

Introduction

On the 14th of November 2016, ecologist Karl Just inspected the roadside and rail reserve on the north side of Quarry Road in Woodend for approximately two hours. The aim of the inspection was to document the type and condition of the vegetation and to assess the impact of frequent slashing of parts of the groundflora. While a detailed plant survey was not undertaken, a preliminary list of vascular plant species observed was compiled.

Findings

The vegetation along Quarry Road Reserve is of regional botanical significance. Parts of the site support groundflora of exceptional quality and diversity, containing a rich suite of lilies, orchids, daisies and peas. Such intact examples of herb-rich vegetation have been severely depleted in the region and are now uncommon. It is notable that the site at Quarry Road is one of the best areas for viewing wildflowers in Woodend. The site contains at least two threatened species, including the endangered *Eucalyptus aggregata* (Black Gum) and the rare *Geranium* sp. 3 (Pale-flower Crane's-bill).

Plate 1 - Valley Grassy Forest at Quarry Road with a high cover of lilies and orchids.



Quarry Road contains high quality remnants of two Ecological Vegetation Classes (EVCs), including Valley Grassy Forest (EVC 47) and Grassy Forest (EVC 128), both of which are listed as 'vulnerable' in the Central Victorian Uplands bioregion. Valley Grassy Forest once covered up to 10% of the region, but due

to its occurrence on relatively fertile soils, between 60-70% of this area has now been cleared while less than 30% of that remaining area supports high quality groundflora (pers. observation.). The example at Quarry Road therefore represents part of the small fraction of high quality Valley Grassy Forest remaining.

During the site inspection, a total of 81 indigenous species were recorded. A greater number of species would be recorded during a detailed flora survey.

Table 1 - Indigenous vascular flora species recorded at Quarry Rd in November 2016

Scientific name	Common name	VROT	FFG Act
<i>Acacia dealbata</i> subsp. <i>dealbata</i>	Silver Wattle		
<i>Acacia melanoxylon</i>	Blackwood		
<i>Acaena echinata</i> var. <i>echinata</i>	Sheep's Burr		
<i>Acaena novae-zelandiae</i>	Bidgee-widgee		
<i>Acrotriche serrulata</i>	Honey-pots		
<i>Amphibromus nervosus</i>	Common Swamp Wallaby-grass		
<i>Anthosachne scabra</i> s.s.	Common Wheat-grass		
<i>Arthropodium strictum</i> s.s.	Chocolate Lily		
<i>Austrostipa mollis</i>	Supple Spear-grass		
<i>Austrostipa rudis</i> subsp. <i>rudis</i>	Veined Spear-grass		
<i>Brunonia australis</i>	Blue Pincushion		
<i>Bulbine bulbosa</i>	Bulbine Lily		
<i>Burchardia umbellata</i>	Milkmaids		
<i>Calochilus robertsonii</i>	Purple Beard-orchid		
<i>Chrysocephalum apiculatum</i> s.s.	Common Everlasting		
<i>Chrysocephalum semipapposum</i>	Clustered Everlasting		
<i>Coronidium scorpioides</i>	Button Everlasting		
<i>Craspedia variabilis</i>	Variable Billy-buttons		
<i>Crassula decumbens</i> var. <i>decumbens</i>	Spreading Crassula		
<i>Crassula sieberiana</i> s.l.	Sieber Crassula		
<i>Daviesia leptophylla</i>	Narrow-leaf Bitter-pea		
<i>Dianella admixta</i>	Black-anther Flax-lily		
<i>Dillwynia cinerascens</i> s.s.	Grey Parrot-pea		
<i>Drosera auriculata</i>	Tall Sundew		
<i>Eleocharis acuta</i>	Common Spike-sedge		
<i>Eryngium vesiculosum</i>	Prickfoot		
<i>Eucalyptus aggregata</i>	Black Gum	Endangered	Listed
<i>Eucalyptus ovata</i> var. <i>ovata</i>	Swamp Gum		
<i>Eucalyptus radiata</i> subsp. <i>radiata</i>	Narrow-leaf Peppermint		
<i>Euchiton japonicus</i>	Creeping Cudweed		
<i>Geranium gardneri</i>	Rough Crane's-bill		
<i>Geranium</i> sp. 3	Pale-flower Crane's-bill	Rare	
<i>Geranium</i> sp. 5	Naked Crane's-bill		
<i>Gonocarpus tetragynus</i>	Common Raspwort		
<i>Haloragis heterophylla</i>	Varied Raspwort		

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<i>Hardenbergia violacea</i>	Purple Coral-pea		
<i>Hydrocotyle foveolata</i>	Yellow Pennywort		
<i>Hydrocotyle laxiflora</i>	Stinking Pennywort		
<i>Hypericum gramineum</i>	Small St John's Wort		
<i>Isolepis hookeriana</i>	Grassy Club-sedge		
<i>Isolepis hookeriana</i>	Grassy Club-sedge		
<i>Juncus subsecundus</i>	Finger Rush		
<i>Leptorhynchus squamatus subsp. squamatus</i>	Scaly Buttons		
<i>Leptorhynchus tenuifolius</i>	Wiry Buttons		
<i>Lomandra filiformis subsp. coriacea</i>	Wattle Mat-rush		
<i>Luzula meridionalis var. flaccida</i>	Common Woodrush		
<i>Lythrum hyssopifolia</i>	Small Loosestrife		
<i>Microlaena stipoides var. stipoides</i>	Weeping Grass		
<i>Microseris walteri</i>	Yam Daisy		
<i>Microtis unifolia</i>	Common Onion-orchid		
<i>Montia australasica</i>	White Purslane		
<i>Pentapogon quadrifidus var. quadrifidus</i>	Five-awned Spear-grass		
<i>Pimelea humilis</i>	Common Rice-flower		
<i>Pimelea humilis</i>	Common Rice-flower		
<i>Plantago varia</i>	Variable Plantain		
<i>Poa morrisii</i>	Soft Tussock-grass		
<i>Poa sieberiana var. hirtella</i>	Grey Tussock-grass		
<i>Podolepis jaceoides</i>	Showy Podolepis		
<i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed		
<i>Pteridium esculentum</i>	Austral Bracken		
<i>Ranunculus glabrifolius</i>	Shining Buttercup		
<i>Ranunculus lappaceus</i>	Australian Buttercup		
<i>Rytidosperma erianthum</i>	Hill Wallaby-grass		
<i>Rytidosperma geniculatum</i>	Kneed Wallaby-grass		
<i>Rytidosperma pallidum</i>	Silver-top Wallaby-grass		
<i>Rytidosperma racemosum var. racemosum</i>	Slender Wallaby-grass		
<i>Rytidosperma setaceum var. setaceum</i>	Bristly Wallaby-grass		
<i>Schoenus apogon</i>	Common Bog-sedge		
<i>Sebaea ovata</i>	Yellow Sebaea		
<i>Senecio hispidulus s.l.</i>	Rough Fireweed		
<i>Senecio quadridentatus</i>	Cotton Fireweed		
<i>Stylidium graminifolium s.s.</i>	Grass Trigger-plant		
<i>Thelymitra arenaria</i>	Forest Sun-orchid		
<i>Thelymitra brevifolia</i>	Pepper-top Sun-orchid		
<i>Thelymitra pauciflora s.s.</i>	Slender Sun-orchid		
<i>Themeda triandra</i>	Kangaroo Grass		
<i>Thysanotus tuberosus</i>	Common Fringe-lily		
<i>Tricoryne elatior</i>	Yellow Rush-lily		
<i>Veronica gracilis</i>	Slender Speedwell		
<i>Wurmbea dioica subsp. dioica</i>	Common Early Nancy		

The impact of mowing

While occasional and well timed mowing can be utilised to manage native groundflora in a positive way (i.e. by mow-catch before annual exotic grasses have seeded), frequent and repetitive mowing can have a serious impact. This is particularly the case if indigenous plants are mown during the flowering-seeding stage, which prevents natural reproduction. If this continues, eventually many plants are lost from the system. Mowing can also have other negative effects if it is undertaken when the soil is wet (leading to disturbance to the soil layer by creating deep wheel ruts) or if mowers are set too low (scalping the soil and damaging sensitive plant tissues).

Plate 2 – a group of four sun-orchids that have been recently slashed, removing the flowers. Quarry Road, November 2016.



Recommendations

It is recommended that all sites supporting significant native groundflora at Quarry Road be designated as 'no-mow' areas. These areas will likely require regular weed control to prevent the growth of widespread woody weeds such as English Broom, as well as annual exotic grasses. Intervening areas supporting minimal native groundflora and high weed cover can be continued to be mown to prevent the development of dense weed swards. Some slashing adjacent to Quarry Road may also be required to maintain an adequate fire-break for adjacent houses.