

Advice to the Minister for the Environment and Heritage from the Threatened Species Scientific Committee (the Committee) on Amendments to the list of Threatened Species under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)

1. Scientific name (common name)

Caladenia williamsiae (Williams Spider Orchid)

2. Description

The Williams Spider Orchid is usually a solitary, terrestrial orchid growing between 15 and 20 cm tall. It is a distinctive orchid with a short, broad, pale green erect leaf about 7 to 9 cm long and 1.5 to 1.8 cm wide. The spider-like flowers are small and dark yellow-green, and the flowering period is from August to early September (Hopper & Brown 2001).

3. National Context

Williams Spider Orchid is endemic to Western Australia and has been recorded from three populations within a nature reserve near Brookton, approximately 135 km southeast from Perth.

The species is currently listed as rare under the Western Australian *Wildlife Conservation Act 1950* and is managed as 'critically endangered' (according to IUCN criteria) by the Western Australian Government.

4. How judged by the Committee in relation to the EPBC Act criteria.

The Committee judges the species to be **eligible** for listing as **endangered** under the EPBC Act. The justification against the criteria is as follows:

Criterion 1 – It has undergone, is suspected to have undergone or is likely to undergo in the immediate future a very severe, severe or substantial reduction in numbers.

The total known population size of Williams Spider Orchid is approximately 143 mature individuals across three populations. There exists very little information on the species' previous extent. It has only recently been discovered and surveyed. Surveys have been conducted in surrounding areas containing suitable habitat but no other individuals have been identified (CALM 2005).

Land clearing is was a substantial threat in the past (CALM 2005). The species is located within a reserve within a largely cleared area of the Western Australian wheatbelt. The land surrounding the reserve is completely cleared farmland. Therefore, while the species may once have been more widespread, suitable habitat is now restricted to the reserve and isolated woodland pockets. Surveys in similar vegetation in other nearby locations, and within a few kilometres of the reserve, have failed to locate any more populations.

The recent discovery of this species without longer term survey work means that there is no quantitative data to establish population trends for the Williams Spider Orchid. Therefore, there are no quantitative data available to assess the species against this criterion.

Criterion 2 – Its geographic distribution is precarious for the survival of the species and is very restricted, restricted or limited.

The Williams Spider Orchid has a very restricted estimated extent of occurrence of 1.7 km², and occurs as three small populations in one nature reserve. Its area of occupancy is also very restricted, estimated to be no more than 0.003 km² (CALM 2005).

Because habitat for this species is so restricted and isolated, recruitment is not likely outside of the reserve in which it is located. There is limited information on current or future threats to the species.

Of the three recorded populations, only the original population has been subject to grazing by kangaroos. The impact of fire on this species is unknown (CALM 2005).

The geographic distribution of the Williams Spider Orchid is very restricted. While there is limited information on current or future threats to the species, kangaroo grazing on the original population and the potential threat of fire in the future is sufficient evidence to suggest that the species' geographic distribution is precarious for its survival. Therefore, the species is **eligible** for listing as **endangered** under this criterion.

Criterion 3 – The estimated total number of mature individuals is limited to a particular degree and: (a) evidence suggests that the number will continue to decline at a particular rate; or (b) the number is likely to continue to decline and its geographic distribution is precarious for its survival.

The total estimated population is approximately 140 mature individuals, but there is no available evidence to suggest a continuing decline in the population.

There is limited available data about potential fluctuations in numbers or impacts on the total population. One population was originally recorded to have 11 individuals in 2000 but only six in 2001. Surveys conducted later in 2003 (CALM 2005), recorded 14 individuals at this population. Kangaroos have been observed grazing on the young shoots of the orchid at this population site. However, grazing does not appear to have had an obvious impact on the species at this site, nor does it appear to be a threat to the two other populations.

It is not known how this species responds to fire. However, while there are potential threats to the species, none of these currently suggest a likely decline in the species. Therefore, the species is **not eligible** for listing under this criterion.

Criterion 4 – The estimated total number of mature individuals is extremely low, very low or low.

The total estimated population for the Williams Spider Orchid is approximately 140 mature individuals, known from three populations, within a very restricted area of occupancy of 0.003 km².

Therefore, the species is **eligible** for listing as **endangered** under this criterion.

Criterion 5 - Probability of extinction in the wild

There are no quantitative data available to assess the species against this criterion.

5. CONCLUSION

The Williams Spider Orchid is currently located in a nature reserve 135 km from Perth. The total population is very low with approximately 140 mature individuals scattered across a 1.7 km² area, in 3 small populations, with a very restricted area of occupancy of 0.003 km². The species has only been recently discovered and whilst subsequent surveys have increased the original known population numbers, it has not been found in any other locations.

The species is potentially threatened by grazing impacts from kangaroos. The impact of fire on this species is unknown. However, while there are potential threats to the species, none of these currently suggest a likely decline in the species.

The species is eligible for listing as **endangered** under criteria 2 and 4.

6. Recommendation

The Committee recommends that the list referred to in section 178 of the EPBC Act be amended by **including** in the list in the **endangered** category:

Caladenia williamsiae (Williams Spider Orchid)

References cited in the advice

CALM (2005) Records held in CALM's Declared Flora Database and rare flora files. WA Department of Conservation and Land Management, Western Australia.

Hopper, S.D., & Brown, A.P. (2001) Contributions to Western Australian Orchidaceae 2; New taxa and circumscriptions in Caladenia. *Nuytsia* 14 (1/2) pp 27-308.