

Flora & Fauna Guarantee Action Statement

#28

This Action Statement was first published in 1992 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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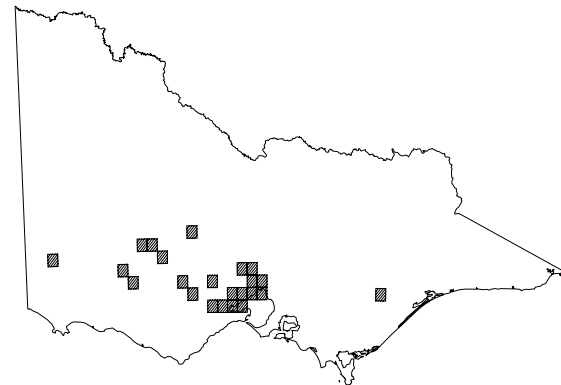
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Button Wrinklewort *Rutidosia leptorrhynchoides*



Button Wrinklewort (*Rutidosia leptorrhynchoides*)



Distribution in Victoria (DSE 2002)

Description and Distribution

The Button Wrinklewort (*Rutidosia leptorrhynchoides* F.Muell) is a perennial multi-stemmed semi-shrub with upright, linear, lanceolate basal leaves and leafy, ascending stems to 350 mm. Flower heads are terminal in the upper branches with numerous bracts in several rows. Florets are orange-yellow, tubular and bisexual. The species flowers from October to February (Scarlett & Parsons 1990). A full botanical description of the species is given in Burbidge & Gray (1979).

The Button Wrinklewort was formerly widespread across the grasslands and grassy woodlands south of the Great Dividing Range in Victoria into southeastern New South Wales. The historical range spreads from Casterton (near the Victorian-South Australian border) to near Queanbeyan in New South Wales. The species is now restricted to 11 tiny refugia in south-western Victoria (including the western suburbs of

Melbourne, Lara, Bannockburn, Rokewood, Wickliffe and between Beaufort and Ararat), with outlying populations on the shores of Lake Burley Griffin in Canberra and near Queanbeyan, New South Wales. The species is not known to occur naturally from any conservation reserve in Victoria.

Conservation Status

Current Status

Gullan <i>et al.</i> (1990)	Endangered in Victoria
Briggs & Leigh (1988)	Endangered in Australia

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

Reasons for Conservation Status

It is estimated that 95% of Victoria's native lowland grasslands have been substantially altered since European settlement (Stuwe 1986). Historically, the decline of the Button Wrinklewort is linked with the destruction of its grassland habitat. The fertile soils and light timber cover that characterised the former range of the species were subject to agricultural development. Most of its area has been cleared, fertilised and oversown with introduced pasture species. The major grassland type known to contain Button Wrinklewort is the Western (Basalt) Plains Grassland community. This community has been listed as threatened on Schedule 2 of the *Flora and Fauna Guarantee Act 1988*, since only about 0.16% of the original extent of the community now remains and the decline is continuing (SAC 1991b).

The Button Wrinklewort has been recorded from 16 ten-minute grids representing 18 populations. The species is presumed extinct at seven of these sites, as it has not been recorded despite intensive searches. Populations at the 11 remaining sites have also been reduced following local disturbances in recent years, including urban expansion, V/line track duplication and fire protection works. Although all remaining remnants are on public land, these are still prone to significant threats as the land is not being managed principally for conservation.

In their final recommendation, the Scientific Advisory Committee (SAC 1991a) determined that the Button Wrinklewort:

- is rare,
- is in a demonstrable state of decline as its native grassland habitat has declined, and
- is significantly prone to future threats, especially vegetation clearance and urban expansion.

Major Conservation Objectives

The major conservation objective is to ensure that the Button Wrinklewort can survive, flourish and maintain its potential for evolutionary development in the wild. This will be achieved by:

- protecting and enhancing known wild and re-established populations through appropriate management of habitat and cooperative management agreements;
- maintaining genetic variation within the species by collecting and propagating seed of known populations for future reintroductions; and
- establishing three additional populations with a minimum size of 1500 individuals in secure areas of suitable habitat by 1995.

Management Issues

Ecological Issues Specific to the Taxon

The Button Wrinklewort is a semi-shrub species restricted to open stands of plains grassland, and grassy woodlands, on fertile clays to clay loams, usually in areas where the grass cover is more open: either as a result of recurrent fires or on low rises with shallow, stony soils. In undisturbed grassland, the main management issue is to maintain an appropriate fire regime, since this profoundly affects habitat suitability. Lowland grassland communities need 'intermittent' burning to maintain floristic diversity (McDougall 1987, Lunt 1990). Where frequent burning is prevented, dense swards of grass species out-compete the Button Wrinklewort and the species vanishes. In heavily grazed areas the species is also rapidly removed because it is palatable to stock. The Button Wrinklewort is under threat from direct destruction, heavy and persistent grazing over the flowering/fruitlet period, severe soil disturbance and compaction, competition from dense grasses, weed invasion and altered fire regimes.

The 11 extant refugia, representing a total of approximately 2000 plants, are now highly fragmented. Genetic health and viability of these remnants is now a serious issue for the long-term survival of the species.

Also, if the plants are to survive in the wild in the long term, areas will need to be large enough to support populations of the pollinator(s). The fleshy fruits of this species are bird dispersed (Floyd 1989).

Wider Conservation Issues

The long-term conservation of the Button Wrinklewort requires the retention of native grassland habitat, and this is likely to be beneficial for most other indigenous grassland flora and fauna and the ecological community as a whole.

However, the potential effects of the required fire regime on other biota, particularly the fauna and other threatened plant species, are not well understood. Therefore an ecological, rather than individual species, approach to management of remnant lowland grasslands will be required to ensure that the conservation benefits are optimised.

Notwithstanding, it may be necessary to manage small areas specifically for the conservation of rare or threatened plant species (VROTS). Sites where the Button Wrinklewort occurs are presently being managed with this in mind.

Degradation and disturbance within remnant grasslands, including the existing Derrimut and Laverton North Grassland Reserves, is increasing. There has been limited active management at these sites. The serious problem of weed infestation, particularly the aggressive invasion by the introduced Chilean Needle-grass (*Nassella* (previously *Stipa*) *neesiana*), needs immediate attention if the values of these grasslands are to be preserved. With further industrial and residential development on surrounding remnant grasslands, drainage and water quality issues will also require further attention, as will management issues relating to fire.

Social and Economic Issues

By and large, the issues are inseparable from those associated with protecting grasslands in general. There are some minor site-specific issues related to the Button Wrinklewort.

The main social benefit of conserving the Button Wrinklewort is that it meets community concerns that further extinctions of native species be prevented. Preserving native grassland provides a wider range of natural habitats for recreation, tourism, education and research. It also provides a gene pool from which improved agricultural plants may be developed.

There are minor social costs to ensuring the long-term survival of the Button Wrinklewort because small areas of land have to be set aside and managed in specific ways. This may have minor effects on grazing, tree planting, fire prevention and the activities of public authorities. Management of areas within cemeteries could potentially restrict the area allocated for future burials, but without proper planning the species could be eliminated from these areas.

Protection of the Button Wrinklewort on farming properties is not likely to be a major issue, since all known populations are on public land and it is unlikely to remain in areas that have been subject to intensive agricultural activities.

However, many grassland remnants are on road reserves adjacent to farming properties. These areas are under continued threat as rural fire prevention measures often override conservation values. Adjoining landholders and management bodies give a high priority to fire prevention for personal safety and protection of assets. Unless adequately explained, any changes to fire prevention measures may be perceived as downgrading these priorities.

The rural community is generally unaware of the conservation values of native grasslands. Further, given the economic difficulties facing many rural people, some perceive Government funds as being spent on matters of little direct consequence to them.

Management Action

Previous Management Action

Habitat Inventory

Scarlett (1984) has undertaken research and surveys to determine the occurrence of Button Wrinklewort. More generalised inventories of native grasslands in various parts of Victoria have been prepared by Frood (1985), Stuwe (1986), McDougall (1987), Lunt (1987, 1988 & 1990) and DCE (1990). Consultant botanists K. McDougall and T. Barlow are currently studying remnant grassland vegetation in western Victoria under an ANPWS grant.

Extant Populations

A V/Line Vegetation Management Agreement between the Public Transport Corporation (PTC) and the Department of Conservation and Environment (DCE) was made in October 1989. This agreement allows for sites of Botanical

Significance occurring on rail reserves to be identified, sign posted and/or fenced and appropriate management implemented. Eight rail reserves where the Button Wrinklewort occurs have been identified and entered on the Schedule. All these sites have been signposted and fenced. A three-year autumn management burn and weed control strategy has been implemented at these sites. DCE and the Health Department are negotiating a Public Authority Management Agreement under the *Flora and Fauna Guarantee Act 1988*. The Rokewood and Truganina Cemeteries have been identified as having high conservation values under such an agreement and initial discussions, identifying past and preferred management activities, have taken place. The Shire of Ararat and the Wickliffe Fire Brigade have been notified of the presence and significance of the Button Wrinklewort population on the road reserve north of Wickliffe. Verbal agreement on the passive management of this site, including not enlarging a mineral earthbreak, has been reached. The Wickliffe to Willaura road is a strategic fire break; however, the Fire Brigade has agreed to burn the small section of road reserve where the population of Button Wrinklewort and another endangered species (*Ptilotus erubescens*) occurs, on a two- to three-year frequency.

Potential Habitat Areas

Under the *Crown Land (Reserves) Act 1978*, Derrimut Grassland Reserve was made a permanent reserve in 1989, Laverton North Grassland Reserve was made a temporary reserve in 1983 and the adjacent area, previously leased by the Royal Melbourne Institute of Technology, was made a temporary reserve on 25 June 1991.

Other areas of potential habitat are being managed in ways compatible with the conservation of the Button Wrinklewort. These include Cobra-Killuc Wildlife Reserve, Lake Goldsmith State Game Reserve, Gellibrand Hill Park, Hamilton Institute of Rural Learning and some railway reserves under the V/Line Vegetation Management Agreement.

DCE (1990) has published an action plan for conservation of remnant native grasslands and grassy woodlands of the Melbourne area, and is preparing a statewide Grasslands and Grassy Woodlands Conservation Strategy.

Biological Research and Survey

The Botany Department at La Trobe University, with a research grant from ANPWS, Save The Bush and World Wide Fund for Nature (WWFN), has been instrumental in pioneering techniques for re-establishing the Button Wrinklewort and other threatened grassland species. Trials have taken place at various secure grassland sites in western Victoria.

Current research by La Trobe University at Truganina is centred on population recruitment and seedling mortality studies (John Morgan pers. comm.).

Burnley College of Horticulture is also undertaking studies on grassland ecology at Truganina, focusing on interactions between *Rutidosis* populations and other flora and soil components within the site (John Delpratt pers. comm.).

Habitat Management

Work has begun on Draft Management Plans for the Derrimut

Grassland Reserve, the St. Albans and Bannockburn Railway Reserves and on a series of grassland Management Guidelines.

Long-term grassland restoration programs have begun at Organ Pipes National Park and Mooramong. Ecological burning and weed control activities have been undertaken at both Derrimut and Laverton North Grassland Reserves and at Cobra-Killuc Reserve consistent with the area's Management Plan (Hastings 1983).

Grasslands containing Button Wrinklewort have recently been burnt at Truganina and Rokewood Cemeteries and at Laverton, Bannockburn, Middle Creek and Dobie's Bridge Railway Reserves.

Propagation and Translocation

Between 1950 and 1951 the Native Plants Preservation Society planted Button Wrinklewort at its sanctuary in Sydenham. The species has not persisted there. Since 1980, the Botany Department of La Trobe University and The National Trust have developed a propagation and reintroduction program.

La Trobe University Botany Department and the Department of Conservation and Environment have introduced the species to the Laverton North Grassland Reserve. By 1989, 711 individuals had been established. La Trobe University and The National Trust of Victoria have introduced the species to the Mooramong Nature Reserve. By 1989, over 900 individuals had been established.

DCE and the Friends of The Organ Pipes National Park have recently established over 100 plants at Organ Pipes as part of the grasslands restoration program.

In 1990, DCE Ballarat collected seed and propagated plants at the Creswick Forest Nursery. Some of these plants have been used to establish a small population in the Middle Creek Bushland Reserve and a Native Grassland display at the Royal Zoological Gardens, Melbourne. Those planted at Middle Creek did not persist but those at the Zoo appear to have successfully established.

Button Wrinklewort was placed on the Priority List of the Royal Botanic Gardens for inclusion in the seed bank and propagation program for VROTS species in June 1992.

In 1991, La Trobe University Botany Department established a small plot of 50 plants at the Yalla-Y-Poora Reserve, north of Streatham.

Interpretation and Community Awareness

A native grassland display has been established at the Melbourne Zoo to promote recognition and public awareness of this threatened community and its rare plant species.

A poster on Grasslands in Victoria was published by DCE in June 1991.

Intended Management Action

The effectiveness of this Button Wrinklewort conservation program will be maximised, while the costs are minimised, if it is integrated with management of the grassland and grassy woodland communities of which it is a part. The

same applies to other species which rely on grasslands or grassy woodlands. The best approach will be to prepare a grassland and grassy woodland action statement which integrates the conservation requirements of the whole suite of (potentially) rare or threatened component species. It will be necessary to ensure that known populations of Button Wrinklewort are protected from disturbance and that the sites continue to receive ongoing monitoring and management commitments.

Flora and Fauna Guarantee Act 1988

- Undertake a Critical Habitat Determination for the Button Wrinklewort by 1993.
- Develop a policy on the deliberate and indirect taking of protected flora to be incorporated into road and rail reserve management plans
- Inform relevant land/area managers where such sites are situated.
- Establish a Public Authority Management Agreement under the *Flora and Fauna Guarantee Act 1988* with the Public Transport Corporation by 1994, to replace the 1989 agreement.

Biological Research and Survey

- Continue monitoring surveys of Button Wrinklewort populations at known sites.
- Continue to encourage biological research of Button Wrinklewort by tertiary institutes.
- Where appropriate, implement research findings relevant to the management of the Button Wrinklewort.

Habitat Conservation

- Complete by 1992 approved management plans for both Truganina and Rokewood Cemetery populations under the auspices of the public authority management agreement between DCE and the Cemetery Trusts.
- Identify the Wickliffe site with 'Significant Roadside Area' markers after consultation with the Fire Brigade and the Shire of Ararat by end 1992. Task to include written agreement in the form of a Roadside Management Plan for the site and other significant roadsides in the Shire.
- Complete and implement management prescriptions for all rail reserves where the Button Wrinklewort occurs, e.g. weed control at Manor is necessary to prevent Fennell (*Foeniculum vulgare*) becoming a major problem.
- Ensure that populations of the Button Wrinklewort and other rare or threatened plant species occurring on rail reserves are taken into consideration at an early planning stage in the rail standardisation project between Melbourne and Adelaide, and in any duplication projects.
- Develop and implement appropriate fire management and weed control programs at all Grassland sites where the species exists or has been reintroduced. Incorporate suitable techniques sensitive to the natural values of the areas concerned.

Propagation and Translocation

- Establish self-perpetuating Button Wrinklewort populations numbering at least 1500 individuals at three

secure grassland sites within the former distribution of the species by 1995. Sites to consider should include Derrimut Grasslands Reserve, Gellibrand Hill Park, Organ Pipes National Park (where a grasslands restoration program has begun), Cobra-Killuc Wildlife Reserve and the Hamilton Community Parklands where suitable grasslands exist. In the case of the latter two sites, only plants from the Wickliffe population are appropriate for reintroductions. Reintroduction sites should utilise the most threatened and scientifically significant sites, and those, to date, that have not been used for propagation (e.g. Dobies Bridge, Bannockburn and Wickliffe provenances).

- Undertake monitoring at all re-establishment sites to assess the success or failure of activity and rectify as necessary.
- Establish a population of the Button Wrinklewort in the Royal Botanic Gardens in accord with the *ex situ* conservation strategy by 1993.

Interpretation and Community Awareness

- Establish interpretative facilities and educational material at the Royal Botanic Gardens, Melbourne Zoo, DCE Nurseries and within relevant DCE Regions to promote the conservation of grassland communities and associated rare plant species.

Other Desirable Management Actions

Biological Research

Continue and extend biological studies to provide information on genetics, reproduction, population dynamics and habitat requirements of the Button Wrinklewort.

Habitat Conservation

As far as possible, ensure that identified habitat areas are managed appropriately. Such actions would consist of a cooperative approach and, where appropriate, be incorporated within all relevant DCE strategies and plans.

Community Awareness

Incorporate into Grasslands and Grassy Woodlands Conservation Strategy, social studies into rural community attitudes towards native grassland conservation issues and alternative fire protection measures.

Legislative Powers Operating

Legislation

Flora and Fauna Guarantee Act 1988: Rutidosis leptorhynchoides is protected flora under the Act. Regulates taking of listed biota from wild, has provision for preserving habitat and promoting conservation actions.

Crown Land (Reserves) Act 1975: provision for reserving Crown land for specific purposes.

Amendment S17 to the State Planning Scheme under the *Planning and Environment Act 1987*: requires a permit to remove, destroy, or lop native vegetation from any area of land in contiguous ownership that exceeds 0.4 hectares.

Licence/Permit Conditions

A Permit to take or possess Button Wrinklewort should only be issued if DCE is satisfied that the proposal has a direct benefit to the conservation of the species. Such proposals may include approved research and survey projects and the Propagation and Translocation Program.

Consultation and Community Participation

There have been:

- articles in local papers in the western suburbs and rural areas;
- discussions with La Trobe University Botany Department relating to flora management and weed control;
- discussions and correspondence with cemetery trusts notifying the significance of the sites and the need for sympathetic management;
- negotiations with various municipalities and government authorities over management of grasslands containing populations of Button Wrinklewort; and
- publicity and the development of a public awareness program in conjunction with the launching of the Government's Grasslands Action Plan early in 1991. The plan was produced with input from community groups, and its release is resulting in further development of public awareness of the issues concerning conservation of grasslands.

There will be:

- production of extension and interpretative material to increase public awareness, and activities in local schools to familiarise students with grassland communities and their inhabitants;
- public participation in the development of the various grassland management plans being prepared by DCE; and
- a reprint of the Grasslands poster.

Implementation, Evaluation and Review

The DCE Managers in Regions where the Button Wrinklewort occurs will be primarily responsible for overseeing the implementation of this Action Statement.

The Action Statement will be reviewed by March 1995.

Contacts

Management

Flora and Fauna Guarantee Officers in Ballarat, Geelong and Melbourne Regions of DCE

Biology

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Further information

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>

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Personal Communications

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