

DEVIATION ROAD, KINGLAKE

BOTANICAL ASSESSMENT

2015/16

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DEVIATION ROAD BOTANICAL ASSESSMENT – 2015/16

SUMMARY

Deviation Road contains good quality indigenous vegetation with a wide spectrum of indigenous species from the remnants of a Wet Forest to a Damp Forest vegetation community. The site has low levels of invasive weeds which, coupled with containing Nationally Threatened Species *Pomaderris vaccinifolia*, justifies its listing as significant roadside vegetation.

AIM

The aim of this investigation is to better understand the botanical values of this roadside. This evidence may assist future management decisions and support the protection and enhancement of the natural landscape of Deviation Road, Kinglake.

INTRODUCTION/ASSESSMENT PURPOSE

The first known botanical assessment of this estimated two hectares of Kinglake roadside vegetation. The assessment includes vegetation structure, species composition, EVC's, locations of any significant or rare plant species, locations of high threat weed species, and quality assessment. The assessment is sponsored by the Upper Goulburn Landcare Network (UGLN) as part of the Ribbons of Remnant Roadside funding by the Victorian State Government. This program seeks to generate better ecological understanding of roadside vegetation and habitat values.

BACKGROUND

LOCATION

The Kinglake District is set in the southern slopes of the Great Dividing Range in Central Victoria. Deviation Road is located centrally in the Kinglake district between Kinglake and Kinglake West. It is also close to the highest point in the



**Rough Treeferns (*Cathea australis*) at
"Wallaby Gully" opposite 161 Deviation Rd**

district at Frank Thompson Reserve which is 662m above sea level (ASL) and is a factor that affects the vegetation found there. It is estimated that the 1.835 km Deviation Road varies between 620-640m ASL. A site map is provided in Figure 1 and Figure 2.



Figure 1: Deviation Road, Kinalake (Length 1835m)



Figure 2: Aerial View of Deviation Road, Kinalake

HISTORY

Kinglake district is within the traditional land of the **Kulin Nation** with Wurundjeri people to the south and Taungurung people to the north, so Deviation Road would possibly have been within an area of interaction between the two peoples. Their specific habitation of this area is still yet to be made known or understood other than it would have been a desirable place to visit at certain times of the year possibly for trading, ceremonies, and there would have been use of much of the flora (and fauna) for food, clothing, medicine, weapons, and possibly traditional firestick farming as practised widely. In fact, recent bushfires across Victoria have revealed previously unrecorded tracks and evidence of habitation that have yet to be properly assessed. There is much conjecture on the lost opportunities to learn from Aboriginal fire management and the abrupt changes imposed by white settlement which, it is claimed, have lead to less regular but more intense fires, now being exacerbated by climate change.

To increase awareness of the cultural value and history of indigenous flora and fauna the author takes this opportunity to include the known Koorie (Aboriginal) use of many of the plants in this area. See Appendix 4 (Koorie/Aboriginal Use of Flora) for more detail.

Initiated in the 1920's, this 1.835 km road was built through an agricultural property owned by the Ford family, apparently as an alternative east-west route to the poor condition then of Gangelhoff Road. After around 50 years of being part of the main Whittlesea-Kinglake Road, Deviation Road is now a side road off of the main Whittlesea/Kinglake Road route perhaps because of its winding and more hazardous nature during weather conditions such as fog. The formerly named Gangelhoff Road having been upgraded with now improved road building methods and reverted to being the main Whittlesea/Kinglake Road in 1980/81. (see map below).

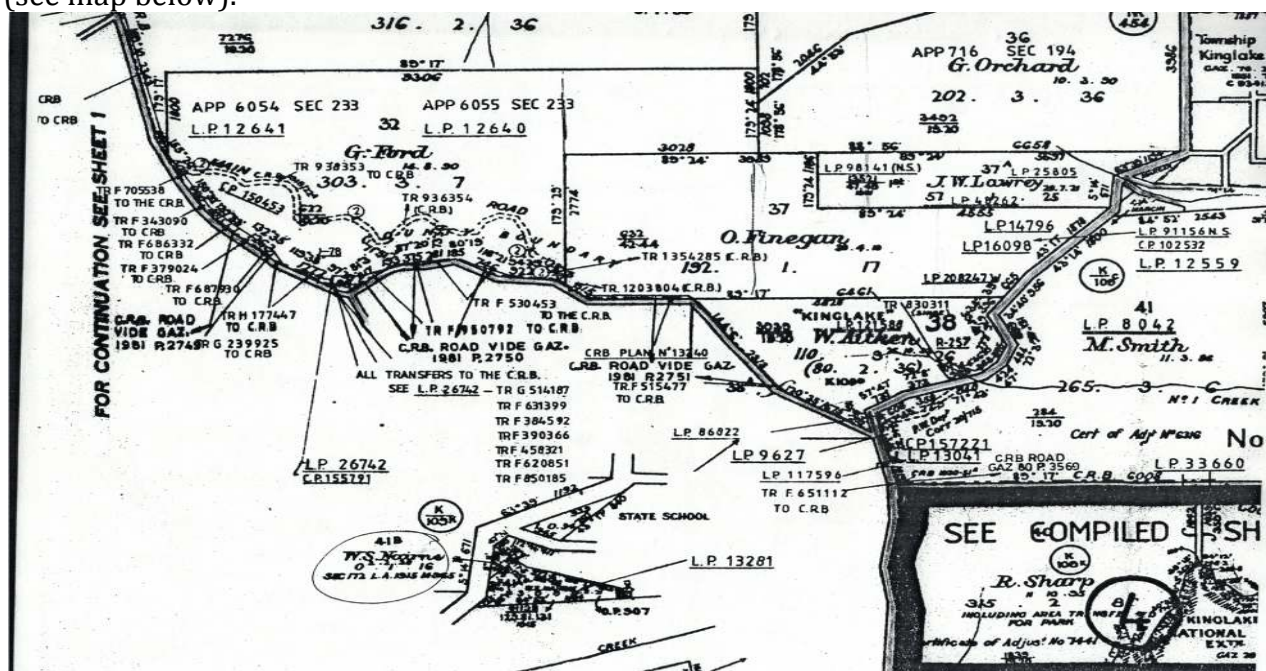


Figure 3: CRB (VicRoads) 1981 Gazettal of the Main Road bypass of Deviation Road

Like much of Kinglake district, the area has been extensively cleared of forest for agricultural purposes and logging since white settlement in the late 1800's. It is suggested by some observers including foresters and arborists that the introduction in the past 150 years to this area of agriculture with its mass clearing, logging, construction of homes, farms, outbuildings, roads and tracks, would have altered the vegetation mix from a much more dominant Mountain Ash community to Mountain Grey Gums, Messmate, with scattered Narrow-leaved Peppermints.

The catastrophic 2009 bush fires destroyed most of the homes along this road and burnt the vegetation so extensively that it is predicted to be many years before pre fire conditions could be restored. Southeast Australia is already one of the most fire prone areas on Earth and it is commonly predicted that fires, assisted by climate change, are drying out the wetter EVC's and changing them, and in this area particularly from Wet (Sclerophyll) to Damp (Sclerophyll) Forest types. As for the roadsides, the major post fire clean up removed many of the roadside trees here and in the district to the concern of local residents and successfully although belatedly lead to a community wide campaign to rein in the perceived overreach of that clean up (post fire photos below from resident Karen).



FLORA VALUES

This location situated on the southern slopes of the Great Dividing Range influences the vegetation communities contained. Where rainfall exceeds 900mm (Kinglake Average Annual Rainfall varies from 850 - 1350 mm) *Eucalyptus* forests are commonly tall (over 30m) with a dense understorey of small trees, especially in sheltered valleys. Kinglake sits on the boundary of the *Highlands Southern Fall* and *Highlands Northern Fall* Bioregions, which are two of the 28 Bioregions as defined by the Victorian State Government. Bioregions are a landscape-scale approach to classifying the environment using attributes such as climate, geomorphology, geology, soils and vegetation. Within these bioregions, further classifying areas into Environmental Vegetation Classes (EVC's) can assist with flora identification.

Desktop assessment using the Department of Environment Land Water & Planning's (DELWP) *Biodiversity Interactive Maps* online tool suggested that there were three EVCs present; Wet Forest (EVC 30), Damp Forest (EVC 29) and Shrubby Foothill Forest (EVC 45), see Figure 4.

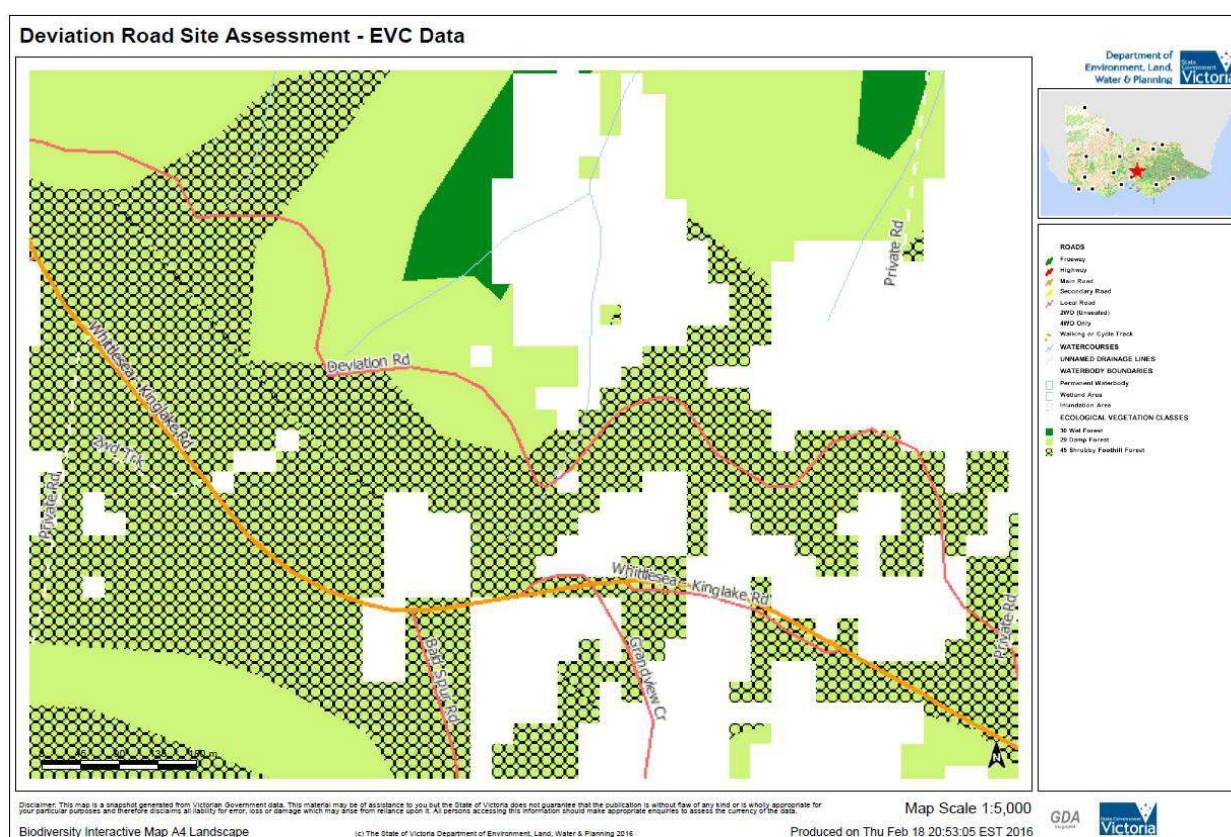


Figure 4: EVC Information, Deviation Road, Kinglake (from Biodiversity Interactive Maps)

While EVCs act as a useful guide, land use history and major disturbances such as logging, agriculture, mining, human habitation and intense bushfires complicate this process of classifying vegetation communities.

RELEVANT AUTHORITIES AND STRATEGIES

Local Government

Although Kinglake District straddles five local government areas, much of the District including Deviation Road is within the boundaries of and thus administered by Murrindindi Shire Council (MSC). MSC have listed Deviation Road as Significant Roadside No 20 which gives it significance within their priorities and is intended to make residents and visitors aware of the values.

Clause 21.05 of the Murrindindi Planning Scheme sets the priorities for environmental protection in the shire. Objective 3 of this local planning policy *Biodiversity and Native Vegetation* includes the strategy to “retain, protect and enhance native vegetation, including roadside vegetation, remnant vegetation areas, large old paddock trees and revegetation areas.” This is supported by the MSC Rural Roadside Management Plan (2014-18)

Water Catchment

Kinglake District straddles two catchments/authorities, Port Philip and Westernport Catchment Management Authority (PPWCMA) and Goulburn Broken Catchment Management Authority (GBCMA). Deviation Road falls just within the GBCMA catchment on the north side of this catchment divide and thus within the GB Regional Catchment Strategy 2012-19.

State Government

Indigenous vegetation is protected by State Government on public land through the Fauna and Guarantee Act, 1988 (FFG), with special consideration for rare or threatened species and more broadly through the Planning and Environment Act. Clause 12.01 of the P&E Act seeks to assist the protection and conservation of Victoria’s biodiversity (including native vegetation) by ensuring that clearing of vegetation and habitat which impacts on biodiversity is regulated through permitted clearing regulations.

Federal Government

The Environment Protection Biodiversity Conservation Act, 1999 (EPBC), contains protections for matters of national environmental significance including certain vegetation communities, fauna, and flora. This includes the Critically Endangered *Pomaderris vacciniifolia* or Round-leaf Pomaderris and has implied legal responsibilities for protection by private land owners and government agencies, which in the Kinglake district includes MSC, Nillumbik Shire Council, GBCMA, PPWCMA, and Parks Victoria.

METHODS

This report was compiled by fieldwork mainly in Summer 2015/16 using visual assessment and field guides research, and report writing. Additional information was



Deviation Road on foggy day

gathered via interviews and personal communications with residents and other stakeholders.

As is a common practice, locations of flora and fauna are not always made clear to avoid potential unlawful or destructive removal.

Disclaimer

Plant identification being mainly during Summer was limiting for some species and follow up is suggested during their flowering times including for some tree species which were also more difficult due to height, lack of flowers and fruit, still burnt bark from recent fires, and the ever present possibility of hybrids.

RESULTS

This botanic assessment identified almost eighty indigenous flora species from trees through shrubs, ground flora, grasses, and ferns in a structure fitting this roadside closer to a Damp Forest type EVC than the original believed to be Wet Forest. The presence has been confirmed of at least one Nationally Threatened Species in profusion (*Pomaderris vacciniifolia*), at least one Rare species within Victoria (*Goodia pubescens*), and at least another ten FFG Protected Flora. The assessment found recent evidence of disturbance included post-fire clearing of trees, inappropriate resident herbicide spraying, but, a reduced occurrence of weeds, especially noxious weeds, with environmental weeds in particular yet to be eradicated.

A full list of recorded flora species is provided in Appendix 1. This inventory of flora species is also presented in Appendix 3 by botanical Family names.

Connectivity

The connectivity of the roadside to the adjacent rural properties, Frank Thompson Reserve, and Kinglake National Park adds to the habitat and biodiversity value as can be seen from the aerial photo in Figure 2. Vegetation cover is close to total for approximately one third of the road, less so at the eastern end where there has also been extensive clearing of the adjoining properties. This also correlates to the vegetation quality with higher quality along the western and middle sections. This connectivity also reduces the deleterious fragmentation and edge effects including increased risk of losing sensitive flora



Tree Lomatia (*Lomatia fraseri*) on northern roadside

(and fauna), reductions in genetic diversity of those sensitive species, increased predation, and competition from species favoured by the disturbance.

Biodiversity

As can be seen by the attached detailed lists of observed species, this road is deservedly considered an area of high biodiversity with remnants of the original vegetation believed to have existed before white settlement less than 200 years ago.

Structure

Along at least half of its length there are tall trees, abundant tree and shrub regrowth, and a diversity of ground flora for most of the length of the road, gradually lessening in diversity and quality towards the more open and cleared eastern end. This multi-layered structure provides more diverse habitat and opportunities for use by a larger number of fauna species. Being seven years since the major 2009 fires, the regrowth has been substantial and the period from 7-10 years is considered by ecologists (Tolhurst pers comm and Lindenmayer) to be a potentially dangerous period for another intense fire because of increased fuel loads in these types of vegetation communities.

EVCs

Initial assessments suggested that Deviation Road is within a changing mixture from Wet (Sclerophyll) Forest tending to Damp (Sclerophyll) Forest with some features of other EVC's such as Scrubby Foothill Forest (as documented via Biodiversity Interactive Maps), as well as Riparian Forest, and Herb rich Foothill Forest.

Trees

Many potential habitat trees and fallen logs have been cleared particularly after the 2009 fires (see below and earlier photos).



Treestump after July 2009 clearing

trunks mainly on private adjacent lands which do not appear to be mature enough to offer significant hollows.

Despite intermittent clearing, as evidenced by the number and size of the stumps, tree species include *Eucalyptus regnans* (Mountain Ash), *E. radiata* (Narrow-leaved Peppermint), *E. obliqua* (Messmate) and *E. cypellocarpa* (Mountain Grey Gum) with possible/probable hybrids which invites further closer arboreal study. Mountain Ash tends to the less exposed east i.e. northeast and southeast, whereas Mountain Grey Gum and Messmate are found more in the exposed west and southwest, and partly southeast. There are dead tall

Shrubs

There is a healthy range of shrubs including extensive clumpings of *Pultenaea muelleri* (Mueller's Bush-pea), *Goodenia ovata* (Hop Goodenia), *Pomaderris vacciniifolia* (Round-leaf Pomaderris), *Coprosma quadrifida* (Prickly Currant-bush), with scattered *Senecio linearifolius* (Fireweed Groundsel), *Prostanthera lasianthos* (Victorian Christmas Bush), *Pomaderris aspera* (Hazel Pomaderris), *Cassinia aculeata* (Dogwood), *Pimelea axiflora* (Bootlace Bush), *Goodia pubescens* (Silky Gold Tip), *Coprosma hirtella* (Rough Coprosma), and Wattle species including the abundant *Acacia quinquinervia* (Mountain Hickory Wattle), *Acacia mucronata* (Narrow-leaf Wattle), *Acacia dealbata* (Silver Wattle), *Acacia verticillata* (Prickly Moses), the endemic *Acacia melanoxylon* (Blackwood), and a solitary *Lomatia fraseri* (Tree Lomatia).



Round-leaf Pomaderris growing on Deviation Road



Rose Hyacinth-Orchid (*Dipodium roseum*) amongst Pink Bells (*Tetratheca ciliata*)

Groundflora

A diverse range of ground flora was recorded, common to the EVC. This included *Dipodium roseum* (Rosy Hyacinth-Orchid), *Tetratheca ciliata* (Pink Bells), *Viola hederaceae* (Ivy-leaf Violet), and *Wahlenbergia gracilis* (Sprawling Bluebell).

Grasses

Commonly recorded grasses include species such as *Poa ensiformis* (Purple-sheathed Tussock Grass), *Poa tenera* (Slender Tussock Grass), *Poa morrissii* (Velvet Tussock Grass), *Poa sieberiana* (Grey Tussock Grass), *Microlaena ericoides* (Weeping Grass) and *Tetrarrhena juncea* (Forest Wire-grass). Other sedge and grasslike life forms noted include

Gahnia sieberiana (Red-fruited Sawsedge), *Lepidosperma elatius* (Tall Sword-sedge), *Lepidosperma laterale* (Variable Sword-sedge), and *Dianella tasmanica* (Tasman Flax-lily).

Climbers

Common climbers found along Deviation Road include *Clematis aristata* (Mountain Clematis), *Clematis glycenoides* (Forest Clematis), and *Billardiera scandens* (Apple-berry).

Ferns

Deviation Road is rich in tree and ground ferns, especially in wetter shady locations. Fern species recorded include *Cyathea australis* (Rough Treefern), *Dicksonia antarctica* (Smooth Tree-fern), *Pteridium esculentum* (Austral Bracken), and *Polystichum proliferum* (Mother Shield Fern) known in adjacent gullies.

Fungi, lichens, mosses, and mistletoes

These life forms are often cryptic to identify and not always found or easily identified on roadsides. Unidentified lichen was observed on tree trunks and all deserve further exploration at a more appropriate time of year such as around May for Fungi.

Habitat

The habitat at this in site is sufficient to allow for a diversity of wildlife including Lyrebirds, Wombats, Echidnas, Bandicoots, Possums as well as exotic species like Foxes and Rabbits. Residents also report a wide diversity of birdlife. Local birds would be attracted by the diversity of food, shelter, and foliage for nesting, although there were no tree hollows sighted in the roadside vegetation in this (admittedly height limited) assessment.

Fauna

Fauna sightings were not aims of the assessment, but, flora as habitat is important so it is worthwhile to include known or opportunistic sightings/observations such as the Long-nosed Bandicoots (diggings and photos), Lyrebirds, and many other bird species (see Appendix 2). It is worth noting that there has also been unconfirmed observation of a Quoll including tracks by HLM contractor in 2011 which is not the first sighting in the area over recent years.



***Pomaderris vacciniifolia* flowering in Kinglake West**



DISCUSSION

RARE OR THREATENED SPECIES

Pomaderris vacciniifolia (Round-leaf Pomaderris) was declared as a Nationally Threatened Species in 2008 after concern over its possible demise during the construction of the North-South Pipeline through nearby Castella/Toolangi district where it was believed the last 150 plants were known to exist. The 2009 Bushfires appear to have promoted the growth of *Pomaderris vacciniifolia* where it has not been identified previously including in Deviation Road on the roadside and in neighbouring properties. Of note is property No 110 Deviation Road, home of Kinglake Landcare Group (KLG) members, where very many of these shrubs can be found particularly in an area on their property near the road (500+). On this property plants are growing along their driveway and out across the roadside on both sides of the road (see map). Other patches occur particularly along the southern roadside including a 20m long patch of 50+ plants just further east around the MSC Significant Roadside sign. *Pomaderris vacciniifolia* on the roadsides are often growing alongside similar numbers of *Spyridium parvifolium* (Dusty Miller) and amongst the abundant *Pultenaea muelleri* (Mueller's Bush-pea).

With a state conservation status of Rare within Victoria, *Goodia pubescens* (Silky Golden Tip), formerly known for a long time as *Goodia lotifolia* var. *pubescens*, was also found scattered along the roadside. It is also well represented in other areas in the district including in the Kinglake National Park with a limited distribution in Southern Victoria and Tasmania. Occasionally mistaken for the weedy *Genista monspessulana* (Cape Broom) and can be inadvertently eradicated.

Several of the species along this road are listed as Protected Flora under the FFG Act, including *Prostanthera lasianthos*, *Pomaderris vacciniifolia*, *Acacia mucronata* var. *mucronata*, *Acacia verticillata*, *Cassinia aculeata*, *Olearia argophylla*, *Olearia lirata*, *Dipodium roseum*, and *Senecio* spp., although this limited protection only applies to public land.



Significant Roadside (No 20) is the designation of Deviation Road by MSC particularly due to the presence of the *Pomaderris vacciniifolia* (Round-leaf Pomaderris), the rare *Goodia pubescens* (Silky Golden-tip) and other general biodiversity values. The 2009 Bushfires appear to have promoted the growth of *Pomaderris vacciniifolia* where it had not been identified previously. This phenomenon is not uncommon with several plant species becoming more abundant after fires such as *Acacia dealbata* (Silver Wattle), *Pultenaea* spp. (Bush-peas), and *Olearia* spp. (Daisy Bushes) which are then observed to reduce over time until the next fire.



MSC Significant Roadside signage on Deviation Rd

LAND USE THREATS & OPPORTUNITIES

The fragmentation of bushland since white settlement, consequent disturbance such as weed invasions, probable changed fire regimes leading to more severe bushfires as in 2009 have all altered the vegetation community of the area, but, the roadside vegetation appears to have adapted to these processes and confirmed the biodiversity value of this roadside.

Local residents/landowners

District surveys over the years, including since the 2009 bushfires, have expressed strong residents' desire to live here for the rural lifestyle and natural landscapes. This is in reality usually tempered by practical considerations of fire protection, space for workshops, sheds, domestic animals, driveways, water tanks, etc. Deviation Road residents and landowners were not surveyed formally, but, several with a known interest were approached (such as KLG members) and those that approached us or who we met as we surveyed the roadside. The level of awareness by local residents/landowners varies from an absentee landowner with perceived issues through to those with a better than average knowledge of the indigenous flora and fauna of several residents. This included a local botanist from an adjoining road met while exercising during the assessment. Most people approached or contacted during the site assessment usually appeared pleasantly surprised at the biodiversity of the site when discussed and often expressed interest in further knowledge.

Pest Plants

Although roadsides are themselves important to the spread of weeds, this roadside is relatively cleaner of pest plants due to UGLN, KLG, MSC and resident works in recent years including MSC programmed roadside weed control by specialist contractors during this survey. Residents, particularly KLG members, and this author have been involved in weed control in recent years and can personally attest to



Vegetation clearing and spraying of roadside done as part of adjacent property 'clean up' works



Local weed Tutsan, *Hypericum androsaemum*

the weed reduction despite prolific vegetation regrowth aided by more consistent rainfall since the 2009 fires compared with the pre-fire drought years. A roadside assessment for noxious weeds by HLM for an MSC Weeds Tender submission in October 2015 observed occasional *Genista monspessulana* (Cape Broom) and *Rubus* spp. agg. (Blackberry) with environmental weeds including a large patch of *Myosotis sylvatica* (Wood Forget-me-not) and a large patch of *Hypericum perforatum* (Tutsan) both halfway along on the northside, occasional *Onopordum acanthium* ssp. *acanthium* (Scotch Thistles), and *Ilex aquifolium* (Holly). This current assessment saw evidence of very recent weed control by “cut’n’paint” and herbicide spraying, particularly of noxious weeds and some environmental weeds. The assessment has also revealed a small, almost hidden, patch of persistent probable garden escapes *Tradescantia fluminensis* (Wandering Creeper), and a creeping lengthy patch of *Symphytum officinale* (Common Comfrey), both on the north-western roadside. Weedy grasses occur in patches along the roadside and in adjacent properties possibly exacerbated by poorly targeted herbicide spraying, storm and/or roadside maintenance disturbance e.g. the *Tradescantia* is located around a patch of excess road gravel.

Pest Animals

Rabbits are easily sighted and there is also evidence of their diggings. Deer have been a regular problem noted by some residents. There has been some resident rabbit burrow destruction in the Deviation Road area, with limited success. Indian Myna traps have also been used to remove this bird pest in Deviation Road on some properties.

Erosion

Some limited erosion particularly after significant rainfall shortly after the 2009 bushfires, and some limited erosion onto the road from poorly maintained steep driveways.

Dumping

Roadside dumping appears to be limited compared with some other roads in the district. However, green waste dumping is often the cause of weed infestations particularly of succulents such as *Tradescantia*. The weedy Comfrey is, as a resident observed, probably spreading as a garden escapee from a nearby property adjoining a gully.



Garden Escapee Weed, Common Comfrey *Symphytum officinale*

Damaging Herbicide Spraying

Excessive or inappropriate herbicide spraying happens even on signed significant roadside areas, and spraying regularly by a resident (or residents) on Deviation Road effectively has killed off most ground flora from road edge to the fence line at the particular locations shown in the photos below. MSC has previously advised that under the Road Management Act and the MSC Rural Roadside Management Plan residents may spray out all veg 1.5m from road verge. However, this unfortunately often includes the steeper roadside slopes and cuttings which, because of their inaccessibility to vehicles and domestic mowing/slashing equipment, often contain intact patches of indigenous vegetation, and these generally poorer soils also tend to favor the indigenous plants and not the weeds. Excessive or poor herbicide spraying of roadsides can eradicate indigenous flora substituting more vigorous and invasive weeds, or eradicating all ground flora, as can be seen at the western end of Deviation Road.



Fence line herbicide spraying along Deviation Road



Sprayed out from fenceline to roadside



RECOMMENDATIONS

Community/residents

As reported, the level of awareness of their vegetation community by local residents/landowners is varied, but, this assessment revealed interest in further knowledge. As local community groups are the closest organisations to the people by their very nature, so workshops on “your local environment” with advice to residents re value of their roadsides should be considered.

It is suggested that State and local government give more support to community groups such as Landcare that currently help to protect and enhance the ecology of the area.

Local Government

Local government is the closest level of government to the people and of the district and is the managing authority of local roads such as Deviation Road.

In recent years, it is considered that MSC has had a greater awareness and made progress in initiating and/or upgrading road maintenance, and particularly with weed control through specialist contractors with working knowledge of indigenous and weedy species. There appears to be a need for further cooperative advice to residents through workshops, sponsoring community activities such as Landcare workshops, and botanical tours to raise the level of awareness of local residents.

Limited green waste delivery at the Kinglake Transfer Station at peak bushfire periods is a positive for the area by reducing the illegal dumping of green waste. Consideration could be given to an all year round free service to further reduce illegal dumping and also reduce resident burn offs.

State Government

Recent changes to legislation in Victoria have transferred the responsibility for noxious weeds on roadside to Local Government from a former State responsibility. However, this transfer of responsibilities has not apparently been accompanied by sufficient resources to enable that to happen, especially for rural shires with large areas of responsibility and limited growth areas compared to many urban local governments.

Parks Victoria manages nearby Kinglake National Park and a scarcity of resources for community education, weed control etc. has a limiting effect on their ability to more effectively protect and enhance the flora and fauna of the district, and thus indirectly connectivity with Deviation Road.

Most other State agencies such as DELWP are administered from outside the Kinglake District which, combined with funding restraints, can limit their local activities and enforcement of the FFG Act etc.

Road maintenance, and particularly limited funding of vegetation maintenance of the adjoining VicRoads (Whittlesea-Kinglake Road) can also affect Deviation Road including its habitat connectivity.

APPENDIX 1 - FLORA SPECIES (Alphabetical by species)

Indigenous Flora

<i>Acacia dealbata</i>	Silver Wattle
<i>Acacia howittii</i> #	Sticky Wattle (probably planted, now naturalised)
<i>Acacia melanoxylon</i>	Blackwood
<i>Acacia mucronata</i> var <i>longifolia</i>	Narrow-leaf/Variable Sallow Wattle
<i>Acacia obliquinerva</i>	Mountain Hickory Wattle
<i>Acacia verticillata</i>	Prickly Moses
<i>Acaena novae-zelandiae</i>	Bidgee-widgee
<i>Banksia marginata</i> #	Silver Banksia
<i>Callistemon sieberi</i>	River Bottle-brush (possibly planted)
<i>Cassinia aculeata</i>	Dogwood/Common Cassinia
<i>Clematis aristata</i>	Austral/Mountain Clematis
<i>Clematis glycenoides</i> #	Forest Clematis
<i>Coprosma hirtella</i>	Rough Coprosma
<i>Coprosma quadrifida</i>	Prickly Currantbush
<i>Cyathea australis</i>	Rough Tree-fern
<i>Dianella</i> sp	Rough Flax-lily
<i>Dianella tasmanica</i>	Tasman Flax-lily
<i>Dichondra repens</i> #	Kidney-weed
<i>Dicksonia antarctica</i> *	Soft Tree-fern
<i>Dipodium roseum</i>	Rosy Hibiscus Orchid
<i>Dryopoa dives</i> #	Giant Mountain Grass
<i>Dysphania pumilio</i> #	Crumbweed/Goosefoot
<i>Echinopogon ovatus</i> #	Forest Hedgehog Grass
<i>Eucalyptus cypellocarpa</i>	Mountain Grey Gum
<i>Eucalyptus obliqua</i>	Messmate
<i>Eucalyptus radiata</i>	Narrow-leaved Peppermint
<i>Eucalyptus regnans</i>	Mountain Ash
<i>Gahnia sieberiana</i>	Redfruited Saw-sedge
<i>Geranium potentilloides</i>	Soft Crane's-bill
<i>Gonocarpus tetragynus</i>	Common Raspwort
<i>Goodia pubescens</i>	Silky Golden Tip
<i>Goodenia ovata</i>	Hop Goodenia
<i>Hedycarya angustifolia</i>	Austral Mulberry
<i>Helichrysum luteoalbum</i>	Jersey Cudweed
<i>Hydrocotyle hirta</i> #	Hairy Pennywort
<i>Juncus procerus</i>	Tall Rush
<i>Juncus pallidus</i>	Pale Rush
<i>Lepidosperma elatius</i>	Tall Sword-sedge
<i>Lomandra longifolia</i> var <i>longifolia</i>	Spiny-headed Mat-rush
<i>Lomatia fraseri</i>	Tree Lomatia
<i>Melaleuca armillaris</i>	Giant Honey-myrtle (probably planted)
<i>Microlaena stipoides</i>	Weeping Grass
<i>Olearia argophylla</i>	Musk Daisy-bush
<i>Olearia lirata</i>	Snowy Daisy-bush

Pimelea axiflora
Pittosporum bicolor
Plantago debilis #
Poa ensiformis
Poa morrisii
Poa sieberiana var *sieberiana*
Poa tenera
Poranthera microphylla
Polyscias sambucifolia
Polystichum proliferum #
Pomaderris aspera
Pomaderris racemosa #
Pomaderris vacciniifolia
Prostanthera lasianthos
Pteridium esculentum
Pultenaea muelleri var *muelleri*
Pultenaea scabra #
Ranunculus glabrifolius #
Rubus parvifolius
Rumex brownii #
Sambucus gaudichaudiana
Senecio glomeratus var *glomeratus*
Senecio linearifolius var *denticulatus*
Solanum aviculare
Spyridium parvifolium
Stackhousia monogyna #
Stellaria flaccida #
Tetratheca ciliata
Tetrarrhena juncea
Urtica incisa
Viola hederacea
Wahlenbergia gracilis
 Unidentified Lichen

Bootlace Bush
 Banyalla
 Slender/Shade Plantain
 Purple-sheathed Tussock Grass
 Velvet Tussock-grass
 Grey Tussock-grass
 Slender Tussock-grass
 Small Poranthera
 Elderberry Panax
 Mother Shield Fern
 Hazel Pomaderris
 Slender/Cluster Pomaderris
 Round-leaf Pomaderris
 Victorian Xmas Bush
 Austral Bracken
 Muellers Bush-pea
 Rough Bush-pea
 Shining Buttercup
 Native Raspberry
 Swamp Dock/Slender Dock
 White Elderberry
 Annual Fireweed
 Fireweed Groundsel
 Kangaroo Apple
 Dusty Miller
 Creamy Candles
 Forest Starwort
 Pink Bells
 Forest Wiregrass
 Scrub Nettle
 Ivy-leaf Violet
 Sprawling Bluebell

Exotic Flora

Acer pseudoplatanus #
Acetosella vulgaris #
Anagallis arvensis
Anthoxanthum odoratum
Agapanthus praecox ssp *orientalis*
Centaureum erythraea
Cirsium vulgare
Conyza sp #
Crocus x crocosmiiflora #
Cynodon dactylon #
Cyperus eragrostis
Dactylis glomerata
Ehrharta erecta #
Genista monspessulana
Holcus lanatus
Hypericum androsaemum

Sycamore Maple
 Sheep Sorrel
 Scarlet Pimpernel
 Sweet Vernal Grass
 Agapanthus
 Common Centaury/Pink Stars
 Spear Thistle
 Fleabane
 Montbretia
 Couch Grass
 Cut-drain Sedge
 Cocksfoot
 Veldt Grass
 Montpellier Broom/Cape Broom
 Yorkshire Fog
 Tutsan



<i>Hypochaeris radicata</i>	Cats-ears
<i>Ilex aquifolium</i>	Holly
<i>Lotus angustissimus</i>	Slender Birdsfoot Trefoil
<i>Myosotis sylvatica</i>	Wood Forget-me-not
<i>Navarretia squarrosa</i> #	Californian Stinkweed
<i>Onopordum acanthium</i> ssp <i>acanthium</i>	Scotch Thistle
<i>Phalaris</i> sp #	Canary Grass
<i>Plantago lanceolata</i>	Narrow Plantain/Ribwort
<i>Prunella vulgaris</i>	Self-heal
<i>Rubus fruticosus</i> agg	European Blackberry spp
<i>Rubus laciniatus</i>	Cut-leaf Blackberry
<i>Solanum nigrum</i> #	Black-berry Nightshade
<i>Symphytum officinale</i>	Common Comfrey
<i>Taraxacum officinale</i>	Dandelion
<i>Tradescantia fluminensis</i>	Wandering Creeper
<i>Trifolium repens</i> var <i>repens</i>	White Clover
<i>Verbascum thapsus</i> ssp <i>thapsus</i> #	Great Mullein
<i>Viola odorata</i>	Sweet Violet
<i>Watsonia bulbillifera</i> #	Bulbil Watsonia

- found within 2 km of Deviation Road

APPENDIX 2 FAUNA SPECIES

Indigenous Fauna (Common Names only)

Long-nosed Bandicoots
Gang Gang Cockatoos
Galahs
Golden Whistler
Ringtail Possums
Mountain Brushtail Possums
King Parrots (see photo)
Three-lined or Striped Skink
Sulphur-crested Cockatoos
Superb Fairy-wrens
Superb Lyrebirds
Eastern Rosella
Crimson Rosella
Swamp Wallabies
Marbled Geckoes
Eastern Grey Kangaroos
More birds...



Male King Parrot on fenceline

Exotic fauna

Sambar (?) Deer
Rabbits (Abundant)
Indian Mynas

APPENDIX 3 – FLORA SPECIES (by Family)

FERNS AND ALLIES

Cyatheaceae

Cyathea australis Rough Tree-fern

Dennstaedtiaceae

Pteridium esculentum Austral Bracken

Dicksoniaceae

Dicksonia antarctica Soft Tree-fern

Dryopteridaceae

Polystichum proliferum # Mother Shield-fern

MONOCOTYLEDONS

Liliaceae/Agapanthaceae

**Agapanthus praecox* ssp *orientalis* Agapanthus

Liliaceae/Asparagaceae

Lomandra longifolia var *longifolia* Spiny-headed Mat-rush

Commelinaceae

* *Tradescantia fluminensis* Wandering Creeper

Cyperaceae

**Cyperus eragrostis* Drain Flat-sedge

Gahnia sieberiana Red-fruited Saw-sedge

Lepidosperma elatius Tall Sword-sedge

Lepidosperma laterale Variable Sword-sedge

Gentianaceae

**Centaurea erythraea* Common Centaury/Pink Stars

Hemerocallidaceae

Dianella tasmanica Tasman Flax-lily

Dianella sp Rough Flax-lily

Iridaceae

**Crocasmia X crocosmiiflora* # Montbretia

**Watsonia meriana* var *bulbillifera* # Bulbil Watsonia

Juncaceae

Juncus procerus Tall Rush

Juncus pallidus Pale Rush

Orchidaceae

Dipodium roseum Rosy Hyacinth-Orchid

Poaceae

* *Anthoxanthum odoratum* Sweet Vernal-grass

* *Cynodon dactylon* # Couch

* *Dactylis glomerata* Cocksfoot

Dryopoa dives # Giant Mountain-grass

Echinopogon ovatus # Forest Hedgehog Grass

* *Ehrharta erecta* # Veldt Grass

* *Holcus lanatus* Yorkshire Fog

Microlaena stipoides Weeping Grass



* *Phalaris* sp # Canary Grass
Poa ensiformis Purple-sheathed Tussock-grass
Poa morrissii Velvet Tussock-grass
Poa sieberiana var *sieberiana* Grey Tussock-grass
Poa tenera Slender Tussock-grass
Tetrarrhena juncea Forest Wire-grass

DICOTYLEDONS

Aceraceae

**Acer pseudoplatanus* # Sycamore Maple

Adoxaceae

Sambucus gaudichaudiana White Elderberry

Aquifoliaceae

**Ilex aquifolium* Holly

Araliaceae

**Hydrocotyle hirta* Hairy Pennywort

Polyscias sambucifolia Elderberry Panax

Asteraceae

Cassinia aculeata Dogwood/Common Cassinia

**Cirsium vulgare* Spear Thistle

**Conyza* sp # Fleabane

**Delairea odorata* # Cape Ivy

Helichrysum luteoalbum Jersey Cudweed

**Hypochaeris radicata* Cat's-ears/Flatweed

**Lotus angustissimus* Slender Birdsfoot Trefoil

Olearia argophylla Musk Daisy-bush

Olearia lirata Snowy Daisy-bush

**Onopordum acanthium* ssp *acanthium* Scotch Thistle

Senecio glomeratus var *glomeratus* Annual Fireweed

Senecio linearifolius var *denticulatus* Fireweed Groundsel

* *Sonchus asper* s.l. Rough Sow-thistle

* *Sonchus oleraceus* Common Sow-thistle

**Taraxacum officinale* Dandelion

Boraginaceae

**Myosotis sylvatica* Wood Forget-me-not

**Symphytum officinale* Common Comfrey

Campanulaceae

Wahlenbergia gracilis Sprawling Bluebell

Caryophyllaceae

Stellaria flaccida # Forest Starwort

Celastraceae

Stackhousia monogyna # Creamy Candles

Chenopodiaceae

**Chenopodium album* Fat Hen

Dysphania pumilio # Crumbweed/Goosefoot

Clusiaceae

**Hypericum androsaemum* Tutsan

Convolvulaceae

Dichondra repens # Kidney Weed

Elaeocarpaceae

Tetratheca ciliata Pink Bells

Euphorbiaceae

Poranthera microphylla s.s. Small Poranthera

Fabaceae

**Genista monspessulana* Montpellier Broom/Cape Broom

Goodia pubescens Silky Golden-tip

**Melilotus* spp. Melilot

Pultenaea muelleri var. *muelleri* Muellers Bush-pea

Pultenaea scabra # Rough Bush-pea

**Trifolium repens* var. *repens* White Clover

Geraniaceae

Geranium potentilloides Soft Crane's Bill

Goodeniaceae

Goodenia ovata Hop Goodenia

Haloragaceae

Gonocarpus tetragynus Common Raspwort

Lamiaceae

Prostanthera lasianthos Victorian Christmas-bush

**Prunella vulgaris* Self-heal

Mimosaceae

Acacia dealbata Silver Wattle

Acacia howittii # Sticky Wattle (probably planted and now naturalised)

Acacia melanoxylon Blackwood

Acacia mucronata var. *longifolia* Narrow-leaf/Variable Sallow Wattle

Acacia obliquinerva Mountain Hickory Wattle

Acacia verticillata Prickly Moses

Monimiaceae

Hedycarya angustifolia Austral Mulberry

Myrtaceae

Callistemon sieberi River Bottle-brush (possibly planted)

Eucalyptus cypellocarpa Mountain Grey-gum

Eucalyptus obliqua Messmate

Eucalyptus radiata Narrow-leafed Peppermint

Eucalyptus regnans Mountain Ash

Melaleuca armillaris Giant Honey-myrtle (probably planted)

Oxalidaceae

Oxalis perennans Wood Sorrel

Pittosporaceae

Pittosporum bicolor Banyalla

Polemoniaceae

**Navarretia squarrosa* # Californian Stinkweed

Polygonaceae

**Acetosella vulgaris* Sheep Sorrel #

Rumex brownii Swamp Dock/Slender Dock #

Primulaceae

Anagallis arvensis Scarlet Pimpernel

Proteaceae

Banksia marginata # Silver Banksia

Lomatia fraseri Tree Lomatia

Ranunculaceae

Clematis aristata Austral/Mountain Clematis

Clematis glycenoides # Forest Clematis

**Ranunculus repens* Creeping Buttercup



Ranunculus glabrifolius # Shining Buttercup

Rhamnaceae

Pomaderris aspera Hazel Pomaderris

Pomaderris racemosa # Slender/Cluster Pomaderris

Pomaderris vacciniifolia Round-leaf Pomaderris

Spyridium parvifolium Dusty Miller

Rosaceae

Acaena novae-zelandae Bidgee-widgee

**Rubus lacianatus* Cut-leaf Blackberry

Rubus parvifolius Native Raspberry

**Rubus fruticosus* agg European Blackberry Species

Rubiaceae

Coprosma hirtella Rough Coprosma

Coprosma quadrifida Prickly Currant-bush

**Galium aparine* # Cleavers

Scrophulariaceae

**Verbascum thapsus* ssp *thapsus* Great Mullein

Solanaceae

Solanum aviculare Kangaroo Apple

**Solanum nigrum* s.s #. Black-berry Nightshade

Thymeleaceae

Pimelea axiflora Bootlace Bush

Urticaceae

Urtica incisa Scrub Nettle

Veronicaceae

Plantago debilis Slender/Shade Plantain

**Plantago lanceolata* Narrow Plantain/Ribwort

**Plantago major* Greater Plantain

Veronica notabilis # Forest Speedwell

Violaceae

Viola hederacea Ivy-leaf Violet

**Viola odorata* Sweet Violet

* - Exotic Flora

- found within 2 km of Deviation Road

APPENDIX 4 – KOORIE (Aboriginal) USE OF FLORA

Many of the plants found in Deviation Road are species used by Aboriginal people across Victoria including **for food, fibre, adhesives, and implements**. From Beth Gott in Flora of Victoria Volume 1 is explained the following uses of these local species:

Acacia dealbata resin for adhesives, inner bark for string, bark for buckets, and wood for axe handles, *Acacia melanoxylon* inner bark for string, wood for woomeras, shields, and throwing sticks, and bark infusion for rheumatic joints, *Acacia verticillata* bark for string fishing lines, *Banksia* spp. cones for fire carriers, *Eucalyptus* spp. (especially stringybarks) inner bark for string, bags, and nets, *Hedycarya angustifolia* (Djelwuck) wood for firedrills and spear ends, *Juncus* spp. stems for baskets and string, *Lepidosperma* spp. leaves for baskets, *Lomandra longifolia* leaves for baskets and net bags, *Melaleuca* spp. paperbark for swaddling, *Pimelea axiflora* bark as string for fine nets, *Poa ensiformis* leaves and stems for string and baskets, *Pomaderris aspera* wood for pegs stretching animal skins, *Prostanthera lasianthos* (Corranderk) stems for fire drill; and food and medicine from all parts of plants including seeds, flowers, roots, and leaves - *Acacia dealbata* gum for food and also applied to sores and wounds, and bark infusion for indigestion, *Coprosma* spp. berries, *Cyathea australis* and *Dicksonia antarctica* heart of the stems, and *Cyathea* stalks of young leaves as a tonic, *Eucalyptus* spp. flowers for nectar and seed, and gum for toothache, *Geranium* spp. tubers, *Helichrysum luteoalbum* (in Qld) leaf infusion for general sickness, *Lomandra* spp. flowers for nectar, *Orchidaceae* tubers of most species, *Polyscias sambucifolia* fleshy fruit, *Pteridium esculentum* rhizomes (and in Qld young stem for insect bites), *Rubus* spp. fleshy fruits, *Sambucus* spp. drupes, *Solanum* spp. ripe berries, and *Urtica incisa* poultices of leaves and stems for sprains (and in NSW as a poultice for rheumatism).

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