

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

Lowan Mallee bioregion

EVC 48: Heathy Woodland

###### Description:

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

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| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus (non-mallee) spp.  Eucalyptus (mallee) spp. | 50 cm  30 cm | 15 / ha |

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 20% | Eucalyptus leucoxylon  Eucalyptus arenacea Eucalyptus incrassata Eucalyptus leptophylla | Yellow Gum  Desert Stringybark Yellow Mallee Slender-leaf Mallee |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Medium Shrub | 13 | 40% | MS |
| Small Shrub | 14 | 30% | SS |
| Medium Herb | 2 | 1% | MH |
| Hummock Grass | 1 | 5% | HG |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 4 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | 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**  Hakea mitchellii | **Common Name**  Desert Hakea |
| MS | Callitris verrucosa | Scrub Cypress-pine |
| MS | Leptospermum coriaceum | Mallee Tea-tree |
| MS | Allocasuarina pusilla s.l. | Dwarf Sheoak |
| SS | Baeckea crassifolia | Desert Baeckea |
| SS | Leucopogon rufus | Ruddy Beard-heath |
| SS | Hibbertia riparia | Erect Guinea-flower |
| SS | Brachyloma ericoides ssp. ericoides | Brush Heath |
| PS | Astroloma humifusum | Cranberry Heath |
| MH | Goodenia geniculata | Bent Goodenia |
| MH | Glischrocaryon behrii | Golden Pennants |
| HG | Triodia scariosa | Porcupine Grass |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Lomandra juncea | Desert Mat-rush |
| MTG | Lepidosperma carphoides | Black Rapier-sedge |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MNG | Lepidobolus drapetocoleus | Scale Shedder |
| MNG | Hypolaena fastigiata | Tassel Rope-rush |
| TTG | Schoenus breviculmis | Matted Bog-sedge |
| SC | Billardiera cymosa s.l. | Sweet Apple-berry |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 48: Heathy Woodland – Lowan Mallee bioregion | |
|  | **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 20 years.  **Organic Litter:**  40 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MTG Pentaschistis airoides ssp. airoides False Hair-grass high low  Published by the Victorian Government Department of Sustainability and Environment April 2006  © The State of Victoria Department of Sustainability and Environment 2006  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**

Lowan Mallee 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.

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| **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 leucoxylon | **Common Name**  Yellow Gum |
|  | Callitris gracilis ssp. murrayensis | Slender Cypress-pine |
|  | Allocasuarina luehmannii | Buloke |
|  | Eucalyptus porosa | Black Mallee-box |
|  | Eucalyptus silvestris | Woodland Box |
|  | Eucalyptus microcarpa | Grey Box |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | 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

|  |  |
| --- | --- |
| EVC 66: Low Rises Woodland - Lowan Mallee 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**

Lowan Mallee 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.

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| **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 - Lowan Mallee 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**

Lowan Mallee bioregion

EVC 87: Lowan Sands Mallee

###### Description:

Low woodland to mallee shrubland to 7 m tall, commonly dominated by Eucalyptus arenacea with a heathy understorey. Found on deep to moderately deep siliceous sands of aeolian origin.

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 25% | Eucalyptus arenacea  Eucalyptus incrassata | Desert Stringybark  Yellow Mallee |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 35% | MS |
| Small Shrub | 7 | 30% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Medium Herb | 4 | 10% | MH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 5 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 10% | MNG |
| **Total understorey projective foliage cover** |  | **60%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum myrsinoides | **Common Name**  Heath Tea-tree |
| MS | Banksia marginata | Silver Banksia |
| MS | Callitris rhomboidea | Oyster Bay Cypress-pine |
| MS | Allocasuarina pusilla s.l. | Dwarf Sheoak |
| SS | Hibbertia sericea s.l. | Silky Guinea-flower |
| SS | Isopogon ceratophyllus | Horny Cone-bush |
| SS | Hibbertia virgata | Twiggy Guinea-flower |
| SS | Phyllota pleurandroides | Heathy Phyllota |
| MH | Goodenia geniculata | Bent Goodenia |
| MH | Argentipallium obtusifolium | Blunt Everlasting |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Wahlenbergia gracilenta s.l. | Annual Bluebell |
| LTG | Xanthorrhoea australis | Austral Grass-tree |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Lepidosperma carphoides | Black Rapier-sedge |
| MTG | Neurachne alopecuroidea | Fox-tail Mulga-grass |
| MTG | Lomandra juncea | Desert Mat-rush |
| MNG | Hypolaena fastigiata | Tassel Rope-rush |
| MNG | Lepidobolus drapetocoleus | Scale Shedder |
| TTG | Centrolepis strigosa ssp. strigosa | Hairy Centrolepis |
| TTG | Schoenus breviculmis | Matted Bog-sedge |
| SC | Cassytha glabella | Slender Dodder-laurel |
| SC | Cassytha pubescens s.s. | Downy Dodder-laurel |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 87: Lowan Sands Mallee - Lowan Mallee bioregion | |
|  | **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 20 years.  **Organic Litter:**  5% cover  **Logs:**  5 m/0.1 ha. (note: large log class is not applicable)  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MNG Ehrharta calycina Perennial Veldt 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**

Lowan Mallee bioregion

EVC 88: Heathy Mallee

###### Description:

Low mallee shrubland to low open mallee shrubland to 4 m with a dense to moderately dense understorey of heathy shrubs. Occurs on infertile siliceous Lowan Sand on dunefields and sandplains. This is a prominent EVC in the central Big Desert.

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 25% | Eucalyptus incrassata  Eucalyptus leptophylla Eucalyptus arenacea | Yellow Mallee  Slender-leaf Mallee Desert Stringybark |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** Medium Shrub | **#Spp**  6 | **%Cover**  30% | **LF code**  MS |
| Small Shrub | 7 | 20% | SS |
| Large Herb | 2 | 1% | LH |
| Medium Herb | 3 | 5% | MH |
| Hummock Grass | 1 | 5% | HG |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **55%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Calytrix tetragona | **Common Name**  Common Fringe-myrtle |
| MS | Hakea mitchellii | Desert Hakea |
| MS | Leptospermum coriaceum | Mallee Tea-tree |
| MS | Babingtonia behrii | Broom Baeckea |
| SS | Hibbertia riparia | Erect Guinea-flower |
| SS | Baeckea crassifolia | Desert Baeckea |
| SS | Stenanthemum leucophractum | White Cryptandra |
| SS | Cryptandra tomentosa | Prickly Cryptandra |
| LH | Helichrysum leucopsideum | Satin Everlasting |
| MH | Goodenia geniculata | Bent Goodenia |
| MH | Goodenia robusta | Woolly Goodenia |
| HG | Triodia scariosa | Porcupine Grass |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Lepidosperma carphoides | Black Rapier-sedge |
| MTG | Lomandra juncea | Desert Mat-rush |
| MTG | Lomandra collina | Pale Mat-rush |
| MNG | Lepidobolus drapetocoleus | Scale Shedder |
| MNG | Hypolaena fastigiata | Tassel Rope-rush |
| TTG | Schoenus breviculmis | Matted Bog-sedge |
| SC | Cassytha glabella | Slender Dodder-laurel |
| SC | Billardiera cymosa s.l. | Sweet Apple-berry |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 88: Heathy Mallee - Lowan Mallee bioregion | |
|  | **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 20 years.  **Organic Litter:**  10% cover  **Logs:**  5m/0.1 ha. (note: large log class does not apply)  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MTG Vulpia myuros Rat’s-tail Fescue high high  MTG Ehrharta calycina Perennial Veldt 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**

Lowan Mallee bioregion

EVC 89: Dunefield Heathland

###### Description:

Treeless heathland or low shrubland to 2 m tall. Very scattered small mallee form trees may be present. In recently burnt stands (less than 20 years since fire) an open sub-shrub and ground stratum is also common. Occurs on deep siliceous sand on minor dunes and undulating sandplains where siliceous Lowan Sand of coastal origins has accumulated to some depth.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 6 | 50% | MS |
| Small Shrub | 6 | 20% | SS |
| Medium Herb | 4 | 5% | MH |
| Hummock Grass | 1 | 1% | HG |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 5% | MNG |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **60%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum myrsinoides | **Common Name**  Heath Tea-tree |
| MS | Banksia marginata | Silver Banksia |
| MS | Callitris verrucosa | Scrub Pine |
| MS | Hakea mitchellii | Desert Hakea |
| SS | Hibbertia riparia | Erect Guinea-flower |
| SS | Hibbertia virgata | Twiggy Guniea-flower |
| SS | Spyridium subochreatum var. subochreatum | Velvet Spyridium |
| SS | Leucopogon woodsii | Nodding Beard-heath |
| MH | Goodenia geniculata | Bent Goodenia |
| MH | Podotheca angustifolia | Sticky Heads |
| MH | Comesperma calymega | Blue-spike Milkwort |
| MH | Argentipallium obtusifolium | Blunt Everlasting |
| HG | Triodia scariosa | Porcupine Grass |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Lepidosperma carphoides | Black Rapier-sedge |
| MTG | Lomandra juncea | Desert Mat-rush |
| MTG | Lomandra leucocephala ssp. robusta | Wooly Mat-rush |
| MNG | Lepidobolus drapetocoleus | Scale Shedder |
| MNG | Hypolaena fastigiata | Tassel Rope-rush |
| TTG | Schoenus breviculmis | Matted Bog-sedge |
| SC | Cassytha glabella | Slender Dodder-laurel |

###### Recruitment:

Episodic/Fire. Desirable period between disturbances is 20 years.

###### Organic Litter:

5% cover

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Weediness:** |  | | | |
| **LF Code** | **Typical Weed Species** | **Common Name** | **Invasive** | **Impact** |
| MTG  MTG | Vulpia myuros  Ehrharta calycina | Rat’s-tail Fescue  Perennial Veldt Grass | high  high | high  high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 89: Dunefield Heathland - Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee bioregion

EVC 90: Tea-tree Scrub

###### Description:

A dense scrub 2 to 3 m tall of Mallee Tea-tree Leptospermum coriaceum associated with the Outlet Creek system. Tea-tree scrub may represent the colonization of Lowan sand deposits that have either been derived from the riverine system or been recently blown across it. The natural firebreak that the riverine system provides may also be an important determinant of its composition. This vegetation community could also possibly exist as a result of an extremely long period without fire in the EVC Sandplain Heathland.

###### Lifeforms:

|  |  |  |  |
| --- | --- | --- | --- |
| **Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 55% | MS |
| Small Shrub | 5 | 15% | SS |
| Medium Herb | 4 | 5% | MH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Medium to Small Tufted Graminoid | 5 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 1% | MNG |
| Scrambler/Climber | 1 | 1% | SC |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Leptospermum coriaceum | **Common Name**  Mallee Tea-tree |
| MS | Aotus subspinescens | Mallee Aotus |
| MS | Calytrix tetragona | Common Fringe-myrtle |
| MS | Banksia ornata | Desert Banksia |
| SS | Hibbertia riparia | Erect Guinea-flower |
| SS | Hibbertia virgata | Twiggy Guinea-flower |
| SS | Micromyrtus ciliata | Heath-myrtle |
| SS | Phyllota pleurandroides | Heathy Phyllota |
| MH | Poranthera microphylla | Small Poranthera |
| MH | Podotheca angustifolia | Sticky Long-heads |
| MH | Wahlenbergia gracilenta s.l. | Annual Bluebell |
| LTG | Triodia scariosa | Porcupine Grass |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Neurachne alopecuroidea | Fox-tail Mulga-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Lomandra leucocephala ssp. robusta | Woolly Mat-rush |
| MTG | Lepidosperma carphoides | Black Rapier-sedge |
| TTG | Centrolepis cephaloformis ssp. cephaloformis | Cushion Centrolepis |
| MNG | Lepidobolus drapetocoleus | Scale Shedder |
| SC | Thysanotus patersonii | Twining Fringe-lily |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 90: Tea-tree Scrub – Lowan Mallee bioregion | |
|  | **Recruitment:**  Continuous.  **Organic Litter:**  20% cover  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MH Hypochoeris glabra Smooth Cat's-ear high low MH Silene apetala var. apetala Mallee Catchfly high low MH Silene gallica French Catchfly high low  MH Reichardia tingitana False Sow-thistle high low MTG Pentaschistis airoides ssp. airoides False Hair-grass high low MTG Vulpia bromoides Squirrel-tail Fescue high low  MNG Vulpia myuros Rat’s-tail Fescue 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**

Lowan Mallee 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** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 5 | 20% | 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 - Lowan Mallee 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**

Lowan Mallee bioregion

EVC 93: Sandstone Ridge Shrubland (syn. Broombush Mallee)

###### Description:

Low open mallee to 3 m tall typically with a tall shrubby understorey, or shrubland with scattered emergent mallees. A good field character for this EVC is the dominance or co-dominance of the tall shrub Melaleuca uncinata in shrubland or as an understorey shrub in Mallee vegetation. Confined to the crests of outcropping Parilla sandstone ridges and also where these ridges are at least partially obscured by a shallow mantle of Lowan sand.

+ mallee only component (ignore when assessing shrubland areas and standardise final score as appropriate)

###### Tree Canopy Cover+:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus incrassata  Eucalyptus leptophylla | Yellow Mallee  Slender-leaf Mallee |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 4 | 40% | MS |
| Small Shrub | 4 | 5% | SS |
| Medium Herb | 2 | 5% | MH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Tiny Tufted Graminoid | 1 | 1% | TTG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 15% | S/C |
| **Total understorey projective foliage cover** |  | **60%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Melaleuca uncinata | **Common Name**  Broombush |
| MS | Babingtonia behrii | Broom Baeckea |
| MS | Callitris verrucosa | Scrub Cypress-pine |
| MS | Hakea mitchellii | Desert Hakea |
| SS | Hibbertia riparia | Erect Guinea-flower |
| SS | Eutaxia microphylla | Common Eutaxia |
| SS | Hibbertia virgata | Twiggy Guniea-flower |
| SS | Micromyrtus ciliata | Heath-myrtle |
| MH | Helichrysum leucopsideum | Satin Everlasting |
| MH | Glischrocaryon behrii | Golden Pennants |
| MH | Podotheca angustifolia | Sticky Long-heads |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Neurachne alopecuroidea | Fox-tail Mulga-grass |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| SC | Thysanotus patersonii | Twining Fringe-lily |
| SC | Billardiera cymosa s.l. | Sweet Apple-berry |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 93: Sandstone Ridge Shrubland (syn. Broombush Mallee) - Lowan Mallee Bioregion | |
|  | **Recruitment:**  Episodic/Fire. Desirable period between disturbances is 20 years.  **Organic Litter:**  10% cover  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MH Hypochoeris glabra Smooth Cat's-ear high low MTG Pentaschistis airoides subsp. airoides False Hair-grass high high  MTG Ehrharta calycina Perennial Veldt 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**

Lowan Mallee Bioregion

EVC 93\_61: Treed Sandstone Ridge Shrubland

##### Description:

Low open mallee to 3 m tall typically with a tall shrubby understorey, or shrubland with scattered emergent mallees. A good field character for this EVC is the dominance or co-dominance of the tall shrub Melaleuca uncinata in shrubland or as an understorey shrub in Mallee vegetation. Confined to the crests of outcropping Parilla sandstone ridges and also where these ridges are at least partially obscured by a shallow mantle of Lowan sand.

##### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | *Eucalyptus costata subsp. murrayana Eucalyptus leptophylla* | Yellow Mallee Slender-leaf Mallee |

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

Large Tufted Graminoid

Medium to Small Tufted Graminoid Tiny Tufted Graminoid

##### #Spp %Cover LF Code

4 40% MS

4 5% SS

2 5% MH

1 1% LTG

3 5% MTG

1 1% TTG

Bryophytes/Lichens 10% BL



Soil Crust 15% S/C

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  *Babingtonia behrii* | **Common Name**  Broom Baeckea |
| MS | *Callitris verrucosa* | Scrub Cypress-pine |
| MS | *Hakea mitchellii* | Desert Hakea |
| MS | *Melaleuca uncinata* | Broombush |
| SS | *Eutaxia microphylla* | Common Eutaxia |
| SS | *Hibbertia riparia* | Erect Guinea-flower |
| SS | *Hibbertia virgata* | Twiggy Guinea-flower |
| SS | *Micromyrtus ciliata* | Heath-myrtle |
| MH | *Glischrocaryon behrii* | Golden Pennants |
| MH | *Helichrysum leucopsideum* | Satin Everlasting |
| MH | *Podotheca angustifolia* | Sticky Long-heads |
| LTG | *Austrostipa mollis* | Supple Spear-grass |
| MTG | *Austrodanthonia setacea* | Bristly Wallaby-grass |
| MTG | *Dianella revoluta s.l.* | Black-anther Flax-lily |
| MTG | *Lepidosperma viscidum* | Sticky Sword-sedge |
| MTG | *Neurachne alopecuroidea* | Fox-tail Mulga-grass |
| TTG | *Various spp.* |  |

##### Recruitment:

Episodic/Fire. Desirable period between disturbances is 20 years.

Ecological Vegetation Class Bioregion Benchmark

|  |  |
| --- | --- |
| EVC 93\_61: Treed Sandstone Ridge Shrubland | |
|  | **Organic Litter:**  10 % cover  **Logs:**  5 m/0.1ha. (note: large log class does not apply).  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MTG *Pentaschistis airoides subsp. airoides* False Hair-grass high high SC *Asparagus asparagoides* Bridal Creeper high high MTG *Ehrharta calycina* Perennial Veldt-grass high high  MH *Hypochoeris glabra* Smooth Cat's-ear high low  Published by the Victorian Government Department of Sustainability and Environment  © The State of Victoria Government Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-comercial is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson St, East Melbourne, Victoria 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss, of other consequences which may arise from you relying on any information in this publication.  [**www.dse.vic.gov.au**](http://www.dse.vic.gov.au/) |



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

Lowan Mallee bioregion

EVC 95: Red Swale Mallee

###### Description:

Dense to sometimes whipstick form of mallee shrubland to 6 m tall with a typically sparse understorey. This EVC does not necessarily occur in dune swales, however it is often found on low points in the jumbled or parabolic dunefields of the Lowan where the underlying Parilla ridges may be “exposed” and are mantled by a thin layer of aeolian material.

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 30% | Eucalyptus dumosa  Eucalyptus calycogona Eucalyptus leptophylla  Eucalyptus socialis | Dumosa Mallee  Red Mallee Slender-leaf Mallee Grey Mallee |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** Medium Shrub | **#Spp**  4 | **%Cover**  10% | **LF code**  MS |
| Small Shrub | 3 | 5% | SS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 7 | 10% | MH |
| Small or Prostrate Herb | 2 | 1% | SH |
| Large Tufted Graminoid | 1 | 1% | LTG |
| Medium to Small Tufted Graminoid | 3 | 5% | MTG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 20% | S/C |
| **Total understorey projective foliage cover** |  | **55%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Dodonaea bursariifolia | **Common Name**  Small Hop-bush |
| MS | Beyeria opaca | Dark Turpentine Bush |
| MS | Melaleuca uncinata | Broombush |
| SS | Westringia rigida | Stiff Westringia |
| MH | Chenopodium desertorum | Frosted Goosefoot |
| MH | Stenopetalum lineare | Narrow Thread-petal |
| MH | Crassula colorata | Dense Crassula |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MTG | Lepidosperma viscidum | Sticky Sword-sedge |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |

**Recruitment:**

Episodic/Fire. Desirable period between disturbances is 30 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** |
| T | Olea europaea | Olive | high | high |
| LH | Brassica tournefortii | Mediterranean Turnip | high | high |
| LH | Opuntia spp. | Cactus | high | high |
| MH | Gazania linearis | Gazania | high | high |
| SC | Asparagus asparagoides | Bridal Creeper | high | high |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 95: Red Swale Mallee - Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee 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 Eucalyptus porosa  Allocasuarina luehmannii | Dumosa Mallee  Bull Mallee  Black Mallee-box Buloke |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  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 | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| SS | Rhagodia spinescens | Hedge 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 - Lowan Mallee 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 low 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**

Lowan Mallee 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**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  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 - Lowan Mallee 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**

Lowan Mallee 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

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 98: Semi-arid Chenopod Woodland - Lowan Mallee bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  T+ Alectryon oleifolius ssp. canescens 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  SH *Calotis hispidula* Hairy Burr-daisy  SH *Plagiobothrys elachanthus* Hairy Forget-me-not  SH *Isoetopsis graminifolia* Grass Cushion  SH *Pogonolepis muelleriana* Stiff Cup-flower  **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 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**

Lowan Mallee Bioregion

EVC 98\_61: Non-treed 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.

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

Small or Prostrate Herb\* Large Non-Tufted Graminoid

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

##### #Spp %Cover LF Code

2 40% MS

4 15% SS

1. 1% PS
2. 5% LH

6 15% MH

8 15% SH

1. 5% LNG
2. 5% MTG

1 1% MNG

Bryophytes/Lichens 10% BL



Soil Crust 30% S/C

\*Largely seasonal lifeform

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  MS |  | **Species typical of at least part of EVC range**  *Atriplex nummularia* | **Common Name**  Old-man Saltbush |
| MS |  | *Maireana pyramidata* | Sago Bush |
| MS | r | *Maireana sedifolia* | Pearl Bluebush |
| MS |  | *Nitraria billardierei* | Nitre-bush |
| SS |  | *Enchylaena tomentosa var. tomentosa* | Ruby Saltbush |
| SS | k | *Sclerolaena divaricata* | Tangled Copperburr |
| SS |  | *Sclerolaena obliquicuspis* | Limestone Copperburr |
| SS |  | *Sclerolaena tricuspis* | Streaked Copperburr |
| PS |  | *Sclerochlamys brachyptera* | Short-wing Saltbush |
| LH |  | *Polycalymma stuartii* | Poached-eggs Daisy |
| MH |  | *Brachyscome lineariloba* | Hard-head Daisy |
| MH |  | *Osteocarpum acropterum var. deminutum* | Babbagia |
| MH |  | *Zygophyllum ammophilum* | Sand Twin-leaf |
| MH |  | *Zygophyllum crenatum* | Notched Twin-leaf |
| SH |  | *Calotis hispidula* | Hairy Burr-daisy |
| SH |  | *Isoetopsis graminifolia* | Grass Cushion |
| SH |  | *Plagiobothrys elachanthus* | Hairy Forget-me-not |
| SH |  | *Pogonolepis muelleriana* | Stiff Cup-flower |
| LNG |  | *Various spp.* |  |
| MTG |  | *Various spp.* |  |
| MNG |  | *Various spp.* |  |

Ecological Vegetation Class Bioregion Benchmark

|  |  |
| --- | --- |
| EVC 98\_61: Non-treed Semi-arid Chenopod Woodland | |
|  | **Recruitment:**  Continuous.  **Organic Litter:**  5 % cover  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  SH *Medicago minima* Little Medic high high  MH *Limonium spp.* Sea Lavender high high  MNG *Bromus rubens* Red Brome high high  LH *Brassica tournefortii* Mediterranean Turnip high high  MH *Carrichtera annua* Ward's Weed high high LH *Sisymbrium erysimoides* Smooth Mustard high high MNG *Vulpia spp.* Fescue high high  LH *Salvia verbenaca* Wild Sage high high  MTG *Schismus barbatus* Arabian Grass high high  LH *Sonchus oleraceus* Common Sow-thistle high low  MH *Erodium cicutarium* Common Heron's-bill high low  MH *Reichardia tingitana* False Sow-thistle low low  MTG *Hordeum glaucum* Northern Barley-grass high high MH *Silene apetala var. apetala* Mallee Catchfly high high  Published by the Victorian Government Department of Sustainability and Environment  © The State of Victoria Government Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-comercial is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson St, East Melbourne, Victoria 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss, of other consequences which may arise from you relying on any information in this publication.  [**www.dse.vic.gov.au**](http://www.dse.vic.gov.au/) |



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

Lowan Mallee 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 - Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee 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 55%

|  |  |  |
| --- | --- | --- |
| **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 |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 103: Riverine Chenopod Woodland (syn. Black Box Chenopod Woodland) - Lowan Mallee Bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  5% cover  **Logs:**  5m/0.1 ha.  **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**

Lowan Mallee 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 - Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee bioregion

EVC 132: Plains Grassland

###### Description:

A grassland occurring in slight (and more fertile) depressions of the open, sandy plains south-east of the Danyo fault in the Murray Sunset National Park. The grasslands were subject to past heavy grazing by sheep and were the preferred locations for stock tanks that further exacerbated pressure placed on them by stock, goats, rabbits and hares. Many of the original chenopod shrubs were eaten out and replaced by introduced grasses and herbs. It is possible that the EVC was originally Semi-arid Chenopod Woodland (shrubland version).

###### Lifeforms:

|  |  |  |  |
| --- | --- | --- | --- |
| **Life form** | **#Spp** | **%Cover** | **LF code** |
| Small Shrub | 5 | 10% | SS |
| Medium Herb\* | 12 | 15% | MH |
| Small or Prostrate Herb \* | 4 | 10% | SH |
| Medium to Small Tufted Graminoid | 4 | 25% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 1% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 20% | S/C |

\*Largely seasonal life form

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

|  |  |  |  |
| --- | --- | --- | --- |
| **LF Code**  SS |  | **Species typical of at least part of EVC range**  Sclerolaena diacantha | **Common Name**  Grey Copperburr |
| MH | r | Podolepis canescens | Grey Podolepis |
| MH |  | Senecio pinnatifolius | Variable Groundsel |
| MH |  | Goodenia pusilliflora | Small-flower Goodenia |
| MH |  | Rhodanthe stuartiana | Clay Sunray |
| SH |  | Pogonolepis muelleriana | Stiff Cup-flower |
| SH |  | Isoetopsis graminifolia | Grass Cushion |
| SH |  | Calotis hispidula | Hairy Burr-daisy |
| SH |  | Maireana lobiflora | Lobed Bluebush |
| LTG |  | Austrostipa nodosa | Knotty Spear-grass |
| MTG |  | Austrostipa eremophila | Desert Spear-grass |
| MTG |  | Austrodanthonia caespitosa | Common Wallaby-grass |
| MTG |  | Aristida contorta | Sand Wire-grass |

**Recruitment:**

Continuous

###### Organic Litter:

5% cover

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 132: Plains Grassland - Lowan Mallee bioregion | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Sonchus oleraceus Common Sow-thistle high low  LH Salvia verbenaca Wild Sage high high  MH Hypochoeris glabra Smooth Cat's-ear high low MH Silene apetala var. apetala Mallee Catchfly high high  MH Erodium cicutarium Common Heron's-bill high low MH Leontodon taraxacoides ssp. taraxacoides Hairy Hawkbit high low MH Amsinckia calycina Hairy Fiddle-neck high high  MH Amsinckia lycopsoides Bugloss Fiddle-neck high high  MH Buglossoides arvensis Corn Gromwell high high  SH Medicago minima Little Medic high high SH Mesembryanthemum crystallinum Common Ice-plant high high MTG Moraea setifolia Thread Iris high low MTG Critesion murinum ssp. glaucum Blue Barley-grass high high MNG Bromus rubens Red Brome high high  MNG Vulpia myuros Rat's-tail Fescue 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**

Lowan Mallee bioregion

EVC 195: Seasonally Inundated Shrubby Woodland

###### Description:

Shrub-dominated eucalypt woodland to 15 m tall with an understorey visually dominated by medium shrubs and including a range of sedges and grasses and herbs including a number of annuals. Occurs on moderately fertile, poorly-drained, shallow sand or silty topsoils over heavier clay subsoils that naturally impede drainage. Often associated with recent Quaternary swamp deposits and broad, seasonal drainage lines and outwash flats between sand dunes. Soils are generally inundated or waterlogged in winter and baked hard in summer, which promotes sedges and annual species.

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

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus leucoxylon | Yellow Gum |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** | **#Spp** | **%Cover** | **LF code** |
| Immature Canopy Tree |  | 5% | IT |
| Medium Shrub | 7 | 35% | MS |
| Small Shrub | 4 | 5% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 3 | 5% | LH |
| Medium Herb | 4 | 10% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Medium to Small Tufted Graminoid | 6 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 4 | 5% | MNG |
| Tiny Tufted Graminoid | 3 | 1% | TTG |
| Epiphyte | 1 | 1% | EP |
| Bryophytes/Lichens | na | 10% | BL |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 195: Seasonally Inundated Shrubby Woodland - Lowan Mallee bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  MS Melaleuca gibbosa Slender Honey-myrtle  MS Calytrix tetragona Common Fringe-myrtle  MS Hakea rugosa Dwarf Hakea  MS Grevillea ilicifolia Holly Grevillea  SS Hibbertia riparia Erect Guinea-flower  SS Eutaxia microphylla var. microphylla Common Eutaxia  SS Hibbertia sericea s.l. Silky Guinea-flower  SS Astroloma conostephioides Flame Heath  PS Astroloma humifusum Cranberry Heath  LH Arthropodium strictum s.s. Chocolate Lily  LH Arthropodium spp. (s.s.) Vanilla Lily  LH Senecio tenuiflorus Slender Fireweed  MH Wahlenbergia gracilenta s.s. Hairy Annual-bluebell  MH Chamaescilla corymbosa var. corymbosa Blue Stars  MH Microseris scapigera spp. agg. Yam Daisy  SH Hydrocotyle laxiflora Stinking Pennywort  SH Myriocephalus rhizocephalus Woolly-heads  SH Drosera glanduligera Scarlet Sundew  SH r Gnephosis drummondii Slender Cup-flower  LTG Austrostipa mollis Supple Spear-grass  MTG Schoenus apogon Common Bog-sedge  MTG Dianella revoluta s.s. Black-anther Flax-lily  MTG Austrodanthonia setacea var. setacea Bristly Wallaby-grass  MTG Lomandra juncea Desert Mat-rush  MNG Hypolaena fastigiata Tassel Rope-rush  TTG Centrolepis strigosa ssp. strigosa Hairy Centrolepis  TTG Centrolepis aristata Pointed Centrolepis  TTG Isolepis marginata Little Club-sedge  EP Cassytha glabella Slender Dodder-laurel  EP Amyema pendula Drooping Mistletoe  SC Thysanotus patersonii Twining Fringe-lily  **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 Cirsium vulgare Spear Thistle high low LH Centaurium tenuiflorum Slender Centaury high low  MH Hypochoeris glabra Smooth Cat's-ear high low MH Hypochoeris radicata Cat's Ear high low  MTG Briza minor Lesser Quaking-grass high low  MNG Aira elegantissima Delicate Hair-grass high low  MNG Juncus capitatus Capitate Rush high high  MNG Vulpia myuros Rat's-tail Fescue high low  MNG Bromus rubens Red Brome high low  TTG Cyperus tenellus Tiny Flat-sedge high high  Published by the Victorian Government Department of Sustainability and Environment September 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**

Lowan Mallee bioregion

EVC 291: Cane Grass Wetland

###### Description:

Open-grassland, typically very species-poor except on outer verges, often with monospecific (or virtually so) cane-grass dominated centres. Occur on alluvial plains in shallow (~1 m deep) depressions, on very heavy grey clay soils, prone to turbidity when inundated (4-6 months) and extreme cracking when dry.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Small or Prostrate Herb | 2 | 10% | SH |
| Medium to Tiny Non-tufted Graminoid | 2 | 50% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| **Total understorey projective foliage cover** |  | **70%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code** | **Species typical of at least part of EVC range** | **Common Name** |
| SH  SH MNG MNG | Lemna disperma  Azolla filiculoides Eragrostis infecunda  Eleocharis acuta | Common Duckweed  Pacific Azolla Southern Cane-grass Common Spike-sedge |

###### Recruitment:

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

###### Organic Litter:

10% cover

###### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 291: Cane Grass Wetland – Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee bioregion

EVC 292: Red Gum Swamp

###### Description:

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. River Red Gum woodland to 15 m tall with sedgy or grassy-herbaceous ground-layer, comprising various balances of true aquatics and species tolerant of intermittent to seasonal inundation.

|  |  |  |
| --- | --- | --- |
| **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 Shrub | 1 | 1% | MS |
| Large Herb | 3 | 10% | LH |
| Medium Herb | 10 | 25% | MH |
| Small or Prostrate Herb | 3 | 5% | SH |
| Large Tufted Graminoid | 2 | 5% | LTG |
| Medium to Small Tufted Graminoid | 8 | 20% | MTG |
| Medium to Tiny Non-tufted Graminoid | 2 | 15% | MNG |
| Bryophytes/Lichens | na | 10% | BL |

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Allocasuarina luehmannii | **Common Name**  Buloke |
| LH | Villarsia reniformis | Running Marsh-flower |
| LH | Eryngium ovinum | Blue Devil |
| LH | Brachyscome cardiocarpa | Swamp Daisy |
| MH | Potamogeton tricarinatus s.l. | Floating Pondweed |
| MH | Haloragis aspera | Rough Raspwort |
| MH | Drosera peltata ssp. peltata | Pale Sundew |
| MH | Stylidium despectum | Small Trigger-plant |
| SH | Lobelia pratioides | Poison Lobelia |
| SH | Solenogyne dominii | Smooth Solenogyne |
| SH | Neopaxia australasica | White Purslane |
| LTG | Amphibromus nervosus | Common Swamp Wallaby-grass |
| LTG | Juncus flavidus | Gold Rush |
| LTG | Carex tereticaulis | Hollow Sedge |
| MTG | Juncus holoschoenus | Joint-leaf Rush |
| MTG | Schoenus tesquorum | Soft Bog-sedge |
| MTG | Austrodanthonia duttoniana | Brown-back Wallaby-grass |
| MTG | Lachnagrostis filiformis | Common Blown-grass |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Chorizandra enodis | Black Bristle-sedge |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 292: Red Gum Swamp – Lowan Mallee bioregion | |
|  | **Recruitment:**  Episodic/Flood. Desirable period between disturbances is 5 years.  **Organic Litter:**  20 % cover  **Logs:**  15 m/0.1 ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MH Hypochoeris radicata Cat's Ear high low MH Cicendia filiformis Slender Cicendia high low  MTG Briza minor Lesser Quaking-grass high low  Published by the Victorian Government Department of Sustainability and Environment October 2005  © The State of Victoria Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-commercial purposes is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or at cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be  directed to the Nominated Officer, Copyright, 8 Nicholson Street, East Melbourne, Victoria, 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication. |

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

Lowan Mallee 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 – Lowan Mallee 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**

Lowan Mallee 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 |
| Small Shrub | 1 | 1% | SS |
| Large Herb | 4 | 10% | LH |
| Medium Herb | 5 | 10% | MH |
| Small or Prostrate Herb | 1 | 5% | 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**  MS | **Species typical of at least part of EVC range**  Viminaria juncea | **Common Name**  Golden Spray |
| MS | Melaleuca decussata | Totem-poles |
| SS | Rubus parvifolius | Small-leaf Bramble |
| LH | Wahlenbergia gracilis s.s. | Sprawling Bluebell |
| LH | Myriophyllum crispatum | Upright Water-milfoil |
| MH | Rumex brownii | Slender Dock |
| MH | Oxalis perennans | Grassland Wood-sorrel |
| MH | Mentha australis | River Mint |
| MH | Acaena novae-zelandiae | Bidgee-widgee |
| LTG | Cyperus gunnii ssp. gunnii | Flecked Flat-sedge |
| LTG | Carex appressa | Tall Sedge |
| MTG | Lachnagrostis filiformis var. filiformis | Common Blown-grass |
| MTG | Juncus amabilis | Hollow Rush |
| MNG | Eleocharis acuta | Common Spike-sedge |
| MNG | Cynodon dactylon | Couch |
| SC | Calystegia sepium | Large Bindweed |

**Recruitment:**

Continuous

###### Organic Litter:

30% cover

###### Logs:

20m / 0.1 ha

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 641: Riparian Woodland – Lowan Mallee bioregion | |
|  | **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  SC Galium aparine Cleavers 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**

Lowan Mallee bioregion

EVC 676: Salt Paperbark Woodland

###### Description:

Low non-eucalypt woodland to 8 m tall with herbaceous ground-layer dominated by halophytic chenopods and other succulent herbs with a range of annual grasses and herbs. Occurs on heavy soils with large salt concentrations (sometimes with a shallow sand overlay on lake verges) in areas with seasonally waterlogged heavy clay soils on saline flats and lake verges.

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 20% | Melaleuca halmaturorum ssp. halmaturorum | Salt Paperbark |

**Life forms:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Life form** | **#Spp** | **%Cover** | **LF code** |
| Prostrate Shrub | 1 | 10% | PS |
| Medium Herb | 3 | 15% | MH |
| Small or Prostrate Herb | 3 | 10% | SH |
| Medium to Small Tufted Graminoid | 1 | 1% | MTG |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **45%** |  |

|  |  |  |
| --- | --- | --- |
| **LF Code**  PS | **Species typical of at least part of EVC range**  Wilsonia rotundifolia | **Common Name**  Round-leaf Wilsonia |
| MH | Sarcocornia quinqueflora | Beaded Glasswort |
| MH | Samolus repens | Creeping Brookweed |
| MH | Spergularia sp. 3 | Salt Sea-spurrey |
| SH | Selliera radicans | Shiny Swamp-mat |
| SH | Angianthus pressianus | Salt Angianthus |
| SH | Apium prostratum | Annual Celery |
| MTG | Puccinellia stricta var. perlaxa | Plains Saltmarsh-grass |

**Recruitment:**

Continuous

###### Logs:

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

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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 676: Salt Paperbark Woodland - Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee bioregion

EVC 710: Damp Heathland

###### Description:

Developed on sites of intermittent waterlogging, typically wet in winter and dry in summer, with low nutrient availability. Closed tall heathland, or scrub if long unburnt. There is a dense ground layer of rushes and sedges, and sometimes emergent eucalypts.

|  |  |  |  |
| --- | --- | --- | --- |
| **Life Forms: Life form** | **#Spp** | **%Cover** | **LF code** |
| Medium Shrub | 6 | 30% | MS |
| Small Shrub | 5 | 20% | SS |
| Prostrate Shrub | 2 | 5% | PS |
| Medium Herb | 6 | 10% | MH |
| Small or Prostrate Herb | 2 | 1% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 1% | LNG |
| Medium to Small Tufted Graminoid | 4 | 10% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 15% | MNG |
| Scrambler or Climber | 2 | 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**  Leptospermum continentale | **Common Name**  Prickly Tea-tree |
| MS | Epacris impressa | Common Heath |
| MS | Banksia marginata | Silver Banksia |
| MS | Leptospermum myrsinoides | Heath Tea-tree |
| SS | Pultenaea stricta | Rigid Bush-pea |
| SS | Hibbertia fasciculata var. prostrata | Bundled Guinea-flower |
| SS | Dillwynia glaberrima | Smooth Parrot-pea |
| SS | Leucopogon glacialis | Twisted Beard-heath |
| PS | Xanthosia dissecta s.l. | Cut-leaf Xanthosia |
| MH | Gonocarpus tetragynus | Common Raspwort |
| MH | Argentipallium obtusifolium | Blunt Everlasting |
| MH | Drosera peltata ssp. auriculata | Tall Sundew |
| SH | Drosera pygmaea | Tiny Sundew |
| MTG | Patersonia fragilis | Short Purple-flag |
| MTG | Schoenus apogon | Common Bog-sedge |
| MNG | Hypolaena fastigiata | Tassel Rope-rush |
| MNG | Leptocarpus tenax | Slender Twine-rush |
| MNG | Baumea juncea | Bare Twig-sedge |
| SC | Cassytha pubescens s.s. | Downy Dodder-laurel |
| SC | Cassytha glabella | Slender Dodder-laurel |

###### Recruitment:

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

###### Organic Litter:

20% cover

###### Weediness:

There are no consistent weeds in this EVC.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 710: Damp Heathland – Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee bioregion

EVC 803: Plains Woodland

###### Description:

Grassy or sedgy woodland to 15 m tall 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 former Quaternary swamp deposits.

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

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **%cover** | **Character Species** | **Common Name** |
| 15% | Eucalyptus leucoxylon  Allocasuarina luehmannii Eucalyptus microcarpa  Eucalyptus melliodora | Yellow Gum  Buloke Grey Box Yellow Box |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 2 | 5% | MS |
| Small Shrub | 2 | 5% | SS |
| Prostrate Shrub | 1 | 1% | PS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 20 | 25% | MH |
| Small or Prostrate Herb | 4 | 10% | SH |
| Large Tufted Graminoid | 1 | 5% | LTG |
| Large Non-tufted Graminoid | 1 | 1% | LNG |
| Medium to Small Tufted Graminoid | 16 | 30% | MTG |
| Medium to Tiny Non-tufted Graminoid | 3 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |

**Recruitment:**

Continuous

###### Organic Litter:

10 % cover

###### Logs:

10 m/0.1 ha.

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 803: Plains Woodland – Lowan Mallee bioregion | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  MS Acacia pycnantha Golden Wattle  MS Acacia acinacea s.l. Gold-dust Wattle  SS Eutaxia microphylla var. microphylla Common Eutaxia  PS Astroloma humifusum Cranberry Heath  LH Senecio quadridentatus Cotton Fireweed  MH Acaena echinata Sheep's Burr  MH Plantago gaudichaudii Narrow Plantain  MH Maireana enchylaenoides Wingless Bluebush  MH Calocephalus citreus Lemon Beauty-heads  SH Solenogyne dominii Smooth Solenogyne  SH Oxalis perennans Grassland Wood-sorrel  SH Daucus glochidiatus Austral Carrot  SH Goodenia pinnatifida Cut-leaf Goodenia  LTG Austrostipa mollis Supple Spear-grass  MTG Austrostipa scabra Rough Spear-grass  MTG Austrodanthonia setacea Bristly Wallaby-grass  MTG Dianella revoluta s.s. Black-anther Flax-lily  MTG Austrodanthonia caespitosa Common Wallaby-grass  MNG Wurmbea dioica Common Early Nancy  TTG Centrolepis strigosa ssp. strigosa Hairy Centrolepis  TTG Centrolepis aristata Pointed Centrolepis  EP Amyema miquelii Box Mistletoe  SC Thysanotus patersonii Twining Fringe-lily  SC Convolvulus erubescens spp. agg. Pink Bindweed  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  LH Sonchus oleraceus Common Sow-thistle high low  MH Hypochoeris radicata Cat's Ear high low MH Trifolium angustifolium var. angustifolium Narrow-leaf Clover high low  MH Hypochoeris glabra Smooth Cat's-ear high low  MH Arctotheca calendula Cape Weed high low  MH Petrorhagia velutina Velvety Pink high low  MH Trifolium dubium Suckling Clover high low  MH Anagallis arvensis Pimpernel high low  SH Trifolium glomeratum Cluster Clover high low  LNG Avena fatua Wild Oat 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  MTG Lolium rigidum Wimmera Rye-grass high low  MTG Vulpia bromoides Squirrel-tail Fescue high low  MNG Vulpia 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 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**

Lowan Mallee 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 70 cm 15 / ha

Eucalyptus largiflorens 50 cm

**Tree Canopy Cover:**

**%cover Character Species Common Name**

20% Eucalyptus camaldulensis River Red-gum

Eucalyptus largiflorens 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 – Lowan Mallee bioregion | |
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**EVC/Bioregion Benchmark for Vegetation Quality Assessment**

Lowan Mallee 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 | 50 cm  70 cm | 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\* | 4 | 10% | SH |
| Medium to Small Tufted Graminoid\* | 2 | 5% | 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 70%

|  |  |  |
| --- | --- | --- |
| **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 |
| 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 |
| LNG | Eragrostis australasica | Cane 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 – Lowan Mallee 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**

Lowan Mallee 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 |
|  | Eucalyptus cyanophylla | Blue-leaved Mallee |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form** Medium Shrub | **#Spp**  6 | **%Cover**  10% | **LF code**  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 | Wooly-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 - Lowan Mallee 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**

Lowan Mallee 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 ssp. 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  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**  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 |
| 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 - Lowan Mallee 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**

Lowan Mallee Bioregion

EVC 826\_61: Treed 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 ssp. murrayensis to 10 m tall being the dominant trees. Widespread on the northern plains.

##### Large Trees:

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

*Allocasuarina luehmannii*

*Callitris gracilis subsp. murrayensis*

##### Tree Canopy Cover:

40 cm

40 cm

5 / ha

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

##### Understorey: Lifeform

**#Spp %Cover LF Code**

Immature Canopy Tree 5% IT

Small Shrub Large Herb Medium Herb\*

Small or Prostrate Herb\* Large Tufted Graminoid Large Non-Tufted Graminoid

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

1. 5% SS
2. 5% LH

6 20% MH

3 10% SH

1 5% LTG

1 5% LNG

5 35% MTG

2 5% MNG

Bryophytes/Lichens 10% BL



Soil Crust 25% S/C

\*Largely seasonal lifeform

Ecological Vegetation Class Bioregion Benchmark

|  |  |  |
| --- | --- | --- |
| EVC 826\_61: Treed Plains Savannah | | |
|  | **LF Code Species typical of at least part of EVC range Common Name**  SS *Maireana decalvans* Black Cotton-bush  SS *Pimelea curviflora s.s.* Curved Rice-flower  SS *Sclerolaena diacantha* Grey Copperburr  SS E e *Sclerolaena napiformis* Turnip Copperburr  LH *Arthropodium fimbriatum* Nodding Chocolate-lily  LH *Calocephalus citreus* Lemon Beauty-heads  LH *Eryngium ovinum* Blue Devil  LH *Ptilotus exaltatus* Mulla Mulla  MH *Calotis scabiosifolia* Rough Burr-daisy  MH *Goodenia pinnatifida* Cut-leaf Goodenia  MH *Ptilotus macrocephalus* Feather Heads  MH *Sida corrugata* Variable Sida  SH *Chamaesyce drummondii* Flat Spurge  SH *Convolvulus erubescens spp. agg.* Pink Bindweed  SH *Maireana pentagona* Hairy Bluebush  SH *Pogonolepis muelleriana* Stiff Cup-flower  LTG *Austrostipa aristiglumis* Plump Spear-grass  LTG *Austrostipa blackii* Crested Spear-grass  LTG *Austrostipa gibbosa* Spurred Spear-grass LNG *Various spp.*  MTG *Austrodanthonia duttoniana* Brown-back Wallaby-grass  MTG *Austrostipa nodosa* Knotty Spear-grass  MTG *Austrostipa scabra* Rough Spear-grass  MTG *Whalleya proluta* Rigid Panic  MNG *Various spp.*  **Recruitment:**  Continuous.  **Organic Litter:**  5 % cover  **Logs:**  5 m/0.1ha.  **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  SH *Medicago minima* Little Medic high high  LH *Sisymbrium irio* London Rocket high high  LH *Salvia verbenaca* Wild Sage high high  MS *Lycium ferocissimum* African Box-thorn 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 *Hordeum hystrix* Mediterranean Barley-grass high high  LH *Marrubium vulgare* Horehound high high  MH *Oxalis pes-caprae* Soursob high high MH *Trifolium arvense var. arvense* Hare's-foot Clover high high MH *Trifolium campestre var. campestre* Hop Clover high high MH *Hedypnois cretica* Cretan Hedypnois high high  MNG *Avena barbata* Bearded Oat high high MNG *Brachypodium distachyon* False Brome high high MTG *Romulea rosea* Onion Grass high high  MTG *Vulpia bromoides* Squirrel-tail Fescue high high  LNG *Avena fatua* Wild Oat high high  MH *Arctotheca calendula* Cape Weed high high | |
|  |  |  |
|  | Ecological Vegetation Class Bioregion Benchmark | |



|  |  |
| --- | --- |
| EVC 826\_61: Treed Plains Savannah | |
|  | **Weediness:**  **LF Code Typical Weed Species Common Name Invasive Impact**  MH *Limonium sinuatum* Notch-leaf Sea-lavender high high  MH *Plantago coronopus* Buck's-horn Plantain high high MH *Trifolium angustifolium var.* Narrow-leaf Clover high high  *angustifolium*  MTG *Romulea minutiflora* Small-flower Onion-grass high high  MTG *Poa bulbosa* Bulbous Meadow-grass high high  MTG *Lolium rigidum* Wimmera Rye-grass high high MTG *Hordeum murinum s.l.* Barley-grass high high SH *Medicago polymorpha* Burr Medic high high LH *Echium plantagineum* Paterson's Curse high high MH *Spergularia rubra s.l.* Red Sand-spurrey high low  LH *Lepidium africanum* Common Peppercress high low  MH *Hypochoeris glabra* Smooth Cat's-ear high low  MH *Hypochoeris radicata* Cat's Ear high low LH *Helminthotheca echioides* Ox-tongue high low SH *Trifolium glomeratum* Cluster Clover high low MTG *Pentaschistis airoides subsp. airoides* False Hair-grass high low MNG *Aira cupaniana* Quicksilver Grass high low  MH *Trifolium striatum* Knotted Clover high low MH *Trifolium subterraneum* Subterranean Clover high low  Published by the Victorian Government Department of Sustainability and Environment  © The State of Victoria Government Department of Sustainability and Environment 2004  This publication is copyright. Reproduction and the making available of this material for personal, in-house or non-comercial is authorised, on condition that:   * the copyright owner is acknowledged; * no official connection is claimed; * the material is made available without charge or cost; and * the material is not subject to inaccurate, misleading or derogatory treatment.   Requests for permission to reproduce or communicate this material in any way not permitted by this licence (or by the fair dealing provisions of the Copyright Act 1968) should be directed to the Nominated Officer, Copyright, 8 Nicholson St, East Melbourne, Victoria 3002.  For more information contact: Customer Service Centre, 136 186  This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss, of other consequences which may arise from you relying on any information in this publication.  [**www.dse.vic.gov.au**](http://www.dse.vic.gov.au/) |



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

Lowan Mallee 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 – Lowan Mallee 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 low  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**

Lowan Mallee 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** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Allocasuarina spp.  Callitris gracilis ssp. murrayensis | 60 cm  40 cm  40 cm | 15/ha |

###### Tree Canopy Cover:

**% cover Character Species Common Name**

20% Eucalyptus leucoxylon Yellow Gum

Allocasuarina luehmannii Buloke

Callitris gracilis ssp. murrayensis Slender Cypress-pine

###### 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 20% SS

Prostrate Shrub 2 5% PS

Large Herb 1 1% LH

Medium Herb 7 15% MH

Small or Prostrate Herb 3 5% SH

Medium to Small Tufted Graminoid 8 25% MTG

Tiny Tufted Graminoid\* 2 1% TTG

Medium to Tiny Non-tufted Graminoid 3 1% MNG

Bryophytes/Lichens na 10% BL

Soil Crust na 10% S/C

* Largely seasonal life form

|  |  |  |
| --- | --- | --- |
| **LF Code**  T | **Species typical of at least part of EVC range**  Allocasuarina verticillata | **Common Name**  Drooping Sheoke |
| MS | Calytrix tetragona | Common Fringe-myrtle |
| MS | Acacia pycnantha | Golden Wattle |
| SS | Hibbertia stricta s.l. | Upright Guinea-flower |
| SS | Eutaxia microphylla | Common Eutaxia |
| SS | Pultenaea hispidula | Rusty Bush-pea |
| PS | Astroloma humifusum | Cranberry Heath |
| MH | Microseris scapigera spp. agg. | Yam Daisy |
| MH | Acaena echinata | Sheep's Burr |
| MH | Wurmbea dioica | Common Early Nancy |
| SH | Daucus glochidiatus | Australian Carrot |
| SH | Hydrocotyle laxiflora | Stinking Pennywort |
| SH | Drosera whittakeri ssp. aberrans | Scented Sundew |
| LTG | Austrostipa mollis | Supple Spear-grass |
| MTG | Schoenus apogon | Common Bog-sedge |
| MTG | Neurachne alopecuroidea | Fox-tail Mulga-grass |
| MTG | Lomandra nana | Dwarf Mat-rush |
| MTG | Arthropodium strictum s.l. | Chocolate Lily |
| TTG | Centrolepis strigosa ssp. strigosa | Hairy Centrolepis |
| TTG | Centrolepis aristata | Pointed Centrolepis |
| TTG | Aphelia pumilio | Dwarf Aphelia |
| SC | Thysanotus patersonii | Twining Fringe-lily |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 882: Shallow Sands Woodland - Lowan Mallee bioregion | |
|  | **Recruitment:**  Continuous  **Organic Litter:**  20% 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  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 high  MTG Vulpia bromoides Squirrel-tail Fescue high high  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  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**

Lowan Mallee bioregion

EVC 981: Parilla Mallee

###### Description:

Open mallee to 10 m tall supported by shallow accumulations of aeolian material that have been deposited on the slopes of prominent Parilla Sandstone ridges. The understorey is highly variable comprising numerous floristic variants many of which appear to be strongly influenced by land use and fire regime. A well-developed woody shrub layer is typical in relatively undisturbed remnants.

|  |  |  |
| --- | --- | --- |
| **Large trees:** |  | |
| **Species** | **DBH(cm)** | **#/ha** |
| Eucalyptus spp.  Callitris spp. | 20 cm  35 cm | 25/ha |

###### Tree Canopy Cover:

|  |  |  |
| --- | --- | --- |
| **% cover** | **Character Species** | **Common Name** |
| 25% | Eucalyptus oleosa ssp. oleosa  Eucalyptus socialis Eucalyptus dumosa  Callitris gracilis ssp. murrayensis | Oil Mallee  Grey Mallee Dumosa Mallee  Slender Cypress-pine |

|  |  |  |  |
| --- | --- | --- | --- |
| **Understorey: Life form**  Immature Canopy Tree | **#Spp** | **%Cover**  5% | **LF code**  IT |
| Medium Shrub | 4 | 10% | MS |
| Small Shrub | 3 | 10% | SS |
| Large Herb | 1 | 1% | LH |
| Medium Herb | 3 | 5% | MH |
| Small or Prostrate Herb | 5 | 5% | SH |
| Medium to Small Tufted Graminoid | 6 | 15% | MTG |
| Medium to Tiny Non-tufted Graminoid | 1 | 5% | MNG |
| Bryophytes/Lichens | na | 10% | BL |
| Soil Crust | na | 10% | S/C |
| **Total understorey projective foliage cover** |  | **60%** |  |

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| --- | --- | --- |
| **LF Code**  MS | **Species typical of at least part of EVC range**  Pittosporum angustifolium | **Common Name**  Weeping Pittosporum |
| MS | Melaleuca lanceolata ssp. lanceolata | Moonah |
| MS | Acacia pycnantha | Golden Wattle |
| MS | Acacia brachybotrya | Grey Mulga |
| SS | Olearia lanuginosa | Wooly Daisy-bush |
| SS | Westringia rigida | Stiff Westringia |
| SS | Enchylaena tomentosa var. tomentosa | Ruby Saltbush |
| SS | Maireana brevifolia | Short-leaf Bluebush |
| MH | Helichrysum leucopsideum | Satin Everlasting |
| SH | Daucus glochidiatus | Austral Carrot |
| SH | Calandrinia calyptrata | Pink Purslane |
| MTG | Austrostipa spp. | Spear-grass |
| MTG | Dianella revoluta s.l. | Black-anther Flax-lily |
| MTG | Austrodanthonia setacea | Bristly Wallaby-grass |
| MTG | Austrodanthonia caespitosa | Common Wallaby-grass |
| MNG | Austrostipa elegantissima | Feather Spear-grass |
| MNG | Austrostipa platychaeta | Flat-awned Spear-grass |
| MNG | Austrostipa eremophila | Desert Spear-grass |
| SC | Clematis microphylla | Small-leaved Clematis |

Ecological Vegetation Class bioregion benchmark

|  |  |
| --- | --- |
| EVC 981: Parilla Mallee - Lowan Mallee bioregion | |
|  | **Recruitment:**  Continuous (excluding eucalypt overstorey)  **Organic Litter:**  20% cover  **Logs:**  15m/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 Brassica tournefortii Mediterranean Turnip high high  LH Centaurium tenuiflorum Slender Centaury high low  LH Gazania linearis Gazania high high  LH Sysimbrium spp. Mustard high high  LH Opuntia robusta Wheel Cactus high high MH Mesembryanthemum nodiflora Ice-plant high high  MH Carrichtera annua Ward’s Weed high high  MH Silene apetala var. apetala Sand Catchfly high low SH Mesembryanthemum crystallinum Common Ice-plant high high  MNG Bromus spp. Brome high high  MNG Schismus barbatus Arabian Grass high low 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 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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