

Appendix 5 Roadside Vegetation Management Factsheets

RMS 1.98 VALUE & BENEFIT OF PROTECTING ROADSIDE REMNANTS

Within the settled agricultural regions of the State, responsibility for the care and control of roadsides, including vegetation, is vested in local councils under the Local Government Act. Indigenous roadside vegetation is protected under the Native Vegetation Act. Local Councils must therefore be consulted before any disturbance occurs. All road management agencies carry out roadworks that have the potential to adversely impact on the roadside environment, and in particular, on roadside vegetation. It is therefore important to be aware of the location of areas of significant vegetation in order that roadwork activities can be appropriately modified. In the past Councils have had different cultures for managing roadside vegetation. There is now a move to adopt more uniform policies across regions.

Following the lead of a Mount Lofty Ranges conservation group in 1995 a simple, cost effective method of discreetly marking native vegetation sites, as adapted from similar schemes in WA and Victoria, was initiated. This process for systematically marking roadside sites that have significant native vegetation was developed by the Roadside Marker System Steering Group with members representing five local Councils, Department of Environment, Heritage and Aboriginal Affairs (DEHAA), Transport SA and two conservation groups.

The use of this discreet Road Marker System (RMS), in conjunction with in-house native vegetation training programmes and individual Council database registers is allowing Council staff, contractors and other agency workers to apply guidelines set out in each site's action plan. This system has now been adopted by Transport SA and a number of Mount Lofty Ranges Catchment Area councils. They consider the RMS helps preserve local natural heritage and reduces the risk of unnecessary disturbance. A Code of Practice for management of roadside vegetation using RMS as the process is being developed for use by agencies and local government.

Other Fact Sheets available:

- ***Why Protect Remnant Vegetation?***
- ***Native Vegetation Roadside Marker System***
- ***Roadside Significant Sites Database***
- ***Integrated Management-Native Remnants on Roadsides***
- ***Roadside Vegetation Survey Methods***
- ***Support & Supplies***
- ***Legislation~Roadside Vegetation Management***
- ***Related Publications***

For Further Information Contact:

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What is Local Native Vegetation?

Local or indigenous species are plants that originated within a defined area. They give an area its own distinct characteristics and help reflect an image of the landscape that existed pre-European settlement. It is distinct from 'exotic' vegetation, which can include introduced European trees like oaks and elms, environmental weeds (non-indigenous natives), like Cootamundra Wattle and common weeds like broom, gorse and blackberry.

Values and Benefits of Retaining Native Vegetation:

- Preserves local flora and fauna populations and gene pools of biodiversity which reflects the variety of life on earth.
- Serves as a natural, sustainable, minimal cost groundcover which helps prevent soil erosion and reduce storm water run-off damage.
- Reduces fire fuel hazard levels along roadsides. Slow growth rate and low flammability aspects of some native species, particularly summer-green native grasses, lower fire risk in direct contrast to hot intense fires generated by gorse, phalaris, blackberry and broom.
- Reduces maintenance costs.

Impacts and Threats to Native Vegetation:

A number of threats to native vegetation exist including wildfire, unauthorised clearance and weed invasion. Weeds can spread quickly and invasion is often enhanced by soil disturbance, causing problems for Councils and adjoining landowners because of:

- Increased cost and time spent on control and lowered return on grazing and cropping country.
- Vermin (eg starlings, foxes) acting as dispersal agents for olive and gorse seed or bacterial/fungal diseases which have the potential to devastate orchards and reserves (eg fire blight and phytophthora).
- Fire fuel hazard build up, thus creating a risk to CFS crews or other road users during a wildfire.
- Increased risk to assets through increased fire intensity.
- Degraded value of natural assets and foregone recreation and tourism opportunities.

Re-establishing Local Species

Revegetation projects never replicate natural vegetation associations. Establishing revegetated plantings are however important for their roles:

- In stabilisation of potential erosion sites;
- Control of siltation in water catchment areas; and
- Extending the buffer zone (lessens edge effect) for adjoining local native vegetation.

Only projects utilising locally sourced indigenous seed are acceptable for roadside re establishment.

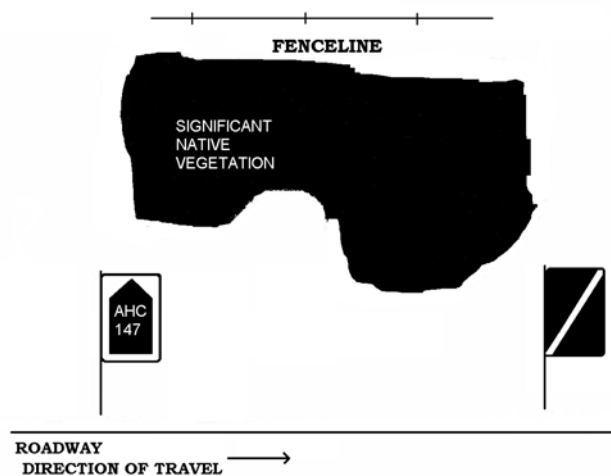
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The Roadside Marker System (RMS) has been designed to identify sites of natural, historic and cultural significance so that these important sites can be avoided and protected during roadworks and other public utility work nearby. In particular Councils¹ are adopting the RMS to assist in management of Roadside Native Vegetation. The system is voluntary, and uses a simple uniform standard for marking sites assisting Council and other agencies to protect remnant native stands, and to comply with the requirements of Commonwealth and State conservation, heritage, soil and Landcare legislation. It thus supports best practice management for roadside native vegetation. The marking system may be readily extended for identifying other landscape, historic and cultural features if and when required by council.

Components of the marker system include:

- A register (data base) that records the location of significant roadside features providing details of each site's special features or management needs.
- Marker plates fastened to posts to discreetly mark the site for operational reference (see figure below).
- An Environmental Code of Practice for planning and site management is recommended.
- Environmental Awareness Training for road gangs and other roadside operators is recommended.



Above: Location of markers in relation to a typical significant site and roadway. Shown from a travelling position of left to right.

The register of sites is used by staff during planning of roadworks to advise work gangs of the location of significant sites and special work practice requirements. The roadside marker system will also enable Council and agency work crews to respond to identified site markers by getting details from the Council's Roadside Marker System register, and implement appropriate management methods and constraints to avoid unnecessary damage to the site.

Other agencies which should be aware of Roadside Markers include:

¹ Three Councils are currently implementing the RMS scheme: Adelaide Hills Council, City of Playford & City of Onkaparinga

- Animal and Plant Control Boards; Transport SA; ETSA Corporation; SA Water; Telecommunications operators and sub-contractors, and other road and roadside operators.

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The Roadside Significant Sites Database, or RSSD, is a collection of information on sites of natural and cultural significance within road reserves. It has been developed by Transport SA and is available for use by councils.

Identifying Sites

Natural features recorded in RSSD include rare plants, important vegetation, fauna habitat, wetlands, watercourses, geological features, conservation reserves and water catchment areas. Features of high cultural value include heritage sites, buildings and artefacts of Aboriginal and non-Aboriginal origin together with features of unique aesthetic or functional value.

Sources of information on significant sites vary widely. Many sites are identified in the registers of the National Estate, State Heritage, Local Heritage, National Trust - Significant Trees, and Geological Monuments. Others sources include the Gazetted boundaries of National Park Reserves and published information on endangered, rare, and/or vulnerable native plants and animals, plant communities and habitats. An important source of information on roadside vegetation are roadside surveys based on a rapid survey procedure developed by Transport SA and Planning SA (See Fact Sheet 6).

Recording Site Data

Each identified Site is assigned an individual site number known as the Site ID. Information is then recorded on the sites location, details of its significance, actions required for site protection, information source, and contact details of those who can assist if this is required. A typical site data sheet is shown on the back of this sheet.

Accessing Site Data

Raising staff awareness of the existence of significant sites is fundamental to their successful protection. RSSD allows fast remote access to reliable information about site identification and protection. Data can also be plotted onto maps indicating sites of significance by Site ID.

Roadside Marking

The real value of RSSD lies in its use as a tool to protect the locations it identifies. Each site listing includes instructions to assist field staff in the most appropriate course of action to protect the site. In many cases, simply being aware of the site will trigger behaviour appropriate to protecting the site.

Sites identification in the field is aided by the Roadside Marker System (See Fact Sheet 3). In this system markers showing site ID are placed at the beginning and end of a significant site. The markers are discreet so as not to attract undue attention yet clear enough to raise the awareness of field staff from any agency working in the vicinity of a site.

General Roadside Care

Protecting the roadside environment doesn't stop at protecting significant sites. All roadsides should be subject to a code of environmental best practice. RSSD sites are simply sites of special significance for which specific restrictions or conditions apply.

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Councils must meet their obligations under the catchment, native vegetation, pest plant, soil, Landcare and natural resource legislation. A change in management practice and a more sensitive, integrated and informed approach to native vegetation management is appropriate and necessary best practice. Control of weeds on roadside reduces long-term maintenance costs for councils and provides the community with cost effective vegetation management, reduces the potential for soil erosion, and eliminates a potential fire hazard to native vegetation and community assets.

Managing and maintaining native vegetation requires the adoption of broad strategies and management plans which includes the involvement of council staff, outside agencies and community volunteers. In contrast to exotic species native vegetation needs little in the way of maintenance. Occasionally a tree may need to be trimmed to avoid damage to traffic. In late summer, areas of native grass can be mown to reduce the height of spent seed heads. This lowers the fuel load without the need to remove the ground cover. In general native vegetation survival is assured providing the following procedures take place:

- 1. Monitoring:** mainly recording changes in species distribution and populations; seasonal seed production; general condition of the plant association; signs of weed invasion; and fuel loading in the understorey.
- 2. Tactical response to weed invasion:** where exotics and pest plants have invaded remnant native roadside vegetation methods of management may include:

Integrated Environmental Weed Control:

Emphasis needs to be placed on cooperative and coordinated management between council, other agencies and the community. By integrating weed control in a sustainable manner costs are reduced in the long-term with more beneficial results in management practices. Council's strategic plan should be considered in developing these practices. Various methods of control are suitable, but the method used needs to be suitable for the site. Some examples follow:

- Using the cut and swab method to control olives, broom and gorse in sensitive areas of native vegetation.
- Boom spray in exotic grasses in areas with no native vegetation present.
- Alternative control methods for water courses which allow natural regeneration to occur and avoids soil disturbance and erosion.
- Control burn programmes in areas of roadside with tall eucalypts and exotic grass understorey.

Rehabilitation of native vegetation: Rehabilitation reduces the need for expensive weed control works, prevents soil erosion and provides habitat for native birds while improving the landscape aesthetics of the district. Also it creates a buffer zone which acts as a strategic link to areas of remnant vegetation which can be designed as a fire break or wildfire control area.

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Indigenous vegetation found in road reserves in South Australia, represents remnants of pre-European settlement vegetation. These important biological assets have significant conservation value, as much of the native vegetation within the agricultural region of the state has been removed or highly disturbed. Roadside vegetation, both indigenous and introduced, is also an integral part of the road asset from a road managers perspective. Protection, management and maintenance of roadside vegetation have benefits for the road user, road maintenance and adjacent land management. The benefits of managing existing remnant vegetation are also significant when considering the high cost of revegetation and the difficulties in achieving successful revegetation.

Road managers need information to know what is present on roadsides and the significance of what is present. This is important for road planning and road maintenance purposes from road network planning, management of maintenance contracts, construction project planning to development of environmental programmes and strategies. To assist this process a standard and consistent survey, mapping and assessment methodology has been developed in a joint project by Transport SA and Planning SA (DTUPA). This method provides quality information, which helps determine appropriate protection, management and maintenance for the roadside assets through such activities as fencing, weed control and wildfire prevention

This methodology enables rapid collection of information, in a standard and consistent format, and facilitates assessment of the roadside vegetation at both a road network and individual road level. The methodology combines roadside survey, mapping, geographic information systems (GIS) and database technology to provide a cost effective mapping and assessment procedure.

Survey data collected is input into the Roadside Vegetation Database, a sub-set of the Biological Survey of South Australia (SA) which provides biological data for the Environmental Database of SA. The roadside data is stored, maintained and assessed through a relational database and GIS which enables it to be integrated with other road asset data, such as drainage, in a GIS environment. Road managing agencies can use this information to identify environmentally significant remnant roadside vegetation. Appropriate management can be implemented to ensure roadworks do not adversely impact on the vegetation. Such an inventory of roadside vegetation may provide the basis of a strategy for protecting and managing high value indigenous vegetation along roadsides on a regional basis.

Data will be able to be reproduced on a GIS map with other appropriate information (i.e. road networks, drainage and contours) to support and clearly illustrate a particular roadside management strategy for any road section. In addition, once the survey information is entered into the database it is then able to be output in an appropriate format for display and query in the user friendly GIS package ArcView, for use by individual road management agencies.

The survey aspect of the methodology involves surveyors' determining typical species composition of vegetation communities, the condition of these communities and any

disturbances in the roadside corridor, from a vehicle travelling at low speed. Appropriate field inspections are required to verify the observations made from the vehicle.

Roadside vegetation survey data recorded on field sheets is entered into the Roadside Vegetation Database, within the Geographic Analysis and Research Unit, Planning SA. This information is then analysed and outputs are produced.

A full roadside vegetation survey methodology consists of a hierarchy of components that build towards a comprehensive knowledge of the vegetation and its condition. The main components are:

1. A “drive-by” roadside vegetation survey that describes and maps all the vegetation present on selected roadsides. This type of rapid assessment collects data that can be used to determine the ecological significance of different remnants and the extent of weed invasion. Most information is collected while in a vehicle driving along roads.
2. An analysis of the information, which summaries the information and assigns a category of overall significance to each defined segment. The information is then used to generate management recommendations for the roadside vegetation in the survey area. Combined, the rapid assessment and the analysis produce a comprehensive general overview of the remnant native roadside vegetation, providing the framework for the collection of more detailed botanical information.
3. A detailed botanical survey that re-visits high quality areas (“Reference Sites”) identified during the “drive-by” survey, to collect detailed floristic and structural data describing the vegetation associations identified during the rapid assessment. The methods used during this phase conform to the standard procedures for the Biological Survey of South Australia (Heard & Channon, 1997).

For information on possible consultants experienced in the use of the methodology and database please contact Planning SA. The South Australian Indigenous Growers & Revegetators Association (SAIGRA), PO Box 10082, Gouger St, Adelaide, 5000. Phone: 1800 065 363 also have information on possible contractors.

For further information on the roadside methodology, database and possible contract specifications contact:

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