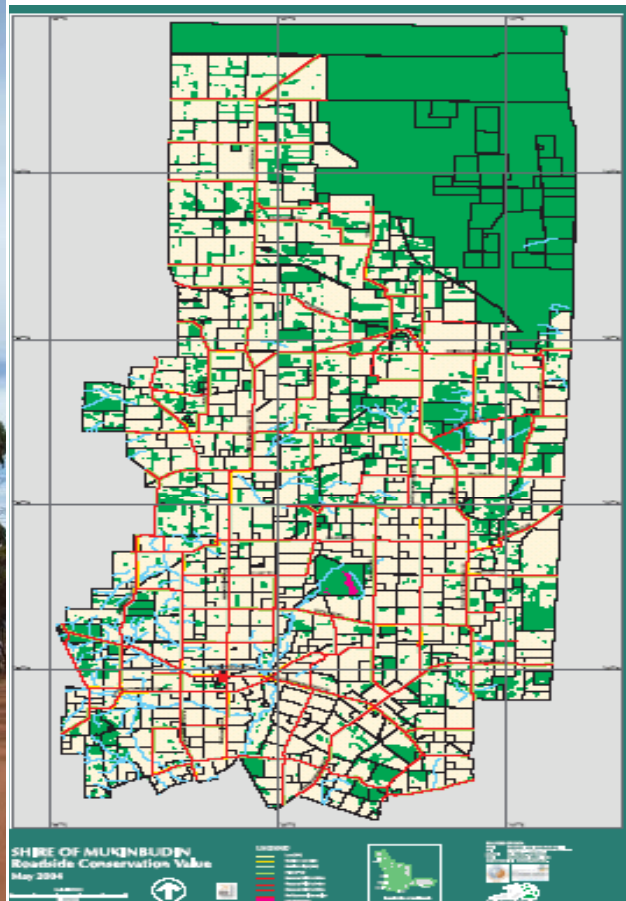


# Roadside conservation values in the Shire of Mukinbudin



November 2004  
Roadside Conservation Committee



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## Executive Summary

This report, produced by the Roadside Conservation Committee provides an overview of roadside conservation issues relevant to the Shire of Mukinbudin. Primarily providing detailed results of the roadside survey, with accompanying management recommendations, it also briefly describes the natural environment in Mukinbudin.

The Shire of Mukinbudin, aware of the need to conserve roadside remnants, liaised with the Roadside Conservation Committee (RCC) in October 2003 to survey roads under their control and management. Surveys to assess conservation values of roadside remnants were conducted from November to December 2003. The majority (92%) of the Shire's 921.7 km of roadsides were assessed by the RCC for their conservation status and maps produced via a Geographic Information System (GIS).

The survey indicated that high conservation value roadsides covered more than half of the roadsides surveyed, with medium-high conservation value roadsides accounting for 35.1%. Medium-low and low conservation value roadsides occupied only 7.9% of the roadsides surveyed. A more detailed analysis of results is presented in the report

It is envisaged that the prime use 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 accompanying maps are valuable as a road reserve planning and management tool, for example;

- identifying degraded areas for strategic rehabilitation or in need of specific management techniques and weed control programs;
- prioritising roadside vegetation protection and/or rehabilitation programs;
- 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 Mukinbudin to utilise the Roadside Conservation Value map into many facets of its Landcare, tourism and road maintenance operations, NRM strategy documents. In addition, the Roadside Conservation Committee is available to provide assistance with the development of roadside vegetation management plans and associated documents.

# **PART A:**

# **OVERVIEW OF**

# **ROADSIDE**

# **CONSERVATION**

## 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 per cent of the known populations of 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, and they have the potential to improve local tourism and provide a sense of place;
- often contain sites of Aboriginal /European historic or cultural significance;



**The Fat-tailed Dunnart has been recorded in the Shire of Mukinbudin.**

Photo by G. Barron, 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.

- provide windbreaks and stock shelter areas for adjoining farmland by helping to stabilise temperature and reduce evaporation.
- assist with erosion and salinity control, and not only in the land adjoining the road reserve *per se*; 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. Approval of the local shire and a CALM permit are required prior to collection. Guidelines for seed and timber harvesting can be found in Appendix 6.

## **What are the Threats?**

### 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 by the general community and all who work in the road reserve environment. As a consequence, there is a paucity of knowledge of threatening processes such as road maintenance, and inappropriate use of fire control 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.

### Roadside Clearing

Western Australia's south-west 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 the ILZ, 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 of native vegetation requires a permit unless it is for exempt purposes. Maintaining *existing* clearances in transport corridors or the maintenance of *existing* infrastructure does not require a permit, while clearing to *establish* a new road or alignment does require a permit. 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.

## 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, but 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 Policies on Fire Management are:

1. Roadside Burning should not take place without the consent of the managing authority;
2. Local Government Authorities should adopt by-laws to control roadside burning;
3. Roadside burning should be planned as part of a total Shire/area Fire Management Plan;
4. Only one side of a road should be burnt in any one year;
5. 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;
6. No firebreaks should be permitted unless the width of the roadside vegetation strip is greater than 20m;
7. 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;
8. In the case of any dispute concerning roadside fire management, the Bush Fires Board 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 retention of some of the scenic values associated with the road and also provide habitat for associated fauna.

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.



## Weeds

Weeds are generally disturbance opportunists and as such the road verge often provides a vacant niche 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 or food resources.

Once weeds become established in an area, they become a long-term management issue, costing considerable resources to control or eradicate. The WA Herbarium records 27 weed species in the Shire of Mukinbudin.



**Roadside infestation of African lovegrass**

Photo by B.M. Hussey

## 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 Conservation and Land Management (CALM) 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

\* The State Government has recently made changes to the *Environmental Protection Act* 1986.

New legislation has been introduced under the *Environmental Protection Act* 1986 which specifies that all clearing of native vegetation requires 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 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, an area permit and a purpose permit. Where clearing is for a once-off clearing event such as pasture clearing or an agricultural development for example, an area permit is required. Where ongoing clearing is necessary as part of a maintenance program for road or railway reserves for example, a purpose permit is needed. The exemptions are designed to enable farmers and landholders to continue regular incidental clearing without having to apply for a permit. In the case of Shire road construction and maintenance activities, clearing is allowed to occur if it is to the width and height previously cleared for that purpose. A permit will be required if clearing is needed to establish a new road, widen an existing road surface into roadside vegetation or create a new gravel pit on uncleared land for example.

It is recommended that a cautionary 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.

## Special Environment Areas

A Special Environmental Area is a section of roadside which requires special protection for the following reasons:

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

Special Environmental Areas can be delineated by the use of site markers. See the RCC publication *Guidelines for Managing Special Environmental Areas in Transport Corridors* for design and placement of SEA markers. Workers who come across a 'Special Environmental Area' marker in the field should not disturb the area between the markers unless specifically instructed. If in doubt, the Supervisor, Shire Engineer or CEO should be contacted. Western Power and West Net rail also have systems for marking sites near power or rail lines.



**Roadside SEA markers are highly visible.**

Photo by K. Jackson

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

The Special Environmental Area Register should be consulted by the appropriate person prior to work commencing on any particular road. This will ensure that inadvertent damage does not occur.

Local Government is encouraged to permanently mark Special Environmental Areas to prevent inadvertent or inappropriate damage to the rare flora or other values being protected. Markers of a uniform shape and colour will make recognition easier for other authorities using road reserves.

## Flora Roads

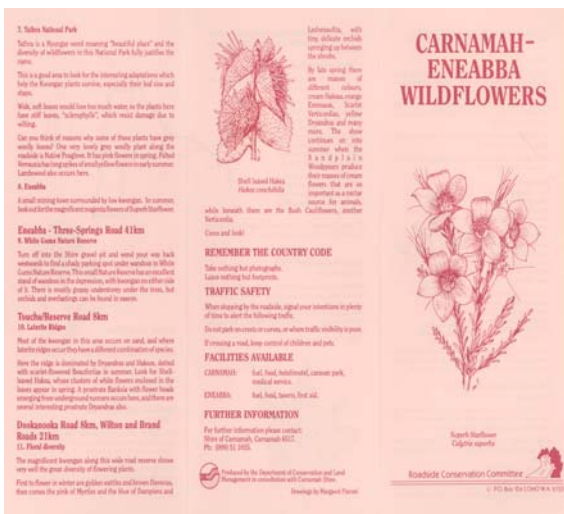
A flora road is one which has special conservation value because of the vegetation contained within the road reserve. The managing authority may decide to declare a Flora Road based on the results of the survey of roadside conservation value. The Roadside Conservation Committee has prepared *Guidelines for the Nomination and Management of Flora Roads*, refer to Appendix 7.

Although presently there are no Flora Roads designated within the Shire of Mukinbudin, the roadside survey and the roadside conservation value (RCV) map highlighted a number of roadsides which 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. This has the dual effect of drawing the attention of tourists to the high conservation value roadside and also alerting all that work in the roadside environment that the marked section of roadside requires due care to protect the values present.

In order to plan roadworks so that important areas of roadside vegetation are not disturbed, road managers should know of these areas. It is important to the sustainability of the designated flora roads, that all road managers are aware of the locate of flora roads under their control. It is suggested that the Shire establish a *Special Environmental Area Register* important for conservation.

Attractive roadside drives 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,
- using specially designed signs to delineate the Flora Road section (contact the RCC).



**Roadsides are one of the most accessible places for tourists to view wildflowers.**

Photo by CALM

# PART B

## **The Natural Environment in the Mukinbudin Shire**

## 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. The 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 southwest, are endemic.

The WA Herbarium lists over 380 species of plants present in the Shire of Mukinbudin. The most prolific genus are *Acacia*, 50 spp, *Eucalyptus* 26 spp, *Grevillea* 15 spp, and 9 species of *Verticordia*. The complete list of recorded flora can be seen in Appendix 4 of this report.



**Flame Grevillea (*Grevillea excelsior*), a native plant of the roadside flora in the Shire of Mukinbudin.**

Photography by H. Adamson, E. Wajon and S.J. Patrick Photo used with the permission of the WA Herbarium, CALM <http://florabase.calm.wa.gov.au/help/photos#reuse>.

### Declared Rare Flora (DRF)

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 of DRF along roadsides are designated Special Environmental Areas (SEA's) and are delineated by yellow stakes with an identification plate welded on.

It is suggested that the RCC publication *Guidelines for Managing SEA's in Transport Corridors* is used 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 Roadside Conservation Committee. For information

regarding DRF, contact the CALM Flora Officer for the Merredin District. If roadworks are to be carried out near DRF sites, it is advisable to contact CALM at least one week in advance.

Currently (July 2004) 20 populations of eight DRF species were known from roadside populations within the Shire of Mukinbudin. These include:

- *Acacia denticulosa*
- *Acacia merrickiae*
- *Acacia sciophanes*
- *Boronia adamsiana*
- *Eremophila virens*
- *Eremophila viscida*
- *Eucalyptus brevipes*
- *Grevillea minutiflora*

**Varnish bush, *Eremophila viscida*, (pictured below) is present within roadsides in the Shire of Mukinbudin.**



Photos by S. F. Patrick and A..P. Brown. Photo used with the permission of the WA Herbarium, CALM (<http://florabase.calm.wa.gov.au/help/photos#reuse>)

## Fauna

The Western Australian Museum records approximately 70 species of native fauna from the Mukinbudin area, listed in 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 native fauna species recorded in the Mukinbudin area, there were 14 bird, 4 amphibia, 7 mammal and 45 reptile species.

A number of the fauna species recorded from Mukinbudin are classified as being endemic to the wheatbelt region of Western Australia, or smaller regions within the State. For example, the Midline Knob-tailed Gecko



**The Midline Knob-tailed Gecko (*Nephurus vertebralis*), an endemic species, is found in the Shire of Mukinbudin.**

Photo by R. E. Johnstone, Photo used with the permission of the WA Museum, FaunaBase (<http://www.museum.wa.gov.au/faunabase.htm>).



**The Crested Bellbird is a threatened species.**

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

tailed Gecko (*Nephurus vertebralis*) occurs only within Western Australia's

semiarid western interior, from the Gascoyne and upper Murchison south to the northern wheat belt areas of Morawa and Kununoppin (Western Australian Museum, 2004).

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 CALM, two species of threatened fauna have been recorded or sighted throughout the Shire of Mukinbudin, i.e. the Western Spiny-tailed Skink (*Egernia stokesii badia*) and the Crested Bellbird (southern) (*Oreoica gutturalis gutturalis*). Many fauna species, particularly small birds need continuous corridors of dense vegetation to move throughout the landscape. Roadsides therefore are of particular importance to these avifauna because they usually contain the only continuous linear vegetation connection in some areas.

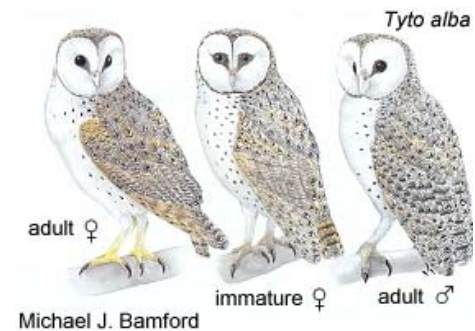
## Remnant Vegetation Cover

Only 14 per cent of the original native vegetation remains in the Shire of Mukinbudin. Whilst this is higher than most of the other NEWROC Shires, the remaining remnants can be depleted if proactive measures are not taken to manage this priceless resource.

Shire	% Vegetation Cover Remaining
Mukinbudin	14.0%
Nungarin	15.2%
Westonia	21.5%
Wyalkatchem	4.9%
Trayning	8.4%
Koorda	8.1%
Mt Marshall	10.6%

**Table 1. Remnant vegetation in agricultural areas of the NEWROC 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.



### **The Barn Owl (*Tyto alba*) occurs in the Mukinbudin area.**

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



**PART C**

**ROADSIDE**

**SURVEYS IN THE**

**SHIRE OF**

**MUKINBUDIN**

## 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 'snapshot' 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 (92%) of the Shire of Mukinbudin's 921.7 km of roadsides were assessed and subsequently mapped to determine the conservation status of the road reserves. Fieldwork was carried out throughout the months of November and December in 2003. The enthusiastic efforts of the roadside surveyor, Community Landcare Coordinator Amanda Malone and the support provided by Council and Shire staff ensured that this project was successfully completed.

## Methods

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 in Appendix 1. This provides both a convenient and uniform method of scoring.

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

- structure of native vegetation on roadside;
- extent of native vegetation along roadside;
- number of native species;
- level of weed infestation;
- 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 roadside conservation value map by the following colour codes.

<b>Conservation Value</b>	<b>Conservation Status</b>	<b>Colour Code</b>
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.

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.

### 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 Mukinbudin. 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 Mukinbudin. The data used to produce both the map and the following figures and tables are presented in Appendix 2. Road names and length information can be found in Appendix 3.

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

### Roadside Conservation Value Categories

High conservation value roadsides are those with a score between 9-12, 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.

Medium-high conservation value roadsides are those with a score between 7-8, 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. between 6-19 species;
- few to half weeds i.e. between 20-80% of total plants;
- medium to high value as a biological corridor.

Medium-low conservation value roadsides are those with a score between 5-6, 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. between 0-5 species;
- half weeds, i.e. between 20-80% of total plants;



**Flora roads are typically high conservation value roadside remnants.**

Photo D. Lamont



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

Photo by RCC

- medium to low value as a biological corridor.

Low Conservation Value roadsides are those with a score between 0-4, 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. less than 5 different species;
- mostly weeds, i.e. more than 80% of total plants, or ground layer totally weeds;
- low value as a biological corridor.



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

Photo by RCC

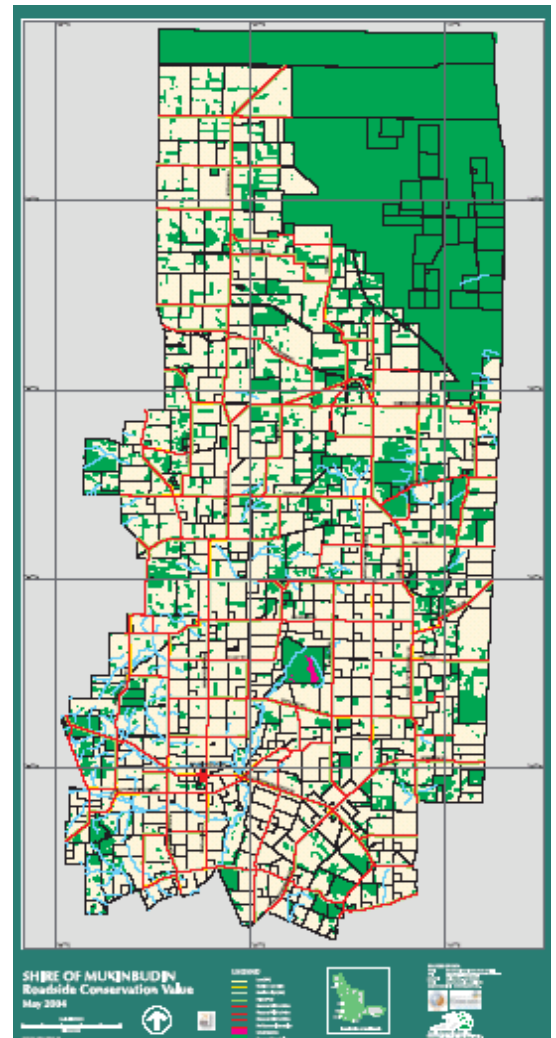
## USING THE RCV MAP

The 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 *per se*, 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 or in need of specific management techniques and 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. Other overlays, such as the degree of weed infestation, or the location of environmentally sensitive areas or future planned developments, could also be produced as an aid to roadside management.

This report contains a number of recommendations that outline the location of a number of high conservation value corridors, potential Flora Roads, tourist routes and degraded roadside areas suitable for restoration projects.



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

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

- regional or district fire management plans;
- Landcare and/or Bushcare projects would be able to incorporate the information from this survey into 'whole of' landscape projects.
- 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 data conveyed on roadside conservation value maps.**

Photo by RCC



**The survey data and map can be used in developing regional or district fire management plans**

Photo by CALM

## RESULTS

A summary of the general roadside conditions in the Shire of Mukinbudin is presented in Table 2. 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.

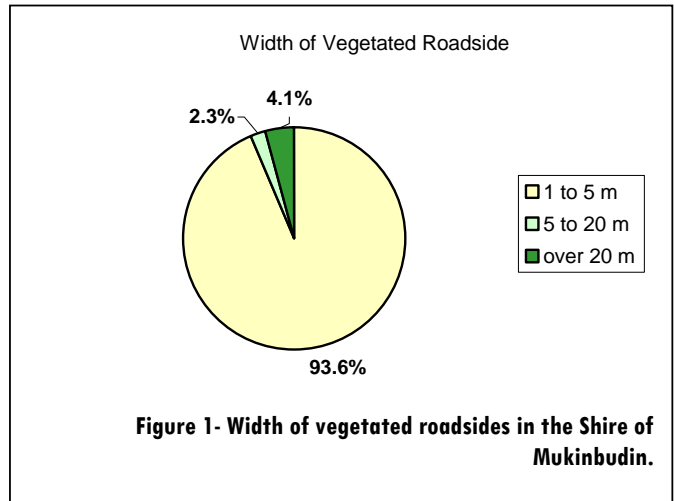
<b>Summary Information</b>					
Length of roadsides surveyed: 1697.9 km					
<b><u>Conservation Status</u></b>			<b><u>Native Vegetation on Roadsides</u></b>		
	Total (km)	%		Total (km)	%
High (9-12)	967.7	57.0	2-3 vegetation layers	1684.7	99.2
Medium-high (7-8)	596.5	35.1	1 vegetation layer	12.4	0.7
Medium-low (5-6)	102.9	6.1	0 vegetation layers	0.8	0.0
Low (0-4)	30.8	1.8	Total	1697.9	100.0
Total	1697.9	100.0			
<b><u>Number of Different Native Species</u></b>			<b><u>Extent of Native Vegetation</u></b>		
	Total (km)	%		Total (km)	%
Over 20 species	60.4	3.6	Over 80%	952.0	56.1
6 to 19 species	1538.9	90.6	20% to 80%	699.3	41.2
0 to 5 species	98.5	5.8	Less than 20%	46.5	2.7
Total	1697.9	100.0	Total	1697.9	100.0
<b><u>Predominant Adjoining Land use</u></b>			<b><u>Value as a Biological Corridor</u></b>		
	Total (km)	%		Total (km)	%
Agricultural: completely cleared	868.0	51.1	High	609.8	35.9
Agricultural: scattered vegetation	677.5	39.9	Medium	802.1	47.2
Uncleared native vegetation	112.0	6.6	Low	286.0	16.8
Drain	0.7	0.0	Total	1697.9	100.0
Plantation of non-natives	0.0	0.0			
Railway	34.0	2.0			
Urban or Industrial	0.0	0.0			
Other	5.7	0.3			
Total	1697.9	100.0			
			<b><u>Weed Infestation</u></b>		
				Total (km)	%
			Light	957.8	56.4
			Medium	684.5	40.3
			Heavy	55.6	3.3
			Total	1697.9	100.0

Data was collected in Mukinbudin Shire throughout November and December 2003

**Table 2: Summary of the roadside conditions in the Shire of Mukinbudin.**

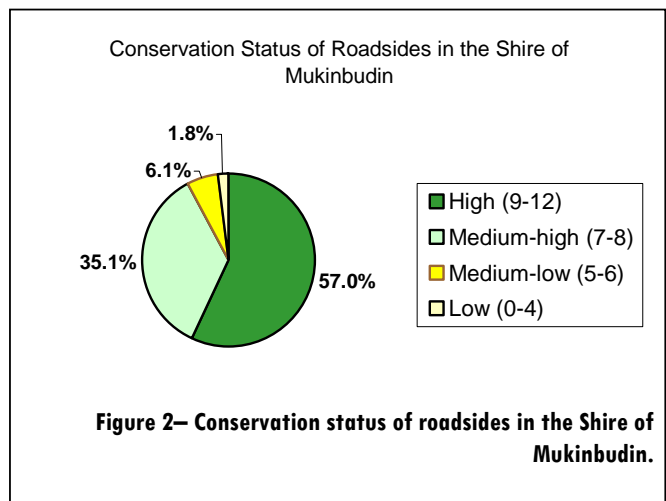
### **Width of Vegetated Roadside:**

The 'width of vegetated roadside' value provided an insight into the width of the vegetation occurring within roadsides in the Shire of Mukinbudin. Roadsides where the vegetation width was greater than 20m covered 4.1% (69.1km) of the Shire. 2.3% (38.9km) of roadsides supported vegetation between 5-20m in width, and 93.7% (1589.9km) of roadsides contained native vegetation between 1-5m in width, refer to Figure 1.



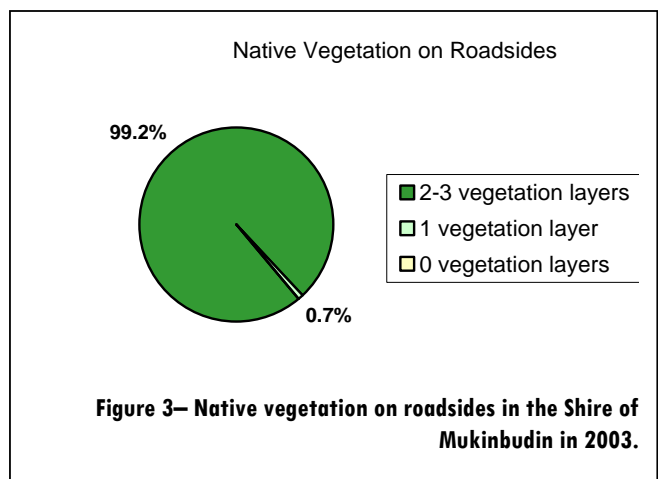
### **Conservation Status**

The conservation status category indicated the conservation value of roadsides. Roadside sections of high conservation value covered 57.0% of the length of roadsides surveyed (967.7 km). Medium-high conservation value roadsides accounted for 35.1% of the total surveyed (596.5 km), medium-low conservation roadside covered 6.1% of the total surveyed (102.9 km). Roadsides of low conservation value occupied 1.8% of the roadsides surveyed (30.8 km), refer to Figure 2.



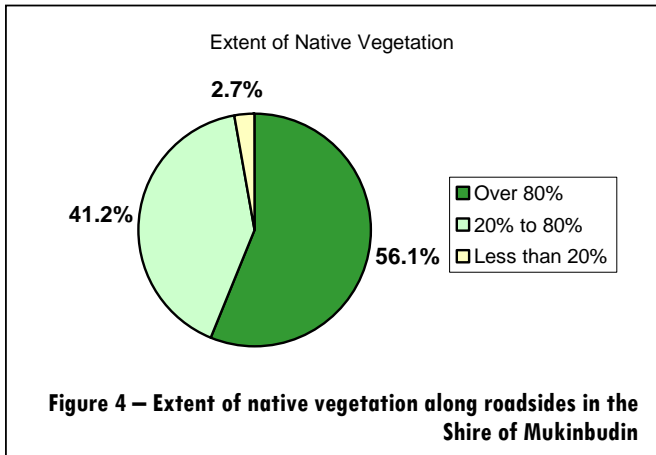
### **Native Vegetation on Roadside**

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 99.2% of roadsides (1684.7 km). 0.7% had only one layer (12.4 km) and 0.0% had no layers of native vegetation (0.8 km), refer to Figure 3 .



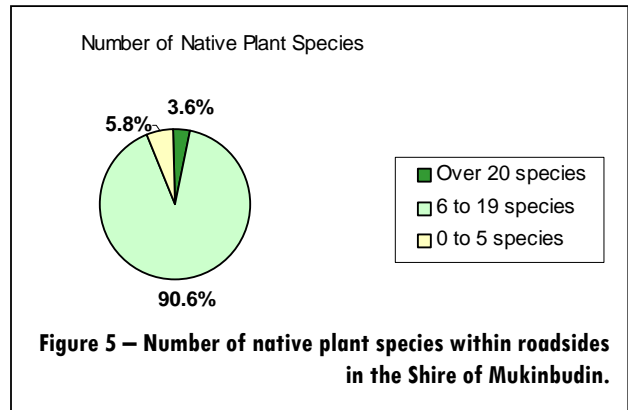
### **Extent of Native Vegetation**

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 56.1% of the roadsides surveyed (952.0 km). Survey sections with 20% to 80% vegetation cover accounted for 41.2% of the roadsides (699.3 km). The remaining 2.7% had less than 20% native vegetation (46.5 km), and therefore, a low 'extent of native vegetation' value, refer to Figure 4.



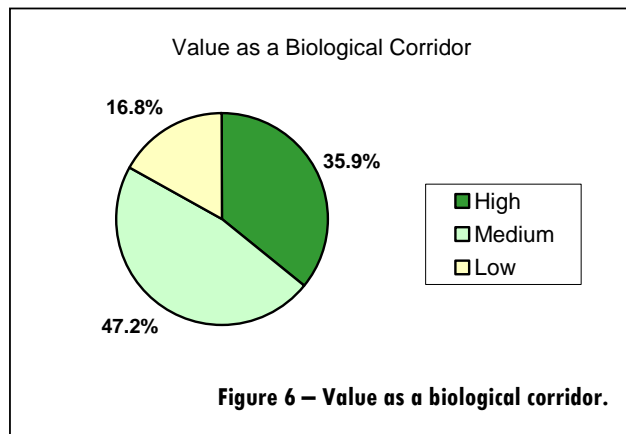
### **Number of Native Plant Species**

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 3.6% (60.4 km) of the roadside. Roadside sections with 6 to 19 plant species accounted for 90.6% (1538.9 km) of the roadside. The remaining 5.8% (98.5 km) contained less than 5 plant species, refer to Figure 5.



### **Value as a Biological Corridor**

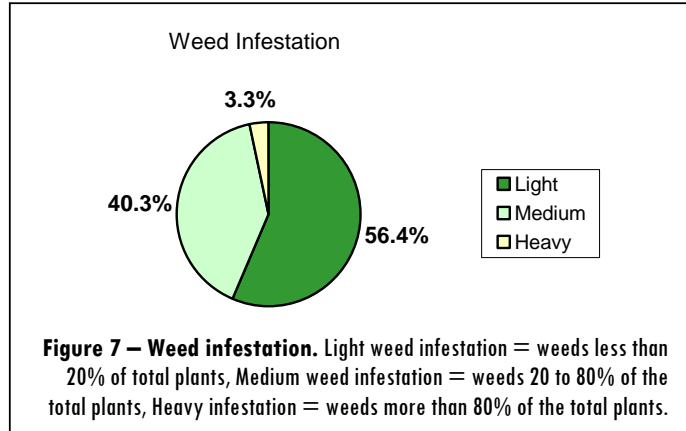
Roadsides determined to have high value as biological corridors (as determined by the roadside surveyors) were present along 35.9% (609.8 km) of the roadside, medium value made up 47.2% (802.1 km), and roadsides with low value as a biological corridor occurred along 16.8% (286.0 km) of the roadsides surveyed, refer to Figure 6.





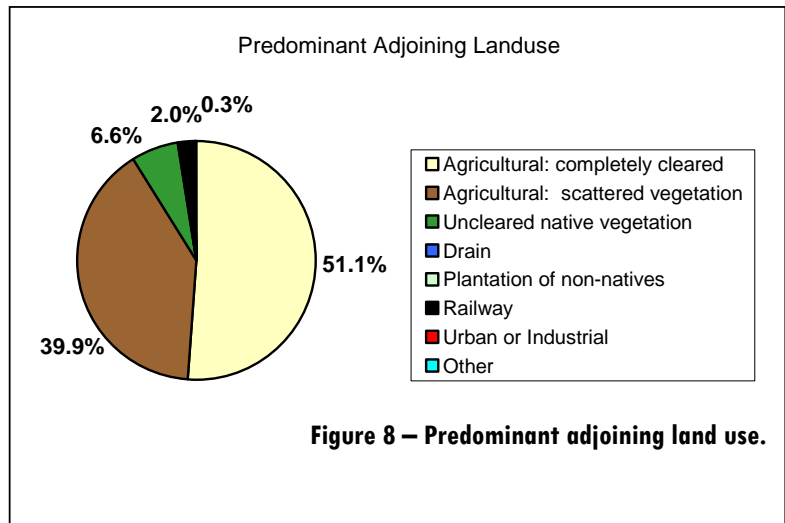
### Weed Infestation.

Light levels of weed infestation were observed on 56.4% (957.8 km) of the roadsides surveyed, medium level weed infestation occurred on 40.3% (684.5 km) of the roadsides and 3.3% (55.6 km) were heavily infested with weeds, refer to Figure 7.



### Predominant Adjoining Land Use

Uncleared native vegetation was present on 6.6% (112.0 km) of the land adjoining roadsides, whilst 51.1% (868.0 km) of roadsides adjoined land that had been completely cleared for agriculture. 39.9% (677.5 km) of the roadsides bordered land cleared for agriculture, but contained a scattered distribution of native vegetation. Railways were the predominant adjoining landuse for 2.0% (34.0 km) of the roadsides surveyed, 'other' landuses adjoined 0.3% (5.7 km), and drains adjoined 0.04% (0.7 km) of the roadsides surveyed, see Figure 8.



## Management Recommendations

The primary aim of road management is the creation and maintenance of a safe, efficient road system. However, the following management procedures are recommended. The following section provides general management recommendations that will assist in retaining and enhancing roadside conservation values.

The Executive Officer of the Roadside Conservation Committee 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:

- *RCC Roadside Manual*,
- *The Roadside Handbook*, and
- *Guidelines for Managing Special Environmental Areas in Transport Corridors*.

### **1.0 Identification of High Conservation Value Roadside Networks**

Roadside vegetation linking areas of remnant vegetation are important for maintaining biodiversity and healthy populations of flora and fauna. It is important to recognise that disturbance leads to weed invasion, which downgrades the conservation value, and increases the fire threat.

A number of roadside remnants in the Shire of Mukinbudin play an important role as corridors for movement of biota throughout the landscape. Analysis of the roadside conservation value map and survey data highlighted four priority roadside connections.

#### **1.1 Corridor Connection A:**

- Beringbooding Road, Mt Jackson Road, Connell Road and Cunderdin Road.

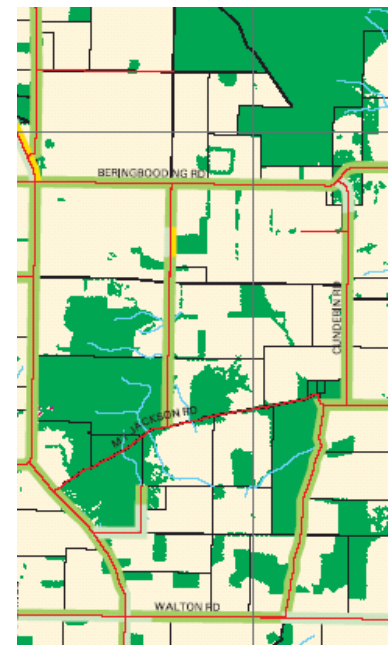
The majority of these roads were classified as high conservation value, therefore having a diverse array of native vegetation with an intact natural structure, low levels of disturbance, few weeds and high value as biological

corridors. These roadsides provide habitat, shelter and, most importantly, corridors for movement between the adjacent areas of remnant vegetation.

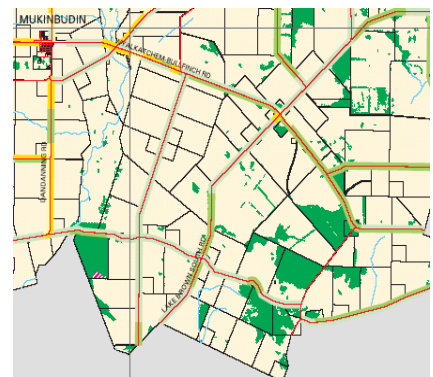
#### **1.2 Corridor Connection B:**

- Cookinbin Road, Andrews East Road, Stock Road, Davis Road and Wyalkatchem-Bullfinch Road.

These roadside remnants consist of high conservation value and medium-high conservation value roadsides, and stretch approximately 16kms across the landscape, traversing 6 sizeable areas of remnant



**Corridor Connection A, above, links a number of otherwise isolated remnants.**



**Corridor Connection B extends approximately 16 km across the southern boundary of the Shire.**

vegetation located primarily on private land.

High conservation value roadsides require protection from any unnecessary disturbance. Medium-high conservation value areas are particularly susceptible to degradation through human disturbance.

### 1.3 Corridor Connection C:

- Harry Road, Wilgoyne road, Wymond Road, Clamp Road, Copeland North Road and Copeland Road

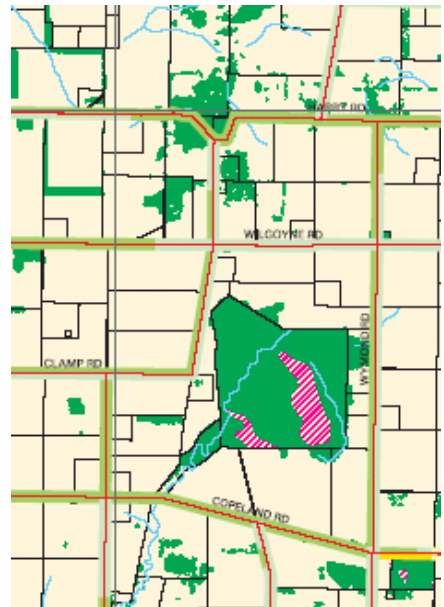
The roadside vegetation is generally high to medium-high conservation value, and links numerous small patches of remnant vegetation with a larger CALM estate.

Given the proximity to the Mukinbudin town centre, and high conservation value roadsides, these roads may be suitable as a tourist route, and may warrant declaration as Flora Roads, refer to Appendix 7.

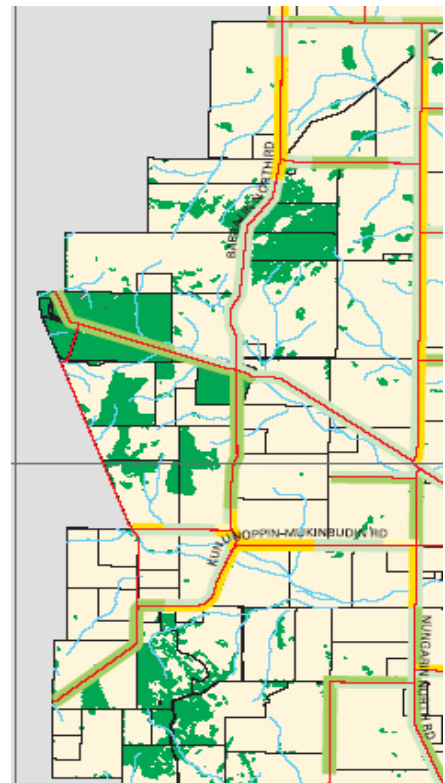
### 1.4 Corridor Connection D:

- Barbalin South Road, Barbalin North Road, Wyalkatchem Bullfinch Road, Kalyanbudding Road, Jones Road, Kunnunoppin Mukinbudin Road.

These roads varied in conservation value, although, roadsides adjacent to remnant vegetation were generally high or medium-high conservation value. Small sections of medium-low to low conservation value roadsides may hinder movement of biota along the corridor and between patches of remnant vegetation. Therefore, these are priority areas for rehabilitation and restoration through weed control and revegetation.



**Corridor Connection C links a number of smaller remnants with a larger CALM estate.**



**Corridor Connection D links approximately 5 otherwise isolated patches of remnant native vegetation.**

## 1.5 Management Recommendations for Corridor Connections A, B, C and D:

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.









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,
- incorporating into tourist, wildflower and/or scenic drives.

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
- encourage revegetation projects by adjacent landholders.

### 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;
-  Apply the Fire Threat Assessment (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;
-  Encourage adjacent landholders to set back fences to allow roadside vegetation to proliferate;
-  Encourage adjacent landholders to plant windbreaks or farm tree lots adjacent to roadside vegetation to create a denser windbreak or shelterbelt;
-  Encourage revegetation projects by adjacent landholders.

## **2.0 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:

- Community support- encourage ongoing community involvement and commitment by establishing a local Roadside Advisory Committee or working group within the Shire Environmental Committee;
- Contract specifications- maintain roadside values by developing environmental specifications for inclusion in all tender documents or work practices;
- Community education- use of innovative and pertinent material can increase community understanding of roadside values;
- Training- 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 Roadside Conservation Committee 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.

## **3.0 Setting Objectives**

The objective of all roadside management should be to:

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>• <b>Protect</b><ul style="list-style-type: none"><li>- native vegetation</li><li>- rare or threatened flora or fauna</li><li>- cultural and heritage values</li><li>- community assets from fire</li></ul></li><br/><li>• <b>Maintain</b><ul style="list-style-type: none"><li>- safe function of the road</li><li>- native vegetation communities</li><li>- fauna habitats and corridors</li><li>- visual amenity and landscape qualities</li><li>- water quality</li></ul></li></ul> | <ul style="list-style-type: none"><li>• <b>Minimise</b><ul style="list-style-type: none"><li>- land degradation</li><li>- spread of weeds and vermin</li><li>- spread of soil borne pathogens</li><li>- risk and impact of fire</li><li>- disturbance during installation and maintenance of service assets</li></ul></li><br/><li>• <b>Enhance</b><ul style="list-style-type: none"><li>- indigenous vegetation communities</li><li>- fauna habitats and corridors</li></ul></li></ul> |
|---|---|

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Shepherd, D. P., Beeston, G.R. and Hopkins, A. J. M. (2001). Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture, Western Australia, South Perth

Western Australian Museum (2004) Fauna Base,  
[www.museum.wa.gov.au/faunabase/prod/index.htm](http://www.museum.wa.gov.au/faunabase/prod/index.htm)

# Appendix

## 1

SURVEY TO DETERMINE THE CONSERVATION VALUE OF ROADSIDES IN THE SHIRE OF _____		Roadside Conservation Committee C/- Locked Bag 104 Bentley Delivery Centre WA 6983	Phone: (08) 9334 0423 Fax: (08) 9334 0199		
Date _____ Observer(s) _____ Road Name _____ Shire _____ Nearest named place _____ Direction of travel (N,S,E,W) _____ Section No. _____ Starting Point _____ Odometer reading _____ Ending Point _____ Odometer reading _____ Length of section _____		<b><u>No. OF DIFFERENT NATIVE SPECIES</u></b> 0 – 5 <input type="checkbox"/> <input type="checkbox"/> 6 – 19 <input type="checkbox"/> <input type="checkbox"/> Over 20 <input type="checkbox"/> <input type="checkbox"/> <b><u>FAUNA OBSERVED</u></b> _____ <b><u>VALUE AS A BIOLOGICAL CORRIDOR</u></b> Connects uncleared areas <input type="checkbox"/> <input type="checkbox"/> Flowering shrubs <input type="checkbox"/> <input type="checkbox"/> Large trees with hollows <input type="checkbox"/> <input type="checkbox"/> Hollow logs <input type="checkbox"/> <input type="checkbox"/> <b><u>PREDOMINANT ADJOINING LANDUSE</u></b> Agricultural crop or pasture: - Completely cleared <input type="checkbox"/> <input type="checkbox"/> - Scattered <input type="checkbox"/> <input type="checkbox"/> Uncleared land <input type="checkbox"/> <input type="checkbox"/> Plantation of non-native trees <input type="checkbox"/> <input type="checkbox"/> Urban or industrial <input type="checkbox"/> <input type="checkbox"/> Railway Reserve parallel to road <input type="checkbox"/> <input type="checkbox"/> Drain Reserve parallel to road <input type="checkbox"/> <input type="checkbox"/> Other: _____ <b><u>UTILITIES / DISTURBANCES</u></b> Disturbances continuous <input type="checkbox"/> <input type="checkbox"/> Disturbances isolated <input type="checkbox"/> <input type="checkbox"/> Disturbances absent <input type="checkbox"/> <input type="checkbox"/> Type: _____ <b><u>GENERAL WEEDS</u></b> Few weeds (<20% total plants) <input type="checkbox"/> <input type="checkbox"/> Half weeds (20 - 80% total) <input type="checkbox"/> <input type="checkbox"/> Mostly weeds (>80% total) <input type="checkbox"/> <input type="checkbox"/> Ground layer totally weeds <input type="checkbox"/> <input type="checkbox"/>		<b><u>NOMINATED WEEDS</u></b> _____ < 20% total weeds <input type="checkbox"/> <input type="checkbox"/> 20 – 80% total weeds <input type="checkbox"/> <input type="checkbox"/> > 80% total weeds <input type="checkbox"/> <input type="checkbox"/> _____ < 20% total weeds <input type="checkbox"/> <input type="checkbox"/> 20 – 80% total weeds <input type="checkbox"/> <input type="checkbox"/> > 80% total weeds <input type="checkbox"/> <input type="checkbox"/> _____ < 20% total weeds <input type="checkbox"/> <input type="checkbox"/> 20 – 80% total weeds <input type="checkbox"/> <input type="checkbox"/> > 80% total weeds <input type="checkbox"/> <input type="checkbox"/> _____ < 20% total weeds <input type="checkbox"/> <input type="checkbox"/> 20 – 80% total weeds <input type="checkbox"/> <input type="checkbox"/> > 80% total weeds <input type="checkbox"/> <input type="checkbox"/> _____ < 20% total weeds <input type="checkbox"/> <input type="checkbox"/> 20 – 80% total weeds <input type="checkbox"/> <input type="checkbox"/> 80% total weeds <input type="checkbox"/> <input type="checkbox"/> <b><u>GENERAL COMMENTS</u></b> _____ <b><u>OFFICE USE ONLY</u></b> Conservation value score <input type="checkbox"/> <input type="checkbox"/>	
<b><u>WIDTH OF ROAD RESERVE (m)</u></b> _____ Side of the road           Left       Right					
<b><u>WIDTH OF VEGETATED ROADSIDE</u></b> 1 – 5 m <input type="checkbox"/> <input type="checkbox"/> 5 – 20 m <input type="checkbox"/> <input type="checkbox"/> Over 20 m <input type="checkbox"/> <input type="checkbox"/>					
<b><u>NATIVE VEGETATION ON ROADSIDE</u></b> Tree layer <input type="checkbox"/> <input type="checkbox"/> Shrub layer <input type="checkbox"/> <input type="checkbox"/> Ground layer <input type="checkbox"/> <input type="checkbox"/>					
<b><u>EXTENT OF NATIVE VEGETATION ON ROADSIDE</u></b> Less than 20% <input type="checkbox"/> <input type="checkbox"/> 20 – 80% <input type="checkbox"/> <input type="checkbox"/> Over 80% <input type="checkbox"/> <input type="checkbox"/>					

A survey of the roadside conservation values in the Shire of Mukinbudin



# Appendix

## 2

Road #	Section #	Road Name	From	To	Length of section (km)	Native vegetation		Extent native vegetation		Number of Species		Value as Weeds		Adjoining Landuse		Conservation Value Score (0-12)			
						Left	Right	Left	Right	Left	Right	Left	Right	Left	Right	Left	Right		
4160004	1	WILGOYNE RD	0.00	0.68	0.68	2	2	1	1	1	1	0	1	1	1	2	1	7	7
4160004	2	WILGOYNE RD	0.68	3.28	2.60	2	2	1	2	1	2	2	2	1	2	2	0	9	10
4160004	3	WILGOYNE RD	3.28	5.58	2.30	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160004	4	WILGOYNE RD	5.58	8.78	3.20	2	2	1	1	1	1	1	1	1	1	1	1	7	7
4160004	5	WILGOYNE RD	8.78	11.98	3.20	2	2	1	1	1	1	1	0	1	1	2	2	8	7
4160004	6	WILGOYNE RD	11.98	20.88	8.90	2	2	1	1	0	0	2	1	1	1	2	2	8	7
4160005	1	MUKINBUDIN NORTH EAST RD	0.00	2.40	2.40	2	2	1	1	1	1	0	0	1	1	1	2	6	7
4160005	2	MUKINBUDIN NORTH EAST RD	2.40	6.30	3.90	2	2	0	1	0	1	0	0	0	1	1	2	3	7
4160005	3	MUKINBUDIN NORTH EAST RD	6.30	12.00	5.70	2	2	1	1	1	1	1	1	1	1	2	1	8	7
4160005	4	MUKINBUDIN NORTH EAST RD	12.00	13.60	1.60	2	2	2	2	1	1	0	0	2	2	1	1	8	8
4160005	5	MUKINBUDIN NORTH EAST RD	13.60	14.80	1.20	2	2	2	1	1	1	1	0	2	1	2	0	10	5
4160005	6	MUKINBUDIN NORTH EAST RD	14.80	15.30	0.50	2	2	1	1	1	1	0	0	1	1	2	0	7	5
4160005	7	MUKINBUDIN NORTH EAST RD	15.30	16.40	1.10	2	2	0	0	0	0	0	0	0	0	2	2	4	4
4160005	8	MUKINBUDIN NORTH EAST RD	16.40	18.00	1.60	2	2	1	1	1	1	1	1	1	1	1	2	7	8
4160005	9	MUKINBUDIN NORTH EAST RD	18.00	21.51	3.51	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160006	1	BONNIE ROCK LAKE BROWN RD	0.00	2.00	2.00	2	2	1	1	1	1	0	1	1	1	2	2	7	8
4160006	2	BONNIE ROCK LAKE BROWN RD	2.00	5.50	3.50	1	1	2	2	1	1	0	0	2	2	2	1	8	7
4160006	3	BONNIE ROCK LAKE BROWN RD	5.50	8.20	2.70	2	2	1	2	1	1	0	0	1	2	2	1	7	8
4160006	4	BONNIE ROCK LAKE BROWN RD	8.20	9.20	1.00	2	2	2	2	1	2	0	0	2	2	1	0	8	8
4160006	5	BONNIE ROCK LAKE BROWN RD	9.20	10.90	1.70	2	2	1	1	1	1	0	0	1	1	1	1	6	6
4160006	6	BONNIE ROCK LAKE BROWN RD	10.90	11.70	0.80	2	2	0	2	0	1	0	1	0	2	2	1	4	9
4160006	7	BONNIE ROCK LAKE BROWN RD	11.70	22.40	10.70	2	2	1	1	1	1	1	0	1	1	2	2	8	7
4160006	8	BONNIE ROCK LAKE BROWN RD	22.40	23.40	1.00	1	2	0	0	0	0	0	0	0	0	2	2	3	4
4160006	9	BONNIE ROCK LAKE BROWN RD	23.40	24.60	1.20	2	2	1	1	0	0	0	0	1	1	2	2	6	6
4160006	10	BONNIE ROCK LAKE BROWN RD	24.60	25.90	1.30	2	2	1	0	1	0	1	1	1	0	1	1	7	4
4160006	11	BONNIE ROCK LAKE BROWN RD	25.90	31.00	5.10	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160006	12	BONNIE ROCK LAKE BROWN RD	31.00	34.90	3.90	2	2	2	2	1	1	2	2	2	2	2	2	11	11
4160006	13	BONNIE ROCK LAKE BROWN RD	34.90	36.00	1.10	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160006	14	BONNIE ROCK LAKE BROWN RD	36.00	46.80	10.80	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160006	15	BONNIE ROCK LAKE BROWN RD	46.80	47.70	0.90	2	2	1	1	1	1	0	0	1	1	2	1	7	6
4160006	16	BONNIE ROCK LAKE BROWN RD	47.70	48.90	1.20	2	2	1	1	1	1	0	0	1	1	2	1	7	6
4160006	17	BONNIE ROCK LAKE BROWN RD	48.90	50.00	1.10	2	2	2	2	1	1	0	0	2	2	1	1	8	8
4160006	18	BONNIE ROCK LAKE BROWN RD	50.00	50.73	0.73	2	2	2	2	1	1	1	1	2	2	1	0	9	8
4160007	1	NUNGARIN NORTH RD	0.00	2.00	2.00	2	2	1	0	1	1	1	1	1	0	2	2	8	6

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Road #	Section #	Road Name	From	To	Length section (km)	of Native vegetation		Extent native vegetation		of Number of Species		of Value as Weeds		Corridor		Adjoining Landuse		Conservation Value (0-12)	Score
4160007	2	NUNGARIN NORTH RD	2.00	8.10	6.10	2	2	1	1	1	1	2	2	1	1	2	1	9	8
4160007	3	NUNGARIN NORTH RD	8.10	8.90	0.80	2	2	2	2	1	1	0	1	2	2	1	0	8	8
4160007	4	NUNGARIN NORTH RD	8.90	9.60	0.70	2	2	2	1	2	1	2	1	1	1	0	2	9	8
4160007	5	NUNGARIN NORTH RD	9.60	10.73	1.13	2	2	1	1	1	1	1	1	0	0	1	2	6	7
4160008	1	BERINBOODING RD	0.00	10.90	10.90	2	2	2	2	1	1	2	2	2	2	2	1	11	10
4160008	2	BERINBOODING RD	10.90	12.00	1.10	2	2	2	2	2	2	1	1	2	2	0	0	9	9
4160008	3	BERINBOODING RD	12.00	13.25	1.25	2	2	2	2	1	1	1	1	2	2	1	2	9	10
4160009	1	MOONDON RD	0.00	30.80	30.80	2	2	2	2	1	1	2	2	2	2	2	2	11	11
4160009	2	MOONDON RD	30.80	31.40	0.60	2	2	2	2	1	1	2	2	2	2	2	0	11	9
4160009	3	MOONDON RD	31.40	32.92	1.52	2	2	2	2	1	1	2	2	2	2	2	2	11	11
4160010	1	QUANTACUTTING NTH RD	0.00	6.80	6.80	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160010	2	QUANTACUTTING NTH RD	6.80	13.20	6.40	2	2	1	1	1	1	1	0	1	1	2	1	8	6
4160010	3	QUANTACUTTING NTH RD	13.20	14.71	1.51	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160011	1	GRAHAM RD	0.00	12.60	12.60	2	2	2	2	1	1	2	2	2	2	2	1	11	10
4160011	2	GRAHAM RD	12.60	14.09	1.49	2	2	1	1	1	1	1	0	1	1	1	1	7	6
4160012	1	CARLTON RD	0.00	7.37	7.37	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160013	1	LAKE BROWN STH RD	0.00	0.50	0.50	2	2	1	1	1	1	1	1	1	1	0	0	6	6
4160013	2	LAKE BROWN STH RD	0.50	5.70	5.20	2	2	1	1	1	1	2	1	1	1	1	1	8	7
4160013	3	LAKE BROWN STH RD	5.70	10.70	5.00	2	2	2	2	1	1	1	2	2	2	1	1	9	10
4160013	4	LAKE BROWN STH RD	10.70	13.28	2.58	2	2	1	1	1	1	1	1	1	1	2	1	8	7
4160014	1	POPES HILL STH RD	0.00	13.20	13.20	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160014	2	POPES HILL STH RD	13.20	14.40	1.20	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160015	1	CLAMP RD	0.00	12.95	12.95	2	2	1	1	1	1	2	2	1	1	2	1	9	8
4160015	2	CLAMP RD	12.95	14.55	1.60	2	2	2	2	1	1	0	1	2	2	1	0	8	8
4160016	1	COPELANDS RD	0.00	12.96	12.96	2	2	1	1	1	1	2	2	1	1	2	2	9	9
4160017	1	WHYTE RD	0.00	1.00	1.00	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160017	2	WHYTE RD	1.00	3.20	2.20	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160017	3	WHYTE RD	3.20	4.10	0.90	2	2	2	1	1	1	1	2	1	2	2	10	8	
4160017	4	WHYTE RD	4.10	5.60	1.50	2	2	1	1	1	1	1	0	1	1	1	1	7	6
4160017	5	WHYTE RD	5.60	6.80	1.20	2	2	2	2	1	1	0	1	2	2	1	1	8	9
4160018	1	WALTON RD	0.00	5.00	5.00	2	2	1	1	1	1	2	1	1	1	2	2	9	8
4160018	2	WALTON RD	5.00	9.40	4.40	2	2	2	2	1	1	1	0	2	2	2	2	10	9
4160018	3	WALTON RD	9.40	13.40	4.00	2	2	1	1	1	1	2	2	1	1	1	1	8	8
4160019	1	OGILVIE RD	0.00	3.10	3.10	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160019	2	OGILVIE RD	3.10	8.10	5.00	2	2	1	1	1	1	2	1	1	1	2	1	9	7

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Road #	Section #	Road Name	From	To	Length section (km)	of Native vegetation		Extent native vegetation		of Number of Species		of Value as Weeds		Corridor		Adjoining Landuse		Conservation Value (0-12)	Score
41600193		OGILVIE RD	8.10	13.66	5.56	2	2	2	2	1	1	2	2	2	2	1	1	10	10
41600201		DANDANNING RD	0.00	1.60	1.60	2	2	1	1	1	1	1	1	0	0	1	1	6	6
41600202		DANDANNING RD	1.60	2.60	1.00	2	2	2	2	1	1	2	1	2	2	1	1	10	9
41600203		DANDANNING RD	2.60	3.40	0.80	2	2	2	2	1	1	1	2	2	2	1	1	9	10
41600204		DANDANNING RD	3.40	8.30	4.90	2	2	0	0	0	0	1	0	0	0	2	2	5	4
41600205		DANDANNING RD	8.30	9.50	1.20	2	2	1	1	1	1	1	1	1	1	2	2	8	8
41600206		DANDANNING RD	9.50	10.60	1.10	2	2	1	1	1	1	1	1	1	1	1	1	7	7
41600207		DANDANNING RD	10.60	10.94	0.34	2	2	2	2	2	2	2	1	2	2	0	2	10	11
41600211		COOKINBIN RD	0.00	1.20	1.20	2	2	1	1	1	1	1	0	1	1	2	2	8	7
41600212		COOKINBIN RD	1.20	3.40	2.20	2	2	2	2	1	1	1	2	2	2	0	0	8	9
41600213		COOKINBIN RD	3.40	9.03	5.63	2	2	1	1	1	1	1	1	1	1	2	2	8	8
41600221		MCGREGOR RD	0.00	2.60	2.60	2	2	2	2	1	1	1	1	2	2	1	1	9	9
41600222		MCGREGOR RD	2.60	13.95	11.35	2	2	1	1	1	1	1	0	1	1	1	1	7	6
41600231		JONES EAST RD	0.00	1.00	1.00	2	2	1	1	1	1	0	0	1	1	2	2	7	7
41600232		JONES EAST RD	1.00	4.04	3.04	2	2	2	2	1	1	1	1	2	2	2	2	10	10
41600241		KALYANBUDDING RD	0.00	4.03	4.03	2	2	1	1	1	1	1	1	1	1	2	2	8	8
41600251		KALYANBUDDING RD	0.00	0.90	0.90	2	2	1	1	1	1	1	1	1	1	2	1	8	7
41600252		KALYANBUDDING RD	0.90	3.10	2.20	2	2	2	2	1	1	1	1	2	2	1	1	9	9
41600253		KALYANBUDDING RD	3.10	3.99	0.89	2	2	1	1	1	1	0	1	1	1	2	2	7	8
41600261		BARBALIN NTH RD	0.00	1.90	1.90	2	2	1	1	1	1	1	1	1	1	2	1	8	7
41600262		BARBALIN NTH RD	1.90	3.60	1.70	2	2	2	2	1	1	0	0	2	2	1	1	8	8
41600263		BARBALIN NTH RD	3.60	4.50	0.90	2	2	2	2	1	1	0	1	2	2	1	0	8	8
41600264		BARBALIN NTH RD	4.50	6.60	2.10	2	2	2	2	1	1	1	1	2	2	0	0	8	8
41600265		BARBALIN NTH RD	6.60	10.60	4.00	2	2	1	1	1	0	0	1	1	1	1	1	6	6
41600266		BARBALIN NTH RD	10.60	11.90	1.30	2	2	2	2	1	1	0	0	2	2	1	1	8	8
41600267		BARBALIN NTH RD	11.90	13.60	1.70	2	2	0	1	0	0	0	0	0	1	2	2	4	6
41600268		BARBALIN NTH RD	13.60	18.60	5.00	2	2	2	2	1	1	1	0	2	2	1	1	9	8
41600269		BARBALIN NTH RD	18.60	21.30	2.70	2	2	2	2	1	1	1	1	2	2	0	0	8	8
416002610		BARBALIN NTH RD	21.30	25.40	4.10	2	2	2	2	1	1	1	1	2	2	1	1	9	9
416002611		BARBALIN NTH RD	25.40	26.30	0.90	2	2	2	2	1	1	0	1	2	2	0	1	7	9
41600271		BARBALIN STH RD	0.00	2.00	2.00	2	2	2	2	2	2	2	2	2	2	0	0	10	10
41600272		BARBALIN STH RD	2.00	4.50	2.50	2	2	2	2	1	1	2	2	2	2	2	1	11	10
41600273		BARBALIN STH RD	4.50	5.74	1.24	2	2	1	1	1	1	1	1	0	0	1	2	6	7
41600281		FOGARTY RD	0.00	0.50	0.50	2	2	0	0	0	0	0	0	1	0	2	2	5	4
41600282		FOGARTY RD	0.50	2.00	1.50	2	2	1	1	1	1	1	0	1	1	1	2	7	7

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Road #	Section #	Road Name	From	To	Length section (km)	of Native vegetation		Extent native vegetation		of Number of Species		of Value as Weeds		Corridor		Adjoining Landuse		Conservation Value (0-12)	Score
4160028	3	FOGARTY RD	2.00	2.90	0.90	2	2	1	1	1	1	0	0	2	2	1	0	7	6
4160029	1	DAVIS RD	0.00	1.24	1.24	2	2	2	2	2	2	1	2	2	2	0	0	9	10
4160029	2	DAVIS RD	1.24	4.14	2.90	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160029	3	DAVIS RD	4.14	6.24	2.10	2	2	1	1	1	1	2	2	1	1	2	2	9	9
4160030	1	FOURTY SIX GATE RD	0.00	3.20	3.20	2	2	1	1	1	1	0	1	1	1	1	1	6	7
4160030	2	FOURTY SIX GATE RD	3.20	7.00	3.80	2	2	2	2	1	2	0	0	2	2	2	1	9	9
4160030	3	FOURTY SIX GATE RD	7.00	9.50	2.50	2	2	1	1	1	1	2	1	1	1	2	2	9	8
4160030	4	FOURTY SIX GATE RD	9.50	10.61	1.11	2	2	2	2	1	2	1	2	2	2	1	0	9	10
4160031	1	HARRY RD	0.00	4.70	4.70	2	2	1	1	1	1	2	2	1	1	2	1	9	8
4160031	2	HARRY RD	4.70	16.00	11.30	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160031	3	HARRY RD	16.00	16.53	0.53	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160032	1	COMERFORD RD	0.00	6.90	6.90	2	2	2	2	1	1	0	0	2	2	1	1	8	8
4160032	2	COMERFORD RD	6.90	8.01	1.11	2	2	1	1	1	1	0	1	1	1	1	2	6	8
4160033	1	KAROMIN RD	0.00	1.70	1.70	2	2	1	1	1	1	1	1	2	2	2	1	9	8
4160033	2	KAROMIN RD	1.70	3.87	2.17	2	2	2	1	1	1	1	1	1	0	1	1	8	6
4160034	1	HAROLD RD	0.00	2.30	2.30	2	2	1	2	1	1	1	1	2	2	1	1	8	9
4160034	2	HAROLD RD	2.30	3.00	0.70	2	2	2	2	2	1	2	1	2	2	1	1	11	9
4160034	3	HAROLD RD	3.00	5.41	2.41	2	2	2	2	2	2	1	1	2	2	1	1	10	10
4160035	1	BRIERLY RD	0.00	2.52	2.52	2	2	2	1	1	1	1	1	2	1	1	1	9	7
4160036	1	SQUIRE RD	0.00	2.02	2.02	1	2	1	1	1	1	0	1	1	1	2	2	6	8
4160036	2	SQUIRE RD	2.02	4.03	2.01	2	2	0	1	1	1	0	2	1	1	2	2	6	9
4160037	1	LAKE RD	0.00	3.30	3.30	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160037	2	LAKE RD	3.30	4.12	0.82	2	2	2	2	1	1	0	0	2	2	0	0	7	7
4160039	1	WIALKI STH RD	0.00	10.60	10.60	2	2	2	2	1	1	2	2	2	2	2	1	11	10
4160039	2	WIALKI STH RD	10.60	12.30	1.70	2	2	2	2	1	1	1	0	2	2	2	2	10	9
4160039	3	WIALKI STH RD	12.30	13.10	0.80	2	2	2	2	2	1	0	0	2	2	0	1	8	8
4160039	4	WIALKI STH RD	13.10	15.77	2.67	2	2	2	2	2	2	1	2	2	2	0	0	9	10
4160040	1	WYOMING TRL	0.00	0.50	0.50	2	2	1	1	1	1	2	1	1	1	2	2	9	8
4160040	2	WYOMING TRL	0.50	1.50	1.00	2	2	1	2	1	1	0	0	1	2	2	1	7	8
4160040	3	WYOMING TRL	1.50	3.00	1.50	2	2	1	0	1	1	0	0	1	0	1	1	6	4
4160040	4	WYOMING TRL	3.00	5.10	2.10	2	2	1	1	1	1	0	0	1	1	2	2	7	7
4160041	1	BRANDIS RD	0.00	0.70	0.70	2	2	2	2	1	1	1	0	2	2	1	2	9	9
4160041	2	BRANDIS RD	0.70	2.20	1.50	2	2	1	1	1	1	1	0	1	1	1	1	7	6
4160041	3	BRANDIS RD	2.20	3.20	1.00	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160042	1	TOOLE RD	0.00	0.60	0.60	2	2	2	2	1	1	2	1	2	2	1	0	10	8

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4160042	2	TOOLE RD	0.60	4.90	4.30	2	2	2	2	1	1	2	2	2	2	2	1	11	10
4160042	3	TOOLE RD	4.90	8.10	3.20	2	2	2	2	2	2	1	1	2	2	0	0	9	9
4160042	4	TOOLE RD	8.10	9.00	0.90	2	2	1	1	1	1	0	0	1	1	2	1	7	6
4160042	5	TOOLE RD	9.00	16.60	7.60	2	2	2	2	1	1	2	2	2	2	2	1	11	10
4160043	1	SPRIGG RD	0.00	1.40	1.40	2	2	2	2	1	2	2	2	2	2	0	0	9	10
4160043	2	SPRIGG RD	1.40	8.73	7.33	2	2	2	2	1	1	2	1	2	2	2	2	11	10
4160044	1	BONNIE ROCK TANK RD	0.00	3.13	3.13	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160045	1	CLUNE RD	0.00	9.68	9.68	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160046	1	DOOTANNING RD	6.96	7.66	0.70	2	2	1	1	1	1	2	2	1	1	2	2	9	9
4160046	2	DOOTANNING RD	7.66	10.76	3.10	2	2	2	2	1	1	0	1	2	2	2	1	9	9
4160047	1	CUNDERDIN RD	0.00	1.20	1.20	2	2	1	1	1	1	2	2	1	1	0	0	7	7
4160047	2	CUNDERDIN RD	1.20	8.10	6.90	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160047	3	CUNDERDIN RD	8.10	15.85	7.75	2	2	2	2	1	1	2	2	2	2	1	0	10	9
4160048	1	COPELAND NTH RD	0.00	4.03	4.03	2	2	1	1	1	1	2	2	1	1	2	2	9	9
4160049	1	MANUEL RD	0.00	3.03	3.03	2	2	1	2	1	1	0	0	1	2	2	2	7	9
4160049	2	MANUEL RD	3.03	4.03	1.00	2	2	2	2	1	1	1	0	2	2	2	1	10	8
4160050	1	MORRISON RD	0.00	3.60	3.60	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160050	2	MORRISON RD	3.60	5.20	1.60	2	2	1	1	1	1	1	1	1	1	1	1	7	7
4160050	3	MORRISON RD	5.20	9.60	4.40	2	2	2	2	1	1	0	1	2	2	1	2	8	10
4160050	4	MORRISON RD	9.60	10.80	1.20	2	2	1	2	1	1	1	1	1	2	2	1	8	9
4160050	5	MORRISON RD	10.80	12.13	1.33	2	2	2	2	2	1	1	1	2	2	1	2	10	10
4160051	1	SEVIER RD	0.00	2.40	2.40	2	2	1	1	1	1	2	2	1	1	1	1	8	8
4160052	1	SCOTSMAN RD	0.00	1.10	1.10	2	2	2	2	1	1	1	1	2	2	1	2	9	10
4160052	2	SCOTSMAN RD	1.10	2.40	1.30	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160052	3	SCOTSMAN RD	2.40	4.70	2.30	2	2	2	2	0	0	1	1	2	2	2	2	9	9
4160052	4	SCOTSMAN RD	4.70	5.20	0.50	2	2	1	1	1	1	2	1	1	1	2	2	9	8
4160052	5	SCOTSMAN RD	5.20	7.57	2.37	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160053	1	ADAMS RD	0.00	5.60	5.60	2	2	2	2	1	1	2	2	2	2	2	2	11	11
4160054	1	SPENCERS RD	0.00	10.22	10.22	2	2	2	2	1	1	0	1	2	2	1	1	8	9
4160055	2	KUSER RD	0.00	1.93	1.93	2	2	2	2	1	1	0	0	2	2	0	1	7	8
4160056	1	DOIG RD	0.00	10.95	10.95	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160071	1	HENRY RD	0.00	4.86	4.86	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160072	1	SHEARDOWN RD	0.00	11.25	11.25	2	2	2	2	1	1	2	2	2	2	1	2	10	11
4160072	2	SHEARDOWN RD	11.25	12.25	1.00	2	2	2	2	1	1	0	0	2	2	2	2	9	9
4160073	1	MOLYNEUX RD	0.00	2.60	2.60	2	2	1	1	1	1	0	0	1	1	2	2	7	7

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4160073	2	MOLYNEUX RD	2.60	5.58	2.98	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160074	1	MCINNES RD	0.00	3.83	3.83	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160075	1	WATTONING WEST RD	0.00	1.00	1.00	2	2	2	2	1	1	1	0	2	2	1	2	9	9
4160075	2	WATTONING WEST RD	1.00	1.80	0.80	2	2	1	1	1	1	0	0	1	1	0	0	5	5
4160075	3	WATTONING WEST RD	1.80	3.50	1.70	2	2	2	1	1	1	1	2	1	2	1	10	7	
4160075	4	WATTONING WEST RD	3.50	6.00	2.50	2	2	2	2	0	0	1	1	2	2	1	2	8	9
4160075	5	WATTONING WEST RD	6.00	6.50	0.50	2	2	1	2	1	1	0	0	1	0	2	2	7	7
4160075	6	WATTONING WEST RD	6.50	9.30	2.80	2	2	1	1	1	1	1	2	1	1	2	2	8	9
4160075	7	WATTONING WEST RD	9.30	10.08	0.78	2	2	2	2	1	1	2	1	2	2	1	1	10	9
4160077	1	WYMOND RD	0.00	12.40	12.40	2	2	1	1	1	1	2	1	1	1	2	2	9	8
4160077	2	WYMOND RD	12.40	14.13	1.73	2	2	2	2	1	1	0	0	2	2	2	2	9	9
4160078	1	MILNE RD	0.00	5.80	5.80	2	2	2	2	1	1	1	2	2	2	1	1	9	10
4160078	2	MILNE RD	5.80	6.60	0.80	2	2	1	1	1	1	0	0	1	1	2	2	7	7
4160079	1	MIGUEL RD	0.00	7.56	7.56	2	2	2	2	1	1	1	2	2	2	1	1	9	10
4160081	1	DEASE RD	0.00	1.22	1.22	2	2	1	1	1	1	1	1	1	1	2	1	8	7
4160081	2	DEASE RD	1.22	6.82	5.60	2	2	2	2	1	1	2	1	2	2	1	1	10	9
4160082	1	CONNELL RD	0.00	1.50	1.50	2	2	2	2	1	1	2	2	2	2	2	2	11	11
4160082	2	CONNELL RD	1.50	2.50	1.00	2	2	1	1	1	1	1	0	1	1	0	2	6	7
4160082	3	CONNELL RD	2.50	6.20	3.70	2	2	2	2	1	1	1	2	2	2	1	1	9	10
4160082	4	CONNELL RD	6.20	8.34	2.14	2	2	2	2	1	2	1	1	2	2	1	0	9	9
4160083	1	MOTT RD	0.00	2.20	2.20	2	2	1	1	1	1	1	0	1	1	2	2	8	7
4160083	2	MOTT RD	2.20	4.20	2.00	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160083	3	MOTT RD	4.20	5.10	0.90	2	2	1	1	1	1	0	0	1	1	1	1	6	6
4160083	4	MOTT RD	5.10	7.10	2.00	2	2	2	2	1	1	0	0	2	2	1	1	8	8
4160083	5	MOTT RD	7.10	7.90	0.80	2	2	1	2	1	1	1	1	1	2	2	2	8	10
4160083	6	MOTT RD	7.90	11.93	4.03	2	2	2	2	2	2	2	2	2	2	0	0	10	10
4160085	1	ANGLE RD	0.00	7.78	7.78	2	2	2	2	1	1	1	2	2	2	2	2	10	11
4160086	1	LAVERY RD	0.00	3.11	3.11	2	2	1	1	1	1	0	1	1	1	2	1	7	7
4160086	2	LAVERY RD	3.11	3.76	0.65	2	2	2	2	1	1	1	0	2	2	1	1	9	8
4160086	3	LAVERY RD	3.76	4.61	0.85	2	2	1	1	1	1	1	1	1	1	1	1	7	7
4160087	1	AITKEN RD	0.00	3.79	3.79	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160089	1	ANDREW EAST RD	0.00	2.87	2.87	2	2	1	1	1	1	1	1	1	1	1	2	7	8
4160089	2	ANDREW EAST RD	2.87	3.97	1.10	2	2	2	2	1	1	1	2	2	2	1	0	9	9
4160089	3	ANDREW EAST RD	3.97	6.34	2.37	2	2	1	1	1	2	1	2	1	1	1	0	7	8
4160093	1	QUANTACUTTING WEIRA RD	0.00	4.41	4.41	2	2	2	2	1	1	2	1	2	2	1	1	10	9

A survey of the roadside conservation values in the Shire of Mukinbudin

Road #	Section #	Road Name	From	To	Length section (km)	of Native vegetation		Extent native vegetation		of Number of Species		of Value as Weeds		Corridor		Adjoining Landuse		Conservation Value (0-12)	Score
4160093	2	QUANTACUTTING WEIRA RD	4.41	5.01	0.60	2	2	1	1	1	1	0	0	1	1	2	2	7	7
4160093	3	QUANTACUTTING WEIRA RD	5.01	8.11	3.10	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160093	4	QUANTACUTTING WEIRA RD	8.11	9.14	1.03	2	2	2	2	2	2	2	2	2	2	0	0	10	10
4160094	1	ELSEWHERE RD	0.00	2.09	2.09	2	2	2	2	1	1	2	2	2	2	2	2	11	11
4160095	1	COPELAND STH RD	0.00	3.50	3.50	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160095	2	COPELAND STH RD	3.50	4.33	0.83	2	2	2	2	1	1	2	1	2	2	0	1	9	9
4160096	1	FOREST AVE	0.00	0.70	0.70	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160096	2	FOREST AVE	0.70	4.30	3.60	2	2	1	1	1	1	2	2	1	1	2	2	9	9
4160096	3	FOREST AVE	4.30	5.29	0.99	2	2	1	2	1	1	0	1	1	2	1	1	6	9
4160097	1	BORLASE RD	0.00	0.70	0.70	2	2	1	1	1	1	0	0	1	1	1	2	6	7
4160097	2	BORLASE RD	0.70	3.70	3.00	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160097	3	BORLASE RD	3.70	4.70	1.00	2	2	1	2	1	1	0	0	1	2	2	2	7	9
4160097	4	BORLASE RD	4.70	5.65	0.95	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160098	1	ARNOLD RD	0.00	4.83	4.83	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160102	1	WHITCHER RD	0.00	1.70	1.70	2	2	2	2	2	1	0	0	2	2	0	1	8	8
4160102	2	WHITCHER RD	1.70	2.60	0.90	2	2	1	1	2	1	1	1	1	1	0	1	7	7
4160102	3	WHITCHER RD	2.60	3.27	0.67	2	2	2	2	1	1	2	2	2	2	0	0	9	9
4160106	1	DEAD HORSE HILL RD	0.00	6.90	6.90	2	2	1	1	1	1	1	2	1	1	2	2	8	9
4160106	2	DEAD HORSE HILL RD	6.90	7.72	0.82	2	2	1	1	1	2	1	2	1	1	1	0	7	8
4160107	1	WYALKATCHEM BULLFINCH RD	0.00	4.20	4.20	2	2	2	2	1	1	2	2	2	2	0	1	9	10
4160107	2	WYALKATCHEM BULLFINCH RD	4.20	5.20	1.00	2	2	1	2	1	1	1	1	1	2	1	1	7	9
4160107	3	WYALKATCHEM BULLFINCH RD	5.20	6.70	1.50	2	2	2	2	1	1	1	1	2	2	0	1	8	9
4160107	4	WYALKATCHEM BULLFINCH RD	6.70	13.60	6.90	2	2	1	1	1	1	1	1	1	1	2	1	8	7
4160107	5	WYALKATCHEM BULLFINCH RD	13.60	14.40	0.80	2	2	1	0	0	0	0	0	1	0	1	1	5	3
4160107	6	WYALKATCHEM BULLFINCH RD	14.40	16.02	1.62	2	2	1	1	0	0	0	0	1	1	2	2	6	6
4160107	7	WYALKATCHEM BULLFINCH RD	17.42	19.42	2.00	2	2	1	1	1	1	0	0	1	1	2	2	7	7
4160107	8	WYALKATCHEM BULLFINCH RD	19.42	20.12	0.70	2	2	1	1	1	1	0	0	1	1	1	1	6	6
4160107	9	WYALKATCHEM BULLFINCH RD	20.12	21.22	1.10	2	2	1	1	1	1	0	0	1	1	2	0	7	5
4160107	10	WYALKATCHEM BULLFINCH RD	21.22	21.82	0.60	2	2	0	0	0	0	0	0	0	0	2	2	4	4
4160107	11	WYALKATCHEM BULLFINCH RD	21.82	22.92	1.10	2	2	0	1	0	0	1	2	0	1	2	2	5	8
4160107	12	WYALKATCHEM BULLFINCH RD	22.92	23.52	0.60	2	2	1	1	1	1	1	0	2	1	2	2	9	7
4160107	13	WYALKATCHEM BULLFINCH RD	23.52	24.02	0.50	2	2	0	0	0	1	1	0	0	0	2	2	5	5
4160107	14	WYALKATCHEM BULLFINCH RD	24.02	26.92	2.90	2	2	1	1	1	1	1	2	1	1	2	2	8	9
4160107	15	WYALKATCHEM BULLFINCH RD	26.92	29.92	3.00	2	2	1	2	1	2	2	2	1	2	1	2	8	12
4160107	16	WYALKATCHEM BULLFINCH RD	29.92	31.12	1.20	1	2	0	1	0	1	1	2	0	1	2	2	4	9

A survey of the roadside conservation values in the Shire of Mukinbudin



Road #	Section #	Road Name	From	To	Length section (km)	of Native vegetation		Extent native vegetation		of Number of Species		of Value as Weeds		Corridor		Adjoining Landuse		Conservation Value (0-12)	Score
4160107	17	WYALKATCHEM BULLFINCH RD	31.12	32.02	0.90	2	2	2	2	1	1	1	2	2	2	2	10	11	
4160107	18	WYALKATCHEM BULLFINCH RD	32.02	34.52	2.50	2	2	2	2	1	1	2	2	2	2	1	1	10	10
4160107	19	WYALKATCHEM BULLFINCH RD	34.52	36.42	1.90	2	2	2	2	1	1	2	2	2	2	0	0	9	9
4160107	20	WYALKATCHEM BULLFINCH RD	36.42	37.92	1.50	2	2	2	2	1	1	1	2	2	2	1	0	9	9
4160107	21	WYALKATCHEM BULLFINCH RD	37.92	43.92	6.00	2	2	1	2	1	1	1	1	1	2	1	1	7	9
4160108	1	KUNUNOPPIN MUKINBUDIN RD	0.00	5.00	5.00	2	2	2	2	1	1	1	1	2	2	1	1	9	9
4160108	2	KUNUNOPPIN MUKINBUDIN RD	5.00	6.90	1.90	2	2	1	1	1	1	1	1	1	1	2	0	8	6
4160108	3	KUNUNOPPIN MUKINBUDIN RD	6.90	8.10	1.20	2	2	1	1	1	1	0	0	1	1	2	0	7	5
4160108	4	KUNUNOPPIN MUKINBUDIN RD	8.10	10.50	2.40	2	2	0	1	1	1	0	0	0	1	2	1	5	6
4160108	5	KUNUNOPPIN MUKINBUDIN RD	10.50	11.50	1.00	2	2	1	2	1	1	0	0	2	2	1	0	7	7
4160108	6	KUNUNOPPIN MUKINBUDIN RD	11.50	12.50	1.00	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160108	7	KUNUNOPPIN MUKINBUDIN RD	12.50	13.50	1.00	1	2	0	1	0	1	0	2	0	0	2	2	3	8
4160109	1	MUKINBUDIN BONNIE ROCK RD	0.00	1.80	1.80	2	2	1	0	1	1	1	1	1	0	1	1	7	5
4160109	2	MUKINBUDIN BONNIE ROCK RD	1.80	5.90	4.10	2	2	1	1	1	1	2	2	1	1	2	2	9	9
4160109	3	MUKINBUDIN BONNIE ROCK RD	5.90	6.80	0.90	2	2	2	2	1	1	2	1	2	2	2	1	11	9
4160109	4	MUKINBUDIN BONNIE ROCK RD	6.80	9.90	3.10	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160109	5	MUKINBUDIN BONNIE ROCK RD	9.90	11.70	1.80	2	2	2	1	1	1	1	1	2	1	0	2	8	8
4160109	6	MUKINBUDIN BONNIE ROCK RD	11.70	14.20	2.50	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160109	7	MUKINBUDIN BONNIE ROCK RD	14.20	15.20	1.00	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160109	8	MUKINBUDIN BONNIE ROCK RD	15.20	19.60	4.40	2	2	2	2	1	1	2	2	2	2	2	2	11	11
4160109	9	MUKINBUDIN BONNIE ROCK RD	19.60	20.60	1.00	2	2	2	2	1	1	1	1	2	2	0	2	8	10
4160109	10	MUKINBUDIN BONNIE ROCK RD	20.60	27.80	7.20	2	2	2	2	1	1	1	1	2	2	2	2	10	10
4160110	1	MUKINBUDIN WIALKI RD	0.00	0.70	0.70	2	2	1	0	0	0	2	0	1	0	2	2	8	4
4160110	2	MUKINBUDIN WIALKI RD	0.70	1.50	0.80	0	2	0	0	0	0	0	0	0	0	2	2	2	4
4160110	3	MUKINBUDIN WIALKI RD	1.50	2.80	1.30	2	1	1	0	0	0	0	0	1	0	2	2	6	3
4160110	4	MUKINBUDIN WIALKI RD	2.80	4.90	2.10	2	2	0	0	0	0	0	0	0	0	2	2	4	4
4160110	5	MUKINBUDIN WIALKI RD	4.90	20.80	15.90	2	2	1	1	1	0	1	1	1	1	2	2	8	7
4160110	6	MUKINBUDIN WIALKI RD	20.80	22.20	1.40	2	2	2	1	1	0	1	0	2	1	0	2	8	6
4160110	7	MUKINBUDIN WIALKI RD	22.20	24.50	2.30	2	2	2	1	1	0	1	0	2	1	0	2	8	6
4160110	8	MUKINBUDIN WIALKI RD	24.50	26.00	1.50	2	2	1	1	1	1	0	0	1	1	2	2	7	7
4160110	9	MUKINBUDIN WIALKI RD	26.00	26.80	0.80	2	2	2	2	1	1	0	0	2	2	2	2	9	9
4160110	10	MUKINBUDIN WIALKI RD	26.80	32.20	5.40	2	2	1	1	1	1	1	1	1	1	2	2	8	8
4160110	11	MUKINBUDIN WIALKI RD	32.20	32.70	0.50	2	2	2	2	1	1	2	2	2	2	0	0	9	9
4160110	12	MUKINBUDIN WIALKI RD	32.70	33.30	0.60	2	2	1	1	1	1	1	1	1	1	2	0	8	6
4160110	13	MUKINBUDIN WIALKI RD	33.30	36.30	3.00	2	2	2	2	1	1	1	1	2	2	1	2	9	10

A survey of the roadside conservation values in the Shire of Mukinbudin

Road #	Section #	Road Name	From	To	Length section (km)	of Native vegetation		Extent native vegetation		of Number Species		of Value as Weeds		Corridor		Adjoining Landuse	Conservation Value (0-12)	Score	
4160110	14	MUKINBUDIN WIALKI RD	36.30	37.30	1.00	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160110	15	MUKINBUDIN WIALKI RD	37.30	38.40	1.10	2	2	1	2	1	1	1	1	1	2	2	1	8	9
4160110	16	MUKINBUDIN WIALKI RD	38.40	42.50	4.10	2	2	1	1	1	1	1	1	1	2	1	8	7	
4160111	1	DRISCOLL RD	0.00	7.00	7.00	2	2	2	2	1	1	1	1	2	2	2	1	10	9
4160111	2	DRISCOLL RD	7.00	7.58	0.58	2	2	1	1	1	1	0	0	1	1	1	1	6	6

# Appendix

## 3

### APPENDIX 3

Road names and lengths: Shire of Mukinbudin (source- Main Roads WA)

Road Number	Road Name	Road Length (km)
4160053	ADAMS RD	6.10
4160090	ADAMS ST	0.11
4160087	AITKEN RD	3.79
4160024	ALBERT RD	4.03
4160089	ANDREWS EAST RD	6.34
4160085	ANGLE RD	7.78
4160098	ARNOLD RD	4.83
4160026	BARBALIN NORTH RD	25.89
4160027	BARBALIN SOUTH RD	5.74
4160091	BECKINGHAM RD	0.81
4160008	BERINGBOODING RD	13.25
4160044	BONNIE ROCK TANK RD	3.13
4160006	BONNIE ROCK-LAKE BROWN RD	50.73
4160097	BORLASE RD	5.65
4160041	BRANDIS RD	3.20
4160035	BRIERLY RD	2.52
4160058	CALDER RD	0.52
4160012	CARLTON RD	7.37
4160015	CLAMP RD	14.55
4160069	CLAMP ST	0.14
4160045	CLUNE RD	9.68
4160032	COMERFORD RD	8.01
4160082	CONNELL RD	8.34
4160064	CONWAY RD	0.24
4160021	COOKINBIN RD	9.03
4160048	COPELAND NORTH RD	4.03
4160016	COPELAND RD	12.96
4160095	COPELAND SOUTH RD	4.33
4160059	CRUIKSHANK RD	0.63
4160047	CUNDERIN RD	15.85
4160020	DANDANNING RD	10.94
4160029	DAVIS RD	6.24
4160106	DEAD HORSE HILL RD	7.72
4160081	DEASE RD	6.82
4160056	DOIG RD	10.95
4160046	DOOTANING RD	10.76
4160111	DRISCOLL RD	7.58
4160105	EARL DRIVE	0.69
4160094	ELSEWHERE RD	2.09
4160103	FAGAN RD	2.83
4160063	FERGUSON RD	0.24
4160028	FOGARTY RD	8.80
4160096	FOREST AVE	5.29
4160030	FORTY SIX GATE RD	10.61
4160011	GRAHAM RD	14.09
4160065	GREENSLADE RD	0.49
4160034	HAROLD RD	5.41
4160031	HARRY RD	16.53
4160071	HENRY RD	4.86
4160104	JAMIESON RD	4.61
4160023	JONES EAST RD	4.04

Road Number	Road Name	Road Length (km)
4160076	JONES RD	2.63
4160025	KALYANBUDDING WEST RD	3.99
4160033	KAROMIN RD	3.87
4160088	KOONKOOBING RD	3.39
4160108	KUNUNOPPIN-MUKINBUDIN RD	19.12
4160055	KUSER RD	1.93
4160013	LAKE BROWN SOUTH RD	13.28
4160037	LAKE RD	4.12
4160060	LANSDELL RD	0.41
4160086	LAVERY RD	4.61
4160066	LUKIN RD	0.23
4160057	MADDOCK RD	0.63
4160049	MANUEL RD	4.03
4160022	MCGREGOR RD	13.95
4160074	MCINNES RD	3.83
4160067	MEMORIAL AVE	0.23
4160079	MIGUEL RD	7.56
4160078	MILNE RD	6.60
4160073	MOLYNEUX RD	5.58
4160009	MOONDON RD	32.92
4160050	MORRISON RD	12.13
4160083	MOTT RD	11.93
4160084	MT JACKSON RD	7.48
4160005	MUKINBUDIN NORTH EAST RD	21.51
4160109	MUKINBUDIN-BONNIE ROCK RD	27.80
4160110	MUKINBUDIN-WIALKI	42.50
4160099	NICOL RD	3.84
4160007	NUNGARIN NORTH RD	10.73
4160019	OGILVIE RD	13.66
4160038	POPES HILL NORTH RD	3.25
4160014	POPES HILL SOUTH RD	14.40
4160070	POTTER RD	0.49
4160010	QUANTA CUTTING NORTH RD	14.71
4160093	QUANTA CUTTING-WEIRA RD	9.14
4160052	SCOTSMAN RD	7.57
4160051	SEVIER RD	4.37
4160072	SHEARDOWN RD	12.25
4160101	SMITH RD	6.40
4160054	SPENCERS RD	10.22
4160043	SPRIGG RD	8.73
4160036	SQUIRE RD	4.03
4160080	STOCKTON RD	5.78
4160068	STRUGNELL RD	1.00
4160042	TOOLE RD	16.60
4160100	UN-NAMED RD	1.57
4160018	WALTON RD	13.40
4160075	WATTONING WEST RD	10.08
4160102	WHITCHER RD	3.27
4160062	WHITE RD	0.48
4160017	WHYTE RD	6.80
4160039	WIALKI SOUTH RD	15.77
4160004	WILGOYNE RD	20.88
4160092	WUNDOWLIN RD	1.26
4160107	WYALKATCHEM-BULLFINCH RD	41.92
4160077	WYMOND RD	14.13
4160040	WYOMING TRL	5.10

A survey of the roadside conservation values in the Shire of Mukinbudin

# Appendix

## 4

## APPENDIX 4

Flora species in the Shire of Mukinbudin (source- W.A Herbarium)

Note: not a comprehensive list.

\* = Weed species

Acacia acuminata subsp. acuminata ms  
Acacia acutata  
Acacia aestivalis  
Acacia ancistrophylla var. perarcuata P3  
Acacia andrewsii  
Acacia ascendens P2  
Acacia assimilis subsp. assimilis  
Acacia beauverdiana  
Acacia chrysellia  
Acacia colletioides  
Acacia consanguinea ms  
Acacia coolgardiensis  
Acacia coolgardiensis subsp. coolgardiensis  
Acacia coolgardiensis subsp. effusa  
Acacia crenulata ms P3  
Acacia denticulosa R  
Acacia enervia subsp. enervia  
Acacia erinacea  
Acacia fauntleroyi  
Acacia graniticola ms  
Acacia hemiteles  
Acacia heteroneura var. heteroneura  
Acacia heteroneura var. jutsonii  
Acacia heteroneura var. prolixa  
Acacia inaequiloba  
Acacia inceana subsp. conformis P1  
Acacia jibberdingensis  
Acacia lasiocalyx  
Acacia longispinea  
Acacia mackeyana  
Acacia merrickiae P4  
Acacia microbotrya  
Acacia murrayana  
Acacia neurophylla subsp. neurophylla  
Acacia nigripilosa subsp. nigripilosa ms  
Acacia nigripilosa subsp. nigripilosa ms  
Acacia nyssophylla  
Acacia obtecta  
Acacia prainii  
Acacia resinimarginea  
Acacia restiacea  
Acacia rigens  
Acacia sciophanes R  
Acacia sessilispica  
Acacia steedmanii  
Acacia stereophylla var. stereophylla  
Acacia subrigida P2  
Acacia tetragonophylla  
Acacia tratmaniana  
Acacia yorkkrakinensis subsp. acrita  
Allocastrum campestre  
Allocastrum corniculatum  
Allocastrum spinosissimum  
Amyema gibberula var. tatei  
Amyema preissii  
Anthocercis anisantha subsp. anisantha  
Anthocercis genistoides  
\*Arctotheca calendula  
Argyrolottia turbinata  
Aristida contorta  
Arthropodium curvipes  
Arthropodium dyeri  
Astroloma serratifolium  
Atriplex stipitata  
Austrodanthonia caespitosa  
Austrostipa nitida  
Baeckea benthamii ms  
Baeckea crispiflora  
Baeckea cryptonoma ms  
Baeckea grandibracteata  
Baeckea muricata  
Baeckea recurva ms  
Baeckea tenuiramea  
Beaufortia interstans  
Bellida graminea  
\*Borago officinalis  
Boronia adamsiana R  
Boronia coerulescens subsp. spinescens  
Boronia ternata  
Boronia ternata var. ternata  
Borya constricta  
Borya sphaerocephala  
Brachychiton gregorii  
\*Bromus diandrus  
\*Bromus rubens  
Brunonia australis  
Bursaria occidentalis  
Caladenia dimidia ms  
Caladenia roei  
Caladenia saccharata  
\*Callitris glaucophylla  
Callitris preissii subsp. verrucosa  
Calothamnus quadrifidus  
Calothamnus quadrifidus var. "unsorted"  
Calothamnus tuberosus  
Calycopeplus paucifolius  
Calytrix leschenaultii  
Cephalopterum drummondii  
Chamaexeros fimbriata  
Chamaelaucium brevifolium  
Chamaelaucium drummondii subsp. hallii ms  
Chamaelaucium halophilum ms  
Cheilanthes lasiophylla  
Chenopodium cristatum  
\*Citrullus lanatus  
Comesperma drummondii  
Comesperma integerrimum  
Comesperma scoparium  
Conospermum floribundum  
Cryptandra micrantha ms  
Cryptandra wilsonii  
\*Cucumis myriocarpus  
Cullen discolor  
\*Cuscuta epithimum  
Cyanostegia angustifolia  
Cyanostegia microphylla

*Cymbopogon ambiguus*  
*Dampiera eriocephala*  
*Dampiera haematotricha* subsp. *dura*  
*Dampiera juncea*  
*Dampiera lavandulacea*  
*Dampiera linearis*  
*Dampiera luteiflora*  
*Dampiera oligophylla*  
*Dampiera stenostachya*  
*Dampiera tenuicaulis* var. *curvula*  
*Dampiera wellsiana*  
*Darwinia purpurea*  
*Daucus glochidiatus*  
*Dicrastylis corymbosa*  
*Dicrastylis parvifolia*  
*Diplachne parviflora*  
*Diplolaena velutina*  
*Dodonaea adenophora*  
*Dodonaea inaequifolia*  
*Dodonaea viscosa* subsp. *angustissima*  
*Drosera andersoniana*  
*Drosera glanduligera*  
*Drosera macrantha* subsp. *macrantha*  
*Drosera subhirtella* subsp. *subhirtella*  
*Drummondita hassellii*  
*Dryandra shanklandiorum* P4  
*Duboisia hopwoodii*  
*Ecdeiocolea monostachya*  
 \**Echium plantagineum*  
 \**Eragrostis cilianensis*  
*Eragrostis dielsii*  
*Eremophila caperata* ms  
*Eremophila clarkei*  
*Eremophila decipiens linearifolia*  
*Eremophila decipiens* subsp. *decipiens* ms  
*Eremophila decipiens* subsp. *linearifolia* ms  
*Eremophila drummondii*  
*Eremophila ionantha*  
*Eremophila oppositifolia* subsp. *angustifolia* ms  
*Eremophila oppositifolia* var. *angustifolia* ms  
*Eremophila scoparia*  
*Eremophila virens* R  
*Eremophila viscida* R  
*Eriostemon brucei* subsp. *brucei*  
*Eriostemon coccineus*  
*Eriostemon deserti*  
*Eriostemon rhomboideus*  
*Eriostemon tomentellus*  
*Eucalyptus brevipes* R  
*Eucalyptus burracoppinensis*  
*Eucalyptus calycogona* var. *calycogona*  
*Eucalyptus celastroides* subsp. *virella*  
*Eucalyptus crucis* subsp. *lanceolata*  
*Eucalyptus hypochlamydea* subsp. *hypochlamydea* ms  
*Eucalyptus kochii* subsp. *plenissima*  
*Eucalyptus leptopoda* subsp. *leptopoda*  
*Eucalyptus leptopoda* subsp. *subluta*  
*Eucalyptus loxophleba* subsp. *lissophloia*  
*Eucalyptus melanoxylon*  
*Eucalyptus myriadena* subsp. *myriadena*  
*Eucalyptus oldfieldii*  
*Eucalyptus oleosa*  
*Eucalyptus orbifolia*  
*Eucalyptus petraea*  
*Eucalyptus rigidula*  
*Eucalyptus rudis*  
*Eucalyptus salicola*  
*Eucalyptus salubris*  
*Eucalyptus sheathiana*  
*Eucalyptus spathulata* subsp. *spathulata*  
*Eucalyptus subangusta* subsp. *subangusta*  
*Eucalyptus synandra* R  
*Eucalyptus websteriana*  
*Eucalyptus yilgarnensis*  
*Exocarpos aphyllus*  
*Exocarpos sparteus*  
*Frankenia cinerea*  
*Gastrolobium bennettsianum*  
*Gastrolobium parviflorum*  
*Gilberta tenuifolia*  
*Glischrocaryon aureum* var. *angustifolium*  
*Glischrocaryon flavescens*  
*Glycine clandestina*  
*Goodenia affinis*  
*Granitites intangendus*  
*Grevillea acuaria*  
*Grevillea anethifolia*  
*Grevillea didymobotrya* subsp. *didymobotrya*  
*Grevillea eremophila*  
*Grevillea eriobotrya* P3  
*Grevillea excelsior*  
*Grevillea levis*  
*Grevillea nana*  
*Grevillea nana* subsp. *abbreviata* P2  
*Grevillea nana* subsp. *nana*  
*Grevillea paniculata*  
*Grevillea paradoxa*  
*Grevillea sarissa* subsp. *sarissa*  
*Grevillea shuttleworthiana* subsp. *shuttleworthiana*  
*Grevillea yorkkrakinensis*  
*Hakea francisiana*  
*Hakea invaginata*  
*Hakea meisneriana*  
*Hakea rigida* ms P2  
*Halgania cyanea* var. *latisejala* ms  
*Halgania cyanea* var. *tuberculosa* ms  
*Halgania integerrima*  
*Halgania lavandulacea*  
*Hemigenia dielsii*  
*Hemiphora elderi*  
*Hibbertia* aff. *rostellata*  
*Hibbertia commutata*  
*Hibbertia exasperata*  
*Hibbertia glomerata*  
*Hibbertia lividula*  
*Hibbertia subvaginata*  
*Homalocalyx thryptomenoides*  
*Hyalochlamys globifera*  
*Hybanthus floribundus* subsp. *floribundus*  
 \**Hypochaeris glabra*  
*Isotoma petraea*  
*Isotropis juncea*  
*Jacksonia rhadinoclada*  
*Juncus aridicola*  
*Juncus flavidus*  
*Keraudrenia cacaobrunnea* ms  
*Keraudrenia integrifolia*  
*Kunzea pulchella*  
*Labichea lanceolata*  
 \**Lactuca serriola*



*Lawrencella rosea*  
*Lechenaultia biloba*  
*Lepidium genistoides* P2  
*Lepidosperma viscidum*  
*Leptospermum erubescens*  
*Leptospermum roei*  
*Leucochrysum fitzgiribonii*  
*Lobelia winfridae*  
*Logania flaviflora*  
*Lysiana casuarinae*  
*Maireana georgei*  
*Malleostemon roseus*  
*Malleostemon tuberculatus*  
*Mallophora rugosifolia*  
*Marianthus erubescens*  
*Melaleuca acuminata* subsp. *acuminata* ms  
*Melaleuca conothamnoides*  
*Melaleuca cordata*  
*Melaleuca lanceolata* subsp. *thaeroides*  
*Melaleuca macronychia* subsp. *macronychia*  
*Melaleuca nematophylla*  
*Melaleuca radula*  
*Melaleuca* sp. Wongan Hills(R.Davis 1959)  
*Melaleuca uncinata*  
 \**Mentha spicata*  
 \**Mesembryanthemum nodiflorum*  
*Micromyrtus flaviflora*  
*Mirbelia microphylla*  
*Mirbelia ramulosa*  
*Mirbelia seorsifolia*  
*Monachather paradoxus*  
*Olearia muelleri*  
*Olearia pimeleoides*  
*Opercularia vaginata*  
 \**Osteospermum clandestinum*  
 \**Parietaria cardiostegia*  
*Patersonia drummondii* subsp. *drummondii* ms  
 \**Pentaschistis airoides*  
 \**Pentzia globifera*  
*Persoonia leucopogon* P1  
*Persoonia saundersiana*  
*Petrophile incurvata*  
*Phebalium canaliculatum*  
*Phebalium drummondii* P1  
*Phebalium filifolium*  
*Phebalium laevigatum* ms  
*Phebalium megaphyllum* ms  
*Phebalium tuberculatum*  
*Pimelea aeruginosa*  
*Pimelea angustifolia*  
*Pimelea avonensis*  
*Pimelea microcephala* subsp. *microcephala*  
*Pimelea suaveolens* subsp. *flava*  
*Pittosporum phylliraeoides*  
*Pittosporum phylliraeoides* var. *microcarpa*  
*Pityrodia halganiacea*  
*Pityrodia lepidota*  
*Pityrodia teckiana*  
*Pityrodia terminalis*  
*Podolepis canescens*  
*Podolepis capillaris*  
*Podolepis lessonii*  
*Podotheca gnaphalioides*  
 \**Polygonum arenastrum*  
*Prasophyllum gracile*  
*Prostanthera campbellii*  
*Prostanthera eckersleyana*  
*Prostanthera grylloana*  
*Psammomya choretroides*  
*Pseudactinia* sp. Bungalbin Hill(F.H.& M.P.Mollemans P1  
 \**Pseudognaphalium luteo-album*  
*Ptilotus drummondii* var. *drummondii*  
*Ptilotus exaltatus* var. *villosus*  
*Ptilotus gaudichaudii* var. "unsorted"  
*Ptilotus holosericeus*  
*Ptilotus obovatus* var. *obovatus*  
*Pultenaea obcordata*  
*Rhodanthe chlorocephala* subsp. *rosea*  
*Rhodanthe citrina*  
*Rhodanthe rubella*  
 \**Salsola kali*  
 \**Schismus barbatus*  
*Schoenia cassiniana*  
 \**Senecio lautus* subsp. *dissectifolius*  
*Senna artemisioides* subsp. *filifolia*  
*Senna cardiosperma* subsp. *stowardii*  
*Senna glutinosa* subsp. *charlesiana*  
*Senna pleurocarpa* var. *angustifolia*  
*Sida calyxhymenia*  
*Solanum hoplopetalum*  
*Solanum lasiophyllum*  
 \**Solanum nigrum*  
*Solanum nummularium*  
*Spartochloa scirpoidea*  
 \**Spergularia* aff. *rubra*  
*Spiculaea ciliata*  
*Stackhousia monogyna*  
*Stipa hemipogon*  
*Stylidium dielsianum*  
*Stylidium leptophyllum*  
*Stylidium merrallii* R  
*Stylidium nungarinense*  
*Stylidium yilgarnense*  
*Stypantra glauca*  
*Swainsona beasleyana*  
*Swainsona elegans*  
*Templetonia sulcata*  
*Thryptomene* aff. *kochii*  
*Thryptomene aspera* subsp. *Mukinbudin*(N.& P.Moyle s.n.) P1  
*Thryptomene aspera* subsp. *Paynes Find*(C.A.Gardner 11996)  
*Thryptomene australis*  
*Thryptomene kochii*  
*Thysanotus manglesianus*  
*Thysanotus rectantherus*  
*Trachymene cyanopetala*  
*Trachymene ornata*  
*Tragus australianus*  
*Trichodesma zeylanicum*  
 \**Trifolium hirtum*  
*Triodia rigidissima*  
*Tripterococcus brunonis*  
*Velleia cynopotamica*  
*Verticordia auriculata*  
*Verticordia brachypoda*  
*Verticordia chrysantha*  
*Verticordia chrysanthella*  
*Verticordia interioris*

*Verticordia picta*  
*Verticordia rennicana*  
*Verticordia roei* subsp. *meiogona* P1  
*Verticordia serrata* var. *serrata*  
*Vittadinia gracilis*  
*Waitzia acuminata*  
*Waitzia acuminata* var. *acuminata*  
*Wrixonia prostantheroides*  
*Wurmbea densiflora*  
*Wurmbea tenella*  
*Xanthorrhoea nana*  
*Xerolirion divaricata*  
\**Zaluzianskya divaricata*  
*Zygophyllum apiculatum*

# Appendix

## 5

## APPENDIX 5

Fauna species in the Shire of Mukinbudin (source- W.A Museum)

Information provided by Western Australian Museum, Fauna Base, latitude/longitude coordinates -- 31.0000, 118.1666 and -30.3333, 118.5000. Note- not a comprehensive list.

\* represents introduced species.

Scientific Name	Common name
<b>Reptiles</b>	
<b>Agamidae</b>	
<i>Ctenophorus cristatus</i>	<b>Crested Bicycle Dragon</b>
<i>Ctenophorus maculatus griseus</i>	
<i>Ctenophorus ornatus</i>	<b>Ornate Rock Dragon</b>
<i>Ctenophorus reticulatus</i> [	<b>Western Netted Dragon</b>
<i>Ctenophorus scutulatus</i>	<b>Lozenge-marked Bicycle Dragon</b>
<i>Moloch horridus</i>	<b>Thorny Devil</b>
<i>Pogona minor minor</i>	<b>Western Bearded Dragon</b>
<b>Elapidae</b>	
<i>Brachyurophis semifasciata</i>	<b>Southern shovel-nosed snake)</b>
<i>Demansia psammophis</i>	<b>Yellow-faced whipsnake</b>
<i>Furina ornata</i>	<b>Moon snake</b>
<i>Parasuta gouldii</i>	<b>Gould`s snake</b>
<i>Parasuta monachus</i>	<b>Monk snake</b>
<i>Pseudechis australis</i>	<b>Mulga snake</b>
<i>Pseudonaja modesta</i>	<b>Ringed brown snake</b>
<i>Pseudonaja nuchalis</i>	<b>Gwardar</b>
<i>Simoselaps bertholdi</i>	<b>Jan`s banded snake</b>
<i>Suta fasciata</i>	<b>Rosen`s snake</b>
<i>Vermicella bertholdi</i>	
<b>Gekkonidae</b>	
<i>Crenadactylus ocellatus</i>	<b>Clawless Gecko</b>
<i>Crenadactylus ocellatus ocellatus</i>	<b>Clawless Gecko</b>
<i>Diplodactylus granariensis</i>	<b>Wheatbelt Stone Gecko</b>
<i>Diplodactylus maini</i>	<b>Main`s Ground Gecko</b>
<i>Diplodactylus pulcher</i>	<b>Beautiful Gecko</b>
<i>Gehyra variegata</i>	<b>Variegated Tree Dtella</b>
<i>Heteronotia binoei</i>	<b>Bynoe`s Gecko</b>
<i>Nephrurus vertebralis</i>	<b>Midline Knob-tailed Gecko</b>
<i>Oedura reticulata</i>	<b>Reticulated Velvet Gecko</b>
<i>Underwoodisaurus milii</i>	<b>Barking Gecko</b>
<b>Pygopodidae</b>	
<i>Delma australis</i>	<b>Marbled-faced Delma</b>
<i>Gehyra variegata</i>	<b>Variegated Tree Dtella</b>
<i>Lialis burtonis</i>	<b>Burton`s Legless Lizard</b>
<i>Pygopus nigriceps</i>	<b>Hooded Scaly-foot</b>
<b>Scincidae</b>	
<i>Ctenotus atlas</i>	<b>Southern Mallee Skink</b>

Scientific Name	Common name
<i>Ctenotus mimetes</i>	<b>Checker-side Skink</b>
<i>Cyclodomorphus melanops elongatus</i>	<b>Eastern Slender Bluetongue</b>
<i>Egernia stokesii badia</i>	<b>Western Spiny-tailed Skink</b>
<i>Eremiascincus richardsonii</i>	<b>Banded Skink</b>
<i>Lerista macropisthopus</i>	
<i>Lerista macropisthopus macropisthopus</i>	
<i>Menetia greyii</i>	<b>Common Dwarf Skink</b>
<i>Morethia butleri</i>	
<i>Tiliqua occipitalis</i>	<b>Western Bluetongue</b>
Typhlopidae	
<i>Ramphotyphlops australis</i>	
<i>Ramphotyphlops bituberculatus</i>	
<i>Ramphotyphlops waitii</i>	
Varanidae	
<i>Varanus tristis tristis</i>	<b>Black-headed Monitor</b>
<b>Mammals</b>	
Dasyuridae	
<i>Sminthopsis crassicaudata</i>	<b>Fat-tailed dunnart</b>
<i>Sminthopsis dolichura</i>	<b>Little Long-tailed Dunnart</b>
Macropodidae	
<i>Macropus fuliginosus</i>	<b>Western Grey Kangaroo</b>
<i>Macropus robustus erubescens</i>	<b>Biggada</b>
<i>Macropus rufus</i>	<b>Red kangaroo</b>
Molossidae	
<i>Tadarida australis</i>	<b>White-striped Freetail-bat</b>
Muridae	
* <i>Mus musculus</i>	<b>House mouse</b>
Vespertilionidae	
<i>Vespadelus regulus</i>	<b>Southern Forest Bat</b>
<b>Birds</b>	
Campephagidae	
<i>Coracina novaehollandiae novaehollandiae</i>	<b>Black-faced Cuckoo-Shrike</b>
Climacteridae	
<i>Climacteris rufa</i>	<b>Rufous Treecreeper</b>
Dicruridae	
<i>Rhipidura albicauda</i>	

Scientific Name	Common name
Megapodiidae <i>Leipoa ocellata</i>	<b>Mallee Fowl</b>
Meliphagidae <i>Lichenostomus leucotis novaenorciae</i>	
Pardalotidae <i>Pardalotus striatus</i> <i>Pardalotus striatus westraliensis</i>	<b>Striated Pardalote</b>
Petroicidae <i>Eopsaltria australis griseogularis</i>	<b>Western Yellow Robin</b>
Psittacidae <i>Neophema elegans</i> <i>Platycercus zonarius</i> <i>Polytelis anthopeplus anthopeplus</i>	<b>Elegant Parrot</b> <b>Australian Ringneck (Ring-necked Parrot)</b> <b>Regent Parrot</b>
Rallidae <i>Porzana pusilla palustris</i>	
Strigidae <i>Ninox novaeseelandiae</i>	<b>Boobook Owl</b>
Tytonidae <i>Tyto alba</i>	<b>Barn Owl</b>
<b>Amphibia</b>	
Myobatrachidae <i>Crinia pseudinsignifera</i> <i>Heleioporus albopunctatus</i> <i>Neobatrachus kunapalari</i> <i>Pseudophryne guentheri</i>	<b>Bleating Froglet</b> <b>Western Spotted Frog</b> <b>Kunapalari Frog or Wheatbelt Frog</b> <b>Crawling Frog or Günther`s Toadlet</b>

# Appendix

## 6

## **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 Conservation and Land Management (CALM) and/or the RCC for advice. Licences allowing the taking of roadside flora may be issued by CALM 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 Scientific or Other Prescribed Purposes Licences where the protected flora is being taken for specific non-commercial purposes.

These licences are issued by CALM. In issuing a licence, CALM is required to be assured that the activity will not compromise the conservation of the flora. In determining this, CALM 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 CALM 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 CALM, 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 CALM.
- ✓ 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 CALM.
- ✓ 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 can not be removed for commercial purposes without a special endorsement on the Commercial Purposes Licence issued by CALM.
- ✓ No flora of special conservation concern (Declared Rare Flora or Priority Flora) should be removed without special authorisation through CALM.
- ✓ No commercial harvesting of any plant product should be allowed for any reason between the markers that delineate a Special Environmental 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 road side in areas where the vegetation is close to the road, where vehicles can not be safely parked off the road, or where there is poor driver visibility.

# Appendix

## 7



### Guidelines for the Nomination and Management of Flora

#### 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 Roadside Conservation Committee 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 if 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 (MRWA, Local Government or DCLM);
- Distance of the proposed Flora Road;
- 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 will be 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, and the RCC's *Guidelines for Managing Special Environment Areas in Transport Corridors* and the *Roadside Handbook* also provides 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,
- 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.
- The RCC hope to establish links with the Tourist Commission for inclusion on wildflower tourist maps.

### **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, MRWA, DCLM) establish a *Register of Roads Important for Conservation* also. This register should be consulted prior to any works being initiated in the area.