

Action Statement

Flora and Fauna Guarantee Act 1988

No. 138

Basalt Sun-orchid *Thelymitra gregaria*

Description and distribution

The Basalt Sun-orchid *Thelymitra gregaria* is endemic to Victoria. It occurs in the Victorian Volcanic Plain Bioregion in the Derrinallum, Streatham, Woorndoo and Yalla Y Poora areas. It was formerly recorded but now extinct at Darlington, and south-west of Melbourne at Werribee. Fewer than 1 500 plants are known in the wild, in five populations. Former abundance is not known but assumed to be many thousands across its natural range.



Basalt Sun-orchid *Thelymitra gregaria*

Habitat

The Basalt Sun-orchid occurs in open species rich native grassland dominated by *Themeda triandra* with perennial herbs and lilies on poorly drained red-brown soil derived from basalt. Critical habitat has not been determined but fire or other disturbance such as slashing is highly likely to promote flowering.

Conservation status

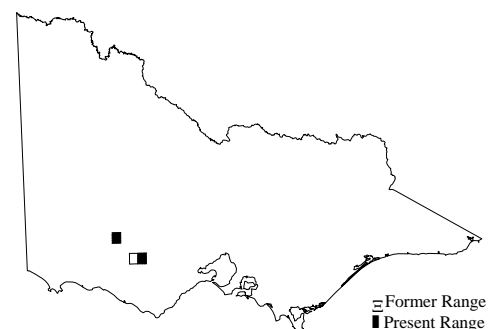
National conservation status

The Basalt Sun-orchid has not been listed under the Commonwealth **Environment Protection and Biodiversity Conservation Act 1999**.

An assessment under the IUCN Red List criteria (2000) undertaken by Coates *et al.* (2002) determined the Basalt Sun-orchid to be Endangered.

Victorian conservation status

The Basalt Sun-orchid has been listed as threatened under the Flora and Fauna Guarantee Act 1988.



Distribution in Victoria
(from *Flora Information System*, NRE 2002)

Decline and threats

Current threats and estimated risk

Weed invasion

High - in particular *Phalaris aquatica*, *Romulea rosea*; and *Cuscuta dubia* invasion will occur without regular burning and/or spraying; will be exacerbated by soil disturbance

Grazing

Low - sites are not grazed at present and rabbits are scarce at most sites.

Inappropriate fire regimes

Low - sites require fire and are burnt annually.

Site disturbance

Extremely high - all sites are on roadsides or rail reserves adjacent to paddocks on private property and are subject to accidental damage from heavy machinery

Reservation status

No populations of Basalt Sun-orchid are currently protected within a conservation reserve.

Potential threats and estimated risk

Illegal collection

Low - there is no evidence of collection in the past

Ecology/biology

Moderate - conditions for maintenance of pollinator and fungal activity are unknown

Other issues

- *T. gregaria* populations are vulnerable to damage from heavy machinery. Public Authority Management Agreements (PAMAs) under the Victorian **Flora and Fauna Guarantee Act 1988** (FFG) are urgently required for all roadside and rail reserve sites.
- Habitat where *T. gregaria* occurs is highly significant and listed as threatened under the Victorian *FFG Act 1988* and some sites are National Estate listed. It is vital to continue the current fire regime of annual burning in order to preserve species diversity in vegetation where *T. gregaria* occurs, to maintain openness and suppress invasive exotic species such as *Phalaris aquatica*, *Romulea rosea* and *Cuscuta dubia*.
- La Trobe University have conducted applied research in site management since the 1980s at Derrinallum and Vite Vite and their involvement should continue to be encouraged. Local Field Naturalists should also be encouraged to contribute to site management at Yalla Y Poora.

- The population at Yalla Y Poora is on land currently managed by DSE but it is proposed to transfer management to Parks Victoria.
- Weed control for *Phalaris aquatica* at Woorndoo.

Existing conservation measures

- Grassland vegetation communities at Derrinallum and Vite Vite sites have been monitored since the late 1980s (School of Botany, La Trobe University)
- Fire ecology has been researched and is well understood for Western Basalt Plains Grassland (School of Botany, La Trobe University)
- A Public Authority Management Agreement (PAMA) is currently being prepared with the Shire of Moyne, which will include the site near Woorndoo (NRE).
- Ecological burns planned for Yalla Y Poora and volunteers will carry out weed control.
- Two sites are burnt annually (Derrinallum, Woorndoo).
- All known populations were visited during recovery plan preparation.

Conservation objectives

Long term objective

That the Basalt Sun-orchid can survive, flourish and retain its potential for evolutionary development in the wild.

Objectives of this Action Statement

1. Improve knowledge of population sizes, trends and habitat requirements.
2. Protect sites and manage habitat.
3. Maintain and/or increase existing population sizes

Overall approach

Broadscale risk management will include negotiated Public Authority Management Agreements with Local Government and rail reserve managers to undertake annual burning, weed management and protection of sites from damage caused by heavy machinery. Searches will be conducted at similar sites in the region in the spring following annual fuel reduction burning. Populations will be mapped and annual censusing carried out to determine their response to current management. Recovery will be jointly managed by DSE with involvement from La Trobe University School of Botany and local field naturalists.

Intended management actions

The intended management actions listed below are further elaborated in DSE's Actions for Biodiversity

Conservation database. Detailed information about the actions and locations, including priorities, is held in this system and will be provided annually to land managers and other authorities.

1. Determine current conservation status, including clarifying taxonomy and acquiring baseline population data.

Responsibility: DSE (Biodiversity & Natural Resources Division, SW Region)

2. Measure population trends and responses against recovery actions. Conduct annual censusing of populations, collate, analyse and report on census data and re-prioritise and adjust recovery actions and/or threat management

Responsibility: DSE (Biodiversity & Natural Resources Division, SW Region)

3. Determine habitat requirements of key populations. Identify key populations, conduct surveys, identify ecological correlates of populations and prepare habitat descriptions.

Responsibility: DSE (Biodiversity & Natural Resources Division, SW Region)

4. Provide information and advice, including maps, regarding the location and management of Basalt Sun-orchid sites to landholders, land managers and other authorities, especially Catchment Management Authorities and local government authorities.

Responsibility: DSE (Biodiversity & Natural Resources Division, SW Region)

5. Incorporate actions to protect, enhance and restore Basalt Sun-orchid habitat into the Glenelg Hopkins and Corangamite Regional Catchment Strategies or their subordinate strategies via the relevant Biodiversity Action Plans. Implement these actions, according to priority, as resources become available, in conjunction with other agencies, community groups and landholders.

Responsibility: Catchment Management Authorities

6. Incorporate information regarding the location and management of Basalt Sun-orchid sites into local planning schemes, including environmental significance overlays, and apply the Victorian Planning Provisions so as to protect these sites.

Responsibility: local government authorities

7. Manage risks to populations. Identify and implement strategies to control threats and identify disturbance regimes to promote regeneration and recruitment for key populations and their habitat on public and private land.

Responsibility: DSE (Biodiversity & Natural Resources Division, SW Region), land managers, landholders

8. Promote in-situ recruitment by preparing habitat for seedling recruitment and re-stocking populations with seed.

Responsibility: DSE (Biodiversity & Natural Resources Division, SW Region)

9. Undertake or encourage and support research, including the following:

- Describe life history
- Evaluate natural pollination levels and causes of pollinator limitation
- Determine the effects of artificial pollination on growth survival and reproduction
- Determine spatial distribution of mycorrhizal fungi
- Determine optimal conditions for growth of mycorrhizal fungi in-situ

Responsibility: DSE (Biodiversity & Natural Resources Division)

10. Increase populations ex-situ. Hand pollinate plants, collect and store seed and determine seed viability. Collect and store mycorrhizal fungi . Establish and maintain cultivated populations and record such collections in a database of threatened orchid taxa in cultivation.

Responsibility: DSE (Biodiversity & Natural Resources Division), Royal Botanic Gardens

11. Develop and implement materials for land manager, landholder and community information, including technical information on *in-situ* recovery techniques.

Responsibility: DSE (Biodiversity & Natural Resources Division)

12. Involve community groups in recovery actions where appropriate and provide support under the Botanic Guardians scheme.

Responsibility: DSE (Biodiversity & Natural Resources Division, SW Region)

References

- Coates, F., Jeanes, J. & Pritchard, A. (2002) Recovery Plan for Twenty-five Threatened Orchids of Victoria, South Australia and New South Wales 2003 - 2007. Department of Natural Resources and Environment, Melbourne.
- DSE (2003) *Advisory List of Rare or Threatened Plants in Victoria - 2003*. Department of Sustainability and Environment: East Melbourne. (available on the DSE web site)
- DSE (2004) *Flora Information System* (electronic flora database). Department of Sustainability and Environment: Melbourne.

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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 prepared under section 19 of the Flora and Fauna Guarantee Act 1988 under delegation from Chloe Munro, Secretary, Department of Natural Resources and Environment, November 2002.

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