

Action Statement

Flora and Fauna Guarantee Act 1988

No. 96

Small Milkwort *Comesperma polygaloides*

Description and Distribution

Small Milkwort *Comesperma polygaloides* (F. Muell.) is an erect, perennial forb, 10-20cm tall, rarely to 35cm tall. The leaves are bluish-green, 0.5-1.7cm long, narrowly oblong to oblong, subsessile and 0.1-0.3cm wide. Clumps of upright shoots arise from woody underground rhizomes. The small, purple-mauve, butterfly-like flowers are in racemes 2-7cm long. The seed is covered with fine hairs, aiding wind dispersal. Flowering and seed-set generally occur between November and February, however on the Western (Basalt) Plains, flowers have been noted as late as June. More detailed botanical descriptions are found in Willis (1972) and Jessop and Tolkein (1986).

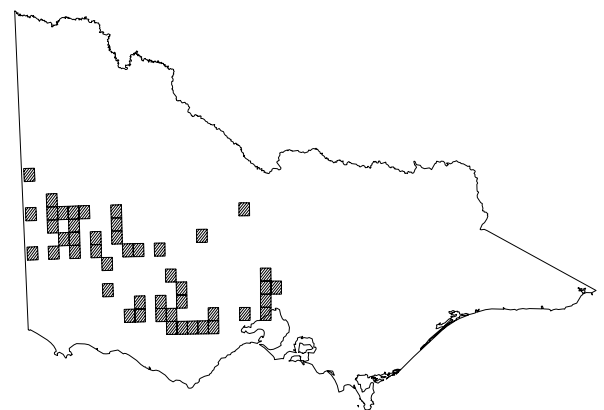
Nationally, Small Milkwort has a disjunct distribution. It occurs in the South Western Province and adjacent Coolgardie District of Western Australia where it is widespread but uncommon (Beard 1970 in Scarlett 1981). It has also been recorded from South Australia in the Port Elliot-Goolwa area to Bordertown and Naracoorte (Black 1948, Jessop 1980 in Scarlett 1981) through to western and central Victoria (Scarlett 1981). Small Milkwort is found on a range of soil types, from clays of volcanic origin to sandy

In Victoria, Small Milkwort is found in remnant native grasslands on the Western (Basalt) Plains where it is restricted to small localised stands on roadsides and railway reserves (Scarlett 1981). These grasslands are dominated by Kangaroo Grass *Themeda triandra*, Silver Tussock *Poa labillardieri* and, less commonly, Wallaby Grasses *Danthonia* spp. and Spear Grasses *Stipa* spp.

Small Milkwort is also an uncommon component of the grassy woodlands of the Wimmera extending east to the Bendigo area. These woodlands are generally dominated by Grey Box *Eucalyptus microcarpa*, Yellow Gum *Eucalyptus leucoxylon* or



Small Milkwort *Comesperma polygaloides*
(Illustration by Mali Moir)



Distribution in Victoria

[data from Flora Information System, NRE 1998]

Small Milkwort is found in mallee communities on relatively fertile soils.

Since it was listed as a threatened species under the **Flora and Fauna Guarantee Act 1988** in 1991, surveys have increased the knowledge of both the range and number of stands of the species.

In the Wimmera, Small Milkwort occurs in 10 Conservation Reserves and six other Public land blocks.

In the Bendigo area the species has been recorded in two Conservation Reserves and one unreserved Public land site.

On the Western (Basalt) Plains there is one reserved site at Derrimut Grassland. Other sites are all on unreserved Public land comprising sections of railway reserve, and roadsides in the Shires of Corangamite, Golden Plains, Moyne, Pyrenees and Southern Grampians.

Conservation Status

Current status

NRE (1998).....Vulnerable (Victoria)

The Small Milkwort has been listed as a threatened taxon on Schedule 2 of the **Flora and Fauna Guarantee Act 1988**.

Reasons for conservation status

Small Milkwort is not presently endangered but is at risk over a longer period through continued habitat depletion.

Small Milkwort was once widespread across areas that have been cleared, cultivated, heavily grazed or developed for urban uses. Small Milkwort is sensitive to heavy stock grazing and is eliminated by cultivation. Only a small fraction of its former habitat remains in a near-natural condition.

Small Milkwort continues to be under threat from habitat destruction, modification and fragmentation throughout its range. It is not known whether Small Milkwort populations are viable and if recruitment is occurring.

Despite an increase in the number of known stands of Small Milkwort, the status of the species is regarded as insecure. All records are from vegetation communities that have been greatly reduced in extent and poorly reserved. Stands in reserves are often found in small areas with relatively fertile soils that are not typical of the majority of the reserve.

Small Milkwort stands in the Wimmera are almost invariably limited to sites where the history of stock grazing has been of light intensity or infrequent. Grazing causes decline of Small

Milkwort through direct impact and also possibly by promoting introduced grasses which then outcompete Small Milkwort. Many of the remaining stands of Small Milkwort are under continuing threats from rabbit grazing and, possibly, inappropriate fire regimes.

Site disturbance by mechanical equipment is a threat to Small Milkwort where there is potential for invasion of introduced grasses or where the underground parts are likely to be disturbed. The species persists on the Western Highway adjacent to the Grampians National Park under regular but shallow soil scalping. This practice may inadvertently assist the plant through reduction in competition from other plants, without harming the underground root stock.

Sites on the Western (Basalt) Plains are managed, or utilised, by a range of authorities and individuals including VicRoads, Victrack Access and private rail operators, local government, telecommunications providers, electricity supply authorities, rural fire brigades, adjoining landholders and drovers. Activities conducted by such groups can inadvertently threaten Small Milkwort. One roadside site north of Mortlake was destroyed in May 1995 by cattle droving.

In its final recommendation the Scientific Advisory Committee (SAC 1991) determined that the Small Milkwort is:

- in a demonstrable state of decline which is likely to result in extinction; and
- significantly prone to future threats which are likely to result in extinction; and
- very rare in terms of abundance or distribution.

Major Conservation Objectives

1. Protect at least 30 populations of Small Milkwort across the range of the species, and maintain or increase numbers of plants above current population levels.
2. Establish a population in cultivation to provide material for taxonomic and ecological investigation

Management Issues

Little research into the ecology of Small Milkwort has been undertaken.

Management issues vary across the geographic range of the species. On the Western (Basalt) Plains the species is generally restricted to roadsides and railway land subject to a range of potentially threatening uses including provision of public utilities, road works and droving. Small Milkwort is poorly represented in conservation reserves. The northern populations are largely confined to conservation reserves where the major

threat is likely to be invasion by introduced grasses. The fragmentation of stands may have long-term implications for viability of the species (Foreman *pers. comm.*).

Deliberate burning of many remnants of the Western (Basalt) Plains Grasslands takes place as part of strategic fire-break fuel reduction by Rural Fire Brigades. On some other sites burning by NRE is also undertaken in order to provide for the habitat requirements of the constituent species.

The difference in habitat types, response to various management regimes and flowering times across the range of the species suggests that taxonomic research into the species may be useful and that local provenance material should be used in any re-establishment programs.

Ecological issues specific to the taxon

Small Milkwort is palatable to domestic stock and grazing therefore constitutes a direct threat to this species.

Observations on the Western (Basalt) Plains indicate that Small Milkwort resprouts after fire. While some stands have been observed to persist where burning has taken place on a number of occasions over several years, not enough is known of the long-term persistence of the plant under different fire regimes. At sites where burning is carried out early in the season eg: to promote early flowering species, there is potential for Small Milkwort to become locally extinct. It is also possible that fire promotes Small Milkwort by decreasing competition from other species and that the long term absence of fire may therefore disadvantage Small Milkwort.

Knowledge of the persistence of the perenniating root stock is inadequate and requires further investigation. However individuals have been observed to resprout for a number of years at the same location both on burnt and unburnt sites.

Although propagation from has been shown to be successful, the difficulty in collecting seed, due to rapid shedding of seed, is likely to limit propagation by this method. Propagation from cuttings has been attempted with very limited success to date. However, cuttings from new season's growth have potential as a means of propagation (Scarlett *pers. comm.*).

Stands of Small Milkwort are generally limited to high quality habitat where invasion by introduced grasses is low. This suggests Small Milkwort may be vulnerable to competition from these grasses. Competition from native species may also be a factor determining the distribution of Small Milkwort.

Wider conservation issues

The native grasslands of the Western (Basalt) Plains, one of the main habitats of Small Milkwort, are themselves listed as a threatened community under the **Flora and Fauna Guarantee Act (1988)**. Other listed species that are components of these grasslands include Button Wrinklewort *Rutidosia leptorrhynchoides*, Large-fruit Groundsel *Senecio macrocarpus* and Hairy-tails *Ptilotus erubescens*. Achieving the conservation objectives for Small Milkwort will also benefit these individual species and the grassland community as a whole. Care will however need to be taken to ensure that specific management actions for other species do not have detrimental effects on Small Milkwort.

Management Plans for Conservation Reserves supporting Small Milkwort need to incorporate appropriate management prescriptions for Small Milkwort.

Weed competition, for example from Chilean Needle-grass *Nassella neesiana* and Serrated Tussock *Nassella trichotoma*, in sites to the west of Melbourne, are a threat to grassland remnants. In the Wimmera, Wimmera Ryegrass *Lolium rigidum* and Wild Oats *Avena barbata* are threats to grassy woodlands. Bent Grass *Agrostis capillaris* and Phalaris *Phalaris aquatica* are likely to compete with Small Milkwort on the Western (Basalt) Plains (Ingeme *pers. comm.*).

Social and economic issues

Avoiding conflicting use of roadsides by local government, communications and electricity providers, may in some instances lead to increased costs in the provision and maintenance of public utilities. However, modification of grading practices, location of utilities to firebreaks, can in most cases be accommodated with little extra expense if the issues are addressed early.

The existing practice on the Western (Basalt) Plains of roadside burning by Rural Fire Brigades does not appear to harm Small Milkwort provided it is carried out at an appropriate time of the year, and may even assist in its conservation.

Droving of stock along roadsides during the widespread drought of 1994/95 for the purpose of feeding stock (rather than movement between paddocks) highlighted a major threat to roadside stands of Small Milkwort (and other threatened plant species). Increased regulation of droving along some roadsides, including avoiding sites with conservation values, will affect a small number of stock owners from interstate and the persons they employ as drovers. Droving is generally limited to drought years. The issue of droving of stock for feed on roadsides is an

emotive one, but generally there is strong Shire and public support for its control.

There will be a need for continued training of bodies such as Telstra, Optus, rail operators, local shires, contractors, etc who have an interest in the management of road and railway reserves. Further training in the appreciation of conservation values and appropriate management techniques is required. Previous training programs have been highly successful and have resulted in long-term cost savings for these operators through minimisation of the need for site restoration and risks of erosion.

The presence of Small Milkwort adds to the colours and variety of species in grasslands and grassy woodlands, and constitutes an attraction to the members of the community who, in increasing numbers, visit these sites.

Small Milkwort may be suitable for propagation in gardens or in containers for the flower trade.

Previous Management Action

A Draft Conservation Program for Native Grasslands and Grassy Woodlands in Victoria (DCE 1992) has been completed.

Botanical surveys have been conducted on grasslands at Derrimut near Melbourne (Lunt 1990), further west on the Western (Basalt) Plains (Stuwe 1986), in the Little Desert National Park (McGuckin 1994) and in Wimmera Buloke woodlands (Morcom unpubl.).

An Action Statement for the Western (Basalt) Plains Grassland Community has been prepared (CNR 1994) and is being implemented.

Management Plans have been prepared for the Shelford-Mt Mercer Road, the Carngham-Streatham Road and the Shelford - Cressy Road, all of which support populations of Small Milkwort. Liaison with stakeholders in the management of these roads has been undertaken.

Gold exploration practices were modified at a site containing Small Milkwort in the Deep Lead Flora and Fauna Reserve near Stawell. Subsequent monitoring has shown that the plants persist.

Stands of Small Milkwort on the eastern boundary of the Grampians National Park have been monitored. Yearly fluctuations in numbers are thought to reflect variations in annual rainfall.

An attempt to propagate the species from seed resulted in 8 germinants from 12 seeds, and propagation from cuttings has been attempted with limited success (N. Scarlett *pers. comm.*).

Negotiations and training were undertaken by NRE with National Rail Corporation contractors and the Public Transport Corporation to protect stands of

remnant grasslands on the Western (Basalt) Plains supporting Small Milkwort during the 1995 works on the Melbourne to Adelaide rail line.

Intended Management Action

Survey

1. Conduct further surveys including for Kamarooka occurrence; if located, include in propagation and monitoring efforts.

Planning

2. Develop and implement Roadside Management Plans for all roadside sites.
3. Develop and implement Public Authority Management Agreements for the two Wimmera cemeteries in which Small Milkwort occurs.

Site management guidelines

4. Develop and apply site management guidelines for Small Milkwort sites on public land. Modify these management guidelines depending on results of monitoring. Issues to be considered include:
 - preventing use of machinery or vehicles on Small Milkwort sites when soils are wet or such use will damage the underground parts of the plants.
 - determining appropriate grazing management on a site by site basis. On sites where Small Milkwort persists in the presence of grazing, allow grazing to continue ensuring that the grazing is of light intensity and ceases well before the flowering period. Ensure that such sites are monitored.
 - reducing competition from introduced grasses (where applicable) through careful application of herbicide directly onto the introduced grass at times when the Small Milkwort is dormant.
 - ensuring that Small Milkwort sites are not burnt prior to flowering, seed set and dispersal.

Population monitoring

5. Monitor recruitment and flowering at 6 representative sites, to determine population persistence, trends and recruitment under various management regimes; collect site description and grazing data.

Other Desirable Action

Habitat assessment

6. Collect site description data, including information on past and present grazing regimes, for stands of Small Milkwort so as to

build up knowledge of the ecological requirements of the species.

Propagation

7. Support continued investigation into propagation methods. Establish ex-situ populations of Small Milkwort, from material collected across the range of the species, to be used as sources of propagation material. Universities and community groups will be encouraged to participate with assistance under the *Botanic Guardians Scheme*.

Population establishment and reinforcement

8. Establish or reinforce populations of at least 50 plants of Small Milkwort on at least ten public land sites across the range of the species, where the species now exists only in very small numbers or sites that are within the former range of the species. Universities and community groups will be encouraged to participate with possible assistance under the *Botanic Guardians Scheme*.

Research

9. Conduct trials on the effect of fire on Small Milkwort both in the Western (Basalt) Plains and the Wimmera. Modify management prescriptions accordingly after glasshouse trials.

Taxonomy

10. Investigate taxonomic and genetic differences between populations of this species, especially in regard to differences between populations on the Western (Basalt) Plains and populations in the Wimmera.

Legislative Powers Operating

Legislation

Catchment and Land Protection Act 1994 - provides for the integrated management and protection of catchments, community participation in the management of land and resources, and the control of noxious weeds and pest animals.

Conservation Forests and Lands Act 1987 - provides for the management of public land under the Act, the coordination of legislation administered by NRE and for the preparation of codes of practice.

Crown Land (Reserves) Act 1978 - provides for reserving areas as public land and for making a specific reservation status for existing public land.

Country Fire Authority Act 1958 - provides for fire protection and suppression in country areas

and requires that authorities take practical steps for the prevention of fires.

Flora and Fauna Guarantee Act 1988 - provides for the protection of flora and fauna in Victoria through a range of mechanisms including controls over the handling or protected flora and listed fish.

Forests Act 1978 - provides for the management of forests, and includes controls over the taking of forest produce.

Local Government Act 1958 - provides for local council by-laws and conservation regulations (e.g. permit requirement for land clearing).

National Parks Act 1975 - provides for the preservation, protection and management of natural areas and includes controls over taking native flora and fauna from parks.

Planning and Environment Act 1987 - provides for the protection of native vegetation through the State section, and for regional planning controls in all planning schemes.

Licence/permit conditions

Permit collection of limited quantities of cuttings or seed only for the purpose of establishing plants in artificial situations which will then be used for many years for propagation of the species.

Once an ex-situ population of Small Milkwort is established, further seed collection will be permitted only for conservation purposes. No collection for horticultural purposes will be permitted. If local variation in the species is demonstrated across its range and propagation stock is required from a type that has not yet been established in an ex-situ situation.

Consultation and Community Participation

Discussions will be held with local government with the aim of drafting uniform Local Laws relating to droving and identifying "No Droving" roads.

Discussions will continue with rail operators and other stakeholders to ensure suitable ongoing management of rail reserves.

Community participation in conservation of Small Milkwort, and the Western (Basalt) Plains in general, will be encouraged by on-site "Grassland walks" at selected sites.

Implementation, Evaluation and Review

The Regional Managers, Port Phillip, South West and North West Regions, will coordinate the implementation of this action statement.

Primary responsibility for implementation and assessment of the effectiveness of the management actions lie with the Flora and Fauna Unit of these Regions.

In line with the major conservation objectives, this Action Statement will be review in 2004 in light of the results of monitoring

Contacts

Management

NRE Flora and Fauna staff in South West, North West and Port Phillip Regions and Parks, Flora and Fauna Division in Melbourne.

Biology

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Further information can be obtained from Department of Sustainability and Environment Customer Service Centre on 136 186.

Flora and Fauna Guarantee Action Statements are available from the Department of Sustainability and Environment website: <http://www.dse.vic.gov.au>

This Action Statement was first published in 1999 and remains current. This version has been prepared for web publication. It retains the original text of the action statement, although contact information, the distribution map and the illustration may have been updated.

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