

Approved Conservation Advice
(s266B of the *Environment Protection and Biodiversity Conservation Act 1999*)

Approved Conservation Advice for
***Caladenia williamsiae* (Williams Spider Orchid)**

This Conservation Advice has been developed based on the best available information at the time this conservation advice was approved.

Description

Caladenia williamsiae, Family Orchidaceae, also known as Williams Spider Orchid, usually has a solitary stalk growing to 15–20 cm tall. The leaf is pale green, erect, broadly linear, 7–9 cm in length and 15–18 mm wide. The spiderlike flowers are yellow-green (Hopper & Brown, 2001). Flowers appear from August to September, and its floral architecture indicates that it is pollinated by thynnid wasps (CALM, 2005).

Caladenia williamsiae is also known as *Arachnorchis williamsiae* (Jones et al., 2002).

Conservation Status

Williams Spider Orchid is listed as **endangered**. This species is eligible for listing as endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) as, in 2006, the Minister considered the Threatened Species Scientific Committee's (TSSC) advice under section 189 of the EPBC Act and amended the list under section 184 to include *Caladenia williamsiae*. The TSSC determined that this species met Criteria 2 and 4 of their eligibility criteria (TSSC, 2006b). The species is also listed as rare under the *Wildlife Conservation Act 1950* (Western Australia).

Distribution and Habitat

Williams Spider Orchid is endemic to Western Australia. It is known from open Wandoo (*Eucalyptus wandoo*)/Jarrah (*E. marginata*) woodland in red loamy earth with a scattered open shrub layer that includes *Hypocalyma angustifolium*, *Acacia pulchella*, and *Hibbertia exasperata* (Hopper & Brown, 2001; CALM, 2005). There are three known populations, which in 2003 comprised 143 individual plants. All known populations occur within the Weam Nature Reserve near Brookton, approximately 135 km south-east of Perth in a largely cleared area of the West Australian wheatbelt. The current area of occupancy of Williams Spider Orchid is 0.003 km² and its extent of occurrence is estimated to be approximately 1.7 km² (CALM, 2005). This species occurs within the South West (Western Australia) Natural Resource Management Region.

The distribution of this species is not known to overlap with any EPBC Act-listed threatened ecological communities.

Threats

The main identified threat to Williams Spider Orchid is grazing by kangaroos. Grazing of flower buds was noted in one population, but the two other populations had not been subject to grazing pressure (CALM, 2005).

The main potential threats to Williams Spider Orchid include fire and unauthorised collection. Its response to fire is unknown (CALM, 2005).

Research Priorities

Research priorities that would inform future regional and local priority actions include:

- Design and implement a monitoring program.

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- More precisely assess population size, distribution, fire ecology, ecological requirements and the relative impacts of threatening processes.
- Undertake survey work in suitable habitat and potential habitat to locate any additional populations.
- Undertake seed germination and/or vegetative propagation trials to determine the requirements for successful establishment, including mycorrhizal association trials.
- Determine pollinating agents.

Regional and Local Priority Actions

The following priority recovery and threat abatement actions can be done to support the recovery of Williams Spider Orchid.

Habitat Loss, Disturbance and Modification

- Monitor known populations to identify key threats.
- Monitor the progress of recovery, including the effectiveness of management actions and the need to adapt them if necessary.
- Ensure maintenance activities, infrastructure or development activities in areas where Williams Spider Orchid occurs do not adversely impact on known populations.
- Control access routes to suitably constrain public access to known sites on public land.
- Minimise adverse impacts from land use at known sites.

Fire

- Develop and implement a suitable fire management strategy for Williams Spider Orchid.
- Provide maps of known occurrences to local and state Rural Fire Services and seek inclusion of mitigative measures in bush fire risk management plans, risk register and/or operation maps.

Conservation Information

- Raise awareness of Williams Spider Orchid within the local community.

Enable Recovery of Additional Sites and/or Populations

- Undertake appropriate seed and mycorrhizal fungi collection and storage.
- Investigate options for linking, enhancing or establishing additional populations.
- Implement national translocation protocols (Vallee et al., 2004) if establishing additional populations is considered necessary and feasible.

Trampling, Browsing or Grazing

- Prevent grazing pressure from kangaroos at known sites through exclusion fencing or other barriers.

This list does not necessarily encompass all actions that may be of benefit to Williams Spider Orchid, but highlights those that are considered to be of highest priority at the time of preparing the conservation advice.

Information Sources:

Hopper, SD & Brown, AP 2001, 'Contributions to Western Australian orchidology: New taxa and circumscriptions in *Caladenia*', *Nuytsia*, vol. 14, no. 1/2, pp. 303–4.

Jones, DL, Clements, MA, Sharma, IK & Mackenzie, AM 2002, 'Nomenclatural notes arising from studies into the Tribe Diurideae (Orchidaceae)', *The Orchadian*, vol. 13 no. 10, p. 454.

Vallee, L, Hogbin, T, Monks, L, Makinson, B, Matthes, M & Rossetto, M 2004, *Guidelines for the Translocation of Threatened Plants in Australia - Second Edition*, Australian Network for Plant Conservation, Canberra.

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West Australian Department of Conservation and Land Management (CALM) 2005, Records held in CALM's Declared Flora Database and Rare Flora Files.