## Roadside Vegetation and Conservation Values in the Shire of Kent

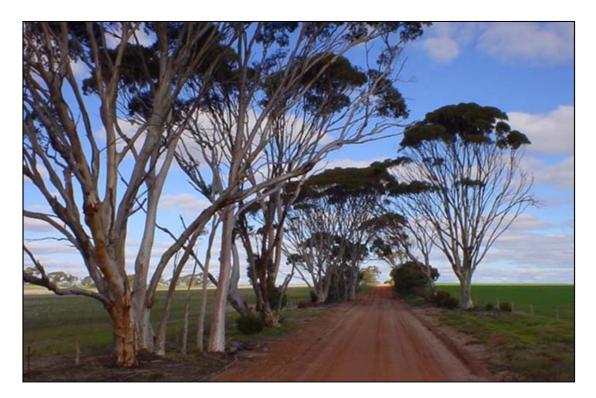


Photo by E. Maesepp



Roadside Conservation Committee

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#### **Executive Summary**

This report provides an overview of the conservation status of roadside remnant vegetation in the Shire of Kent. The report primarily provides detailed results of the roadside survey and is accompanied by management recommendations. It also briefly describes the natural environment in Kent, legislative considerations and threats to conservation values.

Aware of the need to conserve roadside remnants, the Shire of Kent, local community members and the Nyabing-Pingrup Land Conservation District Committee (LCDC) liaised with the Roadside Conservation Committee (RCC) in 2004 to survey roadsides in their Shire. Surveys to assess the conservation values of roadside remnants were conducted between September and November 2004 and February and March 2005. The majority, 92%, of the Shire's 1,306 km of roadsides were assessed by the RCC for their conservation status and maps were produced via a Geographic Information System (GIS). Roadside locations of six nominated weeds and salt affected roadsides were also recorded and mapped onto separate clear overlays.

The results of the survey indicated that high conservation value roadsides covered 64% of the roadsides surveyed in the Shire, with medium-high conservation value roadsides accounting for 18%. Medium-low and low conservation value roadsides occupied 10% and 9%, respectively. A more detailed analysis of results is presented in Part C of this report.

It is envisaged that the primary purpose of the roadside survey data and Roadside Conservation Value (RCV) map will be for use by Shire and community groups as a management and planning tool. Applications may range from prioritising work programs to formulating management strategies. Past experience has shown that this document and the accompanying maps are valuable in assisting with:

- formulating a roadside vegetation management plan for roads maintenance work;
- identifying degraded areas for strategic rehabilitation or specific management techniques and weed control programs;
- re-establishing habitat linkages throughout the Shire's overall conservation network;
- developing regional or district fire management plans;
- identifying potential tourist routes, i.e. roads with high conservation value would provide visitors with an
  insight into the remnant vegetation of the district; and
- incorporating into Landcare or similar projects for 'whole of' landscape projects.

Progressive surveys of some Shires have revealed an alarming decline in the conservation status of many roadside reserves. In some cases the conservation value has declined at a rate of approximately 10% in 9 years. This trend indicates that without appropriate protection and management, roadside reserves will become veritable biological wastelands within the near future. However, proactive and innovative management of roadside vegetation has the potential to abate and reverse this general decline. Opportunities exist for the Shire of Kent to utilise the RCV map in many facets of its Landcare, tourism, road maintenance operations and Natural Resource Management (NRM) strategy documents. In addition, the RCC is available to provide assistance with the development of roadside vegetation management plans and associated documents.

## PART A

## OVERVIEW OF ROADSIDE CONSERVATION

#### 1.0 Why is Roadside Vegetation Important?

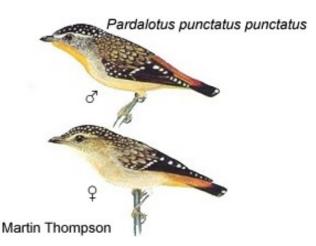
Since the settlement of Western Australia by Europeans, large areas of native vegetation in the south west of the state have been cleared for agriculture, roads, settlements, and other development. The fragmentation of the more or less continuous expanse of native vegetation communities by clearing has resulted in the isolation of plant and animal populations. This results in a mosaic of man-made biogeographical islands of small native vegetation remnants.

The flora and fauna in these areas are severely disadvantaged and these habitats are typically unreliable for sustaining wildlife due to limited and scarce food resources, increased disease risk and the reduced genetic diversity caused by a diminishing gene pool. Some habitat fragments may be too small to provide the

requirements for even a small population; therefore, it is essential to their survival that they have a means of dispersing throughout the landscape. The presence of native vegetation along roadsides often fulfils an important role in alleviating this isolation effect by providing connectivity between bush remnants. While many roadside reserves are inadequate in size to support many plant and animal communities, they are integral in providing connections between larger areas of potentially more suitable remnant patches. It is therefore important that all native vegetation is protected regardless of the apparent conservation value it contains. It is important to acknowledge that even degraded roadsides have the ability to act as corridors for the dispersal of a variety of fauna.

Other important values of transport corridor remnants are that they:

- are often the only remaining example of original vegetation within extensively cleared areas;
- often contain rare and endangered plants and animals. Currently, roadside plants represent more than 80% of the known populations of Declared Rare Flora (DRF) and three species are known only to exist in roadside populations;
- provide the basis for our important wildflower tourism industry. The aesthetic appeal of well-maintained roadsides should not be overlooked, they have the potential to improve local tourism and provide a sense of place;
- often contain sites of Aboriginal/European historic or cultural significance;
- provide windbreaks and stock shelter areas for adjoining farmland by helping to stabilise temperature and reduce evaporation.



The Spotted Pardalote (Pardalotus punctatus punctatus) has been recorded in the Shire of Kent.

Photo by M. Thompson, Photo used with the permission of the WA Museum, FaunaBase (http://www.museum.wa.gov.au/faunabase.htm).



Flora Roads are high conservation value roadside remnants. Photo D. Lamont.

- assist with erosion and salinity control, and not only in the land adjoining the road reserve; and
- provide a valuable source of seed for regeneration projects. This is especially pertinent to shrub species, as clearing and grazing beneath farm trees often removes this layer. <u>Approval of the local shire and a</u> <u>Department of Environment and Conservation (DEC) permit are required prior to collection</u>. Guidelines for seed and timber harvesting can be found in Appendix 6.

#### 2.0 What are the Threats?

#### 2.1 Lack of Awareness

The general decline of the roadside environment can, in many instances, be attributed to the lack of awareness of the functional and conservation value of the roadside remnants, both by the general community and those who work in the road reserve environment. As a consequence, there is a lack of knowledge of threatening processes (such as road maintenance and inappropriate use of fire) on the sustainability of the roadside reserve as a fauna corridor and habitat area. This situation can therefore act as a catalyst for decline in environmental quality.

#### 2.2 Roadside Clearing

Western Australia's agricultural region, also known as the Intensive Land-use Zone (ILZ), covers an area of approximately 25,091,622 ha, of which only 29.8% is covered by the original native vegetation. Of the 87 rural Local Government Authorities in this zone, 21 carry less than 10% of the original remnant vegetation and a further 30 have less than 30% (Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. 2001).

Inappropriate road management practices, particularly the systematic and indiscriminate clearing of roadside vegetation in some areas has caused irreversible damage and impacted enormously upon the conservation value of roadsides in Western Australia. Clearing roadside vegetation reduces the viability of the roadside to act as a biological corridor, the diminished habitat width impeding the movement of wildlife throughout the surrounding landscape matrix. Roadside clearing activities have the potential to introduce and spread weeds, due to the movement and disturbance of soil, thus competing with native vegetation residing in the roadside. When coupled with poor site planning and preparation, road construction and maintenance projects can often introduce and spread weeds into previously undisturbed, weed-free roadsides. Roadsides are, in many cases, the only remaining example of remnant vegetation in agricultural areas, yet they are also at great risk due to ongoing inappropriate clearing.

Amendments to the *Environmental Protection Act* 1986 have put in place a permit application process designed to assess vegetation clearing based upon a number of clearing principles which ensure ecological, conservation and land degradation issues are considered. Under the Act, clearing native vegetation requires a permit unless it is for exempt purposes. These amendments are design to provide improved protection for native vegetation, maintain biodiversity and allow for some incidental clearing activities to continue, such as day-to-day farming practices, without the need for a permit.

#### 2.3 Fire

Although Western Australia's flora and fauna have evolved with a tolerance to pre-European fire regimes, these are generally not present today. Fire in transport corridors will inevitably alter the native vegetation, however the extent of changes is dependent on a number of factors such as:

- species present;
- intensity of fire;
- frequency of fire; and
- seasonality of the fire.

The RCC's policy on fire management is:

- roadside burning should not take place without the consent of the managing authority;
- Local Government Authorities should adopt by-laws to control roadside burning;
- roadside burning should be planned as part of a total Shire/area Fire Management Plan;
- only one side of a road should be burnt in any one year;
- when designing a Fire Management Plan, the two principles which must be kept in mind are the ecological management of vegetation and the abatement of fire hazard;
- no firebreaks within the road reserve should be permitted unless the width of the roadside vegetation strip is greater than 20m;
- a firebreak on any road reserve should be permitted only when, in the opinion of the road manager, one is necessary for the protection of the roadside vegetation. The road manager shall specify the maximum width to which the break may be constructed; and
- in the case of any dispute concerning roadside fire management, the Fire and Emergency Services Authority (FESA) should be called in to arbitrate.

If a decision is made to use fire, only one side of a road should be burnt at a time, as this will ensure habitat retention for associated fauna and also retention of some of the scenic values associated with the road.

Fire can be particularly destructive to heritage sites, whether they are of Aboriginal or European origin. Before any decision is made to burn a road verge, particularly if threatened flora is present, the proponent should be aware of all values present and the impact the fire will have. It is illegal to burn roadsides where Declared Rare Flora (DRF) is present without written permission from the Minister for the Environment.



Before a decision is made to burn a road verge, the impact on natural, cultural and landscape values should be carefully considered. Photo D. Lamont

#### 2.4 Weeds

Weeds are generally disturbance opportunists and as such the road verge often provides a vacant niche which is easily colonised. Their establishment can impinge on the survival of existing native plants, increase

flammability of the vegetation and interfere with the engineering structure of the road. The effect of weed infestations on native plant populations can be severe, often with flow-on effects for native fauna such as diminished habitat and/or food resources.

Once weeds become established in an area, they become a longterm management issue, costing considerable resources to control or eradicate. The WA Herbarium records 36 weed species in the Shire of Kent (Appendix 4). The roadside survey recorded populations of six significant weeds, and their locations were mapped by the RCC onto clear overlays. The six nominated weeds were:

- Paterson's Curse (Echium plantagineum);
- Turnip (Brassica tournefortii);
- Wild Radish (Raphanus raphanistrum);
- Bridal Creeper (Asparagus asparagoides);
- Tumbleweed (Amaranthus albus); and
- African Lovegrass (Eragrostis curvula).

Roadside populations of these weeds can be observed on the weed overlays provided with the Kent RCV map (2005). The RCV map and weed overlays will assist the Shire and community in planning, budgeting and coordinating strategic weed control projects. Further information on the presence of these nominated weeds is presented in Part C of this report.



*Echium plantagineum* Photos: R. Knox & J. Dodds Paterson's curse is a widespread pasture weed that is spread by seed, making roadside populations a priority for control.

Photography by R. Knox and J.Dodds. Photo used with the permission of the WA Herbarium, DEC <u>http://florabase.calm.wa.gov.au/help/photos#reuse</u>).



Tumbleweed (*Amaranthus albus*) is an invasive weed found along roadsides in the Shire of Kent

Photography by R. Randall. Photo used with the permission of the WA Herbarium, DEC http://florabase.calm.wa.gov.au/help/photos#reuse)



Wild radish can be a common weed in degraded roadsides, and is found throughout Kent. Photo by K. Jackson RCC

#### 2.5 Salinity

Salinity is one of the greatest environmental threats facing Western Australia's agricultural areas, with approximately 1.8 million hectares in the South West Agricultural Region already affected to some degree. Dryland salinity has occurred as a consequence of the heavy clearing undertaken in the past, namely the removal of perennial deep-rooted native vegetation and replacement by shallow rooted annual crop vegetation and the subsequent rising of the water table. The large amount of salt stored within the soil column in these areas of Western Australia is dissolved by the rising water and carried to the surface. Once at the surface, the water evaporates leaving a white film of salt over the landscape, making it unproductive for current agricultural practices and severely impacting upon the remaining native vegetation. Without significant changes to the current land use it has been estimated that approximately 3 million hectares will be affected by salinity by 2010-2015 and 6 million hectares, or 30% of the region, affected by the time a new groundwater equilibrium is reached (Department of Agriculture WA, 2004).

The effect of salinity has not only been restricted to agriculture, it is also having a serious effect on rural town sites and the road network. The National Land and Resources Audit (2002) warned that across Australia some 19,800km of roads, 1,600km of railways and 306 towns are all at a high risk from dryland salinity (Department of Environment and Heritage and the Department of Agriculture, Fisheries and Forestry Australia, 2003). It has also been estimated that more than 4,000km (5%) of roads in the south west land division of Western Australia are at threat of being degraded by the effects of rising water tables and salinity.

Based on figures supplied by the Department of Agriculture WA for the *Salinity Investment Framework Interim Report* (2003), Table 1 shows that approximately 8.2%, or 112.45km of roads in the Shire of Kent are potentially under threat from salinity.

Shire	Total road	Roads potentially affected by salinity - length in km						
	length assessed (km)	Highways	Local roads	Main roads	Other roads	Total affected	% of total potentially affected	
Dumbleyung	1,020.80		49.30	5.10	4.03	58.43	5.72%	
Katanning	726.37		31.43	5.08	7.03	43.53	5.99%	
Kent	1,372.75		56.15	6.28	50.03	112.45	8.19%	
Lake Grace	2,195.71	1.60	90.10	15.43	71.90	179.03	8.15%	
Wagin	817.68		43.90	4.03	6.05	53.98	6.60%	
Wickepin	848.27		32.93	0.70	12.73	46.35	5.46%	

Table 1. Road lengths potentially affected by salinity in the Shires of Dumbleyung, Katanning, Kent, Lake Grace, Wagin and Wickepin.

Adapted from material produced by the Department of Agriculture WA for Department of Environment 2003, Salinity Investment Framework Interim Report - Phase 1, 2003, Department of Environment, Salinity and Land Use Impacts Series No. SLUI 32

Aware of the threat salinity poses to the Shire, the 2004/05 Kent roadside survey was designed so that roadside surveyors could record the presence of salt affected roadsides as an additional attribute. The location of salt affected roadsides appears as a clear overlay accompanying the Shire of Kent RCV map (2005). The data relating to occurrence of salt affected roadsides in Kent, as observed by the roadside surveyors, is also presented in Part C of this report.

#### 3.0 Legislative Requirements

Uncertainty often exists in the minds of many with regard to the 'ownership', control and management of 'the roadside'. This problem is also exacerbated by the multitude of legislative reference to activities within a transport corridor.

The Department of Environment and Conservation (DEC) has the legislative responsibility to manage and protect all native flora and fauna in Western Australia. It is important to note that all native flora and fauna is protected under provisions of the *Wildlife Conservation Act 1950* and cannot be taken unless it is taken in a lawful manner. In addition to the general provisions relating to protected flora under the *Wildlife Conservation Act*, special protection is afforded to flora that is declared as rare or threatened under Section 23F of the *Wildlife Conservation Act*.

The legislation pertaining to the management of road reserves is complex and includes those listed below.

#### State legislation:

- Aboriginal Heritage Act 1972
- Agriculture and Related Resources Protection Act 1976
- Bush Fires Act 1954
- Conservation and Land Management Act 1984
- Environmental Protection Act 1986
- Heritage of WA Act 1990
- Land Act 1933
- Local Government Act 1995
- Main Roads Act 1930
- Mining Act 1978
- Soil and Land Conservation Act 1945
- State Energy Commission Supply Act 1979
- Water Authority Act 1987
- Wildlife Conservation Act 1950,1979

#### Commonwealth legislation:

- Environment Protection and Biodiversity Conservation Act 1999

New legalisation has been introduced under the *Environmental Protection Act 1986* which specify that all clearing of native vegetation require a permit, unless it is for an exempt purpose. The *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* provide an outline of these exemptions. Clearing applications are assessed against twelve clearing principles, which look at values such as the:

- biological value of the remnant vegetation;
- potential impact on wetlands, watersources and drainage;
- existence of rare flora and threatened ecological communities; and
- likely land degradation impacts.

This assessment process is designed to provide a more comprehensive and stringent land clearing control system. There are two land clearing permits available, 1. an area permit and 2. a purpose permit. Where clearing is for a once-off clearing event such as pasture clearing or an agricultural development, an area permit is required. Where ongoing clearing is necessary for a specific purpose, such as a road widening programs, a purpose permit is needed. Shire road maintenance activities are exempt, to the width and height previously legally cleared for that purpose (refer to Schedule 2 of the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*).

It is recommended that a precautionary approach be taken when working within roadsides and that the relevant authority be contacted if there is any doubt about the management or protection of heritage or conservation values present in the roadsides.

#### 4.0 Environmentally Sensitive Areas

An Environmentally Sensitive Area (ESA) is a section of roadside that requires special protection for at least one of the following reasons:

- protection of rare or threatened species of native plants;
- protection of sites that have other high conservation or scientific values; and/or
- protection of Aboriginal or European cultural sites.

ESAs can be delineated by the use of site markers. Please see the RCC publication *Guidelines for Managing Special Environmental Areas in Transport Corridors* for design and placement of ESA markers. Markers of a uniform shape and colour will make recognition easier for other authorities using road reserves. Workers who come across an 'Environmentally Sensitive Area' marker in the field should not disturb the area between the markers unless specifically instructed. If in doubt, the Works Supervisor, Shire Engineer or CEO should be contacted. Western Power and WestNet Rail also have systems for marking sites near power or rail lines.

To ensure that knowledge of rare flora and other sites does not get lost due, perhaps, to staff changes, the Local Authority should establish an *Environmentally Sensitive Area Register*. This should outline any special treatment that the site should receive and be consulted by the appropriate person prior to any work being initiated in the area.

Local Government is encouraged to permanently mark ESAs to prevent inadvertent or inappropriate damage to Declared Rare Flora (DRF) or other values being protected.



Roadside ESA markers are highly visible. Photo by K. Jackson

#### 5.0 Flora Roads

A Flora Road is one which has special conservation value because of the vegetation contained within the road reserve. The managing authority may decide to declare a Flora Road based on the results of the survey

of roadside conservation value. The RCC has prepared *Guidelines for the Nomination and Management of Flora Roads* (Appendix 7). The Flora Road signs (provided by the RCC) draw the attention of both the tourist and those working in the road reserve to the roadside flora, indicating that it is special and worthy of protection. The program seeks to raise the profile of roadsides within both the community and road management authorities.

Although presently there are no Flora Roads designated within the Shire of Kent, the roadside survey and the RCV map highlighted a number of roadsides that have the potential to be declared as Flora Roads. These, and other roads, may be investigated further to see if they warrant a declaration as a Flora Road (See Part C of this report).



Roadsides are one of the most accessible places for tourists to view wildflowers. Photo by DEC

In order to plan roadworks so that important areas of roadside vegetation are not disturbed, road managers should be aware of these areas. To ensure this is not overlooked it is suggested that areas declared as Flora Roads be included in the Shire's *Environmentally Sensitive Area Register*.

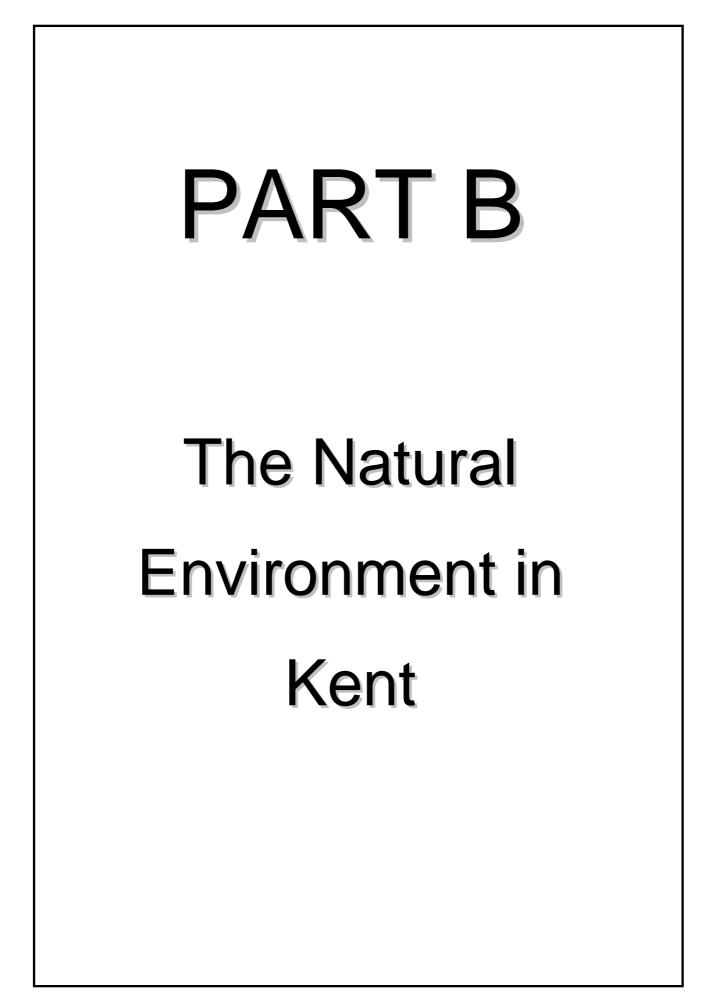
Attractive roadside are an important focus in Western Australia, the "Wildflower State". Declared Flora Roads

will by their very nature be attractive to tourists and would often be suitable as part of a tourist drive network. Consideration should be given to:

- promoting the road by means of a small brochure or booklet;
- showing all Flora Roads on a map of the region or State; and
- using specially designed signs to delineate the Flora Road section (provided by the RCC).

Right: The RCC has assisted local communities to produce wildflower drive pamphlets.





#### 1.0 Flora

On a global scale Western Australia has almost ten times the amount of vascular plant varieties than countries such as Great Britain. In fact Western Australia has some 4.8% of the 250,000 known vascular flora present on Earth. Western Australian flora is also unique, with the majority of species being endemic, that is, found nowhere else in the world. Up to 75% of the 6,000 species in the South West are endemic.

The WA Herbarium lists over 250 species of plants present in the Shire of Kent. The most prolific genera are *Acacia* 83 spp, *Eucalyptus* 66 spp, *Melaleuca* 46 spp, *Grevillea* 27 spp, *Verticordia* 26 spp, and *Dryandra* 24 spp. The complete list of recorded flora can bee seen in Appendix 4 of this report.

#### 2.0 Declared Rare Flora

Declared Rare Flora (DRF) species, or populations, are of great conservation significance and should therefore be treated with special care when road and utility service, construction or maintenance is undertaken. Populations



Grevillea teretifolia

Photos: H. Adamson & M. Kealle

Round leaf Grevillea (Grevillea teretifolia), a native plant of the roadside flora in the Shire of Kent. Photography by H. Adamson, and M Kealley. Photo used with the permission of the WA Herbarium, DEC http://florabase.calm.wa.gov.au/help/photos#reuse

of DRF along roadsides are designated Environmentally Sensitive Areas (ESAs) and are delineated by yellow stakes with an identification plate welded on. The RCC suggests using the RCC publication *Guidelines for Managing Special Environment Areas in Transport Corridors* as a guideline for managing these sites. It is the responsibility of the road manager to ensure these markers are installed, and guides for this are available from the RCC. For information regarding DRF, contact the Department of Environment and Conservation Flora Officer for the Katanning District. If roadworks are to be carried out near DRF sites, it is advisable to

contact the Department of Environment and Conservation at least six weeks in advance.

Currently (as at August 2005), 35 locations of Declared Rare and Priority Flora are known to occur within roadsides in the Shire of Kent. All of these sites are road verges vested in the Shire. In total, there are eighteen species of declared rare and priority flora on roadsides in the Shire, these are:



Declared Rare Flora (DRF) sites should be clearly marked with these yellow posts. Photo K. Jackson.

- Acacia mutabilis subsp. Stipulifera;
- Astartea clavifolia;
- Dryandra erythrocephala var. inopinata;
- Dryandra rufistylis;
- Dryandra conferta var. parva;
- Dryandra drummondii subsp. macrorufa;
- Daviesia tortuosa;
- Verticordia brevifolia subsp. brevifolia;
- Eucalyptus mimica subsp. Mimica;

- Grevillea prostrata;
- Eremophila veneta;
- Grevillea involucrata;
- Roycea pycnophylloides;
- Adenanthos pungens subsp. pungens;
- Acacia leptalea;
- Drakaea isolata; and
- Caladenia melanoma.

Note - this information may have changed since the time of this report's release; therefore it is important to contact the relevant Department of Environment and Conservation District office, or the Species and Communities Branch in Kensington for the most recent information.

#### 3.0 Fauna

The Western Australian Museum records approximately 144 species of fauna from the Kent area (Appendix 5). WA Museum fauna records comprise specimen records, museum collections and observations from 1850 to present; therefore it is intended to act only as a general representation of the fauna in the area. Of the fauna species recorded in the Kent area, there were 48 bird, 12 amphibia, 28 mammal, 1 fish and 52 reptile species.

A number of the fauna species recorded from Kent are classified as endemic to the Wheatbelt region of Western Australia, or smaller regions within the State. For example, the



The Reticulated Velvet Gecko, Oedura reticulata, can be found in the Shire of Kent.

Photo by B. G. Bush, Photo used with the permission of the WA Museum, FaunaBase (http://www.museum.wa.gov.au/faunabase.htm).

Reticulated Velvet Gecko (*Oedura reticulata*) occurs only within the semi-arid southern interior from Buntine south to Woodanilling and Lake Grace, and was recorded by WA Museum in the Kent area.

The *Wildlife Conservation Act* 1950 provides for native fauna (and flora) to be specially protected where they are under identifiable threat of extinction, and as such, are considered to be "threatened". Based on distributional data from the Department of Environment and Conservation, 24 species of threatened and priority fauna have been recorded or sighted throughout the Shire of Kent, and these are listed below.

#### Chuditch (Dasyurus geoffroii)

This carnivorous marsupial occupies large home ranges, is highly mobile and appears able to utilise bush remnants and corridors.

#### Bilby (Macrotis lagotis)

This species shelters in burrows and occupies a range of habitats from grassland on clayey and stony soils or sandplains to mulga scrub and woodlands on red earths. It has suffered a large decline and contraction in distribution.

#### Numbat (Myrmecobius fasciatus)

This diurnal marsupial feeds almost exclusively on termites and is very vulnerable to predation by foxes and cats. It occurs in a variety of habitats including woodland and shrubland where it shelters in hollow logs, tree hollows and burrows.

#### Red-tailed Phascogale (Phascogale calura)

This arboreal marsupial seems to prefer dense woodland or tall shrubland with a continuous canopy and is most often associated with dense stands of rock sheoak (*Allocasuarina huegeliana*) and wandoo (*Eucalyptus wandoo*).

#### Heath Mouse (Dayang) (Pseudomys shortridgei)

• This species inhabits long unburnt heath and mallee scrub on sandy soils. It has a very limited distribution in the south eastern Wheatbelt through to the south coast.

#### Western Brush Wallaby (Macropus irma)

This species occurs in areas of forest and woodland supporting a dense shrub layer.

#### Western Mouse (Pseudomys occidentalis)

This species occurs most frequently in areas of long-unburnt vegetation on sandy clay or loam with a matrix of gravel. It is known to feed on the seeds of quandong (*Santalum acuminatum*) and various sedge species.

#### Woylie (Bettongia penicillata ogilbyi)

This species of rat-kangaroo occupies a variety of habitats with a clumped low understorey of tussock grasses or woody shrubs.

#### Quenda (Isoodon obesulus fusciventer)

This species prefers areas with dense understorey vegetation, particularly around swamps and along watercourses, that provides ample protection from predators.

#### Tammar Wallaby (Macropus eugenii derbianus)

This species prefers thickets of Melaleuca, Sheoak or other large shrubs associated with grassland.

#### Bush Stonecurlew (Burhinus grallarius)

A well camouflaged, ground nesting bird which prefers to 'freeze' rather than fly when disturbed. It inhabits lightly timbered open woodlands.

#### Hooded Plover (Charadrius rubricollis)

This species frequents the margins and shallows of salt lakes, also along coastal beaches, where it forages for invertebrates along the water's edge.

#### Crested Shrike-tit (south western spp) (Falcunculus frontatus leucogaster)

This species is an uncommon inhabitant of woodlands.

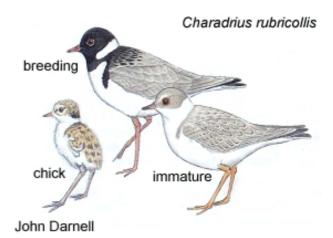
Shy Heathwren (western spp) (Hylacola cauta whitlocki)

• This species is an uncommon resident in mallee undergrowth.

## • Crested Bellbird (southern) (*Oreoica gutturalis gutturalis*)

This sedentary and solitary species inhabits the drier

mallee woodlands and heaths of the southern parts of the State. Survey of Roadside Conservation Values in the Shire of Kent



#### The Hooded Plover (above) is a threatened species generally occurring near salt lakes. Photo by J. Darnell, Photo used with the permission of the WA Museum,

FaunaBase (http://www.museum.wa.gov.au/faunabase.htm).

#### White-browed Babbler (Pomatostomus superciliosus ashbyi)

This species of bird lives in eucalypt forests and woodlands, and forages on or near the ground for insects and seeds.

#### Western Whipbird (Psophodes nigrogularis oberon)

This subspecies occurs from the Stirling Range east to Munglinup and north to Lake Grace and inhabits areas of mallee and heath, nesting in dense vegetation.

#### Australasian Bittern (Botaurus poiciloptilus)

This species inhabits beds of tall dense reeds and sedges in freshwater swamps.

#### Malleefowl (Leipoa ocellata)

This species was once widely distributed across southern Australia. It prefers woodland or shrubland with an abundant litter layer that provides essential material for the construction of its nest mound.

### Carnaby's Black-Cockatoo (Calyptorhynchus latirostris)

This species moves around seasonally in flocks to feeding areas in proteaceous scrubs and heaths and eucalypt woodlands as well as pine plantations. Breeding occurs in winter/spring, mainly in the eastern woodlands and Wheatbelt where they can find mature hollow-bearing trees to nest in.



The Malleefowl (above) is a vulnerable species that relies on remnant bushland for its survival. Photo by M.J. Bamford, Photo used with the permission of the WA Museum, FaunaBase (http://www.museum.wa.gov.au/faunabase.htm).

 Western Rosella (inland ssp) (*Platycercus* icterotis xanthogenys)

This subspecies of the Western Rosella occurs in eucalypt and casuarina woodlands and scrubs, especially of Salmon Gum and tall mallees.

#### Peregrine Falcon (Falco peregrinus)

This species is uncommon and prefers areas with rocky ledges, cliffs, watercourses, open woodland or margins with cleared land.

#### Bothriembryon bradshawi (Bothriembryon bradshawi)

This species of snail appears to be found in leaf litter associated with wandoo woodland.

#### • Carpet Python (Morelia spilota imbricata)

This species occurs in a variety of habitats including forest and heathland. It is often arboreal and preys on birds, other reptiles and small to medium size mammals. This species is listed under both Schedule 4 and Priority 4.

Many fauna species, particularly small birds, need continuous corridors of dense vegetation to move throughout the landscape. Roadsides therefore are of particular importance to this avifauna because they usually contain the only continuous linear vegetation connection in some areas.

#### 4.0 Remnant Vegetation Cover

Only 26.8% of the original native vegetation remains in the Shire of Kent and this is located in a variety of tenures from nature reserves to privately owned land. *National Objectives and Targets for Biodiversity Conservation 2001-2005* (Environment Australia, 2001) stated that vegetation types represented by less than 30% are considered ecologically endangered and in need of protection and restoration wherever they are located. Kent has less than 27% remaining which is quite low. The remaining vegetation can easily be further depleted if proactive measures are not taken to manage this priceless resource.

Shire	Total Area (ha)	Area inside Clearing Line (ha)	Vegetation Cover Remaining (inside clearing line)	
			(ha)	(%)
Dumbleyung	253,816	253,816	24,003	9.5
Katanning	153,272	153,272	17,149	11.2
Kent	575,537	575,537	154,315	26.8
Kulin	466,712	466,712	55,883	12.0
Lake Grace	1,031,972	1,031,972	225,891	21.9
Wagin	193,910	193,910	15,847	8.2
Wickepin	202,347	202,347	15,120	7.5

 Table 2. Remnant vegetation remaining in agricultural areas of Kent and surrounding Shires (Shepherd, Beeston and Hopkins, 2001).

The continued presence of the flora and fauna living in these fragmented remnants is dependant on the connectivity throughout the landscape. This enables access to habitat and food resources essential for the survival of species and the overall biodiversity of the region. In many situations remnant native vegetation in transport corridors is of vital importance as it provides the only continuous link throughout the landscape.



Tree hollows are of vital importance to breeding birds. Photo by L. McMahon, Birds Australia

# PART C

## ROADSIDE SURVEYS IN THE SHIRE OF KENT

#### 1.0 Introduction

The roadside survey and mapping program was developed to provide a method of readily determining the conservation status of roadsides. Using this method, community volunteers are able to participate in a 'snap-shot' survey of roadside vegetation to identify a range of attributes that, when combined, give an overall indication of the conservation status of the vegetation.

The majority (1198.1km, or 91.7%) of the Shire of Kent's 1,306km of roads were surveyed and then assessed to determine the conservation status of the road reserves. Fieldwork was carried out throughout the months of September, October and November 2004 and February and March 2005. The enthusiastic efforts of the volunteer roadside surveyors, Landcare Coordinator Nicole Davey and the support provided by Council and Shire staff ensured that this project was successfully completed.

#### 1.1 Methods

Roadside surveys were undertaken in a vehicle, with two people per vehicle. The passenger recorded all the roadside survey data using the RCC's iPAQ personal computers. When the iPAQs were not available, the standard paper survey sheets were used (Appendix 1). At the end of the survey, the iPAQs and survey sheets were sent back to the RCC for analysis and mapping.

The methods to assess and calculate the conservation value of the roadside reserves are described in *Assessing Roadsides: A Guide for Rating Conservation Value* (Jackson, 2002). The process involves scoring a set of pre-selected attributes, which when combined represent a roadside's conservation status. A list of these attributes is presented on a standard survey sheet (Appendix 1). This provides both a convenient and uniform method of scoring.

The following 6 attributes were used to produce a quantitative measure of conservation value:

- structure of native vegetation on roadside;
- level of weed infestation;
- extent of native vegetation along roadside;
- number of native species;

- value as a biological corridor; and
- predominant adjoining land use.

Each of these 6 attributes was given a score ranging from 0 to 2 points. Their combined scores provided a conservation value score ranging from 0 to 12. The conservation values, in the form of conservation status categories, are represented on the RCV map by the following colour codes.

Conservation Value	Conservation Status	Colour Code
9 – 12	High	Dark Green
7 – 8	Medium High	Light Green
5 – 6	Medium Low	Dark Yellow
0 – 4	Low	Light Yellow

The following attributes were also noted but did not contribute to the conservation value score:

- width of road reserve;
- width of vegetated roadside;
- presence of utilities/disturbances;
- general comments;
- presence of 6 nominated weeds; and
- presence of salt affected roadside.

It is felt that the recording of these attributes will provide a dataset capable of being used by a broad range of community land management interests.

#### 1.2 Mapping Roadside Conservation Values

The RCC produced a computer-generated map (using a Geographic Information System, or GIS), at a scale of 1:100,000 for the Shire of Kent. Known as the Roadside Conservation Value (RCV) map, it depicts the conservation status of the roadside vegetation and the width of the road reserves within the Shire of Kent. The data used to produce both the map and the following figures and tables are presented in Appendix 2. Road name and length information can be found in Appendix 3.

Digital information was obtained from the Department of Environment and Conservation, Main Roads WA and the Department of Agriculture WA and used in the map, depicting the location of remnant vegetation on both the Crown estate and privately owned land. Watercourses are also depicted on the RCV map.

#### 1.3 Roadside Conservation Value Categories

<u>High conservation value roadsides</u> are those with a score between 9 and 12, and generally display the following characteristics:

- intact natural structure consisting of a number of layers, i.e. ground, shrub, tree layers;
- extent of native vegetation greater than 80%, i.e. little or no disturbance;
- high diversity of native flora, i.e. greater than 20 different species;
- few weeds, i.e. less than 20% of the total plants; and
- high value as a biological corridor i.e. may connect uncleared areas; contain flowering shrubs; tree hollows; and/or hollow logs for habitat.



This high conservation value roadside in Wongan-Ballidu contains relatively intact, undisturbed and diverse remnant vegetation. Photo K. Jackson.

<u>Medium-high conservation value roadsides</u> are those with a score between 7 and 8, and generally have the following characteristics:

- generally intact natural structure, with one layer disturbed or absent;
- extent of native vegetation between 20-80%;
- medium to high diversity of native flora, i.e. 6-19 species;
- few to half weeds i.e. between 20-80% of the total plants; and
- medium to high value as a biological corridor.

<u>Medium-low conservation value roadsides</u> are those with a score between 5 and 6, and generally have the following characteristics:

- natural structure disturbed, i.e. one or more vegetation layers absent;
- extent of native vegetation between 20-80%;
- medium to low diversity of native flora, i.e. 0-5 different species;
- half to mostly weeds, i.e. between 20-80% of total plants; and
- medium to low value as a biological corridor.

Low Conservation Value roadsides are those with a score between 0 and 4, and generally have the following characteristics:

- no natural structure i.e. two or more vegetation layers absent;
- low extent of native vegetation, i.e. less than 20%;
- low diversity of native flora, i.e. 0-5 different species;
- mostly weeds, i.e. more than 80% of total plants, or ground layer totally weeds; and
- low value as a biological corridor.



Medium-high conservation value roadsides contains a moderate number of native species, some disturbance and weed invasion, but have relatively intact natural structure. Photo RCC.



Medium-low conservation value roadsides may contain Declared Rare Flora (DRF).



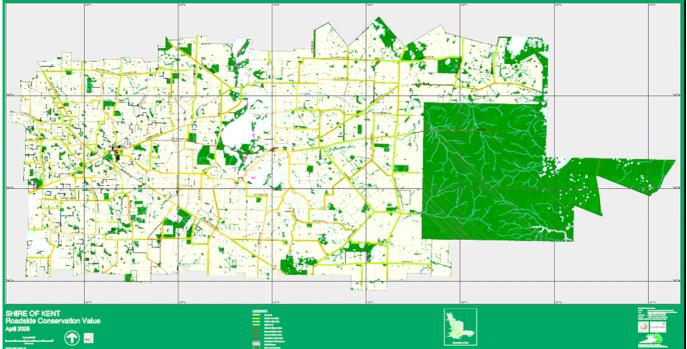
Low conservation value roadsides are typically dominated by weeds and have little or no native vegetation. Photo by K. Jackson.

#### 2.0 USING THE ROADSIDE CONSERVATION VALUE (RCV) MAP

The Roadside Conservation Value (RCV) map initially provides an inventory of the condition of the roadside vegetation. This is important as the quality of roadside vegetation has far reaching implications for sustaining biodiversity, tourism and Landcare values.

Moreover, the data and map can be incorporated as a management and planning tool for managing the roadsides, as it enables the condition of roadside vegetation to be easily assessed. This information can then be used to identify environmentally sensitive areas, high conservation roadsides or strategically important areas, and thus ensure their conservation. Conversely, it enables degraded areas to be identified as areas important for strategic rehabilitation, areas in need of specific management techniques or weed control programs.

The map can also be used as a reference to overlay transparencies of other information relevant to roadside conservation. This enables the roadside vegetation to be assessed in the context of its importance to the Shire's overall conservation network. To further assist in roadside management the Shire could produce other overlays such as the degree of weed infestation, locations of Environmentally Sensitive Areas or future planned developments.



The RCV map depicts roadside conservation values in the Shire of Kent.

As well as providing a road reserve planning and management tool, the RCV map can also be used for developing:

- Regional or District fire management plans;
- Landcare and/or Bushcare projects that would be able to incorporate the information from this survey into 'whole of' landscape projects; and
- Tourist routes, i.e. roads depicted as high conservation value would provide visitors to the district with an insight to the flora of the district.



Weed control along a roadside. Photo MRWA



Catchment recovery projects, such as revegetation programs can utilise the information conveyed on roadside conservation value maps. Photo by RCC



The road manager can declare high conservation value roads as Flora Roads. Photo by D. Lamont.



The survey data and map can be used in developing regional or district fire management plans. Photo by DEC

#### 3.0 RESULTS

Using the information collected by the roadside survey, totals of the attributes used to calculate roadside conservation values in the Shire of Kent are presented (Table 3). The survey data has been combined to provide the total kilometres and percentages of roadside occupied by each of the conservation status categories and the attributes used to calculate the conservation values. As roadsides occur on both sides of the road, roadside distances (km) are equal to *twice* the actual distance of road travelled.

	2		of Kent 2004-05		
Ū.		eyed: 2,396.3 k	(1,198.1 km of road)		
Roadside Conservati		(2.1)		onservation V	
	Total (km)	(%)	Score	Total (km)	(%
High (9-12)	1531.8	63.9	0	0.0	0.0
Medium-high (7-8)	423.8	17.7	1	0.0	0.0
Medium-low (5-6)	230.4	9.6	2	41.5	1.7
Low (0-4)	210.2	8.8	3	73.7	3.1
			4	95.1	4.0
Total	2396.3	100.0	5	131.4	5.5
			6	99.0	4.1
Native Vegetation in F	<u>Roadsides</u>		7	73.0	3.0
	Total (km)	(%)	8	350.9	14.6
2-3 vegetation layers	2174.9	90.8	9	257.9	10.8
1 vegetation layer	171.0	7.1	10	285.8	11.9
0 vegetation layers	50.4	2.1	11	681.5	28.4
			12	306.7	12.8
Total	2396.3	100.0			
	200010		Total	2396.3	100.0
Number of Native Plar	nt Snecies		rotar	2000.0	100.0
	Total (km)	(%)	Width of Ve	getated Road	ahial
Over 20 species	1268.2	52.9	<u>main or ve</u>	Total (km)	<u>13100</u> (%
6 to 19 species	723.6	30.2	1 to 5 m	1268.4	52.9
0 to 5 species	404.4	16.9	5 to 20 m	613.2	25.6
0 10 0 3000103	-10-1-1	10.0	Over 20 m	373.0	15.6
Total	2396.3	100.0	Unknown	141.6	5.9
Predominant Adjoining	Land Use		Total	2396.3	100.0
	Total (km)	(%)			
Agricultural: completely cleared	2067.9	86.3	Extent of N	lative Vegeta	tion
Agricultural: scattered vegetation	55.8	2.3		Total (km)	(%
Uncleared native vegetation	251.5	10.5	Over 80%	1297.1	54.1
Drain	0.0	0.0	20% to 80%	689.1	28.8
Plantation of non-natives	0.0	0.0	Less than 20%	410.1	17.1
Railway	8.5	0.4	2000 11011 2070	410.1	
Urban or Industrial	0.0	0.4	Total	2396.3	100.0
Other	12.6	0.5	Total	2390.3	100.0
Other	12.0	0.5	Value as a F	Biological Cor	ridor
Total	2396.3	100.0	value as a c	Total (km)	
ισται	2390.3	100.0	High	766.4	(%) 32 (
Waad Infactat	on		-		32.0
Weed Infestati		(0/)	Medium	1354.0	56.5
	Total (km)	(%)	Low	275.9	11.5
Light <20% weeds	1443.9	60.3	<b>T</b> - ( - )	0000 0	400.5
Medium 20-80% weeds	589.2	24.6	Total	2396.3	100.0
Heavy >80% weeds	363.1	15.2			
Total	2396.3	100.0			

Roadside surveys were carried out in Kent Shire from September 2004 to March 2005

Table 3. Summary of results from the roadside survey in the Shire of Kent.

The width of road reserves in the Shire of Kent was recorded in increments of 20 metres (Table 4). The majority of road reserves were 20 metres in width, with 564.8km (47.1%) of roads falling into this category. Of the remaining roads 331.5km (27.7%) were 40 metres in width, 141.2 km (11.8%) were 60m wide, 14.3km (1.2%) were 80m wide, and 141.5km (11.8%) of roadsides were 100m wide. The width of the road reserve for 4.8km (0.4%) of roads surveyed was unknown.

Width of Road Reserve - Kent						
	Total km	%				
20m	564.8	47.1				
40m	331.5	27.7				
60m	141.2	11.8				
80m	14.3	1.2				
100m	141.5	11.8				
Unknown	4.8	0.4				
Total	1198.1	100.0				

#### Width of Vegetated Road Reserve

The width of vegetated roadside was recorded by selecting one of three categories, 1-5 metres, 5-20 metres or over 20 metres in width. The left and right hand sides were recorded independently, and then combined to establish the total figures (Table 5). The majority of roadside vegetation 1,268.4km (52.9%) was between 1 to 5 metres in width, followed by 613.2km (25.6%) of roadsides where the vegetation fell between 5 to 20 metres in width. Roadside vegetation over 20 metres in width spanned 373.0km (15.6%) of the roadsides surveyed, whilst the width was unknown for 141.6km (5.9%) of the roadsides surveyed.

#### Native Vegetation on Roadsides

The number of native vegetation layers present, either the tree, shrub or ground layers determined the 'native vegetation on roadside' value. Sections with two to three layers of native vegetation covered 90.8% (2174.9km) of roadsides, 7.1% (171.0km) had only one layer and 2.1% (50.4km) had no layers of native vegetation (Table 3 and Figure 1).

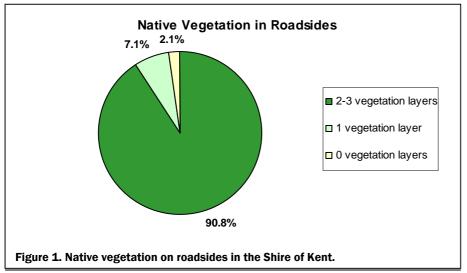


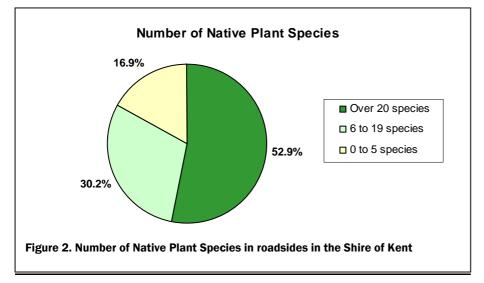
Table 4. Width of road reserves in the Shire of Kent.

Width of Vegetated Roadside - Kent					
Total Km	%				
1268.4	52.9				
613.2	25.6				
373.0	15.6				
141.6	5.9				
2396.3	100.0				
	Total Km 1268.4 613.2 373.0 141.6				

Table 5. Width of vegetation on roadsides in the Shire of Kent.

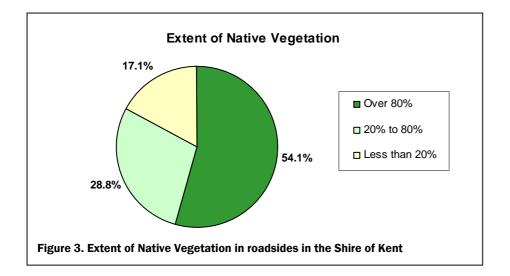
#### Number of Native Plant Species

The 'number of native plant species' score provided a measure of the diversity of the roadside vegetation. Survey sections with more than 20 plant species spanned 52.9% (1,268.2km) of the roadsides surveyed. Roadside sections with 6 to 19 plant species accounted for 30.2% (723.6km) of the roadside. The remaining 16.9% (404.4km) contained less than 5 plant species (Table 3 and Figure 2).



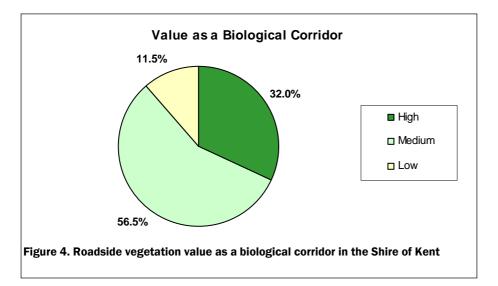
#### Extent of Native Vegetation

The 'extent of native vegetation' cover refers to the continuity of the roadside vegetation and takes into account the presence of disturbances such as weeds. Roadsides with extensive vegetation cover, i.e. greater than 80%, occurred along 54.1% (1,297.1km) of the roadsides surveyed. Survey sections with medium, i.e. 20% to 80%, vegetation cover accounted for 28.8% (689.1km) of the roadsides. The remaining 17.1% (410.1km) had less than 20% native vegetation and therefore, a low 'extent of native vegetation' value (Table 3 and Figure 3).



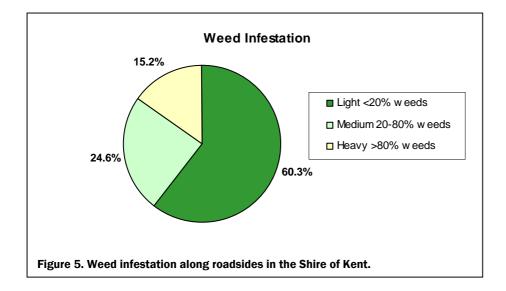
#### Value as a Biological Corridor

This characteristic considered the presence of four attributes: connection to uncleared areas; presence of flowering shrubs; large trees with hollows; and hollow logs. Roadsides determined to have high value as a biological corridor were present along 32.0% (766.4km) of the roadsides surveyed. Roadsides with medium value as biological corridors made up 56.5% (1,354.0km), and roadsides with low value as a biological corridor occurred along 11.5% (275.9km) of the roadsides surveyed (Table 3 and Figure 4).



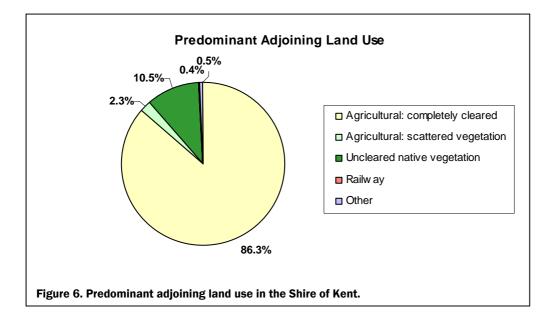
#### Weed Infestation

Light levels of weed infestation (weeds less than 20% of total plants), were recorded on 60.3% (1443.9km) of the roadsides surveyed, medium level weed infestation (weeds 20-80% of the total plants) occurred on 24.6% (589.2km) of the roadsides and 15.2% of roadsides (363.1km) were heavily infested with weeds (weeds more than 80% of the total plants) (Table 3 and Figure 5).



#### Predominant Adjoining Land Use

Uncleared native vegetation was present on 10.5% (251.5km) of the land adjoining roadsides, whilst 86.3% (2,067.9km) of roadsides adjoined land that had been completely cleared for agriculture. 2.3% (55.8km) of the roadsides bordered land cleared for agriculture, however this land contained a scattered distribution of native vegetation. Railway reserves were the predominant adjoining land use for 0.4% (8.5km) of the roadsides surveyed and 'other' land uses adjoined 0.5% (12.6km) of the roadsides surveyed (Table 3 and Figure 6).



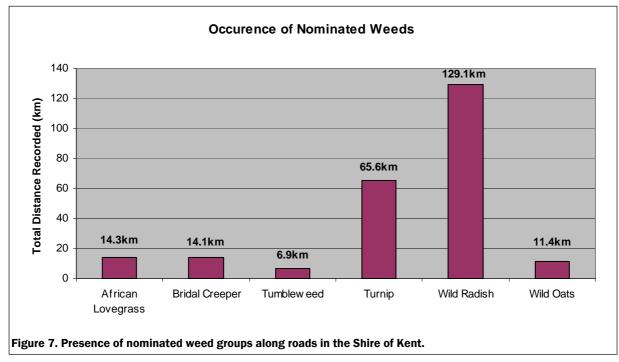
#### Nominated Weeds

The following weeds/ weed groups are depicted on clear overlays accompanying the 2005 RCV map:

- Paterson's Curse (Echium plantagineum);
- Turnip (Brassica tournefortii);
- Wild Radish (Raphanus raphanistrum);
- Bridal Creeper (Asparagus asparagoides);
- Tumbleweed (Amaranthus albus); and
- African Lovegrass (*Eragrostis curvula*).

Roadside populations of nominated weeds were recorded as being present in the road reserve, i.e. not recorded specifically for presence on the left and/or right hand sides. Therefore, the occurrence of each weed (in kilometres) indicates the presence of the weed within the road and may need to be doubled where present on both sides of the road.

Of the nominated weeds species surveys Wild Radish was the most prevalent, recorded along 129.1km (5.4%) of roads surveyed. Turnip was also quite prevalent, recorded along 65.6km (2.7%) of roads. African Lovegrass was the next most commonly recorded weed, occurring along 14.3km (0.6%) of roads, followed by Bridal Creeper, recorded along 14.1km (0.6%). Wild Oats was recorded along 11.4km (0.5%) of roadsides, and Tumbleweed was recorded along 6.9km of road (0.3%) (Figure 7).

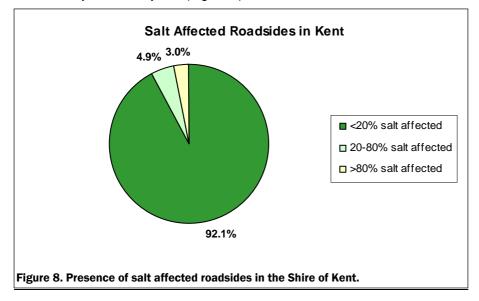


#### Salinity

The presence of salinity in roadsides was recorded throughout the survey and these locations are depicted on a separate clear overlay accompanying the 2005 RCV map. The surveyors determined the level of salt damage occurring in roadsides, and there were 3 categories to choose from:

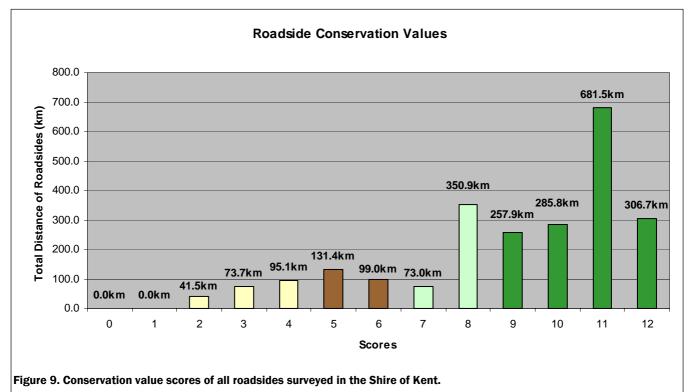
- no or minor salt damage (<20% of roadside salt affected);</li>
- moderate salt damage (20-80% of roadside salt affected); or
- major salt damage (>80% of roadside salt affected).

Of the 2,396.3km of roadsides surveyed, 92.1% (2,207.5km) of roadsides had no, or a minor (<20%) level of salt damage, 4.9% (116.5km) were moderately affected by salt (20-80% salt affected) and 3.0% (72.3km) were heavily affected by salt (Figure 8).



#### **Conservation Value Scores**

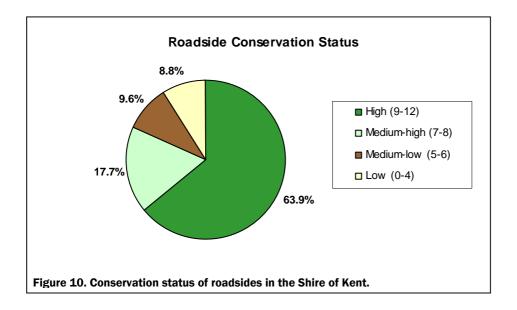
Conservation value scores were calculated for each section of roadside surveyed. Scores range from 0 to 12, from lowest to highest conservation value respectively (Figure 9). The most occurring roadside conservation values were between 8 and 12, with a score of 11 being the highest with 681.5km of roadside, followed by 8 (350.9km), then 12 (306.7km) and then the score of 10 (285.8km). Roadsides with a conservation value score of 9 covered 257.9km of roadsides, scores of 5 covered 131.4km and a score of 6 spanned 99.0km of roadside. 95.1km of roadsides scored 4, 73.7km of roadsides scored 3, 73.0km of roadside scored 7, 41.5km of roadsides scored 2, and 0km of roadsides scored a conservation value of 1 or 0.



Survey of Roadside Conservation Values in the Shire of Kent

#### **Conservation Status**

The conservation status category indicated the combined conservation value of roadsides surveyed in the Shire of Kent. Roadside sections of high conservation value (9-12) covered 63.9% (1,531.8km) of the length of roadsides surveyed. Medium-high conservation value (7-8) roadsides accounted for 17.7% (423.8km) of the total surveyed. Medium-low conservation (5-6) roadside covered 9.6% (230.4km) of the total surveyed. Roadsides of low conservation value (0-4) occupied 8.8% (210.2km) of the roadsides surveyed (Table 3 and Figure 10).



#### Flora Roads

A flora road is one which has special conservation value because of the vegetation contained within the road reserve. The RCC has prepared *Guidelines for the Nomination and Management of Flora Roads* (Appendix 7).

Although presently there are no Flora Roads declared within the Shire of Kent, the roadside survey and the RCV map highlighted a large number of roadsides that have the potential to be declared as Flora Roads. Roadsides, or large sections of roadsides, determined as having high conservation value in the western half of the Shire of Kent (Nyabing area) include:

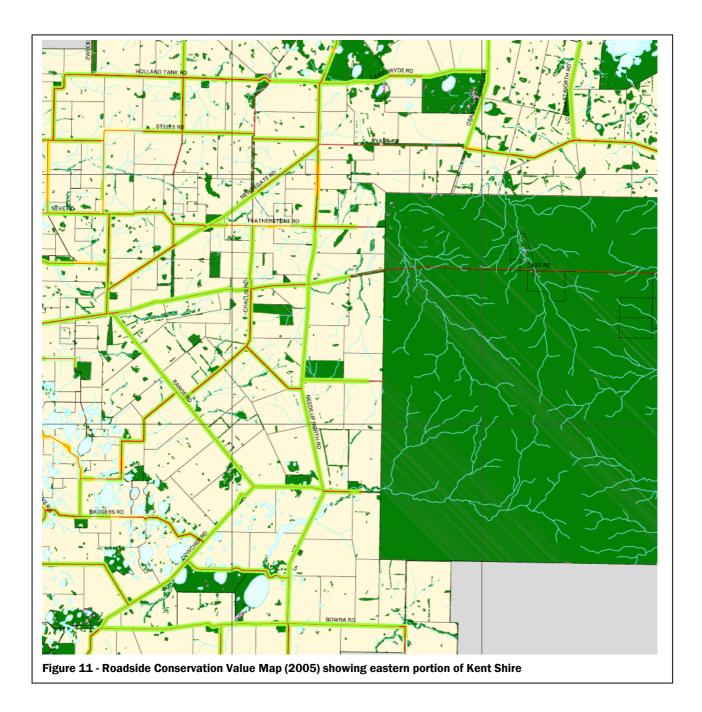
- Peterson Road
- Beagley Road
- Rasmussen Road
- Kuringup Road
- Kuringup Road North

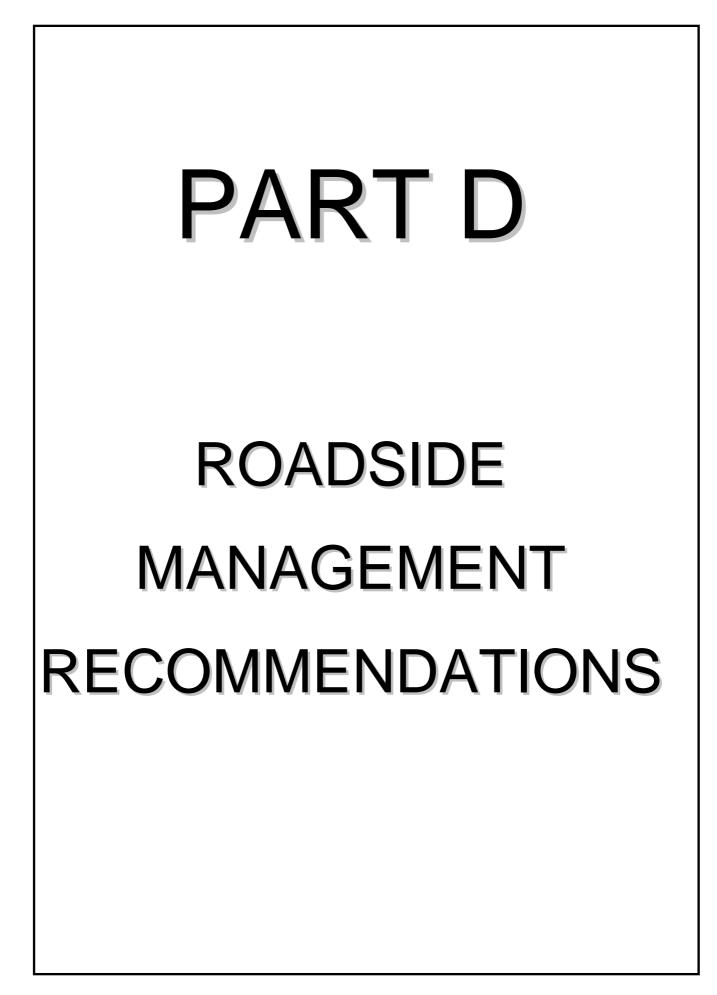
- Harvey Road
- Addis Road
- Kwobrup North Road
- Boongadoo Road
- Gwelfi Road

In the eastern portion of the Shire, a high number of roadsides were assessed as being high conservation, and many of these may be suitable as flora roads (Figure 11).



Flora Road nominations are assessed by the RCC. Photo D Lamont.





#### 1.0 Management Recommendations

The primary aim of road management is the creation and maintenance of a safe, efficient road system. In addition, there are often important conservation values within the road reserve and thus this section provides general management procedures and recommendations that will assist in retaining and enhancing roadside conservation values.

The Executive Officer of the RCC is also available to provide assistance on all roadside conservation matters, and can be contacted on (08) 9334 0423. The following RCC publications provide guidelines and management recommendations that will assist Local Government Authorities:

- Handbook of Environmental Practice for Road Construction and Maintenance Works.
- Guidelines for Managing Special Environmental Areas in Transport Corridors; and
- The Roadside Handbook;

### 1.1 Protect high conservation value roadsides by maintaining and enhancing the native plant communities.

This can be achieved by:

- retaining remnant vegetation;
- minimising disturbance to existing roadside vegetation;
- minimising disturbance to soil; and
- preventing or controlling the introduction of weeds.

### 1.2. Promote and raise awareness of the conservation value associated with roadside vegetation by:

- establishing a register of Shire roads important for conservation;
- declaring suitable roadsides as Flora Roads; and
- incorporating it into tourist, wildflower and/or scenic drives.

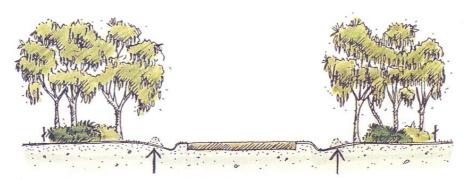
#### **1.3** Improve roadside sections of medium to low conservation value by:

- minimising disturbance caused by machinery, adjoining land practices and incidences of fire;
- carrying out a targeted weed control program;
- retaining remnant trees and shrubs;
- allowing natural regeneration;
- spreading local native seed to encourage regeneration; and
- encouraging revegetation projects by adjacent landholders.

## 2.0 Minimising Disturbance

Minimal disturbance can be achieved by:

- adopting a road design that occupies the minimum space;
- diverting the line of a table drain to avoid disturbing valuable flora;
- pruning branches, rather than removing the whole tree or shrub;
- not dumping spoil on areas of native flora;
- applying the Fire Threat Assessment (see RCC Roadside Manual) before burning roadside vegetation, use methods other than fuel reduction burns to reduce fire threat; if roadside burning must be undertaken, incorporate it into a district fire management program;
- encouraging adjacent landholders to set back fences to allow roadside vegetation to proliferate;
- encouraging adjacent landholders to plant windbreaks or farm tree lots adjacent to roadside vegetation to create a denser windbreak or shelterbelt; and
- encouraging revegetation projects by adjacent landholders.

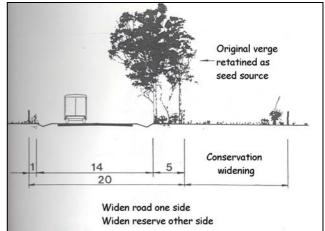


Avoid windrowing drain material into vegetation



Above: A high value road reserve in Tammin. The road was built on adjoining farmland in order to retain the important remnant bushland existing in the undeveloped road reserve.

Below right: Widening a road to one side only so that a wider section of roadside vegetation is retained on the other side of the road reserve.



## 3.0 Planning for Roadsides

The RCC is able to provide comprehensive models of Roadside Management Plans and encourages all Shires to adopt this practice of planning for roadside conservation.

The following actions greatly enhance likelihood of a plan that changes behaviour and results in on-ground actions:

- <u>Community support</u> encourage ongoing community involvement and commitment by establishing a local Roadside Advisory Committee or working group within the Shire Environmental Committee;
- <u>Contract specifications</u> maintain roadside values by developing environmental specifications for inclusion in all tender documents or work practices;
- <u>Community education</u> use of innovative and pertinent material can increase community understanding of roadside values; and
- <u>Training</u> promote local roadside planning initiatives and gain acceptance and understanding by involving shire staff, contractors, utility provider staff and the community in workshops, seminars or training days. The RCC can provide this training.

Training develops recognition and understanding of roadside values and highlights best work practices. Workshops are developed to ensure that local issues and environments are dealt with and they include site visits to high conservation remnants, current projects and works. For training enquiries please contact the RCC Executive Officer (08) 9334 0423.

## 4.0 Setting Objectives

The objective of all roadside management should be to:

#### Protect

- native vegetation
- rare or threatened flora and fauna
- cultural and heritage values
- community assets from fire
- Maintain
- safe function of the road
- native vegetation communities
- fauna habitats and corridors
- visual amenity and landscape qualities
- water quality

- Minimise
- land degradation
- spread of weeds and vermin
- spread of soil borne pathogens
- risk and impact of fire
- disturbance during installation and maintenance of service assets
- Enhance
- indigenous vegetation communities
- fauna habitats and corridors

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# Appendix

1



URVEY TO DETERMINE T			N VALUE OF ROADSIDES IN THE	C/-	Locked Ba	servation Committee g 104 ery Centre WA 6983	Phone: (08) 9334 04 Fax: (08) 9334 0199	
Date			No. OF DIFFERENT NATIVE SPECIE			NOMINATED WEEDS	I	
Observer(s)			0 - 5 6 - 19					
Road Name			Over 20			< 20% total weeds 20 – 80% total weeds		
Shire			VALUE AS A BIOLOGICAL CORRIDO	) <u>R</u>		> 80% total weeds		
Nearest named place			Connects uncleared areas					
Direction of travel (N,S,E,W	n		Flowering shrubs			ADA/ initiations do	_	_
			Large trees with hollows			< 20% total weeds 20 – 80% total weeds		
Section No.			Hollow logs			> 80% total weeds		ū
Starting Point			PREDOMINANT ADJOINING LANDU	<u> 8 E</u>				_
Odometer reading			Agricultural crop or pasture:					
Ending Point			- Completely cleared - Scattered		8	< 20% total weeds 20 – 80% total weeds		
			Uncleared land	ŏ	ō	20 – 80% total weeds > 80% total weeds		Ë
Odometer reading			Plantation of non-native trees Urban or industrial	Ē				-
Length of section			Railway Reserve parallel to road Drain Reserve parallel to road		P		·······	
WIDTH OF ROAD RESEI	RVE (m)		Other:			< 20% total weeds		
						20 – 80% total weeds > 80% total weeds		
Side of the road	Left	Right	UTILITIES			> ou% total weeds		
WIDTH OF VEGETATED	ROADSIE	) <u>E</u>	Utility Present					
1 – 5 m			Utility Absent			< 20% total weeds		
5 – 20 m			Туре:			20 – 80% total weeds		
Over 20 m						> 80% total weeds		
NATIVE VEGETATION O	N ROADS	IDE	GENERAL WEEDS					
Tree layer			Few weeds (<20% total plants)			< 20% total weeds		
			Half weeds (20 - 80% total) Mostly weeds (>80% total)			20 – 80% total weeds		
Ground layer			Ground layer totally weeds	Ľ	Ë	80% total weeds		
EXTENT OF NATIVE VE		N ON	SALT AFFECTED ROADSIDE			GENERAL COMMENTS	<u>6</u>	
ROADSIDE			< 20% salt affected					
Less than 20%			20 - 80% salt affected		ō			
20 - 80%			> 80% salt affected			OFFICE USE ONLY		
Over 80%						Conservation value score	0	

## Appendix

2

Survey of Roadside Conservation Values in the Shire of Kent

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Adjo Lano	ining duse	Conser Value : (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060001	1	0.00	0.60	0.60	ONE TWENTY NINE RD	East	07- Oct- 04		20	2	2	0	0	0	0	0	1	2	1	2	2	6	6	
3060001	2	0.60	1.40	0.80	ONE TWENTY NINE RD	East		mike	20	2	2	1	0	1	0	2	2	0	0	0	2	6	6	
3060001	3	1.40	4.30	2.90	ONE TWENTY NINE RD	East		mike	20	2	2	0	1	0	0	0	0	0	0	2	1	4	5	
3060001	4	4.30	4.80	0.50	ONE TWENTY NINE RD	East		mike	20	1	1	1	0	0	0	1	1	0	0	2	2	5	4	
3060001	5	4.80	5.50	0.70	ONE TWENTY NINE RD	East		mike	20	2	2	1	0	0	0	2	2	2	0	2	2	9	6	
3060001	6	5.50	8.00	2.50	ONE TWENTY NINE RD	East	-	mike	20	2	2	0	1	0	0	0	0	1	1	2	2	5	6	
3060001	7	8.00	8.40	0.40	ONE TWENTY NINE RD	East		mike	20	2	2	2	1	2	1	2	2	2	1	0	1	10	8	VICTORIAN_TEA_TREE
3060001	8	8.40	9.50	1.10	ONE TWENTY NINE RD	East	-	mike	20	2	2	0	0	0	0	2	2	2	2	2	2	8	8	VICTORIAN_TEA_TREE
3060001	9	9.50	10.40	0.90	ONE TWENTY NINE RD	East		mike	20	2	2	1	0	1	0	2	1	2	2	0	2	8	7	
3060001	10	10.40	12.00	1.60	ONE TWENTY NINE RD	East		mike	20	2	2	0	0	0	0	2	2	0	0	0	0	4	4	SALT_AFFECTED_ROADSIDE
3060001	11	12.00	14.90	2.90	ONE TWENTY NINE RD	East		mike	20	2	2	0	0	0	0	1	1	1	2	2	2	6	7	
3060001	12	14.90	16.80	1.90	ONE TWENTY NINE RD	East	-	mike	20	2	2	1	0	1	0	1	1	2	0	2	2	9	5	
3060001	13	16.80	18.70	1.90	ONE TWENTY NINE RD	East		mike	20	2	2	0	0	0	0	1	1	2	2	2	2	7	7	
3060001	14	18.70	20.00	1.30	ONE TWENTY NINE RD	East		mike	20	2	2	0	1	0	0	0	1	1	1	2	1	5	5	BRIDAL_CREEPER
3060001	15	20.00	23.30	3.30	ONE TWENTY NINE RD	East		mike	20	2	2	1	1	0	0	0	0	0	2	2	2	3	7	
3060001	16	23.30	24.00	0.70	ONE TWENTY NINE RD	East		mike	20	2	2	1	0	1	0	2	1	2	1	2	2	10	6	

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		tive tation	Exte Vege	ent of station	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Adjoi Lanc	ning luse	Value	12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060001	17	24.00	34.80	10.80	ONE TWENTY NINE RD	East	07- Oct- 04		20	2	2	1	1	0	0	2	1	1	0	2	2	8	6	SALT_AFFECTED_ROADSIDE
3060001	18	34.80	35.10	0.30	ONE TWENTY NINE RD	East		mike	20	2	2	1	1	1	1	2	2	1	2	0	0	7	8	VICTORIAN_TEA_TREE
3060001	19	35.10	38.80	3.70	ONE TWENTY NINE RD	East		mike	20	2	2	0	1	0	0	0	1	2	2	2	2	6	8	
3060001	20	38.80	39.50	0.70	ONE TWENTY NINE RD	East		mike	20	0	0	0	0	0	0	0	0	0	1	2	2	2	3	
3060001	21	39.50	40.30	0.80	ONE TWENTY NINE RD	East		mike	20	0	0	0	0	0	0	2	0	0	0	2	2	4	2	
3060001	22	40.30	48.50	8.20	ONE TWENTY NINE RD	East		mike	20	1	1	0	0	0	0	0	1	2	2	2	2	5	6	
3060001	23	48.50	49.95	1.45	ONE TWENTY NINE RD	East		mike	20	1	1	0	0	1	1	1	1	2	2	2	2	7	7	
3060002	1	2.95	7.85	4.90	TINCURRIN RD	North	14-	J&B Temby	20	2	1	1	1	1	0	1	1	2	2	0	1	7	6	
3060002	2	7.85	19.75	11.90	TINCURRIN RD	North	14-	J&B Temby	20	1	1	1	1	0	0	1	1	2	2	1	1	6	6	
3060002	3	19.75	23.75	4.00	TINCURRIN RD	North	14-	J&B Temby	20	1	0	1	0	0	0	1	0	2	0	1	1	6	1	
3060002	4	23.75	25.05	1.30	TINCURRIN RD	North	14-	J&B Temby	20	1	1	1	1	0	0	1	1	2	2	1	1	6	6	
3060003	1	3.00	9.80	6.80	KUKERIN SOUTH RD	South	-	Mike	20	2	2	1	0	0	0	2	1	2	2	2	2	9	7	VICTORIAN TEA TREE
3060003	2	9.80	11.20	1.40	KUKERIN SOUTH RD	South		Mike	20	1	1	1	1	1	2	2	2	2	2	0	0	7	8	
3060003	3	11.20	19.50	8.30	KUKERIN SOUTH RD	South		Mike	20	2	2	0	1	0	0	1	0	1	2	2	2	6	7	VICTORIAN TEA TREE
3060003	4	19.50	19.80	0.30	KUKERIN SOUTH RD	South		mike	20	2	2	1	1	1	1	1	1	1	1	1	0	7	6	
3060003	5	19.80	22.00	2.20	KUKERIN SOUTH RD	South		mike	20	2	2	1	1	1	0	2	2	2	2	2	2	10	9	

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		tive tation		ent of tation	P	ative ant ecies	w	eeds	В	ue as iol. ridor		ining duse	(0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060004	1	0.00	2.70	2.70	KUKERIN NORTH RD	South	01- Oct- 04		20	1	1	0	0	0	0	1	1	0	1	2	2	4	5	CABBAGE_FAMILY_WEEDS
3060004	2	2.70	3.30	0.60	KUKERIN NORTH RD	South	01- Oct- 04		20	2	2	1	0	2	0	2	1	2	1	0	2	9	6	CABBAGE_FAMILY_WEEDS
3060004	3	3.30	5.40	2.10	KUKERIN NORTH RD	South		mike	20	2	2	0	0	0	0	1	1	1	1	2	2	6	6	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060004	4	5.40	6.40	1.00	KUKERIN NORTH RD	South		mike	20	2	1	0	0	0	0	1	1	1	0	0	2	4	4	VICTORIAN_TEA_TREE
3060004	5	6.40	7.60	1.20	KUKERIN NORTH RD	South		mike	20	1	1	0	0	0	0	2	1	0	1	2	0	5	3	
3060004	6	7.60	8.10	0.50	KUKERIN NORTH RD	South		mike	20	1	2	1	1	0	0	1	2	0	1	2	0	4	7	
3060004	7	8.10	12.00	3.90	KUKERIN NORTH RD	South		mike	20	1	1	0	0	1	0	2	0	1	0	2	2	7	3	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060004	8	12.00	13.00	1.00	KUKERIN NORTH RD	South	-	mike	20	2	2	1	1	1	1	2	2	2	1	2	2	10	9	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060004	9	13.00	14.00	1.00	KUKERIN NORTH RD	South	-	mike	20	1	1	0	0	0	0	1	1	1	0	2	2	5	4	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060004	10	14.00	15.10	1.10	KUKERIN NORTH RD	South	-	mike	20	1	0	0	0	0	0	1	2	0	0	0	2	2	4	CABBAGE_FAMILY_WEEDS
3060004	11	15.10	16.50	1.40	KUKERIN NORTH RD	South	-	mike	20	1	1	0	0	0	0	1	1	2	1	2	1	6	4	CABBAGE_FAMILY_WEEDS
3060006	1	0.00	0.30	0.30	MT PLEASANT RD	North	00- Feb- 05	mike	20	1	1	0	0	1	1	0	0	0	0	2	2	4	4	
3060006	2	0.30	4.20	3.90	MT PLEASANT RD	North	00- Feb- 05	mike	20	2	2	0	1	0	0	0	0	0	2	2	2	4	7	
3060006	3	4.20	5.30	1.10	MT PLEASANT RD	North	00- Feb- 05	mike	20	2	2	1	1	0	1	0	0	0	0	1	2	4	6	
3060006	4	5.30	5.50	0.20	MT PLEASANT RD	North	00- Feb- 05	mike	20	2	2	1	0	1	0	1	1	2	1	1	1	8	5	
3060006	5	5.50	5.90	0.40	MT PLEASANT RD	North	00- Feb- 05	mike	20	1	2	0	0	0	1	0	0	0	1	2	1	3	5	

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Aajo	ining duse	Conser Value : (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060006	6	5.90	11.00	5.10	MT PLEASANT RD	North	00- Feb- 05	mike	20	2	2	1	1	1	1	2	2	2	2	1	1	9	9	
3060006	7	11.00	11.80	0.80	MT PLEASANT RD	North	00- Feb- 05	mike	20	2	1	2	1	2	1	2	2	2	2	0	1	10	8	
3060007	1	0.00	4.70	4.70	ONE TWENTY FIVE RD	East	07- Oct- 04		20	2	2	0	0	0	0	1	2	1	2	2	2	6	8	
3060007	2	4.70	6.60	1.90	ONE TWENTY FIVE RD	East	07- Oct- 04		20	1	2	0	0	0	0	2	2	0	0	0	0	3	4	SALT_AFFECTED_ROADSIDE
3060007	3	6.60	12.40	5.80	ONE TWENTY FIVE RD	East	07- Oct- 04		20	2	2	0	0	0	0	2	2	2	1	2	2	8	7	
3060007	4	12.40	13.00	0.60	ONE TWENTY FIVE RD	East		mlke	20	2	2	1	0	1	0	2	1	1	1	0	2	7	6	
3060007	5	13.00	14.00	1.00	ONE TWENTY FIVE RD	East		mlke	20	2	2	0	0	0	0	2	2	2	1	1	2	7	7	VICTORIAN_TEA_TREE
3060007	6	14.00	17.00	3.00	ONE TWENTY FIVE RD	East	-	mlke	20	2	2	0	0	1	0	1	2	2	0	2	2	8	6	VICTORIAN_TEA_TREE
3060007	7	17.00	18.40	1.40	ONE TWENTY FIVE RD	East		mlke	20	1	2	0	0	0	0	2	2	2	2	2	2	7	8	
3060007	8	18.40	19.60	1.20	ONE TWENTY FIVE RD	East		mlke	20	1	2	0	1	0	1	2	2	0	2	1	0	4	8	
3060007	9	19.60	28.60	9.00	ONE TWENTY FIVE RD	East	07- Oct- 04		20	2	0	1	0	0	0	0	0	1	0	2	2	6	2	
3060008	1	0.00	1.30	1.30	PETERSEN RD	East	09- Oct- 04		20	2	2	0	0	0	0	1	1	0	0	2	2	5	5	SALT_AFFECTED_ROADSIDE
3060008	2	1.30	2.40	1.10	PETERSEN RD	East		mike	20	2	2	0	0	0	0	2	2	0	0	2	0	6	4	SALT_AFFECTED_ROADSIDE
3060008	3	2.40	6.00	3.60	PETERSEN RD	East		mike	20	2	2	0	0	0	0	2	2	0	0	2	2	6	6	SALT_AFFECTED_ROADSIDE
3060008	4	6.00	15.30	9.30	PETERSEN RD	East		mike	20	2	2	1	1	1	1	2	2	2	2	0	0	8	8	
3060009	1	2.87	4.57	1.70	NIPPERING NORTH RD	North		mich	20	1	0	1	1	0	0	0	0	2	0	2	2	6		VICTORIAN_TEA_TREE SALT_AFFECTED_ROADSIDE

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Adjo Lano	ining duse	Conser Value (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060009	2	4.57	10.87	6.30	NIPPERING NORTH RD	North	01- Oct- 04	mich	20	1	1	1	1	1	1	0	0	2	2	2	2	7	7	VICTORIAN_TEA_TREE
3060009	3	10.87	14.77	3.90	NIPPERING NORTH RD	North		mich	20	2	2	1	1	1	1	0	0	2	2	2	2	8	8	VICTORIAN_TEA_TREE
3060010	1	1.00	1.30	0.30	WHITE WELL RD	East	00- Feb- 05	mike	20	2	1	2	0	1	0	2	2	2	2	1	1	10	6	
3060010	2	1.30	3.20	1.90	WHITE WELL RD	East	00- Feb- 05	mike	20	2	2	2	1	1	1	2	2	1	0	1	1	9	7	
3060010	3	3.20	3.90	0.70	WHITE WELL RD		00- Feb- 05	mike	20	2	0	0	0	0	0	2	2	2	2	2	2	8	6	
3060010	4	3.90	4.20	0.30	WHITE WELL RD	East	00- Feb- 05	mike	20	2	2	0	0	1	0	2	2	2	2	0	2	7	8	
3060010	5	4.20	7.20	3.00	WHITE WELL RD	East	00- Feb- 05	mike	20	2	2	1	0	1	0	1	1	2	2	1	2	8	7	
3060010	6	7.20	7.90	0.70	WHITE WELL RD	East	00- Feb- 05	mike	20	2	2	0	2	0	2	0	1	2	2	1	0	5	9	
3060010	7	7.90	13.00	5.10	WHITE WELL RD	East	00- Feb- 05	mike	20	2	2	0	0	1	1	0	0	2	2	2	2	7	7	
3060010	8	13.00	17.70	4.70	WHITE WELL RD		00- Feb- 05	mike	20	2	2	1	1	0	0	1	1	0	0	1	1	5	5	
3060010	9	17.70	18.30	0.60	WHITE WELL RD	East	00- Feb- 05	mike	20	1	1	0	0	0	0	0	0	0	0	1	0	2	1	
3060010	10	18.30	20.40	2.10	WHITE WELL RD	East	00- Feb- 05	mike	20	1	1	0	0	0	0	0	0	1	1	2	1	4	3	
3060010	11	20.40	20.90	0.50	WHITE WELL RD	East	00- Feb- 05	mike	20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	SALT_AFFECTED_ROADSIDE
3060012	1	0.00	0.70	0.70	BIBIKIN RD	South		mich	20	2	2	2	2	1	1	1	1	2	2	0	0	8	8	SALT_AFFECTED_ROADSIDE
3060012	2	0.70	4.00	3.30	BIBIKIN RD	South		mich	20	1	1	1	1	0	0	0	0	0	0	2	2	4	4	SALT_AFFECTED_ROADSIDE
3060012	3	4.00	6.20	2.20	BIBIKIN RD	South	10- Nov- 04	mich	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	w	eeds	В	ue as iol. ridor	Adjo	ining duse	Conser Value (0-	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060012	4	6.20	9.60	3.40	BIBIKIN RD	South	10- Nov- 04	mich	20	1	1	1	1	0	0	1	1	0	0	2	2	5	5	
3060012	5	9.60	11.50	1.90	BIBIKIN RD	South	10- Nov- 04	mich	20	1	1	0	0	0	0	0	C	0	0	2	2	3	3	
3060013	1	0.00	2.20	2.20	WISHBONE RD	North	16- Oct- 04	meryn	20	1	1	1	1	0	0	1	1	2	2	1	1	6	6	SALT_AFFECTED_ROADSIDE
3060013	2	2.20	3.00	0.80	WISHBONE RD	North		meryn	20	2	2	1	1	1	1	1	1	0	0	1	1	6	6	
3060013	3	3.00	3.90	0.90	WISHBONE RD	North		meryn	20	2	2	0	0	0	0	0	C	0	0	1	1	3	3	
3060013	4	3.90	4.30	0.40	WISHBONE RD	North		meryn	20	2	2	1	1	0	0	1	1	1	0	0	1	5	5	
3060013	5	4.30	4.90	0.60	WISHBONE RD	North	16- 0ct- 04	meryn	20	1	1	1	1	0	0	1	1	0	0	1	1	4	4	PATERSONS_CURSE
3060013	6	4.90	5.30	0.40	WISHBONE RD	North	16- 0ct- 04	meryn	20	1	1	1	1	0	0	1	1	0	0	1	1	4	4	SALT_AFFECTED_ROADSIDE
3060013	7	5.30	5.70	0.40	WISHBONE RD	North		meryn	20	2	2	1	1	0	0	1	1	0	0	1	1	5	5	
3060013	8	5.70	6.00	0.30	WISHBONE RD	North		meryn	20	2	0	1	0	1	0	1	C	1	0	1	1	7	1	
3060013	9	6.00	6.30	0.30	WISHBONE RD	North		meryn	20	2	2	1	1	1	0	1	2	1	1	1	1	7	7	
3060013	10	6.30	8.60	2.30	WISHBONE RD	North		meryn	40	1	1	0	0	0	0	2	2	0	0	1	1	4	4	SALT_AFFECTED_ROADSIDE
3060013	11	8.60	11.00	2.40	WISHBONE RD	North		meryn	40	2	2	1	1	1	1	1	1	1	1	1	1	7	7	
3060013	12	11.00	14.80	3.80	WISHBONE RD	North	15- 0ct- 04	meryn	40	2	2	1	1	1	1	1	1	2	2	1	1	8	8	
3060013	13	14.80	15.90	1.10	WISHBONE RD	North		meryn	40	2	2	1	1	0	0	1	1	1	0	1	1	6	5	
3060013	14	15.90	17.20	1.30	WISHBONE RD	North		meryn	40	2	2	1	1	0	0	1	1	0	1	1	0	5	5	SALT_AFFECTED_ROADSIDE

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		ive ation		ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. rridor	Aajo	oining duse	Conser Value (0-	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Righ	t Left	Right	Left	Right	(Weeds and salt listed if present)
3060013	15	17.20	22.20	5.00	WISHBONE RD	North	15- Oct- 04		40	2	2	2	2	1	1	1	1	2	2	2 1	1	9	9	
3060013	16	22.20	23.50	1.30	WISHBONE RD	North	15- Oct- 04		20	1	1	1	0	0	0	1	0	0	C	) 1	1	4	2	
3060013	17	23.50	25.30	1.80	WISHBONE RD	North		meryn	20	2	1	1	1	1	1	1	2	1	1	1	1	7	7	CABBAGE_FAMILY
3060013	18	25.30	29.50	4.20	WISHBONE RD	North		meryn	20	2	2	1	0	0	0	1	0	0	C	) 1	1	5	3	
3060013	19	29.50	31.30	1.80	WISHBONE RD	North		meryn	20	1	2	1	1	0	0	0	1	0	1	1	1	3	6	SALT_AFFECTED_ROADSIDE
3060013	20	31.30	31.80	0.50	WISHBONE RD	North		meryn	20	0	1	0	0	0	0	0	0	0	1	1	1	1	3	
3060013	21	31.80	34.70	2.90	WISHBONE RD	North		meryn	20	1	2	1	1	0	0	1	1	0	C	) 1	1	4	5	
3060013	22	34.70	36.40	1.70	WISHBONE RD	North		meryn	20	2	2	2	1	1	1	2	2	2	2	2 0	1	9	9	
3060013	23	36.40	36.80	0.40	WISHBONE RD	North		meryn	20	2	2	1	1	0	0	1	1	2	2	2 1	1	7	7	
3060014	1	0.00	7.72	7.72	TARIN ROCK RD	East	23-	megan and ella	20	2	2	2	2	0	0	2	2	2	2	2 1	1	9	9	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060014	2	7.72	11.19	3.46	TARIN ROCK RD	East	23-	megan and ella	20	2	2	2	2	2	2	2	2	2	2	2 0	2	10	12	VICTORIAN_TEA_TREE
3060014	3	11.19	15.15	3.96	TARIN ROCK RD	East	23-	megan and ella	20	2	2	2	2	1	1	1	1	2	2	2 2	2	10	10	CABBAGE_FAMILY_WEEDS
3060014	4	15.15	16.81	1.66	TARIN ROCK RD	East	23- Sep- 04	megan and ella	20	2	2	1	1	1	1	0	0	2	2	2 1	2	7	8	CABBAGE_FAMILY_WEEDS
3060014	5	16.81	17.37	0.56	TARIN ROCK RD	East	23-	megan and ella	20	2	2	0	1	0	0	0	0	1	1	1	2	4	6	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060014	6	17.37	17.84	0.46	TARIN ROCK RD	East	23-	megan and ella	20	2	0	1	0	1	0	0	0	0	(	) 1	2	5	2	CABBAGE_FAMILY_WEEDS CABBAGE_FAMILY_WEEDS
3060014	7	17.84	20.00	2.16	TARIN ROCK RD	East	23-	megan and ella	20	2	2	1	1	1	1	0	0	1	1	2	2	7	7	CABBAGE_FAMILY_WEEDS CABBAGE_FAMILY_WEEDS

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width	Nat Veget			ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor		ining duse	Conser Value : (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060014	8	20.00	20.76	0.76	TARIN ROCK RD	East	23- Sep- 04	megan and ella	20	2	2	2	2	2	2	2	2	2	2	2	2	12	12	
3060015	1	0.00	2.80	2.80	BLADENDALE RD	North	24- Sep- 04		20	2	1	0	0	0	0	0	0	0	0	2	2	4	3	VICTORIAN_TEA_TREE
3060015	2	2.80	3.40	0.60	BLADENDALE RD	North	24- Sep- 04	geoff	20	1	1	0	0	0	0	2	1	0	0	0	2	3	4	VICTORIAN_TEA_TREE
3060015	3	3.40	6.90	3.50	BLADENDALE RD	North		geoff	20	2	2	2	2	1	1	1	1	1	1	2	2	9	9	VICTORIAN_TEA_TREE
3060015	4	6.90	7.20	0.30	BLADENDALE RD	North		geoff	20	2	2	2	2	2	2	2	2	2	2	2	2	10	12	VICTORIAN_TEA_TREE
3060015	5	7.20	7.50	0.30	BLADENDALE RD	North		geoff	20	2	2	2	2	2	2	2	2	2	2	2	0	12	10	VICTORIAN_TEA_TREE
3060015	6	7.50	7.80	0.30	BLADENDALE RD	North		geoff	20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060015	7	7.80	10.20	2.40	BLADENDALE RD	North		geoff	20	2	2	1	1	0	0	1	1	0	0	1	2	5		VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060015	8	10.20	10.80	0.60	BLADENDALE RD	North		geoff	20	2	2	2	2	2	2	2	2	1	1	0	0	9	9	VICTORIAN_TEA_TREE
3060015	9	10.80	11.70	0.90	BLADENDALE RD	North		geoff	20	1	2	1	1	1	1	1	1	1	1	2	2	7		CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060015	10	11.70	12.80	1.10	BLADENDALE RD	North		geoff	20	1	1	1	1	1	0	2	2	1	0	1	2	7	6	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060015	11	12.80	14.30	1.50	BLADENDALE RD	North	24- Sep- 04		20	1	0	0	0	0	0	0	2	0	0	1	1	2	3	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060016	1	0.22	1.52	1.30	KUKERIN NORTH EAST RD	North	24- Sep- 04	megan mike	20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	
3060016	2	1.52	2.02	0.50	KUKERIN NORTH EAST RD	North	24-	megan mike	20	2	2	2	2	2	2	2	2	2	2	2	2	12	12	
3060016	3	2.02	4.02	2.00	KUKERIN NORTH EAST RD	North	24-	megan mike	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	
3060016	4	4.02	4.32	0.30	KUKERIN NORTH EAST RD	North	24-	megan mike	20	2	2	2	2	1	1	2	2	2	2	0	0	9	9	

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width	Nat Veget			ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor		ining duse	Conser Value (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060016	5	4.32	6.12	1.80	KUKERIN NORTH EAST RD	North		megan mike	20	2	2	2	2	1	1	2	2	2	2	2	2	11	11	
3060017	1	10.80	11.30	0.50	TARIN ROCK NORTH RD	North		ella megan	20	2	2	2	2	0	0	2	2	2	2	0	0	8	8	
3060017	2	9.60	10.80	1.20	TARIN ROCK NORTH RD	North		ella megan	20	2	2	2	2	2	2	2	2	2	2	1	0	10	11	
3060017	3	4.40	9.60	5.20	TARIN ROCK NORTH RD	North		ella megan	20	2	2	2	2	2	2	2	2	2	2	1	2	11	12	CABBAGE_FAMILY_WEEDS
3060017	4	0.00	4.40	4.40	TARIN ROCK NORTH RD	North		ella megan	20	2	2	0	1	0	1	0	1	1	2	1	2	4	9	CABBAGE_FAMILY_WEEDS
3060019	1	0.00	5.35	5.35	TRELOARS RD	East		mike	20	0	0	0	0	0	0	0	0	0	0	2	1	2	1	VICTORIAN_TEA_TREE SALT_AFFECTED_ROADSIDE
3060019	2	5.35	9.20	3.85	TRELOARS RD	East		mike	20	2	2	0	1	0	0	0	0	2	2	2	1	6	6	VICTORIAN_TEA_TREE
3060019	3	9.20	9.65	0.45	TRELOARS RD	East	-	mike	20	2	1	1	0	0	0	1	0	1	0	2	1	7	2	CABBAGE_FAMILY_WEEDS
3060019	4	9.65	12.30	2.65	TRELOARS RD	East	-	mike	20	1	1	1	1	0	0	1	2	2	1	2	1	7	6	CABBAGE_FAMILY_WEEDS
3060019	5	12.30	13.45	1.15	TRELOARS RD	East	-	mike	20	0	0	0	0	0	0	0	0	0	0	2	1	2	1	CABBAGE_FAMILY_WEEDS
3060019	6	13.45	14.70	1.25	TRELOARS RD	East		mike	20	2	1	0	1	0	0	1	1	0	2	2	1	5	6	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060020	1	0.00	0.40	0.40	CANDLELIGHT RD	South		mike	20	0	0	0	0	0	0	0	0	0	0	2	2	2	2	VICTORIAN_TEA_TREE
3060020	2	0.40	2.50	2.10	CANDLELIGHT RD	South		mike	20	0	1	0	1	0	1	0	1	0	2	2	2	2	8	VICTORIAN_TEA_TREE
3060020	3	2.50	5.30	2.80	CANDLELIGHT RD	South		mike	20	1	2	0	1	0	1	1	2	2	1	2	2	5	8	VICTORIAN_TEA_TREE
3060020	4	5.30	9.20	3.90	CANDLELIGHT RD	South		mike	20	2	2	0	0	1	0	2	2	1	1	1	1	7	6	VICTORIAN_TEA_TREE
3060020	5	9.20	11.20	2.00	CANDLELIGHT RD	West		mike	20	2	2	1	0	1	0	2	2	2	1	1	1	8	6	VICTORIAN_TEA_TREE

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		ive ation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Aajo	ining duse	Conser Value (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060020	6	11.20	11.80	0.60	CANDLELIGHT RD	West	01- Oct- 04		20	1	1	1	0	1	0	1	2	2	1	0	1	6	5	VICTORIAN_TEA_TREE
3060020	7	11.80	17.60	5.80	CANDLELIGHT RD	West	01- Oct- 04		20	1	2	0	1	1	1	1	1	1	1	2	1	6		CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060020	8	17.60	18.40	0.80	CANDLELIGHT RD	West		mike	20	2	2	0	0	0	0	1	1	1	1	1	2	5	6	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060020	9	18.40	19.40	1.00	CANDLELIGHT RD	West		mike	20	2	2	1	1	1	1	1	0	2	2	1	2	8	8	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060021	1	0.00	1.20	1.20	KUKERIN RD	West	24-	megan and mike	20	2	1	2	0	1	0	0	0	1	1	0	2	6	4	
3060021	2	1.20	1.70	0.50	KUKERIN RD	West	24- Sep- 04	megan and mike	20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	
3060021	3	1.70	2.20	0.50	KUKERIN RD	West	24-	megan and mike	20	2	2	1	1	1	1	0	0	1	1	2	0	7	5	
3060021	4	2.20	4.80	2.60	KUKERIN RD	West	24-	megan and mike	20	2	2	1	1	1	1	0	0	2	2	2	1	8	7	CABBAGE_FAMILY_WEEDS
3060022	1	0.00	2.40	2.40	RIFLE RANGE RD	South	29- Oct- 04		0	2	2	1	1	1	1	2	2	0	0	2	2	8	8	
3060022	2	2.40	5.40	3.00	RIFLE RANGE RD	South		geoff	0	2	2	2	2	2	2	2	2	1	1	1	0	10	9	
3060022	3	5.40	7.40	2.00	RIFLE RANGE RD	South		geoff	20	2	2	1	1	1	1	2	2	1	1	1	1	8	8	
3060022	4	7.40	12.50	5.10	RIFLE RANGE RD	South		geoff	20	2	2	1	1	0	0	2	2	2	2	2	2	9	9	
3060023	1	0.00	0.90	0.90	CARWARDINE RD	South		mike	20	2	2	1	1	0	0	1	1	1	1	2	2	7	7	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060023	2	0.90	1.40	0.50	CARWARDINE RD	South		mike	20	2	2	1	0	1	0	1	0	1	1	2	2	6	5	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060023	3	1.40	2.40	1.00	CARWARDINE RD	South		mike	20	2	2	1	0	0	0	2	2	1	0	2	2	8	6	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060023	4	2.40	3.70	1.30	CARWARDINE RD	South		mike	20	1	2	0	1	0	1	1	2	1	1	2	0	5	7	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		ive ation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Adjoi Lanc		Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060023	5	3.70	6.20	2.50	CARWARDINE RD	South	01- Oct- 04		20	2	2	0	0	0	0	2	1	1	2	2	1	7	6	VICTORIAN_TEA_TREE
3060023	6	6.20	6.50	0.30	CARWARDINE RD	South	-	mike	20	2	2	1	1	1	0	1	1	1	1	2	1	8	6	VICTORIAN_TEA_TREE
3060024	1	0.00	0.80	0.80	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	2	2	2	2	2	2	1	1	0	2	9	11	
3060024	2	0.30	3.50	3.20	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	1	1	2	2	0	0	0	0	0	2	5	7	
3060024	3	3.50	3.90	0.40	CANDLELIGHT SOUTH EAST RD	West	29- Oct- 04	geoff	0	2	2	2	2	2	2	0	0	2	2	0	0	8	8	
3060024	4	3.90	6.60	2.70	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	1	1	1	1	2	2	2	2	2	2	10	10	
3060024	5	6.60	6.80	0.20	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	2	2	2	2	1	1	0	0	0	0	7	7	
3060024	6	6.80	7.80	1.00	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	2	2	2	2	2	2	1	1	0	2	9	11	
3060024	7	7.80	10.80	3.00	CANDLELIGHT SOUTH EAST RD	West	29- Oct- 04		0	2	2	1	1	2	2	0	0	1	1	2	2	8	8	
3060024	8	10.80	12.20	1.40	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	0	0	0	0	0	0	0	0	0	2	2	4	2	
3060024	9	12.20	14.40	2.20	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	1	1	1	1	0	0	0	0	2	2	6	6	
3060024	10	14.40	14.70	0.30	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	1	1	1	1	0	0	0	0	0	2	4	6	
3060024	11	14.70	16.60	1.90	CANDLELIGHT SOUTH EAST RD	West		geoff	0	2	2	1	1	1	1	0	0	0	0	2	2	6	6	
3060025	1	0.00	0.50	0.50	ADAMS RD	North		mike	0	2	2	2	2	1	2	2	2	0	2	0	0	7	10	
3060025	2	0.50	4.60	4.10	ADAMS RD	North		geoff	0	2	2	0	0	0	0	0	0	1	2	2	2	5	6	
3060025	3	4.60	5.10	0.50	ADAMS RD	North		mike	0	2	2	2	2	2	2	1	1	2	2	1	0	10	9	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width	Nat Veget	tive tation	Exte Vege	ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Adjoi Lanc	ning luse	Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060025	4	5.10	7.80	2.70	ADAMS RD	North	29- Oct- 04		0	1	1	0	0	0	0	0	0	1	1	1	1	3	3	
3060025	5	7.80	8.90	1.10	ADAMS RD	North	29- Oct- 04	mike	0	2	1	2	0	2	0	2	1	1	0	0	2	9	4	
3060025	6	8.90	10.40	1.50	ADAMS RD	North		geoff	20	2	2	0	0	0	0	1	1	1	1	2	2	6	6	
3060025	7	10.40	10.80	0.40	ADAMS RD	North		mike	0	2	2	0	1	0	1	2	2	0	2	2	0	6	8	
3060025	8	10.80	16.40	5.60	ADAMS RD	North		geoff	20	2	2	1	1	1	1	1	2	2	2	1	2	8	9	
3060026	1	0.70	1.90	1.20	MERILUP RD	North		mike	0	2	2	1	1	1	1	0	0	0	0	1	2	5	6	
3060026	2	1.90	2.30	0.40	MERILUP RD	North		geoff	0	2	2	1	1	1	1	2	2	1	1	0	0	7	7	
3060026	3	2.30	4.70	2.40	MERILUP RD	North		mike	0	2	2	1	1	1	1	2	2	0	0	2	2	8	8	
3060026	4	4.70	4.90	0.20	MERILUP RD	North		geoff	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	
3060026	5	4.90	6.00	1.10	MERILUP RD	North		mike	20	1	1	0	0	0	0	0	0	1	1	2	0	4	2	
3060026	6	6.00	6.30	0.30	MERILUP RD	North		geoff	0	1	1	1	1	0	0	2	2	2	2	2	0	8	6	
3060026	7	6.30	6.80	0.50	MERILUP RD	North		mike	0	2	2	1	1	2	1	2	1	1	0	0	2	8	7	
3060026	8	6.80	11.50	4.70	MERILUP RD	North		geoff	0	2	2	1	0	1	0	1	1	1	1	2	2	8	6	
3060027	1	0.00	1.00	1.00	TARIN ROCK SOUTH RD	North		mike	20	2	2	1	1	0	0	1	1	0	0	2	2	6	6	
3060027	2	1.00	1.90	0.90	TARIN ROCK SOUTH RD	North		mike	20	0	2	0	0	0	0	0	0	0	0	2	2	2	4	
3060027	3	1.90	3.20	1.30	TARIN ROCK SOUTH RD	North		mike	20	2	2	1	0	1	0	2	2	2	1	2	2	10	7	

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width	Na Vege	tive tation	Exte Vege	ent of etation	P	ative ant ecies	We	eeds	В	ue as iol. ridor	Adjo	ining duse	Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060027	4	3.20	3.30	0.10	TARIN ROCK SOUTH RD	North	21- Oct- 04		20	2	2	1	1	1	1	1	1	2	2	2	0	8	7	
3060027	5	3.30	5.60	2.30	TARIN ROCK SOUTH RD	North	21- Oct- 04		20	2	2	2	2	2	2	1	1	2	2	0	0	9	9	
3060027	6	5.60	5.80	0.20	TARIN ROCK SOUTH RD	North	21- Oct- 04		20	2	2	0	1	0	1	2	2	1	2	1	0	6	8	
3060027	7	5.80	6.50	0.70	TARIN ROCK SOUTH RD	North		mike	20	2	2	0	0	0	0	2	2	1	2	2	0	7	6	
3060027	8	6.50	10.50	4.00	TARIN ROCK SOUTH RD	North		mike	20	2	2	1	1	0	0	2	2	0	2	2	2	7	9	
3060027	9	10.50	11.40	0.90	TARIN ROCK SOUTH RD	East	24-	megan and mike	20	0	0	0	0	0	0	0	C	0	0	2	2	2	2	CABBAGE_FAMILY_WEEDS
3060027	10	11.60	14.90	3.30	TARIN ROCK SOUTH RD	North		megan and mike	20	2	2	1	1	1	1	0	C	2	2	1	2	2 7	8	CABBAGE_FAMILY_WEEDS
3060027	11	14.90	15.10	0.20	TARIN ROCK SOUTH RD	North	24-	megan and mike	20	2	2	2	2	1	1	1	1	2	2	0	2	8	10	
3060027	12	15.10	17.80	2.70	TARIN ROCK SOUTH RD	North	24- Sep- 04	and mike	20	2	2	2	2	1	1	2	2	1	1	2	2	10	10	
3060027	13	17.80	19.10	1.30	TARIN ROCK SOUTH RD	North	24-	megan and mike	20	2	2	2	2	2	2	2	2	2	2	2 0	2	10	12	
3060027	14	19.10	19.80	0.70	TARIN ROCK SOUTH RD	North	24-	megan and mike	20	2	2	2	2	2	2	2	2	2	2	2 0	0	10	10	VICTORIAN_TEA_TREE
3060027	15	19.80	21.90	2.10	TARIN ROCK SOUTH RD	North	24-	megan and mike	20	2	2	2	2	1	1	1	1	2	2	: 1	2	9	10	VICTORIAN_TEA_TREE
3060027	16	21.90	22.40	0.50	TARIN ROCK SOUTH RD	North	24-	megan and mike	20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	
3060028	1	0.00	4.21	4.21	LEO RD	East	21- Oct- 04	mike	20	1	1	0	0	0	0	0	C	1	1	2	2	4	4	
3060028	2	4.21	4.42	0.21	LEO RD	East		mike	20	2	2	1	1	1	0	1	1	2	0	0	2	7	6	
3060028	3	4.42	8.43	4.01	LEO RD	East		mike	0	2	2	1	1	1	1	1	1	1	1	2	2	8	8	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width	Nat Veget	ive ation	Exte Vege	ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Adjo Lano	ining duse	(0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060029	1	0.00	3.40	3.40	WALKERS RD	East	28- Oct- 04		20	2	2	0	0	0	0	1	1	0	0	2	2	5	5	
3060029	2	3.40	3.70	0.30	WALKERS RD	East	28- Oct- 04	mike	20	2	2	1	1	1	1	1	1	1	1	0	0	6	6	
3060029	3	3.70	4.50	0.80	WALKERS RD	East		mike	20	2	2	1	0	0	0	0	0	0	0	2	2	5	4	
3060029	4	4.50	5.20	0.70	WALKERS RD	East	28- Oct- 04	mike	20	1	2	0	1	0	1	1	1	0	0	2	0	4	5	
3060029	5	5.20	8.10	2.90	WALKERS RD	East		mike	20	2	2	0	0	0	0	0	0	0	1	2	2	4	5	
3060029	6	8.10	8.70	0.60	WALKERS RD	East		mike	0	2	2	0	0	0	0	1	1	0	0	2	0	5	3	
3060029	7	8.70	11.40	2.70	WALKERS RD	East		mike	20	2	2	0	0	1	0	1	1	0	0	1	1	5	4	
3060030	1	0.00	1.80	1.80	JARRING SOUTH RD	North		mike	20	2	2	1	1	1	1	1	1	2	2	2	0	8	6	
3060030	2	1.80	3.50	1.70	JARRING SOUTH RD	North		mike	20	2	2	0	1	1	0	2	2	1	1	1	0	7	6	
3060030	3	3.50	4.10	0.60	JARRING SOUTH RD	North	21- Oct- 04	mike	20	2	2	0	1	0	1	1	1	0	0	2	0	5	5	
3060030	4	4.10	5.80	1.70	JARRING SOUTH RD	North		mike	20	0	0	0	0	0	0	0	0	0	0	1	1	1	1	
3060030	5	5.80	9.30	3.50	JARRING SOUTH RD	North		mike	20	2	2	1	0	1	0	2	2	1	2	2	2	9	8	
3060030	6	9.30	9.70	0.40	JARRING SOUTH RD	North		mike	20	2	1	1	0	0	0	1	1	0	0	0	2	4	4	
3060031	1	0.00	0.60	0.60	SIBERIA RD	East	24-	megan and mike	20	2	2	2	2	1	1	2	2	2	2	0	0	9	9	
3060031	2	0.60	1.50	0.90	SIBERIA RD	East	24-	megan and mike	20	2	2	1	2	1	2	1	2	2	2	1	0	8	10	
3060031	3	1.50	2.20	0.70	SIBERIA RD	East	24-	megan and mike	20	0	0	0	0	0	0	0	0	0	0	1	2	1	2	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width	Na Vege	tive tation	Exte Vege	ent of tation	Pla	ative ant cies	We	eds	В	ue as iol. ridor	Adjo	ining luse	Conser Value (0-	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060031	4	2.20	3.20	1.00	SIBERIA RD	East	24- Sep- 04		20	2	2	2	2	1	2	1	2	2	2	2	0	10	10	
3060031	5	3.20	5.40	2.20	SIBERIA RD	East	24- Sep- 04	megan and mike	20	2	2	2	2	2	2	1	1	2	2	2	2	11	11	
3060031	6	5.40	9.50	4.10	SIBERIA RD	East	24- Sep- 04	megan and mike	20	2	2	1	1	2	2	1	1	2	2	2	2	10	10	
3060031	7	9.50	10.50	1.00	SIBERIA RD	East	24- Sep- 04	megan and mike	20	2	2	2	2	2	2	2	2	2	2	2	0	12	10	
3060031	8	10.50	12.70	2.20	SIBERIA RD	East		megan and mike	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	
3060031	9	12.70	13.20	0.50	SIBERIA RD	East	24- Sep- 04	megan	20	2	2	2	2	1	1	1	1	2	2	0	0	8	8	CABBAGE_FAMILY_WEEDS
3060031	10	13.20	14.20	1.00	SIBERIA RD	East	24- Sep- 04	megan	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	CABBAGE_FAMILY_WEEDS
3060032	1	0.00	1.00	1.00	OLD LAKE GRACE RD	East	24-	megan andmike	20	2	2	2	2	1	1	2	2	2	2	2	2	11	11	
3060032	2	1.00	1.80	0.80	OLD LAKE GRACE RD	East	24- Sep- 04	megan andmike	20	2	2	2	2	1	1	2	2	2	2	0	2	9	11	
3060032	3	1.80	6.00	4.20	OLD LAKE GRACE RD	East	24-	megan andmike	20	2	2	2	2	1	1	1	1	2	2	2	2	10	10	
3060032	4	6.00	6.30	0.30	OLD LAKE GRACE RD	East	24- Sep- 04	megan	20	2	2	2	2	1	1	2	2	2	2	2	0	11	9	
3060032	5	6.30	12.00	5.70	OLD LAKE GRACE RD	East	24-	megan andmike	20	2	2	2	2	1	1	2	2	2	2	2	2	11	11	
3060032	6	12.00	12.50	0.50	OLD LAKE GRACE RD	East	24- Sep- 04	megan and mike	20	2	2	2	2	1	1	1	1	2	2	2	0	10	8	
3060032	7	12.50	14.90			East	24- Sep- 04	megan and mike	20	2	2	2	2	2	2	2	2	2	2	2	2	12	12	
3060033	1	0.00	2.30	2.30	WILLOCK RD	North	24- Sep- 04	megan	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	CABBAGE_FAMILY_WEEDS
3060033	2	2.30	3.00	0.70	WILLOCK RD	North	24- Sep- 04	megan and mike	20	2	2	2	2	1	1	2	2	2	2	2	0	11	9	CABBAGE_FAMILY_WEEDS

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		ive ation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Ααյο	ining duse		Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right			Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060034	1	0.00	5.30	5.30	COCKRAN RD	West	Sep- 04		20	2	2	1	1	1	1	0	0	2	2	2	2	8	8	VICTORIAN_TEA_TREE
3060035	1	0.00	6.90	6.90	BRAYS RD	South	29- Oct- 04	geoff	20	2	2	1	1	1	1	2	2	2	2	2	2	10	10	
3060035	2	6.90	7.20	0.30	BRAYS RD	South	29- Oct- 04	mike	20	2	2	1	1	2	2	2	2	2	2	2	0	11	9	
3060035	3	7.20	7.70	0.50	BRAYS RD	South	29- Oct- 04	geoff	20	2	2	1	1	1	1	2	2	0	0	2	2	8	8	
3060036	1	0.00	0.30	0.30	NIPPERING RD	North		mich	20	2	2	2	2	2	2	1	2	2	2	0	0	9	10	
3060036	2	0.30	0.70	0.40	NIPPERING RD	North		mich	20	2	1	2	1	2	0	1	0	2	2	0	2	9	6	
3060036	3	0.70	4.00	3.30	NIPPERING RD	North	08- 0ct- 04	mich	20	1	1	1	1	0	0	0	0	2	2	2	2	6	6	
3060036	4	4.00	4.93	0.93	NIPPERING RD	North	08- 0ct- 04	mich	20	1	1	1	1	0	0	0	0	2	2	2	2	6	6	
3060037	1	0.00	1.00	1.00	114 GATE RD	East		meryn	20	1	1	1	1	0	0	1	1	1	1	1	1	5	5	
3060037	2	1.00	1.30	0.30	114 GATE RD	East	12- Oct- 04	meryn	20	2	2	0	1	0	0	1	1	1	0	0	2	4	6	
3060037	3	1.30	3.20	1.90	114 GATE RD	East		meryn	20	2	2	1	1	0	0	1	2	0	1	1	1	5	7	
3060037	4	3.20	3.70	0.50	114 GATE RD	East		meryn	20	0	1	0	0	0	0	0	0	0	0	1	1	1	2	
3060037	5	3.70	5.30	1.60	114 GATE RD	East		meryn	20	1	1	1	1	0	0	0	0	1	1	1	1	4	4	BRIDAL_CREEPER
3060037	6	5.30	6.20	0.90	114 GATE RD	East		meryn	20	1	1	1	1	0	0	0	0	0	0	1	1	3	3	BRIDAL_CREEPER
3060037	7	6.20	6.70	0.50	114 GATE RD	East		meryn	20	1	1	1	1	0	0	0	0	0	0	1	1	3	3	BRIDAL_CREEPER
3060037	8	6.70	7.30	0.60	114 GATE RD	East		meryn	20	2	2	1	1	1	1	1	1	1	1	1	1	7	7	BRIDAL_CREEPER

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Aajo	ining duse	Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right			Left	Right	Left	Right	(Weeds and salt listed if present)
3060037	9	7.30	10.50	3.20	114 GATE RD	East	12- Oct- 04		20	1	1	0	1	0	0	0	0	0	0	1	1	2	3	BRIDAL_CREEPER
3060037	10	10.50	10.70	0.20	114 GATE RD	East	12- Oct- 04		20	1	2	0	1	0	0	1	1	0	0	1	1	3	5	CABBAGE_FAMILY_WEEDS
3060037	11	10.70	11.70	1.00	114 GATE RD	East		meryn	20	0	1	0	1	0	0	2	1	0	1	1	1	3	5	CABBAGE_FAMILY_WEEDS BRIDAL_CREEPER
3060037	12	11.70	12.00	0.30	114 GATE RD	East		meryn	20	0	0	0	0	0	0	0	0	0	0	1	1	1	1	CABBAGE_FAMILY_WEEDS BRIDAL_CREEPER
3060037	13	12.00	13.10	1.10	114 GATE RD	East		meryn	20	2	0	1	0	0	0	0	0	2	0	1	1	6	1	CABBAGE_FAMILY_WEEDS
3060037	14	13.10	14.00	0.90	114 GATE RD	East		meryn	20	0	0	0	0	0	0	0	0	0	0	1	1	1	1	CABBAGE_FAMILY_WEEDS
3060037	15	14.00	14.30	0.30	114 GATE RD	East		meryn	20	2	0	1	0	0	0	1	0	1	0	1	1	6	1	CABBAGE_FAMILY_WEEDS
3060037	16	14.30	16.00	1.70	114 GATE RD	East		meryn	20	2	1	1	1	0	0	0	0	1	1	1	1	4	4	CABBAGE_FAMILY_WEEDS
3060037	17	16.00	16.60	0.60	114 GATE RD	East	12- 0ct- 04	meryn	20	2	2	1	1	1	1	0	0	2	2	1	1	7	7	CABBAGE_FAMILY_WEEDS
3060037	18	16.60	17.10	0.50	114 GATE RD	East		meryn	20	1	1	1	1	0	0	0	0	2	2	0	0	4	4	CABBAGE_FAMILY_WEEDS
3060037	19	17.10	17.60	0.50	114 GATE RD	East		meryn	20	2	2	1	1	0	0	1	1	2	2	0	1	6	6	
3060037	20	17.60	18.90	1.30	114 GATE RD	East		meryn	20	1	2	1	1	0	0	0	0	0	0	1	1	3	3	BRIDAL_CREEPER
3060037	21	18.90	20.40	1.50	114 GATE RD	East		meryn	20	2	2	1	1	1	1	1	1	2	2	1	1	8	8	BRIDAL_CREEPER
3060037	22	20.40	20.80	0.40	114 GATE RD	East		meryn	20	2	2	1	1	1	1	1	1	2	2	0	1	7		BRIDAL_CREEPER SALT_AFFECTED_ROADSIDE
3060038	1	0.00	0.60	0.60	SMITHS RD	North		Meryn	20	2	2	1	1	0	0	1	1	2	2	2	2	8	8	
3060038	2	0.60	1.20	0.60	SMITHS RD	North		Meryn	20	1	1	1	1	0	0	2	2	0	0	0	1	4	5	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation		ent of station	Р	ative lant ecies	We	eeds	В	ue as iol. ridor		ining duse	Conser Value (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right			Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060038	3	1.20	1.70	0.50	SMITHS RD	North	12- Oct- 04		20	1	1	1	1	0	0	2	1	1	0	1	1	6	4	
3060038	4	1.70	2.50	0.80	SMITHS RD	West		Meryn	20	1	2	0	0	0	0	1	2	0	1	1	1	3	6	
3060038	5	2.50	4.20	1.70	SMITHS RD	West		Meryn	20	1	2	1	1	0	0	1	1	0	2	1	1	4	7	
3060038	6	4.20	4.50	0.30	SMITHS RD	West		Meryn	20	1	1	1	1	0	0	0	0	0	1	1	0	3	3	
3060038	7	4.50	5.10	0.60	SMITHS RD	West		Meryn	20	0	0	0	0	0	0	0	2	0	1	1	0	1	3	
3060038	8	5.10	5.70	0.60	SMITHS RD	West		Meryn	20	1	1	1	0	0	0	0	0	0	0	1	0	3	1	
3060039	1	0.00	1.40	1.40	DWELYERDINE RD	West		meryn	40	0	2	0	1	0	0	0	1	0	2	1	1	1	7	
3060039	2	1.40	2.70	1.30	DWELYERDINE RD	West		meryn	20	1	0	1	0	0	0	1	0	1	0	1	1	5	1	
3060039	3	2.70	4.40	1.70	DWELYERDINE RD	West		meryn	20	2	0	1	0	0	0	1	0	1	0	1	1	6	1	
3060039	4	4.40	5.30	0.90	DWELYERDINE RD	West	13- 0ct- 04	J Temby	40	2	0	1	0	1	0	1	0	0	0	1	1	6	1	
3060039	5	5.30	6.40	1.10	DWELYERDINE RD	West		J Temby	0	1	0	1	0	0	0	2	0	1	C	0	1	5	1	
3060039	6	6.40	7.50	1.10	DWELYERDINE RD	West		J Temby	0	2	2	1	1	1	1	2	2	2	2	0	0	8	8	
3060040	1	0.00	3.50	3.50	SPRINGHURST RD	East	01- 01- 0ct- 04	mike	20	2	2	1	1	0	0	0	0	1	1	2	2	6		VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060040	2	3.50	5.90	2.40	SPRINGHURST RD	East	01- Oct- 04		20	0	0	0	0	0	0	1	1	0	0	2	2	3	3	CABBAGE_FAMILY_WEEDS
3060040	3	5.90	10.60	4.70	SPRINGHURST RD	East	-	mike	20	1	1	0	0	0	0	1	1	1	1	2	2	5	5	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060040	4	10.60	11.00	0.40	SPRINGHURST RD	East		mike	20	1	1	1	1	1	1	1	1	1	0	2	0	5		VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor		ining duse	Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060040	5	11.00	16.20	5.20	SPRINGHURST RD	East	01- Oct- 04		20	0	1	0	0	0	0	1	1	1	1	2	2	4		VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060040	6	16.20	16.70	0.50	SPRINGHURST RD	East	01- Oct- 04		20	2	2	1	0	1	0	2	2	1	2	0	2	7	8	VICTORIAN_TEA_TREE
3060040	7	16.70	18.30	1.60	SPRINGHURST RD	North	-	mike	20	2	1	1	1	1	1	1	1	1	0	2	2	8	6	VICTORIAN_TEA_TREE
3060041	1	0.00	0.10	0.10	KERSLEY DR	South		mich	20	1	1	1	1	0	0	0	0	0	0	0	0	2	2	
3060041	2	0.10	0.40	0.30	KERSLEY DR	South	10- 0ct- 04	mich	20	1	1	2	2	0	0	0	1	0	2	2	0	5	6	
3060041	3	0.40	0.60	0.20	KERSLEY DR	South	-	mich	20	1	0	0	0	0	0	2	2	0	0	2	2	5	4	
3060041	4	0.60	2.40	1.80	KERSLEY DR	West		· mich	20	2	0	2	0	1	0	0	0	2	0	0	2	7	2	
3060041	5	2.40	3.60	1.20	KERSLEY DR	West		· mich	20	2	0	2	0	1	0	0	0	2	0	0	2	7	2	SALT_AFFECTED_ROADSIDE
3060042	1	0.00	1.30	1.30	DAMPER FLAT RD	North		ella	40	2	2	0	0	0	0	1	1	0	0	2	2	5	5	CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060042	2	1.30	2.50	1.20	DAMPER FLAT RD	North		ella	40	1	1	1	1	0	0	0	0	0	0	2	2	4	4	CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060042	3	2.50	3.00	0.50	DAMPER FLAT RD	North		ella	40	1	1	0	0	0	0	1	1	0	0	2	2	4	4	CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060042	4	3.00	3.40	0.40	DAMPER FLAT RD	North	-	ella	20	2	2	0	0	0	0	1	1	0	0	2	1	5		CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060042	5	3.40	5.40	2.00	DAMPER FLAT RD	North		ella	20	1	1	0	0	0	0	2	2	0	0	1	1	4	4	CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060042	6	5.40	5.80	0.40	DAMPER FLAT RD	North		ella	20	2	2	1	1	0	0	1	1	0	0	1	2	5	6	CABBAGE_FAMILY_WEEDS SALT_AFFECTED_ROADSIDE
3060042	7	5.80	6.40	0.60	DAMPER FLAT RD	North	-	ella	20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	SALT_AFFECTED_ROADSIDE
3060042	8	6.40	7.00	0.60	DAMPER FLAT RD	North		ella	20	1	1	1	1	0	0	0	0	0	0	2	2	4	4	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		ive ation		ent of tation	# Na Pla Spe	ant	Wee	eds	Bi	ie as ol. ridor	Adjoi Land	ning luse			Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left I	Right	Left F	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060043	1	0.00	0.60	0.60	FAIRCLOUGH RD	West	05- Oct- 04	ella	20	2	2	2	2	2	2	2	2	2	2	0	0	10		VICTORIAN_TEA_TREE
3060043	2	0.60	1.80	1.20	FAIRCLOUGH RD	West	05- Oct- 04	ella	20	1	1	0	0	0	0	1	1	0	0	2	2	4		BRIDAL_CREEPER VICTORIAN_TEA_TREE SALT_AFFECTED_ROADSIDE
3060043	3	1.80	2.90	1.10	FAIRCLOUGH RD	West	05- Oct- 04	ella	20	2	2	1	1	2	2	2	2	1	1	2	2	10	10	VICTORIAN_TEA_TREE
3060043	4	2.90	3.40	0.50	FAIRCLOUGH RD	West	05- Oct- 04	ella	20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	
3060043	5	3.40	4.00	0.60	FAIRCLOUGH RD	West	05- Oct- 04	ella	20	2	1	0	0	0	0	0	0	1	1	2	2	5	4	VICTORIAN_TEA_TREE
3060043	6	4.00	5.50	1.50	FAIRCLOUGH RD	West	-	ella	20	1	0	0	0	0	0	1	0	0	0	2	2	4	2	VICTORIAN_TEA_TREE
3060043	7	5.50	9.50	4.00	FAIRCLOUGH RD	West	05- Oct- 04	ella	20	2	2	1	1	0	0	0	0	0	0	2	1	5	4	VICTORIAN_TEA_TREE
3060043	8	9.50	10.20	0.70	FAIRCLOUGH RD	West	05- Oct- 04	ella	20	2	2	2	2	2	2	2	2	2	2	0	2	10	12	VICTORIAN_TEA_TREE
3060045	1	0.00	1.10	1.10	BULLOCK HILLS RD	West	10- Nov- 04	michele	20	1	1	1	1	0	0	0	0	0	0	2	2	4	4	
3060045	2	1.10	1.80	0.70	BULLOCK HILLS RD	West	10- Nov- 04	michele	20	1	1	1	1	0	0	0	0	0	1	2	2	4	5	
3060045	3	1.80	3.30	1.50	BULLOCK HILLS RD	West	10- Nov- 04	michele	20	2	1	1	1	0	0	0	0	2	2	2	2	7	6	
3060045	4	3.30	4.30	1.00	BULLOCK HILLS RD	West	10- Nov- 04		20	1	1	2	2	0	0	0	0	0	0	2	0	5	3	
3060046	1	0.00	1.29	1.29	BELLS RD	North		B&J Temby	20	1	0	1	0	0	0	1	1	2	2	1	1	6	4	
3060047	1	0.00	1.50	1.50	MILD WATERS RD	North	30- Sep- 04	michele	20	1	1	2	2	1	1	2	2	2	2	2	2	10	10	
3060047	2	1.50	2.70	1.20	MILD WATERS RD	North	30- Sep- 04	michele	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	VICTORIAN_TEA_TREE CAPE_TULIP
3060048	1	0.00	1.10	1.10	KINGS RD	East	24- Sep- 04	geoff	40	2	1	2	2	2	1	2	1	2	1	0	2	10	8	VICTORIAN_TEA_TREE

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width	Nat Veget	ive ation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Adjoi Lanc		(0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060048	2	1.10	3.30	2.20	KINGS RD	East	24- Sep- 04		40	2	2	2	2	2	2	2	2	0	1	0	0	8		VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060048	3	3.30	4.50	1.20	KINGS RD	East		geoff	40	2	2	2	2	1	1	1	1	1	1	1	2	8	9	VICTORIAN_TEA_TREE
3060048	4	4.50	5.80	1.30	KINGS RD	East		geoff	20	2	2	1	1	1	1	2	2	2	2	0	1	8	9	VICTORIAN_TEA_TREE
3060048	5	5.80	7.30	1.50	KINGS RD	East		geoff	20	2	2	2	2	1	1	2	2	1	1	2	1	10	9	
3060049	1	0.00	4.00	4.00	HARRISON RD	East		michele	20	2	2	0	0	0	0	0	0	1	1	2	2	5	5	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060050	1	0.00	4.10	4.10	MOULYINNING NORTH	South	-	mike	20	2	2	1	0	0	0	1	0	0	0	2	2	6	4	VICTORIAN_TEA_TREE SALT_AFFECTED_ROADSIDE
3060050	2	4.10	5.90	1.80	MOULYINNING NORTH RD	South		mike	20	1	1	0	0	0	0	1	0	0	0	2	2	4	3	CABBAGE_FAMILY_WEEDS
3060050	3	5.90	6.88	0.98	MOULYINNING NORTH RD	South	-	mike	20	1	1	0	0	0	0	2	2	0	0	2	2	5	5	CABBAGE_FAMILY_WEEDS
3060050	4	6.88	9.65	2.78	MOULYINNING NORTH	South		mike	20	0	0	0	0	0	0	0	0	0	0	2	2	2	2	CABBAGE_FAMILY_WEEDS
3060050	5	9.65	10.53	0.88	MOULYINNING NORTH	South		mike	20	0	2	0	1	0	0	0	0	0	1	0	0	2	6	CABBAGE_FAMILY_WEEDS
3060050	6	10.53	11.70	1.18	MOULYINNING NORTH	South	-	mike	20	2	2	1	1	1	1	2	2	2	1	0	0	8	7	VICTORIAN_TEA_TREE
3060051	1	0.00	0.40	0.40	MOULYINNING SOUTH	South	31- Oct- 04		20	2	2	1	1	0	0	1	1	1	0	2	2	7	6	
3060051	2	0.40	0.70	0.30	MOULYINNING SOUTH	South	31- Oct- 04		20	0	1	0	0	0	0	0	0	0	0	2	2	2	3	
3060051	3	0.70	1.10	0.40	MOULYINNING SOUTH	South		geoff	20	1	1	0	0	0	0	0	0	0	1	2	2	3	4	
3060051	4	1.10	1.70	0.60	MOULYINNING SOUTH	South		geoff	20	0	1	0	0	0	0	0	0	0	1	2	2	2	4	
3060051	5	1.70	3.70	2.00	MOULYINNING SOUTH	South		geoff	20	1	2	1	1	0	0	0	0	2	2	2	2	6	7	

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Ααյο	ining duse		Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060051	6	3.70	4.00	0.30	MOULYINNING SOUTH RD	South	31- Oct- 04		20	1	1	1	1	1	1	2	2	1	1	2	1	8	7	
3060051	7	4.00	4.40	0.40	MOULYINNING SOUTH RD	South		geoff	20	2	2	1	1	0	0	0	0	1	1	2	2	6	6	
3060051	8	4.40	4.70	0.30	MOULYINNING SOUTH RD	South	31- Oct- 04		20	2	2	1	1	1	1	1	1	1	1	2	0	8	6	
3060051	9	4.70	6.40	1.70	MOULYINNING SOUTH RD	South	31- Oct- 04		20	1	1	1	1	1	1	0	0	1	1	2	2	6	6	
3060051	10	6.40	6.60	0.20	MOULYINNING SOUTH RD	South		geoff	20	2	2	2	2	2	2	2	2	1	1	0	0	9	9	
3060052	1	0.00	8.60	8.60	GOODING RD	West		mike	0	2	2	0	0	0	0	0	0	0	1	2	2	4	5	
3060053	1	0.00	0.60	0.60	CLARKES RD	North		geoff	20	2	2	2	2	1	1	2	2	2	2	2	1	11	10	
3060053	2	0.60	0.90	0.30	CLARKES RD	North	30- Oct- 04	geoff	20	2	2	2	2	1	1	1	1	1	1	2	0	9	7	
3060053	3	0.90	3.00	2.10	CLARKES RD	North	30- Oct- 04	geoff	20	2	2	1	1	0	0	0	0	2	2	2	2	7	7	
3060053	4	3.00	3.20	0.20	CLARKES RD	North	30- Oct- 04	geoff	20	2	2	2	2	0	1	0	0	0	0	2	0	6	5	
3060055	1	0.00	3.50	3.50	POWELLS RD	West	28- Oct- 04	michele	20	2	2	1	1	1	1	0	0	2	2	2	2	8	8	
3060055	2	3.50	3.70	0.20	POWELLS RD	West	28- Oct- 04	michele	20	1	1	2	2	0	0	0	0	2	2	0	2	5	7	
3060056	1	0.00	2.50	2.50	SANDPLAIN RD	West	10- Nov- 04	michele	20	1	1	1	1	0	0	0	0	2	2	2	2	6	6	
3060056	2	2.50	3.30	0.80	SANDPLAIN RD	West	10- Nov- 04	michele	20	2	2	1	1	0	0	0	0	2	0	2	2	7	5	
3060056	3	3.30	4.20	0.90	SANDPLAIN RD	West	10- Nov- 04	michele	20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	
3060057	1	0.00	0.50	0.50	FORBES RD	South	10- Nov- 04	michele	20	2	2	1	1	0	0	0	0	0	0	2	2	5	5	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		ive ation		ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Adjo Lano	ining duse	(0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060057	2	0.50	1.00	0.50	FORBES RD	South	10- Nov- 04	michele	20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	SALT_AFFECTED_ROADSIDE
3060057	3	1.00	2.30	1.30	FORBES RD	South	10- Nov- 04	michele	0	2	2	1	1	0	0	0	0	2	2	2	2	7	7	
3060067	1	0.00	1.50	1.50	HOLDEN RD	West	23-	megan and ella	20	2	2	2	2	2	2	2	2	2	2	1	2	11	12	
3060067	2	1.50	2.40	0.90	HOLDEN RD	West	23- Sep- 04	megan and ella	20	2	2	2	2	2	2	2	2	2	2	0	2	10	12	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060067	3	2.40	6.40	4.00	HOLDEN RD	West		megan and ella	20	2	2	1	1	1	1	2	2	2	2	2	1	10	9	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060067	4	6.40	6.80	0.40	HOLDEN RD	West	23- Sep- 04	megan and ella	20	1	1	1	0	1	0	0	0	1	0	2	1	6	2	
3060067	5	6.80	10.50	3.70	HOLDEN RD	West	23-	megan and ella	20	2	2	2	2	2	2	2	2	2	2	2	2	12	12	
3060070	1	0.00	0.70	0.70	BROWNS RD	East		ella	20	2	2	1	1	0	0	1	1	1	1	2	1	7	6	SALT_AFFECTED_ROADSIDE
3060070	2	0.70	1.00	0.30	BROWNS RD	East		ella	20	2	2	1	1	1	0	1	1	1	1	2	1	8	6	
3060070	3	1.00	1.50	0.50	BROWNS RD	East		ella	20	1	0	0	0	0	0	0	0	0	0	2	1	3	1	
3060070	4	1.50	2.10	0.60	BROWNS RD	East		ella	20	2	2	1	1	0	0	0	0	0	1	1	2	4	6	
3060071	1	0.00	2.78	2.78	CANTWELLS RD	East	-	mike	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	
3060071	2	2.78	3.16	0.38	CANTWELLS RD	East		mike	20	2	2	0	0	0	0	1	1	1	1	2	0	6	4	
3060071	3	3.16	5.74	2.58	CANTWELLS RD	East		mike	20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	
3060072	1	0.00	2.66	2.66	DATATINE NORTH RD	North		mike	20	2	2	1	1	1	1	2	2	2	2	2	2	10	10	
3060072	2	2.66	4.81	2.16	DATATINE NORTH RD	North		mike	20	2	2	0	0	0	0	0	0	0	0	2	2	4	4	SALT_AFFECTED_ROADSIDE

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width	Nat Veget	ive ation	Exte Vege	ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Adjoi Lanc	ning luse	Conser Value (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060072	3	4.84	7.87	3.03	DATATINE NORTH RD	North	09- Oct- 04		20	2	2	1	1	1	0	2	0	0	0	2	2	8	5	
3060072	4	7.87	9.72	1.86	DATATINE NORTH RD	North		mike	20	2	1	0	0	0	0	0	0	2	1	2	2	6	4	
3060073	1	0.15	0.55	0.40	ROBSON RD	East		mike	20	2	2	1	1	0	0	2	0	0	0	2	2	7	5	
3060073	2	0.55	0.85	0.30	ROBSON RD	East		mike	20	2	2	2	2	1	1	2	2	2	2	0	2	9	11	
3060073	3	0.85	2.15	1.30	ROBSON RD	East		mike	20	2	2	0	0	0	0	0	0	2	2	1	2	5	6	SALT_AFFECTED_ROADSIDE
3060073	4	2.15	3.85	1.70	ROBSON RD	East		mike	20	2	2	0	0	0	0	0	0	0	0	2	2	4	4	SALT_AFFECTED_ROADSIDE
3060073	5	3.85	6.15	2.30	ROBSON RD	East		mike	20	2	2	0	1	0	0	0	0	0	0	2	2	4	5	
3060074	1	0.00	3.70	3.70	KURINGUP NORTH RD	South		mike	20	1	1	0	0	0	0	0	0	1	0	1	1	3	2	
3060076	1	0.00	0.40	0.40	BAGNALLS RD	West		meryn	20	2	2	1	1	0	0	1	1	1	1	1	1	6	6	
3060076	2	0.40	0.70	0.30	BAGNALLS RD	West	16- Oct- 04	meryn	20	1	1	1	1	0	0	1	1	0	0	1	1	4	4	
3060076	3	0.70	1.00	0.30	BAGNALLS RD	West		meryn	20	1	1	0	0	1	1	0	0	0	0	1	1	3	3	
3060076	4	1.00	1.40	0.40	BAGNALLS RD	West		meryn	20	1	2	1	1	0	0	1	1	1	1	1	1	5	6	
3060076	5	1.40	2.40	1.00	BAGNALLS RD	West		meryn	20	1	2	0	0	0	0	0	0	1	1	1	1	3	4	
3060076	6	2.40	3.40	1.00	BAGNALLS RD	West		meryn	20	1	1	1	1	0	0	1	1	1	1	1	1	5	5	
3060076	7	3.40	4.00	0.60	BAGNALLS RD	West		meryn	20	1	1	1	1	0	0	1	1	0	0	1	1	4	4	
3060077	1	0.00	0.80	0.80	HOME RD	East		meryn	20	2	2	1	1	0	0	1	1	1	2	1	1	6	7	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation	Exte Vege	ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Adjo Lano	ining duse	Conser Value (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060078	1	0.00	0.53	0.53	DART RD	East	16- Oct- 04		20	1	1	0	0	0	0	1	1	1	1	1	1	4	4	
3060078	2	0.53	2.47	1.93	DART RD	East	16- Oct- 04		20	2	2	1	1	0	0	1	1	0	0	1	1	5	5	
3060078	3	2.47	3.40	0.93	DART RD	East		meryn	20	0	0	0	0	0	0	0	0	0	0	1	1	1	1	
3060081	1	0.00	0.66	0.66	JIPSONS RD	North		geoff	20	1	1	2	2	1	1	2	2	1	1	1	1	8	8	
3060081	2	0.66	3.62	2.96	JIPSONS RD	North		geoff	20	2	2	0	0	0	0	1	1	1	1	1	2	5	6	CABBAGE_FAMILY_WEEDS
3060082	1	0.00	3.10	3.10	DUALLING RD	South	-	mike	20	2	2	0	0	0	0	0	0	1	2	2	2	5	6	
3060082	2	3.10	3.50	0.40	DUALLING RD	South		mike	20	2	2	0	0	0	0	0	0	0	0	2	1	4	3	
3060082	3	3.50	5.10	1.60	DUALLING RD	South	-	mike	20	2	2	1	0	0	0	1	1	2	2	2	2	8	7	
3060083	1	0.00	1.03	1.03	HILLS RD	North		geoff	20	2	2	2	2	2	2	2	2	2	2	0	2	10	12	VICTORIAN_TEA_TREE
3060083	2	1.03	2.67	1.63	HILLS RD	North		geoff	20	2	2	2	2	1	1	2	2	2	2	0	2	9	11	VICTORIAN_TEA_TREE
3060083	3	2.67	4.40	1.73	HILLS RD	North		geoff	20	2	2	1	1	1	1	1	1	2	2	2	2	9		CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060083	4	4.40	5.04	0.63	HILLS RD	North		geoff	20	2	2	2	2	1	1	2	2	1	1	2	2	10	10	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060083	5	5.04	6.57	1.53	HILLS RD	North		geoff	20	2	2	2	2	2	2	2	2	2	2	0	2	9	11	
3060083	6	6.57	7.30	0.73	HILLS RD	North		geoff	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	VICTORIAN_TEA_TREE
3060083	7	7.30	8.34	1.03	HILLS RD	North		geoff	40	2	2	2	2	1	1	2	2	2	2	2	2	11	11	VICTORIAN_TEA_TREE
3060083	8	8.34	8.57	0.23	HILLS RD	North		aeoff	40	2	2	2	2	2	2	2	2	2	2	2	0	12	10	VICTORIAN_TEA_TREE

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		ive ation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Adjo Land	ining luse	Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060083	9	8.57	9.41	0.83	HILLS RD	North	24- Sep- 04	geoff	40	2	2	2	2	1	1	2	2	2	2	2	2	11	11	VICTORIAN_TEA_TREE
3060083	10	9.41	10.24	0.83	HILLS RD	North		geoff	40	2	2	2	2	2	2	2	2	2	2	2	0	12	10	VICTORIAN_TEA_TREE
3060083	11	10.24	11.17	0.93	HILLS RD	North		geoff	40	2	2	2	2	2	2	2	2	2	2	2	2	12	12	VICTORIAN_TEA_TREE
3060084	1	0.00	1.10	1.10	SLANT RD	South		mike	20	1	1	1	0	0	0	1	1	1	0	2	2	6	4	VICTORIAN_TEA_TREE
3060084	2	1.10	2.00	0.90	SLANT RD	South		mike	20	2	2	1	1	1	0	2	1	0	1	0	2	6	7	VICTORIAN_TEA_TREE
3060084	3	2.00	2.90	0.90	SLANT RD	South	-	mike	20	2	2	1	1	1	1	2	2	0	2	0	0	6	8	VICTORIAN_TEA_TREE
3060085	1	0.00	2.30	2.30	DONGOLOCKING RD	East		J.Temby	20	2	2	1	1	1	1	1	2	1	2	1	0	7	8	
3060085	2	2.30	3.90	1.60	DONGOLOCKING RD	East		J.Temby	20	1	1	1	1	0	0	1	1	2	2	1	1	6	6	
3060085	3	3.90	4.80	0.90	DONGOLOCKING RD	East		J.Temby	20	1	2	1	1	1	1	2	2	2	2	1	0	8	8	
3060085	4	4.80	8.60	3.80	DONGOLOCKING RD	East		J.Temby	40	1	2	1	1	1	1	1	1	2	2	1	1	7	8	
3060086	1	0.00	0.50	0.50	COOMELBERRUP RD	East		ella	20	2	2	0	0	0	0	0	0	0	0	1	2	3	4	SALT_AFFECTED_ROADSIDE
3060086	2	0.50	1.00	0.50	COOMELBERRUP RD	South	05- Oct- 04		20	2	2	1	1	0	0	0	0	0	0	1	2	4	5	
3060086	3	1.00	1.30	0.30	COOMELBERRUP RD	South	05- Oct- 04		20	2	2	1	0	1	0	2	0	1	0	0	2	7	4	
3060086	4	1.30	1.80	0.50	COOMELBERRUP RD	South		ella	20	1	1	0	0	1	0	1	1	0	0	0	2	3	4	CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060086	5	1.80	3.20	1.40	COOMELBERRUP RD	South	-	ella	20	1	2	0	0	0	0	1	1	0	0	2	2	4		CABBAGE_FAMILY_WEEDS VICTORIAN_TEA_TREE
3060086	6	3.20	4.50	1.30	COOMELBERRUP RD	West	05- Oct- 04		20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	CABBAGE_FAMILY_WEEDS

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width		ive ation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor		ining duse	(0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060086	7	4.50	5.00	0.50	COOMELBERRUP RD	South	05- Oct- 04		20	0	0	0	0	0	0	0	0	0	0	2	2	2	2	CABBAGE_FAMILY_WEEDS
3060086	8	5.00	7.00	2.00	COOMELBERRUP RD	South	05- Oct- 04		20	1	2	0	0	1	0	0	0	2	2	2	2	6	6	SALT_AFFECTED_ROADSIDE
3060086	9	7.00	7.20	0.20	COOMELBERRUP RD	South	05- Oct- 04		20	2	2	2	2	2	2	2	2	2	2	2	2	12	12	
3060086	10	7.20	7.60	0.40	COOMELBERRUP RD	South	05- Oct- 04		20	1	1	1	1	1	1	1	1	1	2	2	2	7	8	
3060087	1	3.50	9.20	5.70	JAY RD	South		geoff	0	1	1	0	0	0	0	0	0	2	2	2	2	5	5	
3060087	2	9.20	10.20	1.00	JAY RD	South		geoff	0	0	0	0	0	0	0	0	0	0	0	2	2	2	2	
3060087	3	10.20	10.60	0.40	JAY RD	South		geoff	0	1	1	0	0	0	0	0	0	1	1	2	2	4	4	
3060090	1	0.00	3.00	3.00	NIPPERING SCHOOL RD	North	09- Oct- 04		20	1	1	1	1	0	0	2	2	1	0	2	2	7	6	
3060090	2	3.00	3.50	0.50	NIPPERING SCHOOL RD	North	09- Oct- 04		20	1	1	1	1	0	0	2	2	0	0	2	1	6	5	
3060090	3	3.50	4.40	0.90	NIPPERING SCHOOL RD	North	09- Oct- 04		20	1	1	1	1	0	0	0	0	0	0	2	2	4	4	
3060094	1	0.00	0.90	0.90	BOUNDRY RD	North	23- Sep- 04	megan ella	20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	VICTORIAN_TEA_TREE SALT_AFFECTED_ROADSIDE
3060094	2	0.90	1.70	0.80	BOUNDRY RD	North	23- Sep- 04	megan ella	20	2	2	2	2	1	1	2	2	2	2	0	2	9	11	VICTORIAN_TEA_TREE
3060094	3	1.70	6.30	4.60	BOUNDRY RD	North	23- Sep- 04	megan ella	20	2	2	1	1	1	1	1	1	2	2	1	1	8	8	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060094	4	6.30	7.60	1.30	BOUNDRY RD	North		megan ella	20	2	2	2	2	1	1	1	1	2	2	1	1	9	9	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060094	5	7.60	7.90	0.30	BOUNDRY RD	North		megan ella	20	2	2	2	2	2	2	0	2	2	2	1	0	9	10	VICTORIAN_TEA_TREE CABBAGE_FAMILY_WEEDS
3060094	6	7.90	9.20	1.30	BOUNDRY RD	North	23- Sep- 04	megan ella	20	2	2	2	2	1	1	2	2	2	2	1	1	10	10	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width	Na Vege	tive tation	Exte Vege	ent of tation	# Nat Pla Spec	nt	We	eds	В	ue as iol. ridor		oining nduse	Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left R	light L	_eft	Right	Left	Right	Lef	t Righ	t Left	Right	(Weeds and salt listed if present)
3060094	7	9.20	10.40	1.20	BOUNDRY RD	East	Sep- 04		20	0	2	0	2	0	2	0	2	0	2	2	2 1	2	11	VICTORIAN_TEA_TREE
3060094	8	10.40	11.80	1.40	BOUNDRY RD	East	23- Sep- 04		20	2	2	2	2	1	1	2	2	2	2	2	2 0	) 11	9	VICTORIAN_TEA_TREE
3060095	1	0.00	0.80	0.80	MUTTERS RD	West	05- Oct- 04	ella	40	2	2	2	2	2	2	2	2	1	1	2	2 2	2 11	11	VICTORIAN_TEA_TREE
3060095	2	0.80	2.20	1.40	MUTTERS RD	West	05- Oct- 04		40	2	2	1	1	1	1	0	0	1	1	2	2 2	2 7	7	VICTORIAN_TEA_TREE
3060095	3	2.20	3.30	1.10	MUTTERS RD	West		ella	40	1	1	0	0	0	0	1	0	0	0	2	2 2	2 4	3	VICTORIAN_TEA_TREE SALT_AFFECTED_ROADSIDE
3060096	1	0.00	0.63	0.63	KELLY RD	North		ella	20	1	1	0	0	0	0	1	1	1	1	2	2 2	2 5	5	
3060096	2	0.63	2.16	1.53	KELLY RD	North		ella	20	2	2	0	0	1	1	0	0	0	0	2	2 2	2 5	5	VICTORIAN_TEA_TREE
3060096	3	2.16	3.00	0.84	KELLY RD	North	05- Oct- 04	ella	20	2	2	2	2	2	2	2	2	1	1	2	2 2	2 11	11	VICTORIAN_TEA_TREE
3060096	4	3.00	3.62	0.62	KELLY RD	North	05- Oct- 04	ella	20	1	1	1	1	1	1	0	0	1	1	2	2 2	2 6	6	VICTORIAN_TEA_TREE
3060096	5	3.62	4.65	1.03	KELLY RD	North	-	ella	20	2	2	2	2	1	1	0	0	1	1		1 2	2 7	8	VICTORIAN_TEA_TREE
3060096	6	4.65	5.58	0.93	KELLY RD	North		ella	20	2	2	1	2	1	2	0	1	0	1	(	) 1	4	10	VICTORIAN_TEA_TREE
3060096	7	5.58	5.90	0.32	KELLY RD	North	05- Oct- 04	ella	20	2	2	1	1	2	2	1	2	0	1	2	2 0	8 (	8	VICTORIAN_TEA_TREE
3060099	1	0.00	1.50	1.50	LEE RD	South	29- Oct- 04	geoff	0	2	2	1	1	1	1	2	2	0	0	2	2 2	2 8	8	SALT_AFFECTED_ROADSIDE
3060100	1	0.00	0.58	0.58	STURGESS RD	South		ella	20	0	0	0	0	0	0	0	0	0	0	2	2 2	2 2	2	CABBAGE_FAMILY_WEEDS
3060100	2	0.58	2.46	1.88	STURGESS RD	South		ella	20	1	1	1	1	1	1	0	0	0	0	2	2 2	2 5	5	BRIDAL_CREEPER VICTORIAN_TEA_TREE
3060107	1	1.05	1.35	0.30	PEPALL RD	North	05- Oct- 04	ella	20	1	2	0	0	0	0	0	0	0	0	2	2 2	2 3	4	BRIDAL_CREEPER VICTORIAN_TEA_TREE

ROAD#	Section#	OD start	OD finish	Sectn length		Direction	Date	Observer	Width	Na Vege	tive tation	Exte Vege	ent of tation	Pla	ative ant cies	We	eds	В	ue as iol. ridor	Adjo	ining duse	Conser Value (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060107	2	1.35	1.65	0.30	PEPALL RD	North	05- Oct- 04		20	1	1	0	0	0	0	0	0	1	1	2	0	4	2	
3060107	3	1.65	2.35	0.70	PEPALL RD	North	05- Oct- 04	ella	20	2	2	1	1	0	0	0	0	2	2	2	2	7	7	
3060110	1	0.00	1.10	1.10	MILLS RD	East	14- Oct- 04	J.Temby	20	1	1	1	1	0	0	1	1	2	2	1	1	6	6	
3060110	2	1.10	2.04	0.94	MILLS RD	East	14- Oct- 04	J.Temby	20	1	1	1	1	1	0	1	1	2	2	0	1	6	6	
3060111	1	0.00	0.80	0.80	BALL RD	East	14- Oct- 04		20	1	0	1	1	0	0	1	1	2	2	0	1	5	5	
3060111	2	0.80	3.10	2.30	BALL RD	North	14- 0ct- 04		0	1	1	1	1	1	0	1	1	2	2	0	1	6	6	
3060111	3	3.10	6.60	3.50	BALL RD	West	14- 0ct- 04	J.Temby	20	1	1	1	1	0	0	1	1	2	2	1	1	6	6	
3060112	1	0.00	2.60	2.60	NAISBITT RD	East	23- Sep- 04	ella megan	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	CABBAGE_FAMILY_WEEDS
3060113	1	0.00	3.10	3.10	BEHN ORD RD	West	08- Oct- 04	mich	20	1	1	1	1	0	0	0	0	1	0	2	2	5	4	CABBAGE_FAMILY_WEEDS
3060117	1	0.00	1.00	1.00	EDWARDS RD	North	29- Oct- 04	geoff	0	2	2	0	2	1	2	2	2	0	1	2	0	7	9	
3060117	2	1.00	4.60	3.60	EDWARDS RD	North	29- 0ct- 04	geoff	0	1	1	1	1	0	0	0	1	0	0	2	2	4	5	
3060117	3	4.60	4.80	0.20	EDWARDS RD	North	29- Oct- 04	geoff	0	0	1	0	1	0	2	2	2	1	1	2	0	5	7	
3060117	4	4.80	11.50	6.70	EDWARDS RD	North	29- Oct- 04	geoff	0	2	2	0	0	0	0	1	1	2	2	2	2	7	7	
3060117	5	11.50	11.70	0.20	EDWARDS RD	North	29- Oct- 04	Ū	0	2	2	1	2	1	2	2	2	2	2	2	0	10	10	
3060123	1	0.86	1.32	0.46	DUMBLEYUNG- NYABING RD	East	09- 0ct- 04	mike	20	2	2	2	2	2	2	2	2	2	2	0	2	10	12	
3060123	2	1.32	5.58	4.26	DUMBLEYUNG- NYABING RD	East	09- Oct- 04		20	2	2	1	1	0	1	0	0	1	1	2	2	6	7	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width	Nat Veget			ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor	Adjoi Lanc		Value	12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060123	3	5.58	6.04	0.46	DUMBLEYUNG- NYABING RD	East	09- Oct- 04	mike	20	2	2	1	0	2	0	1	2	1	1	1	2	8	7	
3060123	4	6.04	8.00	1.96	DUMBLEYUNG- NYABING RD	East	09- Oct- 04	mike	20	2	2	1	1	1	1	1	2	0	0	2	2	7	8	
3060123	5	8.00	9.56	1.56	DUMBLEYUNG- NYABING RD	East	09- Oct- 04	mike	20	2	2	0	0	0	0	1	1	0	0	2	2	5	5	SALT_AFFECTED_ROADSIDE
3060123	6	9.56	11.72	2.16	DUMBLEYUNG- NYABING RD	North	09- Oct- 04	mike	20	2	2	0	0	0	0	1	1	0	0	0	0	3		VICTORIAN_TEA_TREE SALT_AFFECTED_ROADSIDE
3060123	7	11.72	13.18	1.46	DUMBLEYUNG- NYABING RD	North	09- Oct- 04		20	2	2	1	1	1	1	1	1	1	1	2	2	8	8	VICTORIAN_TEA_TREE
3060123	8	13.18	13.44	0.26	DUMBLEYUNG- NYABING RD	North	-	mike	20	1	1	1	2	2	2	2	2	1	1	1	0	8	8	VICTORIAN_TEA_TREE
3060123	9	13.44	16.46	3.02	DUMBLEYUNG- NYABING RD	North	-	mike	20	2	2	1	1	1	1	2	2	1	1	1	0	8	7	VICTORIAN_TEA_TREE
3060123	10	16.46	16.78	0.32	DUMBLEYUNG- NYABING RD	North	-	mike	20	2	2	0	2	0	2	1	2	0	1	2	0	5	9	
3060123	11	16.78	17.10	0.32	DUMBLEYUNG- NYABING RD	North	-	mike	20	2	2	1	1	1	1	2	2	1	1	2	2	9	9	
3060123	12	17.10	18.02	0.92	DUMBLEYUNG- NYABING RD	North	-	mike	20	2	2	1	2	1	2	2	2	2	2	2	0	10	10	
3060123	13	18.02	24.04	6.02	DUMBLEYUNG- NYABING RD	North		mike	20	2	2	0	1	1	1	0	0	1	0	2	2	6	6	SALT_AFFECTED_ROADSIDE
3060123	14	24.04	24.96	0.92	DUMBLEYUNG- NYABING RD	North	-	mike	20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	
3060123	15	24.96	25.88	0.92	DUMBLEYUNG- NYABING RD	North	-	mike	20	0	2	0	1	0	1	1	2	0	2	2	2	3	10	
3060124	1	0.00	0.68	0.68	KATANNING- DUMBLEYUNG RD	North		michele	20	1	1	0	0	0	0	0	0	1	1	2	2	4	4	
3060124	2	0.68	1.08	0.40	KATANNING- DUMBLEYUNG RD	North	-	michele	20	1	2	1	2	1	2	0	0	2	2	2	0	7	8	
3060124	3	1.08	5.48	4.40	KATANNING- DUMBLEYUNG RD	North	28- Oct- 04		20	1	1	1	1	1	1	0	0	2	2	2	2	7	7	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation		ent of tation	Pla	ative ant ecies	We	eds	Bi	ie as iol. ridor	Adjoi Lanc		Value	rvation Score 12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
3060124	4	5.48	5.88	0.40	KATANNING- DUMBLEYUNG RD	North	28- Oct- 04	michele	20	2	2	2	2	1	1	1	1	1	1	0	0	7	7	SALT_AFFECTED_ROADSIDE
3060124	5	5.88	7.78	1.90	KATANNING- DUMBLEYUNG RD	North	28- Oct- 04	michele	20	2	2	2	2	1	1	1	1	1	1	0	0	7	7	
3060124	6	7.78	8.48	0.70	KATANNING- DUMBLEYUNG RD	North	28- Oct- 04	michele	20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	SALT_AFFECTED_ROADSIDE
3060124	7	8.48	13.88	5.40	KATANNING- DUMBLEYUNG RD	North	28- Oct- 04	michele	0	1	0	1	0	0	0	0	0	1	0	2	2	5	2	
3060124	8	13.88	15.78	1.90	KATANNING- DUMBLEYUNG RD	North	28- Oct- 04	michele	20	1	1	1	1	0	0	0	0	1	1	2	2	5	5	SALT_AFFECTED_ROADSIDE
3060124	9	15.78	16.08	0.30	KATANNING- DUMBLEYUNG RD	North	28- Oct- 04	michele	20	1	2	1	2	0	1	0	0	0	1	2	0	4	6	
3060125	1	0.00	4.20	4.20	MORAN RD	North	13- Oct- 04	J.Temby	20	1	1	1	1	0	0	1	1	2	2	1	1	6	6	
3060125	2	4.20	5.10	0.90	MORAN RD	North	13- Oct- 04	J.Temby	20	1	1	1	1	0	0	1	1	2	2	1	1	1	6	
3060125	3	5.10	6.20	1.10	MORAN RD	North	13- Oct- 04	J.Temby	0	1	1	1	1	0	0	2	1	1	0	0	1	5	4	
3060126	1	0.00	5.58	5.58	DORADINE RD	North	01- Oct- 04	mich	20	1	2	1	1	0	0	1	1	2	1	2	2	7	7	VICTORIAN_TEA_TREE
M037	1	187.57	188.17	0.60	DUMBLEYUNG LAKE GRACE RD	East	09- 0ct- 04	mich	100	2	2	2	2	1	1	1	0	2	2	0	1	8	8	
M037	2	188.17	188.77	0.60	DUMBLEYUNG LAKE GRACE RD	East	09- Oct- 04	mich	100	1	1	0	1	0	0	0	0	0	0	2	1	3	3	
M037	3	188.77	189.57	0.80	DUMBLEYUNG LAKE GRACE RD	East	09- 0ct- 04	mich	100	1	1	1	1	0	0	0	0	0	0	1	1	3	3	CABBAGE_FAMILY_WEEDS
M037	4	189.57	190.47	0.90	DUMBLEYUNG LAKE GRACE RD	East	09- 0ct- 04	mich	40	0	0	0	0	0	0	0	0	0	0	2	2	2	2	CABBAGE_FAMILY_WEEDS
M037	5	190.47	194.17	3.70	DUMBLEYUNG LAKE GRACE RD	East	09- 0ct- 04	mich	40	2	1	1	1	1	1	0	0	1	0	1	2	6	5	
M037	6	194.17	195.07	0.90	DUMBLEYUNG LAKE GRACE RD	East	09- 0ct- 04	mich	40	1	2	1	1	1	1	0	0	1	1	1	2	5	7	

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eds	В	ue as iol. ridor		ining luse	Value	12)	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Lef	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
M037	7	195.07	196.47	1.40	DUMBLEYUNG LAKE GRACE RD	East	09- Oct- 04	mich	20	1	1	C	0	0	0	0	0	0	0	1	2	2	3	
M037	8	196.47	196.97	0.50	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	and mike	20	2	2	1	1	1	1	1	1	1	1	1	0	7	6	SALT_AFFECTED_ROADSIDE
M037	9	196.97	198.17	1.20	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	and mike	20	0	0	C	0	0	0	0	0	0	0	2	1	2	1	
M037	10	198.17	199.37	1.20	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	and mike	20	1	1	1	1	1	1	0	0	0	0	2	1	5	4	SALT_AFFECTED_ROADSIDE
M037	11	199.37	199.67	0.30	DUMBLEYUNG LAKE GRACE RD	East		megan and mike	20	2	2	2	1	1	1	2	1	2	2	0	1	9	8	
M037	12	199.67	200.07	0.40	DUMBLEYUNG LAKE GRACE RD	East	24-	megan and mike	20	0	0	C	0	0	0	0	0	0	0	2	2	2	2	CABBAGE_FAMILY_WEEDS
M037	13	200.07	201.27	1.20	DUMBLEYUNG LAKE GRACE RD	East		megan and mike	20	2	2	1	1	1	1	0	0	1	1	2	2	7	7	CABBAGE_FAMILY_WEEDS
M037	14	201.27	201.77	0.50	DUMBLEYUNG LAKE GRACE RD	East		megan and mike	20	0	0	C	0	0	0	0	0	0	0	2	2	2	2	
M037	15	201.77	202.77	1.00	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	and mike	20	2	2	1	1	1	1	0	0	1	1	2	2	7	7	
M037	16	202.77	205.77	3.00	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04		20	2	2	1	1	1	1	1	1	2	2	2	1	9	8	
M037	17	205.77	205.97	0.20	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	megan and mike	20	2	2	1	2	1	1	1	2	2	2	2	0	9	9	
M037	18	205.97	208.97	3.00	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	megan and mike	20	2	2	2	2	1	1	1	1	2	2	1	2	9	10	
M037	19	208.97	213.07	4.10	DUMBLEYUNG LAKE GRACE RD	East		megan and mike	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	
M037	20	213.07	215.57	2.50	DUMBLEYUNG LAKE GRACE RD	East	24-	megan and mike	20	2	2	C	0	2	2	1	1	2	2	2	2	9	9	
M037	21	215.57	216.77	1.20	DUMBLEYUNG LAKE GRACE RD	East	24-	megan and mike	20	1	1	C	0	0	0	1	1	0	0	2	2	4	4	SALT_AFFECTED_ROADSIDE
M037	22	216.77	219.97	3.20	DUMBLEYUNG LAKE GRACE RD	East		megan and mike	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	SALT_AFFECTED_ROADSIDE

ROAD#	Section#	OD start	OD finish	Sectn length	Road Name	Direction	Date	Observer	Width		tive tation		ent of tation	PI	ative ant ecies	We	eeds	В	ue as iol. ridor	Adjo Lano	ining duse	Conser Value : (0-1	Score	Overlay data
		(km)	(km)	(km)					(m)	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	(Weeds and salt listed if present)
M037	23	219.97	221.47		DUMBLEYUNG LAKE GRACE RD	East	Sep- 04		20	1	1	0	0	0	0	0	0	0	0	2	2	3	3	SALT_AFFECTED_ROADSIDE
M037	24	221.47	227.67	6.20	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	megan and mike	20	2	2	1	1	1	1	1	1	2	2	2	2	9	9	
M037	25	227.67	232.87	5.20	DUMBLEYUNG LAKE GRACE RD	East	24- Sep- 04	megan and mike	20	2	2	2	2	2	2	1	2	2	2	2	2	12	12	
M037	26	232.87	234.67	1.80	DUMBLEYUNG LAKE GRACE RD	East	23- Sep- 04	megan and ella	20	2	2	1	2	1	1	1	2	1	2	2	0	8	9	CABBAGE_FAMILY_WEEDS
M037	27	234.67	238.87	4.20	DUMBLEYUNG LAKE GRACE RD	East	23- Sep- 04	megan and ella	20	2	2	2	2	1	1	1	1	2	2	1	1	9	9	CABBAGE_FAMILY_WEEDS
M037	28	238.87	240.27	1.40	DUMBLEYUNG LAKE GRACE RD	East	23- Sep- 04	megan and ella	20	2	2	2	2	2	2	2	2	2	2	1	1	11	11	CABBAGE_FAMILY_WEEDS
M037	29	240.27	242.77	2.50	DUMBLEYUNG LAKE GRACE RD	East	23- Sep- 04	megan and ella	20	2	2	2	2	2	2	2	2	2	2	1	0	11	10	
M037	30	242.77	244.47	1.70	DUMBLEYUNG LAKE GRACE RD	East	23- Sep- 04	megan and ella	20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	
M037	31	244.47	245.37	0.90	DUMBLEYUNG LAKE GRACE RD	East	Sep- 04		20	2	2	2	2	2	2	2	2	2	2	0	1	10	11	
M037	32	245.37	247.27	1.90	DUMBLEYUNG LAKE GRACE RD	East	Sep- 04		20	2	2	2	2	2	2	2	2	2	2	0	0	10	10	
M037	33	247.27	249.87	2.60	DUMBLEYUNG LAKE GRACE RD	East	23- Sep- 04	megan and ella	20	2	2	2	2	2	2	2	2	2	2	2	0	12	10	
M037	34	249.87	252.07	2.20	DUMBLEYUNG LAKE GRACE RD	East		megan and ella	20	2	2	2	2	2	2	2	2	2	2	0	2	10	12	
M037	35	252.07	253.57	1.50	DUMBLEYUNG LAKE GRACE RD	East		megan and ella	20	2	2	2	2	2	2	2	2	2	2	2	2	12	12	

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### **APPENDIX 3**

Road names and lengths: Shire of Kent

(Source- Main Roads WA 2004)

Road Name	Road length (km)
DUMBLEYUNG-NYABING RD	24.39
NEWDEGATE RD	39.60
ONGERUP RD	30.05
GNOWANGERUP RD	21.10
KUKERIN RD	17.98
	32.53
	23.20
	23.50
	13.30
	13.40
DUALLING RD	21.63
EAST RD	44.52
	16.32
	27.60
	21.66
	17.75
	42.68
MOORNAMING SOUTH RD	16.80
	19.46
	20.41
	16.79
	35.40
	11.93
	10.10
	4.66
	11.51
	6.92
	13.01
	6.26
	10.79
	15.36
	9.01
	6.30
	9.89
	2.89
	9.14
	6.71
	13.93
	5.80
	16.65
	23.50
	5.89
	9.47
	12.42
	13.73
	9.78
	13.64
	28.89
	3.63
	5.86
	14.66
	14.17
	26.91
	DUMBLEYUNG-NYABING RD         NEWDEGATE RD         ONGERUP RD         GNOWANGERUP RD         KUKERIN RD         NYABING SOUTH RD         RANGE RD         NORTH KURINGUP RD         NORTH FENCE RD         WARREN RD         DUALLING RD         EAST RD         KURINGUP RD         STEELE RD         NEVE RD         NEEDILUP NORTH RD

Road #	Road Name	Road length (km)
3090055	DUNCOMBE RD	13.34
3090056	CROSBY RD	3.54
3090057	WILSON RD	4.98
3090058	ROBSON RD	2.12
3090059	NAGEL RD	4.41
3090060	DITCHBURN RD	8.85
3090061	CHINOKUP RD	21.41
3090062	HUMPHRIES RD	8.76
3090063	WHYATT RD	18.53
3090064	DAY RD	9.70
3090065	ADDIS RD	4.84
3090066	HOBART RD	3.06
3090067	BROWNE RD	6.95
3090068	HARVEY RD	5.48
3090069	GILLIS RD	11.20
3090070	LEE RD	3.60
3090071	GUELFI RD	6.89
3090072	NORTH MOORNAMING RD	4.24
3090073	COLLINS RD	5.63
3090074	RAMM RD	1.24
3090075	THOMSON RD	5.43
3090076	DAVIES RD	5.95
3090077	GRANT-WILLIAMS RD	10.68
3090078	KWOBRUP SIDING RD	0.92
	REEVES RD	4.62
3090079		
3090080		3.02
3090081	GARRY RD	1.69
3090082	HARRIS RD	5.12
3090083		3.90
3090084	SUTHERLAND TK	13.94
3090085	EDDIES RD	1.53
3090086	RIPPER RD	3.26
3090087	RANDUNOVIC RD	1.78
3090088	TRANTER RD	3.81
3090089	HOLMES RD	3.02
3090090	OWENS RD	2.72
3090091	HASSETT RD	1.73
3090092	SPROXTON RD	2.32
3090093	QUARTERMAINE RD	14.13
3090094	HOLLAND TANK RD	18.27
3090095	MCDONALD RD	2.16
3090096	HAYWOOD RD	4.84
3090097	SOLLY RD	1.59
3090098	BATT RD	9.42
3090099	GLEN RD	1.90
3090100	MINDARABIN RD	3.70
3090101	EMERY RD	1.65
3090102	GARLICK RD	1.68
3090103	SMITH RD	2.58
3090104	HATTWELL RD	6.60
3090105	TOWNSEND RD	6.62
3090106	WOOD RD	4.75
3090107	SEATON ROSS RD	3.58
3090108	PHILLIPS RD	3.86
3090109	MANUEL RD	8.10
3090110	YATES RD	5.74
3090111	WARD RD	5.02
3090112	CHEETHAM RD	1.74

Road #	Road Name	Road length (km)					
3090114	ROSENBURG RD	5.18					
3090115	ROCK DAM RD	6.02					
3090116	LAKE MAGENTA RD	3.79					
3090117	BIN RD	1.04					
3090118	ASPENDALE ST	0.42					
3090119	CRONIN ST	0.26					
3090120	BOURKE ST	0.27					
3090121	JURY ST	0.25					
3090122	CARRIE ST	0.34					
3090123	BURSTON ST	0.25					
3090124	ALTHAM ST	0.11					
3090125	REID ST	0.16					
3090126	DEACON ST	0.09					
3090127	JOLLEY RD	1.57					
3090128	GEORGE ST	0.26					
3090129	HOBLEY ST	0.41					
3090130	DUNNART RD	8.77					
3090132	ADAMS RD	2.53					
3090133	BIG LAKE RD	1.95					
3090134	SHIELDS RD	2.98					
3090135	GRAYS RD	8.51					
3090136	SKIPSEY RD	2.70					
3090137	MURRAY	1.21					
3090138	LOCKHART NORTH RD	10.12					
3090139	MOORE RD	0.45					
3090140	GABY ST	0.48					
3090141	LOFGRENS RD	4.87					
3090143	COATES CL	0.10					
3090144	MORTVALE RD (UNKNOWN)	4.63					
3090155	GYPSUM ACCESS RD	10.23					



### **APPENDIX 4**

### Flora species in the Shire of Kent

### (Source- WA Herbarium)

Note: not a comprehensive list and may not be the most up to date information available.

\* = Weed species P = Priority species

R = Rare species

Acacia acanthaster ms Acacia acanthoclada subsp. acanthoclada Acacia acuminata Acacia acuminata subsp. acuminata ms Acacia aemula subsp. muricata Acacia amputa Acacia amputa ms Acacia andrewsii Acacia arcuatilis ms P2 Acacia assimilis subsp. atroviridis Acacia bidentata Acacia brachyphylla var. recurvata P3 Acacia chamaeleon Acacia chrvsella Acacia consobrina Acacia coolgardiensis subsp. coolgardiensis Acacia crassistipula Acacia cupularis Acacia densiflora Acacia dermatophvlla Acacia dissona var. dissona Acacia drummondii subsp. elegans Acacia enervia subsp. explicata Acacia erinacea Acacia flavopila Acacia glaucoptera Acacia grisea P4 Acacia hemiteles Acacia heteroclita subsp. heteroclita ms Acacia lachnophylla Acacia laricina var. laricina Acacia lasiocalyx Acacia lasiocarpa var. sedifolia Acacia leptalea ms R Acacia leptopetala Acacia leptospermoides Acacia leptospermoides subsp. leptospermoides Acacia lineolata subsp. lineolata Acacia maxwellii Acacia merrallii Acacia mimica var. angusta Acacia mimica var. mimica Acacia moirii subsp. recurvistipula Acacia multispicata Acacia mutabilis subsp. angustifolia ms

Acacia mutabilis subsp. incurva ms P1 Acacia mutabilis subsp. mutabilis ms Acacia mutabilis subsp. rhvnchophvlla ms P3 Acacia mutabilis subsp. stipulifera ms P1 Acacia mvrtifolia Acacia newbeyi P3 Acacia nyssophylla Acacia octonervia P3 Acacia patagiata Acacia pulchella var. glaberrima Acacia pulchella var. goadbyi Acacia pulviniformis Acacia quinquinervia ms Acacia redolens Acacia rostellata ms Acacia saligna Acacia sclerophylla var. pilosa ms P2 Acacia sessilispica Acacia shuttleworthii Acacia sp.P176(B.R.Maslin 5831) Acacia sphacelata subsp. recurva ms Acacia sphacelata subsp. sphacelata ms Acacia spongolitica Acacia stenoptera Acacia sulcata var. ? platyphylla Acacia sulcata var. planoconvexa Acacia sulcata var. platyphylla Acacia tetanophylla Acacia tratmaniana Acacia triptycha Acacia uncinella Acacia undosa P3 Acacia unifissilis Acacia varia var. crassinervis Acacia varia var. parviflora Acacia vassalii R Acacia verricula Acacia viscifolia Actinostrobus pyramidalis Actinotus humilis Adenanthos flavidiflorus Adenanthos glabrescens subsp. glabrescens Adenanthos pungens subsp. pungens R Agonis spathulata Allocasuarina acuaria

Allocasuarina campestris Allocasuarina corniculata Allocasuarina huegeliana Allocasuarina humilis Allocasuarina lehmanniana Allocasuarina microstachya Allocasuarina pinaster Allocasuarina scleroclada Allocasuarina thuyoides \*Alternanthera pungens (Khaki weed) Alyogyne huegelii var. wrayae ms Alyxia buxifolia \*Amaranthus albus (Tumbleweed) Amphipogon turbinatus Anarthria humilis Andersonia caerulea Andersonia lehmanniana subsp. pubescens Andersonia parvifolia Anigozanthos humilis subsp. humilis Anigozanthos rufus Anthocercis genistoides Anthotium rubriflorum Aotus diffusa ms Apium annuum \*Arctotheca calendula (Cape weed) Argentipallium niveum \*Asphodelus fistulosus (Onion weed) Astartea ambigua Astartea clavifolia P2 Asteridea asteroides Asteridea chaetopoda Asterolasia squamuligera Astroloma aff. epacridis Astroloma aff. microphyllum Astroloma cataphractum ms Astroloma compactum Astroloma epacridis Astroloma serratifolium Atriplex exilifolia Atriplex hymenotheca Atriplex paludosa subsp. baudinii Atriplex paludosa subsp. cordata Atriplex semibaccata Atriplex vesicaria subsp. variabilis Austrostipa drummondii Austrostipa hemipogon Baeckea blackettii Baeckea corynophylla Baeckea crispiflora Baeckea preissiana Banksia blechnifolia Banksia gardneri var. hiemalis Banksia media Banksia meisneri subsp. meisneri Banksia prionotes Banksia violacea

Bassia scoparia Beaufortia incana Beaufortia interstans Beaufortia micrantha Beaufortia micrantha var. micrantha Beaufortia micrantha var. puberula Billardiera bicolor Billardiera bicolor var. "unsorted" Billardiera bicolor var. bicolor Billardiera coriacea Billardiera lehmanniana Billardiera sericea Blennospora phlegmatocarpa P2 Boronia baeckeacea subsp. baeckeacea Boronia capitata subsp. clavata Boronia coerulescens Boronia crassifolia Boronia crenulata Boronia crenulata var. crenulata Boronia denticulata Boronia inconspicua Boronia inornata Boronia inornata subsp. inornata Boronia inornata subsp. leptophylla Boronia penicillata P3 Boronia ramosa subsp. anethifolia Boronia subsessilis Boronia ternata var. austrofoliosa ms Boronia ternata var. foliosa Borya constricta Borya sphaerocephala Bossiaea concinna Bossiaea divaricata P3 Bossiaea peduncularis Bossiaea preissii Bossiaea spinosa Bossiaea walkeri Brachyscome ciliaris Brachyscome goniocarpa Brachysema celsianum \*Brassica barrelieri subsp. oxyrrhina (Smoothstem turnip) Brassica tournefortii \*Bromus rubens (Red brome) Caesia micrantha Caesia occidentalis Caladenia dilatata

Caesia occidentalis Caladenia dilatata Caladenia dimidia ms Caladenia discoidea Caladenia doutchiae Caladenia exilis subsp. exilis ms Caladenia falcata Caladenia hirta subsp. rosea ms Caladenia integra P4 Caladenia latifolia Caladenia melanema ms P2 Caladenia multiclavia Caladenia polychroma ms Caladenia roei Caladenia vulgata ms Caladenia x cala ms Caladenia x lavandulacea Calandrinia granulifera Calectasia grandiflora Callistemon phoeniceus Callitris drummondii Callitris preissii subsp. verrucosa Callitris roei Calocephalus stowardii Calothamnus gibbosus Calothamnus gracilis Calothamnus huegelii Calothamnus planifolius Calothamnus quadrifidus Calytrix depressa Calytrix fraseri Calytrix leschenaultii Calytrix nematoclada P3 Calytrix pulchella P3 Calytrix tetragona Carpobrotus modestus Cassinia arcuata Cassytha glabella forma dispar Cassytha melantha Cassytha racemosa Centrolepis humillima Chamaexeros serra Chamelaucium ciliatum Chamelaucium naviculum ms \*Chenopodium album (Fat hen) Chloanthes coccinea Chloris truncata \*Chloris virgata (Feathertop Rhodes grass) Chordifex sphacelatus ms Choretrum glomeratum var. glomeratum Chorizema glycinifolium Chorizema nervosum P1 Chorizema uncinatum Chrysocephalum apiculatum Chrysocoryne drummondii \*Cirsium vulgare (Spear thistle) Clematis delicata ms Coleanthera coelophvlla P1 Coleanthera myrtoides Comesperma lanceolatum P2 Comesperma scoparium Comesperma volubile Conospermum bracteosum Conospermum croniniae Conostephium drummondii Conostephium roei

Conostylis argentea Conostvlis deplexa Conostylis petrophiloides Conostylis pusilla Conostylis seorsiflora subsp. longissima Conostylis seorsiflora subsp. Nyabing(A.Coates s.n.) P2 Conostylis seorsiflora subsp. seorsiflora Conostylis serrulata Conostylis setigera subsp. setigera Coopernookia polygalacea Coopernookia strophiolata Cryptandra arbutiflora var. arbutiflora Cryptandra inconspicua ms P2 Cryptandra leucopogon Cryptandra minutifolia Cryptandra minutifolia subsp. brevistyla Cryptandra nutans Cryptandra pungens Cyanicula gemmata ms Cyanostegia angustifolia Cyanostegia lanceolata Cyphanthera microphylla Cypselocarpus haloragoides Dampiera fasciculata Dampiera fitzgeraldensis P2 Dampiera juncea Dampiera lavandulacea Dampiera linearis Dampiera obligua Dampiera sacculata Darwinia diosmoides Darwinia vestita \*Datura ferox DP (Fierce thornapple) Daviesia abnormis Daviesia articulata Daviesia cardiophylla Daviesia decipiens Daviesia decurrens Daviesia dilatata ms Daviesia emarginata Daviesia incrassata subsp. incrassata Daviesia incrassata subsp. incrassata ms Daviesia incrassata subsp. teres Daviesia pachyphylla Daviesia tortuosa P2 Daviesia uniflora Desmocladus myriocladus ms Desmocladus parthenicus ms Desmocladus quiricanus ms Didymanthus roei \*Digitaria sanguinalis (Crab grass) Dillwynia aff. uncinata

\*Dittrichia graveolens (Stinkwort)

Dodonaea amblyophylla

Dodonaea bursariifolia Dodonaea concinna Dodonaea inaequifolia Dodonaea pinifolia Dodonaea stenozyga Dodonaea viscosa subsp. angustissima Drakaea glyptodon Drakaea isolata ms R Drakonorchis mesocera ms Drosera androsacea Drosera huegelii Drosera leucoblasta Drosera macrantha subsp. macrantha Drosera salina P1 Drosera subhirtella subsp. subhirtella Dryandra armata var. armata Dryandra cirsioides Dryandra conferta Dryandra conferta var. conferta Dryandra conferta var. conferta ms Dryandra conferta var. parva P2 Drvandra cuneata Dryandra drummondii subsp. macrorufa P1 Dryandra erythrocephala Dryandra erythrocephala var. inopinata P2 Dryandra fasciculata P3 Dryandra ferruginea subsp. chelomacarpa P3 Dryandra ferruginea subsp. ferruginea Dryandra foliosissima P2 Dryandra fraseri var. fraseri Dryandra meganotia P3 Dryandra nivea subsp. nivea Dryandra obtusa Dryandra octotriginata Dryandra pallida Drvandra pallida ms Dryandra porrecta P4 Dryandra rufistylis P2 Dryandra xylothemelia P3

\*Eleusine indica (Crowsfoot grass) Elythranthera brunonis Epilobium billardierianum cinereum Éremaea pauciflora var. pauciflora Eremaea violacea Eremophila drummondii Eremophila glabra Eremophila glabra subsp. albicans Eremophila oppositifolia subsp. angustifolia ms Eremophila serpens P4 Eremophila subfloccosa subsp. lanata ms Eremophila veneta ms R Eremophila verticillata R Eriostemon brucei subsp. brucei Eriostemon cymbiformis P2 Eriostemon gardneri

Eriostemon rhomboideus Eriostemon tomentellus \*Erodium botrys (Long storksbill) Erymophyllum tenellum Ervthrina vespertilio Eucalyptus aff. brachycalyx Eucalyptus aff. continens ms Eucalyptus aff. flocktoniae Eucalyptus aff. scyphocalyx Eucalyptus albida Eucalyptus anceps Eucalyptus angustissima subsp. guaerenda P2 Eucalyptus annulata Eucalyptus argyphea Eucalyptus calycogona var. calycogona Eucalyptus capillosa Eucalyptus captiosa Eucalyptus celastroides subsp. virella Eucalyptus clivicola Eucalyptus conglobata Eucalyptus continens ms P3 Eucalyptus densa subsp. densa Eucalyptus depauperata P3 Eucalyptus dissimulata Eucalyptus eremophila Eucalyptus eremophila subsp. eremophila Eucalyptus erythronema var. erythronema Eucalyptus falcata Eucalyptus flocktoniae Eucalyptus gardneri subsp. gardneri Eucalyptus goniocarpa Eucalyptus gratiae Eucalyptus hebetifolia Eucalyptus hypochlamydea subsp. hypochlamydea ms Eucalyptus incrassata Eucalyptus kondininensis Eucalyptus leptopoda subsp. leptopoda Eucalyptus longicornis Eucalyptus loxophleba subsp. lissophloia Eucalyptus loxophleba subsp. loxophleba Eucalyptus medialis Eucalyptus microschema P2 Eucalyptus mimica ms P2 Eucalyptus occidentalis Eucalyptus oleosa Eucalyptus perangusta Eucalyptus phaenophylla subsp. interjacens Eucalyptus phaenophylla subsp. phaenophylla Eucalyptus phenax Eucalyptus pileata Eucalyptus platypus Eucalyptus platypus subsp. platypus Eucalyptus platypus var. platypus Eucalyptus protensa Eucalyptus redacta subsp. redacta ms

Eucalyptus redacta subsp. thamnoides ms Eucalvptus rigidula Eucalyptus salmonophloia Eucalyptus salubris Eucalyptus scyphocalyx Eucalyptus sheathiana Eucalyptus sparsicoma P2 Eucalyptus spathulata Eucalyptus spathulata subsp. spathulata Eucalyptus spathulata var. spathulata Eucalyptus subangusta subsp. pusilla Eucalyptus subangusta subsp. subangusta Eucalyptus suggrandis subsp. alipes Eucalyptus suggrandis subsp. suggrandis Eucalyptus tetragona Eucalyptus uncinata Eucalyptus vegrandis Exocarpos aphyllus Exocarpos sparteus

Fitzwillia axilliflora P2 Frankenia cinerea

Gahnia ancistrophylla Gahnia trifida Gastrolobium crassifolium Gastrolobium propinguum P1 Gastrolobium spinosum Gastrolobium spinosum var. spinosum Gastrolobium tetragonophyllum Genoplesium nigricans ms Glischrocaryon aureum var. angustifolium Glischrocaryon roei Gnaphalium indutum Gompholobium hendersonii Gompholobium scabrum Gompholobium viscidulum Goodenia affinis Goodenia glareicola Goodenia incana Goodenia pulchella Goodenia scapigera Goodenia tripartita Goodenia watsonii subsp. watsonii Grevillea acuaria Grevillea anethifolia Grevillea apiciloba Grevillea beardiana Grevillea biformis subsp. biformis Grevillea cagiana Grevillea coccinea subsp. coccinea Grevillea decipiens Grevillea disjuncta Grevillea dolichopoda Grevillea huegelii Grevillea insignis

Grevillea insignis subsp. insignis Grevillea involucrata R Grevillea newbevi P3 Grevillea oligantha Grevillea paniculata Grevillea patentiloba Grevillea patentiloba subsp. patentiloba Grevillea pectinata Grevillea prostrata P4 Grevillea rigida subsp. distans Grevillea shuttleworthiana subsp. obovata Grevillea teretifolia Grevillea tripartita Grevillea umbellulata subsp. umbellulata Grevillea wittweri P2 Guichenotia sarotes Gunniopsis septifraga Gyrostemon prostratus P3 Gyrostemon subnudus Haemodorum brevisepalum Hakea brachyptera P3 Hakea commutata Hakea cygna subsp. cygna Hakea incrassata

Hakea newbeyana Hakea nitida Hakea pandanicarpa Hakea pandanicarpa subsp. crassifolia ms Hakea prostrata Hakea strumosa Hakea subsulcata Hakea varia Halgania anagalloides var. preissiana ms Halgania andromedifolia Halosarcia aff. syncarpa Halosarcia halocnemoides Halosarcia halocnemoides subsp. caudata Halosarcia indica subsp. bidens Halosarcia lepidosperma Halosarcia lylei Halosarcia pergranulata subsp. pergranulata Halosarcia syncarpa Harperia lateriflora Hemichroa diandra Hemigenia sp.Albany(G.J.Keighery 8712) Hibbertia drummondii Hibbertia enervia Hibbertia exasperata Hibbertia gracilipes Hibbertia inclusa Hibbertia recurvifolia Hibbertia rupicola Hyalochlamys globifera Hyalosperma glutinosum subsp. glutinosum Hybanthus epacroides

Hybanthus floribundus subsp. floribundus Hydrocotyle muriculata P1 Hydrocotyle rugulosa Hypolaena fastigiata Hypolaena humilis ms Hypoxis glabella var. glabella

\*Ipheion uniflorum \*Isolepis marginate (Course club- rush) Isopogon buxifolius Isopogon divergens Isopogon gardneri ms Isopogon heterophyllus Isopogon polycephalus Isopogon scabriusculus subsp. scabriusculus ms Isopogon scabriusculus subsp. stenophyllus ms Isopogon teretifolius subsp. teretifolius ms Isopogon villosus

Jacksonia furcellata Jacksonia racemosa \*Juncus bufonius (Toad rush) \*Juncus capitatus (Capitate rush) Juncus radula Juncus subsecundus

Kennedia eximia Kunzea jucunda Kunzea preissiana

Lachnostachys albicans Lambertia ilicifolia Lambertia inermis Lambertia inermis var. drummondii Lasiopetalum fitzgibbonii P3 Lasiopetalum indutum Lasiopetalum molle Lasiopetalum rosmarinifolium Lawrencella rosea Lawrencia berthae Lawrencia diffusa Lawrencia spicata Lawrencia squamata Laxmannia omnifertilis Laxmannia paleacea Laxmannia ramosa subsp. deflexa Lechenaultia formosa Lechenaultia tubiflora \*Lepidium africanum (Rubble peppercress) Lepidosperma brunonianum Lepidosperma costale Lepidosperma resinosum Lepidosperma sp.A2 Island Flat(G.J.Keighery 7000) Lepidosperma tenue Lepidosperma tuberculatum

Leporella fimbriata Leptomeria pachvclada Leptomeria preissiana Leptospermum erubescens Leptospermum inelegans Leptospermum maxwellii Leptospermum nitens Leptospermum spinescens Leucopogon concinnus Leucopogon crassifolius Leucopogon cuneifolius Leucopogon dielsianus Leucopogon fimbriatus Leucopogon insularis Leucopogon kingianus Leucopogon minutifolius Leucopogon obtusatus Leucopogon ovalifolius Leucopogon polymorphus Leucopogon rubicundus Levenhookia stipitata Lobelia heterophylla Logania buxifolia Logania flaviflora Logania tortuosa Lomandra collina Lomandra rupestris Lycium australe Lyginia barbata Lysinema ciliatum Lysiosepalum involucratum Maireana brevifolia Maireana enchylaenoides Maireana erioclada Maireana georgei Maireana oppositifolia Maireana tomentosa subsp. tomentosa Maireana trichoptera \*Malva parviflora (Marshmallow) Melaleuca ? pentagona Melaleuca acuminata subsp. acuminata ms Melaleuca adenostyla Melaleuca adnata Melaleuca aff. tuberculata Melaleuca apodocephala subsp. apodocephala ms Melaleuca bracteosa Melaleuca brevifolia Melaleuca bromelioides Melaleuca carrii ms Melaleuca conferta Melaleuca cucullata Melaleuca depauperata Melaleuca eleuterostachya Melaleuca elliptica

Melaleuca eurystoma ms Melaleuca fulgens subsp. fulgens Melaleuca halmaturorum Melaleuca hamulosa Melaleuca lanceolata Melaleuca lanceolata subsp. thaeroides Melaleuca lateralis Melaleuca lateriflora subsp. lateriflora ms Melaleuca laxiflora Melaleuca lecanantha Melaleuca nesophila Melaleuca ordinifolia P2 Melaleuca pauperiflora subsp. pauperiflora Melaleuca platycalyx Melaleuca polycephala P3 Melaleuca pungens Melaleuca rhaphiophylla Melaleuca scabra Melaleuca sculponeata P1 Melaleuca seriata Melaleuca societatis ms Melaleuca sp.Wongan Hills(R.Davis 1959) Melaleuca spathulata Melaleuca strobophylla Melaleuca subfalcata Melaleuca subtrigona Melaleuca thymoides Melaleuca thyoides Melaleuca torquata Melaleuca uncinata Melaleuca urceolaris \*Mesembryanthemum nodiflorum (Slender iceplant) Mesomelaena preissii Microcorys exserta Microcorys glabra Microcorys loganiacea Microcorys obovata Microcybe multiflora subsp. multiflora Microcybe multiflora var. baccharoides Microlepidium pilosulum Millotia major Millotia perpusilla Millotia tenuifolia var. tenuifolia Mirbelia floribunda Mirbelia trichocalyx Muehlenbeckia florulenta Muehlenbeckia horrida Muehlenbeckia horrida subsp. abdita P1 Myriocephalus pygmaeus

Nematolepis phebalioides Nemcia effusa P2 Nemcia emarginata Nemcia hookeri Nemcia punctata Neurachne alopecuroidea \*Oenothera stricta subsp. stricta (Evening primrose) Olearia ciliata Olearia homolepis Olearia muelleri Olearia muricata Olearia paucidentata Olearia ramosissima Olearia rudis Opercularia rubioides P2 Ozothamnus lepidophyllus \*Parapholis incurva (Coast barbgrass) Patersonia umbrosa Pelargonium havlasae \*Pentaschistis airoides (False hairgrass) Persicaria prostrata Persoonia brevirhachis P2 Persoonia hakeiformis P2 Persoonia teretifolia Petrophile aspera Petrophile brevifolia Petrophile circinata Petrophile ericifolia subsp. ericifolia Petrophile glauca ms Petrophile helicophylla Petrophile merrallii ms Petrophile phylicoides Petrophile seminuda Petrophile squamata subsp. squamata Phebalium filifolium Phebalium lepidotum Phebalium microphyllum Phebalium rude subsp. amblvcarpum Phebalium tuberculosum Phyllanthus scaber Physopsis lachnostachya Pimelea angustifolia Pimelea argentea Pimelea brachyphylla Pimelea brevifolia subsp. brevifolia Pimelea cracens subsp. cracens Pimelea erecta Pimelea imbricata var. piligera Pittosporum phylliraeoides Pityrodia terminalis Platysace juncea Platysace maxwellii Poa drummondiana \*Poa infirma Podolepis rugata Podotheca angustifolia Pogonolepis stricta \*Polygonum aviculare (Wireweed)

\*Polygonum bellardii Prasophyllum sargentii Prostanthera canaliculata Prostanthera serpyllifolia subsp. microphylla Pterochaeta paniculata Pterostylis mutica Pterostylis picta Pterostylis vittata Ptilotus spathulatus Pultenaea aff. adunca Pultenaea conferta Pultenaea verruculosa var. brachyphylla Pyrorchis nigricans

\*Rapistrum rugosum PP (Turnip weed) Rhagodia ? drummondii Rhagodia drummondii Rhagodia preissii subsp. preissii Rhodanthe heterantha Rhodanthe manglesii Rhodanthe pygmaea Rinzia affinis P2 Rinzia communis Roycea pycnophylloides R \*Rumex crispus (Curled dock)

Samolus caespitosus Samolus junceus Santalum acuminatum Sarcocornia blackiana Scaevola argentea Scaevola pulvinaris Schoenia cassiniana Schoenus sesquispiculus Sclerolaena diacantha Senecio alossanthus Senecio lautus subsp. dissectifolius Senecio quadridentatus Senecio squarrosus Senna artemisioides subsp. filifolia Senna cardiosperma subsp. aff. manicula Senna pleurocarpa var. angustifolia \*Sisymbrium irio (London rocket) Solanum capsiciforme Solanum nummularium \*Solanum rostratum PP (Buffalo burr) Sollva heterophylla \*Sonchus asper subsp. glaucescens (Rough sowthistle, Prickly sowthistle) \*Sonchus oleraceus (Common sowthistle) Sphaerolobium linophyllum Spyridium microcephalum Spyridium mucronatum subsp. recurvum P3 Spyridium polycephalum Stachystemon polyandrus Stackhousia clementii

Stellaria filiformis Stenopetalum lineare Stylidium breviscapum var. breviscapum Stylidium schoenoides Stvlidium squamellosum Stypandra glauca Symonanthus aromaticus Synaphea favosa Synaphea flexuosa P2 Synaphea interioris Tecticornia verrucosa Tegicornia uniflora P4 Templetonia retusa Templetonia sulcata Teucrium sessiliflorum Thelymitra nuda Thelymitra villosa Thomasia grandiflora Thomasia rugosa Thomasia sarotes Thomasia stelligera Thryptomene australis Thysanotus brachiatus P2 Thysanotus patersonii Thysanotus sparteus Thysanotus triandrus Tribonanthes australis Triglochin calcitrapum Triglochin centrocarpum Trochocarpa parviflora P3 Trymalium elachophyllum Typha domingensis \*Ulex europaeus DP (Gorse)

\*Ursinia anthemoides

Velleia trinervis Verreauxia reinwardtii Verticordia acerosa var. preissii Verticordia brevifolia subsp. brevifolia P1 Verticordia chrysantha Verticordia coronata P3 Verticordia densiflora var. cespitosa Verticordia densiflora var. densiflora Verticordia endlicheriana var. endlicheriana Verticordia endlicheriana var. major Verticordia eriocephala Verticordia grandiflora Verticordia habrantha Verticordia humilis Verticordia inclusa Verticordia insignis subsp. compta Verticordia integra Verticordia integra P4 Verticordia lindleyi subsp. purpurea P4

Verticordia pennigera Verticordia picta Verticordia plumosa var. brachyphylla Verticordia plumosa var. incrassata Verticordia roei Verticordia roei subsp. roei Verticordia serrata var. serrata Verticordia subulata Verticordia tumida subsp. therogana

Westringia cephalantha Westringia rigida Wilsonia humilis

Xanthorrhoea platyphylla \*Zaluzianskya divaricata (Zedweed, spreading night phlox) Zygophyllum aurantiacum Zygophyllum glaucum Zygophyllum ovatum

### **APPENDIX 5**

### Fauna species in the Shire of Kent (Source- WA Museum, 2005)

Information provided by Western Australian Museum, Fauna Base, latitude/longitude coordinates -33.1500, 117.9166 and -33.800, 119.4166.

Note - not a comprehensive list.

\* represents an introduced species.

### BIRD SPECIES

Acanthizidae Acanthiza apicalis Hylacola cauta Hylacola cauta whitlocki Smicrornis brevirostris Accipitridae Accipiter cirrocephalus cirrocephalus Accipiter fasciatus fasciatus Hamirostra isura Ardeidae Botaurus poiciloptilus Burhinidae Burhinus grallarius Caprimulgidae Eurostopodus argus Charadriidae Charadrius rubricollis Charadrius ruficapillus Cinclosomatidae Psophodes nigrogularis Psophodes nigrogularis oberon Climacteridae Climacteris rufa Columbidae Phaps elegans Cracticidae Cracticus torquatus Strepera versicolor Cuculidae Chrysococcyx lucidus plagosus Falconidae Falco peregrinus Halcyonidae Dacelo novaeguineae Dacelo novaeguineae novaeguineae Megapodiidae

### Leipoa ocellata

### Meliphagidae

Lichenostomus cratitius Lichenostomus leucotis novaenorciae Lichenostomus ornatus Lichenostomus plumulus Manorina flavigula Phylidonyris melanops Phylidonyris nigra gouldii

### Motacillidae

Anthus australis australis

### Pachycephalidae

Colluricincla harmonica rufiventris Falcunculus frontatus leucogaster Oreoica gutturalis gutturalis

### Pardalotidae

Pardalotus punctatus punctatus Pardalotus punctatus xanthopyge Pardalotus striatus Pardalotus striatus westraliensis

### Passeridae

Stagonopleura oculata

### Phasianidae Coturnix pectoralis

Phasianidae Coturnix pectoralis

### Podargidae

Podargus strigoides

### Pomatostomidae

Pomatostomus superciliosus ashbyi

### Psittacidae

Calyptorhynchus latirostris Calyptorhynchus spp Glossopsitta porphyrocephala Neophema elegans Platycercus icterotis Platycercus icterotis xanthogenys Platycercus spurius Platycercus zonarius Platycercus zonarius Platycercus zonarius Platycercus zonarius semitorquatus Platycercus zonarius zonarius Polytelis anthopeplus anthopeplus

### Strigidae

Ninox novaeseelandiae

### Tytonidae

Tyto alba Tyto alba delicatula Tyto novaehollandiae

### MAMMAL SPECIES

### Burramyidae

Cercartetus concinnus

### Canidae

Canis lupus familiaris \*Vulpes vulpes

### Dasyuridae

Antechinomys laniger Dasyurus geoffroii Phascogale calura Sminthopsis crassicaudata Sminthopsis gilberti Sminthopsis granulipes Sminthopsis griseoventer griseoventer

### Delphinidae

Tursiops truncatus

### Felidae

\*Felis catus

### Macropodidae Macropus eugenii derbianus Macropus fuliginosus Macropus irma

### Muridae

\* Mus musculus Notomys mitchellii Pseudomys albocinereus Pseudomys occidentalis Pseudomys shortridgei Rattus fuscipes

### Myrmecobiidae Myrmecobius fasciatus

Peramelidae Isoodon obesulus Isoodon obesulus fusciventer

### Phalangeridae

Trichosurus vulpecula vulpecula

### Suidae

Sus scrofa

### Tarsipedidae Tarsipes rostratus

### Thylacomyidae Macrotis lagotis

Vespertilionidae Chalinolobus gouldii Chalinolobus sp Nyctophilus geoffroyi Vespadelus regulus

### **REPTILE SPECIES**

### Agamidae

Ctenophorus cristatus Ctenophorus maculatus Ctenophorus maculatus griseus Ctenophorus ornatus Ctenophorus salinarum Ctenophorus scutulatus Pogona minor minor Rankinia chapmani

### Boidae

Morelia spilota imbricata

### Elapidae

Echiopsis curta Elapognathus coronatus Parasuta nigriceps Pseudonaja affinis affinis Pseudonaja modesta Pseudonaja nuchalis Simoselaps bertholdi

### Gekkonidae

Christinus marmoratus Crenadactylus ocellatus Crenadactylus ocellatus ocellatus Diplodactylus granariensis Diplodactylus granariensis granariensis Diplodactylus maini Diplodactylus spinigerus Gehyra variegata Oedura reticulata Strophurus spinigerus inornatus Underwoodisaurus milii

### Pygopodidae

Aprasia repens Christinus marmoratus Delma australis Delma fraseri Lialis burtonis Pygopus lepidopodus

### Scincidae

Cryptoblepharus plagiocephalus Ctenotus gemmula Ctenotus impar Ctenotus schomburgkii Egernia multiscutata Egernia multiscutata bos Egernia richardi Hemiergis initialis Hemiergis initialis initialis Hemiergis peronii Hemiergis peronii peronii Lerista distinguenda Menetia greyii Morethia obscura Tiliqua occipitalis Tiliqua rugosa rugosa

Typhlopidae Ramphotyphlops australis Ramphotyphlops waitii

Varanidae Varanus gouldii Varanus rosenbergi

### **FISH SPECIES**

Atherinidae Atherinosoma wallacei

### **AMPHIBIA SPECIES**

Hylidae

Litoria cyclorhyncha

### Myobatrachidae

Crinia pseudinsignifera Crinia sp Heleioporus albopunctatus Limnodynastes dorsalis Myobatrachus gouldii Neobatrachus albipes Neobatrachus kunapalari Neobatrachus pelobatoides Neobatrachus sp Neobatrachus sutor Pseudophryne guentheri



### **ROADSIDE CONSERVATION COMMITTEE**

### GUIDELINES FOR MANAGING THE HARVESTING OF NATIVE FLOWERS, SEED AND TIMBER FROM ROADSIDES

### Preamble

The diversity of values associated with roadside vegetation is well documented and acknowledged. In landscapes that have been extensively cleared, roadside vegetation provides essential wildlife corridors and habitat for local flora and fauna, including a number of threatened species. Hence it is highly desirable that this asset is managed in such a way as to ensure its conservation and sustainability.

The control and management of roadside vegetation is the responsibility of the road manager. Local government authorities, as road managers, are often approached for 'permission' to take various flora products from the roadside. These requests are mainly for wildflowers, native seed and firewood. Other products which may be sought includes material for making didgeridoos, other types of craftwood, and stakes or poles for various purposes.

Although road managers are primarily concerned about the maintenance of the running surface itself, through the implementation of these simple guidelines for the removal of flora and timber material from the roadsides, the vegetated roadside reserve should be maintained for its biodiversity values, and the benefit of the community and road users.

In some instances the Roadside Conservation Committee (RCC) is supportive of the sustainable harvesting of flora, such as salvage (removal of dead material that is not significant wildlife habitat or is material to be destroyed by road works), or the selective collection of seed for revegetation. However, each case should be viewed on its merits and any decision to facilitate harvesting from roadsides should be referred to the Department of Environment and Conservation and/or the RCC for advice. Licences allowing the taking of roadside flora may be issued by the Department of Environment and Conservation when supported by the road managing authority.

### Legislation

All Western Australian native flora is protected under the *Wildlife Conservation Act 1950*. Native flora includes all parts of a native plant, including its flowers, seed, and timber. Protection of native flora under the Act has the effect of requiring a person to only take (cut or remove) native flora from Crown land under a licence.

Road and rail reserves are Crown land, and hence a licence is required to cut or remove any native flora from a roadside or rail line. There is, however, a legal provision by which the road manager or their agent (contractor) does not require a licence whilst undertaking legitimate road management activities. This provision does not extend to other persons who wish to take protected flora from roadsides.

There are two types of licences that apply to the taking of protected flora from Crown land -Commercial Purposes Licences where the flora is being taken for any commercial purpose, and Survey of Roadside Conservation Values in the Shire of Kent Scientific or Other Prescribed Purposes Licences where the protected flora is being taken for specific non-commercial purposes. These licences are issued by the Department of Environment and Conservation. In issuing a licence, the Department of Environment and Conservation is required to be assured that the activity will not compromise the conservation of the flora. In determining this, the Department of Environment and Conservation will seek advice from the land manager for which the application relates to determine the potential impact of the activity, and how the activity relates to the management objectives being applied to that land.

A licence application may be refused if the activity is either a conservation concern, or does not fit in with the management objectives of the road manager. Once issued with a licence, a licensee must comply with the conditions of the licence that are designed to ensure the activity does not adversely impact on the conservation of the flora or the natural environment in which it occurs.

### **Commercial Wildflower Harvesting**

Western Australia is referred to as the 'Wildflower State', and its wildflowers attract a significant number of tourists each year. Roadside vegetation provides the most accessible, and hence the most commonly viewed, array of wildflowers, and as such are an important feature of regional tourism and can provide a significant financial boost to local economies.

The RCC considers that the flora on roadsides is reserved and maintained for public benefit. It is therefore seen as a contradiction of purpose to allow wildflowers on roadsides to be harvested, particularly for private gain, and this activity should not be permitted.

Wildflower harvesting in many instances detracts from the biodiversity and tourism values of the roadside. It is often the case that flora is harvested from roadsides because of the convenience of access, and harvesters should be directed to find alternative locations.

There are situations where some harvesting may be considered, such as in very wide road reserves where the activity can be screened from road users, but mostly road managers have been discouraged from supporting or allowing such harvesting to occur. If harvesting is to be approved, then the points provided at the end of these guidelines should be considered.

### Seed Collection

Throughout much of the south west, revegetation of the native flora is being undertaken to redress the problems that historic clearing has created. Increasingly, this revegetation is aimed at using local native flora so as to recreate the native vegetation to support biodiversity objectives. The paradox is that in many areas the native vegetation has been cleared to such an extent that adequate sources of native seed cannot be found for undertaking this work. Roadside vegetation may be a source of such seed.

Native seed is an important component of remnant vegetation. It is critical for the regeneration of certain species, called re-seeder species, when plants are either killed by an event, such as fire, storm damage, or die as part of their natural cycle. The maintenance of adequate seed of these species is necessary as a precaution to ensure the sustainability of the flora biodiversity.

Native seed is also an important food source for native fauna living in roadside vegetation, from ants to birds and mammals. The maintenance of this fauna is important for the continuing survival of the vegetation, especially where the fauna is required to pollinate the flora.

When seed is needed for *bona fide* revegetation projects within the local community, and no other source of local seed is available, then the controlling authority may consider giving permission for collection of seed from roadsides. Such collection must be under the appropriate licence issued by the Department of Environment and Conservation and the harvesting should be done in a way that does not endanger the long-term survival of the roadside vegetation.

Where seed collection is to be authorised on roadsides, the road manager should consider the points listed at the end of these guidelines. Specific consideration should be given to the methods that are approved for harvesting the seed, the quantity of seed that may be taken, and the species from which the seed is to be sourced.

### Timber Harvesting from Roadsides.

Timber is harvested for a range of reasons, including saw logs, firewood and craftwood. Due to the ease of access, timber harvesters may wish to source timber from roadside vegetation for these purposes.

The RCC seeks to encourage roadside managers to retain timber on roadsides as an important component of the natural habitat, which fulfils ecological, aesthetic and land management functions. The value of fallen logs and branches within the roadside is often not realised, but this material forms an important habitat for many species of insects, reptiles, mammals and birds, thus enhancing the roadside biodiversity. Insects and reptiles that live in fallen timber are also important elements of the food chain, and are very important to the functioning of natural systems, and the survival of many other native animals.

The RCC believes that harvesting of timber from roadsides should not be permitted except in defined road safety, fence line or service clearance zones, or where a tree has fallen, or appears likely to fall into clearance zones.

Where timber removal is to be allowed, consideration should be given to the points raised at the end of these guidelines, especially in relation to safety issues related to timber cutting. Permission to remove timber should be specific to certain sections of roadsides where the removal is necessary for other planned road management purposes.

### Guidelines For Harvesting On Roadsides

- ✓ In all cases the permission of the managing authority, i.e. Main Roads WA, Local Government or the Department of Environment and Conservation, must be sought before native flora is removed from a roadside.
- Flora removal should be from only designated roads, which have wider vegetated road verges i.e.
   vegetation width > 3metres
- ✓ The number of operators authorised to remove flora from a roadside should be strictly limited to that which can be sustained and managed. The determination of this is at the judgement of the managing authority, but consideration should be taken of the type of flora being harvested and an evaluation of monitoring of the impact of the harvest activity. Advice may be sought from the Department of Environment and Conservation.
- ✓ Approval for flora harvesting should be for a set period, with a review of the impact and operation before renewal.

- ✓ Approval should also stipulate approved methods of harvesting, the species which may be harvested, and the quantity of material to be taken. Advice on harvest conditions may be obtained from the Department of Environment and Conservation.
- ✓ Any flora removed should not affect the viability of the residual seed bank. It is recommended that no more than 20% of the flowers or seed on a plant should be taken, unless it is in an area that is scheduled to be cleared as part of road management.
- Methods of harvesting flora should not jeopardise the survival of the plant/tree, unless it is in an area that is scheduled to be cleared as part of road management.
- ✓ The removal of whole plants should be restricted to areas that are scheduled to be cleared as part of road management. Note, some species of flora such as zamia palms and grass trees cannot be removed for commercial purposes without a special endorsement on the Commercial Purposes Licence issued by the Department of Environment and Conservation.
- ✓ No flora of special conservation concern (Declared Rare Flora or Priority Flora) should be removed without special authorisation through the Department of Environment and Conservation.
- ✓ No commercial harvesting of any plant product should be allowed for any reason between the markers that delineate an Environmentally Sensitive Area.
- ✓ Flora harvesting should be prohibited from designated Flora Roads.
- ✓ Care should be taken that access to Dieback infected areas is limited to the drier months of the year, and vehicular access disallowed.
- ✓ Safety should always be of prime concern and every effort should be made to ensure that personal safety is a key consideration in any harvesting operation.
- ✓ Flora harvesters should not operate from the roadside in areas where the vegetation is close to the road, where vehicles cannot be safely parked off the road, or where there is poor driver visibility.

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### Guidelines for the Nomination and Management of Flora Roads

### Introduction

The Flora Roads program began as an initiative of the Roadside Conservation Committee (RCC), as a means of encouraging road managers to protect and conserve roadside vegetation of high conservation value. Flora Roads also highlight areas of high conservation flora as a tourist asset to local communities and are easily identified to passing travellers as areas worthy of an inspection to view the local flora.



The RCC has defined Flora Roads as "those roads which have conservation value owing to the vegetation growing within the reserve".

Principle Conservation Values of Flora Roads:

- The roadside must contain a significant population of native vegetation. Introduced trees and grasses are not important for conservation.
- The native vegetation must be in as near to its natural condition as possible. In undisturbed vegetation, several layers of plants occur - trees, shrubs and herbs are present in woodlands, for example. If one or more of the expected layers are missing, the conservation value is reduced.
- The roadside may be the only remaining example of original vegetation within a cleared area. It thus:
  - Assists in vegetation mapping and distribution studies
  - Provides a benchmark for study of soil change during agricultural development
  - Provides a source of local seed for revegetation projects
  - Acts as a wildlife habitat for the protection of fauna.
  - Rare or endangered plants may occur on the roadside.
  - May provide nest sites and refuges for native animals.
  - May act as a biological corridor.

### Identification and Nomination of Flora Roads

The RCC has been coordinating a volunteer roadside survey program since 1989, which provides a list of high conservation value roads within many Shires in the agricultural areas of this state. These roadsides can be investigated further to see of they warrant declaration as a Flora Road. Nevertheless, roadsides that have not been surveyed may still be nominated.

Any person may suggest to the managing authority or to the RCC that a road or a section of road fits the criteria of a Flora Road. However, only the managing authority in whom care, control and management of the road is vested can officially declare it a Flora Road.

A road may be nominated as a Flora Road by submitting a written request to the RCC.

The RCC requires the following information:

- Endorsement from the managing authority;
- Name of the road, LGA, and the road manager (Main Roads WA, Local Government or the Department of Environment and Conservation);
- Distance of the proposed Flora Road; and
- Width of the road reserve.

The following information would also be useful:

- Photograph(s) of the road;
- A list of the dominant plant species;
- Threats (weeds, disturbances, etc).

This information will be stored in the RCC Flora Roads Register, a database which is maintained by the RCC Technical Officer (Mapping).

### Establishment of a Flora Road

Given that only the managing authority can officially declare a road, or section of road as a Flora Road, it is important to have the support of the road manager.

The RCC will provide two Flora Road signs to the managing authority. The signs are in the tourist sign colours of white letters and symbols on a leaf brown background. It is the responsibility of the managing authority to erect the signs, and to provide signposts, auxiliary signs and carry out maintenance. One sign may be placed at each approach to the area.

### Management Implications

A standard sign was developed by Main Roads WA in the late 1980's, a policy for the erection of Flora Road signage was developed shortly afterwards. See Appendix 1

Part16 of the RCC *Roadside Manual* details the establishment and management of Flora Roads. The RCC's *Guidelines for Managing Special Environment Areas in Transport Corridors* and the *Roadside Handbook* also provide information on Flora Road establishment.

The aim of all management should be to minimise any disturbance to the roadside flora, consistent with the provision of a safe and efficient roadway.

The managing authority will be expected to take into consideration the high conservation values present, and take special care when working within the Flora Road road reserve and the surrounding area. More specifically though;

- Council may choose to adopt a policy on Roadside Conservation.
- Environmental assessments (pre-construction checklists) should be completed prior to any upgrade work, to assist with planning for flora preservation.
- Fire Management should be undertaken in such a way so as to take into account the ecological needs of the flora.
- Where rehabilitation is contemplated, local native species should be used.

### **Tourism Implications**

Declared Flora Roads will, by their very nature, be attractive to tourists, and would often be suitable as part of a tourist drive network. Consideration should be given to:

- Promoting the road by means of a small brochure or booklet;
- Eventually showing all Flora Roads on a map of the region or State;
- Using specially designed signs to delineate the Flora Road section; and
- Constructing roadside flora rest areas where people can get out and enjoy the flora. Walk trails could be made from these, and information brochures produced;

### Flora Road Register

To ensure that knowledge of Flora Roads sites does not get lost, due perhaps to staff changes, the RCC has established a Flora Roads Register. Information pertaining to each Flora Road (i.e. road name, location, length, etc) will be stored in the Flora Roads database, and updated as necessary.

In order to plan roadworks so that these important areas of roadside vegetation are not disturbed, road managers should also know of these areas. Therefore, it is suggested that the Managing Authority (Shire, Main Roads WA, the Department of Environment and Conservation) establish a *Register of Roads Important for Conservation* also. This register should be consulted prior to any works being initiated in the area.