



PLANT

Caladenia rigida

Stiff White Spider-orchid

| AUS | SA | AMLR | Endemism | Life History |
|-----|----|------|----------|--------------|
| E | E | E | AMLR | Perennial |

Family ORCHIDACEAE



Photo: © Joe Quarmby

Conservation Significance

Endemic to the AMLR. Within the AMLR the species' relative area of occupancy is classified as 'Very Restricted'.³

Description

Single, hairy, narrow-lanceolate shaped leaf, 3–20 cm long. Produces one - three white flowers fringed with red-brown teeth which are white-tipped (Bates and Weber 1990).⁵

Synonym: *Arachnorchis rigida*.⁴

Distribution and Population

Population size estimated to be between 5500 and 5600 mature individuals within 24 subpopulations in 2006, based on the average number of flowering plants in each sub-population per year.⁶ However, these figures are based on limited survey data, and it is likely that the actual population size is much greater than suggested by this data. This is partly due to the discovery a large population in Mt Bold in 2008, estimated to contain >2000 plants. Current extent of occurrence is 458 km², and area of occupancy is 7.8

hectares. Historically known to occur over 1153 km². At least eighteen sub-populations have become extinct within the century.⁵

Once common throughout the park-like woodland areas of the AMLR but in recent years has declined significantly in the southern part of its range. A large but now disjunct population centred in the Millbrook to Williamstown area is being actively managed.²

Post-1983 AMLR filtered records in Mount Crawford Forest, from south of Williamstown to near Cudlee Creek; in an area between Mylor, Scott Creek and Belair; and at Kuitpo Forest.³

Habitat

Occurs in *Eucalyptus obliqua*, *E. fasciculosa*, *E. leucoxyton*, *E. goniocalyx*, *E. microcarpa* open forests with a relatively open shrub layer. This habitat type has been extensively cleared or degraded in the Southern MLR since European settlement, but intact tracts exist in native forest reserves, water reserves, and reserves in the Kersbrook area.⁵

Within the AMLR the preferred broad vegetation group is Heathy Woodland.³

Within the AMLR the species' degree of habitat specialisation is classified as 'Moderate-Low'.³

Biology and Ecology

Generally produces a leaf in April-May. Plants may not produce a leaf or flowers every year, and may remain dormant for several years. Flowers late August to October. In late October the capsules dry and dehisce. Underground tubers are all that remain over the summer months. Average longevity unknown, but likely to be more than fifteen years.⁵

Pollination is probably by native bees and thynnid wasps.⁷ Possibly uses both food mimicry and sexual deception as pollination mechanisms (Bates 1984; Bickerton 1997).⁵

Mycorrhizal fungi probably play an important role in seedling germination and growth in most *Caladenia* species.⁵

Does not require fire to induce flowering, however many sub-populations have been known to flower profusely in the years immediately following summer fires (Bates 1995; DEH 2006). Conversely, numbers in

Further information:

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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



ADELAIDE AND MOUNT LOFTY RANGES SOUTH AUSTRALIA

Threatened Species Profile

Department
for Environment
and Heritage

Scott Creek CP declined significantly after the wildfire in 1990 (T. Hands *pers. comm.* 2005). The decline is thought to be due to the dense regeneration of vegetation after fire. Fire or vegetation slashing could be used as a management tool to maintain open habitat for *C. rigida* (Bates 1995c). Optimum timing of disturbance events has not been determined.⁵

Aboriginal Significance

Post-1983 records indicate the majority of the AMLR distribution occurs in northern Peramangk Nation (and to a lesser extent southern Peramangk). Also present in eastern Kurna Nation.³

Tubers of *Caladenia* spp. are recorded as a traditional Aboriginal food source in the eastern states (Flood 1980).¹

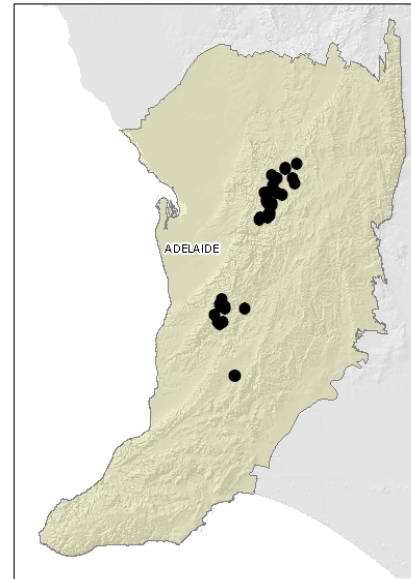
Threats

Key threats include habitat loss and fragmentation, browsing (kangaroos, white-winged choughs, hares, rabbits, deer, also snails, caterpillars and other invertebrates), weed invasion (including woody weeds), lack of recruitment, track management in reserves, recreational activities, inbreeding and loss of genetic diversity in small populations, and fire management activities.⁵

Susceptibility to *Phytophthora* currently unknown, however it is regarded as a potential threat as 56% of sub-populations occur within a Moderate Risk Zone and the majority of its known distribution occurs within 2 km of confirmed or suspected *Phytophthora* infestations (Velzeboer et al. 2005).³ Many of the plants that commonly grow in association with it are highly susceptible to *Phytophthora*.⁵

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.³ 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 Bates, R. J., ed. (2007). *South Australian Native Orchids. Electronic version, August 2007*. Native Orchid Society of South Australia.
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- 4 Jones, D. L. (2006). *A complete guide to native orchids of Australia including the island territories*. New Holland Publishers, Australia.
- 5 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.
- 6 Quarmby, J. P. (2009). *Draft Recovery Plan for Twelve Threatened Orchids in the Lofty Block Region of South Australia 2007 - 2014*. Department for Environment and Heritage, South Australia.
- 7 Turner, M. S. (2001). *Conserving Adelaide's Biodiversity: Resources*. Urban Forest Biodiversity Program, Adelaide.

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