, ground-layer patchily dominated by various life-forms. A range of large dicot herbs (mostly herbaceous perennial, several with a growth-form approaching that of small shrub) are often conspicuous.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus largiflorens Eucalyptus camaldulensis | 50 cm  80 cm | 5/ha |

##### Tree Canopy Cover:

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

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 2 | 10% | MS |
| Small Shrub | 2 | 5% | SS |
| Large Herb | 4 | 10% | LH |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb\* | 2 | 1% | SH |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |

* Largely seasonal life form

##### Total understorey projective foliage cover 50%

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  T |  | **Species typical of at least part of EVC range**  Acacia stenophylla | **Common Name**  River Coobah |
| MS |  | Muehlenbeckia florulenta | Tangled Lignum |
| MS |  | Chenopodium nitrariaceum | Nitre Goosefoot |
| SS |  | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| PS |  | Sclerochlamys brachyptera | Short-wing Saltbush |
| LH | k | Senecio cunninghamii var. cunninghamii | Branching Groundsel |
| LH |  | Senecio pinnatifolius | Mallee Groundsel |
| LH |  | Xerochrysum bracteatum | Golden Everlasting |
| MH |  | Calotis cuneifolia | Blue Burr-daisy |
| MH | k | Lotus australis | Austral Trefoil |
| MH | r | Picris squarrosa | Squat Picris |
| MH |  | Teucrium racemosum s.l. | Grey Germander |
| MTG |  | Setaria jubiflora | Warrego Summer-grass |

**Recruitment:**

Continuous

##### Organic Litter:

10% cover

##### Logs:

10m/0.1 ha.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 818: Shrubby Riverine Woodland - Murray Fans bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Olea europaea subsp. europaea Olive high high  MS Lycium ferocissimum Boxthorn high high LH Sisymbrium erysimoides Smooth Mustard high high  LH Critesion spp. Barley-grass high low  LH Gazania linearis Gazania high high  LH Opuntia spp. Prickly Pear low high  LH Sisymbrium irio London Mustard high high LH Psilocaulon granulicaule Noon-flower high high  MH Limonium sinuatum Notch-leaf Sea-lavender high high  MH Limonium lobatum Winged Sea-lavender high high MH Trifolium arvense var. arvense Hare's-foot Clover high low  MH Mesembryanthemum nodiflora Ice-plant high high  MH Carrichtera annua Ward’s Weed high high  MH Marrubium vulgare Horehound high high MH Carpobrotus aequilaterus Angled Pigface low high  MH Silene apetala var. apetala Sand Catchfly high low  MH Medicago spp. Medic high low  MH Oxalis pes-caprae Soursob high high  MH Silene gallica French Catchfly high low  MH Silene nocturna Mediterranean Catchfly high low SH Mesembryanthemum crystallinum Common Ice-plant high high  MTG Vulpia bromoides Squirrel-tail Fescue high high  MTG Lolium rigidum Wimmera Rye-grass high low MTG Asphodelus fistulosus Onion Weed high high  MNG Bromus rubens Red Brome high high  MNG Vulpia myuros Rat's-tail Fescue high low  MNG Bromus spp. Brome high high  MNG Schismus barbatus Arabian Grass high low  SC Asparagus asparagoides Bridal Creeper 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**

Murray Fans bioregion

EVC 819: Spike-sedge Wetland

##### Description:

Low sedgy vegetation of species-poor seasonal or intermittent wetlands, dominated by spike-sedges. Typically treeless, but sometimes with thickets of saplings or scattered more mature specimens of Eucalyptus camaldulensis. Mostly confined to a narrow ring around the upper margins of floodway ponds. Soils are typically heavy clays (e.g. mottled yellow-grey clay, grey loamy clay), occasionally silty near the surface. In some riverine sites, annual inundation is not reliable and the rhizomic rootstocks of Eleocharis acuta appear capable of surviving at least occasional periods of longer dormancy.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Large Herb | 1 | 5% | LH |
| Medium Herb | 6 | 15% | MH |
| Small or Prostrate Herb | 4 | 5% | SH |
| Medium to Small Tufted Graminoid | 2 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 50% | MNG |
| **Total understorey projective foliage cover** |  | **75%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  LH | **Species typical of at least part of EVC range**  Senecio quadridentatus | **Common Name**  Cottony Fireweed |
| MH | Myriophyllum crispatum | Upright Milfoil |
| MH | Marsilea drummondii | Common Nardoo |
| MH | Ludwigia peploides ssp. montevidensis | Clove-strip |
| MH | Centipeda cunninghamii | Common Sneezeweed |
| SH | Lobelia concolor | Poison Pratia |
| SH | Persicaria prostrata | Prostrate Knotweed |
| SH | Callitriche sonderi | Matted Water-starwort |
| MTG | Triglochin procerum s.l. | Water-ribbons |
| MTG | Lachnagrostis filiformis | Common Blown Grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eleocharis pusilla | Small Spike-sedge |

##### Recruitment:

Episodic/Flood – desirable period is every five years

##### Organic Litter:

20% Cover

##### Logs:

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| LH  MNG | Aster subulatus  Paspalum distichum | Aster-weed  Water Couch | high  high | low  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 819: Spike-sedge Wetland - Murray Fans bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Murray Fans bioregion

EVC 821: Tall Marsh

##### Description:

Wetland dominated by tall emergent graminoids (rushes, sedges, reeds), typically in thick species-poor swards. Competitive exclusion in core wetland habitat - of optimum growing conditions for species tolerant of sustained shallow inundation. Occupies wetlands usually associated with anabranch creeks. Soils are almost permanently moist. Dominant species are tolerant of relatively deep and sustained inundation, but not total immersion for any sustained period.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Herb | 6 | 20% | MH |
| Small or Prostrate Herb | 3 | 10% | SH |
| Large Tufted Graminoid | 1 | 10% | LTG |
| Large Non-tufted Graminoid | 3 | 40% | LNG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| **Total understorey projective foliage cover** |  | **90%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MH | **Species typical of at least part of EVC range**  Myriophyllum papillosum | **Common Name**  Robust Water-milfoil |
| MH | Persicaria decipiens | Slender Knotweed |
| MH | Lythrum hyssopifolia | Small Loose-strife |
| MH | Potamogeton tricarinatus s.l. | Floating Pondweed |
| SH | Lemna disperma | Common Duckweed |
| SH | Azolla filiculoides | Pacific Azolla |
| LTG | Juncus ingens | Giant Rush |
| LNG | Schoenoplectus tabernaemontani | River Club-sedge |
| LNG | Phragmites australis | Common Reed |
| LNG | Typha orientalis | Broad-leaf Cumbungi |
| LNG | Typha domingensis | Cumbungi |
| MTG | Triglochin procerum s.l. | Water Ribbons |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Pseudoraphis spinescens | Spiny Mud-grass |

##### Recruitment:

Episodic/Flood: desirable period of disturbance is every year

##### 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** |
| T  MH MTG MNG | Salix cinerea  Rorippa palustris Polyopogon monspeliensis Paspalum distichum | Grey Sallow  Yellow Marsh-cress Annual Beard-grass Water Couch | high  high high high | high  high low high |

Ecological Vegetation Class bioregion benchmark

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

Murray Fans bioregion

EVC 823: Lignum Swampy Woodland

##### Description:

Understorey dominated by Lignum, typically of robust character and relatively dense (at least in patches), in association with a low Eucalypt and/or Acacia woodland to 15 m tall. The ground layer includes a component of obligate wetland flora that is able to persist even if dormant over dry periods.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus largiflorens  Eucalyptus camaldulensis | 50cm  70cm | 15/ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 20% | Eucalyptus largiflorens  Eucalyptus camaldulensis Acacia stenophylla | Black Box  River Red Gum River Coobah |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 2 | 30% | MS |
| Small Shrub | 1 | 5% | SS |
| Large Herb | 2 | 1% | LH |
| Medium Herb\* | 8 | 10% | MH |
| Small or Prostrate Herb\* | 5 | 10% | SH |
| Medium to Small Tufted Graminoid\* | 4 | 10% | MTG |
| Large Non-tufted Graminoid | 1 | 5% | LNG |
| Medium to Tiny Non-tufted Graminoid\* | 3 | 15% | MNG |
| Soil Crust | na | 10% | S/C |

* + Largely seasonal life form

##### Total understorey projective foliage cover 75%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Muehlenbeckia florulenta | **Common Name**  Tangled Lignum |
| MS | Chenopodium nitrariaceum | Nitre Goosefoot |
| SS | Atriplex lindleyi | Flat-top Saltbush |
| SS | Sclerolaena muricata | Five-spined Bassia |
| LH | Rumex spp. | Dock |
| MH | Marsilea drummondii | Common Nardoo |
| MH | Brachyscome ciliaris | Variable Daisy |
| MH | Euchiton sphaericus | Annual Cudweed |
| MH | Ranunculus spp. | Buttercup |
| LNG | Eragrostis australasica | Cane Grass |
| MTG | Setaria jubiflora | Warrego Summer-grass |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |
| MTG | Sporobolus mitchellii | Short Rat-tail Grass |
| MTG | Eragrostis setifolia | Bristly Love-grass |
| MNG | Eragrostis infecunda | Barren Cane grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Eleocharis pusilla | Small Spike-sedge |
| SC | Asperula gemella | Twin-leaf Bedstraw |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 823: Lignum Swampy Woodland - Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  10 % cover  **Logs:**  10m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  SH Phyla canescens Lippia high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Murray Fans bioregion

EVC 824: Woorinen Mallee

##### Description:

Widespread mallee woodland to 12 m tall, associated with the east-west orientated calcareous dunefields of the Woorinen Formation with a low, open chenopod dominated shrub understorey. A diverse array of sub-shrubs, herbs and grasses are also present. Typically occurs on fine textured red-brown sandy loam and clay loam soils.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species**  Eucalyptus spp. | **DBH(cm)**  15 cm | **#/ha**  30/ha |

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover**  25% | **Character Species**  Eucalyptus oleosa ssp. oleosa | **Common Name**  Oil Mallee |
|  | Eucalyptus dumosa | Dumosa Mallee |
|  | Eucalyptus gracilis | Yorrell |
|  | Eucalyptus calycogona | Red Mallee |
|  | Eucalyptus socialis | Grey Mallee |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 6 | 10% | MS |
| Small Shrub | 6 | 20% | SS |
| Medium Herb\* | 6 | 10% | MH |
| Small or Prostrate Herb | 7 | 10% | SH |
| Medium to Small Tufted Graminoid | 1 | 1% | MTG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 15% | S/C |

* + Largely seasonal life form

##### Total understorey projective foliage cover 60%

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Santalum acuminatum | **Common Name**  Sweet Quandong |
| MS | Exocarpos aphyllus | Leafless Ballart |
| MS | Acacia oswaldii | Umbrella Wattle |
| MS | Eremophila glabra | Common Emu-bush |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| SS | Chenopodium curvispicatum | Cottony Goosefoot |
| SS | Olearia muelleri | Mueller Daisy-bush |
| SS | Maireana pentatropis | Erect Bluebush |
| MH | Zygophyllum apiculatum | Pointed Twin-leaf |
| MH | Stenopetalum lineare | Narrow Thread-petal |
| MH | Eriochiton sclerolaenoides | Woolly-fruit Bluebush |
| MH | Brachyscome ciliaris | Variable Daisy |
| SH | Calandrinia eremaea | Small Purslane |
| SH | Ptilotus seminudus | Rabbit Tails |
| SH | Rhodanthe pygmaea | Pygmy Sunray |
| SH | Isoetopsis graminifolia | Grass Cushion |
| MTG | Austrostipa elegantissima | Feather Spear-grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 824: Woorinen Mallee – Murray Fans bioregion | |
|  | **Recruitment:**  Continuous (excluding overstorey)  **Organic Litter:**  20% cover  **Logs:**  20m/0.1 ha. (note: large log class does not apply)  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  T Olea europaea subsp. europaea Olive high high  MS Lycium ferocissimum Boxthorn high high  LH Opuntia spp. Prickly Pear high high  LH Critesion spp. Barley-grass high low  LH Gazania linearis Gazania high high  LH Psilocaulon granulicaule Noon-flower high high LH Sisymbrium erysimoides Smooth Mustard high high  LH Sisymbrium irio London Mustard high high  MH Brassica tournefortii Mediterranean Turnip high high MH Carpobrotus aequilaterus Angled Pigface high high  MH Medicago spp. Medic high low  MH Marrubium vulgare Horehound high high  MH Oxalis pes-caprae Soursob high high MH Trifolium arvense var. arvense Hare's-foot Clover high low MH Mesembryanthemum nodiflora Ice-plant high high  MH Carrichtera annua Ward’s Weed high high  MH Silene apetala var. apetala Sand Catchfly high low MH Silene gallica French Catchfly high low  MH Silene nocturna Mediterranean Catchfly high low  MH Limonium sinuatum Notch-leaf Sea-lavender high high  MH Limonium lobatum Winged Sea-lavender high high SH Mesembryanthemum crystallinum Common Ice-plant high high  MNG Schismus barbatus Arabian Grass high low  MTG Asphodelus fistulosus Onion Weed high high  MTG Lolium rigidum Wimmera Rye-grass high low  MNG Bromus spp. Brome high high  MNG Vulpia myuros Rat's-tail Fescue high low SC Asparagus asparagoides Bridal Creeper high high  Published by the Victorian Government Department of Sustainability and Environment May 2004  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Murray Fans bioregion

EVC 826: Plains Savannah

##### Description:

A structurally diverse vegetation unit which includes ‘grassy openings’ of a few to many hundreds of hectares, with a variable tree density ranging from a very sparse savannah to woodland. The relative absence of eucalypts is particularly characteristic, with Allocasuarina luehmannii and perhaps Callitris gracilis subsp. murrayensis to 10 m tall being the dominant trees. Widespread on the northern plains.

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

##### Large trees+:

|  |  |  |
| --- | --- | --- |
| **Species** | **DBH(cm)** | **#/ha** |
| Allocasuarina luehmannii  Callitris gracilis ssp. murrayensis | 40 cm | 5/ha |

**Tree Canopy Cover**+**:**

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 10% | Allocasuarina luehmannii  Callitris gracilis ssp. murrayensis | Buloke  Slender Cypress-pine |

**Understorey:**

**Life form #Spp %Cover LF code**

+

Immature Canopy Tree

5% IT

Small Shrub 2 5% SS



Large Herb 3 5% LH

Medium Herb\* 6 20% MH

Small or Prostrate Herb\* 3 10% SH

Large Tufted Graminoid 1 5% LTG

Large Non-tufted Graminoid 1 5% LNG

Medium to Small Tufted Graminoid 5 35% MTG

Medium to Tiny Non-tufted Graminoid\* 2 5% MNG

Bryophytes/Lichens na 10% BL

Soil Crust na 25% S/C

* + Largely seasonal life form

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Acacia pendula | **Common Name**  Boree |
| MS | Acacia oswaldii | Umbrella Wattle |
| SS | Sclerolaena napiformis | Turnip Copperburr |
| SS | Sclerolaena diacantha | Grey Copperburr |
| SS | Maireana decalvans | Black Cotton-bush |
| SS | Pimelea curviflora s.s. | Curved Rice-flower |
| LH | Ptilotus exaltatus | Mulla Mulla |
| LH | Eryngium ovinum | Blue Devil |
| LH | Calocephalus citreus | Lemon Beauty-heads |
| LH | Arthropodium fimbriatum | Nodding Chocolate-lily |
| MH | Calotis scabiosifolia | Rough Burr-daisy |
| MH | Goodenia pinnatifida | Cut-leaf Goodenia |
| MH | Sida corrugata | Variable Sida |
| MH | Ptilotus macrocephalus | Feather Heads |
| SH | Maireana pentagona | Hairy Bluebush |
| SH | Chamaesyce drummondii | Flat Spurge |
| SH | Pogonolepis muelleriana | Stiff Cup-flower |
| SH | Convolvulus erubescens spp. agg. | Pink Bindweed |
| LTG | Austrostipa blackii | Crested Spear-grass |
| LTG | Austrostipa gibbosa | Spurred Spear-grass |
| LTG | Austrostipa aristiglumis | Plump Spear-grass |
| MTG | Austrostipa scabra | Rough Spear-grass |
| MTG | Austrostipa nodosa | Knotty Spear-grass |
| MTG | Whalleya proluta | Rigid Panic |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 826: Plains Savannah – Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  5% cover  **Logs**+**:**  5 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MS Lycium ferocissimum Boxthorn high high  LH Helminthotheca echioides Ox-tongue high low LH Lepidium africanum Common Peppercress high low  LH Salvia verbenaca Wild Sage high high  LH Echium plantagineum Patterson’s curse high high  LH Sisymbrium irio London Rocket high high  LH Marrubium vulgare Horehound high high  LNG Avena fatua Wild Oat high high  MH Limonium sinuatum Notch-leaf Sea-lavender high high  MH Arctotheca calendula Cape Weed high high  MH Hypochoeris glabra Smooth Cat's-ear high low  MH Hypochoeris radicata Cat's Ear high low  MH Oxalis pes-caprae Soursob high high  MH Plantago coronopus Buck's-horn Plantain high high  MH Spergularia rubra s.l. Red Sand-spurrey high low MH Trifolium angustifolium var. angustifolium Narrow-leaf Clover high high  MH Trifolium arvense var. arvense Hare's-foot Clover high high  MH Trifolium campestre var. campestre Hop Clover high high MH Trifolium striatum Knotted Clover high low  MH Trifolium subterraneum Subterranean Clover high low  MH Hedypnois cretica Cretan Hedypnois high high  MNG Aira cupaniana Quicksilver Grass high low  MNG Avena barbata Bearded Oat high high  MNG Brachypodium distachyon False Brome high high MNG Juncus capitatus Capitate Rush high high  MNG Vulpia muralis Wall Fescue high high  MNG Vulpia myuros Rat's-tail Fescue high high  MTG Bromus diandrus Great Brome high high  MTG Critesion hystrix Mediterranean Barley-grass high high  MTG Critesion murinum Barley-grass high high  MTG Lolium rigidum Wimmera Rye-grass high high MTG Pentaschistis airoides ssp. airoides False Hair-grass high low  MTG Poa bulbosa Bulbous Meadow-grass high high  MTG Romulea minutiflora Small-flower Onion-grass high high  MTG Romulea rosea Onion Grass high high  MTG Vulpia bromoides Squirrel-tail Fescue high high  SH Medicago minima Little Medic high high  SH Medicago polymorpha Burr Medic high high  SH Trifolium glomeratum Cluster Clover 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**

Murray Fans bioregion

EVC 829: Chenopod Grassland

##### Description:

Open to sparse shrubland with a more or less continuous tussock grass sward found on heavy somewhat sodic clay plains fringing the active floodplains of major watercourses such as the Loddon and Avoca Rivers.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 1 | 10% | MS |
| Small Shrub | 6 | 30% | SS |
| Large Herb | 1 | 1% | LH |
| Medium Herbs\* | 5 | 15% | MH |
| Small or Prostrate Herbs\* | 4 | 5% | SH |
| Medium to Small Tufted Graminoid | 3 | 20% | MTG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 20% | S/C |

* + Largely seasonal life form

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Lycium australe | **Common Name**  Australian Box-thorn |
| MS | Nitraria billardierei | Nitre-bush |
| SS | Sclerolaena diacantha | Grey Copperburr |
| SS | Maireana aphylla | Leafless Bluebush |
| SS | Minuria cunninghamii | Bush Minuria |
| SS | Lawrencia squamata | Thorny Lawrencia |
| PS | Sclerochlamys brachyptera | Short-wing Saltbush |
| PS | Atriplex semibaccata | Berry Saltbush |
| LH | Podolepis canescens | Grey Podolepis |
| MH | Rhodanthe stuartiana | Clay Sunray |
| MH | Teucrium racemosum s.s. | Grey Germander |
| MH | Maireana excavata | Bottle Bluebush |
| MH | Sida corrugata | Variable Sida |
| SH | Hyalosperma glutinosum ssp. glutinosum | Golden Sunray |
| SH | Hyalosperma semisterile | Orange Sunray |
| SH | Rhodanthe pygmaea | Pygmy Sunray |
| SH | Pogonolepis muelleriana | Stiff Cup-flower |
| LTG | Austrostipa aristiglumis | Plump Spear-grass |
| MTG | Austrostipa spp. | Spear-grass |
| MTG | Whalleya proluta | Rigid Panic |
| MTG | Enteropogon acicularis | Spider Grass |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 829: Chenopod Grassland - Murray Fans bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  5% cover  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Carthamus lanatus Saffron Thistle high high  MH Limonium lobatum Winged Sea-lavender high high  MH Hedypnois cretica Cretan Hedypnois high high  MH Arctotheca calendula Cape Weed high high  MH Romulea rosea Onion Grass high high  SH Moraea setifolia Thread Iris high high  SH Medicago spp. Medic high high MTG Critesion murinum subsp. leporinum Wall Barley-grass high high  MNG Bromus madritensis Madrid Brome high high  MNG Lolium rigidum Wimmera Rye-grass 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

Murray Fans bioregion

EVC 882: Shallow Sands Woodland

###### Description:

Woodland or open-forest to 15 m tall, with a sparse shrub layer of heathy, ericoid shrubs and a species-rich ground cover dominated by grasses and annual herbs. Typically it occurs between the heavier soils of the plains and the deep-sand aeolian dunefields which overlay these plains, but also occurs on broader areas of plains covered by shallow fluvial, outwash or aeolian sands overlaying drainage-impeding clays.

|  |  |  |
| --- | --- | --- |
| Large trees: |  | |
| Species  Eucalyptus spp.  Allocasuarina luehmannii Callitris glaucophylla | DBH(cm)  70 cm  40 cm  40 cm | #/ha  15 / ha |

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| %cover | Character Species | Common Name |
| 15% | Eucalyptus melliodora | Yellow Box |
|  | Allocasuarina luehmannii | Buloke |
|  | Callitris glaucophylla | White Cypress-pine |

|  |  |  |  |
| --- | --- | --- | --- |
| Understorey: Life form | #Spp | %Cover | LF code |
| Immature Canopy Tree |  | 5% | IT |
| Understorey Tree or Large Shrub | 1 | 5% | T |
| Medium Shrub | 4 | 15% | MS |
| Small Shrub | 3 | 10% | SS |
| Prostrate Shrub | 1 | 5% | PS |
| Medium Herb | 10 | 20% | MH |
| Small or Prostrate Herb | 2 | 5% | SH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 13 | 30% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| LF Code  T | Species typical of at least part of EVC range  Exocarpos cupressiformis | Common Name  Cherry Ballart |
| MS | Acacia montana | Mallee Wattle |
| MS | Acacia pycnantha | Golden Wattle |
| MS | Acacia verniciflua | Varnish Wattle |
| MS | Bursaria spinosa ssp. spinosa | Sweet Bursaria |
| SS | Pimelea curviflora s.s. | Curved Rice-flower |
| SS | Eutaxia microphylla | Common Eutaxia |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| PS | Astroloma humifusum | Cranberry Heath |
| MH | Wahlenbergia luteola | Yellowish Bluebell |
| MH | Acaena echinata | Sheep's Burr |
| SH | Daucus glochidiatus | Australian Carrot |
| SH | Drosera whittakeri ssp. aberrans | Scented Sundew |
| LTG | Dichelachne crinita | Long-hair Plume-grass |
| MTG | Austrodanthonia geniculata | Kneed Wallaby-grass |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MTG | Schoenus apogon | Common Bog-sedge |
| MTG | Lomandra multiflora ssp. multiflora | Many-flowered Mat-rush |
| TTG | Centrolepis strigosa ssp. strigosa | Hairy Centrolepis |
| SC | Thysanotus patersonii | Twining Fringe-lily |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 882: Shallow Sands Woodland – Murray Fans bioregion | |
|  | Recruitment:  Continuous  Organic Litter:  20 % cover  Logs:  15 m/0.1 ha.  Weediness:  LF Code Typical Weed Species Common Name Invasive Impact  LH Centaurium tenuiflorum Slender Centaury high low  MH Hypochoeris radicata Cat's Ear high low  MH Hypochoeris glabra Smooth Cat's-ear high low MH Trifolium campestre var. campestre Hop Clover high low  MH Trifolium angustifolium var. angustifolium Narrow-leaf Clover high low  MH Trifolium arvense var. arvense Hare's-foot Clover high low MH Petrorhagia velutina Velvety Pink high low  MTG Briza minor Lesser Quaking-grass high low  MTG Briza maxima Large Quaking-grass high low  MTG Romulea rosea Onion Grass high low  MTG Vulpia bromoides Squirrel-tail Fescue high low  MNG Aira elegantissima Delicate Hair-grass high low  MNG Vulpia myuros f. myuros Rat's-tail Fescue high low  MNG Juncus capitatus Capitate Rush high low  MNG Bromus rubens Red Brome high low  Published by the Victorian Government Department of Sustainability and Environment November 2007  © The State of Victoria Department of Sustainability and Environment 2007  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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