

Roadside Conservation Committee



Cressida Wilson

Executive Officer



The RCC

- Terms of reference:
 - “... to coordinate and promote the conservation and effective management of rail and roadside vegetation for the benefit of the environment and the people of Western Australia”.
- Works with managers and uses of road and rail reserves to maintain and enhance their values



Organisations represented

- Main Roads
- CALM
- Dept. Environment
- Dept. Agriculture
- Alinta
- Testra
- Western Power
- FESA
- WestNet Rail
- Local Government
- Greening Australia
- Wildflower Society
- Conservation Council



Vegetation in road reserves

- Fauna
 - Flora
 - Fungi
 - Salinity
 - Shade and shelter
 - Amenity
 - Tourism
- } Pre European
Low disturbance
Connectivity

Shire	% Native vegetation remaining
Cunderdin	1.8%
Dowerin	4.3%
Goomalling	4.6%
Koorda	8.1%
Northam	22.1%
Wongan-Ballidu	5.2%
Wyalkatchem	4.9%



The Mapping Program

- What:**
- Community/volunteer survey
 - At least 80% of roadsides within a Shire
- Why:**
- Inventory of roadside conditions
 - Management tool for road managers
- How:**
- Vehicle-based survey
 - RCC assessment
 - Values mapped using GIS



What is recorded?

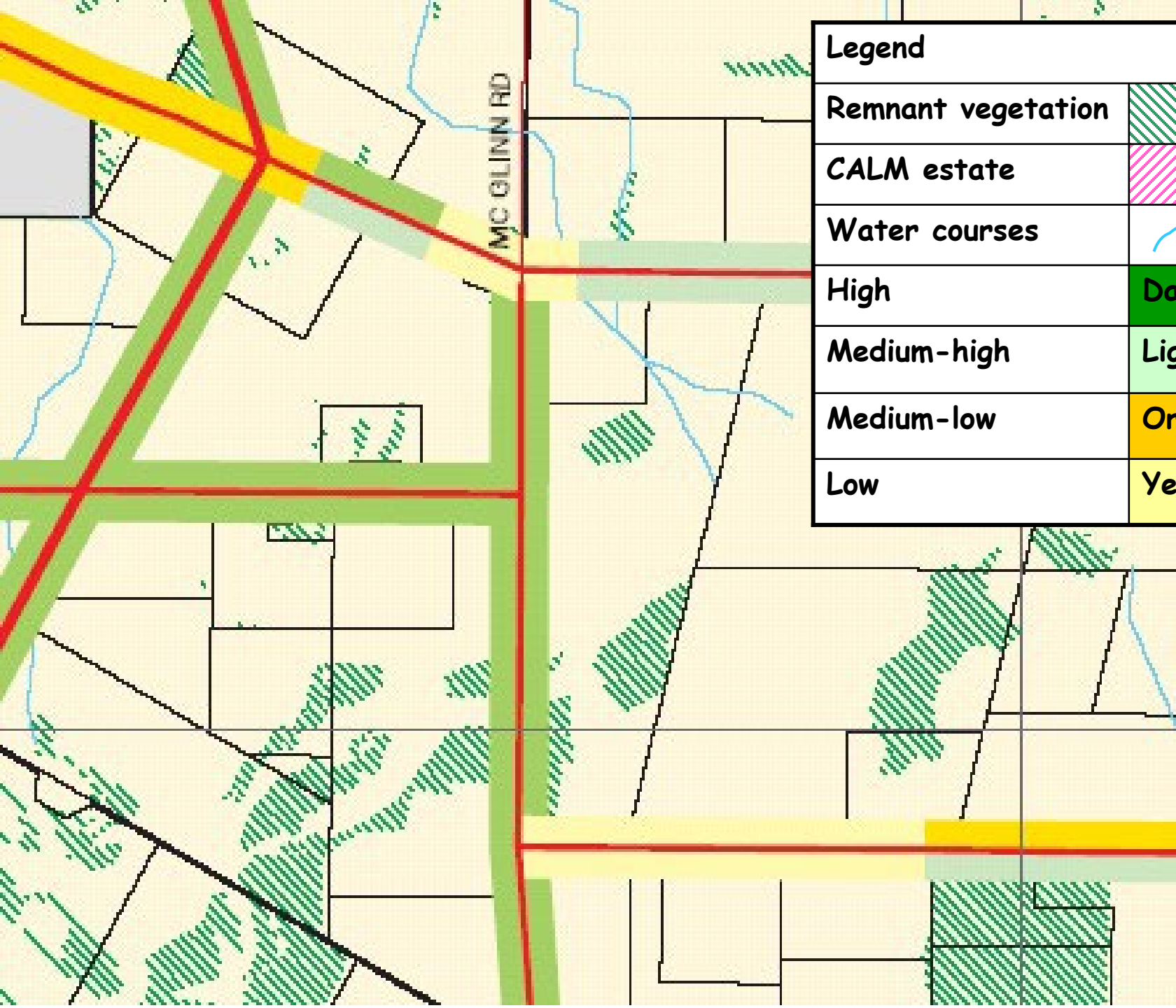
Good

- Native tree, shrub, and ground covers
- Lots of plant species
- Connections remnants
- Hollows in trees and logs

Bad

- Level of weeds >20%
- Narrow road reserve
- Utilities present





Legend

Remnant vegetation



CALM estate



Water courses



High

Dark Green

Medium-high

Light green

Medium-low

Orange

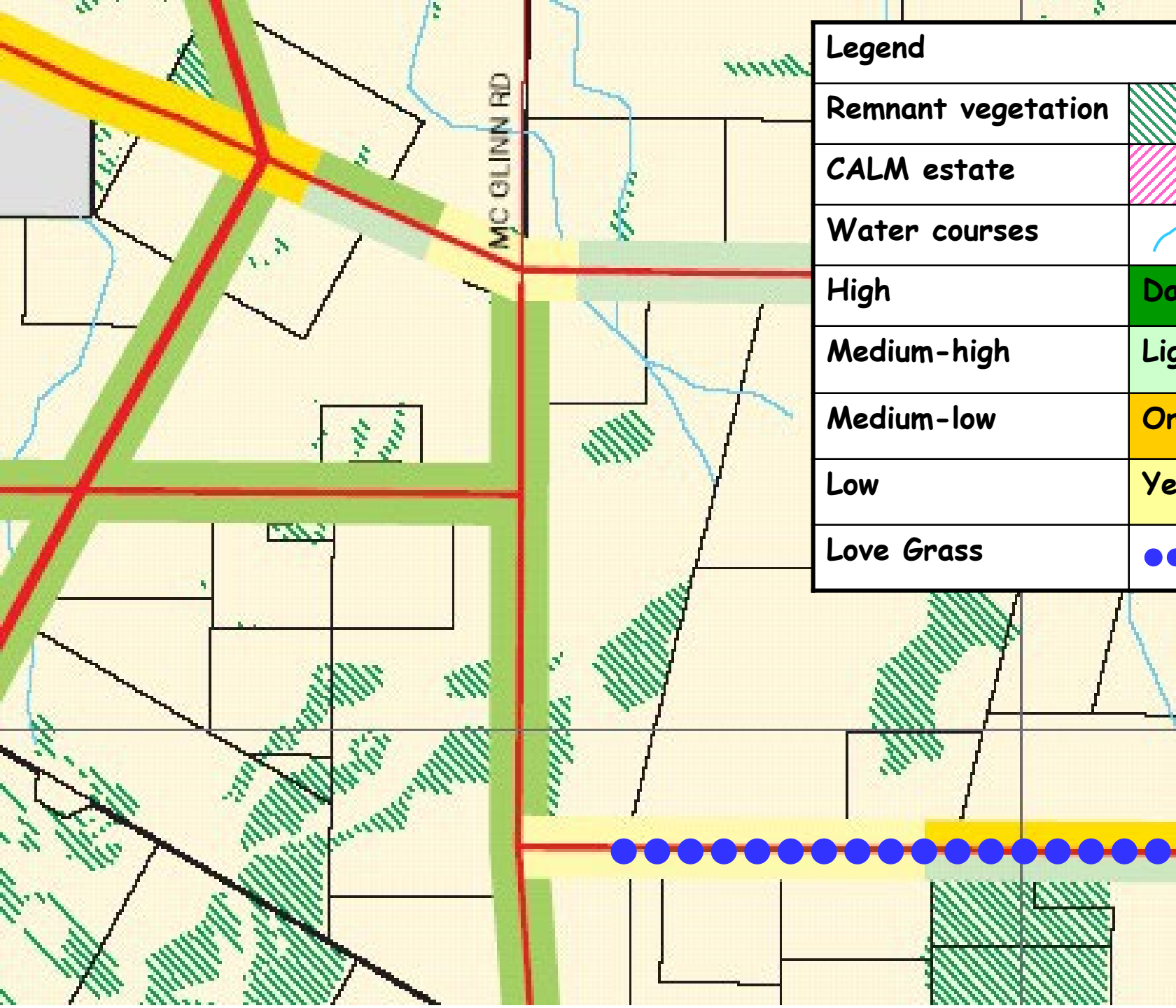
Low

Yellow

Weeds

- Can record up to 7 weeds
- Three categories:
 - <20 %
 - 20-80 %
 - >80 %
- Mostly weed understorey
- Produced on individual overlay sheets

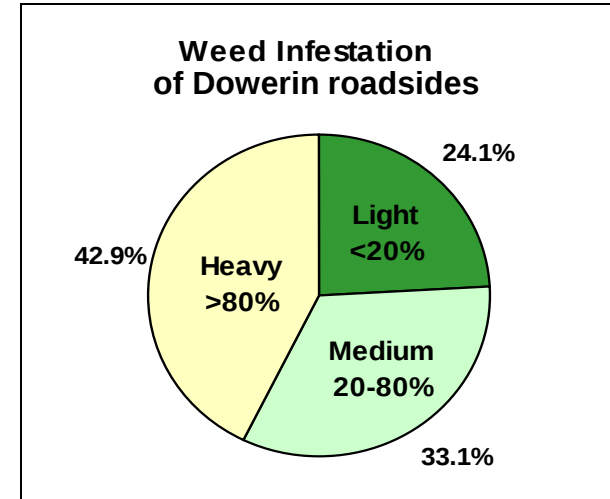


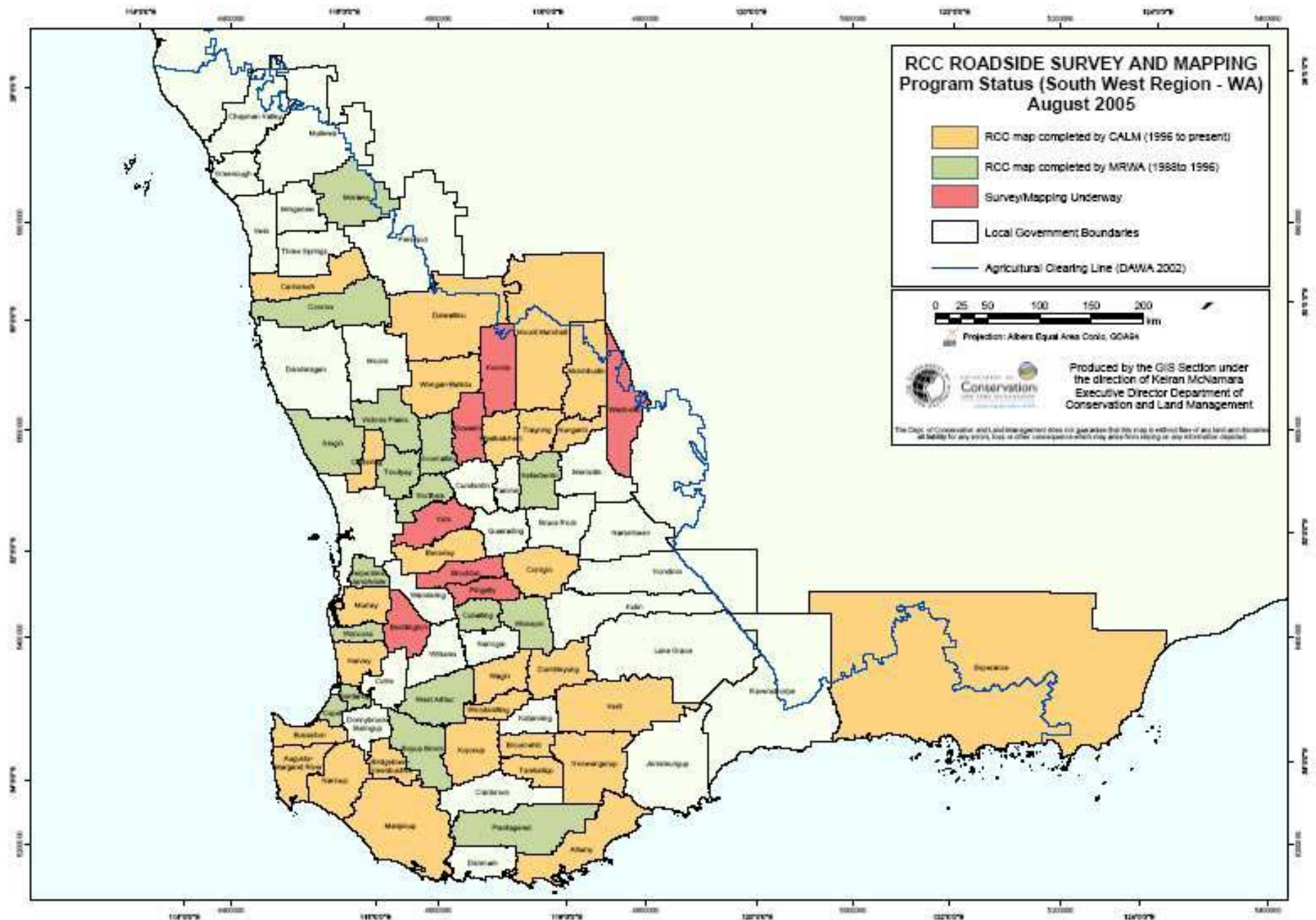


Legend	
Remnant vegetation	
CALM estate	
Water courses	
High	Dark Green
Medium-high	Light green
Medium-low	Orange
Low	Yellow
Love Grass	

What does this mean?

- Management tool
 - Kms of weeds
 - Basis for funding/budget
 - Strategic attack
 - Strategic choice
- Long term monitoring
 - Success of the program
 - Demonstrates aggressiveness





What this means for EWAN

- Only large scale mapping on roadsides
- Much of the SWLD done
- Strategic attack
- Statistics for applying for funding?
- ?



Contacting the RCC

Executive Officer

Cressida Wilson

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Mapping Officer

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17 Dick Perry Ave, Kensington 6983

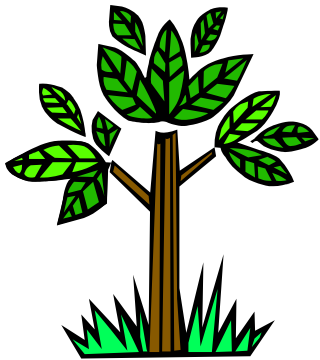
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THREATENED FLORA CONSERVATION



WILDLIFE BRANCH ROLES (flora)

- Flora Management

Flora licensing

- scientific
- hobby
- commercial



Threatened flora

- permits
- databases



Flora industry

- wildflowers
- seed
- sandalwood
- private property timber



THREATENED FLORA

Three levels of formal protection:

International – CITES (Convention on
International Trade in Endangered
Species of Wild Fauna and Flora)

Commonwealth – EPBC Act 1999

State – Wildlife Conservation Act 1950

Wildlife Conservation Act 1950

‘Protected Flora’ is all W.A. native flora in:

Spermatophyta	(flowering, conifers, cycads)
Pteridophyta	(ferns, fern allies)
Bryophyta	(mosses, liverworts)
Thallophyta	(algae, fungi, lichens)

‘To take’ flora includes both direct (gather, pluck, cut, destroy, dig up or remove) and indirect (to cause taking) means.

Wildlife Conservation Act

Section (S23F): 'Rare Flora'

is flora declared by the Minister to be

- likely to become extinct;
- is rare; or
- otherwise needs special protection

'Declared Rare Flora' = 'Threatened Flora'

Only applies to natural or recovery popns.

Listed as 'Extant' and 'Presumed Extinct'

THREATENED SPECIES SCIENTIFIC COMMITTEE (TSSC)

- Ministerially appointed
- Appointment by expertise (CALM, BPGA, Museum and university)
- meets at least annually
- recommends additions, deletions and rank
- recommends specific management actions

Recommendations endorsed by CALM Corp Exec & Cons Commission of WA, and referred to Minister for approval

CALM Policy 9 – Conservation of Threatened Flora in the Wild

To be replaced with the draft Policy 9 -
Conserving Threatened Species and
Ecological Communities, that incorporates
other existing Policies

A species [of flora] may be recommended for
declaration as threatened flora by the Western
Australian Threatened Species Scientific
Committee if it satisfies the following criteria:

(i) The species occurs naturally in Western Australia, is well defined and represented by a voucher specimen in a State or National Herbarium. While it need not necessarily be formally described under conventions in the International Code of Botanical Nomenclature, such a description is preferred and should be undertaken as soon as possible after listing on the schedule.

(ii) It has been established that the species in the wild:

a) is extinct, ie, there is no reasonable doubt that the last individual has died, or

b) meets criteria for listing as threatened in the current version of *IUCN Red List Categories Prepared by the IUCN Species Survival Commission*.

(iii) In the case of hybrids, or suspected hybrids, the following criteria must also be satisfied:

(a) they must be a distinct entity, that is, the progeny are consistent within the agreed taxonomic limits for that taxon group;

(b) they must be capable of self perpetuation, that is, not reliant on the parent stock for replacement; and

(c) they must be the product of a natural event, that is, both parents are naturally occurring and cross fertilisation was by natural means.

Wildlife Conservation Act 1950

Wildlife Conservation (Rare Flora) Notice 2004

Made by the Minister for the Environment under section 23F(2) of the Act.

1. Citation

This notice may be cited as the *Wildlife Conservation (Rare Flora) Notice 2004*.

2. Interpretation

In this notice —

“extant” means known to be living in a wild state;

“protected flora” means any flora belonging to the classes of flora declared by the Minister under section 6 of the Act to be protected flora by notice published in the *Gazette* 9 October 1987, at p. 3855;

“taxon” includes any taxon that is described by a genus name and any other name or description.

Note: The plural form of “taxon” is “taxa”.

3. Rare flora

Subject to clause 4, protected flora —

- (a) specified in Schedule 1, being taxa that are extant and considered likely to become extinct or rare and therefore in need of special protection; and
- (b) specified in Schedule 2, being taxa that are presumed to be extinct in the wild and therefore in need of special protection,

are declared to be rare flora for the purposes of section 23F of the Act throughout the State.

4. Application

Clause 3 does not apply to those plants of a taxon of protected flora specified in Schedule 1 or 2 that have been planted for any purpose other than such plants that have been planted for the purpose of conservation of that taxon and in accordance with approval given by the Executive Director.

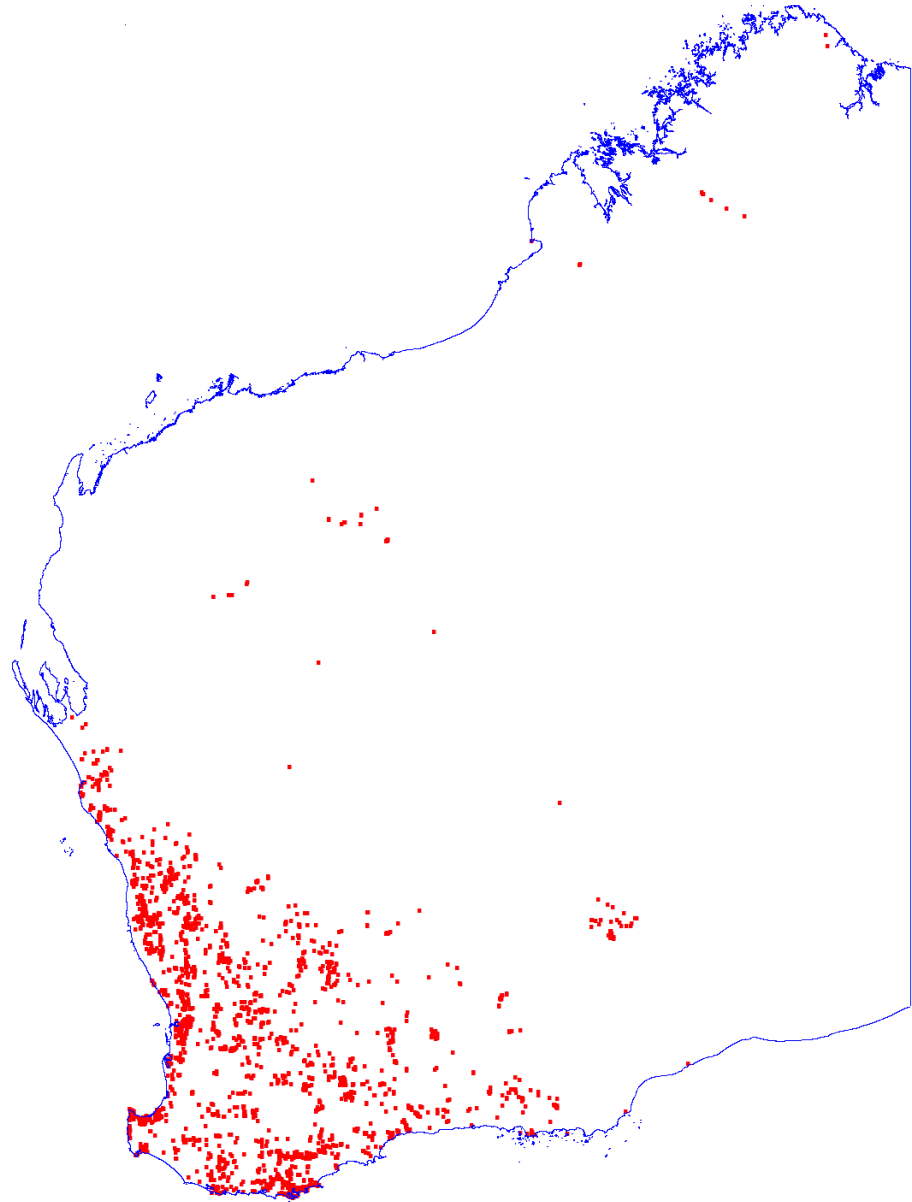
5. Revocation

The *Wildlife Conservation (Rare Flora) Notice 2003* is revoked.

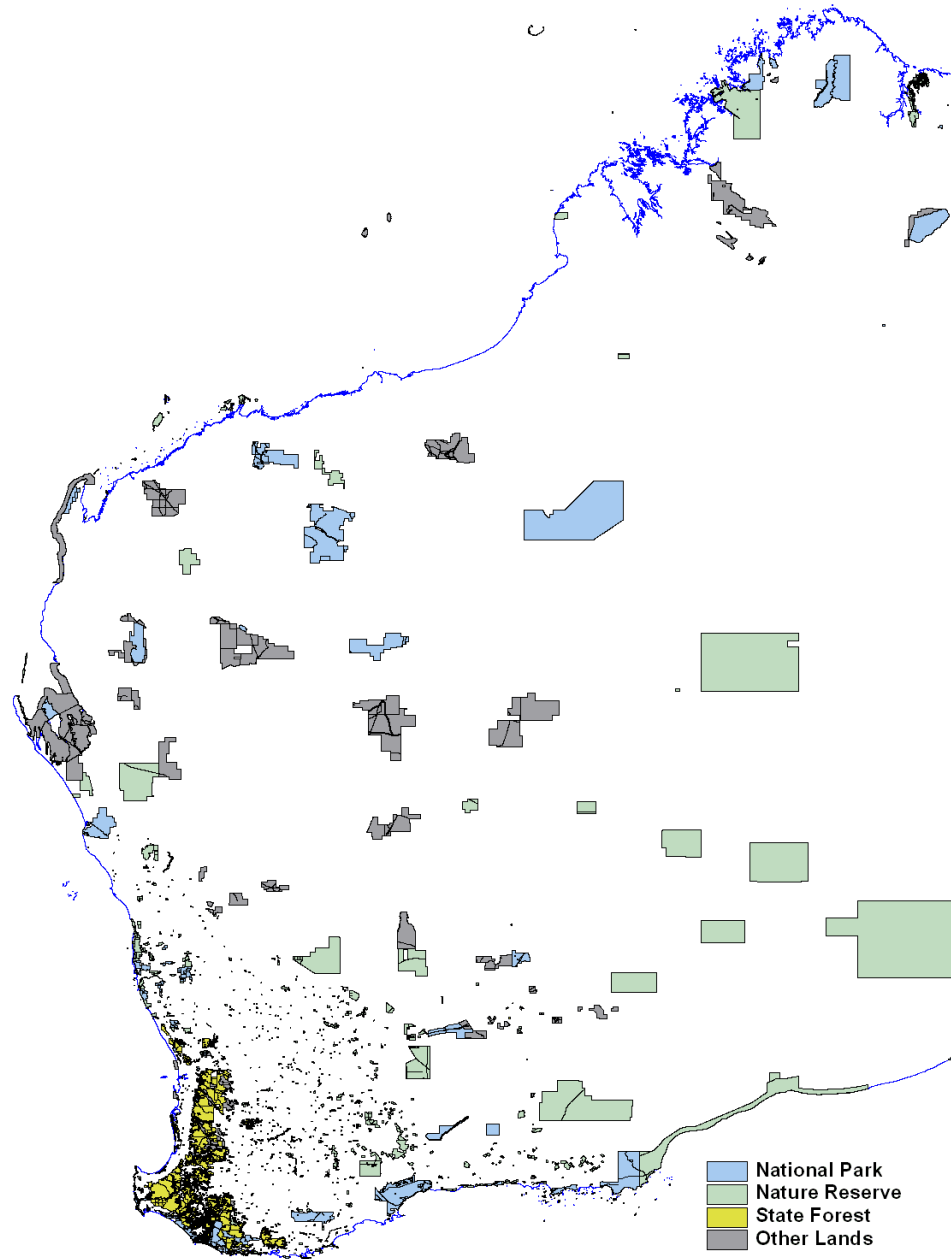
DECLARED RARE FLORA IN W. AUST

- 362 extant taxa (8/2/05)
- 30% of Aust Threatened Flora
- 6.8% of World Threatened Flora

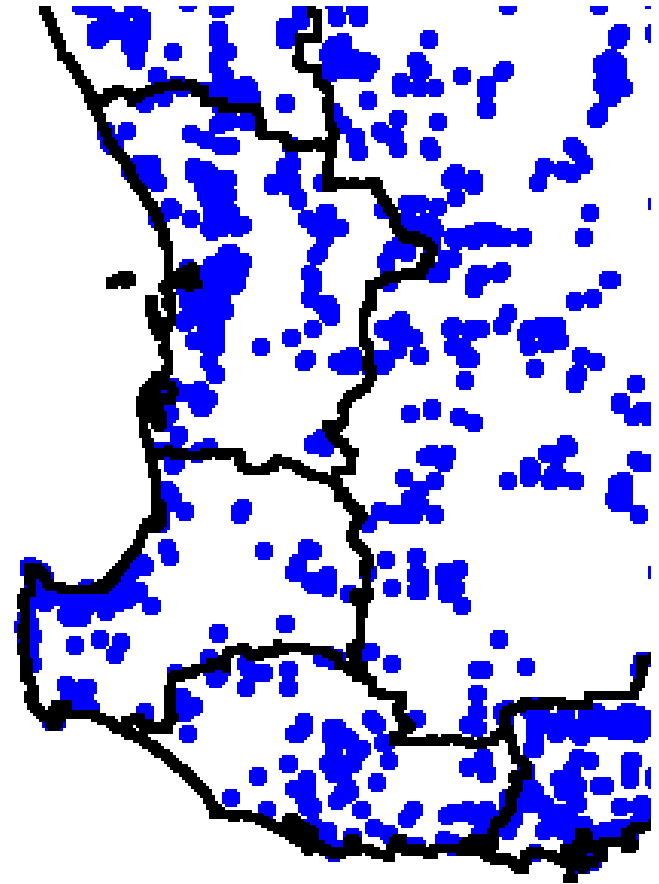
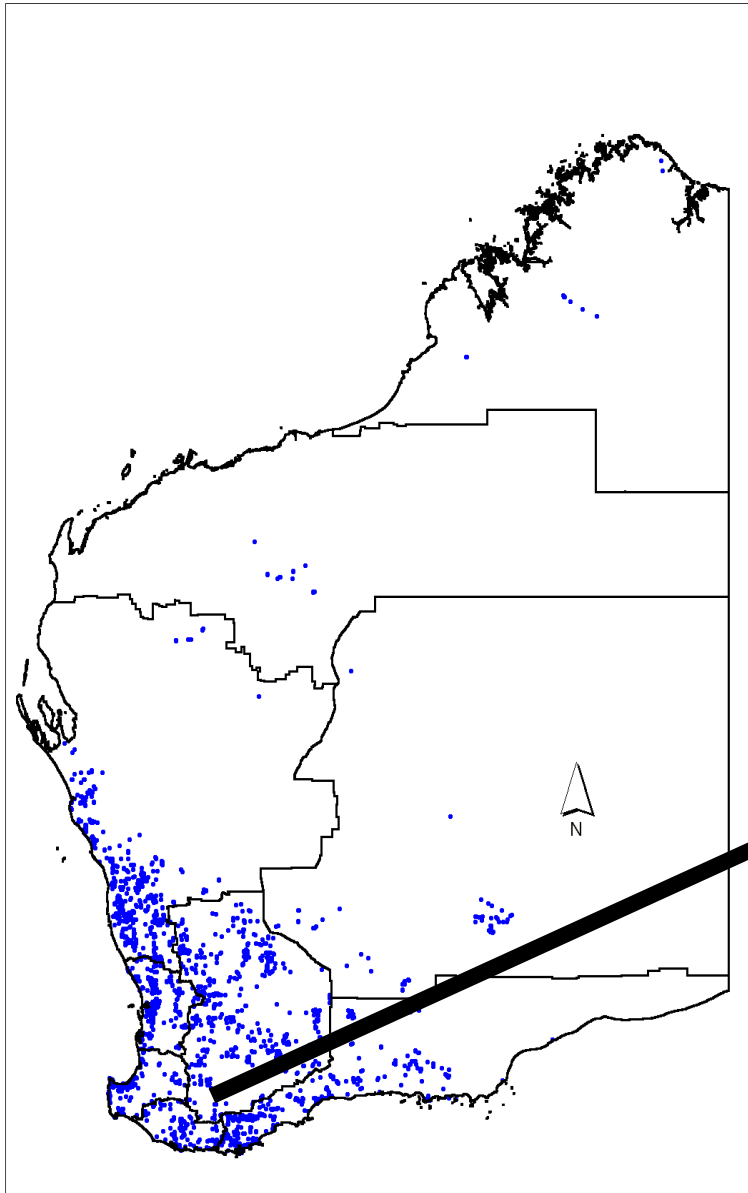
Distribution of Declared Rare Flora in WA



Lands managed by DCLM



Declared Rare Flora CALM Regional Boundaries



Declared Rare Flora, 2001 by Tenure

TENURE	% POPS	% PLANTS	Av. POPN. SIZE (467)
Conservation Reserves	27.5	44.9	763
State Forest	4.3	1.5	159
Local Government	24.3	12.0	230
Main Roads	4.8	1.1	111
Railway Reserves	3.0	0.4	61
Other Vested Crown Land	3.3	2.5	354
Unvested Crown Land	11.9	28.2	1106
Private	20.0	9.5	222

F00
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Chief Executive Officer
Shire of
PO Box
WA 6

DECLARED RARE FLORA -

I wish to advise that a population of the above species of rare Western Australian flora is located , at GPS coordinates 3° 1' 4" S and 11° 1' 4" E (GDA94).

A description of the rare flora and a map showing its approximate location are enclosed for your information. Should you require assistance in the future to identify the plants, please contact the District Conservation Officer at on (08) 9 to arrange a joint onsite inspection.

Western Australia's flora is world-renowned for its richness and uniqueness, and constitutes a significant part of our State's natural heritage. Some 12,500 plant species are known from Western Australia, the majority of which are unique to this State. Many of these species are also either rare or threatened with becoming extinct, as a consequence of the great floral diversity and past land uses. Management of these rare flora populations is thus required to preserve this important part of our heritage.

The Wildlife Conservation Act sets out requirements for the protection of rare flora. Essentially the requirements provide that rare flora shall not be taken by any person (including an employee of the Crown) without the consent of the Minister for the Environment. An extract from the Act is enclosed.

I would be grateful if you would arrange your road maintenance operations so that the area of rare flora will not be disturbed or destroyed. If you wish to discuss the management of this population of rare flora, I would be pleased if you would contact my District Office.

Main Roads Western Australia have informed Local Authorities and Public Service Utilities of a system of registration and field marking of environmentally significant areas, i.e. "Special Environmental Areas". It would be appreciated if your Shire consider protecting these sites through the adoption of a similar registration/field marking system. Further details could be obtained direct from the Main Roads Department.

The locations of rare flora populations are kept confidential to assist in their conservation. I would therefore appreciate you maintaining this confidentiality unless a disclosure assists in preserving the population, such as when a contractor is operating nearby.

This Department is endeavouring to protect our State's rare flora, and your assistance to help conserve this population would be appreciated.

.....
for Keiran McNamara
EXECUTIVE DIRECTOR

5 May, 2005

DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Extract from *WILDLIFE CONSERVATION ACT, 1950*

“to take” in relation to any flora includes to gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora, or to cause or permit the same to be done by any means.

Section 9.

(1) The provisions of this Act relating to flora bind the Crown.

Section 23F.

(1) In this section “rare flora” means flora for the time being declared to be rare flora for the purposes of this section.

(2) Where the Minister is of the opinion that any class or description of protected flora is likely to become extinct or is rare or otherwise in need of special protection, he may, by notice published in the *Government Gazette* declare that class or description of flora to be rare flora for the purposes of this section throughout the State.

(3) The Minister may vary or revoke a notice published under subsection (2) of this section by subsequent notice or notices published in the *Government Gazette*.

(4) A person shall not, whether or not he is:

- (a) the holder of a licence issued under this Act to take protected flora;
- (b) the owner or occupier of private land on which rare flora exists; or
- (c) authorised by the owner or occupier of land on which rare flora exists;

take any rare flora unless -

- (d) where he is not the holder of a licence issued under this Act, he first obtains the consent thereto in writing of the Minister;
- (e) where he is the holder of a licence issued under this Act, he first obtains the further consent thereto in writing of the Minister.

(6) A person who takes any rare flora contrary to the provisions of this section is liable on conviction to a penalty not exceeding ten thousand dollars (\$10 000).

(7) Where an owner or occupier of private land who has been refused consent to take rare flora on that land satisfies the Minister that he will suffer loss or use or enjoyment of the land by reason of that refusal, the Minister shall inform the Treasurer in writing accordingly and the owner or occupier shall be paid compensation for that loss at such rate or rates per annum as -

- (a) is agreed between the owner or occupier and the Treasurer;
- (b) in default of agreement, is determined by a valuer appointed by agreement between the Treasurer and the owner or occupier, or in default of agreement on such an appointment, by a valuer appointed by the Minister,

for such period, not exceeding five years, as the loss continues.

(8) Where compensation has been paid under subsection (7) of this section for a period of five years in respect of any particular land, the Minister shall not refuse an application by the owner or occupier of that land to take rare flora on that part of the land for the loss of use or enjoyment of which compensation has been so paid.

(9) Notwithstanding that compensation has been paid under subsection (7) of this section whether for a period of five years or for a lesser period, for the loss of use or enjoyment of any land, that land may at any time be taken by the Minister administering the *Land Administration Act, 1997* under and subject to Part 9 of the *Land Administration Act, 1997* for any of the purposes of this Act.

Declared Rare Flora marker



Declared Rare Flora marker



DECLARED RARE FLORA

Ministerial Permission to 'Take'

Application Process for Permit to Take :

1. Wildlife Branch
2. Director Nature Conservation
3. Minister for the Environment

Binding on the Crown

ISSUES REGARDING APPLICATIONS TO TAKE

Timing

- flowering period
- seeders/reshooters
- annuals/orchids

Frequency

- seeders

Intensity

- patchiness
- % of population
- local/regional representation

- Conservation Status
- critically endangered
 - recovery plans

PRIORITY FLORA

The need for further survey of poorly known taxa is prioritised into three categories depending on the perceived urgency for determining the conservation status of those taxa, as indicated by the apparent degree of threat to the taxa based on the current information.

1 – 3: Poorly known taxa

4: Rare but not threatened

Priority One - Poorly known Taxa

Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

Priority Two - Poorly Known Taxa

Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

Priority Three - Poorly Known Taxa

Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey.

Priority Four - Rare Taxa

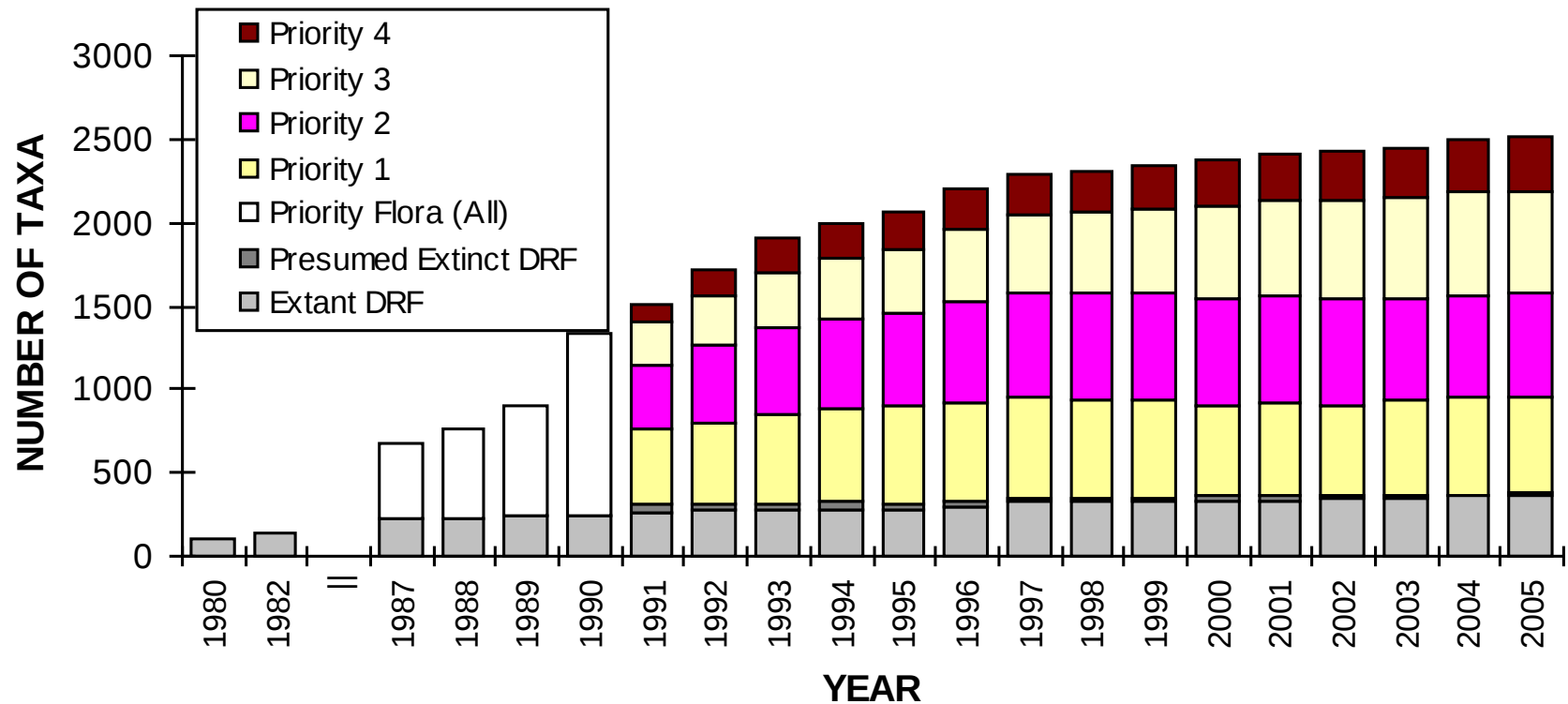
Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.

SUMMARY OF PLANT TAXA WITH PRIORITY FOR CONSERVATION BY CALM ADMINISTRATIVE REGIONS

19/7/2004

	DECLARED RARE FLORA		PRIORITY CODES				TOTAL NO. OF TAXA
REGION	R	X	1	2	3	4	
Kimberley	5	0	49	41	35	5	135
Pilbara	2	0	39	34	53	7	135
Goldfields	11	0	85	42	55	21	214
Midwest	109	1	191	162	226	73	762
Swan	55	0	34	52	84	73	298
South West	46	1	22	32	60	46	207
Warren	19	0	15	54	51	32	171
Wheatbelt	114	5	105	135	162	81	602
South Coast	87	5	104	187	173	134	690
Unknown		3	2	-	-	-	5
STATE*	357	15	578	618	609	319	2496

NUMBER OF DECLARED RARE (DRF) AND PRIORITY FLORA TAXA



Legislation in Road Reserves



Roadside Conservation Committee



Waiver

The advice given in this presentation on Legislation pertaining to roadsides is believed to be correct, however the Roadside Conservation Committee accepts no responsibility for advice given should it prove to be incorrect



Origins of Western Australian Law

- Adversarial law based on the English system
- Consists of international law, common law, subsidiary legislation, policies and administrative guidelines
- Interrelation of Aboriginal law with English based Australian law

All of these areas of law contribute to the legal framework embracing clearing and taking native vegetation in WA



Legislation

- Legislation relating to roadsides is:
 - complex
 - varied
- It includes:
 - Common law
 - Agriculture & Related Resources Protection Act 1976
 - Aboriginal Heritage Act 1972
 - Heritage of Western Australia 1990
 - Main Roads Act 1930
 - Bushfires Act 1954
 - Conservation and Land Management Act 1984
 - Wildlife Conservation Act 1950
 - Environmental Protection and Biodiversity Conservation Act 1990
 - Environmental Protection (Clearing of Native Vegetation) Regulations 2004
 - Soils and Land Conservation Act 1945
 - Town Planning and Development Act 1928
 - Local Government Act 1995
 - Energy Operators (Powers) Act 1979
 -etc



Common Law

- Applies to everyone (including the Crown) unless expressly excluded by an Act of Parliament
- Is often referred to as judge-made law
- Is generally made through the absence of written law, such that a court will determine a matter by looking at the established principles of
 - Common law
 - Custom
 - Tradition
 - Modern convention



Agriculture & Related Resources Protection Act 1976

“To eradicate or control the spread of noxious species of fauna and flora”

- Animals and plants may be declared to require control under this Act
- DEC or DAFWA shall control declared plants and declared animals on land under the control of the Crown
- Local government shall control declared plants and animals on land which is under its control eg. road reserves



Aboriginal Heritage Act 1972

“To make provision for the preservation on behalf of the community of places and objects customarily used by or traditional to the original inhabitants of Australia or their descendants, or associated therewith, and for other purposes incidental thereto”

Road managers must:

- Check if there are any Aboriginal sites within proposed road works and the associated works area
 - Register of Aboriginal Sites
 - With local Aboriginal people

It has the potential to impact road maintenance and construction operations, especially in rural areas.



Heritage of Western Australia Act 1990

“To provide for, and encourage, the conservation of places which have significance to the cultural heritage in the State, to establish the Heritage Council of Western Australia, and for related purposes”.

Road managers must:

- Check if there are any European sites within proposed road works and the associated works area prior to realignment operations
 - Register of Heritage Sites
 - The National Trust
 - Local records to ascertain whether places have historic significance



Main Roads Act 1930

The Main Roads Act 1930 Section 15 part 3a vests all vegetation, both living and dead, on roads under the control of the Commissioner of Main Roads.

15A. (1) No person shall cut, break, bark, root up or otherwise damage, destroy or remove the whole or any part of any timber, tree, sapling, shrub, undergrowth, or wildflower in or upon any highway or main road without the prior consent in writing of the Commissioner except when such action is taken to remove a hazard.



Bush Fires Act 1954

- Firebreaks not to be burned or cleared without the managing authority's permission
- There are two circumstance in which this could be done:
 - Road reserve can be burnt if crops are at risk from fire
 - For the purpose of preventing the occurrence or spread of fire



Conservation & Land Management Act 1984

“To make better provision for the use, protection and management of certain public lands and waters and the flora and fauna thereof, to establish authorities to be responsible therefore, and for incidental or connected purposes”.

- Minister for Environment and the Department of Environment and Conservation (DEC) administers the Act
- DEC controls the commercial harvesting of native flora and fauna in Western Australia from both Crown and private lands



Wildlife Conservation Act 1950

This is the primary statute protecting fauna and native vegetation on Crown land (which includes all public roads)

For the purposes of the Act:

Fauna means:

- Any animal native to any part of Australia
- Any animal that migrates to Australia
- Includes eggs, larvae, skin, fur, plumage and carcass

Flora means:

- Any plant, including wildflower, palm, shrub, tree, fern, creeper or vine, which is native to Western Australia
- Includes any part of flora and all seeds and spores

Under this Act, protected flora on Crown land is deemed to be the property of the Crown, until legally **taken**.



Wildlife Conservation Act 1950

To **take** fauna includes:

to kill, capture, disturb or molest any fauna by any means or to use any method whatsoever to hunt or kill any fauna whether this results in killing or capturing any fauna or not; and also includes every attempt to take fauna and every act of assistance to another person to take fauna and derivatives and inflections have corresponding meaning

To **take** flora includes:

to gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora or to cause or permit the same to be done by any means



Wildlife Conservation Act 1950

Flora and Fauna protection laws and the Crown:

- The fauna protection provisions of this Act do not bind the Crown
- Local government is bound by the fauna provisions of this Act because it is not part of the Crown
- In contrast to the fauna provisions, the flora provisions of this Act bind everyone, including the Crown

BUT!

- Under section 23B, flora can be taken if a person is acting under a licence or statutory power
 - Local government can take what flora they need to in order to undertake their statutory responsibilities
 - This does NOT extend to DRF



The Environmental Protection and Biodiversity Conservation Act 1999

Commonwealth legislation

The EPBC Act promotes the the conservation of biodiversity through:

- The identification of and preparation of threat abatement plans for key threatening processes
- Creation and management of protected areas
- Identifying and monitoring biodiversity, and by the preparation of bioregional plans

The EPBC Act regulates the assessment and approval of activities:

- Which have a significant effect on matters of national environmental significance
- By Commonwealth government agencies anywhere in the world
- By any person on Commonwealth land



The Environmental Protection and Biodiversity Conservation Act 1999

Matters of National Environmental Significance are:

- World Heritage properties
- National Heritage places
- Ramsar wetlands
- Nationally listed threatened species and ecological communities
- Migratory species
- Activities relating to nuclear energy
- The Commonwealth marine environment



Environmental Protection (Clearing of Native Vegetation) Regulations 2004



A strategy for the new process

- To regulate clearing under the Environmental Protection Act
- To deter illegal clearing by increasing penalties
- Extensive illegal clearing will be considered as an environmental harm offence
- To provide a more equitable assessment process
- To encourage sustainability



Definition of Clearing

- (a) the killing or destruction of;
- (b) the removal of;
- (c) the severing or ringbarking of trunks or stems of; or
- (d) the doing of any other substantial damage to;

some or all of the native vegetation in an area,
and includes:

- draining or flooding of land
- burning of vegetation
- grazing by stock
- or any other act or activity, that causes - (a), (c) or (d)



Definition of Native Vegetation

- Native vegetation is defined as:
 - Indigenous aquatic or terrestrial vegetation
 - Including dead vegetation
- This does not include vegetation in a plantation
 - i.e. vegetation intentionally sown, planted or propagated



How do the Regulations operate?

Clearing native vegetation is prohibited unless:

- Clearing is exempt
- A permit has been granted



What are the exemptions?

There are 2 classes of exemptions:

- Clearing required by law under a specific Act
 - E.g. Energy Operators (Powers) Act 1979 Section 54
- Regulations exempting clearing for a specific purpose
 - E.g. Road maintenance work



Exemptions for Urban Activities

- Bush Fires Act 1954
 - Clearing for erection of a lawful building
 - Clearing within 20 metres of a residence
- Town Planning & Development Act 1928
 - Clearing for fire prevention (i.e. Fire breaks)
- Local Government Act 1995 Schedule 3.1
- Energy Operators (Powers) Act 1979 Section 54
 - Removal of vegetation that endangers a power supply



Agricultural/ Pastoral Exemptions

- Pastoral Leases (Land Administration Act 1997)
 - Grazing of native vegetation by stock, as approved by the lease
- Erection and maintenance of a fence line (1.5m) or cutting of fence posts (4 tonnes)
- Establishment or maintenance of an access track (5m, walking track 1m)
- Construction of a firebreak (5m)
- Harvesting domestic firewood (4 tonnes)



Re-growth Maintenance

- Clearing of re-growth is exempt where:
 - the land on which the vegetation is situated was used for cultivation, pasture or forestry 5 years immediately before clearing occurs
 - the clearance is necessary to maintain the land for continued cultivation, pasture or forestry
 - the vegetation consists only of plants that have grown or re-grown within the preceding 5 years



Exemptions for Roads

- Maintenance:
 - Vegetation that has previously legally been cleared for maintenance works can continue to be cleared for maintenance (Schedule 2)
- ~~• Widening and realignments:
 - ~~– NOT EXEMPT~~~~



Schedule 2

- Clearing for:
 - Crossovers, sightlines, roadside furniture, lateral clearance areas
 - Maintenance of the infrastructurecan continue to be cleared if previously legally cleared
- Previously cleared = within the last 10 years to width and height previously cleared
- Anything outside this requires a permit
 - New crossover, extend sightlines, the odd tree



Environmentally Sensitive Areas

- Exemptions do not apply in ESAs
 - Fence line clearing
- An ESA is not an ESA in the maintenance areas of roads

BUT!

- Other legislation must still be adhered to
 - E.g. the Shire must still obtain a permit to take DRF where DRF occurs



Exemptions and ESAs

Fence line



Key:

DRF

Road maintenance work

Permit to take DRF
required

Fence line clearing

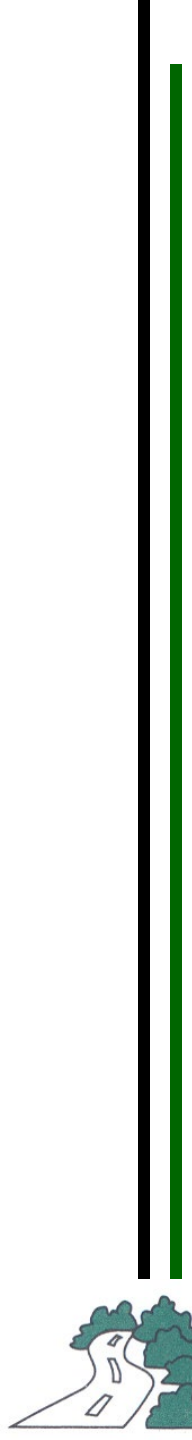
Permit to clear required



Assessment Principles

- Applications will be assessed for effects on:
 - biodiversity
 - neighboring or other local native vegetation areas
 - land and water resources, i.e. land degradation
 - associated watercourses or wetlands
 - surface or underground water sources, including water tables and salinity





Proposal requiring clearing
of native vegetation

Provide basic information
to DEC for clearing permit

Desktop Review

Initial Assessment and site visit

Request for further information

Decision

Possible Appeal

Application Rejected

Application
Approved



Types of permits

- Area permit
 - Issued for clearing a specific area of land
 - Valid for 2 years
- Purpose permit
 - Issued for a program of clearing for a specified purpose
 - Valid for specified period



Decision

- Director General of DEC has the authority to issue a permit, with binding conditions
- Information will be provided on why a permit was refused
- The decision may appeal to the Minister for the Environment, through the Office of the Appeals Convener



Audit & Enforcement

- Clearing of native vegetation is monitored with satellite imagery and aerial photography
- Persons undertaking unauthorised clearing can receive a maximum \$250 000 fine or 3 years jail
- A body corporate responsible for unauthorised clearing could receive a maximum \$500 000 fine



For more information...

- Call the main DEC, NVC, office on 9219 8702
- Talk to Paul West about the Main Roads purpose permit
- Visit the website at:

www.dec.wa.gov.au

And follow the links through Environment to Native
Vegetation Protection



Summary

- Highly complex
- Control weeds and pests
- Apply for a purpose permit for clearing
- Check for Aboriginal and European history
- Check for declared and protected flora and fauna
- *Ask questions*



The Value of Roadside Vegetation



Roadside Conservation Committee

The Roads of Australia

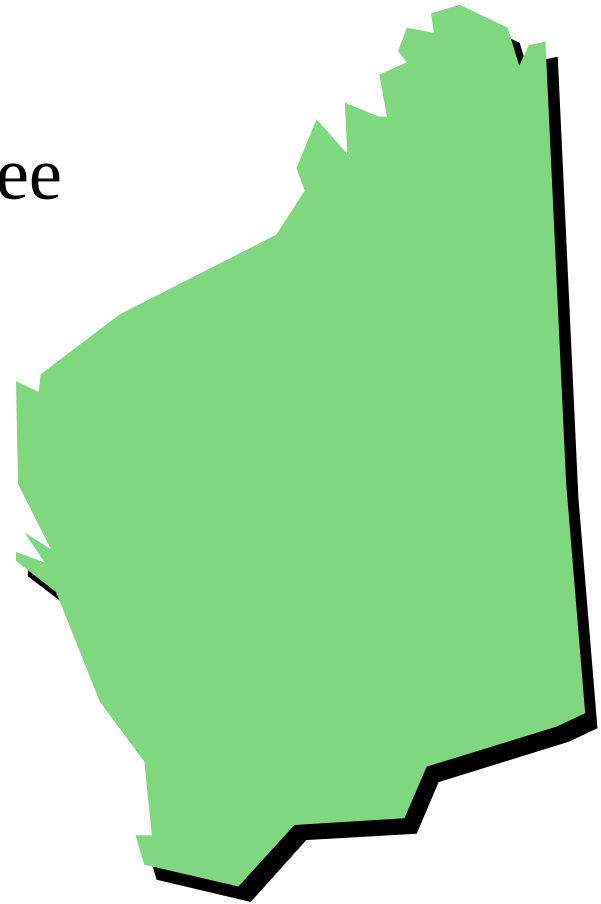


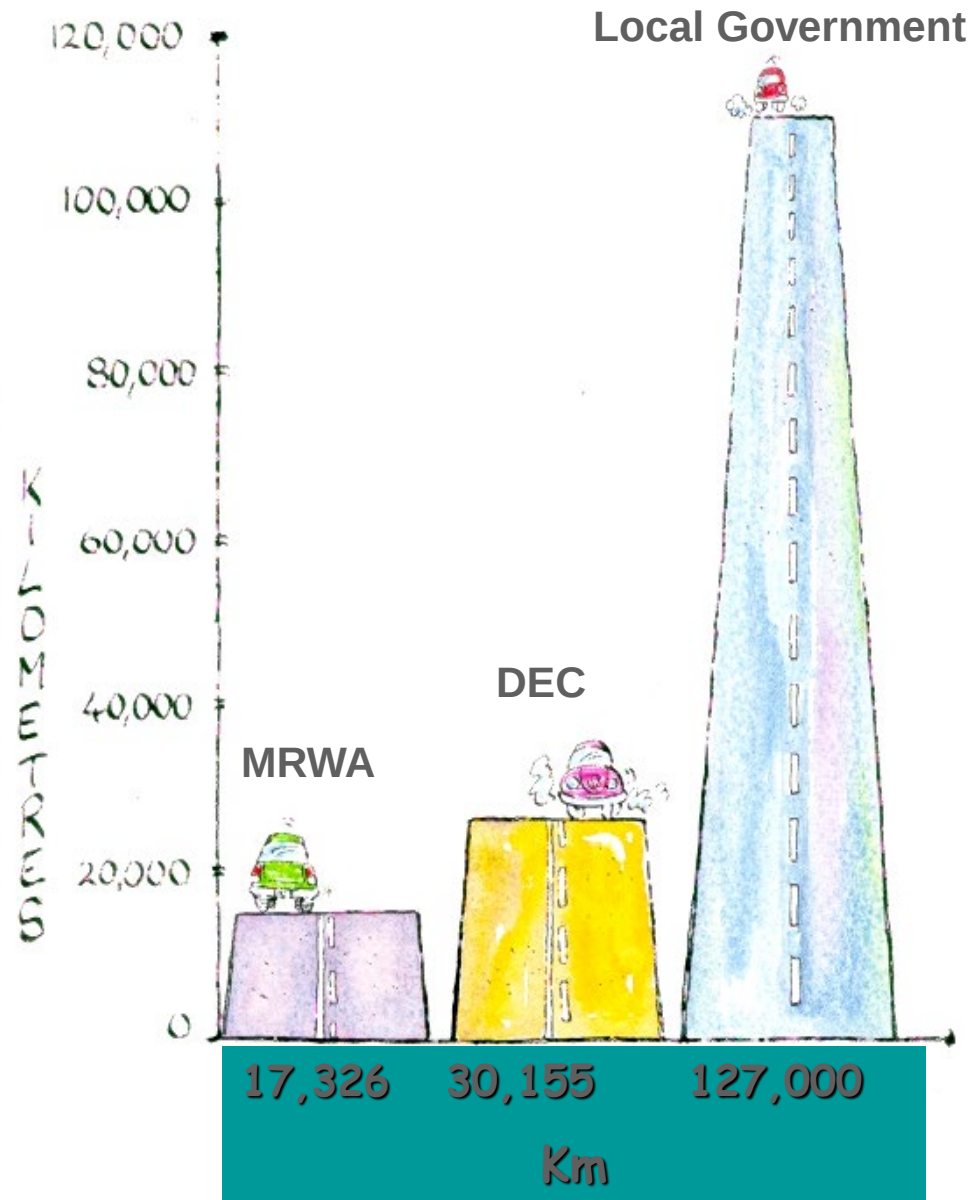
40 laps!



The Roads of Australia

- 19 % located in WA
- Management shared by three main groups...





Roadside Values

What are they?



Some people see....

- Feral animals
- Fire
- Weeds
- Unsightly
- Safety



Positive Views of Roadside Values

1. Environmental Values
2. Landcare Values
3. Cultural Values
4. Aesthetic Values



1. Environmental Values

➤ Flora and Fauna



1. Environmental Values continued

➤ Flora and Fauna

–Wildlife habitat

–DRF



Declared Rare Flora Conservation

- More than 378 species of flora declared rare
- Over 200 have at least one roadside population (53%)
- 3 species are known only from roadsides



Banksia cuneata



Shire	% Native Vegetation
Carnamah	38.9
Coorow	38.8
Irwin	47.9
Mingenew	6.6
Morowa	19.4
Perenjori	8.4
Three Springs	19.7

Vegetation types represented by less than 30% = ecologically endangered

National Objectives and Targets for Biodiversity Conservation 2001-2005 (Environment Australia)

* Keep in mind coastal and pastoral country



1. Environmental Values continued

Flora and Fauna

- Wildlife habitat
- DRF
- Corridors



1. Environmental Values continued

- Flora and Fauna
- Remnant Vegetation
- Biodiversity
- Revegetation
- Scientific/Education



2. Landcare Values

- Stock shelter
- Crop shelter
- Erosion
- Salinity



Roadside Vegetation and Salinity

- The effect of salinity is not restricted to agriculture - it is also having a serious effect on rural townsites and the rural road network
- National Land and Resources Audit (2002) warned that Australia wide
 - 19,800 km of roads
 - 1,600 km of railways, and
 - 306 townsare all at high risk from dryland salinity



The Effect Of Salinity On The Road Network

- More than 3,000km of WA roads are being degraded by the effects of rising water tables/salinity
- The annual cost of repairing Western Australian roads in the year 2000 was \$505 m and this will have risen by an extra \$91 m by 2020
- Shire of Dumbleyung:
 - 4.3% moderate salt damage (20-80%)
 - 5.2% major salt damage (>80%)



3. Cultural Values

- Indigenous sites
- European Historical areas



4. Aesthetic Values

➤ Tourism



➤ Tourism

Spending by international visitors who have listed wildflower viewing as a reason for visiting WA.



Country	\$ in Millions Spent
1 UK	133
2 Indonesia	112
3 Singapore	112
4 New Zealand	72
5 Malaysia	70
6 Japan	69
7 Germany	46
8 USA	41



T o u r i s m

Morawa *Wildflower Drives*



Carallum tenuiflorum

Roadside Conservation Committee



P.O. Box 100, Morawa, Western Australia 6708

5th Annual **WATTLE WEEK FESTIVAL**

Shire of Dalwallinu
WESTERN AUSTRALIA

Saturday 11th—18th September 1999



4. Aesthetic Values continued

➤ Tourism

➤ Scenic

➤ Beauty





What sort
of
roadside
do YOU
want ?



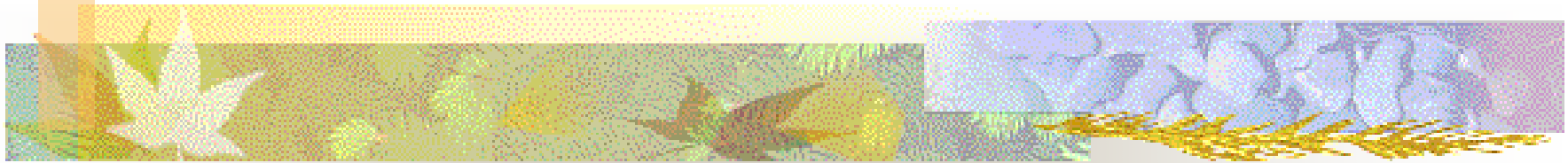
THIS



or THIS ?



Roadside Conservation Committee



Cressida Wilson
Executive Officer

Roadside Conservation Committee





Overview

- Roadside vegetation values
- Weeds and their management
- Revegetation
- Mapping roadside conservation values
- RCC services



The RCC

- Representatives from
 - Local government
 - Utility service providers
 - Community conservation groups
 - Government departments
- Terms of reference:
 - “... to co ordinate and promote the conservation and effective management of rail and roadside vegetation for the benefit of the environment and the people of Western Australia”.

Roadside Vegetation Values



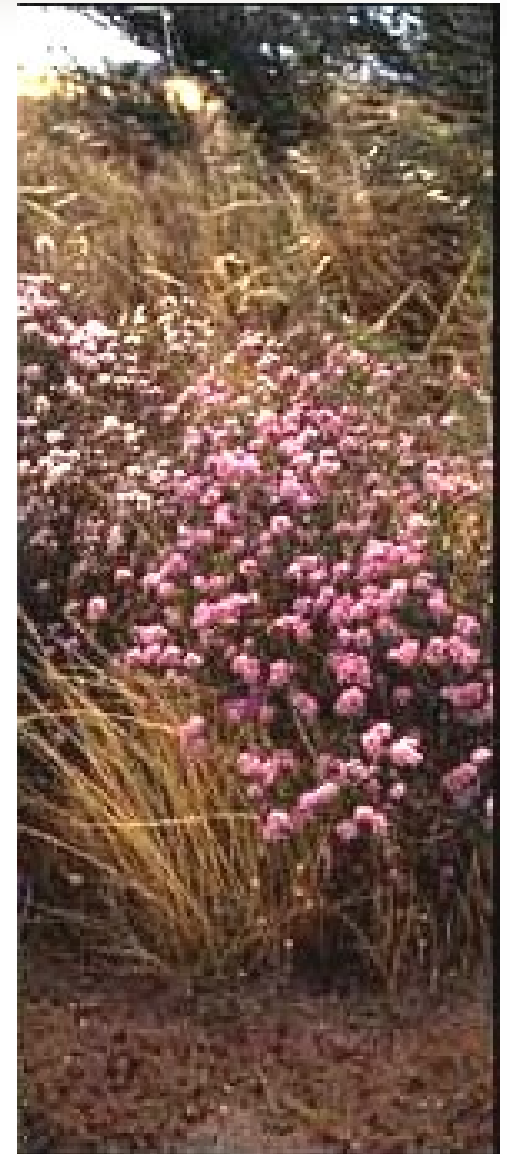
Roadside Conservation Committee





Values

- Landscape services
- Tourism
- Flora
- Fauna



Landscape services

- Ground water tables
 - Salinity
- Wind
- Crop and stock shelter and shade
- Beauty



VS



Tourism

- Wildflower state
- Cultural heritage
- \$\$ spent by tourists
 - Incentives to stay longer
- Repeat visits and recommendations





Flora and Fauna

- Remaining remnant
- Habitat
 - Declared Rare Flora
 - Threatened ecological communities
- Corridors
- Snapshot of
pre-Europeans



Weeds and their management



Roadside Conservation Committee



What is a weed?

A plant that:

- Reduces productivity
- Reduces ecosystem function
- Impacts socially

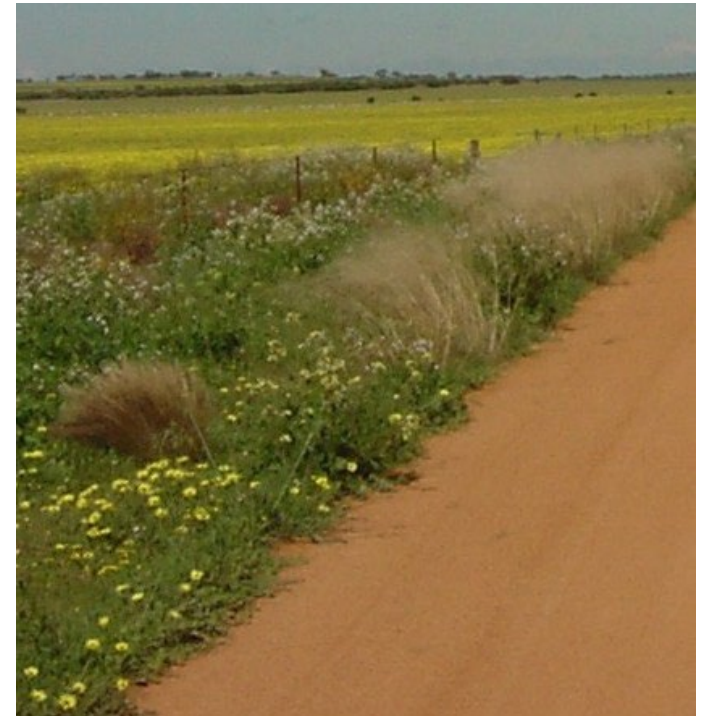
They can be:

- Environmental
- Agricultural
- Sleeper



Weed Issues on Roadsides

- Maintenance costs
- Invasion
- Control techniques
 - Burning
 - Slashing
 - Spraying
 - Biological
 - Regeneration





Economic benefits

Reduced

- Need for grading
- Loss of shoulder material
- Need for drain cleaning and mowing
- Road failures due to water ponding and soft shoulders

Fire to control weeds

- Some weeds ♥ fire
- Annuals = flammable biomass
- Native woody vegetation burns more slowly





FIRE

Disturbance of roadside

Increase in weeds

**Increase in
flammability**

**Increase in culmulative
fuel availability**

**Increase in continuity
of fuel bed**

Control methods

- × ~~Fire~~
- × ~~Grading~~ = disturbance = weeds

But:

- ✓ Slashing
- ✓ Spraying

Lastly:

- ✓ Biological control
- ✓ **Revegetation**



Revegetation



Roadside Conservation Committee



Benefits

- Reduces weed infestations
- Less flammable
- Salinity
- Habitat
- Visually attractive





Challenges

- Difficult to get established
- Trees can cause problems
- Costs – do these outweigh future maintenance costs?
- The enormity of the task



But what to use...?!

- Locally native shrubs and ground covers
- Large variety
- Avoid trees close to the road
- High tech?
 - Frangible material
 - Accentuating colours
- Sources of information:
 - Greening Australia
 - Landcare/NRM groups
 - Main Roads WA

Mapping Roadside Conservation Values



Roadside Conservation Committee





What, Why, How?

- What:**
- Community/volunteer survey
 - At least 80% of roadsides within a Shire

- Why:**
- Inventory of roadside conditions
 - Management tool for road managers

- How:**
- Vehicle-based survey
 - RCC assessment
 - Values mapped using GIS

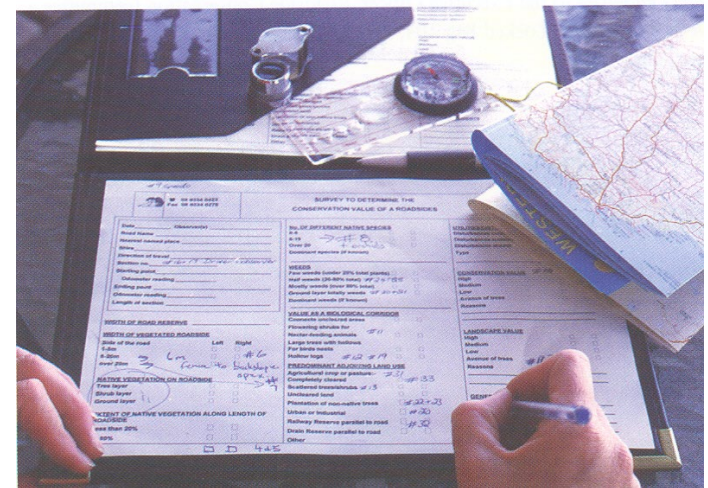
What is recorded?

Good

- Native tree, shrub, and ground covers
- Lots of species of plant
- Serves as a connection between remnants
- Hollows and hollow logs

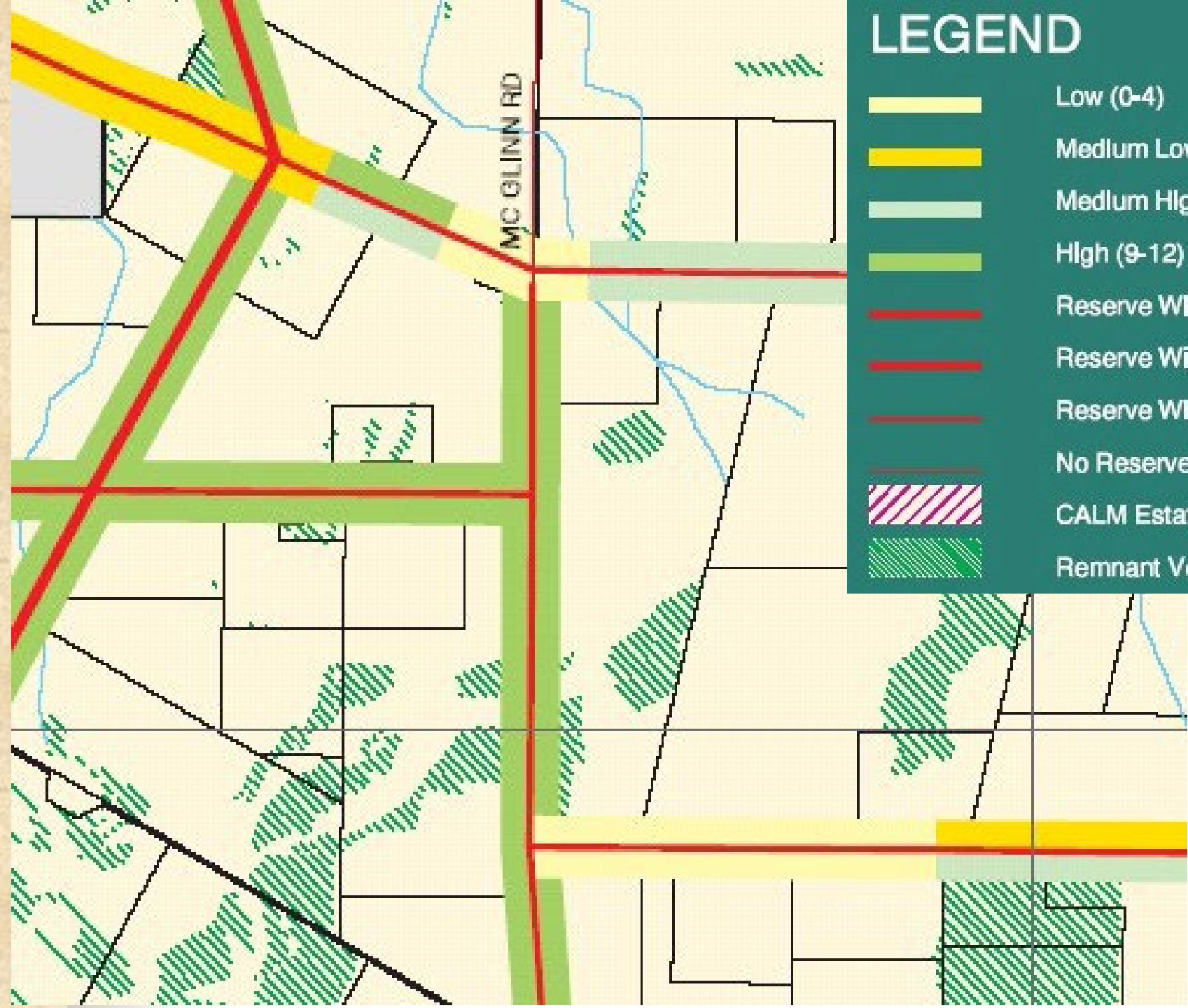
Bad

- Level of weeds >20%
- Narrow road reserve
- Utilities present



LEGEND

- Low (0-4)
- Medium Low (5-6)
- Medium High (7-8)
- High (9-12)
- Reserve Width of 60m
- Reserve Width of 40m
- Reserve Width of 20m
- No Reserve Information
- CALM Estates
- Remnant Vegetation





The Results

■ The Values

Conservation Status	Score	Colour
High	9-12	Dark Green
Med-high	7-8	Light green
Med-low	5-6	Orange
Low	0-4	Yellow



The Results cont.

- Included on maps:
 - Conservation value of roadsides
 - Width of road reserves
 - Up to 6 weed species overlays
 - Other remnant vegetation
 - Water courses
 - CALM estate

= a great management tool



As a Management Tool

- Road works and maintenance
- Revegetation
- Weed control
- Development of Shire policy
- Landscape level planning
 - Council
 - Landcare



Summary

- Roadside vegetation is valuable for:
 - Landscapes
 - Tourism
 - Flora and fauna
 - Controlling weeds
- Weed control
 - Fire and grading are bad
 - Slashing and spraying are better
 - Revegetation is best long term
- Roadside mapping is a valuable management tool



RCC Services

- Roadside training and workshops
- Road verge mapping
- Flora Roads
- Advice on road reserve clearing issues
- Advice on planning



Contacting the RCC

Executive Officer:

Cressida Wilson

9334 0423

cressidaw@calm.wa.gov.au

Technical Officer (mapping):

Kate Jackson

9334 0174

katej@calm.wa.gov.au

The RCC

- Terms of reference:
 - “... to coordinate and promote the conservation and effective management of rail and roadside vegetation for the benefit of the environment and the people of Western Australia”.
- Works with managers and uses of road and rail reserves to maintain and enhance their values



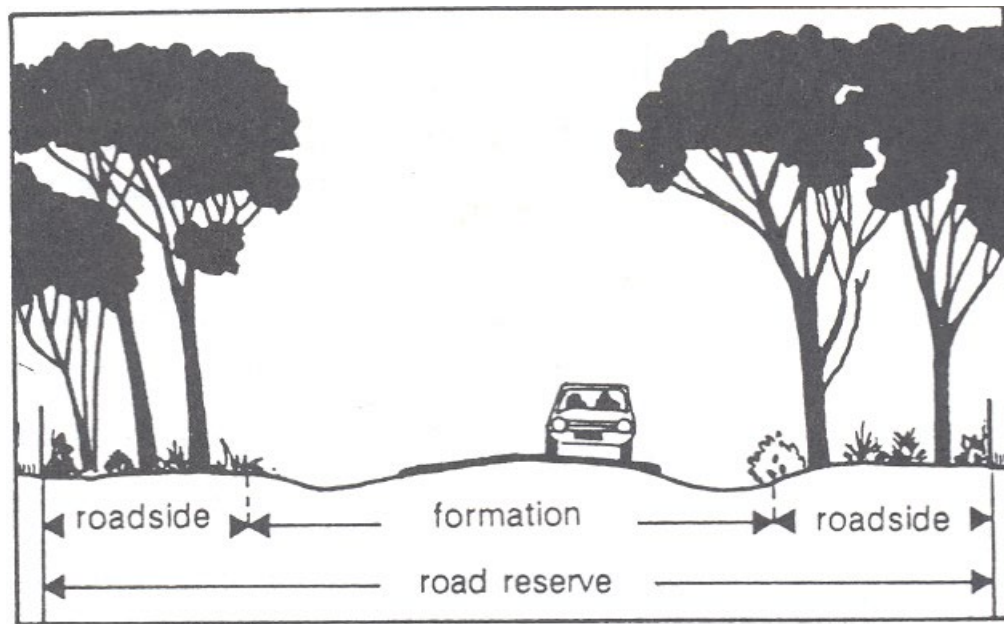
Organisations represented

- Main Roads
- CALM
- Dept. Environment
- Dept. Agriculture
- FESA
- Local Government
- WestNet Rail
- Western Power
- Telstra
- Alinta
- Greening Australia
- Wildflower Society
- Conservation Council



What is “roadside vegetation”?

- Between the fence and the top of the backslope



Vegetation in road reserves

- Fauna
 - Flora
 - Fungi
 - Salinity
 - Shade and shelter
 - Amenity
 - Tourism
- } Pre European
Low disturbance
Connectivity

Shire	% Native vegetation remaining
Cunderdin	1.8%
Dowerin	4.3%
Goomalling	4.6%
Koorda	8.1%
Northam	22.1%
Wongan-Ballidu	5.2%
Wyalkatchem	4.9%



The Mapping Program

- What:**
- Community/volunteer survey
 - At least 80% of roadsides within a Shire
- Why:**
- Inventory of roadside conditions
 - Management tool for road managers
- How:**
- Vehicle-based survey
 - RCC assessment
 - Values mapped using GIS
 - Report back to Shire



What is recorded?

- Community structure and extent **
- Botanical diversity *
- Corridors *
- Habitat value
- Weed density and type *
- Road reserve width
- Roadside vegetation width
- Adjoining landuse *
- Utilities

→ Both Left and Right



The Good

- Native tree, shrub, and ground covers
- Highly diverse plant species
- Connecting remnants
- <20% weeds
- Cleared or scattered adjoining landuse
- Hollows in trees and logs
- Flowering shrubs
- Width >20m



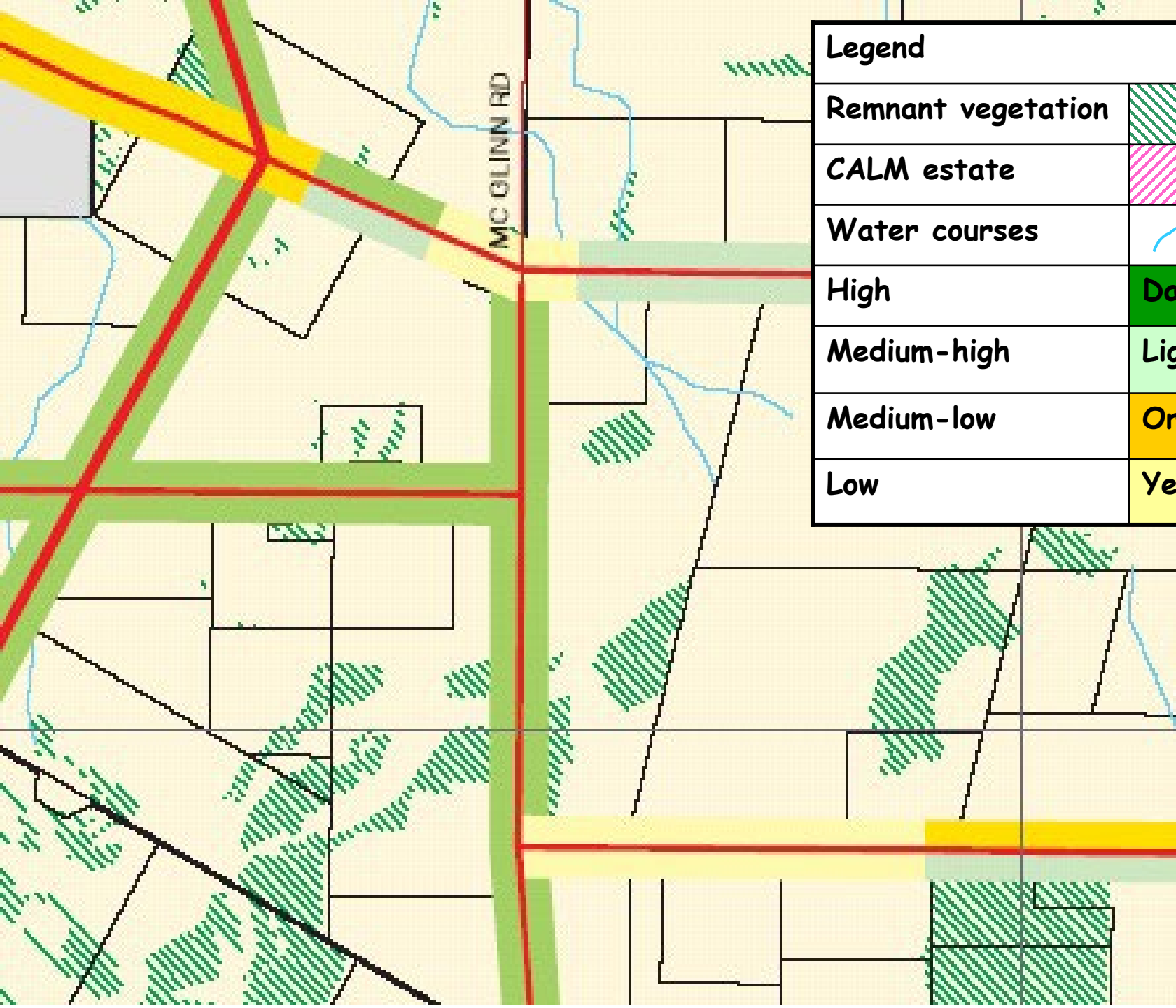
The Bad

- Incomplete structure
- Density of weeds >20%
- Low habitat value
- Narrow road reserve
- Narrow vegetation width
- Utilities present



And the just plain ugly





Legend

Remnant vegetation



CALM estate



Water courses



High

Dark Green

Medium-high

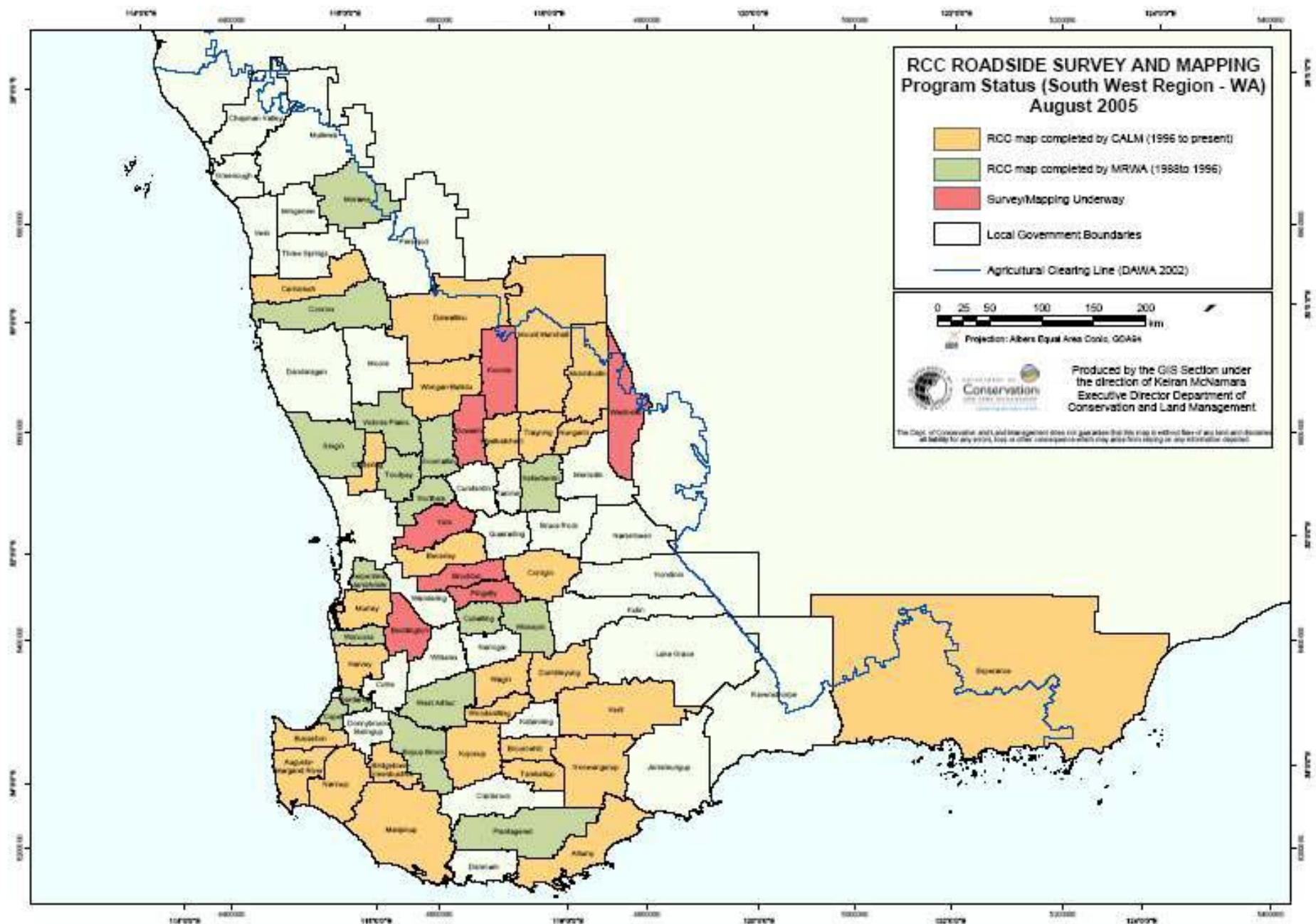
Light green

Medium-low

Orange

Low

Yellow



Redigitizing

- Due to data/map loss
- Yet to be done:
 - Morawa, Dardanup and York
- Underway:
 - Coorow, Waroona, Boyup Brook, Northam



Shire Purpose Permits

- RCC mapping as a tool
 - Special precautions/requirements for High Conservation Value Roads
 - Working against the weed tide
- RCC as a resource
 - Assistance for Shire Veg Management Plans
 - Knowledge of road and roadside issues



Follow up

- Assessing Roadsides handbook
- Map showing Shires surveyed
- Survey training in July?
- *Please* ask me questions and/or advice on roadside matters



Contacting the RCC

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9334 0423

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