

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 3: Damp Sands Herb-rich Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
15%	<i>Eucalyptus obliqua</i>	Messmate Stringybark

Understorey:

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

LF Code

Species typical of at least part of EVC range

Common Name

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

EVC 3: Damp Sands Herb-rich Woodland - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

40 % cover

Logs:

15 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Centaureum erythraea</i>	Common Centaury	high	low
MH	<i>Anagallis arvensis</i>	Pimpernel	high	low
MH	<i>Medicago lupulina</i>	Black Medic	high	low
MH	<i>Acetosella vulgaris</i>	Sheep Sorrel	high	low
LNG	<i>Ammophila arenaria</i>	Marram Grass	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MNG	<i>Lagurus ovatus</i>	Hare's-tail Grass	high	low
MNG	<i>Stenotaphrum secundatum</i>	Buffalo Grass	high	high
MNG	<i>Dactylis glomerata</i>	Cocksfoot	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 6: Sand Heathland

Description:

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

Life Forms:

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

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

EVC 6: Sand Heathland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 7: Clay Heathland

Description:

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

Life forms:

Life form	#Spp	%Cover	LF code
Medium Shrub	8	40%	MS
Small Shrub	5	10%	SS
Prostrate Shrub	3	5%	PS
Medium Herb	7	10%	MH
Large Non-tufted Graminoid	1	5%	LNG
Medium to Small Tufted Graminoid	6	15%	MTG
Medium to Tiny Non-tufted Graminoid	1	10%	MNG
Bryophytes/Lichens	na	10%	BL
Soil Crust	na	10%	S/C

LF Code	Species typical of at least part of EVC range	Common Name
MS	<i>Banksia marginata</i>	Silver Banksia
MS	<i>Leptospermum myrsinoides</i>	Heath Tea-tree
MS	<i>Persoonia juniperina</i>	Prickly Geebung
MS	<i>Allocasuarina misera/paradoxa</i>	Slender/Green Sheoak
SS	<i>Dillwynia glaberrima</i>	Smooth Parrot-pea
SS	<i>Platylobium obtusangulum</i>	Common Flat-pea
SS	<i>Leucopogon virgatus</i>	Common Beard-heath
SS	<i>Hibbertia riparia</i>	Erect Guinea-flower
PS	<i>Xanthosia pusilla</i> spp. agg.	Heath Xanthosia
PS	<i>Astroloma humifusum</i>	Cranberry Heath
PS	<i>Acrotriche serrulata</i>	Honey-pots
MH	<i>Comesperma calymega</i>	Blue-spike Milkwort
MH	<i>Platysace heterophylla</i>	Slender Platysace
MH	<i>Goodenia geniculata</i>	Bent Goodenia
SH	<i>Opercularia varia</i>	Variable Stinkweed
LNG	<i>Gahnia radula</i>	Thatch Saw-sedge
MTG	<i>Lepidosperma laterale</i>	Variable Sword-sedge
MTG	<i>Austrostipa semibarbata</i>	Fibrous Spear-grass
MTG	<i>Tricostularia pauciflora</i>	Needle Bog-sedge
MTG	<i>Lomandra filiformis</i>	Wattle Mat-rush
MNG	<i>Hypolaena fastigiata</i>	Tassel Rope-rush

Recruitment:

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

Organic Litter:

20% Cover

Weediness:

There are no consistent weeds in this EVC.

EVC 7: Clay Heathland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 8: Wet Heathland

Description:

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

Life Forms:

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

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

EVC 8: Wet Heathland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 9: Coastal Saltmarsh

Description:

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

Life Forms:

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

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

Recruitment:

Continuous

Organic Litter:

10% cover

Weediness:

There are no consistent weeds in this EVC.

EVC 9: Coastal Saltmarsh - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 10: Estuarine Wetland

Description:

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

Life Forms:

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

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

Recruitment:

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

Organic Litter:

10% cover

Weediness:

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

EVC 10: Estuarine Wetland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 16: Lowland Forest

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	20 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
30%	<i>Eucalyptus obliqua</i>	Messmate Stringybark
	<i>Eucalyptus baxteri</i> s.l.	Brown Stringybark
	<i>Eucalyptus radiata</i> ssp. <i>radiata</i>	Narrow-leaf Peppermint

Understorey:

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

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

EVC 16: Lowland Forest - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

40 % cover

Logs:

20 m/0.1 ha.

Weediness:

There are no consistent weeds in this EVC.

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 21: Shrubby Dry Forest

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	60 cm	20 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
30%	<i>Eucalyptus tricarpa</i>	Red Ironbark
	<i>Eucalyptus cypellocarpa</i>	Mountain Grey-gum
	<i>Eucalyptus obliqua</i>	Messmate Stringybark

Understorey:

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

EVC 21: Shrubby Dry Forest - Otway Plain bioregion

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

Recruitment:

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

Organic Litter:

20 % cover

Logs:

20 m/0.1 ha.

Weediness:

There are no consistent weeds in this EVC.

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 23: Herb-rich Foothill Forest

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	20 / ha

Tree Canopy Cover:

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

Understorey:

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

EVC 23: Herb-rich Foothill Forest - Otway Plain bioregion

LF Code	Species typical of at least part of EVC range	Common Name
T	<i>Acacia melanoxylon</i>	Blackwood
MS	<i>Ozothamnus ferrugineus</i>	Tree Everlasting
MS	<i>Acacia mucronata ssp. longifolia</i>	Narrow-leaf Wattle
MS	<i>Leptospermum continentale</i>	Prickly Tea-tree
MS	<i>Coprosma quadrifida</i>	Prickly Currant-bush
SS	k <i>Olearia speciosa</i>	Netted Daisy-bush
LH	<i>Senecio glomeratus</i>	Annual Fireweed
LH	<i>Epilobium billardierianum</i>	Variable Willow-herb
LH	<i>Senecio hispidulus</i>	Rough Fireweed
MH	<i>Geranium solanderi s.l.</i>	Austral Cranesbill
MH	<i>Stellaria pungens</i>	Prickly Starwort
MH	<i>Viola hederacea sensu Willis (1972)</i>	Ivy-leaf Violet
SH	<i>Lobelia pedunculata s.l.</i>	Matted Pratia
SH	<i>Oxalis corniculata s.l.</i>	Yellow Wood-sorrel
SH	<i>Hydrocotyle sibthorpioides</i>	Shining Pennywort
SH	<i>Cymbonotus preissianus</i>	Austral Bear's-ear
LTG	<i>Poa labillardierei</i>	Common Tussock-grass
LTG	<i>Deyeuxia quadriseta</i>	Reed Bent-grass
LNG	<i>Tetrarrhena juncea</i>	Forest Wire-grass
MTG	<i>Poa morrisii</i>	Soft Tussock-grass
MTG	<i>Dichelachne sciurea spp. agg.</i>	Short-hair Plume-grass
MTG	<i>Arthropodium strictum s.l.</i>	Chocolate Lily
MNG	<i>Poa tenera</i>	Slender Tussock-grass
GF	<i>Pteridium esculentum</i>	Austral Bracken
SC	<i>Clematis aristata</i>	Mountain Clematis

Recruitment:

Continuous

Organic Litter:

40 % cover

Logs:

20 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Senecio jacobaea</i>	Ragwort	high	high
LH	<i>Plantago lanceolata</i>	Ribwort	high	low
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Centaureum erythraea</i>	Common Centaury	high	low
MH	<i>Lotus corniculatus</i>	Bird's-foot Trefoil	high	low
MH	<i>Medicago lupulina</i>	Black Medic	high	low
MH	<i>Prunella vulgaris</i>	Self-heal	high	low
MH	<i>Cerastium spp.</i>	Mouse-ear Chickweed	high	low
MTG	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	high	high
MNG	<i>Dactylis glomerata</i>	Cocksfoot	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 30: Wet Forest

Description:

Grows on fertile, well-drained loamy soils on a range of geologies and elevation levels. It is largely restricted to protected sites in gullies and on southern aspects of hills and mountains where rainfall is high and cloud cover at ground level is frequent. Characterised by a tall eucalypt overstorey to 30 m tall with scattered understorey trees over a tall broad-leaved shrubby understorey and a moist, shaded, fern-rich ground layer that is usually dominated by tree-ferns.

Large trees:

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

Tree Canopy Cover:

%cover	Character Species	Common Name
40%	<i>Eucalyptus ovata</i>	Swamp Gum

Understorey:

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

EVC 30: Wet Forest - Otway Plain bioregion

LF Code	Species typical of at least part of EVC range	Common Name
T	<i>Pomaderris aspera</i>	Hazel Pomaderris
T	<i>Notelaea ligustrina</i>	Privet Mock-olive
T	<i>Acacia melanoxylon</i>	Blackwood
MS	<i>Pimelea axiflora</i>	Bootlace Bush
MS	<i>Olearia lirata</i>	Snowy Daisy-bush
MS	<i>Hedycarya angustifolia</i>	Austral Mulberry
MS	<i>Coprosma quadrifida</i>	Prickly Currant-bush
LH	<i>Senecio minimus</i>	Shrubby Fireweed
MH	<i>Viola hederacea sensu Willis (1972)</i>	Ivy-leaf Violet
MH	<i>Hydrocotyle hirta</i>	Hairy Pennywort
MH	<i>Gratiola peruviana</i>	Austral Brooklime
SH	<i>Lobelia pedunculata s.l.</i>	Matted Pratia
LTG	<i>Lepidosperma laterale var. majus</i>	Variable Sword-sedge
LTG	<i>Lepidosperma elatius</i>	Tall Sword-sedge
LTG	<i>Carex appressa</i>	Tall Sedge
LNG	<i>Tetrarrhena juncea</i>	Forest Wire-grass
MTG	<i>Dianella tasmanica</i>	Tasman Flax-lily
MTG	<i>Isolepis wakefieldiana</i>	Tufted Club-sedge
MNG	<i>Poa tenera</i>	Slender Tussock-grass
MNG	<i>Echinopogon ovatus</i>	Common Hedgehog-grass
GF	<i>Polystichum proliferum</i>	Mother Shield-fern
GF	<i>Blechnum wattsii</i>	Hard Water-fern
GF	<i>Blechnum nudum</i>	Fishbone Water-fern
TRF	<i>Dicksonia antarctica</i>	Soft Tree-fern
EP	<i>Hymenophyllum cupressiforme</i>	Common Filmy Fern
SC	<i>Parsonsia brownii</i>	Twining Silkpod
SC	<i>Clematis aristata</i>	Mountain Clematis

Recruitment:

Continuous

Organic Litter:

50 % cover

Logs:

30 m/0.1 ha.

Weediness:

There are no consistent weeds in this EVC.

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 45: Shrubby Foothill Forest

Description:

Occurs on ridges and mainly on southern and eastern slopes in association with Damp Forest or Wet Forest on moderately fertile soils and at a range of elevations. The overstorey is a medium eucalypt forest to 25 m tall over an understorey characterised by a distinctive middle strata dominated by a diversity of narrow-leaved shrubs and a paucity of ferns, graminoids and herbs in the ground stratum.

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	20 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
40%	<i>Eucalyptus obliqua</i>	Messmate Stringybark
	<i>Eucalyptus radiata</i> s.l.	Narrow-leaf Peppermint
	<i>Eucalyptus baxteri</i> s.l.	Brown Stringybark

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Understorey Tree or Large Shrub	1	10%	T
Medium Shrub	8	40%	MS
Small Shrub	1	1%	SS
Large Herb	1	1%	LH
Medium Herb	5	10%	MH
Small or Prostrate Herb	1	1%	SH
Large Tufted Graminoid	2	10%	LTG
Large Non-tufted Graminoid	1	15%	LNG
Medium to Small Tufted Graminoid	2	5%	MTG
Ground Fern	3	15%	GF
Tree Fern	1	1%	TRF
Scrambler or Climber	2	1%	SC
Bryophytes/Lichens	na	10%	BL

LF Code	Species typical of at least part of EVC range	Common Name
T	<i>Acacia melanoxylon</i>	Blackwood
MS	<i>Acacia mucronata</i> ssp. <i>longifolia</i>	Narrow-leaf Wattle
MS	<i>Leptospermum continentale</i>	Prickly Tea-tree
MS	<i>Goodenia ovata</i>	Hop Goodenia
MS	<i>Acacia verticillata</i>	Prickly Moses
SS	<i>Tetratheca ciliata</i>	Pink-bells
LH	<i>Mentha laxiflora</i>	Forest Mint
MH	<i>Gonocarpus tetragynus</i>	Common Raspwort
MH	<i>Viola hederacea</i> sensu Willis (1972)	Ivy-leaf Violet
MH	<i>Viola hederacea</i> sensu Entwistle (1996)	Ivy-leaf Violet
SH	<i>Goodenia lanata</i>	Trailing Goodenia
LTG	<i>Gahnia sieberiana</i>	Red-fruit Saw-sedge
LTG	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
LTG	<i>Lepidosperma laterale</i> var. <i>majus</i>	Variable Sword-sedge
LTG	<i>Lepidosperma elatius</i>	Tall Sword-sedge
LNG	<i>Tetrarrhena juncea</i>	Forest Wire-grass
MTG	<i>Dianella tasmanica</i>	Tasman Flax-lily
GF	<i>Pteridium esculentum</i>	Austral Bracken
GF	<i>Blechnum nudum</i>	Fishbone Water-fern
TRF	<i>Cyathea australis</i>	Rough Tree-fern
SC	<i>Billardiera scandens</i>	Common Apple-berry
SC	<i>Clematis aristata</i>	Mountain Clematis

EVC 45: Shrubby Foothill Forest - Otway Plain bioregion

Recruitment:

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

Organic Litter:

40 % cover

Logs:

20 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 48: Heathy Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	60 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
15%	<i>Eucalyptus obliqua</i>	Messmate Stringybark
	<i>Eucalyptus baxteri</i> s.l.	Brown Stringybark

Understorey:

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

EVC 48: Heathy Woodland - Otway Plain bioregion

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

Recruitment:

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

Organic Litter:

40 % cover

Logs:

15 m/0.1 ha.

Weediness:

There are no consistent weeds in this EVC.

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 53: Swamp Scrub

Description:

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

Canopy Cover:

%cover	Character Species	Common Name
60%	<i>Leptospermum lanigerum</i>	Woolly Tea-tree
	<i>Melaleuca squarrosa</i>	Scented Paperbark
	<i>Acacia melanoxylon</i>	Blackwood

Understorey:

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

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

EVC 53: Swamp Scrub - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

40 % cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain Bioregion

EVC 53_62: Estuarine Swamp Scrub

Description:

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

Tree Canopy Cover:

%cover	Character Species	Common Name
50%	<i>Melaleuca ericifolia</i>	Swamp Paperbark

Understorey:

Lifeform	#Spp	%Cover	LF Code
Medium Shrub	2	10%	MS
Medium Herb	3	20%	MH
Small or Prostrate Herb	2	5%	SH
Medium to Small Tufted Graminoid	2	10%	MTG
Medium to Tiny Non-Tufted Graminoid	2	15%	MNG

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

Recruitment:

Continuous.

Organic Litter:

20 % cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high

EVC 53_62: Estuarine Swamp Scrub

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 55: Plains Grassy Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	80 cm	10 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
20%	<i>Eucalyptus ovata</i>	Swamp Gum
	<i>Eucalyptus camaldulensis</i>	River Red-gum
	<i>Eucalyptus melliodora</i>	Yellow Box
	<i>Eucalyptus viminalis</i>	Manna Gum
	<i>Eucalyptus leucoxylon</i>	Yellow Gum

Understorey:

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

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

EVC 55: Plains Grassy Woodland - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

10 % cover

Logs:

10 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Plantago lanceolata</i>	Ribwort	high	low
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Centaureum erythraea</i>	Common Centaury	high	low
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	high	high
MNG	<i>Romulea rosea</i>	Onion Grass	high	low
MNG	<i>Briza maxima</i>	Large Quaking-grass	high	low
MNG	<i>Briza minor</i>	Lesser Quaking-grass	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 56: Floodplain Riparian Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	80 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
20%	<i>Eucalyptus camaldulensis</i>	River Red-gum
	<i>Eucalyptus ovata</i>	Swamp Gum

Life Forms:

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

LF Code

Species typical of at least part of EVC range

Common Name

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

EVC 56: Floodplain Riparian Woodland - Otway Plain bioregion

Recruitment:

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

Organic Litter:

40 % cover

Logs:

30 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MS	<i>Rosa rubiginosa</i>	Sweet Briar	low	high
LH	<i>Rumex conglomeratus</i>	Clustered Dock	high	high
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Rumex crispus</i>	Curled Dock	high	high
LH	<i>Helminthotheca echioides</i>	Ox-tongue	high	high
LH	<i>Aster subulatus</i>	Aster-weed	high	low
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
LH	<i>Sonchus asper s.l.</i>	Rough Sow-thistle	high	low
LH	<i>Plantago lanceolata</i>	Ribwort	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Plantago major</i>	Greater Plantain	high	low
MH	<i>Brassica fruticulosa</i>	Twiggy Turnip	high	high
MH	<i>Atriplex prostrata</i>	Hastate Orache	high	high
LTG	<i>Phalaris aquatica</i>	Toowoomba Canary-grass	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Cyperus eragrostis</i>	Drain Flat-sedge	high	high
MTG	<i>Bromus catharticus</i>	Prairie Grass	high	low
MTG	<i>Lolium perenne</i>	Perennial Rye-grass	high	high
MNG	<i>Paspalum distichum</i>	Water Couch	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 68: Creekline Grassy Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	80 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
15%	<i>Eucalyptus camaldulensis</i>	River Red-gum

Understorey:

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

LF Code

Species typical of at least part of EVC range

Common Name

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

EVC 68: Creekline Grassy Woodland - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

40 % cover

Logs:

20 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
T	<i>Salix fragilis</i>	Crack Willow	high	high
MS	<i>Lycium ferocissimum</i>	African Box-thorn	low	high
MS	<i>Genista monspessulana</i>	Montpellier Broom	high	high
MS	<i>Rosa rubiginosa</i>	Sweet Briar	low	high
MS	<i>Rubus sp. aff. armeniacus</i>	Blackberry	high	high
LH	<i>Plantago lanceolata</i>	Ribwort	high	low
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Hirschfeldia incana</i>	Buchan Weed	high	high
LH	<i>Verbena bonariensis s.l.</i>	Purple-top Verbena	high	high
LH	<i>Rumex crispus</i>	Curled Dock	high	high
LH	<i>Rumex conglomeratus</i>	Clustered Dock	high	high
LH	<i>Conium maculatum</i>	Hemlock	high	high
LH	<i>Helminthotheca echioides</i>	Ox-tongue	high	low
LH	<i>Aster subulatus</i>	Aster-weed	high	low
LH	<i>Sonchus asper s.l.</i>	Rough Sow-thistle	high	low
LH	<i>Solanum nigrum sensu Willis (1972)</i>	Black Nightshade	high	high
MH	<i>Brassica fruticulosa</i>	Twiggy Turnip	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Foeniculum vulgare</i>	Fennel	high	high
SH	<i>Modiola caroliniana</i>	Red-flower Mallow	high	low
LTG	<i>Phalaris aquatica</i>	Toowoomba Canary-grass	high	high
LTG	<i>Piptatherum miliaceum</i>	Rice Millet	high	high
MTG	<i>Ehrharta erecta var. erecta</i>	Panic Veldt-grass	high	high
MTG	<i>Paspalum dilatatum</i>	Paspalum	high	high
MTG	<i>Bromus catharticus</i>	Prairie Grass	high	low
MTG	<i>Romulea rosea</i>	Onion Grass	high	low
MTG	<i>Bromus diandrus</i>	Great Brome	high	low
MTG	<i>Briza maxima</i>	Large Quaking-grass	high	low
MTG	<i>Agrostis capillaris s.l.</i>	Brown-top Bent	high	high
MNG	<i>Dactylis glomerata</i>	Cocksfoot	high	high
MNG	<i>Paspalum distichum</i>	Water Couch	high	high
SC	<i>Tradescantia fluminensis</i>	Wandering Jew	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 83: Swampy Riparian Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	10 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
10%	<i>Eucalyptus ovata</i>	Swamp Gum

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Understorey Tree or Large Shrub	2	10%	T
Medium Shrub	3	10%	MS
Large Herb	3	5%	LH
Medium Herb	9	15%	MH
Small or Prostrate Herb	4	5%	SH
Large Tufted Graminoid	5	25%	LTG
Large Non-tufted Graminoid	1	5%	LNG
Medium to Small Tufted Graminoid	8	20%	MTG
Medium to Tiny Non-tufted Graminoid	2	5%	MNG
Ground Fern	1	1%	GF
Scrambler or Climber	2	5%	SC
Bryophytes/Lichens	na	20%	BL

LF Code	Species typical of at least part of EVC range	Common Name
T	<i>Acacia melanoxylon</i>	Blackwood
T	<i>Acacia mearnsii</i>	Black Wattle
MS	<i>Acacia verticillata</i> ssp. <i>verticillata</i>	Prickly Moses
MS	<i>Leptospermum lanigerum</i>	Woolly Tea-tree
MS	<i>Ozothamnus rosmarinifolius</i>	Rosemary Everlasting
LH	<i>Senecio minimus</i>	Shrubby Fireweed
LH	<i>Persicaria praetermissa</i>	Spotted Knotweed
MH	<i>Acaena novae-zelandiae</i>	Bidgee-widgee
SH	<i>Leptinella reptans</i> s.l.	Creeping Cotula
SH	<i>Hydrocotyle sibthorpioides</i>	Shining Pennywort
SH	R r <i>Lobelia beaugleholei</i>	Showy Lobelia
LTG	<i>Juncus procerus</i>	Tall Rush
LTG	<i>Cyperus lucidus</i>	Leafy Flat-sedge
LTG	<i>Juncus pallidus</i>	Pale Rush
LTG	<i>Poa labillardierei</i>	Common Tussock-grass
MTG	<i>Juncus planifolius</i>	Broad-leaf Rush
MTG	<i>Juncus pauciflorus</i>	Loose-flower Rush
MTG	<i>Triglochin procerum</i> s.l.	Water Ribbons
MNG	<i>Hemarthria uncinata</i> var. <i>uncinata</i>	Mat Grass
MNG	<i>Triglochin striatum</i>	Streaked Arrowgrass
MNG	<i>Empodisma minus</i>	Spreading Rope-rush
GF	<i>Pteridium esculentum</i>	Austral Bracken
TRF	<i>Cyathea australis</i>	Rough Tree-fern
SC	<i>Calystegia sepium</i>	Large Bindweed

EVC 83: Swampy Riparian Woodland - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

20 % cover

Logs:

20 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MS	<i>Rubus</i> sp. aff. <i>armeniacus</i>	Blackberry	high	high
LH	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	high	low
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
LH	<i>Plantago lanceolata</i>	Ribwort	high	low
LH	<i>Parentucellia viscosa</i>	Yellow Bartsia	high	low
MH	<i>Lotus suaveolens</i>	Hairy Bird's-foot Trefoil	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Acetosella vulgaris</i>	Sheep Sorrel	high	low
MH	<i>Leontodon taraxacoides</i> ssp. <i>taraxacoides</i>	Hairy Hawkbit	high	low
MH	<i>Anagallis arvensis</i>	Pimpernel	high	low
SH	<i>Trifolium repens</i> var. <i>repens</i>	White Clover	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	high	high
MTG	<i>Lolium perenne</i>	Perennial Rye-grass	high	low
MTG	<i>Juncus articulatus</i>	Jointed Rush	high	high
MTG	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Soft Brome	high	low
MNG	<i>Vulpia</i> spp.	Fescue	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 104: Lignum Swamp

Description:

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

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

Large trees⁺:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	80 cm	

Tree Canopy Cover⁺:

%cover	Character Species	Common Name
10%	<i>Eucalyptus camaldulensis</i>	River Red Gum

Life forms:

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

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

Recruitment:

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

Organic Litter:

10 % cover

Logs⁺:

5 m/0.1 ha.

EVC 104: Lignum Swamp - Otway Plain bioregion

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MS	<i>Lycium ferocissimum</i>	African Box-thorn	high	high
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Helminthotheca echioides</i>	Ox-tongue	high	high
LH	<i>Cynara cardunculus</i>	Spanish Artichoke	high	high
LH	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	high	low
LH	<i>Aster subulatus</i>	Aster-weed	high	low
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Cerastium glomeratum</i> s.l.	Common Mouse-ear Chickweed	high	low
MTG	<i>Nassella trichotoma</i>	Serrated Tussock	high	high
MTG	<i>Lolium rigidum</i>	Wimmera Rye-grass	high	low
MTG	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Soft Brome	high	low
MTG	<i>Vulpia bromoides</i>	Squirrel-tail Fescue	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 128: Grassy Forest

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	20 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
30%	<i>Eucalyptus obliqua</i>	Messmate Stringybark
	<i>Eucalyptus radiata</i> s.l.	Narrow-leaf Peppermint

Understorey:

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

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

EVC 128: Grassy Forest - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

20 % cover

Logs:

20 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
T	<i>Pinus radiata</i>	Radiata Pine	low	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MTG	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	high	high
MTG	<i>Agrostis capillaris</i> s.l.	Brown-top Bent	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 132: Plains Grassland

Description:

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

Life Forms:

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

LF Code

Species typical of at least part of EVC range

Common Name

LH	<i>Eryngium ovium</i>	Blue Devil
LH	<i>Senecio quadridentatus</i>	Cottony Fireweed
MH	<i>Calocephalus citreus</i>	Lemon Beauty-heads
MH	<i>Acaena echinata</i>	Sheep's Burr
MH	<i>Leptorhynchus squamatus</i>	Scaly Buttons
MH	<i>Geranium retrorsum</i> s.l.	Grassland Crane's-bill
SH	<i>Solenogyne dominii</i>	Smooth Solenogyne
SH	<i>Lobelia pratioides</i>	Poison Lobelia
LTG	<i>Austrostipa bigeniculata</i>	Kneed Spear-grass
MTG	<i>Themeda triandra</i>	Kangaroo Grass
MTG	<i>Austrodanthonia caespitosa</i>	Common Wallaby-grass
MTG	<i>Elymus scaber</i> var. <i>scaber</i>	Common Wheat-grass
MTG	<i>Schoenus apogon</i>	Common Bog-sedge
MNG	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass

Recruitment:

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

Organic Litter:

10% cover

EVC 132: Plains Grassland - Otway Plain bioregion

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Plantago lanceolata</i>	Ribwort	high	low
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	high
MH	<i>Leontodon taraxacoides</i> ssp. <i>taraxacoides</i>	Hairy Hawkbit	high	low
MH	<i>Trifolium subterraneum</i>	Subterranean Clover	high	low
MH	<i>Plantago coronopus</i>	Buck's-horn Plantain	high	high
MH	<i>Trifolium striatum</i>	Knotted Clover	high	low
MH	<i>Trifolium dubium</i>	Suckling Clover	high	low
LTG	<i>Phalaris aquatica</i>	Toowoomba Canary-grass	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Romulea rosea</i>	Onion Grass	high	low
MTG	<i>Vulpia bromoides</i>	Squirrel-tail Fescue	high	low
MTG	<i>Briza minor</i>	Lesser Quaking-grass	high	low
MTG	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Soft Brome	high	low
MTG	<i>Briza maxima</i>	Large Quaking-grass	high	low
MTG	<i>Lolium rigidum</i>	Wimmera Rye-grass	high	low
MTG	<i>Lolium perenne</i>	Perennial Rye-grass	high	high
MTG	<i>Nassella neesiana</i>	Chilean Needle-grass	high	high
MNG	<i>Cynosurus echinatus</i>	Rough Dog's-tail	high	low
MNG	<i>Juncus capitatus</i>	Capitate Rush	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 140: Mangrove Shrubland

Description:

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

Life Forms:

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

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

Recruitment:

Continuous

Weediness:

There are no consistent weeds in this EVC.

EVC 140: Mangrove Shrubland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 154: Bird Colony Shrubland

Description:

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

Life Forms:

Life form	#Spp	%Cover	LF code
Medium Shrub	3	40%	SS
Large Herb	1	10%	LH
Medium Non-Tufted Graminoid	1	5%	MNG

Total understorey projective foliage cover 30%

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

Recruitment:

Continuous

Organic Litter:

10% cover

Weediness:

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

EVC 154: Bird Colony Shrubland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain Bioregion

EVC 160: Coastal Dune Scrub

Description:

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

Understorey:

Lifeform	#Spp	%Cover	LF Code
Medium Shrub	7	50%	MS
Small Shrub	1	1%	SS
Large Herb	3	5%	LH
Medium Herb	7	15%	MH
Small or Prostrate Herb	3	10%	SH
Medium to Small Tufted Graminoid	2	15%	MTG
Medium to Tiny Non-Tufted Graminoid	2	5%	MNG
Scrambler or Climber	3	5%	SC
Bryophytes/Lichens		10%	BL

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

Recruitment:

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

Organic Litter:

40 % cover

EVC 160: Coastal Dune Scrub

Weediness:

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

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 161: Coastal Headland Scrub

Description:

Scrub or low shrubland to 2 m tall on steep, rocky coastal headlands often associated with cliffs exposed to the stresses of extreme salt-laden winds and salt spray from the south west. Occurs on shallow sands along rocky sections of the coast.

Life forms:

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

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

Recruitment:

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

Organic Litter:

40 % cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MS	<i>Lycium ferocissimum</i>	African Box-thorn	high	high
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Centaurea erythraea</i>	Common Centaury	high	low
MH	<i>Trifolium dubium</i>	Suckling Clover	high	low
SH	<i>Trifolium repens</i> var. <i>repens</i>	White Clover	high	low
MNG	<i>Lagurus ovatus</i>	Hare's-tail Grass	high	low
MNG	<i>Dactylis glomerata</i>	Cocksfoot	high	high
SC	<i>Vicia sativa</i>	Common Vetch	high	low

EVC 161: Coastal Headland Scrub - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 163: Coastal Tussock Grassland

Description:

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

Life Forms:

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

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

Recruitment:

Continuous

Organic Litter:

20% Cover

EVC 163: Coastal Tussock Grassland - Otway Plain bioregion

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MS	<i>Rubus</i> sp. aff. <i>armeniacus</i>	Blackberry	high	high
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Plantago lanceolata</i>	Ribwort	high	low
LH	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	high	low
LH	<i>Centaurium tenuiflorum</i>	Slender Centaury	high	low
MH	<i>Lotus suaveolens</i>	Hairy Bird's-foot Trefoil	high	low
MH	<i>Plantago coronopus</i>	Buck's-horn Plantain	high	low
MH	<i>Anagallis arvensis</i>	Pimpernel	high	low
MH	<i>Leontodon taraxacoides</i> ssp. <i>taraxacoides</i>	Hairy Hawkbit	high	low
LTG	<i>Ammophila arenaria</i>	Marram Grass	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Polypogon monspeliensis</i>	Annual Beard-grass	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 165: Damp Heath Scrub

Description:

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

Life forms

Life form	#Spp	%Cover	LF code
Medium Shrub	7	50%	MS
Small Shrub	2	5%	SS
Prostrate Shrub	2	5%	PS
Large Herb	1	1%	LH
Medium Herb	2	5%	MH
Small or Prostrate Herb	1	1%	SH
Large Tufted Graminoid	1	5%	LTG
Medium to Small Tufted Graminoid	2	10%	MTG
Medium to Tiny Non-tufted Graminoid	2	10%	MNG
Ground Fern	1	1%	GF
Bryophytes/Lichens	na	20%	BL
Soil Crust	na	10%	S/C

LF Code

Species typical of at least part of EVC range

Common Name

MS	<i>Leptospermum continentale</i>	Prickly Tea-tree
MS	<i>Melaleuca squarrosa</i>	Scented Paperbark
MS	<i>Allocasuarina paludosa</i>	Scrub Sheoak
MS	<i>Epacris impressa</i>	Common Heath
SS	<i>Platylobium obtusangulum</i>	Common Flat-pea
SS	<i>Epacris lanuginosa</i>	Woolly-style Heath
PS	<i>Bossiaea prostrata</i>	Creeping Bossiaea
PS	<i>Xanthosia pusilla</i> spp. agg.	Heath Xanthosia
PS	<i>Acrotriche serrulata</i>	Honey-pots
MH	<i>Gonocarpus tetragynus</i>	Common Raspwort
MH	<i>Selaginella uliginosa</i>	Swamp Selaginella
SH	<i>Goodenia lanata</i>	Trailing Goodenia
LTG	<i>Xanthorrhoea australis</i>	Austral Grass-tree
MTG	<i>Lepidosperma filiforme</i>	Common Rapier-sedge
MNG	<i>Tetrarrhena distichophylla</i>	Hairy Rice-grass
MNG	<i>Empodisma minus</i>	Spreading Rope-rush
MNG	<i>Poa tenera</i>	Slender Tussock-grass
GF	<i>Pteridium esculentum</i>	Austral Bracken
GF	<i>Lindsaea linearis</i>	Screw Fern
SC	<i>Cassytha glabella</i>	Slender Dodder-laurel

Recruitment:

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

Organic Litter:

40 % cover

Weediness:

There are no consistent weeds in this EVC.

EVC 165: Damp Heath Scrub - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 175: Grassy Woodland

Description:

A variable open eucalypt woodland to 15 m tall or occasionally Sheoak woodland to 10 m tall over a diverse ground layer of grasses and herbs. The shrub component is usually sparse. It occurs on sites with moderate fertility on gentle slopes or undulating hills on a range of geologies.

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	15 / ha
<i>Allocasuarina</i> spp.	40 cm	

Tree Canopy Cover:

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

Understorey:

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

EVC 175: Grassy Woodland - Otway Plain bioregion

LF Code	Species typical of at least part of EVC range	Common Name
T	<i>Acacia mearnsii</i>	Black Wattle
T	<i>Allocasuarina littoralis</i>	Black Sheoak
MS	<i>Leptospermum continentale</i>	Prickly Tea-tree
MS	<i>Epacris impressa</i>	Common Heath
MS	<i>Cassinia aculeata</i>	Common Cassinia
SS	<i>Pimelea humilis</i>	Common Rice-flower
SS	<i>Hibbertia riparia</i>	Erect Guinea-flower
PS	<i>Bossiaea prostrata</i>	Creeping Bossiaea
PS	<i>Astroloma humifusum</i>	Cranberry Heath
PS	<i>Acrotriche serrulata</i>	Honey-pots
LH	<i>Pterostylis longifolia</i> s.l.	Tall Greenhood
MH	<i>Gonocarpus tetragynus</i>	Common Raspwort
MH	<i>Drosera peltata</i> ssp. <i>auriculata</i>	Tall Sundew
SH	<i>Dichondra repens</i>	Kidney-weed
SH	<i>Opercularia varia</i>	Variable Stinkweed
SH	<i>Drosera whittakeri</i> ssp. <i>aberrans</i>	Scented Sundew
LTG	<i>Deyeuxia quadriseta</i>	Reed Bent-grass
LTG	<i>Xanthorrhoea minor</i> ssp. <i>lutea</i>	Small Grass-tree
LNG	<i>Gahnia radula</i>	Thatch Saw-sedge
MTG	<i>Lomandra filiformis</i>	Wattle Mat-rush
MTG	<i>Themeda triandra</i>	Kangaroo Grass
MTG	<i>Poa sieberiana</i>	Grey Tussock-grass
MTG	<i>Lepidosperma laterale</i>	Variable Sword-sedge
MNG	<i>Microlaena stipoides</i> var. <i>stipoides</i>	Weeping Grass
GF	<i>Pteridium esculentum</i>	Austral Bracken
SC	<i>Comesperma volubile</i>	Love Creeper
SC	<i>Billardiera scandens</i>	Common Apple-berry

Recruitment:
Continuous

Organic Litter:
20 % cover

Logs:
15 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
T	<i>Pinus radiata</i>	Radiata Pine	high	high
T	<i>Pittosporum undulatum</i>	Sweet Pittosporum	high	high
MS	<i>Chrysanthemoides monilifera</i>	Boneseed	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MTG	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	high	high
MTG	<i>Briza maxima</i>	Large Quaking-grass	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 196: Seasonally Inundated Sub-saline Herbland

Description:

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

Life Forms:

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

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

Recruitment:

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

Organic Litter:

10 % cover

Logs:

15 m/0.1 ha.

Weediness:

There are no consistent weeds in this EVC.

EVC 196: Seasonally Inundated Sub-saline Herbland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 198: Sedgy Riparian Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
20%	<i>Eucalyptus ovata</i>	Swamp Gum
	<i>Eucalyptus obliqua</i>	Messmate Stringybark

Understorey:

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

LF Code

Species typical of at least part of EVC range

Common Name

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

EVC 198: Sedgy Riparian Woodland - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

30 % cover

Logs:

20 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 201: Shrubby Wet Forest

Description:

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

Large trees:

Species

Eucalyptus spp.

DBH(cm)

90 cm

#/ha

20 / ha

Tree Canopy Cover:

%cover

40%

Character Species

Eucalyptus obliqua

Eucalyptus viminalis

Common Name

Messmate Stringybark

Manna Gum

Understorey:

Life form

Immature Canopy Tree
Understorey Tree or Large Shrub
Medium Shrub
Prostrate 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
Ground Fern
Tree Fern
Scrambler or Climber
Bryophytes/Lichens

#Spp

2
9
1
2
5
2
1
2
1
2
1
3
1
1
na

%Cover

5%
10%
20%
1%
1%
10%
5%
10%
10%
5%
1%
20%
15%
1%
20%

LF code

IT
T
MS
PS
LH
MH
SH
LTG
LNG
MTG
MNG
GF
TRF
SC
BL

EVC 201: Shrubby Wet Forest - Otway Plain bioregion

LF Code	Species typical of at least part of EVC range	Common Name
T	<i>Olearia argophylla</i>	Musk Daisy-bush
T	<i>Notelaea ligustrina</i>	Privet Mock-olive
MS	<i>Ozothamnus ferrugineus</i>	Tree Everlasting
MS	<i>Acacia verticillata</i>	Prickly Moses
MS	<i>Olearia lirata</i>	Snowy Daisy-bush
MS	<i>Goodenia ovata</i>	Hop Goodenia
SS	<i>Tetratheca ciliata</i>	Pink-bells
SS	<i>Pultenaea stricta</i>	Rigid Bush-pea
PS	<i>Acrotriche serrulata</i>	Honey-pots
LH	<i>Mentha laxiflora</i>	Forest Mint
LH	<i>Senecio glomeratus</i>	Annual Fireweed
LH	<i>Pterostylis longifolia</i> s.l.	Tall Greenhood
LH	<i>Wahlenbergia gracilis</i> s.l.	Sprawling Bluebell
MH	<i>Gonocarpus humilis</i>	Shade Raspwort
MH	<i>Viola hederacea</i> sensu Willis (1972)	Ivy-leaf Violet
MH	<i>Acaena novae-zelandiae</i>	Bidgee-widgee
MH	<i>Daucus glochidiatus</i>	Australian Carrot
SH	<i>Oxalis corniculata</i> s.l.	Yellow Wood-sorrel
SH	<i>Leptostigma reptans</i>	Dwarf Nertera
SH	<i>Goodenia lanata</i>	Trailing Goodenia
LTG	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush
LTG	<i>Lepidosperma elatius</i>	Tall Sword-sedge
LTG	<i>Carex appressa</i>	Tall Sedge
LNG	<i>Tetrarrhena juncea</i>	Forest Wire-grass
MTG	<i>Stylidium graminifolium</i> s.l.	Grass Trigger-plant
MTG	<i>Poa sieberiana</i>	Grey Tussock-grass
MTG	<i>Dianella tasmanica</i>	Tasman Flax-lily
MTG	<i>Dianella revoluta</i> s.l.	Black-anther Flax-lily
MNG	<i>Poa tenera</i>	Slender Tussock-grass
GF	<i>Pteridium esculentum</i>	Austral Bracken
GF	<i>Calochlaena dubia</i>	Common Ground-fern
GF	<i>Blechnum nudum</i>	Fishbone Water-fern
GF	<i>Adiantum aethiopicum</i>	Common Maidenhair
TRF	<i>Cyathea australis</i>	Rough Tree-fern
SC	<i>Clematis aristata</i>	Mountain Clematis
SC	<i>Billardiera scandens</i>	Common Apple-berry
SC	<i>Billardiera longiflora</i> var. <i>longiflora</i>	Purple Apple-berry

Recruitment:

Continuous

Organic Litter:

50 % cover

Logs:

30 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 203: Stony Rises Woodland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	15 / ha

Tree Canopy Cover:

%cover	Character Species	Common Name
15%	<i>Eucalyptus viminalis</i> ssp. <i>viminalis</i>	Manna Gum

Understorey:

Life form	#Spp	%Cover	LF code
Immature Canopy Tree		5%	IT
Understorey Tree or Large Shrub	1	10%	T
Medium Shrub	1	5%	MS
Small Shrub	1	5%	SS
Large Herb	3	5%	LH
Medium Herb	8	15%	MH
Small or Prostrate Herb	4	10%	SH
Large Tufted Graminoid	1	5%	LTG
Medium to Small Tufted Graminoid	4	20%	MTG
Medium to Tiny Non-tufted Graminoid	1	5%	MNG
Ground Fern	2	20%	GF
Scrambler or Climber	1	1%	SC
Bryophytes/Lichens	na	10%	BL

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

EVC 203: Stony Rises Woodland - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

20 % cover

Logs:

15 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Carduus pycnocephalus</i>	Slender Thistle	high	high
LH	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	high	low
LH	<i>Cirsium vulgare</i>	Spear Thistle	high	high
LH	<i>Solanum nigrum</i> sensu Willis (1972)	Black Nightshade	high	low
MH	<i>Cerastium glomeratum</i> s.l.	Common Mouse-ear Chickweed	high	low
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Veronica persica</i>	Persian Speedwell	high	low
MH	<i>Trifolium subterraneum</i>	Subterranean Clover	high	low
MH	<i>Trifolium dubium</i>	Suckling Clover	high	low
MH	<i>Acetosella vulgaris</i>	Sheep Sorrel	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Vulpia bromoides</i>	Squirrel-tail Fescue	high	low
MTG	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	high	high
MTG	<i>Bromus diandrus</i>	Great Brome	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 233: Wet Sands Thicket

Description:

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

Lifeforms:

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

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

Recruitment:

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

Organic Litter:

40 % cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MS	<i>Coprosma repens</i>	Mirror Bush	high	high
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Lotus uliginosus</i>	Greater Bird's-foot Trefoil	high	low
MH	<i>Centaurea erythraea</i>	Common Centaury	high	low
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	low
MTG	<i>Briza minor</i>	Lesser Quaking-grass	high	low
MTG	<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass	high	low
SC	<i>Rubus</i> sp. aff. <i>armeniacus</i>	Blackberry	high	high

EVC 233: Wet Sands Thicket - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 311: Berm Grassy Shrubland

Description:

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

Life Forms:

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

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

Recruitment:

Continuous

Organic Litter:

10% Cover

Weediness:

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

EVC 311: Berm Grassy Shrubland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 647: Plains Sedgy Wetland

Description:

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

Life Forms:

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

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

Recruitment:

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

Organic Litter:

10% cover

Logs:

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

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MTG	<i>Juncus bulbosus</i>	Bulbous Rush	high	high

EVC 647: Plains Sedgy Wetland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 821: Tall Marsh

Description:

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

Life Forms:

Life form	#Spp	%Cover	LF code
Large Herb	3	10%	LH
Medium Herb	3	5%	MH
Small or Prostrate Herb	5	20%	SH
Large Tufted Graminoid	1	5%	LTG
Large Non-tufted Graminoid	2	40%	LNG
Medium to Tiny Non-tufted Graminoid	2	1%	MNG
Total understorey projective foliage cover		80%	

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

Recruitment:

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

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Cotula coronopifolia</i>	Water Buttons	high	high
MNG	<i>Paspalum distichum</i>	Water Couch	high	high

EVC 300: Tall Marsh - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 851: Stream Bank Shrubland

Description:

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

Large trees:

Species	DBH(cm)	#/ha
<i>Eucalyptus</i> spp.	70 cm	10 / ha

Tree Canopy Cover:

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

Understorey:

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

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

EVC 851: Stream Bank Shrubland - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

40 % cover

Logs:

10 m/0.1 ha.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
T	<i>Crataegus monogyna</i>	Hawthorn	low	high
MS	<i>Rosa rubiginosa</i>	Sweet Briar	low	high
MS	<i>Ulex europaeus</i>	Gorse	low	high
LH	<i>Plantago lanceolata</i>	Ribwort	high	low
LH	<i>Rumex crispus</i>	Curled Dock	high	low
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	low
LH	<i>Rumex conglomeratus</i>	Clustered Dock	high	low
LH	<i>Sonchus asper</i> s.l.	Rough Sow-thistle	high	low
LH	<i>Helminthotheca echioides</i>	Ox-tongue	high	low
LH	<i>Aster subulatus</i>	Aster-weed	high	low
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
MH	<i>Trifolium angustifolium</i> var. <i>angustifolium</i>	Narrow-leaf Clover	high	low
MH	<i>Trifolium dubium</i>	Suckling Clover	high	low
MH	<i>Plantago major</i>	Greater Plantain	high	low
SH	<i>Trifolium repens</i> var. <i>repens</i>	White Clover	high	low
LTG	<i>Phalaris aquatica</i>	Toowoomba Canary-grass	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Vulpia bromoides</i>	Squirrel-tail Fescue	high	low
MTG	<i>Bromus hordeaceus</i> ssp. <i>hordeaceus</i>	Soft Brome	high	low
MTG	<i>Nassella neesiana</i>	Chilean Needle-grass	high	high
MTG	<i>Bromus diandrus</i>	Great Brome	high	low
MTG	<i>Lolium perenne</i>	Perennial Rye-grass	high	low
MTG	<i>Romulea rosea</i>	Onion Grass	high	low
MTG	<i>Bromus catharticus</i>	Prairie Grass	high	low
MTG	<i>Briza maxima</i>	Large Quaking-grass	high	low
MTG	<i>Briza minor</i>	Lesser Quaking-grass	high	low
MNG	<i>Cynosurus echinatus</i>	Rough Dog's-tail	high	low
MNG	<i>Dactylis glomerata</i>	Cocksfoot	high	high
MNG	<i>Avena barbata</i>	Bearded Oat	high	low
MNG	<i>Paspalum distichum</i>	Water Couch	high	high
SC	<i>Galium aparine</i>	Cleavers	high	low
SC	<i>Vicia sativa</i> ssp. <i>sativa</i>	Common Vetch	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

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

Description:

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

Tree Canopy Cover:

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

Understorey:

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

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

EVC 858: Coastal Alkaline Scrub (*syn.* Calcarenite Dune Woodland) - Otway Plain bioregion

Recruitment:

Continuous

Organic Litter:

40 % cover

Logs:

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

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MS	<i>Rhamnus alaternus</i>	Italian Buckthorn	low	high
MS	<i>Chrysanthemoides monilifera</i>	Boneseed	high	high
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high
MTG	<i>Catapodium rigidum</i>	Fern Grass	high	low
MNG	<i>Lagurus ovatus</i>	Hare's-tail Grass	high	low
MNG	<i>Vulpia</i> spp.	Fescue	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 863: Floodplain Reedbed

Description:

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

Life Forms:

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

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

Recruitment:

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

Organic Litter:

10% cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Aster subulatus</i>	Aster-weed	high	low
MH	<i>Cotula coronopifolia</i>	Water Buttons	high	high

EVC 863: Floodplain Reedbed - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain Bioregion

EVC 879: Coastal Dune Grassland

Description:

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

Understorey:

Lifeform	#Spp	%Cover	LF Code
Medium Shrub	1	5%	MS
Small Shrub	1	5%	SS
Large Herb	2	5%	LH
Medium Herb	4	5%	MH
Small or Prostrate Herb	3	10%	SH
Medium to Small Tufted Graminoid	3	10%	MTG
Medium to Tiny Non-Tufted Graminoid	2	25%	MNG
Scrambler or Climber	1	1%	SC

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

Recruitment:

Continuous.

Organic Litter:

10 % cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MNG	<i>Thinopyrum junceiforme</i>	Sea Wheat-grass	high	high

EVC 879: Coastal Dune Grassland

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
SC	<i>Asparagus asparagoides</i>	Bridal Creeper	high	high
LH	<i>Sonchus oleraceus</i>	Common Sow-thistle	high	high
MH	<i>Leontodon taraxacoides</i> subsp. <i>taraxacoides</i>	Hairy Hawkbit	high	low
LNG	<i>Ammophila arenaria</i>	Marram Grass	high	low
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

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

Description:

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

Life Forms:

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

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

Recruitment:

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

Organic Litter:

10% cover

Weediness:

There are no consistent weeds in this EVC.

EVC 891: Plains Brackish Sedge Wetland (syn. with EVC 656: Brackish Wetland) – Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 898: Cane Grass-Lignum Halophytic Herbland

Description:

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

Life Forms:

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

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

Recruitment:

Continuous

Organic Litter:

10 % cover

Weediness:

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

EVC 898: Cane Grass-Lignum Halophytic Herbland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 899: Plains Freshwater Sedge Wetland

Description:

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

Life Forms:

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

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

Recruitment:

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

Organic Litter:

10% cover

Logs:

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

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Rumex crispus</i>	Curled Dock	high	high
MTG	<i>Juncus bulbosus</i>	Bulbous Rush	high	high

EVC 899: Plains Freshwater Sedge Wetland - Otway Plain bioregion

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EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain Bioregion

EVC 952: Estuarine Reedbed

Description:

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

Understorey:

Lifeform	#Spp	%Cover	LF Code
Medium Herb	2	5%	MH
Small or Prostrate Herb	1	5%	SH
Large Non-Tufted Graminoid	1	50%	LNG

LF Code	Species typical of at least part of EVC range	Common Name
MH	<i>Samolus repens</i>	Creeping Brookweed
MH	<i>Sarcocornia quinqueflora</i>	Beaded Glasswort
SH	<i>Apium prostratum</i> subsp. <i>prostratum</i>	Sea Celery
LNG	<i>Bolboschoenus caldwellii</i>	Salt Club-sedge
LNG	<i>Phragmites australis</i>	Common Reed

Recruitment:

Continuous.

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
LH	<i>Chenopodium album</i>	Fat Hen	low	low
LH	<i>Aster subulatus</i>	Aster-weed	low	low
MH	<i>Atriplex prostrata</i>	Hastate Orache	low	low

EVC/Bioregion Benchmark for Vegetation Quality Assessment

Otway Plain bioregion

EVC 953: Estuarine Scrub

Description:

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

Canopy Cover:

%cover	Character Species	Common Name
50%	<i>Leptospermum lanigerum</i>	Woolly Tea-tree

Understorey:

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

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

Recruitment:

Continuous

Organic Litter:

20 % cover

Weediness:

LF Code	Typical Weed Species	Common Name	Invasive	Impact
MH	<i>Hypochoeris radicata</i>	Cat's Ear	high	low
LNG	<i>Holcus lanatus</i>	Yorkshire Fog	high	high

EVC 53: Estuarine Scrub - Otway Plain bioregion

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