

Action Statement

Flora and Fauna Guarantee Act 1988

No. 101

Adamsons Blown-grass *Agrostis adamsonii*

Description and distribution

Adamson's Blown-grass (*Agrostis adamsonii* Vickery) is a grass that grows to about 70 cm in height. Some plants are tufts consisting of just a single flowering stalk with a few leaf blades, whilst others have over fifty flowering stalks and form a tussock.

Adamson's Blown-grass has now been recorded at 54 sites scattered across the western plains of Victoria, from west of Cavendish through to the vicinity of Geelong at the eastern limit of its range (Brown 1997). The northernmost populations are at Gatum (20 km north-west of Cavendish), near Maroona (20 km north-east of Willaura), Lake Goldsmith (15 km south of Beaufort) and just south of Chepstowe. Southernmost populations are at Caramut, just north of Derrinallum and Lismore, and near Barunah (15 km west of Shelford). Almost all populations occur on private land or on roadsides. It is conceivable that a more intensive search of private properties would reveal additional populations.

The highest concentrations of populations lie to the north-west of Cavendish, to the south of Glenthompson and Wickliffe, and in the Willaura/Maroona area. The remaining populations tend to be well scattered across the western plains. Sixteen populations (~33%) contain more than 500 plants (Brown 1997).

Habitat

Adamson's Blown-grass is mainly found on roadside depressions and flats, associated with drainage lines and small sluggish creeks, particularly where these sites are protected from wind by surrounding rises or by stands of tall grasses such as *Phalaris aquatica*, or sedges and rushes such as *Juncus* spp. or *Gahnia* spp. (Brown



Adamson's Blown Grass *Agrostis adamsonii*
(illustration by Mali Moir)



Distribution in Victoria (NRE 1999)

1997). All populations of Adamsons Blown-grass are found on low lying, seasonally waterlogged sites with moderate to high salinity. The species does not appear to tolerate extreme salinity (>8.0 dS/m) as few plants occur in such situations. Soils where Adamsons Blown-grass occurs tend to be either black cracking clays or strongly duplex soils with poorly permeable subsoil. In general, Adamsons Blown-grass does not readily occur on large open saline swamps or lakebeds. Although Adamsons Blown-grass can tolerate some waterlogging, it does not grow in relatively deep water for any length of time. Adamsons Blown-grass was observed to grow on the margins of depressions with standing water.

Life history and ecology

Adamsons Blown-grass is usually an annual plant, germinating from seed during winter and spring, with flowers maturing around December. Large numbers of seed are produced and are dispersed by wind on the remains of the flowering culms.

Adamsons Blown-grass appears to have the capacity to colonise and expand within suitable habitat. Where roadside reserves are wide, populations of Adamsons Blown-grass are generally of good size. Extension of Adamsons Blown-grass into adjacent paddocks of similar topography, salinity etc., only occurs where sites are fenced off from extensive grazing by sheep. At a number of sites where only light grazing by cattle has occurred, Adamsons Blown-grass appears to survive reasonably well. Discussions with some property owners has revealed that Adamsons Blown-grass has recently appeared on formerly bare, saline areas that have been fenced off within the last 5-10 years.

Populations of Adamsons Blown-grass are known to have persisted for up to 10 years, providing site conditions remain favourable (Brown 1997).

Conservation status

Victoria (NRE 2000) Endangered

Australia (ANZECC 1999) Endangered

Adamsons Blown-grass has been listed as endangered under the **Endangered Species Protection Act 1992** and threatened under the **Flora and Fauna Guarantee Act 1988**.

Decline and threats

In spite of the discovery of 54 populations of Adamsons Blown-grass, the locations of these populations and the small areas actually occupied mean that it remains at risk of sudden and significant decline.

Apart from its rarity, Adamsons Blown-grass is also at risk on account of its habitat being restricted in area, generally degraded and variously subject to disturbance from roadworks, grazing and trampling by stock, altered hydrology and active salinity management. Characteristics of its life history (as an annual apparently prone to large population fluctuations) further contribute to its threat status.

Some populations, especially along roadsides, are threatened by weed invasion, particularly by species of *Phalaris*.

Adamsons Blown-grass is poorly reserved within the formal conservation reserve system, being represented by a single, small population at Lake Goldsmith Wildlife Reserve.

Existing conservation measures

- signposting of known sites in 1993
- germination growth and introduction trials undertaken by staff and students from University of Ballarat
- preliminary discussions with landholders regarding grazing management and fencing
- VicRoads has been notified of the presence of Adamsons Blown-grass to ensure that any road improvements proposed by them do not impact adversely on the plants.
- monitoring of population dynamics, structure and floristics has taken place annually from 1993 to 1998 along marked transects at Skipton and Glenthompson

Conservation objectives

Long term objective

To secure and protect sufficient suitable habitat to allow for an average population above 250,000 plants, with a minimum of 10 large populations (>5,000) and with no reduction in extent of occurrence.

Objectives of this Action Statement

1. To protect as far as possible all large or strategic populations.
2. To provide sufficient secure habitat on private land to allow for natural recolonisation from existing roadside populations or introduction as appropriate.
3. To increase our understanding of the distribution, biology and ecology of Adamsons Blown-grass in order to maximise the effectiveness of recovery actions.

Intended management action

1. Site protection

NRE will coordinate the following actions:

Discussions will be held with all relevant landholders and land managers regarding the type of protection appropriate for each site. Initially, the priority will be to protect the larger (>500 plants) populations, although strategically important populations, such as those containing distinct morphological or environmental variants, or those at the limit of the species' range, will also be considered.

Where small populations exist on roadsides and suitable habitat extends into grazed private land, efforts will be made to fence off areas to allow for recolonisation. In all cases, allowance will be made to install gates in the fences. This will be done in recognition that grazing does not pose a threat during some seasons, and may indeed be desirable to reduce fuel levels or manage pasture species' growth.

It will also be necessary to protect populations on public road reserves. Where fencing is not appropriate, signs will be installed to alert works crews in order to prevent accidental damage. The threat posed by grazing or droving of domestic stock along road reserves will be addressed through consultation with the responsible authorities (usually Shire Councils) who regulate these activities.

2. Monitoring of Adamsons Blown-grass

NRE will coordinate the regular monitoring of populations using the VROTPop system.

3. Introduction trials

Current germination and growth trials undertaken by Ballarat University will be completed. An introduction program will then be designed and implemented by NRE, in co-operation with landholders and salinity management officers, to test the suitability of Adamsons Blown-grass as a native alternative in the management of salt prone areas in parts of western Victoria within the known natural range of the species. A range of sites will be selected that are representative of the range of environmental variation as well as allowing for different management regimes (especially grazing regimes) at each site or between sites. Guidelines for seed collection and use of material of different provenance will be developed as part of the trial.

4. Community involvement

The success of the Adamsons Blown-grass recovery program is heavily dependent on the co-operation and involvement of local community members, particularly landholders. To ensure the co-

operation and involvement of the local community, a number of measures will be undertaken by NRE:

- preparation of articles, displays, brochures and fact sheets on Adamsons Blown-grass for agricultural and related publications and events, especially those dealing with salinity management.
- liaison with Catchment Management Authorities, local government authorities, rural fire brigades and landholders.
- involvement of volunteers and landholders in survey, monitoring and site protection actions, including use of the Botanic Guardians scheme to provide financial support.

5. Professional development

NRE will provide training for extension staff to ensure that advice to landholders balances the objectives of rehabilitating saline areas and conserving the native flora and fauna which occupy those areas.

Other desirable action

6. Habitat characteristics of Adamsons Blown-grass

Understanding the ecological profile of the species' habitat, in order to determine the key characteristics which allow the species to persist or flourish, is desirable.

For Adamsons Blown-grass, this task will build upon preliminary information on floristic composition and soil characteristics which have been collected at some sites. Additional parameters to be sampled may include surface and groundwater levels, water quality, geology, sediment type and landform.

This action could be undertaken as a student project. NRE would provide limited financial support if a suitable student and supervisor were identified.

7. Research monitoring of Adamsons Blown-grass

NRE will facilitate postgraduate research relating to the annual variation in population size, location, demography, reproductive status and growth of Adamsons Blown-grass at a range of sites, and the associated environmental factors.

References

- ANZECC (1999) *Threatened Australian Flora*. Endangered Flora Network, Environment Australia, Canberra.
- Brown, A. J. (1997) *Survey and Monitoring of Adamson's Blown-grass Over Three Seasons*. Unpublished Report to Flora and Fauna Branch,

Department of Natural Resources and Environment, Victoria.

NRE (2000) *Rare or Threatened Vascular Plants in Victoria - 2000*. Department of Natural Resources and Environment, East Melbourne, Victoria.

Compiled by Adrian Moorrees, Department of Sustainability and Environment.

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 2000 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.

© The State of Victoria, Department of Sustainability and Environment, 2004

Published by the Department of Sustainability and Environment, Victoria.
8 Nicholson Street,
East Melbourne,
Victoria 3002 Australia

This publication may be of assistance to you but the State of Victoria and its employees do not guarantee that the publication is without flaw of any kind or is wholly appropriate for your particular purposes and therefore disclaims all liability for any error, loss or other consequence which may arise from you relying on any information in this publication.

ISSN 1448-9902