



PLANT

*Pterostylis bryophila*

Hindmarsh Greenhood

AUS	SA	AMLR	Endemism	Life History
CE	E	E	AMLR	Perennial

Family ORCHIDACEAE



Photo: © Joe Quarmby

**Conservation Significance**

Endemic to the AMLR where the species' relative area of occupancy is classified as 'Extremely Restricted'.<sup>2</sup>

Regarded as Critically Endangered.<sup>4</sup>

**Description**

Terrestrial orchid that grows in small to large colonies and forms tubers. Bright green and white solitary flowers.<sup>5</sup> Three to five basal leaves forming a rosette, when not flowering. Flower scape moderately tall (10-18 cm), very slender and smooth (Jones 1997).<sup>4</sup>

**Distribution and Population**

Post-1983 AMLR filtered records restricted to Mount Billy CP and the nearby Hindmarsh Valley area.<sup>2</sup>

In 2006 the total population size was estimated to be between 880 and 3400 plants within 3 subpopulations (J. Quarmby *pers. comm.* 2009). The large variance in the estimated number of plants is due to the low flowering rate in dry years (J. Quarmby *pers. comm.* 2009). Large populations were discovered in Hindmarsh Tiers in 2008 and 2009 (J. Quarmby *pers.*

*comm.* 2009). A small population was also discovered in Back Valley in 2009 (J. Quarmby *pers. comm.* 2009).

There are relatively recent Adelaide Herbarium records for Deep Creek and Talisker CPs, however the populations have never been re-located (J. Quarmby and R. Bates *pers. comm.* 2009). Note, these records are not shown on the distribution map below.

Also an unconfirmed report from near Inman Valley, possibly no longer extant (R. Bates *pers. comm.* 2005).<sup>4</sup>

There are no pre-1983 records.<sup>2</sup>

**Habitat**

Occurs in moist, shady, mossy areas (e.g. lower slopes of gullies, along creeklines) in grassy woodlands dominated by *Eucalyptus leucoxylon* and *E. fasciculosa*.<sup>4,5</sup>

Understorey typically comprises *Acacia pycnantha*, *A. paradoxa*, *Dodonaea viscosa*, *Bursaria spinosa*, *Exocarpus cupressiformis* and *Xanthorrhoea semiplana*. Groundcovers include a diversity of mosses, grasses (e.g. *Microlaena stipoides*), ferns, lilies, orchids and other annual herbs.<sup>3,4</sup>

Within the AMLR the preferred broad vegetation group is Grassy Woodland.<sup>2</sup>

Within the AMLR the species' degree of habitat specialisation is classified as 'High'.<sup>2</sup>

**Biology and Ecology**

Plants usually produce a rosette of leaves in March or April. Leaves and flowers are not necessarily produced each year, and tubers can remain dormant for several consecutive years. Flowering varies significantly from year to year depending on autumn rainfall. Buds are produced in April-May, followed by flowering in mid May to late June. By early July the leaf shrivels and the pollinated flowers develop into seed capsules. By late July the capsules dry and dehisce. Tubers are replaced annually and extra daughter tubers may also be produced. Average plant longevity unknown but assumed to be more than 15 years.<sup>4,5</sup>

Probably pollinated by nematoceran flies from the families Culicidae (mosquitoes) and Mycetophilidae (fungus gnats). However, Stephens et al. (2001) identified a phorid fly (Phoridae) as a 'probable'

**Further information:**

Biodiversity Conservation Unit, Adelaide Region  
Phone: (61 8) 8336 0901 Fax: (61 8) 8336 0999  
<http://www.environment.sa.gov.au/>

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Prepared as part of the Regional Recovery Plan for Threatened Species and Ecological Communities of Adelaide and the Mount Lofty Ranges, South Australia 2009 - 2014



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## ADELAIDE AND MOUNT LOFTY RANGES SOUTH AUSTRALIA Threatened Species Profile

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pollinator. Also reproduces vegetatively, often forming dense colonies.<sup>4</sup>

Flowering is known to have declined after a wildfire in Mount Billy CP in 1992 (R. Bates 2006 *pers. comm.*). Flowering is known to gradually increase with time since fire.<sup>4</sup>

### Aboriginal Significance

Post-1983 records indicate the entire AMLR distribution occurs in southern Ngarrindjeri Nation.<sup>2</sup>

Species of Orchidaceae are recorded as being a traditional food source for Aboriginal people in NSW. The small tubers were roasted (Flood 1980).<sup>1</sup>

### Threats

Threats include:

- weed invasion and competition (e.g. Bridal Creeper, *Pittosporum undulatum*, *Watsonia meriana* ssp. *bulbillifera*, *Phalaris aquatica*)
- competition from other species following intense fire, e.g. *Acacia paradoxa* and African Daisy (*Senecio pterophorus*)
- illegal collection
- lack of recruitment and lack of genetic diversity, especially in small sub-populations
- human impacts including trampling
- inappropriate fire regimes (especially frequent or intense events)
- grazing by herbivores (Kangaroos, Rabbits, Hares) and invertebrates.<sup>4,5</sup>

Not known if susceptible to *Phytophthora*, but many plant species within its habitat are known to be susceptible.<sup>4</sup> Within the AMLR, the majority of known distribution occurs within 2 km of confirmed or suspected *Phytophthora* infestations.<sup>2</sup>

Additional current direct threats have been identified and rated for this species. Refer to the main plan accompanying these profiles.

### Regional Distribution



Map based on filtered post-1983 records.<sup>2</sup> Note, this map does not necessarily represent the actual species' distribution within the AMLR.

### References

Note: In some cases original reference sources are not included in this list, however they can be obtained from the reference from which the information has been sourced (the reference cited in superscript).

1 Australian National Botanic Gardens (2007). *Aboriginal Plant Use - NSW Southern Tablelands*. Available from <http://www.anbg.gov.au/apu/index.html> (accessed August 2007).

2 Department for Environment and Heritage (2007). *Adelaide and Mount Lofty Ranges Regional Recovery Pilot Project Database*. Unpublished data extracted and edited from BDBSA, SA Herbarium (July 2007) and other sources.

3 Department for Environment and Heritage (2007). *State Herbarium of South Australia Database*. Unpublished data, extracted October 2007.

4 Quarmby, J. P. (2006). *Recovery Plan for Twelve Threatened Orchids in the Lofty Block Region of South Australia 2007 - 2012*. Department for Environment and Heritage, South Australia.

5 Threatened Species Scientific Committee (2006). *Commonwealth Listing Advice on Pterostylis bryophila*.

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