

Action Statement

Flora and Fauna Guarantee Act 1988

No. 95

Bead Glasswort *Halosarcia flabelliformis*

Description and Distribution

Bead Glasswort *Halosarcia flabelliformis*, is a small, shrubby succulent plant of the goosefoot family (Chenopodiaceae) first described by Wilson (1980). It is a woody perennial to 20cm high with branches that are spreading and turning upward. A complete description can be found in Volume 1 of the *Flora of South Australia* (Jessop & Toelken 1986).

Bead Glasswort occurs in Victoria and South Australia. The four Victorian sites are all on public land with one at Raak Plain south west of Mildura, and three near Natimuk at Mitre Lake, Grass Flat Swamp and Olivers Lake in the Wimmera. The South Australian sites are mainly along the coast (including Torrens and Garden Islands near Port Adelaide, Port Parham, Webb Beach, St Kilda and Flinders Islands) as well as inland at Lake Everard. The Victorian stands are the only populations outside South Australia.

Bead Glasswort forms monospecific stands or may be mixed with other *Halosarcia* spp. around the margins of saline lakes. At Raak Plain it occupies an area of 6-8ha with over 100 plants (Browne *pers comm.*). At Mitre Lake there are over 1 000 plants extending for 2.5km along the eastern shoreline. The Olivers Lake population is smaller extending for 0.5km along the shoreline with up to 500 plants. The Telfer Swamp population is perhaps the smallest, scattered over several hectares, with the actual number of plants unknown.

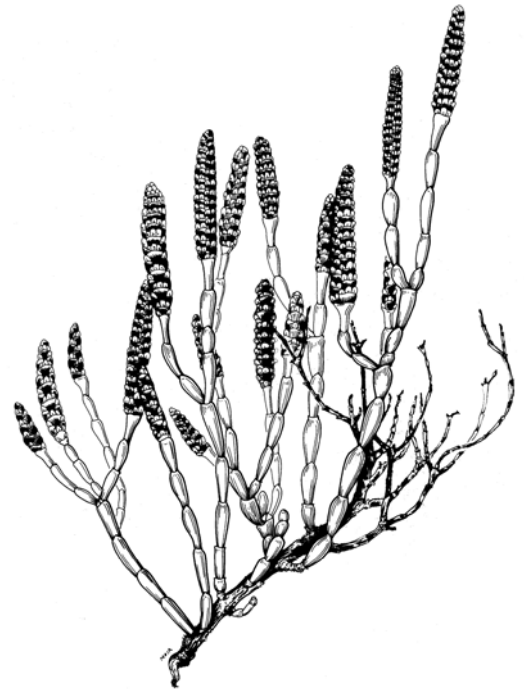
Conservation Status

Current status

ANZECC (1999) Vulnerable (Australia)

NRE (1998) Endangered (Victoria)

Bead Glasswort has received the Scientific Advisory Committee's final recommendation for listing as a



Bead Glasswort, *Halosarcia flabelliformis*
(illustration by Mali Moir)



Distribution in Victoria
[data from Flora Information System, NRE 1998]

threatened taxon on Schedule 2 of the **Flora and Fauna Guarantee Act 1988**.

Reasons for conservation status

Bead Glasswort has a restricted distribution in Victoria and South Australia. The Victorian sites are all around saline wetlands, areas traditionally regarded as of low economic value and subsequently degraded. All sites have suffered significant disturbance through grazing, physical disturbance, weed invasion and rubbish dumping.

In its final recommendation the Scientific Advisory Committee (SAC 1995) determined that Bead Glasswort is:

- very rare in terms of abundance or distribution.

Major Conservation Objective

Protect all sites where Bead Glasswort occurs and maintain current populations of Bead Glasswort at each site

Management Issues

The Victorian sites are predominantly within protected public land in the Murray-Sunset National Park and Mitre Lake, Telfer Swamp and Olivers Lake Flora and Fauna Reserves, giving an excellent opportunity for appropriate conservation management.

Ecological issues specific to the taxon

Bead Glasswort is found on the margins of salt lakes on gypsum deposits. This species occurs in a different habitat to other samphires, in that it occurs on the lowest ground, that is frequently inundated. Other samphire species are usually present but at slightly higher elevations. In some cases it may be mixed with other *Halosarcia* species including *H. nitida*, *H. pergranulata* and *H. syncarpa*, particularly where lake margins are undulating. The margins of these naturally saline lakes have historically been heavily grazed by sheep for extended periods. This is believed to have been responsible for the spread of many weed species.

Rubbish dumping was common, along with uncontrolled use of vehicles and trail bikes, resulting in significant damage to vegetation and erosion. Rubbish dumps have been another source of weed seed and species such as Spear Thistle *Cirsium vulgare*, Saffron Thistle *Carthamus lanatus* and Boxthorn *Lycium ferocissimum* have spread at Mitre Lake. Little control of rabbits and weeds was undertaken. The remoteness of areas has also contributed to the lack of environmental care.

Bead Glasswort is tolerant of seasonal inundation, but rising water tables could lead to excessive and prolonged flooding. At Raak Plain when the plants

are flooded in winter they die back or are killed, then there is regrowth and seedlings when the water dries out (Browne *pers. comm.*) The soil normally associated with Bead Glasswort is sandy with a high kopi (flour gypsum) content. When the water recedes there is little sign of salt on the surface (Browne 1982). This indicates that the water table recedes as distinct from surface evaporation, so if the water table remains high excessive surface salting may occur and make conditions unsuitable for the species. Apart from rising water tables these areas have been seen as somewhere to direct surplus water. Shallow freshwater wetlands have been drained to increase available farmland and surplus water has been diverted into the saline lakes near Natimuk.

The presence of salt and gypsum has led to large areas being stripped causing damage to surrounding vegetation. Attempts to access these sites when conditions were too wet have aggravated these problems. Large areas of samphire flats were either strip mined, dug over or damaged in this process. To remove water, levee banks were built to divert water away from gypsum deposits thus flooding other areas that would have drained naturally.

Wider conservation issues

The management of areas surrounding saline wetlands to prevent rising water tables is a key component of *Landcare* programs. Better land management practices that will lead to sustainable use of agricultural land with minimal run-off will assist in halting the decline of these saline environments. However there is a general perception that tree planting is required at the saline sites. In fact, many saline sites did not support woody vegetation in the past, but the surrounding catchment was timbered. As most of the surrounding catchment is developed for agriculture, there has been a reluctance to use these areas for tree planting. Instead, tree planting has been directed towards the fringes of saline areas using more salt tolerant species such as Red Gum (*Albacutya* provenance) and Salt Paperbark. The latter plant is acceptable in some circumstances but Red Gum is alien to most sites.

Other species, such as Fused Glasswort *Halosarcia syncarpa* (rare in Victoria) can also be protected. The fringes of several salt lakes in the Natimuk area have remnant stands of Salt Paperbark *Melaleuca halmaturorum* which have suffered from rising water tables and inundation. The ability of Salt Paperbark to regenerate on higher ground is limited due to the proximity of the private land that is frequently grazed or under cultivation. Halting the increase in water area of these salt lakes will assist in the conservation of Salt Paperbark.

Social and economic issues

Management of the park boundary fences adjacent to the Bead Glasswort habitat and control of pest plants and animals will provide benefits for adjoining landholders.

Restricted access to salt and gypsum deposits on public land has occurred as a result areas being included within National Parks. There are alternative sources on private land nearby.

The closure of channels and drains, if deemed necessary, is part of a wider salinity management program directed towards achieving sustainable landuse. Any minor adverse effects on economic activities should be more than offset by long-term regional improvement in farming practices.

Previous Management Action

Mitre Lake

The lake surrounds have been grazed under licence for many years and salt extraction occurred from the bed of the lake. In 1982, Dr R. F. Parsons requested that 2km of fencing be erected to protect the main stand of Bead Glasswort. All grazing licences were recommended for cancellation with licences terminated for the south and east sides in September 1983 and the balance terminated in September 1985. Salt extraction ceased prior to 1984. The Land Conservation Council (LCC) recommended that the lake and surrounds be reserved for the protection of flora and fauna (LCC 1986). Signs were erected in 1986 advising that grazing was prohibited. Mitre Lake and surrounds were temporarily reserved for the 'Preservation of Native Plants' in October 1988. Permanent reservation did not proceed due to the high cost of survey. In April 1992 Mitre Lake was listed as a 'High Value Wetland for its Ecological Features' on recommendation of the Scientific Evaluation Committee under the Wetlands Conservation Program for Victoria (CNR 1993). Planting of Salt Paperbark on higher ground took place in 1995. Bead Glasswort extends onto private frontage to the lake in two places and negotiations with the land owner have been initiated to protect these areas under the Wetlands Protection Program by Parks Victoria.

Olivers Lake

As with Mitre Lake, grazing and salt extraction have occurred in the past. The LCC recommended that the area be reserved for the protection of flora and fauna (LCC 1986). It was temporarily reserved for the 'Preservation of Native Plants' in 1988 with permanent reservation following in May 1992. The area was also listed as a 'High Value Wetland due to its Ecological Features' in April 1992 (CNR 1993). In addition to Bead Glasswort, Olivers Lake supports Fused Glasswort, Salt Paperbark and

Buloke *Allocasuarina luehmannii*. Salt extraction ceased prior to 1984 and all grazing ceased around 1985. Tree planting on higher ground took place in 1995 using Salt Paperbark, Slender Cypress Pine *Callitris gracilis*, Yellow Gum *Eucalyptus leucoxylon* and Golden Wattle *Acacia pycnantha*. Further tree planting is proposed for 1999-2000.

Grass Flat (Telfer) Swamp

The western part of the swamp was reserved for the 'Preservation of Native Plants' in October 1988 following the LCC recommendations (LCC 1986). The eastern and privately owned section is protected by a 'Conservation Covenant' through the *Trust for Nature* (Victoria) and is registered under the *Land for Wildlife* program. The Department of Natural Resources and Environment provided advice and a fencing grant to facilitate the protection of this land. Grass Flat Swamp was listed as a 'High Value Wetland for its Ecological Features' (CNR 1993) and contains an extensive stand of Salt Paperbark as well as Fused Glasswort. The Altona Skipper Butterfly *Hesperilla flavescens flavescens* (vulnerable in Victoria) has been recorded breeding at this swamp.

All three areas are noted for their value to waders and species such as Banded Stilt *Cladorhynchus leucocephalus*, Sharp-tailed Sandpiper *Calidris acuminata*, Marsh Sandpiper *Tringa stagnatilis*, Curlew Sandpiper *Calidris ferruginea*, Red-necked Stint *Calidris ruficollis*, Red-necked Avocet *Recurvirostra novaehollandiae* and Red-capped Plover *Charadrius ruficapillus* may occur in large numbers (CNR 1993). Trail bikes and vehicles have largely been excluded from the Wimmera sites and this is no longer seen as a significant threat.

Raak Plain

Vehicle intrusion and Gypsum extraction has caused damage to this area. Increased popularity of trail bikes was becoming of particular concern. The site is now adequately protected as it is within the Murray-Sunset National Park. Although there is an area of 2,000ha designated for Mineral and Stone production it is 1.2km to the east. Only 135ha of this area is currently leased, and even with scope for further leases, the distance from the population of Bead Glasswort should provide protection. Trail bike and vehicle activity has been minimised since the proclamation of the National Park.

Intended Management Action

These actions will be undertaken by Parks Victoria and local naturalists groups under the guidance of Department of Natural Resources and Environment staff.

Site Protection

1. Ensure that boundary fencing at Wimmera sites is maintained in co-operation with neighbours to prevent grazing by domestic stock.
2. Restrict vehicle and trail bike access by closure of unwanted access points
3. Investigate the impact of constructed drains on surrounding private land and negotiate closure where necessary to prevent increasing water levels. This is to be done with close liaison with landholders so as to minimise any adverse effects on adjoining properties.
4. Maintain active pest plant and animal control programs in co-operation with landholders and 'Landcare' groups.
5. At the Wimmera sites, liaise with Parks Victoria to ensure that tree planting programs do not adversely effect the Bead Glasswort sites and that only local species are planted.

Liaison

6. Maintain regular liaison with landholders, local *Landcare* groups and field naturalists so that they are aware of management proposals. The opportunity for input into all management actions should be provided before works commence.
7. Liaise with minerals and stone extraction licensees at Raak Plain to avoid any damage to Bead Glasswort sites. If there is an awareness of the significance of the species the possibility of unintentional damage will be reduced.

Co-operative Management

8. Pursue site protection for the area of Bead Glasswort on private land fronting Mitre Lake through the Parks Victoria *Wetlands Protection Program*.

Regional Salinity Management

9. Maintain regular liaison with the Wimmera Catchment Management Authority, *Landcare* and *Saltwatch* to ensure that the potential impact of rising water tables and increased salinity on Bead Glasswort are considered in their strategies.

Monitoring

10. Establish monitoring plots at all sites. Maintain an annual monitoring program in co-operation with local naturalists. If necessary utilise the 'Botanic Guardians' program to provide any financial assistance that may be required.

Survey

11. Conduct surveys of other saline wetlands, such as Lake Wyn Wyn, in an attempt to locate further populations of Bead Glasswort.

Other Desirable Action

Research

12. Initiate research into the ecology of Bead Glasswort. Investigate the biology and ecology of Bead Glasswort, especially its response to changing salinity and water levels.
13. Investigate impact of constructed drains on private land and negotiate closure to prevent increasing water levels.

Legislative Powers Operating

Legislation

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

Conservation Forests and Lands Act 1987 - provides for the management of public land under the Act, the co-ordination 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 of protected flora.

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

Mineral Resources Development Act 1990 - provides for the management of mineral resources and includes controls over exploration and mining activities to minimise impacts on the environment.

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.

Victorian Conservation Trust Act 1972 - provides for the establishment of conservation covenants on land titles.

Licence/permit conditions

Permits for collection will only be issued for purposes which are in support of the objective of this Action Statement.

Consultation and Community Participation

Botanists who have a knowledge of Bead Glasswort and associated halophytic vegetation have been consulted during the preparation of this Action Statement. Land management files and the views of land managers have been utilised in developing intended actions so as to consider implications for other taxa and practical implementation.

The Wimmera and Mallee Catchment Management Authorities have been consulted in the preparation of this Action Statement.

Implementation, Evaluation and Review

The Regional Managers of South West and North West Regions will coordinate the implementation of this Action Statement, in consultation with Parks Victoria. Primary responsibility for implementation and assessment of the effectiveness of the management actions lie with Parks Victoria and the Flora and Fauna Officers of these Regions.

In line with the major conservation objectives, the results of monitoring will be assessed in 2002. This Action Statement will be reviewed by 2004.

Contacts

Management

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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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