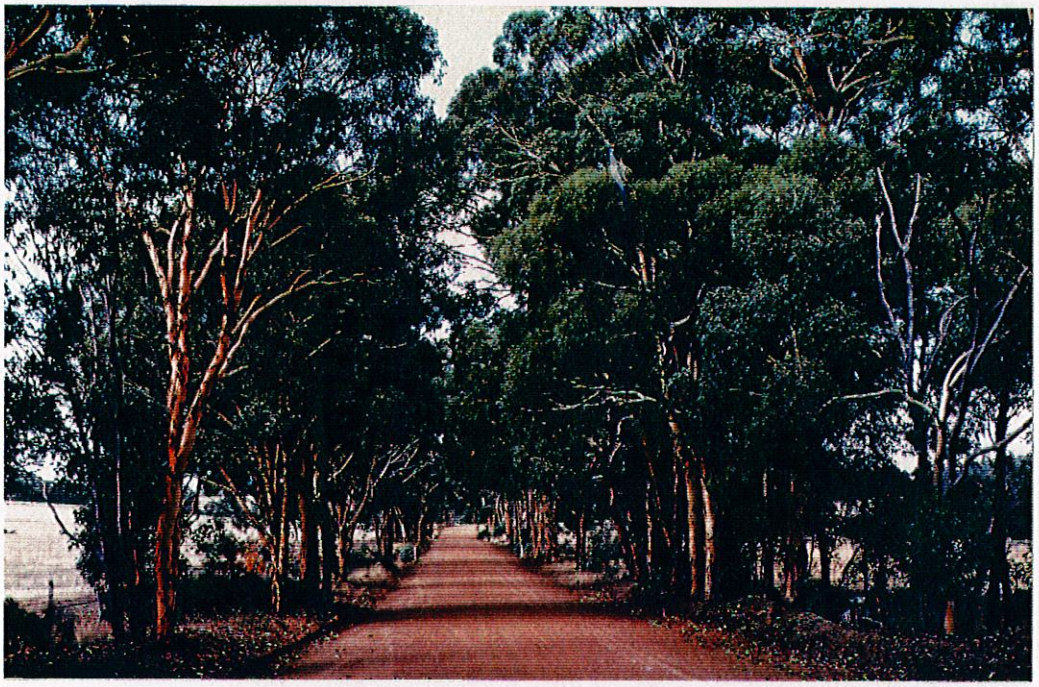
ASSESSMENT OF THE CONSERVATION VALUE OF ROADSIDE VEGETATION IN THE SHIRE OF YORK, WA



TALBOT HALL ROAD

Roadside Conservation Committee

ASSESSMENT OF THE CONSERVATION VALUE OF ROADSIDE VEGETATION IN THE SHIRE OF YORK, 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 York is fortunate in that it has numerous patches of remnant native vegetation, including some State Forest in the west. Many farms contain remnant patches and there are some good strips along roadsides.

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 24/4/1988 and 23/11/1989.

The assessment was done by the following people:-

J Collins
K Dean
J Seabrook

In all they drove 662.7km.

2.3 Limitations

York Shire is rcorded as having 1130km of road. Much of this would be within the townsite, and so outside the scope of this survey. 20 rural roads, totalling 56.2km have not been surveyed.

These roads are listed below:

ROAD NO	ROAD NAME	LENGTH (KM)	COMMENTS
52	Gunapin Rd	8.2	Run principally through State Forest, probably of high conservation value.
149	Qualen Rd	15.8	
82	Boyle Rd	2.2	Around Greenhills.
84	Club Hotel Rd	2.0	Early cleared area.
85	Lenkin Rd	1.2	Probably low conservation value, may have good mature trees.
16	Trews Rd	1.7	Mostly farm access tracks with low potential for conservation
27	Boundary Rd	2.7	
44	Mercers Rd	4.0	
54	Kittlers Rd	0.6	
55	-	0.7	
62	Crees Rd	3.2	
65	Northbourne Rd	1.5	
66	Osbourne Rd	0.6	
75	Gaults Rd	2.3	
194	-	3.8	
195	Brown Rd	0.6	
196	Roediger Rd	1.3	
198	Morris Dve	2.9	
199	-	0.8	
205	Mt Hardy Rd	1.0	
20 roads		56.2km	

Adding this to the total length already surveyed, we have a rural road total for the Shire of 718.9km, giving a survey percentage of 92.2%.

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
- valee 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 York if requested.

3.2 Summary of Data

As explained in Section 2, 662.7km of roads in the Shire of York have been assessed. The following table gives an overview of this assessment.

Figure 1

Results of all roads assessed
Shire of York 1989

CONSERVATION VALUE	LENGTH KM	% OF SURVEY BY LENGTH	NO. OF ROADS WITH AT LEAST ONE SECTION HAVING THIS VALUE
High	83.9	12.7	12
Medium	473.4	71.4	53
Low	105.4	15.9	22
	662.7	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

Three roads within York Shire, portion of M10, M31 and M41 totalling 100.3km, 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 York 1989

ROAD	CONSERVATION VALUE	NO. OF SECTIONS	LENGTH OF SECTIONS (KM)	TOTAL LENGTH OF ROAD (KM)
M10	high	1	1.5	
	medium	3	20.8	22.3
M31	medium	2	42.6	42.6
M41	medium	2	35.4	35.4

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 York.

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

Figure 3

Assessment of roads vested in the Shire of York (1989).

CONSERVATION VALUE	LENGTH KM	% OF SURVEY BY LENGTH	NO OF ROADS WITH AT LEAST ONE SECTION HAVING THIS VALUE
High	82.4	14.7	11
Medium	374.6	66.6	50
Low	105.4	18.7	22
	562.4	100.0	

56.2km of rural Shire roads have not been surveyed.

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

4. MAPPING

A 1:100,000 MRD 'State of Construction' map for the Shire of York shows 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	=	orange
low	=	blue

5. MANAGEMENT GUIDELINES FOR CONSERVATION PURPOSES

Appendix 1 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

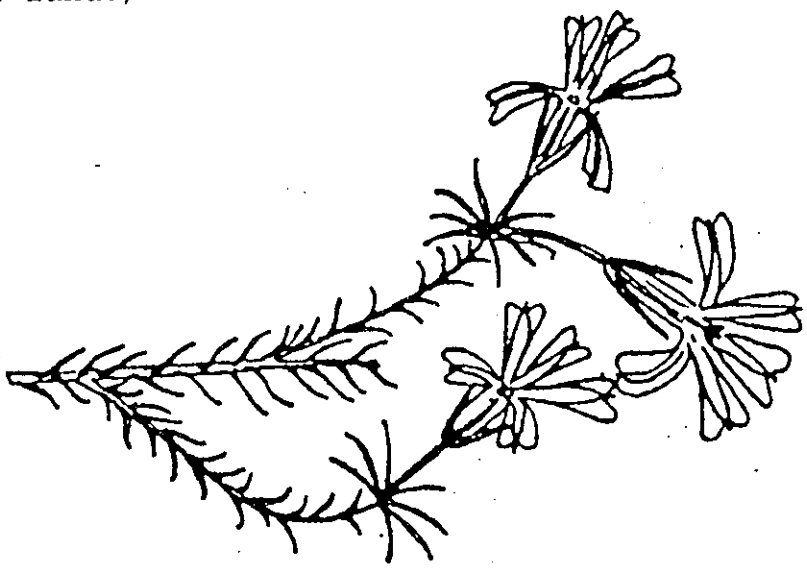
At present there are 4 such areas which contain populations of Declared Rare Flora along roadsides controlled by the Shire of York.

Figure 4

Special Environmental Areas in the Shire of York (1989).

ROAD NO	ROAD NAME	DECLARED RARE FLORA (DRF)	EXACT LOCATION
S132	Goldfields Rd	Thomasia montana	0.5km W of Badgin Rd
17	Berrybrow Rd	Lechenaultia laricina	0.8km N of Grt S Hwy
37	Badgin Rd	Thomasia montana	2.3km S of Goldfields Rd
43	Cameron Rd	Thomasia montana	5.5km S of Goldfields Rd

(NB. DRF also exists in other locations within the Shire, eg. gravel reserves 2617, 24168 and 39149. The Department of Conservation and Land Management has given the Shire a Rare Flora Register, which gives exact details, with maps, of all sites on Shire land.)



7. LANDSCAPE VALUE

7.1 Map

A 1:100 000 MRD 'State of Construction' map has 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.

7.2 Tree Roads

Many of the roads in York retain magnificent avenues of mature trees, Salmon Gum, York Gum, Wandoo and Red Morrel. Often they have grass weeds as an understory.

These large and stately trees are extremely beautiful, especially when they interlace above the road to form a "green cathedral" effect.

Mature trees such as this take a hundred - perhaps several hundred-years to grow. They can scarcely be replaced within one person's lifetime.

Every effort should be taken to preserve these trees, even to the extent of prohibiting the use of the road by oversize vehicles if it could mean the destruction of the cathedral canopy.

Figure 6

Tree Roads identified in the Shire of York (1989)

ROAD	ROAD NAME	TREES
13	Talbot Hall Road	Wandoo, Powderbark
24	Grass Valley Road	York Gum
26	Bogling Road	York Gum, Sheoak
31	Leeming Road	Wandoo
32	Mt Hardey Road	Wandoo
33	Station Road	Salmon Gum
47	Williams Road	Wandoo
67	Wright Road	Wandoo
73	Kennedy Road	Wandoo, Sheoak
74	Mills Road	York Gum, Sheoak, Salmon Gum, Flooded Gum

8. CONSERVATION IN THE SHIRE OF YORK

Appendix 2 contains a brief discussion of how roadside conservation fits into the general picture of conservation in the Shire of York.

Figure 7

High Conservation Value Roads - Shire of York (1989)

ROAD	SECTION	CONSERVATION VALUE	LENGTH	WIDTH OF ROADSIDE	REMARKS
12 Talbot West Rd	from: Helena River Bridge to: Helena Road	n = 10 s = 10	4.4	1-5 m 1-5m	Passes through State Forest
	f: Helena Rd t: East Forest boundary	n = 10 s = 10	8.7	1-5 m 1-5 m	Passes through State Forest
13 Talbot West Rd	f: Talbot Rd t: Qualen Rd	n = 10 s = 10	7.5	1-5 m 1-5 m	Abuts Dale Hall reserve. Magnificent stand of wandoo and powderbark wandoo
14 Wambyn Rd	f: Shire N boundary t: Boyercutty Rd	e = 11 w = 11	5.7	5-20m 5-20m	Excellent quality mallee shrubland
	f: Boyercutty Rd t: Grt S Highway	e = 11 w = 11	4.5	5-20m 5-20m	Abuts St Ronan's NR and gravel reserve. Superb quality vegetation with exception of S 0.4km
15 Boyercutty Rd	f: Wambyn Rd t: 5.1km from Wambyn Rd	n = 11 s = 11	5.1	5-20m 5-20m	Excellent woodland very wide clearing for roadworks lowered overall value

ROAD	SECTION	CONSERVATION VALUE	LENGTH	WIDTH OF ROADSIDE	REMARKS
17 Berrybrow Rd	f: Grt S Highway t: Shire N boundary	e = 11 w = 11	10.2	5-20m 5-20m	Excellent woodland. Abuts State Forest and reserves. SEA at 0.8km from Grt S Hwy
25 Leonard Rd	f: 4.8km from York-Northam Rd t: 6.1km from York-Northam Rd	n = 9 s = 9	1.3	5-20m 5-20m	Very good shrubs inc Euc. macrocarpa, unusual elsewhere
43 Cameron Rd	f: 5.4km from Gold-fields Rd t: 5.9km from Gold-fields Rd	e = 10 w = 10	0.5	1-5 m 1-5 m	Good shrubs and mallee, inc Euc. albida. SEA at 5.5km from Gold-fields Rd
45 Helena Rd	f: 6.2km from Grt S Highway t: Catchment Rd	n = 10 s = 11	2.4	1-5 m 1-5 m	Good wandoo forest
	f: Catchment Rd t: Talbot West Rd	n = 10 s = 10	9.5	?	Passes through State Forest
50 Waterfall Rd	f: Mokine Rd t: 7.5km from Mokine Rd	n = 9 s = 9	7.5	1-5 m 1-5 m	Good woodland with York Gum and shrubs Attractive scenery
53 Lueld Rd	f: Talbot West Rd t: End of road	e/n = 11 w/s = 10	10.5	1-5 m 1-5 m	Dense trees and shrubs

Lueid Rd	t: End of road	w/s = 10		1-5 m	shrubs

ROAD	SECTION	CONSERVATION VALUE	LENGTH	WIDTH OF ROADSIDE	REMARKS
58 Duck Pool Rd	f: Mortlock River Bridge t: Shire N boundary	e = 7 w = 10	3.6	1-5 m ?	Uncleared land adjoining river. Good trees, shrubs and ground flora inc everlastings

APPENDIX 1

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

Eleven roads have at least one section of high conservation value (see Figure 7 for detail). These sections occupy 81.4km of roadside and are 14.5% of the roads surveyed in the Shire.

The greatest length of these roads are in the west of the Shire on laterite soil. Some pass through or close to the State Forest or reserves. Berrybrow, Wambyn and Boyercutty Roads are especially important as they are wide roadsides, and so, as long as they are not disturbed, they should be able to maintain their excellent plant populations for the forseeable future.

An isolated section of good shrub vegetation occurs on Lennard Road. It includes a very good stand of Eucalyptus macrocarpa which is unusual elsewhere in the S e and should not be damaged.

The stand of Eucalyptus albida along Cameron Road is similarly unusual and of great interest, but this roadside is only 20m wide, and very great care will have to be taken during roadworks not to damage the mallees, or the Declared Rare plant which occurs at the same site.

Waterfall Road is interesting as it is little used and, besides having interesting shrub vegetation, it has attractive scenery. Unless a very compelling reason is advanced, proposals to upgrade this road should be resisted.

Duck Pool Road is also little used, and upgrading would destroy its character. Consideration should be given to revegetation of the eastern roadside to trap weed seeds or fertilisers drifting in from the adjoining paddock. These would inevitably downgrade the excellent ground flora including everlastings and orchids which exist along the banks of the Mortlock River which forms the western roadside.

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:-

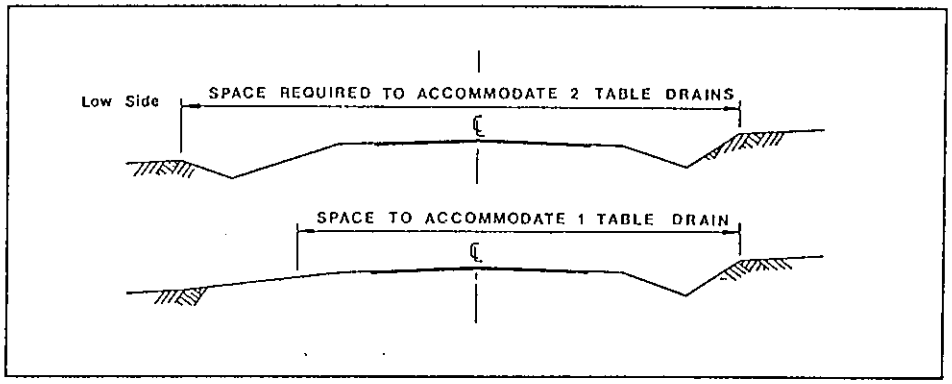
- downgrades the conservation value
- increases the fire threat)

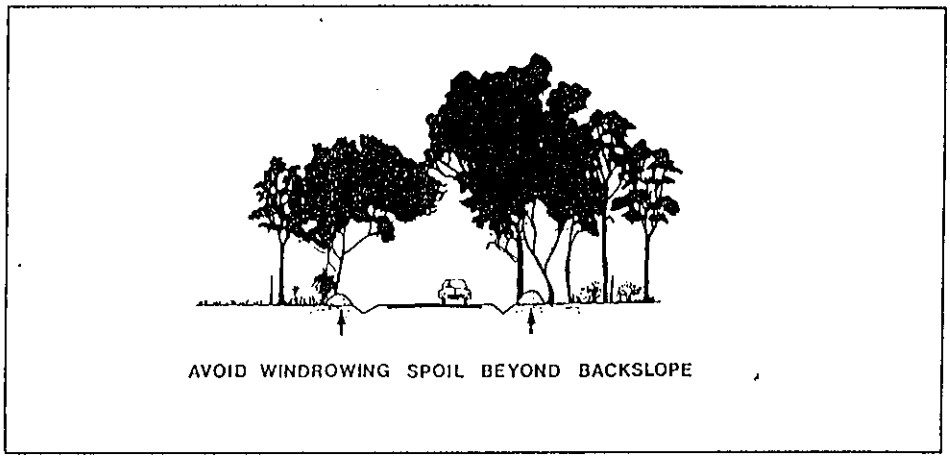
This can be done by:-

- 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.

Construction of a table drain on the lower side of the road should be avoided.





2. MEDIUM CONSERVATION VALUE ROADSIDES
Score 5-8

Most Shire roads fall in this category, 66.6% of those surveyed, with a length of 374.6km.

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.

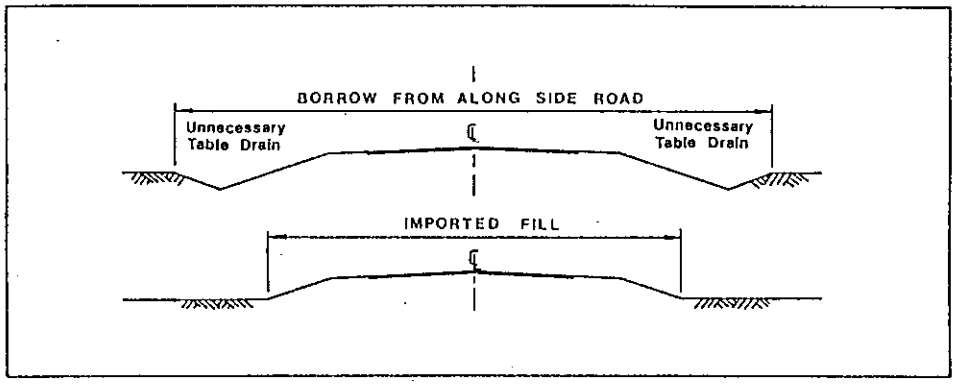
Guidelines For Achieving This Goal

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.

Import fill for embankment to avoid side borrow from alongside the road.



Do not turn road machinery at locations where roadside flora is well conserved.

3. LOW CONSERVATION VALUE ROADSIDES
Score 0-4

18.7% of rural roads, totalling 105.4km in length, have a low value for conservation.

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.

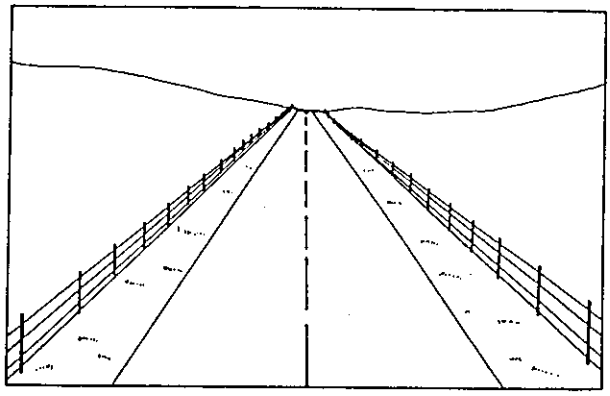
In some cases, the landholder has totally cleared the roadside when erecting a new fence, leaving only weeds or an occasional jam tree to regenerate.

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.



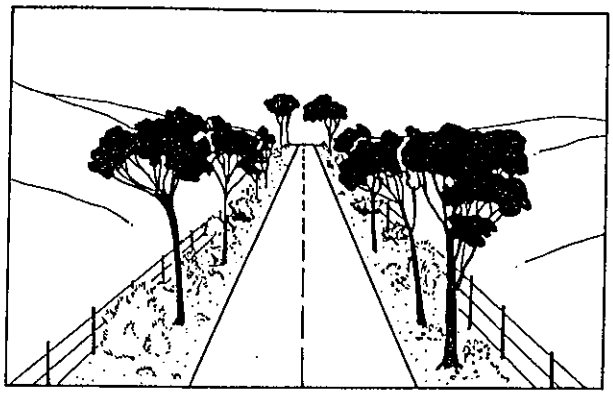
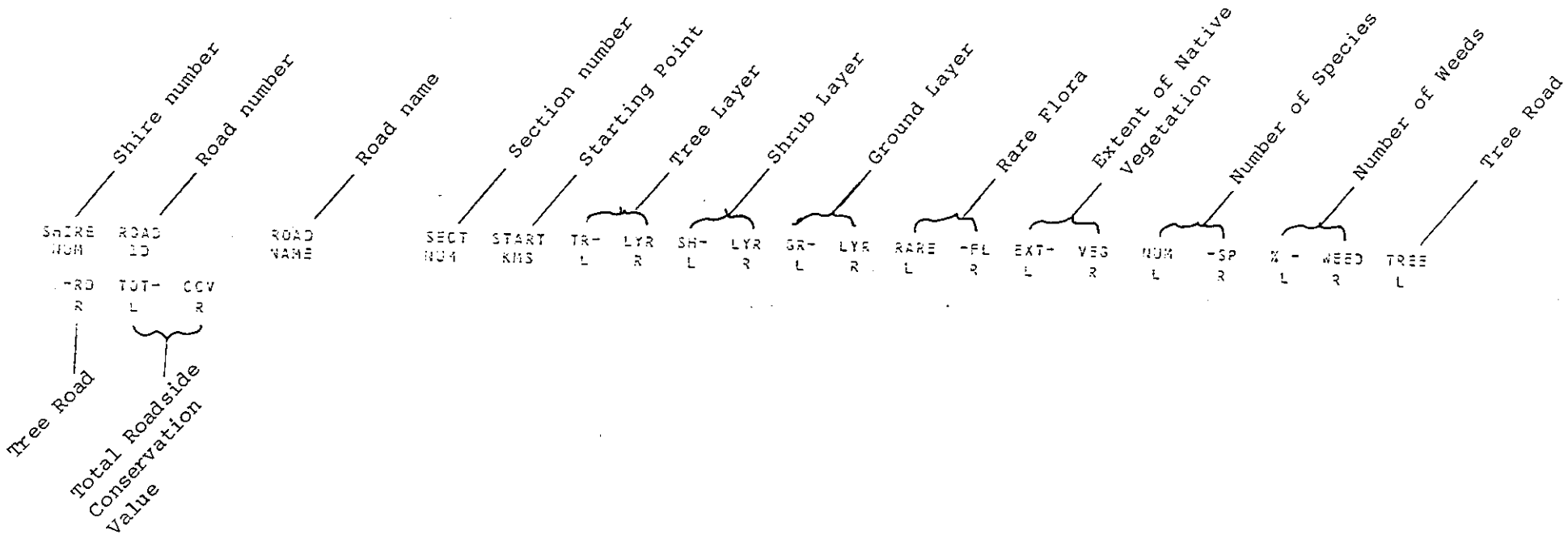


Figure 8 Summary of assessed conservation value



SHIRE NUM -RD R	ROAD ID TOT- L	ROAD NAME CDV R	SECT NUM	START KMS	TR- L	LYR R	SH- L	LYR R	GR- L	LYR R	RARE L	-FL R	EXT- L	VEG R	NUM L	-SP R	% - L	WEED R	TREE L
433	0002 7	7 HANNAVALE RD	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0003 8	TALBOT RD 8	01	0.0	T	T	S	S	G	G			20	20	6	6	20	20	
433	0004 4	SPENCERS BROOK-YORK 4	01	0.0	T	T							0	0	6	6	100	100	
433	0005 5	BURGES SIDING RD 5	01	0.0	T	T							0	0	6	6	100	100	
433	0006 7	CUELLINGTON RD 7	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0006 5	CUELLINGTON RD 5	02	7.9	T	T							0	0	5	6	20	20	
433	0007 6	GWAMBYGINE EAST RD 6	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0007 5	GWAMBYGINE EAST RD 5	02	2.7	T	T	S	S					20	20	6	6	20	20	
433	0008 8	GOODENANNING RD 8	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0009 5	TOP BEVERLEY-YORK RD 5	01	0.0	T	T							20	20	6	6	20	20	
433	0010 6	MOKINE RD 6	01	0.0	T	T							20	20	6	6	20	20	
433 Y	0010 6	MOKINE RD 6	02	2.5	T	T							20	20	6	6	20	20	Y
433	0010 3	MOKINE RD 3	03	10.0	T	T							0	0	6	6	80	80	
433	0010 8	MOKINE RD 8	04	14.5	T	T	S	S					20	20	20	20	20	20	
433	0011 6	OVENS RD 6	01	0.0	T	T							20	20	6	6	20	20	
433	0012 4	TALBOT WEST RD 4	01	0.0	T	T							0	0	0	0	100	100	

SHIRE NUM -RD A	ROAD ID TOT- L	COV R	ROAD NAME	SECT NUM	START KMS	TR- L	LYR R	SH- L	LYR R	GR- L	LYR R	RARE L	-EL R	EXT- L	VEG R	NUM L	-SP R	% - L	WEED R	TREE L
433	0010 10	10	TALBOT WEST RD	02	3.5	T	T	S	S	G	G			60	60	20	20	0	0	
433	0010 10	10	TALBOT WEST RD	03	7.9	T	T	S	S	G	G			60	60	20	20	0	0	
433	0010 7	7	TALBOT WEST RD	04	16.6	T	T	S	S					20	20	6	6	20	20	
433 Y	0010 10	10	TALBOT HALL RD	01	0.0	T	T	S	S					60	60	6	6	0	0	Y
433	0014 11	11	WAMBYN RD	01	0.0	T	T	S	S	G	G			60	60	20	20	0	0	
433	0014 11	11	WAMBYN RD	02	5.7	T	T	S	S	G	G			20	60	20	20	0	0	
433	0015 11	11	BOYERCUTTY RD	01	0.0	T	T	S	S	G	G			60	60	20	20	0	0	
433	0015 3	3	BOYERCUTTY RD	02	5.1	T	T							0	0	0	0	80	80	
433	0016 8	8	GREENHILLS SOUTH RD	01	0.0	T	T	S	S					20	20	0	0	20	20	
433	0017 11	11	BERRY GROW RD	01	0.0	T	T	S	S			Y	Y	60	60	20	20	0	0	
433	0019 5	5	QUALEN WEST RD	01	0.0	T	T							20	20	0	0	20	20	
433	0019 7	7	QUALEN WEST RD	02	5.7	T	T	S	S					20	20	0	0	20	20	
433	0019 6	6	QUALEN WEST RD	03	7.3	T	T							60	60	6	0	0	0	
433	0020 3	3	CUT HILL RD	01	0.0	T	T	S	S					20	20	6	0	20	20	
433	0021 2	2	SANDGATE RD	01	0.0	T	T							0	0	0	0	80	80	
433	0021 6	6	SANDGATE RD	02	2.2	T	T	S	S					20	20	6	0	20	20	

433	0021	SANDGATE RD	02	2.2	T	T	S	S					20	20	6	6	20	20			
	6	6																			

SHIRE NUM	ROAD ID	ROAD NAME	SECT NUM	START KMS	TR- L	LYR R	SH- L	LYR R	GR- L	LYR R	RARE L	-FL R	EXT- L	VEG R	NUM L	-SP R	% - L	WEED R	TREE L
-RD R	TOT- L	OLV R																	
433	0022	MACKIES SIDING RD	01	0.0	T	T							20	20	6	6	20	20	
	6	6																	
433	0023	SEES RD	01	0.0	T	T	S	S					20	20	6	6	20	20	Y
Y	7	7																	
433	0023	SEES RD	02	6.2	T	T	S	S					20	20	6	6	20	20	Y
Y	7	7																	
433	0024	GRASS VALLEY SOUTH R	01	0.0	T	T							0	0	6	6	100	100	Y
Y	4	4																	
433	0025	LENNARD RD	01	0.0	T	T	S	S					20	20	0	0	80	80	Y
Y	6	6																	
433	0025	LENNARD RD	02	4.8	T	T	S	S					80	80	6	6	20	20	Y
Y	9	9																	
433	0025	LENNARD RD	03	6.1	T	T	S	S					20	20	0	0	80	80	Y
Y	6	6																	
433	0026	BOGLING RD	01	0.0	T	T							20	20	6	6	20	20	Y
Y	6	6																	
433	0028	KNOTTS RD	01	0.0	T	T	S	S					20	20	6	6	20	20	
	7	7																	
433	0029	WARDING RD	01	0.0	T	T							20	20	0	0	20	20	
	4	4																	
433	0029	WARDING RD	02	2.1	T	T	S	S					80	80	6	6	20	20	
	8	8																	
433	0029	WARDING RD	03	4.8	T	T							20	20	6	6	20	20	
	6	6																	
433	0030	WALLABY RD	01	0.0	T	T							0	0	6	6	100	100	
	4	4																	
433	0031	LEEMING RD	01	3.0	T	T							20	20	6	6	20	20	Y
Y	7	7																	
433	0032	MT HARDEY RD	01	0.0	T	T							20	20	20	20	20	20	Y
Y	7	8																	
433	0033	STATION RD	01	0.0	T	T							20	20	6	6	20	20	Y
Y	6	6																	

SHIRE NUM	ROAD ID	ROAD NAME	SECT NUM	START KMS	TR- L	LYR R	SH- L	LYR R	GR- L	LYR R	RARE L	-PL R	EXT- L	VEG R	NUM L	-SP R	% - L	WEED R	TREE L
-RD K	TOT- L	GOV R																	
433	0034 8	TAYLOR RD 8	01	0.0	T	T	S	S					20	20	20	20	20	20	
433	0035 6	MACKIE RD 6	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0036 1	QUONAMINING RD 1	01	0.0									0	0	0	0	100	100	
433	0036 6	QUONAMINING RD 6	02	1.2	T	T	S	S					20	20	6	6	20	20	
433	0037 6	BADGIN RD 6	01	0.0	T	T	S	S			Y	Y	20	20	6	6	20	20	
433	0038 8	DUBBINE RD 8	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0039 7	ST JACKS RD 7	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0040 6	ALLEN RD 6	01	0.0	T	T							20	20	6	6	20	20	
433	0042 7	PICCADILLY RD 7	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0043 6	CAMERON RD 6	01	0.0	T	T	S	S			Y	Y	20	20	6	6	20	20	
433	0043 10	CAMERON RD 10	02	5.4	T	T	S	S	G	G	Y	Y	60	20	20	20	0	0	
433	0043 8	CAMERON RD 8	03	5.9	T	T	S	S					20	20	6	6	20	20	
433	0045 5	HELENA RD 5	01	0.0	T	T							20	20	6	6	80	80	
433	0045 11	HELENA RD 10	02	6.2	T	T			G	G			80	80	20	20	0	0	
433	0045 10	HELENA RD 10	03	8.6	T	T	S	S	G	G			80	80	20	20	0	0	
433	0046 3	HAMERSLEY SIDING RD 3	01	0.0	T	T							0	0	6	6	100	100	

														0	0	6	6	100	100		

USER VERGES 18/05/90 CALM ROAD VERGE VEGETATION SUMMARY REPORT BF1-RV-VEGSUM-R PAGE 5

SHIRE NUM	ROAD ID	ROAD NAME	SECT NUM	START KMS	TR-L	LYR R	SH-L	LYR R	GR-L	LYR R	RARE L	-FL R	EXT-L	VEG R	NUM L	-SP R	% - L	WEED R	TREE L
-RD R	TOT-L	CCV R																	
433 Y	0047 6	WILLIAMS RD 6	01	0.0	T	T							20	20	6	6	20	20	Y
433	0048 2	KARABINE RD 2	01	0.0									0	0	0	0	100	100	
433	0049 3	WILBERFORCE RD 3	01	0.0	T	T							0	0	0	0	100	100	
433	0050 9	WATERFALL RD 9	01	0.0	T	T	S	S					20	20	20	20	20	20	
433	0050 2	WATERFALL RD 2	02	7.5	T	T							0	0	0	0	100	100	
433	0051 6	ASHWORTH RD 6	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0056 3	YOUNG RD 3	01	0.0	T	T							0	0	6	6	100	100	
433	0058 6	DUCK POOL RD 6	01	0.0	T	T							20	20	6	6	20	20	
433	0058 10	DUCK POOL RD 7	02	0.8	T	T	S	S	G	G			20	20	20	6	0	20	
433	0059 7	WARDING DAM RD 7	01	0.0	T	T							20	20	6	6	20	20	
433	0059 2	WARDING DAM RD 2	02	1.0			S	S					0	0	0	0	100	100	
433	0061 5	HARDY RD 5	01	0.0	T	T	S	S					0	0	6	6	100	100	
433	0061 6	FLEA POOL RD 6	01	0.0	T	T							20	20	6	6	20	20	
433	0063 6	MOORE RD 6	01	0.0	T	T							20	20	6	6	20	20	
433 Y	0067 3	WRIGHTS RD 7	01	0.0	T	T							20	20	20	20	20	20	Y
433 Y	0069 6	MARWICK RD 6	01	0.0	T	T							20	20	6	6	20	20	Y

SHIRE NUM -RD R	ROAD ID TOT- L	CCV R	ROAD NAME	SECT NUM	START KMS	TR- L	LYR R	SH- L	LYR R	GR- L	LYR R	RARE L	-PL R	EXT- L	VEG R	NUM L	-SP R	% - L	WEED R	TREE L
433	0070 3	3	SEABROOK RD	01	0.0			S	S					0	0	6	0	100	100	
433	0073 8	8	KENNEDY RD	01	0.0	T	T	S	S					20	20	20	20	20	20	
433 Y	0074 0	7	MILLS RD	01	0.0	T	T	S	S					20	20	6	0	20	20	Y
433	0076 6	6	NARRALOGGAN RD	01	0.0	T	T							20	20	6	6	20	20	
433	0078 6	0	CORNER WELL RD	01	0.0	T	T							20	20	0	0	20	20	
433	0079 8	8	KEEDLES RD	01	6.8	T	T	S	S					20	20	6	0	20	20	
433	0081 3	6	RICKEYS SIDING RD	01	0.0	T	T	S	S					20	20	6	6	20	20	
433	0082 4	4	BUCKINGHAM RD	01	0.0	T	T							0	0	6	0	100	100	
433	0083 0	6	COLD HARBOUR RD	01	0.0	T	T							20	20	6	6	20	20	
433	0150 2	2	GREENHILLS RD	01	0.0									0	0	0	0	0	0	
433 !	0150 0	0	GREENHILLS RD	01	4.7	T	T					!	!	0	0	0	0	0	0	!
433	0150 4	4	GREENHILLS RD	02	4.7	T	T							20	20	0	0	100	100	
433 Y	0195 5	5	ARNOLD PARK RD	01	0.0	T	T							20	20	6	0	20	20	Y
433	0195 2	2	ARNOLD PARK RD	02	2.0	T	T							0	0	0	0	100	100	
433	0197 4	4	WHITE WELLS RD	01	0.0	T	T	S	S					0	0	6	6	100	100	

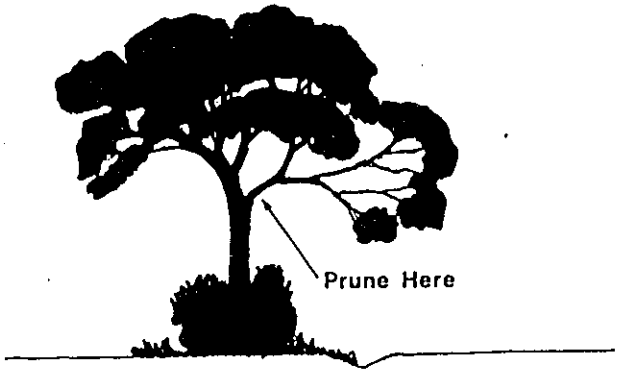
Number of records selected : 95

MANAGEMENT OF "TREE ROADS"

Since mature trees are so slow growing and hard to replace, care should be taken to preserve these avenues wherever possible.

- prune offending branches rather than remove the whole tree. Cut branches off close to limb or tree trunk.
- divert line of table drain to avoid disturbing tree roots.
- import fill to build up formation, rather than using side-borrow from roadside.
- if using herbicide for grass control on the road shoulders, do not use a soil residual tupe, as Salmon Gums are especially sensitive to these.
- encourage the adjoining landholder to plant tree belts on his property that will complement the roadside trees.

Prune offending branches rather than remove the whole tree. Cut branches off close to limb or tree trunk.



GUIDELINES FOR THE MANAGEMENT OF FLORA SITES

1. Protected Flora

All native flora is protected under the Wildlife Conservation Act, which is administered by the Department of Conservation and Land Management.

Local or State government may damage or destroy protected flora without the need for a licence, when this is an unavoidable consequence of constructing and maintaining roads - provided always that the works are executed in a reasonable manner. The same applies to service utilities using the roadside.

2. Endangered Flora

Some species have been officially declared to be rare. They may not be destroyed without the written permission of the Minister for Conservation and Land Management, even when the destruction results from normal road maintenance work. CALM will notify a Local Government Authority if there are rare plants on its roads. Roadside users (e.g. service authorities) therefore need to consult the road manager to ascertain whether rare flora is known to occur along a particular road reserve.

Known sites containing endangered flora should be clearly identified to avoid inadvertent destruction.

3. Confidentiality

The presence of rare plants should not be advertised so that deliberate exploitation does not occur. This principle may also apply to some other sites.

Marking Sites in the Field.

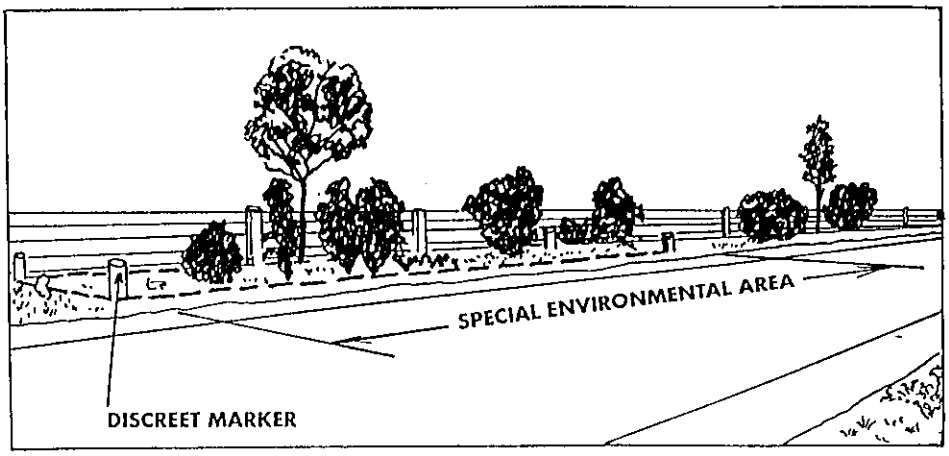


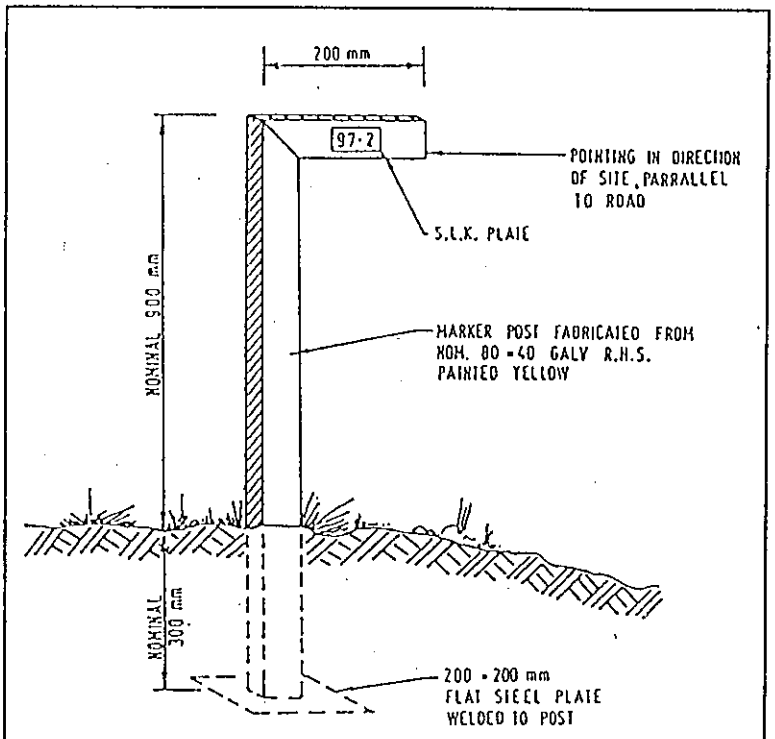
Figure 9
Special environmental area.

4. Marking Sites in the Field

4.1 The Main Roads Department has devised a system, as illustrated in Figures 9 and 10, to permanently mark special environmental areas. A register is kept to record site details for planning purposes, flora recognition and management requirements such as the appliation of herbicides and burning controls. This system has been endorsed by CALM; Westrail also complies with this standard. Local Government Authorities are encouraged to use the same system. Markers of a uniform shape and colour will make recognition easier for other authorities using road reserves.

A cheaper adaptation of the same design is used by the Shire of Victoria Plains. This is equally acceptable as a marker (see Figure 11).

4.2 When notified of a population needing marking, the Local Authority should contact the appropriate CALM Regional office for assistance with exact site location and correct positioning of marker posts.



1. Marker post can be fabricated from material salvaged from damaged sign supports. All posts should be painted yellow.

2. Data plate can be fabricated from aluminium plate with punched SLK numerals. The plate should be riveted to the carriageway side of the marker only.

Figure 10
MRD Special environmental markers

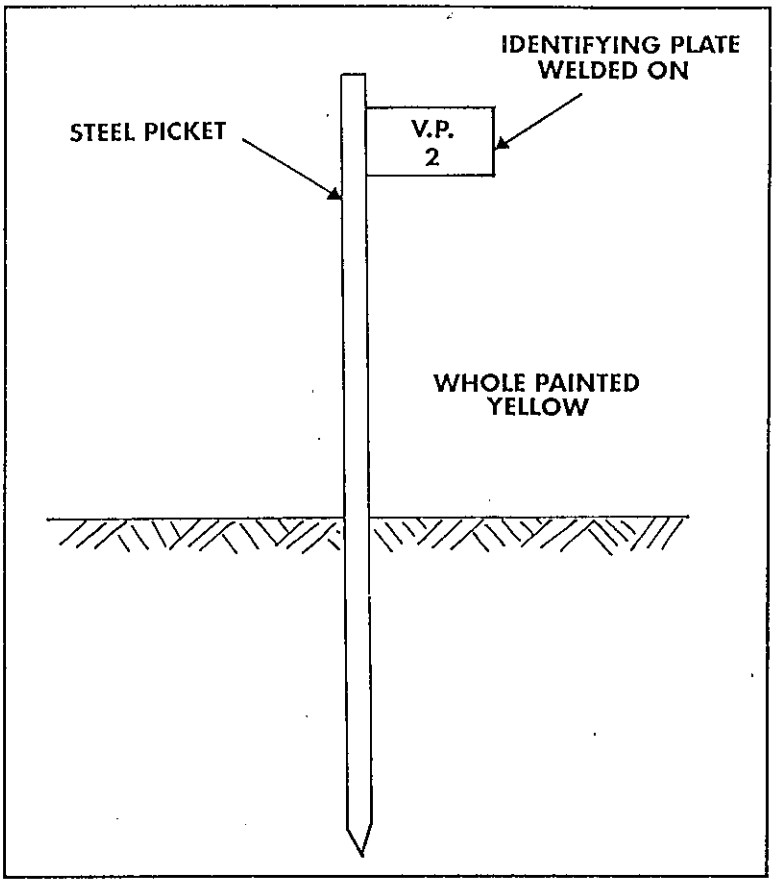


Figure 11
Shire special environmental site marker.

APPENDIX 2

CONSERVATION IN THE SHIRE OF YORK

A number of conservation reserves exist within the Shire of York (see Figure 9) but there are also many areas of remnant vegetation on roadsides and private land which altogether form a conservation network.

Management Plans have been prepared for the Nature Reserves (CALM, 1987) and these can be used as a guideline for the conservation management of other areas vested in the Shire, eg. the Golf Links reserve.

York Shire also falls within the boundaries of the Avon River Management Advisory Committee.

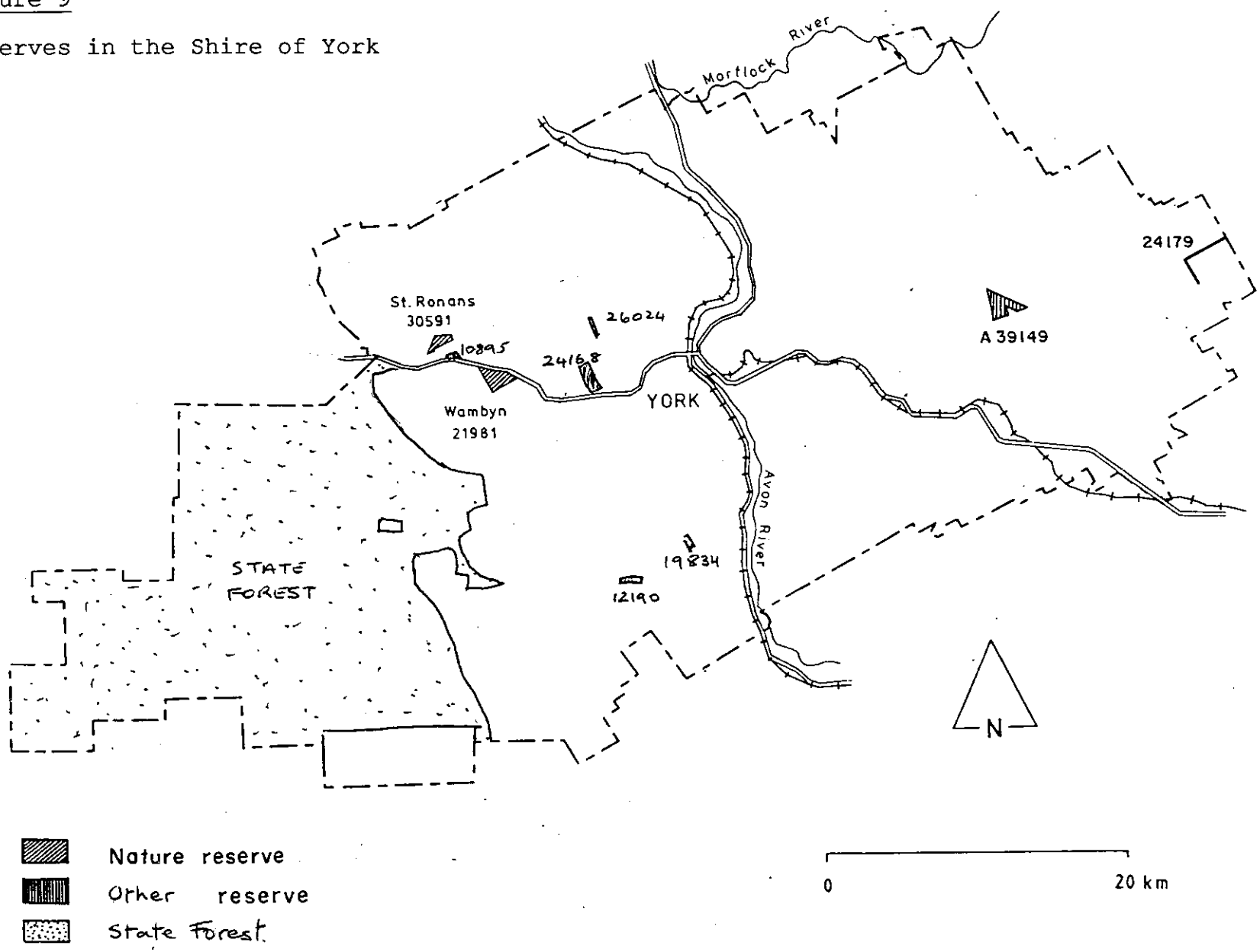
Together with maps showing the location of remnant vegetation, this study, which gives the location of important bush corridors, forms the basis for conservation planning with the Shire. It should now be possible to plan regeneration and replanting schemes to link the remnants and give in the Shire a 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.

Reference

Nature Reserves in the Shires of York and Northam
Management Plan No. 4, CALM, Perth, 1987.

Figure 9

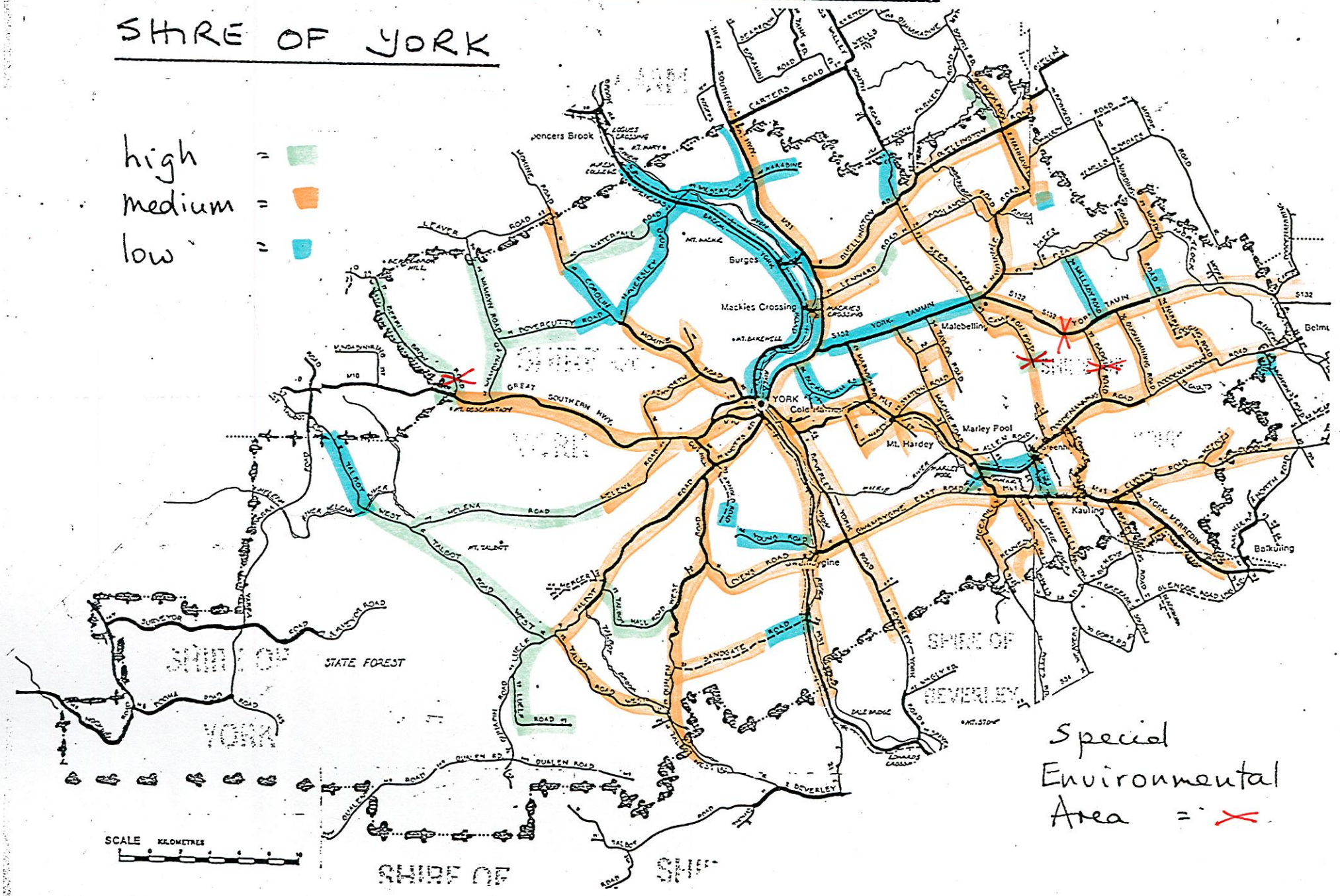
Reserves in the Shire of York



ROADSIDE CONSERVATION VALUE

SHIRE OF YORK

high =
medium =
low =



Special Environmental Area = X