ASSESSMENT OF THE CONSERVATION VALUE OF ROADSIDE VEGETATION IN THE SHIRE OF GINGIN, WA

LANCELIN ROAD

Roadside Conservation Committee

ASSESSMENT OF THE CONSERVATION VALUE OF ROADSIDE VEGETATION IN THE SHIRE OF GINGIN, WESTERN AUSTRALIA

1. INTRODUCTION

Alteration of original native vegetation into productive farmland in Western Australia has been a continual process since the time of original settlement.

The Shire of Gingin is fortunate in that it has numerous large blocks of remnant native vegetation, including some State Forest, National Parks and Nature Reserves in the west. Many farms contain remnant patches and there are some good strips along roadsides especially those on land released since 1960, which were deliberately reserved wide for flora conservation.

These strips and patches form a mosaic in which conservation of wildlife is integrated with farming to form a productive and uniquely Australian landscape. Roadside strips are an essential element of this network, as they function as corridors enabling movement of animals - especially small birds - across the landscape. They are also an important seed source for regeneration projects - especially of shrubs, since grazing beneath farm trees often removes this layer. A well conserved roadside helps with erosion and salinity control and is less of a fire threat than one dominated by annual weeds. Finally, roadside vegetation contributes greatly to the attractiveness of the countryside, as it forms the windowframe through which visitors and residents alike view the landscape

2. ASSESSMENT PROCESS

2.1 Method

The method followed is that developed by the Roadside Conservation Committee and designed to be carried out by volunteers. Its aim is to produce a conservation score which will rate each road as having high, medium or low conservation value. This information can then be used by the road manager to choose appropriate management techniques for the roadsides.

Appendix 1 shows the field data sheet. Each road was divided into as many sections as the assessor decided were reasonably uniform. A data sheet was completed for each section.

2.2 Field Work

Fieldwork was undertaken between 2/9/1987 and 15/3/89.

The assessment was done by the following people:-

B & B Backhouse
J Ellis
R Roe
G Rundle
G Zebrowski

In all they drove 526.1km and covered 77.4% of roads in the Shire.

2.3 Limitations

A number of roads have not been assessed. In the main these roads occur within townsites, farmlet subdivisions, or are farm access roads. The only one which it would really be useful to have assessed is Road No. 4, Beermullah Road, which is an important E-W link across the cleared land south of Moore River National Park.

A list of the roads not assessed will be found in Appendix 3.

2.4 Scoring

Scoring is shown on the field sheet, (Appendix 1).

Topics scored:

- native vegetation on roadside
- extent of native vegetation along length of roadside
- number of different native species
- weeds
- value as a biological corridor
- predominant adjoining land use

Each of the above attributes can score to a maximum of 2, giving total scores in a range from 0-12. These are ranked into the following categories:-

12 - 9	high conservation value
8 - 5	medium conservation value
4 - 0	low conservation value

The following attributes were noted but not scored:-

- width of road reserve
- width of vegetated roadside
- presence of utilities/disturbances

In addition a subjective judgement for Conservation Value and Landscape Value was also recorded.

3. RESULTS

3.1 Field Data Sheets

The field data sheets are retained at the office of the Roadside Conservation Committee, PO Box 104, Como. Duplicate copies will be supplied to the Shire of Gingin on request.

3.2 Summary of Data

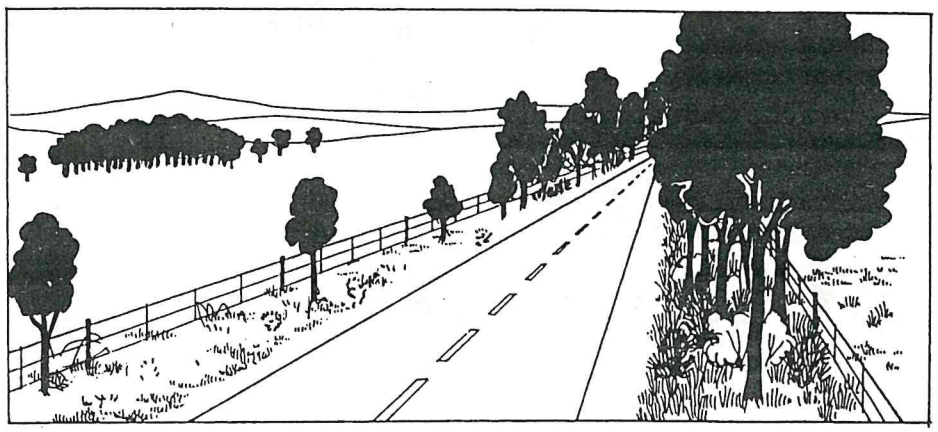
As explained in Section 2, 526.1km of roads in the Shire of Gingin have been assessed. The following table gives an overview of this assessment.

Figure 1

Results of all roads assessed
Shire of Gingin 1989

CONSERVATION VALUE	LENGTH KM	% OF SURVEY BY LENGTH	NO. OF ROADS WITH AT LEAST ONE SECTION HAVING THIS VALUE
High	254.4	48.3	29
Medium	205.1	39.0	28
Low	66.9	12.7	32
	526.1	100.0	

(NB: where the conservation value of the roadside is different on either side of the road, the highest value is recorded on this table.)



3.3 Roads Vested in the Main Roads Department

Two roads within Gingin Shire, portion of H4 and M34, are under the care, control and management of the Main Roads Department (MRD).

Figure 2

Assessment of roads vested in MRD,
Geographically within the Shire of Gingin 1989

ROAD	CONSERVATION VALUE	NO. OF SECTIONS	LENGTH OF SECTIONS	TOTAL LENGTH OF ROAD
H4	high	3	28.1	
	medium	7	30.4	
	low	1	2.3	60.8
M34	high	4	30.8	
	medium	6	32.7	63.5

The result of the assessment have been passed to the MRD, and these roads will not be considered further in this document.

3.4 Roads Vested in the Shire of Gingin.

When the MRD roads are excluded, the data for roads under the care, control and management of the Shire of Gingin is as follows:

Figure 3

Assessment of roads vested in the Shire of Gingin (1989)

CONSERVATION VALUE	LENGTH KM	% OF SURVEY BY LENGTH	NO OF ROADS WITH AT LEAST ONE SECTION HAVING THIS VALUE
High	195.5	48.6	27
Medium	142.0	35.3	26
Low	64.6	16.1	20
	402.1	100.0	

Taking the length of Shire roads to be 680km, 277.9km of Shire roads have not been surveyed. As discussed in 2.3, these are mainly townsite, farmlet or farm access roads, most of which would not be expected to have high conservation significance.

These figures will be used for detailed assessment and guidelines for management in Appendix 2.

4. MAPPING

Two 1:100,000 MRD 'State of Construction' maps for the Shire of Gingin show the roads assessed in this survey. The exact conservation value is written in red figures, while a colour indicates the general value as follows:-

high = green
medium = pink
low = blue

Figure 4 High Conservation Value Roads

Road	Section	Conservation Value	Length	Width of roadside	Remarks
S49 Gingin Brook	f: 2.9km E of Sandringham Rd	n = 9 s = 9	1.5km	1 - 5m	
	t: 4.5km E of Sandringham Rd				
3 Cowalla	f: Gingin Brook Rd	e = 7 w = 9	5.4km	1 - 5m	nice Banksias
	t: Waterville Rd				
	f: 1km N of Cowalla Bridge	e = 9 w = 9	5.0km	>20m	
	t: Sappers Rd				
5 Red Gully	f: 0.7km E of Brand Hwy	n = 6 s = 9	3.6km	>20m	
	t: 4.3km E of Brand Hwy				
	f: 4.8km E of Fynes Rd	n = 9 s = 9	6.1km	>20m	
	t: Mindarra Rd				
	f: Mindarra Rd	n = 9 s = 10	4.5km	>20m	
	t: Shire N boundary				
6 Orange Springs	f: 9.3km W of Brand Hwy	n = 10 s = 10	3.7km	5 - 20m	Moore River NP
	t: 13km W of Brand Hwy				
7 Sappers	whole length	n = 10 s = 10	23.8km	>20m	Nilgen NR
8 KW	f: Sappers Rd	e = 9 w = 9	1.0km	5 - 20m	
	t: 1km S of Sappers Rd				
10 Lefroy Point	whole length	n = 9 s = 9	3.5km	>20m	
11 Mogumber West	f: Brand Hwy	n = 10 s = 10	1.9km	5 - 20m	
	t: 1.9km E of Brand Hwy			>20m	
	f: 3.6km E of Brand Hwy	n = 10 s = 10	0.8km	5 - 20m	
	t: 4.4km E of Brand Hwy				
	f: 5.2km E of Brand Hwy	n = 9 s = 9	7.6km	5 - 20m	
	t: 12.8km E of Brand Hwy				

Figure 4 High Conservation Value Roads

Road	Section	Conservation Value	Length	Width of roadside	Remarks
	f: 12.8km E of Brand Hwy	n = 10 s = 9	4.4km	1 - 5m	
	t: 17.2km E of Brand Hwy			5 - 20m	
	f: 17.2km E of Band Hwy	n = 9 s = 9	7.8km	5 - 20m	
	t: Shire E boundary				
12 Wannamal West	f: Brand Hwy	n = 9 s = 9	3.0km	5 - 20m	
	t: 3km E of Brand Hwy				
	f: 3km E of Brand Hwy	n = 11 s = 10	6.6km	5 - 20m	
	t: 9.5km E of Brand Hwy				
	f: Mindarra Rd	n = 10 s = 10	15.8km	5 - 20m	nice Banksias
	t: Bindoon - Moora Rd				
19 Coonabidgee	f: 4.7km W of Brand Hwy	n = 9 s = 9	0.4km	5 - 20m	
	t: Sullivan Rd				
22 Nilgen	f: Sappers Rd	n = 11 s = 11	13.1km	>20m	Nilgen NR
	t: Dingo Rd				
25 ?	f: Brand Hwy	e = 10 w = 10	1.7km	5 - 20km	
	t: end of road				
35 Fynes	f: Marri Heights Rd	e = 10 w = 10	1.3km	>20m	bush track
	t: end of road				
36 Marri Heights	f: Brand Hwy	n = 10 s = 10	6.2km	>20m	
	t: 6.2km E of Brand Hwy				
38 Wannamal South	f: 0.9km S of Wannamal W Rd	e = 11 w = 11	7.1km	5 - 20m	undisturbed
	t: end of road				
41 Bookine	f: Gingin Brook Rd	e = 9 w = 9	1.3km	5 - 20m	

Figure 4 High Conservation Value Roads

Road	Section	Conservation Value	Length	Width of roadside	Remarks
	t: 1.3km S of Gingin Brook Rd				
42 Military	f: Chitna Rd	e = 10 w = 10	15.8km	?	State Forest
	t: Perth-Lancelin Rd				poor through pines
44 Sandringham	f: 2.8km S of Gingin Brook Rd	e = 10 w = 10	5.4km	1 - 5m	
	t: end of road			5 - 20m	
55 Mimegarra	f: Cowalla Rd	e = 10 w = 10	14.6km	>20m	mature trees
	t: Dingo Rd				and mature shrubs
59 Seabird	f: 2.5km W of Lancelin Rd	n = 8 s = 10	2.8km	>20m	good shrubs
	t: edge of townsite				
66 Ledge Point	f: Lancelin Rd	e = 10 w = 10	5.4km	?	
	t: edge of townsite				
160 Sullivan	f: Coonabidgee Rd	e = 10 w = 10	1.2km	5 - 20m	undisturbed
	t: 1.2km S of Coonabidgee Rd				
	f: 4.8km S of Coonabidgee Rd	e = 9 w = 9	1.4km	5 - 20m	
	t: end of road				
160A ? (off Sullivan)	f: Sullivan Rd	e = 10 w = 10	1.8km	5 - 20m	undisturbed
	t: end of road				
200 Quin	f: 1km S of Tangletoe Rd	e = 9 w = 9	3.2km	5 - 20m	
	t: end of road				
203 Clarke	f: Shire E boundary	n = 10 s = 10	2.9km	5 - 20m	weed free
	t: end of road				

Figure 4 High Conservation Value Roads

Road	Section	Conservation Value	Length	Width of roadside	Remarks
? Barragoon	f: Lancelin Rd	n = 10 s = 10	1.7km	?	State Forest
	t: end of road				
? ?	f: Lancelin Rd	n = 10 s = 10	0.7km	?	Banksia woodland
	t: quarry				

5. MANAGEMENT GUIDELINES FOR CONSERVATION PURPOSES

Appendix 2 contains a detailed discussion of the Shire roads, and guidelines for suggested management techniques which retain and enhance the roadside conservation value.

These guidelines are taken from documents drawn up by the Roadside Conservation Committee.

- Roadside Manual
- Guidelines for the clearing and maintenance of roadside vegetation

Copies of these have been supplied to the Shire, but further copies may be obtained from the RCC on request.

6. SPECIAL ENVIRONMENTAL AREAS

A "Special Environmental Area" is a section of roadside which is of such great significance that it should be treated with special care when road and utility service construction or maintenance is undertaken.

Some reasons for designating a Special Environmental Area would include:

- populations of rare or endangered plants
- vegetation of special scientific, conservation or aesthetic significance
- aboriginal or European cultural sites

So far as is known no such areas have been designated within the Shire of Gingin

7. LANDSCAPE VALUE

7.1 Map

Two 1:100.00 MRD 'State of Construction' maps have been coloured to show 'landscape value' as follows:-

high	=	red
medium	=	yellow
low	=	blue
avenue of trees	=	cross-hatched red

These figures are subjective, based on the individual judgement of each assessor, and relate to the attractiveness of the road in the landscape. This data will be useful for the design of tourist or scenic routes.

7.3 Tree Roads

An avenue of mature trees contributes substantially to the attractiveness of a landscape, framing the view and forming a tunnel effect over the road. In addition, the trees are attractive in themselves, especially Marri when in flower.

Trees take many years to reach full stature so that if an avenue is destroyed, the effect can scarcely be reproduced within a lifetime.

Many trees also contain hollows which are important nest sites for certain birds. It has been calculated that it takes about 100 years for a Wandoo to develop hollows, so the importance of mature trees to maintaining the bird population is very clear.

Figure 5 below is a list of "Tree Roads" as determined by the assessors. Usually, avenues only occur on short sections along these roads.

Figure 5

Tree Roads in the Shire of Gingin (1989)

57 Gingin-Bindoon Road
3 Cowalla Road

8. CONSERVATION IN THE SHIRE OF GINGIN

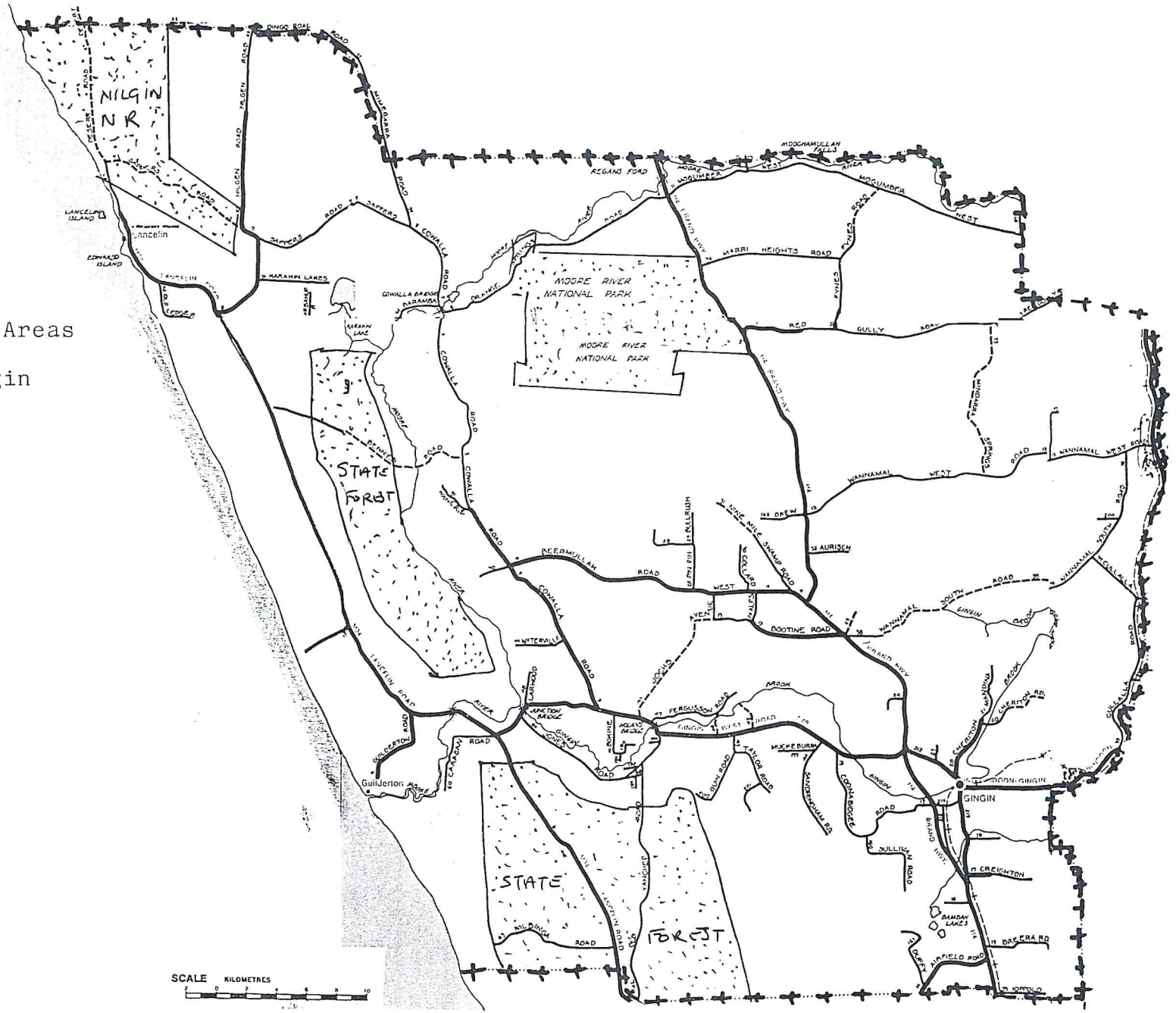
A number of conservation reserves exist within the Shire of Gingin (see Figure 6) but there are also many areas of remnant vegetation on roadsides and private land which altogether form a conservation network.

Together with maps showing the location of remnant vegetation, this study, which gives the location of important bush corridors, forms the basis for conservation planning within the Shire. It should now be possible to plan regeneration and replanting schemes to link the remnants and give in the Shire a landscape where production and conservation are integrated to the benefit of both. The result will be a productive and beautiful region that is uniquely Australian.

Figure 6

Conservation Areas

Shire of Gingin



APPENDIX 1.

SURVEY TO DETERMINE THE CONSERVATION VALUE OF A ROAD

Roadside Conservation Committee
c P.O Box 104 COMO W.A. 6152

Date _____ Observer(s) _____

Road Name _____

Nearest named place _____

Shire _____

Direction of travel _____

Section no. _____

starting point _____

odometer reading _____

ending point _____

odometer reading _____

length of section _____

WIDTH OF ROAD RESERVE

Side of the road	Left	Right
Width of Vegetated roadside		
1-5m	☐	☐
5-20m	☐	☐
over 20m	☐	☐

NATIVE VEGETATION ON ROADSIDE

tree layer	☐	1	max 2
shrub layer	☐	1	
ground layer	☐	1	

RARE FLORA

Rare flora known to be present ☐ ☒

Name _____

EXTENT OF NATIVE VEGETATION ALONG LENGTH OF ROADSIDE

Less than 20%	☐	0
20-80%	☐	1
over 80%	☐	2

No. OF DIFFERENT NATIVE SPECIES

0-5	☐	0
6-19	☐	1
Over 20	☐	2

Dominant species (if Known)

_____

WEEDS

Few weeds (under 20% total plants)	☐	2
Half weeds (20-80% total)	☐	1
Mostly weeds (over 80% total)	☐	0
Ground layer totally weeds	☐	0

Dominant weeds (if known)

_____

VALUE AS A BIOLOGICAL CORRIDOR

Connects uncleared areas	☐	1	max 2
Flowering shrubs for nectar-feeding animals	☐	1	
Large trees with hollows for birds nests	☐	1	
Hollow logs	☐	1	

FAUNA OBSERVED

_____

_____

PREDOMINANT ADJOINING LAND USE

Agricultural crop or pasture:-			
• completely cleared	☐	2	max 2
• scattered trees/shrubs	☐	1	
Uncleared land	☐	0	
Plantation of non-native trees	☐	1	
Urban or Industrial	☐	0	
Railway Reserve parallel to road	☐	1	
Drain Reserve parallel to road	☐	1	

Other

_____

UTILITIES/DISTURBANCES

Disturbances continuous	☐	☐
Disturbances Isolated	☐	☐
Disturbances absent	☐	☐

Type

_____

CONSERVATION VALUE

High	☐	☐
Medium	☐	☐
Low	☐	☐

Reasons

_____

_____

LANDSCAPE VALUE

High	☐	☐
Medium	☐	☐
Low	☐	☐
Avenue of trees	☐	☒

Reasons

_____

_____

GENERAL COMMENTS

_____

_____

_____

_____

						L	R

APPENDIX 2

MANAGEMENT GUIDELINES

It is assumed that the primary aim of road management is the creation and maintenance of a safe, efficient road system. The following conservation guidelines should be considered along with this.

1. **HIGH CONSERVATION VALUE ROADSIDES**
   Score 9-12

   Twenty seven roads have at least one section of high conservation value (see Figure 4 for detail). These sections occupy 195.5km of roadside and are 48.6% of the roads surveyed in the Shire.

   Management Goal

   To maintain and enhance the indigenous plant communities.

   Guidelines for achieving this goal

   1. Minimise disturbance to existing vegetation

      (In narrow strips, disturbance leads to weed invasion which:-

      . downgrades the conservation value
      . increases the fire threat)

      This can be done by:-

      - adopting a road design that occupies the minimum space.
      - diverting the line of a table drain to avoid disturbing valuable flora.
      - prune overhanging branches, rather than removing the whole tree or shrub.
      - do not turn or park machinery over well conserved flora.
      - avoid windrowing soil beyond the backslope.
      - do not dump spoil on well conserved flora.
      - observe dieback control measures if appropriate.
      - use methods other than preventative burning to reduce fire threat.
      - if roadside burning must be undertaken, it should not be repeated within 7 years.
      - encourage adjacent landholders to set back fences to allow vegetation to spread and thicken.
      - encourage adjacent landholders to plant windbreaks or farm tree lots adjacent to roadside vegetation to create a thicker belt.

      It is especially important not to disturb vegetation on sandy soil, as weeds such as wild oats and veldt grass soon take over loose sand.

2. MEDIUM CONSERVATION VALUE ROADSIDES
Score 5-8

Many Shire roads fall in this category, 35.3% of those surveyed, with a length of 142.0km.

These roads are often patchy, having some good stands of native vegetation interspersed with weedy areas. They may have utility services along them. (See map for location.)

Management Goal

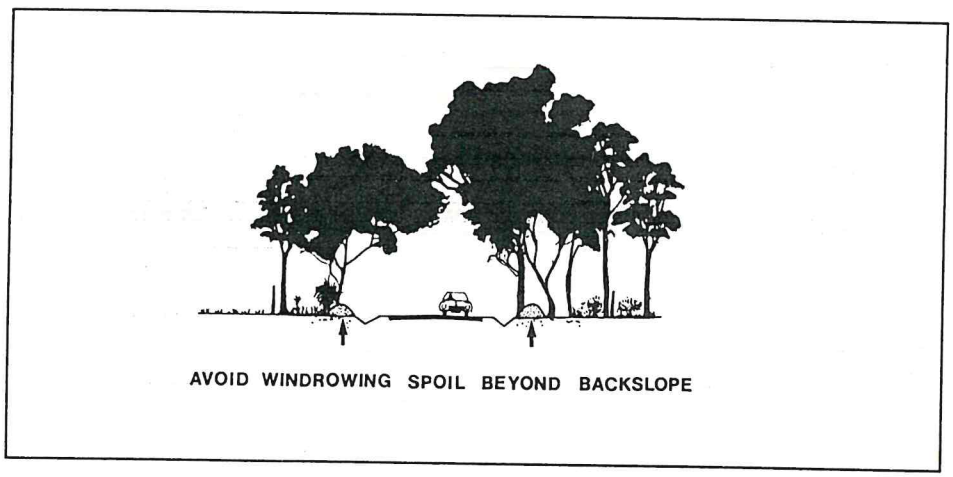
To maintain indigenous vegetation wherever possible, and to encourage its regeneration.

Guidelines For Achieving This Goal

As for High value roadsides, disturbance of areas with good native plant cover should be minimised.

Consideration should be given to weed eradication programmes, combined with reseeding/replanting local species.

Many of these roadsides have the potential to increase in value greatly with sympathetic management.



Weed contaminated spoil should not be dumped in areas of well conserved vegetation.

3. LOW CONSERVATION VALUE ROADSIDES
Score 0-4

Many of these road sections occur where the surrounding land has been long cleared, leaving only a few remnant trees and shrubs on the roadside.

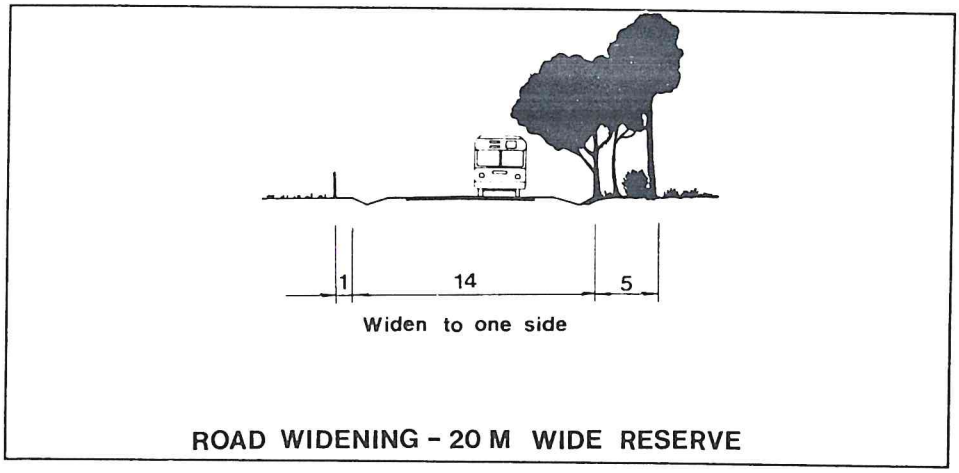
In some cases, the landholder has totally cleared the roadside when erecting a new fence, leaving only weeds or an occasional tree to regenerate.

Management Goals

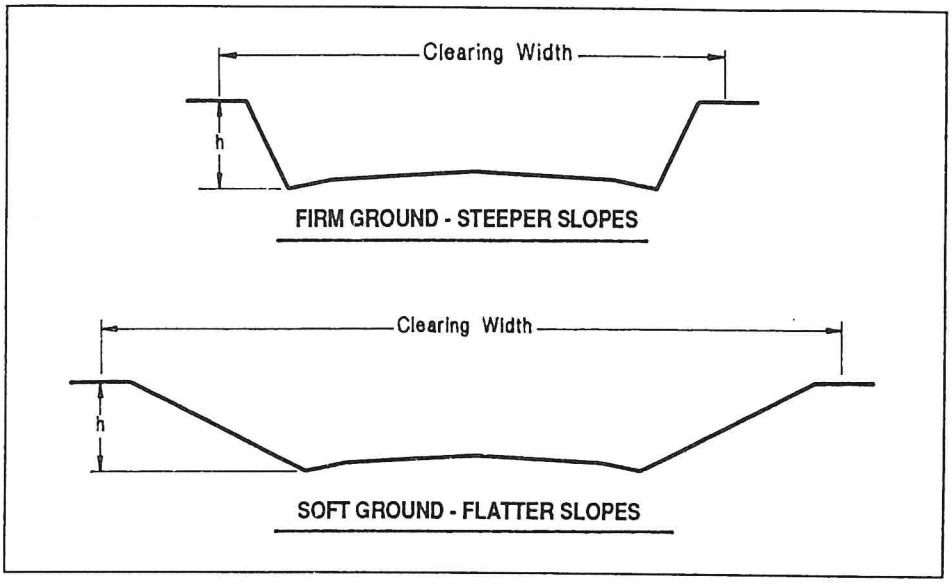
1. Retain remnant trees and shrubs and encourage their regeneration.
2. Encourage revegetation projects using indigenous plants.

Management Guidelines

. Minimise soil disturbance to reduce weed invasion.
. Encourage revegetation projects by adjacent landholders.



ROAD WIDENING - 20 M WIDE RESERVE



APPENDIX 3

Roads that have not been assessed for conservation value, Shire of Gingin (1989).

Road Number

S131	23	50	63	214
4	33	51	67	216
13	34	52	88	217
14	37	54	161	241
15	40	56	162	242
17	46	57	190-198	243
18	47	58	199	244
20	48	61	202	245
21	49	62	205-236	

ROADSIDE CONSERVATION VALUE

SHIRE OF GINGIN

high =
medium =
low =