

1.0 INTRODUCTION

The Shire of Dalwallinu is located 250 km north-east of Perth in Western Australia's northern wheatbelt region, otherwise known as the Midlands region. The Shire covers an area of 7,187 square km and supports a population of approximately 1,767 people. It is serviced by 1,939 km of roads, of which 449 km are sealed (W.A. Local Government Directory, 2003-2004). The Dalwallinu townsite is the administrative centre for the Shire; other localities include Kalannie, Wubin, Pithara and Buntine.

The area experiences a Mediterranean climate with an average annual rainfall of 360mm. Seasonal temperatures are characterised by warm summers, with maxima averaging from the high twenties, and mild winters, with maxima in the mid teens. Mean daily maximum and minimum temperatures and rainfall statistics are shown below.

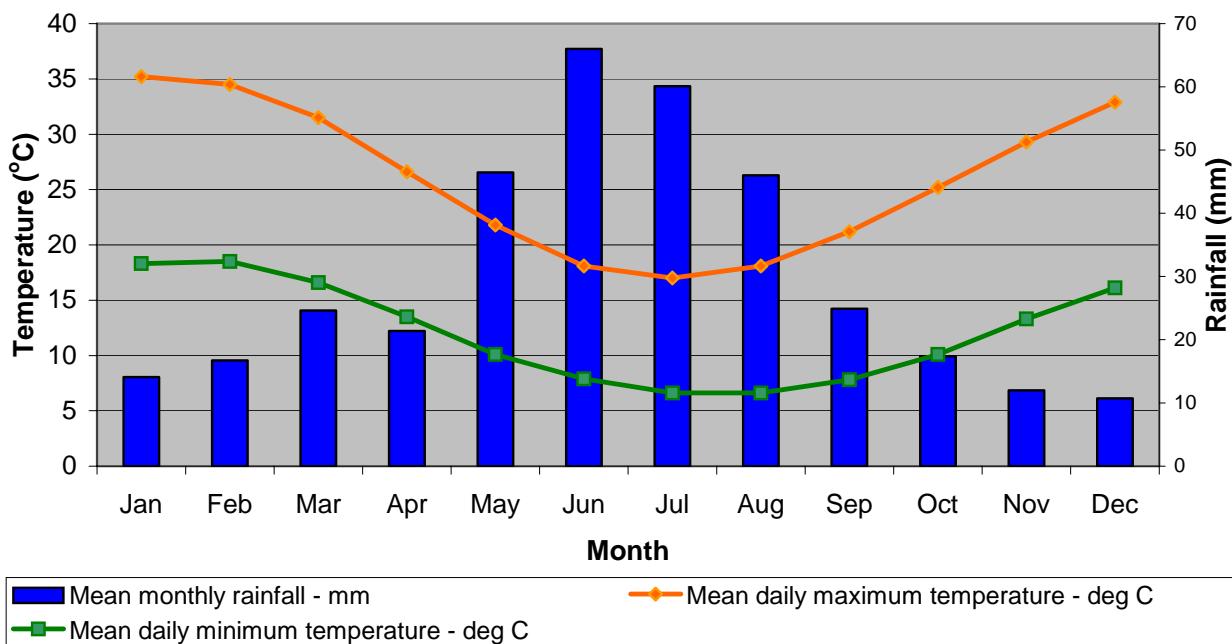


Figure 1 – Mean daily maximum and minimum temperature (°C) and rainfall (mm) in the Shire of Dalwallinu, based on climate averages from the Dalwallinu weather station 008039 (commenced 1912; Last record: 2003).

The primary land use is agriculture, which accounts for 575,482 hectares of land or 78% of the Shire. There are 8,917 hectares of A-Class Conservation Reserves in the Shire, representing 1.24% of land area. Other local industries include bulk fertiliser services, shearing, gypsum mining, Ostrich farming and cedar blind manufacture (Shire of Dalwallinu, www.dalwallinu.wa.gov.au/geography/landuse&.htm).

82.3%, or 595,418 ha of the Shire is located within the Intensive Land-use Zone (ILZ), an area dominated by intensive agricultural enterprises such as cropping and grazing

with some horticulture, intensive livestock production and resource protection. The remaining 17.7% (128, 263 ha) of the Shire is located within the Extensive Land-use Zone (ELZ), which is dominated by grazing and mining activities (Shepherd, Beeston & Hopkins, 2001). These zones are illustrated in Figure 2.

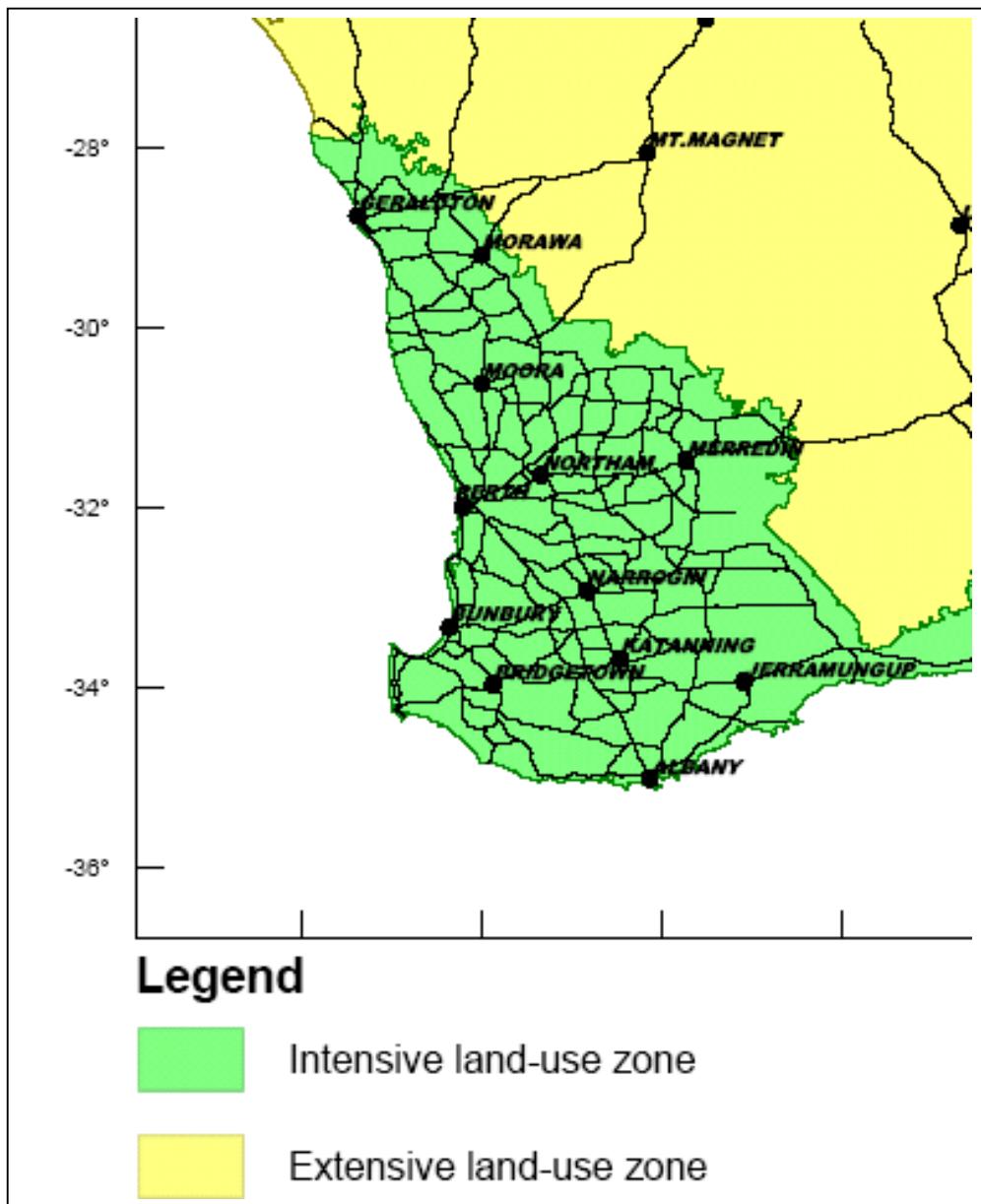


Figure 2- Land-use zones in Western Australia (Department of Agriculture WA, 2004).

Tourism plays an important role with the area's spectacular natural resources being a major attraction. Dalwallinu is the first town on *The Wildflower Way*, a well-known Western Australian tourist route which stretches north to Mullewa. The prime season for wildflowers is between July and October. Each year thousands of wildflower enthusiasts and nature lovers make the journey to enjoy the rare and beautiful sight of flowers literally carpeting the countryside. Other salient features of the area include the Old Courthouse Tourist Information Centre, Wubin Wheatbelt Museum, The Old Well and Petrudor Rock.

1.1 Flora and Fauna

Based on WA Herbarium records, over 900 species of plants have been recorded from the Shire of Dalwallinu. These include 108 species of Acacia, 48 species of Eucalypt, 48 species of Grevillea, 34 species of Melaleuca, 20 species of Eremophila and 23 species of Verticordia, see Appendix 4.

The unique flora seen in the remnant bushland on roadsides rival horticultural varieties of exotic origin and require less water and fertiliser. They have evolved to cope with the low nutrient status of the Western Australia soils and a low annual rainfall with long dry summers.



Verticordia picta

Photos: A. Carr, M. Hancock, M. Seale & S.D. Hopper

The Painted Featherflower (*Verticordia picta*) can be seen flowering in Dalwallinu between July and November.

Photography by A. Carr, M. Hancock, M. Seale & S. D. Hopper. Photo used with the permission of the WA Herbarium, CALM (<http://florabase.calm.wa.gov.au/help/photos#reuse>).

Threatened and priority fauna observed in the Shire of Dalwallinu, based on information from the Department of Conservation and Land Management, indicates that **??? species** have been recorded or sighted throughout the Shire,

1.2 Remnant Vegetation Cover

Within the Intensive Land-use Zone (see Figure 2), the Shire of Dalwallinu retains 12% of its original native vegetation cover. These remnants are located in a variety of tenures, from nature and crown reserves to privately owned bushland. Flora and fauna living in these isolated remnants require connectivity throughout the landscape to find nesting sites, food, shelter and to breed. As a consequence, the presence of native vegetation in transport corridors is of vital importance. The presence of bush corridors to connect these areas is paramount to the survival of our native flora and fauna. A comparison of remnant vegetation in Dalwallinu and with surrounding Shires can be seen in Table 1.

Shire	Percentage of Vegetation Cover Remaining	Area (Ha) of Vegetation Cover Remaining
Dalwallinu	12.0%	71,228
Mukinbudin	14.0%	39,021
Westonia	21.5%	57,813
Kellerberrin	7.4%	14,214
Trayning	8.4%	13,811
Merredin	11.8%	38,551

Table 1. Remnant vegetation remaining in the Shire of Dalwallinu and surrounding Shires (Shepherd et al 2001).

Note: Does not account for areas of these Shires occurring within the Extensive Land-use Zone (ELZ), i.e. pastoral areas of these Shires.

National Objectives and Targets for Biodiversity Conservation 2001-2005 (Environment Australia, 2001) stated that vegetation associations represented by less than 30% remnant vegetation cover are considered ecologically endangered and in need of protection and restoration wherever they are located. There are 9 vegetation associations below the 30% target of vegetation coverage and 2 with less than 10% remaining in the Shire of Dalwallinu, see Table 2. National targets for biodiversity conservation (2001-2005) state the need to have protection measures in place for those vegetation associations that are below 30%. Vegetation associations with less than 10% are considered endangered whilst those between 10-30% are considered vulnerable and those between 30-50% are considered depleted (of the pre 1750 extent).

2.0 VALUES OF ROADSIDES

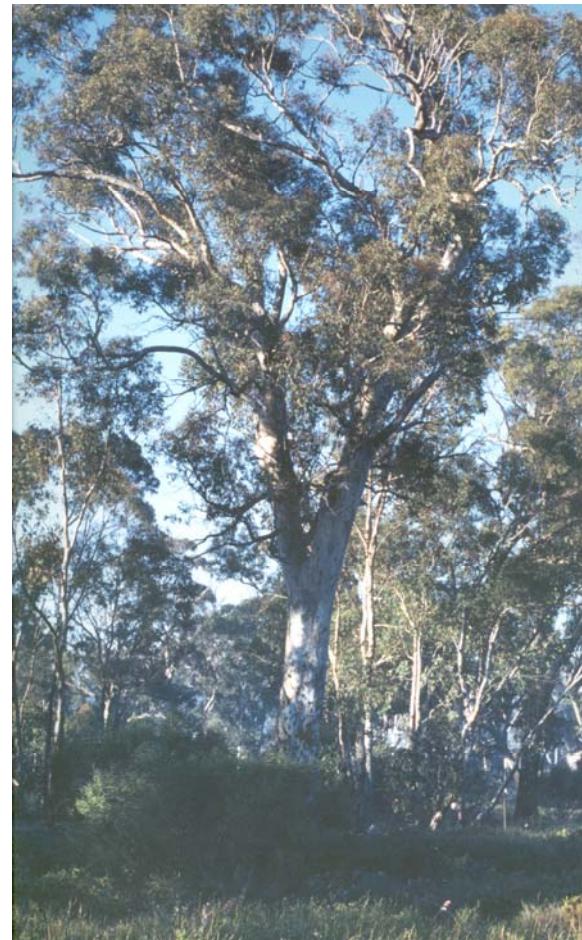
Since the settlement of Western Australia by Europeans, large areas of native vegetation in the south west of the state have been cleared for agriculture, roads, settlements, and other development. The fragmentation of the more or less continuous expanse of native vegetation communities by clearing has resulted in the isolation of plant and animal populations which have become severely disadvantaged by becoming isolated within a mosaic of man-made biogeographical islands of small native vegetation remnants. These are typically unreliable for sustaining wildlife due to food shortages, disease and reduced genetic diversity caused by a diminishing gene pool. Nevertheless, the presence of native vegetation along roadsides can often assist in alleviating this isolation effect by providing connectivity between bush remnants, thereby facilitating the movement of biota across the landscape.

Remnant vegetation includes more than just trees, comprising a diverse mix of trees, shrubs and ground covers (creepers, grasses and herbs) which when intact provide valuable food and shelter for local biodiversity.

Existing native vegetation generally requires less maintenance if left undisturbed.

Remnants in transport corridors are also valuable because they:

- are often the only remaining example of original vegetation within extensively cleared areas;
- are easier to maintain and generally less fire prone than introduced vegetation;
- provide habitat for many native species of plants, mammals, reptiles, amphibians and invertebrates;
- provide wildlife corridors linking other areas of native vegetation;
- often contain rare and endangered plants and animals. Currently, roadside plants represent more than 80 per cent of the known populations of 40 of the declared rare species, and three of these are known only to exist in roadside populations;
- provide the basis for our important wildflower



Mature Wandoo are important habitat trees.

Photo by B. M. Hussey

tourism industry. The aesthetic appeal of well-maintained roadsides should not be overlooked, and they have the potential to improve local tourism and provide a sense of place;

- often contain sites of historic or cultural significance;
- provide windbreaks and stock shelter areas for adjoining farmland by helping to stabilise temperature and reduce evaporation.
- assist with erosion and salinity control, and not only in the land adjoining the road reserve per se;
- are generally far less of a fire threat than annual weeds;
- provide a benchmark for the study of soil change throughout the advancement of agriculture;
- provide a valuable source of seed for regeneration projects. This is especially pertinent to shrub species, as clearing and grazing beneath farm trees often removes this layer;

Approval of the local shire and a CALM permit are required prior to collection.

In a time of rapid change, where the demands placed on the natural resources are numerous, it is vital that there is a coordinated management of lands across all tenures and boundaries to ensure the sustainability and integrity of the natural biota ecosystem processes, agricultural lands and service infrastructure.



Roadsides are the vital link . . . and a priceless community asset.

3.0 LEGISLATION

Uncertainty often exists in the minds of many with regard to the 'ownership', control and management of 'the roadside'. This problem is also exacerbated by the multitude of legislative reference to activities within a transport corridor.

The Department of Conservation and Land Management (CALM) has the legislative responsibility to manage and protect all native flora and fauna in Western Australia. It is important to note that all flora and fauna is protected under provisions of the *Wildlife Conservation Act 1950* and cannot be taken unless it is taken in a lawful manner. In addition to the general provisions relating to protected flora under the *Wildlife Conservation Act*, special protection is afforded to flora that is declared as rare or threatened under section 23F of the *Wildlife Conservation Act*.

The legislation pertaining to the management of road reserves is complex and includes those listed below.

State legislation:

- *Aboriginal Heritage Act 1972*
- *Agriculture and Related Resources Protection Act 1976*
- *Bush Fires Act 1954*
- *Conservation and Land Management Act 1984*
- *Environmental Protection Act 1986*
- *Heritage of WA Act 1990*
- *Land Act 1933*
- *Local Government Act 1995*
- *Main Roads Act 1930*
- *Mining Act 1978*
- *Soil and Land Conservation Act 1945*
- *State Energy Commission Supply Act 1979*
- *Water Authority Act 1987*
- *Wildlife Conservation Act 1950-1979*

Commonwealth legislation:

- *Environment Protection and Biodiversity Conservation Act 1999*

It is recommended that a cautionary approach be taken when working within roadsides, and that the relevant authority be contacted if there is any doubt about the management or protection of heritage or conservation values present in the roadsides.

The Environmental Protection Amendment Act 2003, proclaimed by parliament on the **18th November 2003**, will require greater adherence to legislative requirements before native vegetation is cleared. This legislation will provide for two types of permits which will provide for permission to clear native vegetation, however they will have certain conditions attached to them. For example, the road managing authority may be required to prepare, implement and adhere to a roadside or specific tenure management plan. Before any native vegetation is cleared it is incumbent on the project manager or land manager to ensure that the proposed clearing is being carried out under the terms and conditions of the pending legislation, as there are transitional provisions within it, which are retrospective from 26th June 2002.

4.0 ROADSIDE CONSERVATION IN THE SHIRE OF DALWALLINU

4.1 Collection of native plant material from roadsides

The Shire of Dalwallinu does not generally allow the collection of wildflowers or seed from native plants within road reserves. Exceptions may be granted for special cases, and for particular species. The council has no policy on this issue but has given permission to the Environment Society to collect seed for revegetation purposes. Under the *Wildlife Conservation Act* the Department of Conservation and Land Management may issue a licence following Shire approval.

Collecting seed from a roadside may be the only option in cases where there are no other sources of seed for revegetation, although, it has the potential to impact negatively on the roadside flora. Collection of native plant material from roadsides:

- further depletes the already scarce resource,
- can detract from the integrity of the roadside,
- reduces the amount of seed available for natural regeneration,
- reduces the ability of the area to regenerate after disturbances such as fire, and
- threatens roadside plant communities with the potential introduction and spread of two major threats – *Phytophthora* dieback and weeds.

4.2 Declared Rare Flora (DRF)

Declared Rare Flora (DRF) refers to species, or populations of native plants that are of great significance and should be treated with special care when road and utility service, construction or maintenance is undertaken. Populations of DRF along roadsides are designated Special Environmental Areas (SEA's) and are marked out by yellow stakes with an identification plate welded on. See figures 12 and 13.

It is the responsibility of the road manager to ensure these markers are installed, and guides for this are outlined in 'Guidelines for Managing SEA's in transport corridors', available from the Roadside Conservation Committee.

The DRF sites register in the Shire of Dalwallinu needs to be checked for the presence of appropriate markers, and the location be made known to all involved in the management and planning of works within the roadside environment.

For more information regarding DRF it is advisable to contact the Flora Officer for the Merredin District (08) 9041 2488. If roadworks are to be carried out near DRF sites, or the yellow stakes have been disturbed, it is advisable to contact CALM at least one week in advance.

As of November 2003, the Shire of Dalwallinu had 17 populations of DRF species on roadsides, with 14 of these sites vested in the Shire. Species of DRF recorded from the Shire of Dalwallinu include:

- *Daviesia dielsii*
- *Pityrodia axillaris*
- *Grevillea pythara*
- *Eremophila pinnatifida*
- *Grevillea bracteosa*
- *Boronia ericifolia*
- *Caladenia drakeoides*
- *Eremophila sargentii*



Daviesia dielsii



Photos: S.D. Hopper & A. Doley

Photography by S. D. Hopper & A. Doley. Photo used with the permission of the
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Pityrodia axillaris



Photos: S.J.

Native Foxglove is a Priority One species
Photography by S. J. Patrick & B. A. Fuhrer. Photo used
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Grevillea pythara



Photos: S. Patrick



Grevillea pythara

Declared Rare

4.3 High Conservation Value Roadsides as Flora Roads

A flora road is one which has special conservation value because of the vegetation contained within the road reserve. The managing authority may decide to declare a Flora Road based on the results of the survey of roadside conservation value. Roadsides determined as having high conservation value in the Shire of Dalwallinu include:

- ROADS

(Not a complete list, consult the 2004 Roadside Conservation Value Map)

These, and other roads may be investigated further to see if they warrant a declaration as a Flora Road. This has a twofold effect of drawing the attention of tourists to the high conservation value roadside and it also alerts all that work in the roadside environment that the marked section of roadside requires due care to protect the values present.

In order to plan roadworks so that important areas of roadside vegetation are not disturbed, road managers should know of these areas. It is suggested that the Shire establish a *Register of Roads Important for Conservation* (see section 7.4).



Tourism

Attractive roadside drives are an important drawcard in this, the "Wildflower State". Declared Flora Roads will, by their very nature, be attractive to tourists and would often be suitable as part of a tourist drive network.

Consideration should be given to:

- Promoting the road by means of a small brochure or booklet,
- Showing all Flora Roads on a map of the region or State,
- Using specially designed signs to delineate the Flora Road section (contact the RCC).



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

Management

Management objectives should involve disturbing the roadside flora as little as possible, consistent with the provision of a safe and efficient roadway. The management of Flora Roads should aim to:

- Minimise disturbance,
- Control weeds,
- Encourage natural regeneration.

The management techniques referred to in Section 7.0 of this report can be employed to minimise disturbance to roadside vegetation. Most importantly, staff should be instructed and supervised so that incremental widening does not occur at every pass of the grader.

Environmental assessments (pre-construction check-lists) should be completed prior to any upgrading work, to assist with planning for flora preservation. Fire management should be undertaken in such a way so as to take into account the ecological needs of the flora. Where rehabilitation is contemplated, local native species should always be used.

4.4 Weeds

Weeds are plants that are growing outside their natural range and competing with native plants for nutrients, space, water and light. Weeds often invade roadsides and interfere with the growth and survival of native plants. The effect of weed infestations on native plant populations is severe, and causes flow on effects for native fauna. Once native plants begin to diminish, due to heavy competition, native fauna suffers due to reduced availability of habitat and food. Once weeds become established in an area, they become a long-term management issue, costing many dollars to control or eradicate.

The WA Herbarium records **????** weed species in the Shire of Dalwallinu, see Appendix 4.

The Shire of Dalwallinu works with the Department of Agriculture to control some weed species, for example there is a weed eradication program targeting Saffron Thistle (*Carthamus lanatus*) within road reserves. Saffron thistle is controlled using a mixture of Round-up and Simazene. Unfortunately, roadside areas that have been sprayed may suffer from re-infestations, particularly where there has been little or no weed control carried out in adjoining lands.

A low level of weed growth, due to unfavourable weather has meant that the Shire has not sprayed weeds within roadsides for two years. With the more favourable weather in 2003 weed populations have subsequently been more competitive and invasive therefore, the weed eradication program will restart in 2004. The Shire will be targeting African lovegrass (*Eragrostis curvula*), an invasive roadside weed. African lovegrass tends to grow on the edge of the bitumen, and slowly breaks it up by root penetration. This becomes problematic when attempting to grade the shoulders, as it is difficult to remove without also damaging the bitumen.



Roadside infestation of African lovegrass
(Photo by P. Hussey)

The Roadside Conservation Value map and weed overlays will assist the Shire in coordinating strategic weed control projects, with the highest priority to protect and preserve the high conservation value roadsides, and working towards rehabilitating those with a lower conservation value.

Throughout the roadside survey, six weed species were recorded, and their locations mapped. Roadside weed populations of Paterson's Curse, Wild Oats, Capeweed, Wild Radish, Wild Turnip and Rye Grass can be observed in the weed overlays provided with the Roadside Conservation Value map (2004). [Figure 11](#) also provides some indication of the number of kilometres of roadside that each weed was observed along.



Paterson's Curse; *Echium plantagineum*

Photo by R. Knox and J. Dodd



Wild Oats *Avena fatua*

Photo by J.D. Dodd

4.5 Phytophthora Dieback

The *Phytophthora* species dieback is made up of several types of introduced fungi. About one third of native plants in Western Australia's south-west are susceptible, including species of Banksia, Hakea, Eucalyptus, Melaleuca, Verticordia, Acacia and Grevillea.

The *Phytophthora* fungus infects the roots and inhibits the uptake of water and nutrients, eventually causing death. It is more widespread and severe in the higher rainfall zone and waterlogged sites. The Shire of Dalwallinu is not a known *Phytophthora* dieback risk area as it has an annual rainfall of less than 600mm.

Phytophthora spreads by the movement of spores in water, or by the spread of infected soil. The spores can be introduced to uninfected areas by human activities, particularly through the soil carried on vehicle tyres or footwear.

Human activities, such as routine maintenance or construction, have the potential to spread *Phytophthora* fungi. Currently, there is no practical method of eradicating *Phytophthora* once it is established in an area.



Impact of *Phytophthora* Dieback

Photo Dieback Working Group

The Dieback Working Group has published a booklet, *Managing Phytophthora Dieback in Bushland: A guide for Landholders and Community Conservation Groups* (2000), that provides detailed information on minimising the risk of introducing or spreading *Phytophthora*.

5.0 ASSESSMENT PROCESS

5.1 Methods

The methods to assess and calculate the conservation value of the roadside reserves are described in *Assessing Roadsides: A guide for Rating Conservation Value* (Jackson, 2002).

The process involves scoring a set of pre-selected attributes, which, when combined, represent a roadside's conservation status. A list of these attributes is presented on a standard survey sheet, see Appendix 2. This provides both a convenient and uniform method of scoring.

Ideally, the survey is undertaken by a group of local volunteers, who, aided by their knowledge of the area, are able to provide an accurate and cost effective method of data collection. Community participation also ensures a sense of ownership of the end product, which increases the likelihood of its acceptance and use by the local community and road managers (Lamont and Blyth, 1995).

The majority (**476.2 km**) of the Shire of Dalwallinu's 1,939 km of roadsides were assessed for their conservation status and mapped. Fieldwork was carried out throughout **November 2003**.

The enthusiastic efforts of the volunteer surveyors, local coordinator Christine Jones and the support provided by Council ensured that this project was successfully completed.

5.2 Quantifying Conservation Values

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

- native vegetation on roadside;
- extent of native vegetation along roadside;
- number of native species;
- weed infestation;
- value as a biological corridor; and
- predominant adjoining land use.

Each of these attributes was given a score ranging from 0 to 2 points. Their combined scores provided a conservation score ranging from 0 to 12. The conservation values, in the form of conservation status categories, are represented by the following colour codes

Conservation Value	Conservation Status	Colour Code
9 – 12	High	Dark Green
7 – 8	Medium High	Light Green
5 – 6	Medium Low	Dark Yellow
0 – 4	Low	Light Yellow

Table 3: Colour codes used to depict the conservation status of roadsides.

The following attributes were also noted but did not contribute to the conservation value score:

- width of road reserve;
- width of vegetated roadside;
- presence of utilities/disturbances;
- dominant native species;
- dominant weed species;
- fauna observed;
- general comments.

It is felt that the recording of these attributes will provide a community database that would provide information useful in many spheres, such as local government and community interest groups.

5.3 Mapping Conservation Values

A computer generated map (using a Geographic Information System, or GIS), depicting the conservation status of the roadside vegetation and the width of the road reserves within the Shire of Dalwallinu was produced at a scale of **1:100,000**. The data used to produce both the map and the following figures and tables are presented in Appendix 3.

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

The roadside conservation values map initially provides an inventory of the *status quo* of the condition of the roadside vegetation. This is important as the quality of roadside vegetation has far reaching implications for sustaining biodiversity, tourism and Landcare values.

Moreover the data and map can be incorporated as a management and planning tool for managing the roadsides *per se*, as it enables the condition of roadside vegetation to be easily assessed. This information can then be used to identify environmentally sensitive areas, high conservation roadsides or strategically important areas, and thus ensure

their conservation. Conversely, it enables degraded areas to be identified as areas important for strategic rehabilitation or in need of specific management techniques and weed control programs.

The map can also be used as a reference to overlay transparencies of other information relevant to roadside conservation. This enables the roadside vegetation to be assessed in the context of its importance to the shire's overall conservation network. Other overlays, such as the degree of weed infestation, or the location of environmentally sensitive areas or future planned developments, could also be produced as an aid to roadside management.



Weed control along a roadside

Photo MRWA

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

- Regional or district fire management plans;
- Tourist routes, i.e. roads depicted as high conservation value would provide visitors to the district with an insight to the flora of the district;
- Landcare and/or Bushcare projects would be able to incorporate the information from this survey into 'whole of' landscape projects.



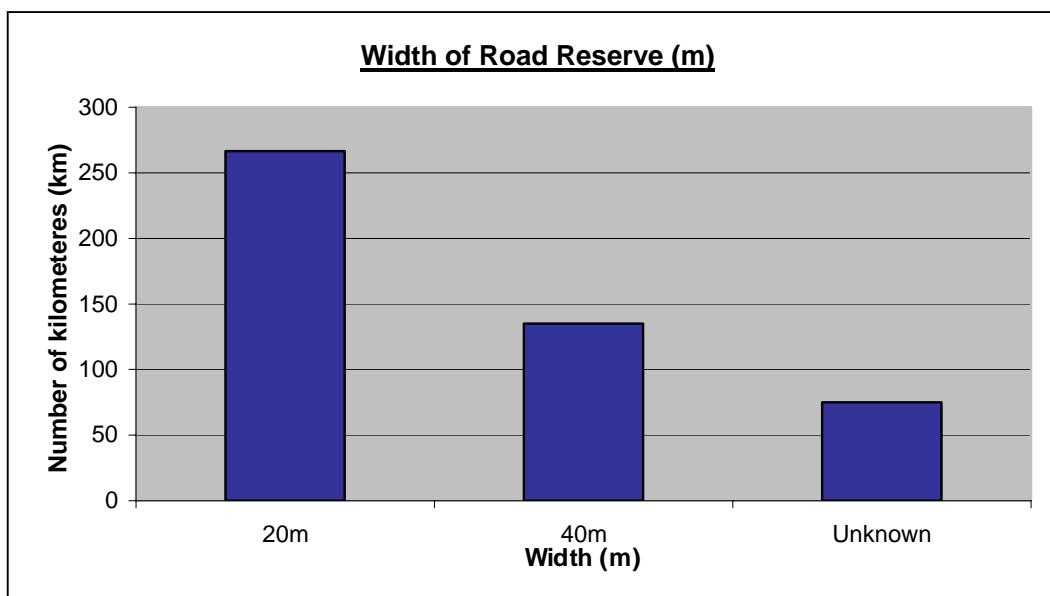
The survey data and map can be used in developing regional or district fire management plans

6.0 SURVEY DATA RESULTS

A summary of the general roadside conditions in the Shire of Dalwallinu is presented in Table 4. The survey data has been combined to provide the total kilometres, and percentages, of roadside occupied by each of the conservation status categories and the attributes used to calculate the conservation values. As roadsides occur on both sides of the road, roadside distances (km) are equal to *twice* the actual distance of road travelled.

Table 4: Summary of the roadside conditions in the Shire of Dalwallinu.

The ‘width of road reserve’ attribute indicates the total width of the road reserve, including the road formation, drains and the roadsides, i.e. from ‘fence to fence’. Of the 952.5km of roads surveyed in 2003, the width of 75kms (15.7%) of road reserve was



unknown, which is common when a road passes through unfenced land, such as Nature reserves. Approximately 28% (134.9km) of the roads surveyed measured 40m in width, and 55.9% (266.4km) were 20m in width.

Figure 2- Width of Road Reserves in the Shire of Dalwallinu (2003)

The ‘width of vegetated roadside’ value provides an insight into the width of the vegetation occurring within roadsides in the Shire of Dalwallinu. Roadsides where the vegetation width was greater than 20m covered 0.77% (7.4km) of the Shire. 22.8% (217.3km) of roadsides supported vegetation between 5-20m in width, and 70.7% (673.8km) of roadsides contained native vegetation between 1-5m in width. The width of vegetation was unknown for 5.7% (54.1km), which is common when a road passes through unfenced land, such as Nature reserves.

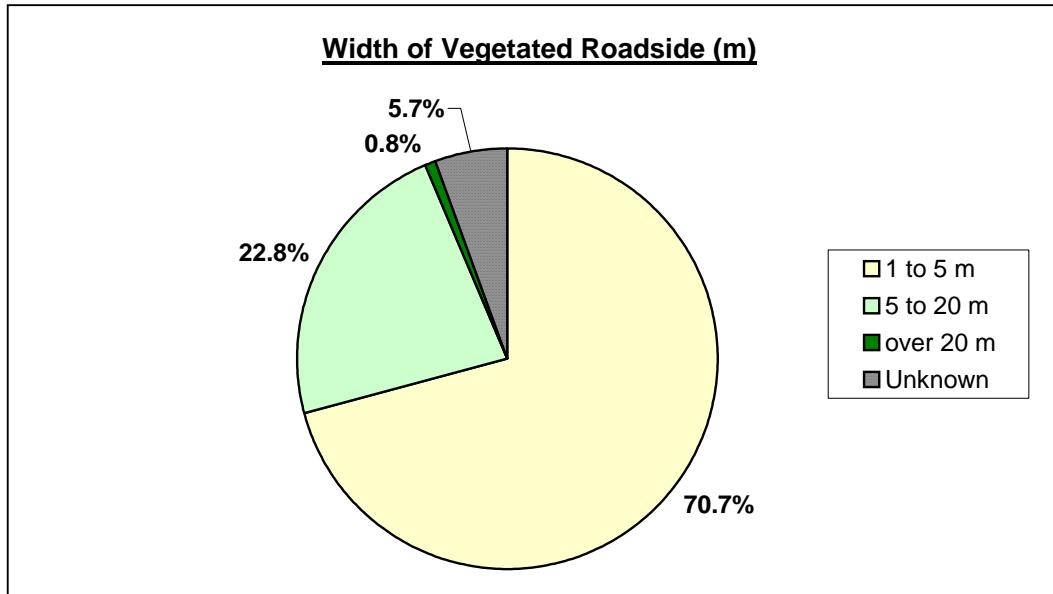


Figure 3- Width of vegetated roadsides in the Shire of Dalwallinu.

Roadside sections of high conservation value covered 65.1% of the length of roadsides surveyed (619.9 km). Medium-high conservation value roadsides accounted for 23.3% of the total surveyed (221.5 km), medium-low conservation roadside covered 5.9% of the total surveyed (55.9 km). Areas of low conservation value occupied 5.8% of the roadsides surveyed (55.2 km), Table 4, Figure 4.

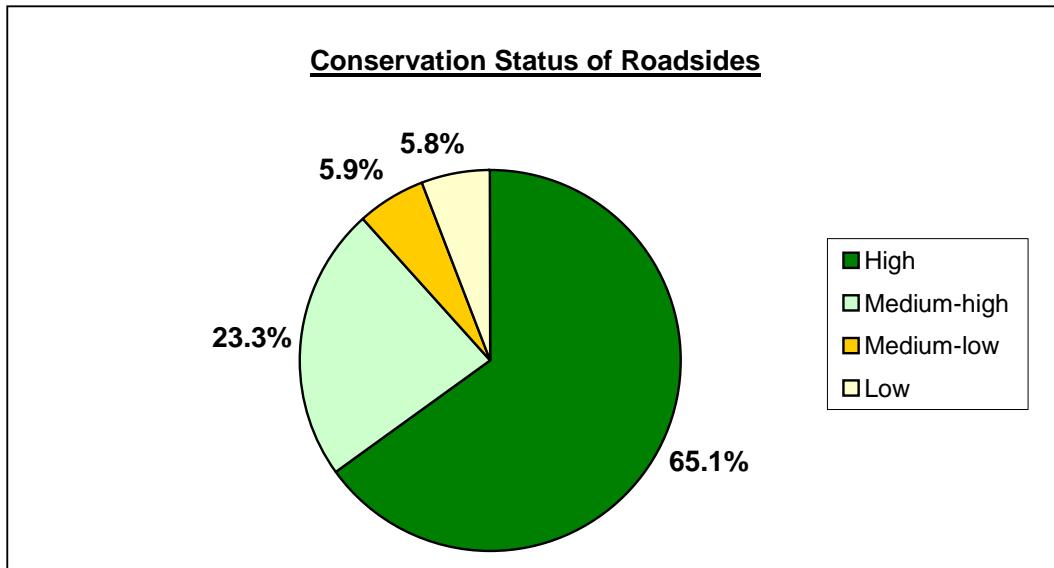


Figure 4 – Conservation status of roadsides in the Shire of Dalwallinu.

The number of native vegetation layers present, either the tree, shrub or ground layers determines the 'native vegetation on roadside' value. Sections with two to three layers of native vegetation covered 94.3% of the roadside (898.0 km). 5.5% had only one layer (52.3 km) and 0.2% had no layers of native vegetation (2.2 km), Table 4, Figure 5.

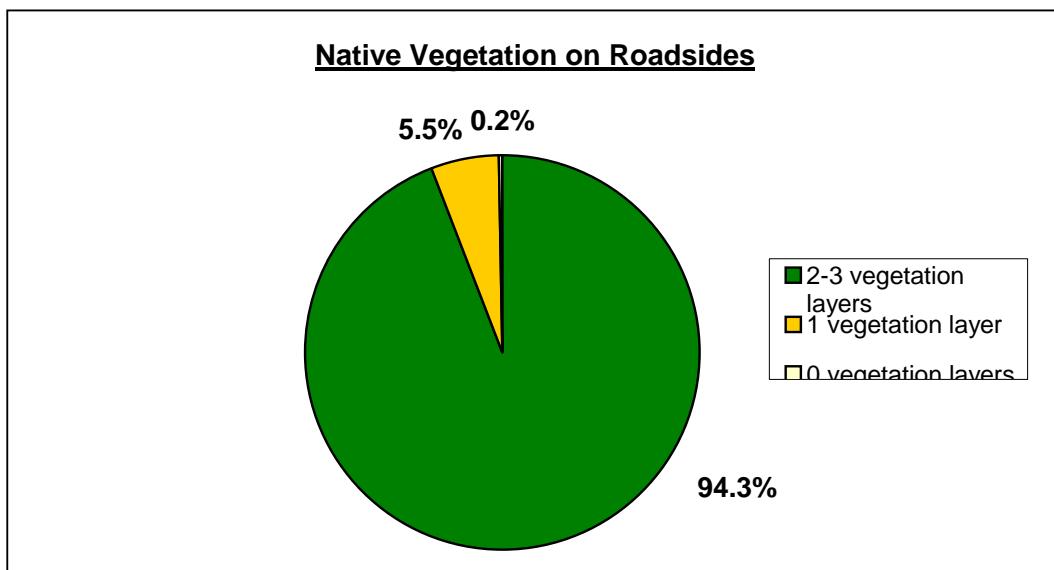


Figure 5– Native vegetation on roadsides in the Shire of Dalwallinu.

Roadside vegetation with extensive cover, i.e. greater than 80%, occurred along 27.8% of the roadsides surveyed (265.0 km). Survey sections with 20% to 80% vegetation cover accounted for 60.3% of the roadsides (574.7 km). The remaining 11.8% had less than 20% native vegetation (112.9 km), and therefore, a low ‘extent of native vegetation’ value, see Table 4, Figure 6.

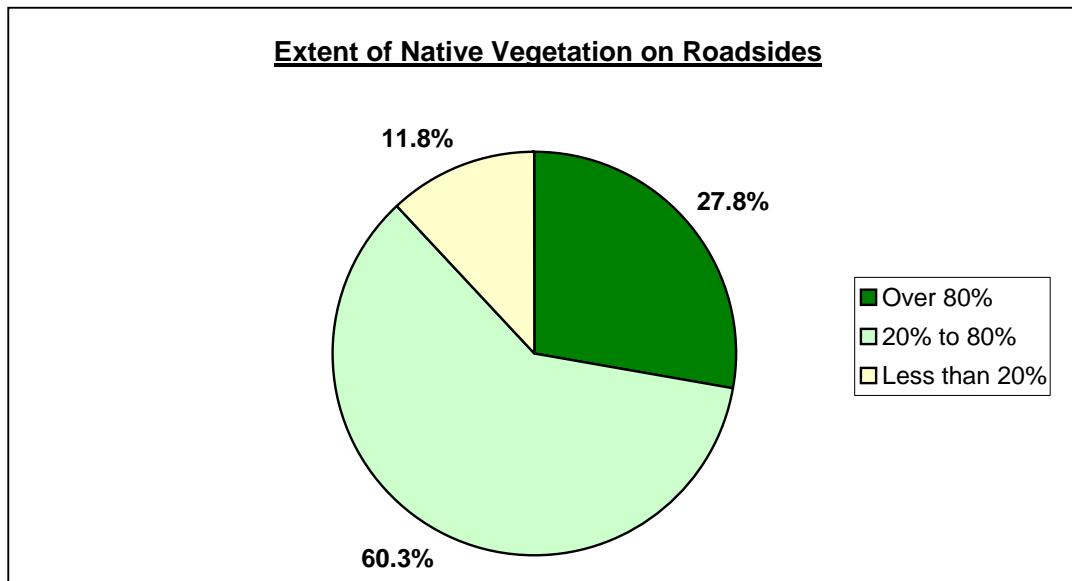


Figure 6 – Extent of native vegetation along roadsides in the Shire of Dalwallinu.

The ‘number of native species’ score provided a measure of the diversity of the roadside vegetation. Survey sections with more than 20 plant species spanned 554.4 km (58.2%) of the roadside. Roadside sections with 6 to 19 plant species accounted for 324.9 km (34.1%) of the roadside. The remaining 73.1 km (7.7%) contained less than 5 plant species, see Table 4, Figure 7.

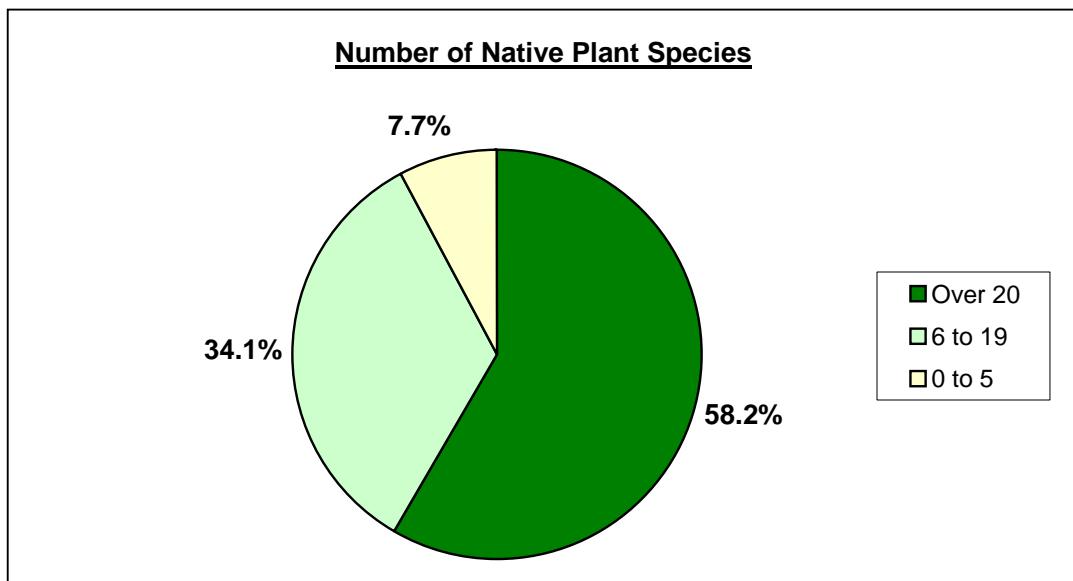


Figure 7 – Number of native plant species within roadsides in the Shire of Dalwallinu.

Roadsides determined to have high value as biological corridors (as determined by the roadside surveyors) were present along 78.8% (750.9 km) of the roadside, medium value made up 11.8% (112.8 km), and roadsides with low value as a biological corridor occurred along 9.3% (88.8 km) of the roadsides surveyed, see Table 4, Figure 8.

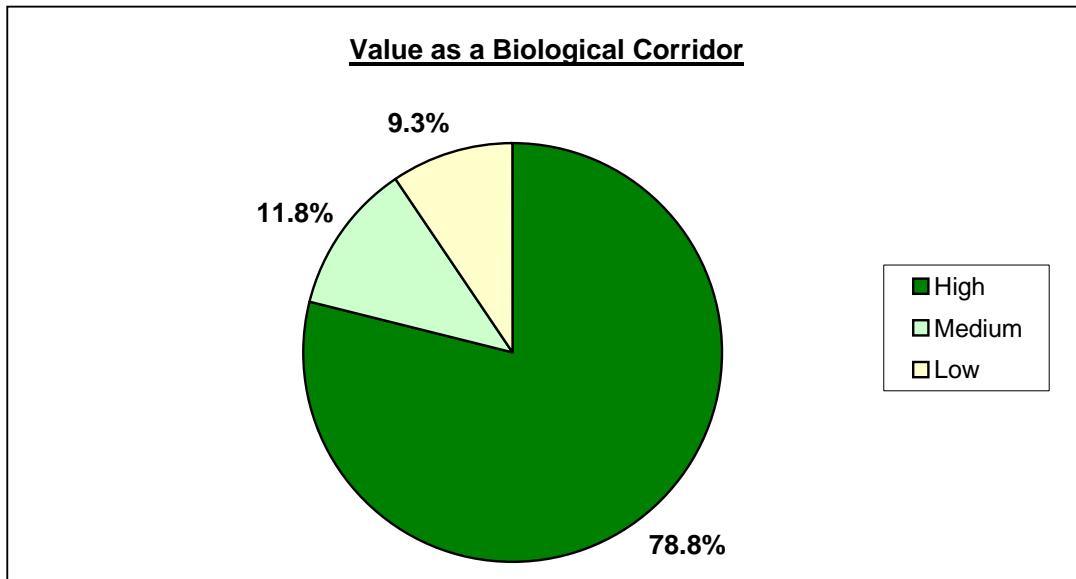


Figure 8 – Value as a biological corridor.

Light levels of weed infestation were observed on 29.1% (277.0 km) of the roadsides surveyed, medium level weed infestation occurred on 36.8% (350.6 km) of the roadsides and 34.1% (325.0 km) were heavily infested with weeds, see Table 4, Figure 9.

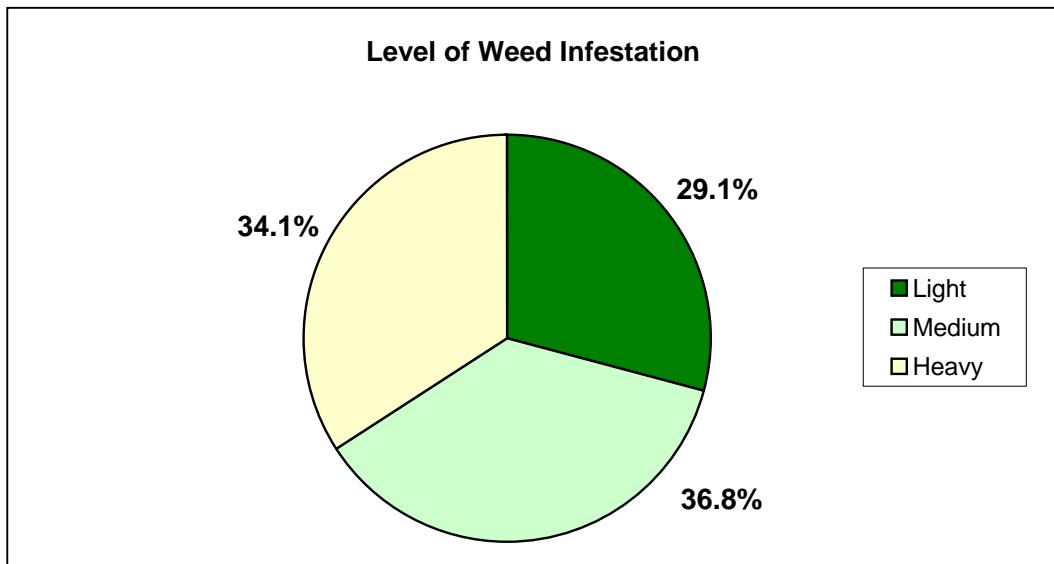


Figure 9 – Weed infestation. Light weed infestation = weeds less than 20% of total plants. Medium weed infestation = weeds 20 to 80% of the total plants. Heavy infestation = weeds more than 80% of the total plants.

Uncleared native vegetation was present on 12.1% (115.5km) of the land adjoining roadsides, whilst 82.1% (782.3 km) of roadsides surveyed were adjoined by land that had been completely cleared for agriculture. 1.8% (17.6 km) of the roadsides surveyed were bordered by land that was cleared for agriculture, but contained a scattered distribution of native vegetation. Drains were the predominant adjoining landuse for 2.4% (22.7 km) of the roadsides surveyed, urban/industrial landuses adjoined 1.2% (11.5 km), and railway reserves adjoined 0.3% (2.9 km) of the roadsides surveyed, see Table 4, Figure 10.

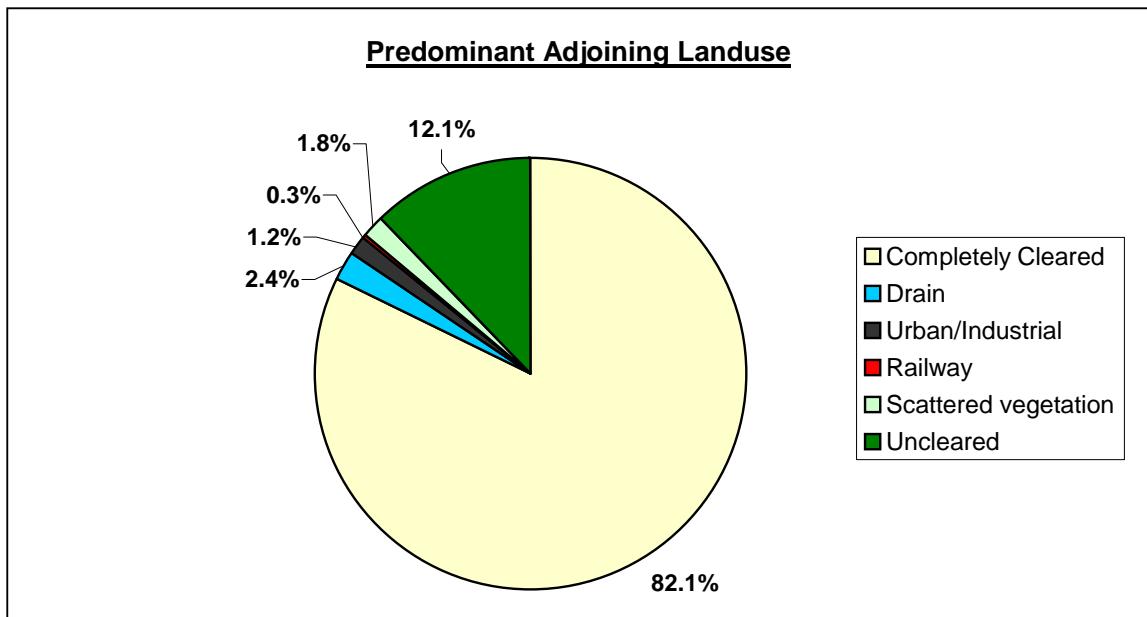


Figure 10 – Predominant adjoining land use.

Roadside populations of the following nominated weeds are indicated on clear overlays accompanying the 2003 RCV map:

- Cape weed;
- Pimpernel;
- Paterson's curse;
- Wild oats
- Barley grass
- Skeleton weed

Wild Mustard was also recorded under the category 'Other weeds', and is represented in Figure 11, with the other 6 nominated weed species observed along roadsides in the Shire.

Of the 6 nominated weeds surveyed throughout 2003, Wild oats were the most highly recorded weed category, occurring along 1004.0 km of roadsides. Cape weed was present along 720.7 km of the roadsides surveyed, whilst Paterson's curse was recorded along 568.9 km of roadside. Barley grass was the next most commonly recorded weed,

occurring along 338.4 km, Mustard was present along 75.5 km, Skeleton weed 32.2 km, and Pimpernel 28 km of roadside, see Figure 11.

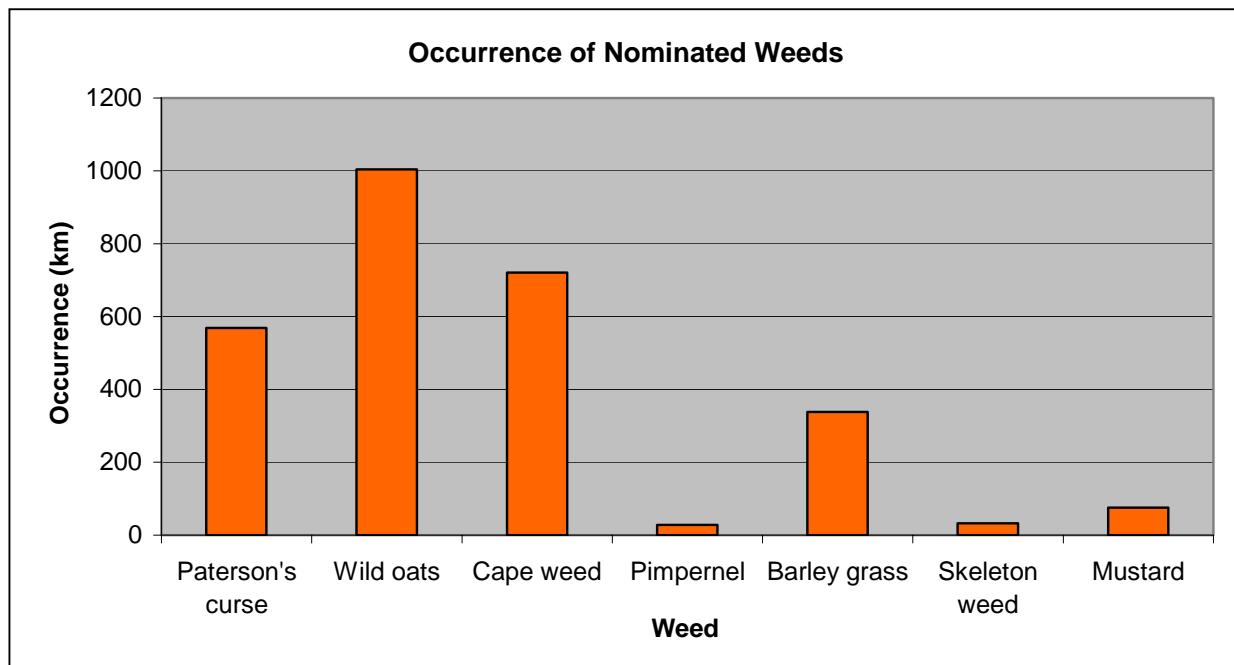


Figure 11 – Occurrence of nominated weeds along roadsides in the Shire of Dalwallinu

7.0 MANAGEMENT TECHNIQUES

The primary aim of road management is the creation and maintenance of a safe, efficient road system. However, the following management procedures are recommended and should be adopted. The following section provides management recommendations that will assist in retaining and enhancing roadside conservation value. These guidelines are taken from the Roadside Conservation Committee's *Roadside Manual* and the *Roadside Handbook*.

The Executive Officer of the Roadside Conservation Committee is also available to assist on all roadside conservation matters, and can be contacted on (08) 9334 0423.

High Conservation Value Roadsides		
Management Goal		Maintain and enhance the native plant communities.
Management Guidelines		Minimal disturbance to existing vegetation. Disturbance leads to weed invasion, which downgrades the conservation value, and increases the fire threat.

Medium Conservation Value Roadsides		
Management Goal		Maintain native vegetation wherever possible, and encourage its regeneration.
Management Guidelines		Minimise disturbance to existing vegetation.

Low Conservation Value Roadsides		
Management Goal		Retain remnant trees and shrubs and encourage their regeneration. Encourage revegetation projects using indigenous plants.
Management Guidelines		Minimise soil disturbance to reduce weed invasion. Encourage revegetation projects by adjacent landholders.

Minimal disturbance can be achieved by:

- Adopting a road design that occupies the minimum space;
- Diverting the line of a table drain to avoid disturbing valuable flora;
- Pruning branches, rather than removing the whole tree or shrub;
- Not dumping spoil on areas of native flora;
- Observing dieback control measures as required;
- Apply the Fire Threat Assessment (Roadside Manual) before burning roadside vegetation;
- Use methods other than fuel reduction burns to reduce fire threat; if roadside burning must be undertaken, incorporate it into a district fire management program;
- Encourage adjacent landholders to set back fences to allow roadside vegetation to proliferate;
- Encourage adjacent landholders to plant windbreaks or farm tree lots adjacent to roadside vegetation to create a denser windbreak or shelterbelt;
- Encourage revegetation projects by adjacent landholders.

7.1 Environmental Guidelines

An Environmental Guidelines has been developed through collaboration with Main Roads Western Australia, the Western Australian Local Government Association and the Roadside Conservation Committee. It is anticipated that this document will be accepted as an industry standard for all working or interested in roadside conservation. This document provides defined parameters for all roadside management works and also provides the local community with an overview of management practices that will ensure the sustainability of native roadside vegetation. Please contact the Roadside Conservation Committee on 9334 0423 for further information.

7.2 Tree Roads

Tree roads are defined as those roadsides with a sufficient density of mature trees to create an attractive tunnel effect. Besides the aesthetic benefits, these areas also provide valuable habitat for birds and other arboreal fauna. Since mature trees are slow growing and hard to replace, care should be taken to conserve these avenues wherever possible. The following points should be considered when working on tree roads:

- 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;
- when using herbicide for weed control on the roadside do not use a soil residual type, such as Simazine or Atrazine. Eucalypts are especially sensitive to these;

- encourage the adjoining landholders to plant shelter belts on their property that will complement the roadside vegetation.

7.3 Special Environment Areas

A Special Environmental Area is a section of roadside, which has such significance that it requires special protection. Reasons for establishing Special Environmental Areas can include:

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

Special Environmental Areas can be delineated by the use of site markers. See Figures 9 and 10 for design and placement of SEA markers. Workers who come across a 'Special Environmental Area' marker in the field should not disturb the area between the markers unless specifically instructed. If in doubt, the Supervisor, Shire Engineer or CEO should be contacted.

Western Power and West Net rail also have systems for marking sites near power or rail lines. Examples of these are seen in the figure below.

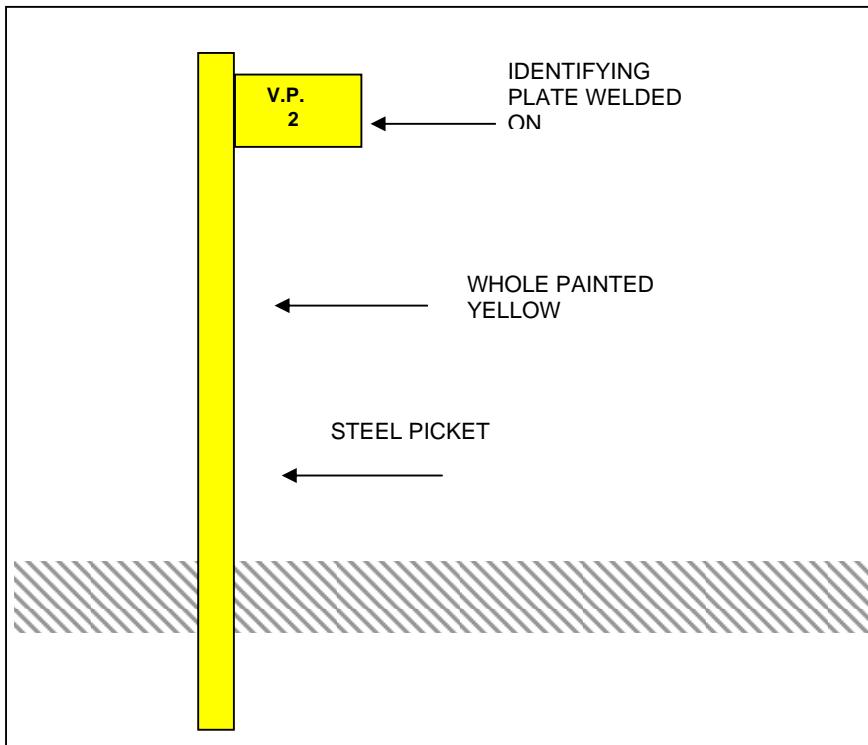


Figure 12 - Special Environmental Area site marker.

7.4 Special Environmental Area Register

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

The Special Environmental Area Register should be consulted by the appropriate person prior to starting work on any particular road, to ensure that inadvertent damage does not occur. All Special Environment Area sites should be marked on the Shire map, which records Roadside Conservation Value

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

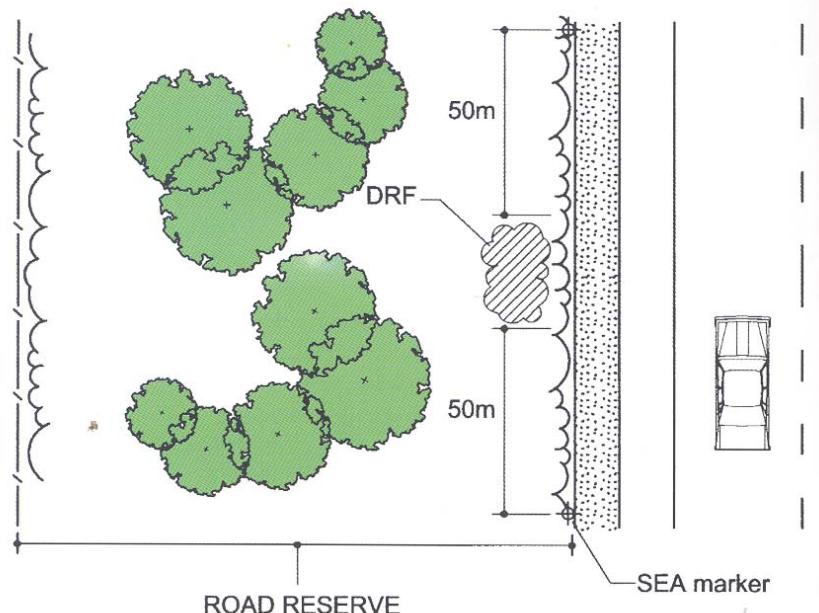


Figure 13 - Marking Special Environment Area (SEA) sites in the field. In this case, a declared rare flora (DRF) site has been marked.

When notified of a population needing marking, the Local Authority should contact the appropriate Department of Conservation and Land Management Regional or District office for assistance to ensure the exact site location and correct positioning of marker posts.

8.0 ROADSIDE PLANNING, STRATEGIES AND ACTION PLANS

8.1 Planning

The RCC is able to provide good models of Roadside Management Plans and encourages all shires to adopt this practice of planning for roadside conservation. The following actions greatly enhance likelihood of a plan that changes behaviour and results in on-ground actions:

- Community support encourage ongoing community involvement and commitment by establishing a local Roadside Advisory Committee or working group within the Shire Environmental Committee;
- Contract specifications maintain roadside values by developing environmental specifications for inclusion in all tender documents or work practices;
- Community education use of innovative and pertinent material can increase community understanding of roadside values;
- Training promote local roadside planning initiatives and gain acceptance and understanding by involving shire staff, contractors, utility provider staff and the community in workshops, seminars or training days. The Roadside Conservation Committee can provide this training.

Training develops recognition and understanding of roadside values and highlights best work practices. Workshops are developed to ensure that local issues and environments are dealt with and they include site visits to high conservation remnants, current projects and works.

The objective of all roadside management planning should be to:

- **Protect**
 - native vegetation
 - rare or threatened flora or fauna
 - cultural and heritage values
 - community assets from fire
- **Maintain**
 - safe function of the road
 - native vegetation communities
 - fauna habitats and corridors
 - visual amenity and landscape qualities
 - water quality
- **Minimise**
 - land degradation
 - spread of weeds and vermin
 - spread of soil borne pathogens
 - risk and impact of fire
 - disturbance during installation and maintenance of service assets
- **Enhance**
 - indigenous vegetation communities
 - fauna habitats and corridors

8.2 Strategies

The development of a strategy enables potentially competing uses to coexist and ensures that roadsides are managed in a coordinated approach. When producing regional strategies the RCC suggests that:

- Organisational support from local government is essential from the outset;
- Strategies should take no longer than 12 months to produce (including a period for community comment);
- Communities need to be provided with background information to make formal decisions.

Management strategies should be produced to address local issues, rather than be to a standard format. Issues can be categorised as:

➤ Functional

- Fire prevention
- Installation and maintenance of services
- Road construction and maintenance
- Stockpile and dumpsite management
- Vegetation removal
- Vehicle and machinery activity
- Water supply catchments

➤ Cultural and Recreational

- Cultural and heritage values
- Horse riding
- Visual amenity and landscape values
- Wayside stops

➤ Landcare

- Apiculture
- Insect Pests
- Pest animals
- Ploughing, cultivating or grading
- Revegetation and site rehabilitation
- Weeds

➤ Conservation

- Protecting and conserving remnant native vegetation
- Rare, threatened or significant flora and fauna
- Regeneration of native plant communities
- Roadside marking of special environmental areas
- Unused road reserves
- Wetlands
- Wildlife habitat
- Wildlife corridors

8.3 Roadside Action Plans

A Roadside Action Plan is prepared for an individual road and contains a works program that will enable conservation values and other road uses to be managed compatibly.

Roadside Action Plans are based on the guidelines that are produced as part of the roadside strategy.

The RCC suggests that Roadside Action Plans be:

- short term documents (to be reviewed within 2 years);
- prepared on a need basis;
- prepared after consultation with major stakeholders;
- a maximum of 2 pages per road;
- names a person or agency responsible for implementing the management recommendations.



Roadside Action Plans may, for example, aim to eradicate invasive weeds such as African Lovegrass from roadsides. Weed overlays may be helpful in identifying strategic locations.

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Appendix

1

APPENDIX 1

Definitions of Remnant Vegetation Types, Beeston et al (1993).

Vegetation classed as "**remnant vegetation**" has one or more of the following characteristics:

- * Most closely reflects the natural state of vegetation for a given area.
- * Has an intact understorey (if forest or woodland).
- * Has minimal disturbance by agents of human activity.

Vegetation classed as "**modified vegetation**" has one or more of the following characteristics:

- * Degraded understorey (i.e. reduction in the number of native species, includes weeds).
- * Obvious human disturbance, i.e. clearing, mining, grazing, weeds.
- * Affected by salt.
- * Narrow corridors of vegetation (usually along roads and railway lines or windbreaks), which are more likely to be affected by edge effects.

Vegetation classed as "**scattered vegetation**" has:

- * No understorey
- * Parkland cleared i.e. scattered single trees.
- * No significant signs or chance of regeneration.

Appendix

2

APPENDIX 2

Standard Survey Sheet

SURVEY TO DETERMINE THE CONSERVATION VALUE OF A ROAD									
Date _____ Observer(s) _____									
Road Name _____									
Nearest named place _____									
Shire _____									
Direction of travel _____									
Section no. _____									
starting point _____									
odometer reading _____									
ending point _____									
odometer reading _____									
length of section _____									
WIDTH OF ROAD RESERVE _____									
Side of the road		Left	Right						
Width of Vegetated roadside									
1-5m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
5-20m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
over 20m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
NATIVE VEGETATION ON ROADSIDE									
tree layer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
shrub layer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
ground layer		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<u>RARE FLORA</u>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
Rare flora known to be present		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
Name _____									
EXTENT OF NATIVE VEGETATION ALONG LENGTH OF ROADSIDE									
Less than 20%		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
20-80%		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
over 80%		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>					
PREDOMINANT ADJOINING LAND USE									
Agricultural crop or pasture:									
<ul style="list-style-type: none"> • completely cleared • scattered trees/shrubs 									
Uncleared land		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Plantation of non-native trees		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Urban or Industrial		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Railway Reserve parallel to road		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Drain Reserve parallel to road		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Other		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
GENERAL COMMENTS									
No. OF DIFFERENT NATIVE SPECIES									
0-5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
6-19		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Over 20		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>					
Dominant species (if known)									
WEEDS									
Few weeds (under 20% total plants)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Half weeds (20-80% total)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Mostly weeds (over 80% total)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Ground layer totally weeds		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Dominant weeds (if known)									
VALUE AS A BIOLOGICAL CORRIDOR									
Connects uncleared areas		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Flowering shrubs for nectar-feeding animals		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Large trees with hollows for birds nests		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Hollow logs		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
<u>FAUNA OBSERVED</u>									
CONSERVATION VALUE									
High		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Medium		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Low		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Reasons									
LANDSCAPE VALUE									
High		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Medium		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Low		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Avenue of trees Reasons									
UTILITIES/DISTURBANCES									
Disturbances continuous		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Disturbances Isolated		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Disturbances absent		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Type									

Fig. 4. Example of the survey sheet developed to assess conservation value of roadsides in Western Australia. Scores given to each attribute are indicated.

Appendix

3

Appendix

4

APPENDIX 4

Native Plant species in the Shire of Dalwallinu

Note – Not a fully comprehensive list.

* indicates weed species.

Acacia acanthoclada subsp. acanthoclada	Acacia isoneura ms
Acacia aciphylla	Acacia isoneura subsp. isoneura ms P3
Acacia acuaria	Acacia jacksonioides
Acacia acuminata	Acacia jennerae
Acacia acuminata subsp. acuminata ms	Acacia jibberdingensis
Acacia acuminata subsp. burkittii ms	Acacia kalgoorliensis P3
Acacia acutata	Acacia kochii
Acacia ancistrophylla var. ancistrophylla	Acacia lasiocalyx
Acacia ancistrophylla var. lissophylla	Acacia latipes
Acacia andrewsii	Acacia leptospermoides subsp. leptospermoides
Acacia anthochaera	Acacia ligulata
Acacia ashbyae	Acacia ligustrina
Acacia assimilis subsp. assimilis	Acacia lineolata subsp. basalis ms
Acacia beauverdiana	Acacia lineolata subsp. lineolata
Acacia bidentata	Acacia lineolata subsp. multilineata P1
Acacia brumalis	Acacia lirellata subsp. compressa ms P2
Acacia chrysella	Acacia longiphylloidea
Acacia colletioides	Acacia longispinea
Acacia congesta subsp. congesta ms	Acacia mackeyana
Acacia consanguinea ms	Acacia merrallii
Acacia coolgardiensis subsp. coolgardiensis	Acacia microbotrya
Acacia coolgardiensis subsp. effusa	Acacia multispicata
Acacia coolgardiensis subsp. latior	Acacia murrayana
Acacia costata	Acacia neurophylla subsp. erugata
Acacia cylindrica P3	Acacia nigripilosa
Acacia daviesioides	Acacia nigripilosa subsp. latifolia ms P1
Acacia deficiens ms	Acacia nigripilosa subsp. nigripilosa ms
Acacia densiflora	Acacia nyssophylla
Acacia dielsii	Acacia obtecta
Acacia dissona var. indoloria P3	Acacia orbifolia
Acacia duriuscula	Acacia oswaldii
Acacia enervia	Acacia prainii
Acacia enervia subsp. explicata	Acacia pravifolia
Acacia eremaea	Acacia ramulosa
Acacia eremophila var. eremophila	Acacia resinimarginnea
Acacia eremophila var. variabilis P3	Acacia resinosa ms
Acacia erinacea	Acacia restiacea
Acacia erioclada	Acacia rostellifera
Acacia fragilis	Acacia saligna
Acacia gibbosa	Acacia saxatilis
Acacia glutinosissima	Acacia scalena ms P3
Acacia graniticola ms	Acacia sericocarpa
Acacia hemiteles	Acacia sibina
Acacia heteroneura var. jutsonii	Acacia signata
Acacia heteroneura var. petila	Acacia sphacelata subsp. sphacelata ms
Acacia heteroneura var. prolixa	Acacia stanleyi ms
Acacia inceana subsp. conformis P1	Acacia stereophylla var. stereophylla
Acacia inceana subsp. latifolia ms	Acacia subrigida P2

Acacia synoria ms	Atriplex semilunaris
Acacia tetragonophylla	Atriplex vesicaria
Acacia trinalis ms P1	Austrodanthonia caespitosa
Acacia tysonii	Austrostipa nitida
Acacia ulicina	Austrostipa trichophylla
Acacia victoriae	Avena barbata
Acacia yorkrakinensis	Avena fatua
Acacia yorkrakinensis subsp. acrita	Baeckea benthamii ms
Acacia ? aulacophylla	Baeckea crispiflora
Acacia ? fragilis	Baeckea cryptandroides
Acacia ? microbotrya	Baeckea cryptonoma ms
Acacia ? nigripilosa subsp. ? nigripilosa ms	Baeckea elderiana
Acetosa vesicaria	Baeckea grandiflora
Actinobole uliginosum	Baeckea grandis
Actinostrobus arenarius	Baeckea megaflora ms
Actinotus humilis	Baeckea muricata
Actinotus superbus	Baeckea recurva ms
Actites megalocarpa	Baeckea sp.Wubin(M.E.Trudgen 5404)
Adenanthes drummondii	Balaustion pulcherrimum
Allium ampeloprasum	Banksia attenuata
Allocasuarina acutivalvis	Banksia benthamiana P4
Allocasuarina acutivalvis subsp. acutivalvis	Bassia scoparia
Allocasuarina acutivalvis subsp. prinsepiana	Beaufortia bracteosa
Allocasuarina campestris	Beaufortia elegans
Allocasuarina corniculata	Beaufortia interstans
Allocasuarina dielsiana	Bellida graminea
Allocasuarina humilis	Blennospora drummondii
Allocasuarina microstachya	Boronia adamsiana R
Alyogyne pinoniana	Boronia coerulescens
Alyxia buxifolia	Boronia coerulescens subsp. spicata
Amphibromus nervosus	Boronia ericifolia P2
Amphipogon caricinus	Borya constricta
Amphipogon strictus	Borya nitida
Andersonia heterophylla	Borya sphaerocephala
Andersonia lehmanniana subsp. pubescens	Bossiaea peduncularis
Angianthus micropodioides P3	Brachypodium distachyon
Angianthus tomentosus	Brachyscome ciliaris
Anigozanthos flavidus	Brachyscome ciliocarpa
Anthocercis anisantha subsp. anisantha	Brachyscome iberidifolia
Anthocercis littorea	Brachyscome perpusilla
Anthotroche pannosa	Brachyscome pusilla
Aotus tietkensis	Brassica tournefortii
Argyroglossis turbinata	Bromus rubens
Aristida contorta	Brunonia australis
Arthropodium dyeri	Bursaria occidentalis
Asphodelus fistulosus	Caladenia cristata P4
Astartea clavifolia P2	Caladenia drummondii
Astartea heteranthera	Caladenia radialis
Astroloomba glaucescens	Caladenia roei
Astroloomba serratifolium	Caladenia vulgata ms
Astroloomba serratifolium var. horridulum	Calandrinia eremaea
Atriplex bunburyana	Calandrinia primuliflora
Atriplex holocarpa	Callitris glaucophylla
Atriplex hymenotheca	Calothamnus chrysantherus
Atriplex paludosa subsp. baudinii	Calothamnus gilesii
Atriplex semibaccata	Calothamnus quadrifidus

<i>Calothamnus quadrifidus</i> var. "unsorted"	
<i>Calotis hispidula</i>	<i>Conospermum brownii</i>
<i>Calycopeplus paucifolius</i>	<i>Conospermum polycephalum</i>
<i>Calytrix depressa</i>	<i>Conospermum stoechadis</i> subsp. <i>stoechadis</i>
<i>Calytrix glutinosa</i>	<i>Conostylis aculeata</i> subsp. <i>bromelioides</i>
<i>Calytrix gracilis</i>	<i>Conostylis androstemma</i>
<i>Calytrix habrantha</i>	<i>Conostylis aurea</i>
<i>Calytrix leschenaultii</i>	<i>Convolvulus remotus</i>
<i>Calytrix plumulosa</i> P3	<i>Cotula bipinnata</i>
<i>Calytrix strigosa</i>	<i>Crassula colorata</i> var. <i>acuminata</i>
<i>Cassytha glabella</i> forma <i>dispar</i>	<i>Crassula exserta</i>
<i>Cassytha melantha</i>	<i>Cratystylis subspinescens</i>
<i>Cassytha nodiflora</i>	<i>Cryptandra apetala</i> var. <i>apetala</i>
<i>Casuarina obesa</i>	<i>Cryptandra arbutiflora</i> var. <i>intermedia</i>
<i>Centaurea melitensis</i>	<i>Cryptandra imbricata</i> ms P3
<i>Centrolepis cephaloformis</i> subsp. <i>cephaloformis</i>	<i>Cryptandra micrantha</i> ms
<i>Centrolepis polygyna</i>	<i>Cryptandra myriantha</i>
<i>Cephaelipterum drummondii</i>	<i>Cryptandra nutans</i>
<i>Ceratogyne obionoides</i>	<i>Cyanicula deformis</i> ms
<i>Chamaescilla corymbosa</i> var. <i>latifolia</i>	<i>Cyanostegia angustifolia</i>
<i>Chamaexeros fimbriata</i>	<i>Cyanostegia microphylla</i>
<i>Chamaexeros macranthera</i>	<i>Cyanostegia microphylla</i>
<i>Chamelaucium brevifolium</i>	<i>Cyphanthera odgersii</i> subsp. <i>occidentalis</i> R
<i>Chamelaucium conostigmum</i> ms P3	<i>Cyphanthera racemosa</i>
<i>Chamelaucium drummondii</i>	<i>Dactyloctenium radulans</i>
<i>Chamelaucium drummondii</i> subsp. <i>drummondii</i>	<i>Dampiera altissima</i>
ms	<i>Dampiera eriocephala</i>
<i>Chamelaucium drummondii</i> subsp. <i>hallii</i> ms	<i>Dampiera juncea</i>
<i>Chamelaucium micranthum</i>	<i>Dampiera lavandulacea</i>
<i>Chamelaucium pauciflorum</i>	<i>Dampiera luteiflora</i>
<i>Chamelaucium pauciflorum</i> subsp.	<i>Dampiera stenostachya</i>
<i>thryptomenioides</i> ms	<i>Dampiera tenuicaulis</i> var. <i>tenuicaulis</i>
<i>Chamelaucium pauciflorum</i> <i>thryptomenioides</i> ms	<i>Dampiera tomentosa</i>
<i>Cheilanthes</i> aff. <i>austrotenuifolia</i>	<i>Dampiera wellsiana</i>
<i>Cheilanthes austrotenuifolia</i>	<i>Darwinia capitellata</i>
<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	<i>Darwinia chapmaniana</i> ms R
<i>Chenopodium melanocarpum</i>	<i>Darwinia halophila</i> ms
<i>Chenopodium pumilio</i>	<i>Darwinia purpurea</i>
<i>Chondrilla juncea</i>	<i>Daucus glochidiatus</i>
<i>Chorizema aciculare</i> subsp. <i>laxum</i>	<i>Daviesia benthamii</i> subsp. <i>benthamii</i>
<i>Chorizema racemosum</i>	<i>Daviesia cardiophylla</i>
<i>Chorizema rhynchosporum</i>	<i>Daviesia dielsii</i> P2
<i>Chrysitrix distigmatosa</i>	<i>Daviesia grahamii</i>
<i>Chrysocoryne trifida</i>	<i>Daviesia hakeoides</i> subsp. <i>subnuda</i> ms
<i>Chthonocephalus pseudovex</i>	<i>Daviesia nematophylla</i>
<i>Clematis delicata</i> ms	<i>Daviesia nudiflora</i> subsp. <i>amplectens</i>
<i>Codonocarpus cotinifolius</i>	<i>Daviesia nudiflora</i> subsp. <i>nudiflora</i>
<i>Comesperma drummondii</i>	<i>Daviesia triflora</i>
<i>Comesperma integrerrimum</i>	<i>Dianella revoluta</i>
<i>Comesperma scoparium</i>	<i>Dianella revoluta</i> var. <i>divaricata</i>
<i>Comesperma spinosum</i>	<i>Dicrastylis fulva</i>
<i>Comesperma volubile</i>	<i>Dicrastylis parvifolia</i>
<i>Commersonia pulchella</i>	<i>Dicrastylis reticulata</i>
<i>Commersonia stowardii</i>	<i>Didymanthus roei</i>
<i>Conospermum amoenum</i> subsp. <i>amoenum</i>	<i>Dithyrostegia amplexicaulis</i>
<i>Conospermum boreale</i> subsp. <i>ascendens</i> ms	<i>Dodonaea adenophora</i>
	<i>Dodonaea bursariifolia</i>

Dodonaea caespitosa	Eriostemon sericeus
Dodonaea divaricata	Eriostemon thryptomenoides
Dodonaea inaequifolia	Eriostemon tomentellus
Dodonaea larreoides	Erodium cygnorum
Dodonaea viscosa subsp. angustissima	Erodium cygnorum subsp. cygnorum
Drosera macrantha	Erymophyllum glossanthus
Drosera macrantha subsp. macrantha	Erymophyllum tenellum
Drosera macrophylla	Eucalyptus aequioperta
Drosera pallida	Eucalyptus aff. leptophylla
Drosera ramellosa	Eucalyptus aff. rigidula
Drosera stolonifera subsp. rupicola	Eucalyptus albida
Drosera stricticaulis	Eucalyptus baudiniana
Drummondia hassellii	Eucalyptus brachycorys
Drummondia hassellii var. hassellii	Eucalyptus burracoppinensis
Dryandra conferta var. conferta	Eucalyptus capillosa subsp. capillosa
Dryandra fraseri var. fraseri	Eucalyptus capillosa subsp. polyclada
Dryandra purdieana	Eucalyptus celastroides subsp. virella
Duboisia hopwoodii	Eucalyptus ceratocorys
Ecdeiocolea monostachya	Eucalyptus crucis subsp. lanceolata
Emex australis	Eucalyptus ebbanoensis subsp. ebbanoensis
Enchytraea lanata	Eucalyptus erythronema var. marginata
Enchytraea tomentosa var. tomentosa	Eucalyptus eudesmioides subsp. eudesmioides
Enteropogon acicularis	Eucalyptus ewartiana
Eragrostis dielsii	Eucalyptus gracilis
Eremaea beaufortioides	Eucalyptus hypochlamydea subsp. ecdysiastes
Eremaea ectadioclada	ms
Eremaea pauciflora subsp. pauciflora	Eucalyptus hypochlamydea subsp.
Eremaea pauciflora var. lonchophylla	hypochlamydea ms
Eremaea pauciflora var. pauciflora	Eucalyptus kochii subsp. kochii
Eremophila caperata ms	Eucalyptus kochii subsp. plenissima
Eremophila clarkei	Eucalyptus leptopoda subsp. arctata
Eremophila decipiens	Eucalyptus loxophleba subsp. lissophloia
Eremophila decipiens subsp. decipiens ms	Eucalyptus loxophleba subsp. supralaevis
Eremophila deserti	Eucalyptus macrocarpa subsp. macrocarpa
Eremophila drummondii	Eucalyptus myriadena subsp. myriadena
Eremophila glabra	Eucalyptus obtusiflora
Eremophila granitica	Eucalyptus oldfieldii
Eremophila lehmanniana	Eucalyptus petraea
Eremophila miniata	Eucalyptus polita
Eremophila oldfieldii subsp. angustifolia ms	Eucalyptus pyriformis
Eremophila oldfieldii subsp. oldfieldii	Eucalyptus rigidula
Eremophila oppositifolia	Eucalyptus salicola
Eremophila oppositifolia subsp. angustifolia ms	Eucalyptus salubris
Eremophila oppositifolia var. angustifolia ms	Eucalyptus sargentii subsp. sargentii
Eremophila pinnatifida ms R	Eucalyptus semivestita ms
Eremophila sargentii P2	Eucalyptus sheathiana
Eremophila serrulata	Eucalyptus stowardii
Eremophila subfloccosa subsp. lanata ms	Eucalyptus striatocalyx
Eremophila vernicosa ms X	Eucalyptus subangusta
Eriachne ovata	Eucalyptus subangusta subsp. pusilla
Erichsenia uncinata	Eucalyptus subangusta subsp. subangusta
Eriochilus scaber subsp. scaber ms	Eucalyptus subangusta subsp. virescens P1
Eriostemon brucei subsp. brucei	Eucalyptus synandra R
Eriostemon deserti	Eucalyptus tenera
Eriostemon glaber	Eucalyptus transcontinentalis
Eriostemon nutans P1	Eucalyptus wandoo subsp. pulvrea

<i>Eucalyptus x carnabyi</i> P4	<i>Grevillea eremophila</i>
<i>Euphorbia drummondii</i>	<i>Grevillea eriobotrya</i> P3
<i>Euryomyrtus recurva</i> ms	<i>Grevillea eriostachya</i>
<i>Exocarpos aphyllus</i>	<i>Grevillea eryngioides</i>
<i>Exocarpos sparteus</i>	<i>Grevillea excelsior</i>
<i>Frankenia cinerea</i>	<i>Grevillea extorris</i>
<i>Frankenia pauciflora</i>	<i>Grevillea granulosa</i> P3
<i>Frankenia setosa</i>	<i>Grevillea hakeoides</i> subsp. <i>stenophylla</i>
<i>Gahnia aristata</i>	<i>Grevillea haplantha</i> subsp. <i>recedens</i>
<i>Gahnia drummondii</i>	<i>Grevillea huegelii</i>
<i>Gastrolobium appressum</i> R	<i>Grevillea juncifolia</i> subsp. <i>temulenta</i>
<i>Gastrolobium bennettsianum</i>	<i>Grevillea kenneallyi</i> P1
<i>Gastrolobium calycinum</i>	<i>Grevillea leucopteris</i>
<i>Gastrolobium floribundum</i>	<i>Grevillea levigata</i>
<i>Gastrolobium laytonii</i>	<i>Grevillea nana</i>
<i>Gastrolobium rotundifolium</i> P1	<i>Grevillea nana</i> subsp. <i>abbreviata</i> P2
<i>Gastrolobium spinosum</i>	<i>Grevillea obliquistigma</i> subsp. <i>funicularis</i>
<i>Gastrolobium spinosum</i> var. <i>grandiflorum</i>	<i>Grevillea obliquistigma</i> subsp. <i>obliquistigma</i>
<i>Gastrolobium spinosum</i> var. <i>spinosum</i>	<i>Grevillea paniculata</i>
<i>Geleznowia verrucosa</i> P3	<i>Grevillea paradoxa</i>
<i>Gilberta tenuifolia</i>	<i>Grevillea petrophiloides</i>
<i>Gilruthia osbornei</i>	<i>Grevillea pinaster</i>
<i>Glischrocaryon aureum</i>	<i>Grevillea pinifolia</i> P1
<i>Glischrocaryon aureum</i> var. <i>angustifolium</i>	<i>Grevillea polybotrya</i>
<i>Glischrocaryon roei</i>	<i>Grevillea pterosperma</i>
<i>Glycine clandestina</i>	<i>Grevillea pythara</i> R
<i>Gnephosis setifera</i> P1	<i>Grevillea rosieri</i> P2
<i>Gnephosis tenuissima</i>	<i>Grevillea sarissa</i> subsp. <i>sarissa</i>
<i>Gnephosis tridens</i>	<i>Grevillea shuttleworthiana</i> subsp. <i>shuttleworthiana</i>
<i>Gnephosis trifida</i>	<i>Grevillea tenuiloba</i> P2
<i>Gnephosis uniflora</i>	<i>Grevillea teretifolia</i>
<i>Gompholobium obcordatum</i>	<i>Grevillea umbellulata</i> subsp. <i>acerosa</i>
<i>Gonocarpus nodulosus</i>	<i>Grevillea umbellulata</i> subsp. <i>umbellulata</i>
<i>Goodenia berardiana</i>	<i>Grevillea uncinulata</i> subsp. <i>uncinulata</i>
<i>Goodenia convexa</i>	<i>Grevillea yorkrakinensis</i>
<i>Goodenia helmsii</i>	<i>Gunniopsis glabra</i>
<i>Goodenia incana</i>	<i>Gunniopsis intermedia</i>
<i>Goodenia mimuloides</i>	<i>Gunniopsis quadrifida</i>
<i>Goodenia occidentalis</i>	<i>Gunniopsis rubra</i> P1
<i>Goodenia perryi</i> P1	<i>Gunniopsis septifraga</i>
<i>Goodenia pinifolia</i>	<i>Gyrostemon racemiger</i>
<i>Goodenia tripartita</i>	<i>Gyrostemon ramulosus</i>
<i>Goodenia watsonii</i> subsp. <i>watsonii</i>	<i>Gyrostemon reticulatus</i> X
<i>Grevillea acacioides</i>	<i>Gyrostemon subnudus</i>
<i>Grevillea acuaria</i>	<i>Hakea erecta</i>
<i>Grevillea apiciloba</i> subsp. <i>apiciloba</i>	<i>Hakea francisiana</i>
<i>Grevillea armigera</i>	<i>Hakea invaginata</i>
<i>Grevillea asparagoides</i> P3	<i>Hakea minyma</i>
<i>Grevillea biformis</i> subsp. <i>biformis</i>	<i>Hakea preissii</i>
<i>Grevillea biternata</i>	<i>Hakea recurva</i> subsp. <i>recurva</i>
<i>Grevillea brachystachya</i>	<i>Hakea scoparia</i>
<i>Grevillea bracteosa</i> P2	<i>Halbania cyanea</i>
<i>Grevillea candicans</i> P3	<i>Halbania integerrima</i>
<i>Grevillea didymobotrya</i> subsp. <i>didymobotrya</i>	<i>Halbania lavandulacea</i>
<i>Grevillea dielsiana</i>	<i>Halbania viscosa</i>
<i>Grevillea dryandroides</i> subsp. <i>dryandroides</i> R	

<i>Halosarcia fimbriata</i>	<i>Isoetes tripus</i>
<i>Halosarcia halocnemoides</i>	<i>Isoetopsis graminifolia</i>
<i>Halosarcia halocnemoides</i> subsp. <i>caudata</i>	<i>Isopogon divergens</i>
<i>Halosarcia indica</i> subsp. <i>bidens</i>	<i>Isopogon scabriusculus</i> subsp. <i>stenophyllus</i>
<i>Halosarcia lepidosperma</i>	<i>Isopogon scabriusculus</i> subsp. <i>stenophyllus ms</i>
<i>Halosarcia leptoclada</i> subsp. <i>inclusa</i>	<i>Isotropis cuneifolia</i>
<i>Halosarcia peltata</i>	<i>Isotropis drummondii</i>
<i>Halosarcia pergranulata</i>	<i>Isotropis juncea</i>
<i>Halosarcia pergranulata</i> subsp. <i>pergranulata</i>	<i>Jacksonia acicularis ms</i>
<i>Halosarcia pruinosa</i>	<i>Jacksonia arida ms</i>
<i>Halosarcia pterygosperma</i> subsp. <i>pterygosperma</i>	<i>Jacksonia fasciculata</i>
<i>Halosarcia syncarpa</i>	<i>Jacksonia macrocalyx</i>
<i>Halosarcia undulata</i>	<i>Jacksonia nematoclada</i>
<i>Hedypnois rhagadioloides</i>	<i>Jacksonia rhadinoclada</i>
<i>Hemiandra</i> aff. <i>pungens</i>	<i>Jacksonia velutina P4</i>
<i>Hemiandra</i> <i>gardneri R</i>	<i>Juncus aridicola</i>
<i>Hemigenia</i> <i>dielsii</i>	<i>Keraudrenia hermanniifolia</i>
<i>Hemigenia</i> <i>diplanthera</i>	<i>Keraudrenia integrifolia</i>
<i>Hemigenia</i> <i>macphersonii</i>	<i>Kunzea pulchella</i>
<i>Hemigenia</i> sp. <i>Edah</i> (J.W.Green 1601)	<i>Lachnostachys coolgardiensis</i>
<i>Hemigenia</i> sp. <i>Jibberding</i> (J.D'Alonzo 418)	<i>Lachnostachys eriobotrya</i>
<i>Hemigenia</i> sp. <i>Paynes Find</i> (A.C.Beauglehole 49138)	<i>Lachnostachys verbascifolia</i> var. <i>verbascifolia</i>
<i>Hemigenia</i> <i>westringioides</i>	<i>Lamarckia aurea</i>
<i>Hemiphora</i> <i>elderii</i>	<i>Lawrencella davenportii</i>
<i>Hibbertia</i> <i>acerosa</i>	<i>Lawrencella rosea</i>
<i>Hibbertia</i> aff. <i>crassifolia</i>	<i>Lawrenzia squamata</i>
<i>Hibbertia</i> aff. <i>gracilipes</i>	<i>Laxmannia paleacea</i>
<i>Hibbertia</i> aff. <i>recurvifolia</i>	<i>Lechenaultia biloba</i>
<i>Hibbertia</i> <i>arcuata</i>	<i>Lechenaultia macrantha</i>
<i>Hibbertia</i> <i>drummondii</i>	<i>Lepidobolus preissianus</i> subsp. <i>volubilis ms</i>
<i>Hibbertia</i> <i>exasperata</i>	<i>Lepidosperma</i> aff. <i>resinosum</i>
<i>Hibbertia</i> <i>glomerosa</i>	<i>Lepidosperma</i> <i>costale</i>
<i>Hibbertia</i> <i>lividula</i>	<i>Lepidosperma</i> <i>resinosum</i>
<i>Hibbertia</i> <i>nutans</i>	<i>Lepidosperma</i> <i>scabrum</i>
<i>Hibbertia</i> <i>rostellata</i>	<i>Lepidosperma</i> <i>squamatum</i>
<i>Hibbertia</i> <i>rupicola</i>	<i>Leptomeria</i> <i>preissiana</i>
<i>Homalocalyx</i> <i>aureus</i>	<i>Leptosema</i> <i>aphyllum ms</i>
<i>Homalocalyx</i> <i>coarctatus</i>	<i>Leptosema</i> <i>daviesioides</i>
<i>Homalocalyx</i> <i>thryptomenoides</i>	<i>Leptosema</i> <i>tomentosum ms</i>
<i>Hordeum</i> <i>glaucum</i>	<i>Leptospermum</i> <i>roei</i>
<i>Hyalochlamys</i> <i>globifera</i>	<i>Leucopogon</i> <i>cuneifolius</i>
<i>Hyalosperma</i> <i>demissum</i>	<i>Leucopogon</i> <i>gracillimus</i>
<i>Hyalosperma</i> <i>glutinosum</i>	<i>Leucopogon</i> <i>hamulosus</i>
<i>Hyalosperma</i> <i>glutinosum</i> subsp. <i>glutinosum</i>	<i>Leucopogon</i> <i>nutans</i>
<i>Hyalosperma</i> <i>glutinosum</i> subsp. <i>venustum</i>	<i>Leucopogon</i> <i>obtusatus</i>
<i>Hyalosperma</i> <i>zacchaeus</i>	<i>Levenhookia</i> <i>leptantha</i>
<i>Hybanthus</i> <i>epacroides</i>	<i>Levenhookia</i> <i>pusilla</i>
<i>Hybanthus</i> <i>floribundus</i>	<i>Lobelia</i> <i>heterophylla</i>
<i>Hybanthus</i> <i>floribundus</i> subsp. <i>floribundus</i>	<i>Lobelia</i> <i>rarifolia</i>
<i>Hydrocotyle</i> <i>callicarpa</i>	<i>Lobelia</i> <i>winfridae</i>
<i>Hydrocotyle</i> <i>pilifera</i> var. <i>glabrata</i>	<i>Logania</i> <i>flaviflora</i>
<i>Hydrocotyle</i> <i>rugulosa</i>	<i>Lomandra</i> <i>micrantha</i> subsp. <i>teretifolia</i>
<i>Hypochaeris</i> <i>glabra</i>	<i>Lysinema</i> <i>ciliatum</i>
<i>Isoetes</i> <i>caroli</i>	<i>Lysinema</i> <i>ciliatum</i> forma Central
<i>Isoetes</i> <i>inflata</i>	wheatbelt(S.Paust 898)
	<i>Lysiopetalum</i> <i>rugosum</i>

<i>Maireana aff. planifolia</i>	<i>Micromyrtus racemosa</i> var. <i>latifolia</i> ms P2
<i>Maireana amoena</i>	<i>Micromyrtus racemosa</i> var. <i>prochtyes</i> ms
<i>Maireana atkinsiana</i>	<i>Microtis parviflora</i>
<i>Maireana brevifolia</i>	<i>Millotia myosotidifolia</i>
<i>Maireana diffusa</i>	<i>Millotia perpusilla</i>
<i>Maireana georgei</i>	<i>Millotia tenuifolia</i> var. <i>tenuifolia</i>
<i>Maireana marginata</i>	<i>Mirbelia depressa</i>
<i>Maireana thesioides</i>	<i>Mirbelia floribunda</i>
<i>Maireana tomentosa</i> subsp. <i>tomentosa</i>	<i>Mirbelia microphylla</i>
<i>Malleostemon roseus</i>	<i>Mirbelia ramulosa</i>
<i>Malleostemon tuberculatus</i>	<i>Mirbelia spinosa</i>
<i>Mallophora globiflora</i>	<i>Mirbelia trichocalyx</i>
<i>Mallophora rugosifolia</i>	<i>Monachather paradoxus</i>
<i>Marsilea drummondii</i>	<i>Myriocephalus pygmaeus</i>
<i>Medicago laciniata</i> var. <i>laciniata</i>	<i>Nemcia obovata</i>
<i>Melaleuca acerosa</i>	<i>Nemcia spathulata</i>
<i>Melaleuca acuminata</i> subsp. <i>websteri</i> ms	<i>Neurachne alopecuroidae</i>
<i>Melaleuca adnata</i>	<i>Nicotiana rotundifolia</i>
<i>Melaleuca aff. concreta</i>	<i>Olearia dampieri</i> subsp. <i>eremicola</i> ms
<i>Melaleuca aff. nesophila</i>	<i>Olearia humilis</i>
<i>Melaleuca conothamnoides</i>	<i>Olearia muelleri</i>
<i>Melaleuca cordata</i>	<i>Olearia pimeleoides</i>
<i>Melaleuca coronicarpa</i>	<i>Olearia propinqua</i>
<i>Melaleuca ctenoides</i>	<i>Opercularia spermococea</i>
<i>Melaleuca eleuterostachya</i>	<i>Ophioglossum lusitanicum</i>
<i>Melaleuca elliptica</i>	<i>Ornithogalum arabicum</i>
<i>Melaleuca fulgens</i> subsp. <i>fulgens</i>	<i>Osteospermum clandestinum</i>
<i>Melaleuca halmaturorum</i>	<i>Panicum antidotale</i>
<i>Melaleuca holosericea</i>	<i>Parietaria cardioscopia</i>
<i>Melaleuca lateriflora</i> subsp. <i>lateriflora</i> ms	<i>Patersonia drummondii</i> subsp. <i>borealis</i> ms
<i>Melaleuca laxiflora</i>	<i>Pentzia globifera</i>
<i>Melaleuca leiocarpa</i>	<i>Persicaria prostrata</i>
<i>Melaleuca leptospermoides</i>	<i>Persoonia angustiflora</i>
<i>Melaleuca macronychia</i> subsp. <i>macronychia</i>	<i>Persoonia chapmaniana</i> P2
<i>Melaleuca nematophylla</i>	<i>Persoonia quinquenervis</i>
<i>Melaleuca nematophylla</i> ms	<i>Persoonia rufiflora</i>
<i>Melaleuca nesophila</i>	<i>Persoonia saundersiana</i>
<i>Melaleuca oldfieldii</i>	<i>Persoonia stricta</i>
<i>Melaleuca orbicularis</i> ms	<i>Petalostylis cassioides</i>
<i>Melaleuca pauperiflora</i> subsp. <i>fastigiata</i>	<i>Petrophile incurvata</i>
<i>Melaleuca platycalyx</i>	<i>Petrophile seminuda</i>
<i>Melaleuca pungens</i>	<i>Petrophile shuttleworthiana</i>
<i>Melaleuca radula</i>	<i>Petrophile wonganensis</i>
<i>Melaleuca scabra</i>	<i>Phebalium ambiguum</i>
<i>Melaleuca sclerophylla</i> P3	<i>Phebalium brachycalyx</i> P1
<i>Melaleuca</i> sp. Wongan Hills (R. Davis 1959)	<i>Phebalium canaliculatum</i>
<i>Melaleuca thyoides</i>	<i>Phebalium megaphyllum</i> ms
<i>Melaleuca uncinata</i>	<i>Phebalium tuberculosum</i>
<i>Melaleuca viminea</i> subsp. <i>viminea</i>	<i>Phebalium tuberculosum</i> subsp. aff. <i>megaphyllum</i>
<i>Mesembryanthemum crystallinum</i>	<i>Phyllota luehmannii</i>
<i>Mesomelaena graciliceps</i>	<i>Pileanthus peduncularis</i>
<i>Mesomelaena preissii</i>	<i>Pimelea aeruginosa</i>
<i>Microcybe multiflora</i> subsp. <i>multiflora</i>	<i>Pimelea angustifolia</i>
<i>Micromyrtus obovata</i>	<i>Pimelea avonensis</i>
<i>Micromyrtus racemosa</i>	<i>Pimelea brevifolia</i> subsp. <i>modesta</i>
<i>Micromyrtus racemosa</i> var. <i>carinata</i> ms	<i>Pimelea brevistyla</i> subsp. <i>minor</i>

<i>Pimelea forrestiana</i>	<i>Rhodanthe laevis</i>
<i>Pimelea imbricata</i> var. <i>piligera</i>	<i>Rhodanthe manglesii</i>
<i>Pimelea sulphurea</i>	<i>Rhodanthe maryonii</i>
<i>Pittosporum phylliraeoides</i> var. <i>microcarpa</i>	<i>Rhodanthe pygmaea</i>
<i>Pityrodia axillaris</i> P1	<i>Rhodanthe spicata</i>
<i>Pityrodia bartlingii</i>	<i>Rhodanthe stricta</i>
<i>Pityrodia halganiacea</i>	<i>Ricinocarpos velutinus</i>
<i>Pityrodia lepidota</i>	<i>Roycea divaricata</i>
<i>Pityrodia teckiana</i>	<i>Rulingia cuneata</i>
<i>Pityrodia terminalis</i>	<i>Rulingia densiflora</i>
<i>Plantago debilis</i>	<i>Rulingia luteiflora</i>
<i>Platysace maxwellii</i>	<i>Rumex drummondii</i> P4
<i>Platysace trachymenioides</i>	<i>Santalum acuminatum</i>
<i>Plectrachne rigidissima</i>	<i>Santalum spicatum</i>
<i>Podolepis canescens</i>	<i>Sarcozona praecox</i>
<i>Podolepis capillaris</i>	<i>Scaevola hamiltonii</i>
<i>Podolepis kendallii</i>	<i>Scaevola humifusa</i>
<i>Podolepis lessonii</i>	<i>Scaevola spinescens</i>
<i>Podotheca angustifolia</i>	<i>Schismus barbatus</i>
<i>Podotheca chrysantha</i>	<i>Schoenia cassiniiana</i>
<i>Podotheca gnaphaloides</i>	<i>Schoenia filifolia</i> subsp. <i>filifolia</i>
<i>Podotheca uniseta</i> P2	<i>Schoenus armeria</i>
<i>Pogonolepis muelleriana</i>	<i>Schoenus hexandrus</i>
<i>Pogonolepis stricta</i>	<i>Schoenus</i> sp. smooth culms(K.R.Newbey 7823)
<i>Polypogon monspeliensis</i>	<i>Scholtzia drummondii</i>
<i>Prasophyllum cyphochilum</i>	<i>Sclerolaena diacantha</i>
<i>Prasophyllum gracile</i>	<i>Sclerostegia disarticulata</i>
<i>Prasophyllum sargentii</i>	<i>Sclerostegia moniliformis</i>
<i>Prostanthera campbellii</i>	<i>Senecio glossanthus</i>
<i>Prostanthera eckersleyana</i>	<i>Senecio laetus</i>
<i>Prostanthera semiteres</i> subsp. <i>intricata</i>	<i>Senna cardiosperma</i> subsp. <i>flexuosa</i>
<i>Psammomoya choretroides</i>	<i>Senna cardiosperma</i> subsp. <i>stowardii</i>
<i>Pseudanthus intricatus</i> ms	<i>Senna glutinosa</i> subsp. <i>charlesiana</i>
<i>Ptilotus drummondii</i> var. <i>drummondii</i>	<i>Senna pleurocarpa</i> var. <i>angustifolia</i>
<i>Ptilotus drummondii</i> var. <i>minor</i>	<i>Setaria verticillata</i>
<i>Ptilotus eriотrichus</i>	<i>Siloxerus multiflorus</i>
<i>Ptilotus exaltatus</i> var. <i>exaltatus</i>	<i>Siloxerus pygmaeus</i>
<i>Ptilotus exaltatus</i> var. <i>villosum</i>	<i>Sisymbrium irio</i>
<i>Ptilotus gaudichaudii</i> var. "unsorted"	<i>Sisymbrium orientale</i>
<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>	<i>Solanum elaeagnifolium</i>
<i>Ptilotus holosericeus</i>	<i>Solanum hoplopetalum</i>
<i>Ptilotus obovatus</i> var. "unsorted"	<i>Solanum lasiophyllum</i>
<i>Ptilotus obovatus</i> var. <i>obovatus</i>	<i>Solanum nummularium</i>
<i>Ptilotus polystachyus</i>	<i>Solanum oldfieldii</i>
<i>Ptilotus polystachyus</i> var. <i>polystachyus</i>	<i>Solanum orbiculatum</i> subsp. <i>orbiculatum</i>
<i>Quinetia urvillei</i>	<i>Sonchus oleraceus</i>
<i>Radyera farragei</i>	<i>Sonchus tenerrimus</i>
<i>Raphanus raphanistrum</i>	<i>Spartothamnella puberula</i> P2
<i>Regelia velutina</i>	<i>Spergula pentandra</i>
<i>Reseda lutea</i>	<i>Spergularia rubra</i>
<i>Rhagodia drummondii</i>	<i>Spyridium majoranifolium</i>
<i>Rhagodia preissii</i> subsp. <i>preissii</i>	<i>Stackhousia monogyna</i>
<i>Rhodanthe chlorocephala</i> subsp. <i>rosea</i>	<i>Stenanthemum intricatum</i>
<i>Rhodanthe chlorocephala</i> subsp. <i>splendida</i>	<i>Stenanthemum pomaderroides</i>
<i>Rhodanthe citrina</i>	<i>Stenopetalum filifolium</i>
<i>Rhodanthe heterantha</i>	<i>Stylium adpressum</i>

<i>Stylium breviscapum</i> var. <i>breviscapum</i>	<i>Verticordia auriculata</i>
<i>Stylium confluens</i>	<i>Verticordia brachypoda</i>
<i>Stylium crassifolium</i>	<i>Verticordia chrysantha</i>
<i>Stylium crassifolium</i> subsp. <i>elongatum</i>	<i>Verticordia chrysanthella</i>
<i>Stylium diuroides</i> subsp. <i>paucifoliatum</i> P2	<i>Verticordia densiflora</i> var. <i>densiflora</i>
<i>Stylium emarginatum</i> subsp. <i>emarginatum</i>	<i>Verticordia endlicheriana</i> var. <i>manicula</i>
<i>Stylium leptophyllum</i>	<i>Verticordia eriocephala</i>
<i>Stylium nungarinense</i>	<i>Verticordia grandis</i>
<i>Stylium petiolare</i>	<i>Verticordia halophila</i>
<i>Stylium uoduscola</i>	<i>Verticordia helmsii</i>
<i>Stylobasium australe</i>	<i>Verticordia mitchelliana</i>
<i>Stypandra glauca</i>	<i>Verticordia monadelpha</i> var. <i>monadelpha</i>
<i>Styphelia tenuiflora</i>	<i>Verticordia muelleriana</i> subsp. <i>muelleriana</i> P3
<i>Swainsona beasleyana</i>	<i>Verticordia nobilis</i>
<i>Swainsona colutooides</i>	<i>Verticordia picta</i>
<i>Synaphea interioris</i>	<i>Verticordia plumosa</i> var. <i>brachiphylla</i>
<i>Templetonia aculeata</i>	<i>Verticordia pritzelii</i>
<i>Templetonia sulcata</i>	<i>Verticordia rennieana</i>
<i>Teucrium sessiliflorum</i>	<i>Verticordia roei</i> subsp. <i>meiogona</i> P1
<i>Thelymitra antennifera</i>	<i>Verticordia staminosa</i> subsp. <i>staminosa</i> R
<i>Thelymitra campanulata</i>	<i>Verticordia tumida</i> subsp. <i>tumida</i>
<i>Thelymitra nuda</i>	<i>Verticordia venusta</i> P3
<i>Thelymitra sargentii</i>	<i>Vittadinia dissecta</i> var. <i>hirta</i>
<i>Thomasia tremandroides</i>	<i>Waitzia acuminata</i> var. <i>acuminata</i>
<i>Thryptomene aspera</i> subsp. <i>Paynes</i>	<i>Waitzia nitida</i>
Find(C.A.Gardner 11996)	<i>Westringia cephalantha</i>
<i>Thryptomene australis</i>	<i>Wrixonia prostanthroides</i>
<i>Thryptomene cuspidata</i>	<i>Wurmbea drummondii</i> P4
<i>Thryptomene denticulata</i>	<i>Wurmbea tenella</i>
<i>Thryptomene hyporhytis</i>	<i>X Drakodenia ornata</i> ms P1
<i>Thryptomene kochii</i>	<i>Xanthorrhoea gracilis</i>
<i>Thryptomene mucronulata</i>	<i>Xanthosia bungei</i>
<i>Thryptomene racemulosa</i>	<i>Zygophyllum simile</i>
<i>Thyridolepis mitchelliana</i>	
<i>Thysanotus aff. patersonii</i>	
<i>Thysanotus manglesianus</i>	
<i>Thysanotus patersonii</i>	
<i>Thysanotus rectantherus</i>	
<i>Trachymene cyanopetala</i>	
<i>Trachymene ornata</i>	
<i>Trachymene pilosa</i>	
<i>Tragus australianus</i>	
<i>Trichanthodium skirrophorum</i>	
<i>Trifolium glomeratum</i>	
<i>Triglochin calcitrapum</i> subsp. <i>incurvum</i> ms	
<i>Triglochin mucronatum</i>	
<i>Triglochin stowardii</i> P2	
<i>Triodia rigidissima</i>	
<i>Trymalium daphnifolium</i>	
<i>Uldinia ceratocarpa</i>	
<i>Urodon capitatus</i>	
<i>Velleia cycnopotamica</i>	
<i>Velleia discophora</i>	
<i>Velleia rosea</i>	
<i>Verreauxia reinwardtii</i>	
<i>Verticordia acerosa</i> var. <i>preissii</i>	