



include *Viola hederacea* (Ivy-leaf Violet), *Poa tenera* (Slender Tussock Grass) and *Dichondra repens* (Kidney Weed).

#### **Shrubby Foothill Forest (EVC 45) – Least Concern (Highlands Southern Fall Bioregion) / Depleted (Highlands Northern Fall Bioregion)**

This EVC occurs as a forest to 40m tall growing on fertile, well drained, loam and clay soils. It is commonly found on ridges and exposed slopes below 500 m often in connection with Damp or Wet Forest. Within the landscape this EVC usually occurs on northerly and westerly aspects (Oates and Taranto 2001, DSE 2007a). The overstorey is comprised of eucalypts, usually *Eucalyptus obliqua* (Messmate Stringybark) and *E. cypellocarpa* (Mountain Grey-gum), with a shrubby understorey and ground layer dominated by ferns, graminoids and herbs (Oates and Taranto 2001).

Within the survey corridor this community is found within the Toolangi South landscape unit. The overstorey is dominated by a mixture of *E. obliqua* (Messmate Stringybark) and *E. radiata* (Narrow-leaf Peppermint). The dense midstorey is dominated by a variety of large and medium shrubs including *Coprosma quadrifida* (Prickly Currant-bush), *Acacia melanoxylon* (Blackwood), *Pultenaea gunni* (Golden Bush-pea) and *Pultenaea muelleri* (Mueller's Bush-pea). The ground layer is dominated variously by grasses and sedges including *Tetrarrhena juncea* (Forest Wire-grass), *Poa tenera* (Slender Tussock-grass), *Microlaena stipoides* var. *stipoides* (Weeping Grass) and *Lomandra longifolia* (Spiny-headed Mat-Rush). Small shrubs such as *Epacris impressa* (Common Heath) are also prevalent within the ground layer as are a variety of herbs including *Helichrysum scorpioides* (Button Everlasting) and *Asperula scoparia* (Prickly Woodruff).

#### **Valley Grassy Forest (EVC 47) – Vulnerable (Highlands Southern Fall Bioregion)**

Valley Grassy Forest occurs on fertile, well drained, loam to clay loam soils, in areas with moderate rainfall of 700 - 800mm per annum. It is found on gently undulating lower slopes and valley floors. The overstorey of this open forest consists of a variety of tall eucalypts to 25m tall over a sparse shrub layer. The ground layer can vary significantly depending on season and environmental conditions. In spring there is usually an array of herbs, lilies, grasses and sedges dominating the ground layer and in drier times the ground layer may be sparse and be noticeably less diverse (Oates and Taranto 2001).

Within the survey corridor this EVC occurs as either a woodland/forest or a grassland community, where the canopy and midstorey have been removed. The woodland/forest community occurs within several gullies and protected south and east-facing slopes within Sugarloaf Reservoir, and in the foothills and lower slopes around Yarra Glen, north to Dixons Creek. The overstorey is dominated by *Eucalyptus obliqua* (Messmate), *E. ovata* (Swamp Gum) and/or *E. radiata* (Narrow-leaf Peppermint), sometimes in association with *E. polyanthemos* (Red Box) in drier situations.



The midstorey is generally sparse with the occasional *Acacia mearnsii* (Black Wattle), *A. dealbata* (Silver Wattle) or *Exocarpos cupressiformis* (Cherry Ballart). The ground layer consists of a wide diversity of grasses, sedges, forbs and ferns. Dominant species include *Pteridium esculentum* (Austral Bracken), *Adiantum aethiopicum* (Common Maidenhair Fern), *Acaena echinata* (Sheep's Burr), *Gahnia radula* (Thatch Saw-sedge), *Microlaena stipoides* var. *stipoides* (Weeping Grass) and *Lomandra longifolia* (Spiny Head Rush). The nationally listed species, *Dianella amoena* (Matted Flax-lily), is also often a scattered component of the understorey within the survey corridor. Common weeds within this EVC are *Anthoxanthum odoratum* (Sweet Vernal Grass) and *Rubus fruticosus* spp. agg. (Blackberry).

In areas where this EVC occurs as a grassland community (e.g. Glenview Road, Melbourne Water Aqueduct, Gulf Road), *Themeda triandra* (Kangaroo Grass) generally dominates the ground layer. A diverse range of other native groundcover species also exist including *Acaena echinata* (Sheep's Burr), *Acaena ovina* (Australian Sheep's Burr), *Arthropodium strictum* (Chocolate Lily), *Austrodanthonia caespitosa* (Common Wallaby-grass), *Austrodanthonia fulva* (Copper-awned Wallaby-grass), *Austrodanthonia penicillata* (Slender Wallaby-grass), *Austrodanthonia racemosa* var. *racemosa* (Striped Wallaby-grass), *Austrodanthonia setacea* var. *setacea* (Bristly Wallaby-grass), *Austrostipa rudis* subsp. *rudis* (Veined Spear-grass), *Burchardia umbellata* (Milkmaids), *Carex iynx/longebrachiata* (Tussock Sedge), *Dianella longifolia* var. *longifolia* (Pale Flax-lily), *Dianella revoluta* (Black-anther Flax-lily), *Drosera peltata* (Pale Sundew), *Elymus scaber* var. *scaber* (Common Wheat-grass), *Epilobium hirtigerum* (Hairy Willow-herb), *Gonocarpus tetragynus* (Common Raspwort), *Lomandra filiformis* (Wattle Mat-rush), *Microlaena stipoides* var. *stipoides* (Weeping Grass), *Microtis parviflora* (Slender Onion-orchid), *Oxalis perennans* (Grassland Wood-sorrel), *Poa morrisii* (Soft Tussock-grass), *Senecio quadridentatus* (Cotton Fireweed), *Schoenus apogon* (Common Bog-sedge), *Thelymitra* spp. (Sun Orchid), *Tricoryne elatior* (Yellow Rush-lily) and *Veronica gracilis* (Slender Speedwell). The nationally Endangered, *Dianella amoena* (Matted Flax-lily), was also recorded within this EVC. Weed species present within this EVC include *Anthoxanthum odoratum* (Sweet Vernal-grass), *Avena* spp. (Oat), *Briza maxima* (Large Quaking-grass), *Bromus hordeaceus* var. *hordeaceus* (Soft Brome), *Dactylis glomerata* (Cocksfoot), *Holcus lanatus* (Yorkshire Fog), *Hypochoeris radicata* (Cat's ear), *Lotus subbiflorus* (Hairy Bird's-foot Trefoil), *Paspalum dilatatum* (Paspalum) and *Vulpia bromoides* (Squirrel-tail Fescue).

### **Swampy Riparian Woodland (EVC 83) – Depleted (Highlands Southern Fall Bioregion)**

This EVC generally occurs along riparian zones of low gradient streams and may also be associated with wetland systems along channel verges and ponds. The overstorey of this community is typically dominated by *Eucalyptus ovata* (Swamp Gum) to 15m tall (Oates and Taranto 2001, DSE 2007).



This community is found within the survey corridor at a single locality where Dixons Creek crosses the Melba Highway, within the Melba South Agricultural Zone / Dixons Creek Floodplain LU. The EVC is treeless, apart from a small tree layer of *Acacia melanoxylon* (Blackwood) and *Acacia mearnsii* (Black Wattle). Smaller shrubs present within this community include *Goodenia ovata* (Hop Goodenia) and *Melaleuca ericifolia* (Swamp Paperbark). The native ground layer is characterised by *Lomandra longifolia* (Spiny-headed Mat-rush) and *Phragmites australis* (Common Reed).

There are a number of introduced species occurring within this disturbed EVC. *Pinus radiata* (Radiata Pines) is scattered through this EVC, while other abundant weeds include *Rubus fruticosus* (Blackberry) and *Lonicera japonica* (Japanese Honeysuckle).

#### **Creepline Herb-rich Woodland (EVC 164) – (Highlands Southern Fall Bioregion)**

Creepline Herb-rich Woodland occurs on alluvial sand, silt and clay soils between altitudes of 20 - 180m. It occurs in low-gradient swampy gullies within relatively open grassy vegetation and is usually found in association with Valley Grassy Forest. The overstorey is generally comprised of eucalypts including *Eucalyptus ovata* (Swamp Gum) and *E. yarraensis* (Yarra Gum). The midstorey is comprised of scattered shrubs, while grassy/sedgy species make up the ground layer.

Within the survey corridor this EVC is restricted to a single location on the south side of Gulf Road, north of Yarra Glen. The overstorey is dominated by remnant and regenerating *E. yarraensis* (Yarra Gum), while the understorey is highly modified and dominated by introduced grasses.

#### **Grassy Woodland (EVC 175) – Endangered (Central Victorian Uplands Bioregion)**

Grassy Woodland occurs on moderately fertile soils and a range of geologies. The landscape is typically gentle slopes and undulating hills. This vegetation community is a variable open woodland with an overstorey of eucalypts up to 15 - 20m in height. The shrub layer is typically sparse, while the ground layer consists of a diverse range of grasses and herbs (Oates and Taranto 2001).

Within the survey corridor this EVC occurs within the Yea Rise landscape unit. It is present in two forms: woodland and grassland communities. Along roadside reserves, this EVC may be either a sparse woodland with scattered large, old eucalypts, younger regenerating eucalypts and a grassy understorey, or in some areas the eucalypts have been cleared so that only a grassland remains. On private properties the vegetation usually consists of a grassland with few or no remnant large trees. Where the vegetation structure is woodland, the overstorey usually consists of *Eucalyptus camaldulensis* (River Red-gum), with a scattered small tree layer of *Acacia mearnsii* (Black Wattle). For the grasslands, the overstorey is very sparse and may be represented by *E.*



camaldulensis (River Red-gum), *E. microcarpa* (Grey Box) or infrequently, *E. melliodora* (Yellow Box). A sparse midstorey is present in the woodland vegetation, consisting mostly of *Cassinia arcuata* (Drooping Cassinia). For both forms of this vegetation community there is a high diversity of both native and weedy grasses. Abundant native grasses include *Austrodanthonia caespitosa* (Common Wallaby-grass), *A. fulva* (Copper-awned Wallaby-grass), *A. penicillata* (Slender Wallaby-grass), *A. setacea* subsp. *setacea* (Bristle Wallaby-grass), *A. eriantha* (Hill Wallaby-grass), *A. pilosa* (Velvet Wallaby-grass), *Austrostipa rudis* subsp. *rudis* (Veined Wallaby-grass) and *Microlaena stipoides* var. *stipoides* (Weeping Grass). Other less frequent grasses include *Elymus scaber* (Common Wheat-grass) and *Themeda triandra* (Kangaroo Grass). Native forbs and rushes include *Acaena ovina* (Australian Sheep's Burr), *Convolvulus* spp. (Bindweed), *Lomandra filiformis* (Wattle Mat-rush) and *Oxalis perennans* (Grassland Wood-sorrel). Weedy species present at the sites are mostly *Anthoxanthum odoratum* (Sweet Vernal-grass), *Avena* spp. (Oat), *Holcus lanatus* (Yorkshire Fog), *Romulea rosea* (Onion Grass), *Vulpia bromoides* (Squirrel-tail Fescue), *Arctotheca calendula* (Capeweed) and *Phalaris minor* (Lesser Canary-grass). One species listed as nationally Endangered, *Dianella amoena* (Matted Flax-lily), was recorded in the roadside woodland community.

#### **Reed Swamp (EVC 300) – Endangered (Highlands Southern Fall bioregion)**

Reed Swamp occurs along the margins of wetland and permanent water bodies on peaty, silty clay soils at low altitudes (10 - 20m). The vegetation community is an open grassland/sedgeland that is characterised by the absence of a canopy layer and the presence of a dense cover of reeds 2 - 3m tall.

Within the survey corridor this EVC occurs within the Melba South Agricultural Zone / Dixons Creek Floodplain LU. It is confined to a single drainage line crossing Gulf Road and the Melbourne Water aqueduct and has most likely developed following some degree of human disturbance to the drainage line. The tree and shrub layer is generally absent from this EVC besides the occasional presence of *Acacia melanoxylon* (Blackwood). The dense ground cover consists of a relatively low diversity of both native and exotic grasses, rushes, sedges and forbs. The EVC is dominated by *Phragmites australis* (Common Rush), in association with *Alisma plantago-aquatica* (Water Plantain), *Juncus sarophorus* (Broom Rush), *Lythrum hyssopifolia* (Small Loosestrife), *Carex appressa* (Tall Sedge), *Centella cordifolia* (Centella), *Eleocharis acuta* (Common Spike Sedge), *Glyceria australis* (Australian Sweet-grass), *Gratiola peruviana* (Austral Brooklime), *Persicaria decipiens* (Slender Knotweed), *Persicaria praetermissa* (Spotted Knotweed) and *Triglochin procera* (Water Ribbons).

Abundant weedy species present within this EVC include *Cyperus eragrostis* (Drain Flat-sedge), *Holcus lanatus* (Yorkshire Fog), *Rubus fruticosus* (Blackberry), *Paspalum distichum* (Water Couch) and *Ranunculus repens* (Creeping Buttercup).

#### **Fern Swamp (EVC 721) – Vulnerable (Highlands Northern Fall Bioregion) ???**



This EVC occurs in high rainfall areas, mostly along drainage systems. These drainage systems typically support Riparian Thicket, or Cool Temperate Rainforest in more free-draining areas. The sparse overstorey may consist of a few woody species such as tall shrubs or small trees, and occasionally emergent *Eucalyptus ovata* (Swamp Gum). Medium to tall ferns are considered a critical lifeform in defining this vegetation type (Oates and Taranto 2001).

This EVC occurs as a perched swamp at a single location within the survey corridor near the headwaters of the Yea River. The EVC is treeless, apart from a fringing overstorey of *Acacia melanoxylon* (Blackwood) and *Eucalyptus ovata* (Swamp Gum). The midstorey is dominated by an extremely dense thicket of *Gleichenia microphylla* (Scrambling Coral Fern) to 1.6 metres in height, with scattered individuals of *Cyathea australis* (Rough Tree-fern). Other shrubs such as *Coprosma quadrifida* (Prickly Currant-bush), *Acacia verticillata* (Prickly Moses) and *Leptospermum lanigerum* (Woolly Tea-tree) occur on the fringe of the swamp. The ground layer is generally species-poor, apart from where tree falls have created an opening in the dense fern layer for other herbaceous species to thrive. Species that occur in these areas include *Blechnum nudum* (Fishbone Water-fern), *Lindsaea linearis* (Screw Fern), *Baumea tetragona* (Square Twig-sedge), *Eleocharis pusilla* (Small Spike-sedge), *Gahnia sieberiana* (Red-fruit Saw-sedge), *Isolepis inundata* (Swamp Club-sedge), *Lepidosperma elatius* (Tall Sword-sedge) and *Schoenus lepidosperma* subsp. *lepidosperma* (Slender Bog-sedge). There are also a small number of herbaceous species, including *Centella cordifolia* (Centella) and *Selaginella uliginosa* (Swamp Selaginella). The only introduced species detected within this EVC was *Rubus fruticosus* spp. agg. (Blackberry).

#### **Gully Woodland (EVC 902) – Vulnerable (Highlands Southern Fall Bioregion)**

Gully Woodland occurs along moderately steep gullies, mostly on colluvial deposits of sand and silts. The vegetation can be a woodland or open forest with an overstorey layer of eucalypts up to 20m tall. In undisturbed examples, there is typically a fairly dense small tree and shrub layer above an understorey of grasses and sedges, often rich in herbs within the inter-tussock spaces (Oates and Taranto 2001).

Within the survey corridor this EVC occurs along a few isolated ephemeral drainage lines within the Melba South Agricultural Zone / Dixons Creek Floodplain. The overstorey is dominated by *Eucalyptus obliqua* (Messmate), *E. radiata* (Narrow-leaf Peppermint) and *Eucalyptus fulgens* (Green Scentbark). The midstorey is usually characterised by *Acacia melanoxylon* (Blackwood) and *Pomaderris aspera* (Hazel Pomaderris), with some small shrubs including *Coprosma quadrifida* (Prickly Currant-bush) and *Goodenia ovata* (Hop Goodenia). In wetter areas, ferns such as *Cyathea australis* (Rough Tree-fern), *Polystichum proliferum* (Mother Shield-fern) and *Adiantum aethiopicum* (Common Maidenhair) are present in the understorey. Otherwise, the ground layer consists mostly of weedy grasses and herbs such as *Acetosella vulgaris* (Sheep



Sorrel), *Anthoxanthum odoratum* (Sweet Vernal-grass) and *Ehrharta erecta* (Panic Veldt-grass). The main woody introduced species present is *Rubus fruticosus* (Blackberry). Some native species present in the understorey include *Acaena novae-zelandiae* (Bidgee Widgee), *Clematis aristata* (Mountain Clematis) and *Pteridium esculentum* (Austral Bracken).