

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 86: Woorinen Sands Mallee

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	15 cm	30/ha

Tree Canopy Cover:

% cover	Character Species	Common Name
25%	<i>Eucalyptus dumosa</i>	Dumosa Mallee
	<i>Eucalyptus leptophylla</i>	Slender-leaf Mallee
	<i>Eucalyptus socialis</i>	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	Species typical of at least part of EVC range	Common Name
MS	<i>Melaleuca lanceolata</i> ssp. <i>lanceolata</i>	Moonah
MS	<i>Myoporum platycarpum</i>	Sugarwood
MS	<i>Dodonaea bursariifolia</i>	Small Hop-bush
MS	<i>Acacia wilhelmiana</i>	Dwarf Nealie
SS	<i>Sclerolaena parviflora</i>	Mallee Copperburr
SS	<i>Halgania cyanea</i>	Rough Halgania
SS	<i>Sclerolaena diacantha</i>	Grey Copperburr
SS	<i>Westringia rigida</i>	Stiff Westringia
LH	<i>Helichrysum leucopsidium</i>	Satin Everlasting
LH	<i>Waitzia acuminata</i> var. <i>acuminata</i>	Orange Immortelle
MH	<i>Podolepis capillaris</i>	Invisible Daisy
MH	<i>Goodenia willisiana</i>	Sandhill Goodenia
MH	<i>Vittadinia dissecta</i>	Dissected New Holland Daisy
MH	<i>Podotheca angustifolia</i>	Sticky Long-heads
SH	<i>Actinobole uliginosum</i>	Flannel Cudweed
SH	<i>Calotis hispidula</i>	Hairy Burr-daisy
SH	<i>Crassula sieberiana</i>	Australian Stonecrop
SH	<i>Ptilotus seminudis</i>	Rabbit-tails
HG	<i>Triodia scariosa</i>	Porcupine Grass
MTG	<i>Austrostipa mollis</i>	Supple Spear-grass
MTG	<i>Lomandra effusa</i>	Scented Mat-rush
MTG	<i>Lomandra leucocephala</i> ssp. <i>robusta</i>	Woolly Mat-rush
MTG	<i>Austrostipa elegantissima</i>	Feather Spear-grass

EVC 86: Woorinen Sands Mallee - Murray Scroll Belt 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	<i>Olea europaea</i>	Olive	high	high
LH	<i>Brassica tournefortii</i>	Mediterranean Turnip	high	high
LH	<i>Opuntia</i> spp.	Prickly Pear	high	high
MH	<i>Gazania linearis</i>	Gazania	high	high
SC	<i>Asparagus asparagoides</i>	Bridal Creeper	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt 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
<i>Casuarina</i> spp.	40 cm	20/ha
<i>Allocasuarina</i> spp.	40 cm	
<i>Callitris</i> spp.	40 cm	
<i>Myoporum platycarpum</i>	35 cm	

Tree Canopy Cover:

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

Understorey:

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

* Largely seasonal life form

Total understorey projective foliage cover 75%

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

EVC 97: Semi-arid Woodland - Murray Scroll Belt bioregion

Recruitment:

Continuous

Organic Litter:

20% cover

Logs:

10m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Brassica tournefortii</i>	Mediterranean Turnip	high	high
LH	<i>Reichardia tingitana</i>	Reichardia	high	low
MH	<i>Silene</i> spp.	Catchfly	high	high
SH	<i>Medicago minima</i>	Little Medic	high	high
MTG	<i>Schismus barbatus</i>	Arabian Grass	high	high
MTG	<i>Pentstemon airoides</i> ssp. <i>airoides</i>	False Hair-grass	high	high
MNG	<i>Bromus rubens</i>	Red Brome	high	high
MNG	<i>Vulpia myuros</i>	Rat's-tail Fescue	high	high
MNG	<i>Criterson murinum</i> subsp. <i>glaucum</i>	Blue Barley-grass	high	high
SC	<i>Asparagus asparagoides</i>	Bridal Creeper	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt 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 or 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
<i>Casuarina pauper</i>	40 cm	15/ha
<i>Allocasuarina luehmannii</i>	40 cm	
<i>Callitris gracilis</i>	40 cm	
<i>Myoporum platycarpum</i>	35 cm	

Tree Canopy Cover⁺:

% cover	Character Species	Common Name
15%	<i>Casuarina pauper</i>	Belah
	<i>Allocasuarina luehmannii</i>	Buloke
	<i>Myoporum platycarpum</i>	Sugarwood
	<i>Callitris gracilis</i> ssp. <i>murrayensis</i>	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

EVC 98: Semi-arid Chenopod Woodland - Murray Scroll Belt bioregion

LF Code	Species typical of at least part of EVC range	Common Name
T ⁺	<i>Alectryon oleifolius</i> ssp. <i>canescens</i>	Cattlebush
T ⁺	<i>Acacia melvillei</i>	Myall
T ⁺	<i>Hakea leucoptera</i> ssp. <i>leucoptera</i>	Silver Needlewood
MS	<i>Maireana pyramidata</i>	Shrubby Bluebush
MS	<i>Maireana sedifolia</i>	Pearl Bluebush
MS	<i>Atriplex nummularia</i>	Old Man Saltbush
MS	<i>Nitraria billardiarei</i>	Nitre-bush
SS	<i>Sclerolaena obliquicuspis</i>	Limestone Copperburr
SS	<i>Sclerolaena tricuspis</i>	Three-spined Bassia
SS	<i>Sclerolaena divaricata</i>	Tangled Bassia
SS	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush
PS	<i>Sclerochlamys brachyptera</i>	Short-wing Saltbush
LH	<i>Polycalymma stuartii</i>	Poached-egg Daisy
MH	<i>Brachyscome lineariloba</i>	Hard-head Daisy
MH	<i>Osteocarpum acropterum</i> var. <i>deminutum</i>	Babbagia
MH	<i>Zygophyllum crenatum</i>	Hard-head Daisy
MH	<i>Zygophyllum ammophilum</i>	Sand Twin-leaf
SH	<i>Calotis hispidula</i>	Hairy Burr-daisy
SH	<i>Plagiobothrys elachanthus</i>	Hairy Forget-me-not
SH	<i>Isoetopsis graminifolia</i>	Grass Cushion
SH	<i>Pogonolepis muelleriana</i>	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	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Brassica tournefortii</i>	Mediterranean Turnip	high	high
LH	<i>Salvia verbenaca</i>	Wild Sage	high	high
LH	<i>Sisymbrium erysimoides</i>	Smooth Mustard	high	high
MH	<i>Reichardia tingitana</i>	False Sow-thistle	low	low
MH	<i>Limonium</i> spp.	Sea-lavender	high	high
MH	<i>Silene apetala</i> var. <i>apetala</i>	Sand Catchfly	high	high
MH	<i>Erodium cicutarium</i>	Common Heron's-bill	high	low
MH	<i>Carrichtera annua</i>	Ward's Weed	high	high
SH	<i>Medicago minima</i>	Little Medic	high	high
MTG	<i>Schismus barbatus</i>	Arabian Grass	high	high
MTG	<i>Critesion murinum</i> ssp. <i>glaucum</i>	Blue Barley-grass	high	high
MNG	<i>Bromus rubens</i>	Red Brome	high	high
MNG	<i>Vulpia</i> spp.		high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt 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 or 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	#Spp	%Cover	LF Code
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		10%	BL
Soil Crust		30%	S/C

*Largely seasonal lifeform

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

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
MH	<i>Limonium spp.</i>	Sea Lavender	high	high
MH	<i>Carrichtera annua</i>	Ward's Weed	high	high
SH	<i>Medicago minima</i>	Little Medic	high	high
LH	<i>Salvia verbenaca</i>	Wild Sage	high	high
MNG	<i>Vulpia spp.</i>	Fescue	high	high
MTG	<i>Schismus barbatus</i>	Arabian Grass	high	high
MH	<i>Silene apetala var. apetala</i>	Mallee Catchfly	high	high
LH	<i>Sisymbrium erysimoides</i>	Smooth Mustard	high	high
MTG	<i>Hordeum glaucum</i>	Northern Barley-grass	high	high
MH	<i>Erodium cicutarium</i>	Common Heron's-bill	high	low
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
MH	<i>Reichardia tingitana</i>	False Sow-thistle	low	low
LH	<i>Brassica tournefortii</i>	Mediterranean Turnip	high	high
MNG	<i>Bromus rubens</i>	Red Brome	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 102: Low Chenopod Shrubland

Description:

Chenopod shrubland to 1 m tall occupying broad, flat alluvial terraces occur along the Murray River, west from Mildura to the border. Also found in narrow bands fringing raak and saline lakes such as Lake Tyrell and on relict lakebed surfaces such as Pine Plains. The field layer is characterised by succulents and a suite of annual herbs.

Life forms:

Life form	#Spp	%Cover	LF code
Medium Shrub	1	5%	MS
Small Shrub	4	25%	SS
Prostrate Shrub	2	5%	PS
Large Herb	2	1%	LH
Medium Herb	6	25%	MH
Small or Prostrate Herb	4	20%	SH
Medium to Small Tufted Graminoid	3	5%	MTG
Medium to Tiny Non-tufted Graminoid	2	1%	MNG
Bryophytes/Lichens	na	10%	BL
Soil Crust	na	20%	S/C

LF Code	Species typical of at least part of EVC range	Common Name
MS	<i>Nitraria billardierei</i>	Nitre-bush
SS	<i>Minuria cunninghamii</i>	Bush Minuria
SS	<i>Sclerolaena tricuspis</i>	Three-spined Bassia
SS	<i>Stelligera endecaspinis</i>	Starfruit Bassia
SS	<i>Atriplex vesicaria</i>	Bladder Saltbush
PS	<i>Sclerochlamys brachyptera</i>	Short-wing Saltbush
PS	<i>Osteocarpum acropterum</i> var. <i>deminutum</i>	Babbagia
LH	<i>Senecio pinnatifolius</i>	Variable Groundsel
MH	<i>Brachyscome lineariloba</i>	Hard-head Daisy
MH	<i>Senecio glossanthus</i>	Slender Groundsel
MH	<i>Crassula colorata</i>	Dense Crassula
MH	<i>Goodenia pusilliflora</i>	Small-flower Goodenia
SH	<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Rounded Noon-flower
SH	<i>Pogonolepis muelleriana</i>	Stiff Cup-flower
SH	<i>Isoetopsis graminifolia</i>	Grass Cushion
MTG	<i>Austrostipa eremophila</i>	Desert Spear-grass
TTG	<i>Hypoxis glabella</i> var. <i>glabella</i>	Tiny Star

Recruitment:

Continuous

Organic Litter:

5% cover

EVC 102: Low Chenopod Shrubland - Murray Scroll Belt bioregion

Weediness:

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

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt 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	DBH(cm)	#/ha
<i>Eucalyptus largiflorens</i>	40 cm	5/ha

Tree Canopy Cover:

%cover	Character Species	Common Name
10%	<i>Eucalyptus largiflorens</i>	Black Box
	<i>Acacia stenophylla</i>	River Coobah

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	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
Soil Crust	na	10%	S/C

* Largely seasonal life form

Total understorey projective foliage cover 60%

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

Recruitment:

Continuous

Organic Litter:

10 % cover

Logs:

5m/0.1 ha.

EVC 103: Riverine Chenopod Woodland (*syn.* Black Box Chenopod Woodland) - Murray Scroll Belt Bioregion

Weediness:

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

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 104: Lignum Swamp

Description:

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

Life forms:

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

* Largely seasonal life form

Total understorey projective foliage cover **75%**

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

Recruitment:

Continuous

Organic Litter:

5% cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
SH	<i>Phyla canescens</i>	Lippia	high	high

EVC 104: Lignum Swamp - Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 106: Grassy Riverine Forest

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	90 cm	20 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
30%	<i>Eucalyptus camaldulensis</i>	River Red-gum

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Small Shrub	2	1%	SS
Large Herb	7	10%	LH
Medium Herb	10	15%	MH
Small or Prostrate Herb	2	1%	SH
Medium to Small Tufted Graminoid	3	20%	MTG
Medium to Tiny Non-tufted Graminoid	1	1%	MNG
Bryophytes/Lichens	na	10%	BL
Total understorey projective foliage cover		60%	

LF Code	Species typical of at least part of EVC range	Common Name
SS	<i>Rhagodia spinescens</i>	Hedge Saltbush
SS	<i>Glycyrrhiza acanthocarpa</i>	Southern Liquorice
SS	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush
LH	<i>Wahlenbergia fluminalis</i>	River Bluebell
LH	<i>Senecio pinnatifolius</i>	Variable Groundsel
LH	k <i>Senecio cunninghamii</i> var. <i>cunninghamii</i>	Branching Groundsel
MH	<i>Calotis scapigera</i>	Tufted Burr-daisy
MH	<i>Teucrium racemosum</i> s.l.	Grey Germander
MH	<i>Morgania glabra</i> spp. agg.	Blue Rod
MH	<i>Brachyscome lineariloba</i>	Hard-head Daisy
SH	<i>Chamaesyce drummondii</i>	Flat Spurge
SH	<i>Epaltes australis</i>	Spreading Nut-heads
LTG	<i>Cyperus gymnocaulos</i>	Spiny Flat-sedge
MTG	<i>Setaria jubiflora</i>	Warrego Summer-grass
MTG	<i>Lachnagrostis filiformis</i>	Common Blown-grass

Recruitment:

Continuous

Organic Litter:

40 % cover

Logs:

30 m/0.1 ha.

EVC 106: Grassy Riverine Forest - Murray Scroll Belt bioregion

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Brassica tournefortii</i>	Mediterranean Turnip	high	low
LH	<i>Solanum nigrum</i> sensu Willis (1972)	Black Nightshade	high	high
LH	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	high	low
LH	<i>Centaurea melitensis</i>	Malta Thistle	high	high
MH	<i>Reichardia tingitana</i>	False Sow-thistle	high	low
MH	<i>Hypochoeris glabra</i>	Smooth Cat's-ear	high	low
MTG	<i>Schismus barbatus</i>	Arabian Grass	high	low
MTG	<i>Critesion murinum</i> ssp. <i>glaucum</i>	Blue Barley-grass	high	low
MNG	<i>Bromus rubens</i>	Red Brome	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt 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	Species typical of at least part of EVC range	Common Name
MS	<i>Malva australiana</i> s.l.	Southern Hollyhock
MS	<i>Solanum simile</i>	Oondoroo
SS	<i>Glycyrrhiza acanthocarpa</i>	Southern Liquorice
SS	<i>Muehlenbeckia horrida</i> ssp. <i>horrida</i>	Spiny Lignum
MH	<i>Chenopodium pumilio</i>	Clammy Goosefoot
MH	<i>Chenopodium glaucum</i>	Glaucous Goosefoot
SH	<i>Glossostigma elatinooides</i>	Small Mud-mat
SH	<i>Glinus lotoides</i>	Hairy Carpet-weed
SH	<i>Mukia micrantha</i>	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.

EVC 107: Lake Bed Herbland - Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 158: Chenopod Mallee

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	20 cm	20/ha

Tree Canopy Cover:

% cover	Character Species	Common Name
20%	<i>Eucalyptus gracilis</i>	Yorrell
	<i>Eucalyptus oleosa</i> ssp. <i>oleosa</i>	Oil Mallee
	<i>Eucalyptus dumosa</i>	Dumosa Mallee

Understorey:

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

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

Recruitment:

Continuous (excluding overstorey)

Organic Litter:

10% cover

Logs:

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

EVC 158: Chenopod Mallee – Murray Scroll Belt bioregion

Weediness:

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

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 806: Alluvial Plains Semi-arid Grassland

Description:

Grassland (turf) to herbland to < 0.2 m tall with only incidental shrubs. Flood-promoted flora, potentially including a wide range of opportunistic ephemeral / annual species occupying low-lying areas within at least previously flood-prone (mostly) higher-level terraces, which may be effectively shallow lakes when flooded. Also sometimes on flats along creeks of the further north-west, in habitat akin to that of Floodway Pond Herbland.

Life forms:

Life form	#Spp	%Cover	LF code
Medium Shrub	1	5%	MS
Small Shrub	3	5%	SS
Large Herb	3	5%	LH
Medium Herb	6	10%	MH
Small or Prostrate Herb	3	5%	SH
Medium to Small Tufted Graminoid	3	50%	MTG
Soil Crust	na	10%	S/C
Total understorey projective foliage cover		85%	

LF Code	Species typical of at least part of EVC range	Common Name
MS	<i>Muehlenbeckia florulenta</i>	Tangled Lignum
MS	<i>Chenopodium nitrariaceum</i>	Nitre-bush
SS	<i>Sclerolaena tricuspis</i>	Three-spined Bassia
SS	<i>Muehlenbeckia horrida</i> ssp. <i>horrida</i>	Spiny Lignum
SS	<i>Sclerochlamys brachyptera</i>	Short-wing Saltbush
LH	<i>Senecio glossanthus</i>	Slender Groundsel
LH	<i>Wahlenbergia fluminalis</i>	River Bluebell
MH	<i>Calocephalus sonderi</i>	Pale Beauty-heads
MH	<i>Spergularia</i> sp. 3	Slender Groundsel
MH	<i>Haloragis aspera</i>	Rough Raspwort
MH	<i>Plantago cunninghamii</i>	Clay Plantain
SH	<i>Isoetopsis graminifolia</i>	Grass Cushion
SH	<i>Myosurus minimus</i> var. <i>australis</i>	Mouse-tail
MTG	<i>Sporobolus mitchellii</i>	Rat-tail Couch

Recruitment:

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

Organic Litter:

5% cover

Weediness:

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

EVC 806: Alluvial Plains Semi-arid Grassland - Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 807: Disused Floodway Shrubby Herbland

Description:

Low open chenopod shrubland (to herbland) occurring along floodway channels which are disused under current river flows. Vegetation comprises mixtures of small chenopods that have colonised under drier conditions and at least sparse remnant component of herb species associated with floodways.

Life forms:

Life form	#Spp	%Cover	LF code
Small Shrub	4	25%	SS
Prostrate Shrub	1	5%	PS
Large Herb	1	5%	LH
Medium Herb	3	10%	MH
Small or Prostrate Herb*	2	10%	SH

* Largely seasonal life form

Total understorey projective foliage cover **40%**

LF Code	Species typical of at least part of EVC range	Common Name
SS	<i>Atriplex lindleyi</i>	Flat-top Saltbush
SS	<i>Atriplex suberecta</i>	Sprawling Saltbush
SS	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	Ruby Saltbush
PS	<i>Atriplex semibaccata</i>	Berry Saltbush
LH	<i>Stemodia florulenta</i>	Blue Rod
MH	<i>Einadia nutans</i> ssp. <i>nutans</i>	Nodding Saltbush
SH	<i>Epaltis australis</i>	Spreading Nut-heads

Recruitment:

Continuous

Organic Litter:

10% cover

Weediness:

There are no consistent weeds in this EVC.

EVC 807: Disused Floodway Shrubby Herbland - Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 808: Lignum Shrubland

Description:

Relatively open shrubland of species of divaricate growth form. The ground-layer is typically herbaceous or a turf grassland, rich in annual/ephemeral herbs and small chenopods. Characterised the open and even distribution of relatively small Lignum shrubs. Occupies heavy soil plains along Murray River, low-lying areas on higher-level (but still potentially flood-prone) terraces.

Life forms:

Life form	#Spp	%Cover	LF code
Medium Shrub	2	30%	MS
Small Shrub	3	10%	SS
Large Herb	1	1%	LH
Medium Herb	6	10%	MH
Small or Prostrate Herb*	5	5%	SH
Large Non-tufted Graminoid	1	10%	LNG
Medium to Small Tufted Graminoid	2	20%	MTG
Soil Crust	na	10%	S/C

* Largely seasonal life form

Total understorey projective foliage cover **75%**

LF Code	Species typical of at least part of EVC range	Common Name
MS	<i>Muehlenbeckia florulenta</i>	Tangled Lignum
MS	<i>Chenopodium nitriaceum</i>	Nitre-bush
SS	<i>Sclerolaena tricuspis</i>	Three-spined Bassia
SS	<i>Sclerochlamys brachyptera</i>	Short-wing Saltbush
LH	<i>Senecio glossanthus</i>	Slender Groundsel
MH	<i>Plantago cunninghamii</i>	Clay Plantain
MH	<i>Brachyscome lineariloba</i>	Hard-headed Daisy
MH	<i>Brachyscome ciliaris</i>	Variable Daisy
MH	<i>Calocephalus sonderi</i>	Pale Beauty-heads
SH	<i>Isoetopsis graminifolia</i>	Grass Cushion
SH	<i>Rhodanthe corymbiflora</i>	Paper Sun-ray
SH	<i>Atriplex leptocarpa</i>	Slender-fruit Saltbush
SH	<i>Tetragonia eremaea</i> s.l.	Annual Spinach
LNG	<i>Eragrostis australasica</i>	Cane-grass
MTG	<i>Sporobolus mitchellii</i>	Rat-tail Couch
MTG	<i>Setaria jubiflora</i>	Warrego Summer-grass

Recruitment:

Continuous

Organic Litter:

10% cover

Weediness:

There are no consistent weeds in this EVC.

EVC 808: Lignum Shrubland - Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 809: Floodplain Grassy Wetland

Description:

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

Life forms:

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

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

Recruitment:

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

Organic Litter:

10% cover

Logs:

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

Weediness:

There are no consistent weeds in this EVC.

EVC 809: Floodplain Grassy Wetland - Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 810: Floodway Pond Herbland

Description:

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

Life forms:

Life form	#Spp	%Cover	LF code
Large Herb	1	1%	LH
Medium Herb	5	20%	MH
Small or Prostrate Herb*	4	15%	SH
Medium to Small Tufted Graminoid	2	10%	MTG
Medium to Tiny Non-tufted Graminoid	3	20%	MNG
Total understorey projective foliage cover		65%	

* Largely seasonal life form

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

Recruitment:

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

Organic Litter:

5% cover

Logs:

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

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Callitriche stagnalis</i>	Water Starwort	high	high

EVC 810: Floodway Pond Herbland - Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 813: Intermittent Swampy Woodland

Description:

Eucalypt woodland to 15 m tall with a variously shrubby and rhizomatous sedge - 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
<i>Eucalyptus camaldulensis</i>	70 cm	15 / ha
<i>Eucalyptus largiflorens</i>	50 cm	

Tree Canopy Cover:

%cover	Character Species	Common Name
20%	<i>Eucalyptus camaldulensis</i>	River Red-gum
	<i>Eucalyptus largiflorens</i>	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	Species typical of at least part of EVC range	Common Name
T	<i>Acacia stenophylla</i>	River Coobah
MS	<i>Muehlenbeckia florulenta</i>	Tangled Lignum
SS	<i>Cressa cretica</i>	Rosinweed
LH	<i>Stemodia florulenta</i>	Blue Rod
LH	<i>Wahlenbergia fluminalis</i>	River Bluebell
MH	<i>Haloragis aspera</i>	Rough Raspwort
MH	<i>Centipeda cunninghamii</i>	Common Sneezeweed
MH	<i>Calocephalus sonderi</i>	Pale Beauty-heads
SH	<i>Epaltes australis</i>	Spreading Nut-heads
MTG	<i>Sporobolus mitchellii</i>	Rat-tail Couch
MTG	<i>Cyperus gymnocaulos</i>	Spring Flat-sedge
MTG	<i>Lachnagrostis filiformis</i>	Common Blown-grass
MNG	<i>Cynodon dactylon</i> var. <i>pulchellus</i>	Native Couch

Recruitment:

Continuous

Organic Litter:

20 % cover

Logs:

20 m/0.1 ha.

Weediness:

There are no consistent weeds in this EVC.

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 818: Shrubby Riverine Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus largiflorens</i>	50 cm	5/ha
<i>Eucalyptus camaldulensis</i>	80 cm	

Tree Canopy Cover:

%cover	Character Species	Common Name
10%	<i>Eucalyptus largiflorens</i>	Black Box
	<i>Eucalyptus camaldulensis</i>	River Red-gum

Understorey:

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

* Largely seasonal life form

Total understorey projective foliage cover 50%

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

Recruitment:

Continuous

Organic Litter:

10% cover

Logs:

10m/0.1 ha.

EVC 818: Shrubby Riverine Woodland - Murray Scroll Belt bioregion

Weediness:

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

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 819: Spike-sedge Wetland

Description:

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

Life Forms:

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

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

Recruitment:

Episodic/Flood – desirable period is every five years

Organic Litter:

20% Cover

Logs:

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

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Aster subulatus</i>	Aster-weed	high	low
MNG	<i>Paspalum distichum</i>	Water Couch	high	high

EVC 819: Spike-sedge Wetland – Murray Scroll Belt bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt bioregion

EVC 820: Sub-saline Depression Shrubland

Description:

A low open shrubland/herbland dominated by chenopods and succulents and occurring on the highest terraces of the former (i. e. pre-1750) Murray River floodplain in far North-West Victoria. It occupies semi-saline treeless pans in low-lying areas within Riverine Chenopod Woodland on very heavy and mildly saline clay soils.

Life forms:

Life form	#Spp	%Cover	LF code
Small Shrub	4	25%	SS
Prostrate Shrub	2	5%	PS
Medium Herb	6	25%	MH
Small or Prostrate Herb	4	20%	SH
Bryophytes/Lichens	na	10%	BL
Soil Crust	na	20%	S/C

LF Code	Species typical of at least part of EVC range	Common Name
SS	<i>Malacocera tricornis</i>	Goat Head
SS	<i>Cressa cretica</i>	Rosinweed
SS	<i>Sclerolaena tricuspis</i>	Three-spined Bassia
SS	<i>Atriplex lindleyi</i>	Flat-top Saltbush
PS	<i>Sclerochlamys brachyptera</i>	Short-wing Saltbush
MH	<i>Brachyscome lineariloba</i>	Hard-head Daisy
MH	<i>Senecio glossanthus</i>	Slender Groundsel
MH	<i>Goodenia pinnatifida</i>	Cut-leaf Goodenia
MH	<i>Plantago cunninghamii</i>	Clay Plantain
SH	<i>Disphyma crassifolium</i> ssp. <i>clavellatum</i>	Rounded Noon-flower
SH	<i>Maireana pentagona</i>	Hairy Bluebush

Recruitment:

Continuous

Organic Litter:

5% cover

Weediness:

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

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt 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 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
<i>Eucalyptus largiflorens</i>	50 cm	15/ha
<i>Eucalyptus camaldulensis</i>	70 cm	

Tree Canopy Cover:

% cover	Character Species	Common Name
20%	<i>Eucalyptus largiflorens</i>	Black Box
	<i>Eucalyptus camaldulensis</i>	River Red Gum
	<i>Acacia stenophylla</i>	River Coobah

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Medium Shrub	2	30%	MS
Small Shrub	1	5%	SS
Large Herb	2	1%	LH
Medium Herb*	8	10%	MH
Small or Prostrate Herb*	5	10%	SH
Medium to Small Tufted Graminoid*	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	Species typical of at least part of EVC range	Common Name
MS	<i>Muehlenbeckia florulenta</i>	Tangled Lignum
MS	<i>Chenopodium nitrariaceum</i>	Nitre Goosefoot
SS	<i>Atriplex lindleyi</i>	Flat-top Saltbush
SS	<i>Sclerolaena muricata</i>	Five-spined Bassia
LH	<i>Rumex</i> spp.	Dock
MH	<i>Marsilea drummondii</i>	Common Nardoo
MH	<i>Brachyscome ciliaris</i>	Variable Daisy
MH	<i>Euchiton sphaericus</i>	Annual Cudweed
MH	<i>Ranunculus</i> spp.	Buttercup
MTG	<i>Setaria jubiflora</i>	Warrego Summer-grass
MTG	<i>Austrodanthonia duttoniana</i>	Brown-back Wallaby-grass
MTG	<i>Sporobolus mitchellii</i>	Short Rat-tail Grass
MTG	<i>Eragrostis setifolia</i>	Bristly Love-grass
LNG	<i>Eragrostis australasica</i>	Cane Grass
MNG	<i>Eragrostis infecunda</i>	Barren Cane grass
MNG	<i>Eleocharis acuta</i>	Common Spike-sedge
MNG	<i>Eleocharis pusilla</i>	Small Spike-sedge
SC	<i>Asperula gemella</i>	Twin-leaf Bedstraw

EVC 823: Lignum Swampy Woodland - Murray Scroll Belt bioregion

Recruitment:

Continuous

Organic Litter:

5% cover

Logs:

10m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
SH	<i>Phyla canescens</i>	Lippia	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Murray Scroll Belt 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	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	15 cm	30/ha

Tree Canopy Cover:

% cover	Character Species	Common Name
25%	<i>Eucalyptus oleosa</i> ssp. <i>oleosa</i>	Oil Mallee
	<i>Eucalyptus dumosa</i>	Dumosa Mallee
	<i>Eucalyptus gracilis</i>	Yorrell
	<i>Eucalyptus calycogona</i>	Red Mallee
	<i>Eucalyptus socialis</i>	Grey Mallee
	<i>Eucalyptus cyanophylla</i>	Blue-leaved Mallee

Understorey:

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

* Largely seasonal life form

Total understorey projective foliage cover 60%

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

EVC 824: Woorinen Mallee - Murray Scroll Belt 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	<i>Olea europaea</i> subsp. <i>europaea</i>	Olive	high	high
MS	<i>Lycium ferocissimum</i>	Boxthorn	high	high
LH	<i>Opuntia</i> spp.	Prickly Pear	high	high
LH	<i>Croton</i> spp.	Barley-grass	high	low
LH	<i>Gazania linearis</i>	Gazania	high	high
LH	<i>Psilocalon granulicaule</i>	Noon-flower	high	high
LH	<i>Sisymbrium erysimoides</i>	Smooth Mustard	high	high
LH	<i>Sisymbrium irio</i>	London Mustard	high	high
MH	<i>Brassica tournefortii</i>	Mediterranean Turnip	high	high
MH	<i>Carpobrotus aequilaterus</i>	Angled Pigface	high	high
MH	<i>Medicago</i> spp.	Medic	high	low
MH	<i>Marrubium vulgare</i>	Horehound	high	high
MH	<i>Oxalis pes-caprae</i>	Soursob	high	high
MH	<i>Trifolium arvense</i> var. <i>arvense</i>	Hare's-foot Clover	high	low
MH	<i>Mesembryanthemum nodiflora</i>	Ice-plant	high	high
MH	<i>Carrichtera annua</i>	Ward's Weed	high	high
MH	<i>Silene apetala</i> var. <i>apetala</i>	Sand Catchfly	high	low
MH	<i>Silene gallica</i>	French Catchfly	high	low
MH	<i>Silene nocturna</i>	Mediterranean Catchfly	high	low
MH	<i>Limonium sinuatum</i>	Notch-leaf Sea-lavender	high	high
MH	<i>Limonium lobatum</i>	Winged Sea-lavender	high	high
SH	<i>Mesembryanthemum crystallinum</i>	Common Ice-plant	high	high
MNG	<i>Schismus barbatus</i>	Arabian Grass	high	low
MTG	<i>Asphodelus fistulosus</i>	Onion Weed	high	high
MTG	<i>Lolium rigidum</i>	Wimmera Rye-grass	high	low
MNG	<i>Bromus</i> spp.	Brome	high	high
MNG	<i>Vulpia myuros</i>	Rat's-tail Fescue	high	low
SC	<i>Asparagus asparagoides</i>	Bridal Creeper	high	high

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