

Advice to the Minister for the Environment, Heritage and the Arts 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 melanema (Ballerina Orchid)

2. Description

The Ballerina Orchid is a small inconspicuous, terrestrial spider orchid. The plants grow singly or in groups and each plant has a single erect pale green leaf, approximately 12 centimetres long (Hopper and Brown, 2001). The spider-like flowers are about 4–5 cm across and cream with maroon markings. The flowering period is from August to early September.

The species grows in a white, sand clay-loam rise among salt flats beneath *Eucalyptus spathulata* mallees, *Melaleuca* scrub or thickets and very scattered low chenopod shrubs.

3. National Context

The Ballerina Orchid is endemic to Western Australia and is known from a single subpopulation near Lake Altham, approximately 290km southeast of Perth.

The species is currently listed as Declared Rare Flora under the Western Australian *Wildlife Conservation Act 1950*.

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

The Committee judges the species to be **eligible** for listing as **critically 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 the Ballerina Orchid is approximately 300 mature individuals all within one subpopulation. There exists very little information on the species previous extent. The known subpopulation was discovered in 1989 and has been surveyed frequently since. Surveys have been conducted in surrounding areas containing suitable habitat but no other subpopulations have been found (CALM, 2006).

Land clearing is considered to have been a substantial threat in the past (CALM, 2006). Ninety-nine percent of the population is located within a nature reserve within a largely cleared area of the Western Australian wheatbelt. Therefore, while the species may once have been more widespread, suitable habitat is now restricted to the reserve and in general is extremely limited (CALM, 2006).

There are no quantitative data to establish population trends for the Ballerina Orchid. Therefore, there are no 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 Ballerina Orchid has a very restricted geographic distribution, comprising a single known subpopulation. Its estimated extent of occurrence is less than one kilometre, while the area of occupancy is about 120 metres x 30 metres, or 3600m² (CALM, 2006).

Because habitat for this species is so restricted and isolated, recruitment is not likely to occur outside of the reserve in which it is located due to clearance of habitat for agriculture. There is limited information on current or future threats to the species. The subpopulation has been subject to grazing by kangaroos and road maintenance activities may have an impact on the species numbers (CALM 2006). Increasing salinity is also a potential threat given the subpopulation's proximity to a saline lake system and the extent of increased salinity and raised ground water tables across large areas of the Western Australian wheatbelt (State Salinity Council, 2000).

As a result of the very restricted distribution, an inferred past decline due to clearance, the potential threats of grazing, salinity and road maintenance, the geographic distribution of this species is precarious for its survival. Therefore, the species is **eligible** for listing as **critically 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 population of the Ballerina Orchid is estimated to be 300 mature individuals in a single population, but there is no available evidence to suggest a continuing decline in the population.

There are limited available data about potential fluctuations in numbers or impacts on the total population. The species is known to undergo seasonal fluctuations in the number of flowering plants which is thought to be based on climatic and other environmental conditions. Kangaroos have been observed grazing on the young shoots of the orchid at this population site. However, it is not clear whether grazing has had an obvious impact on the species.

The Ballerina Orchid is a tuberous perennial and is capable of living for many years, resprouting from underground organs. Plants are capable of reaching reproductive maturity within a few years of germination. Individual plants can be killed by drought and through physical damage by insects and foraging animals (A. Brown, pers. comm.). It is difficult to determine whether fluctuations in the population size are indicative of longer term trends or simply reflect natural fluctuations. Therefore, there are insufficient data available to assess the species against this criterion.

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

The total estimated population for the Ballerina Orchid is approximately 300 mature individuals, known from one subpopulation. Therefore, the species is **eligible** for listing as **vulnerable** under this criterion.

Criterion 5. Probability of extinction in the wild.

There are insufficient data available to assess the species against this criterion.

5. CONCLUSION

The Ballerina Orchid occurs in one subpopulation near Lake Altham in Western Australia. The total population is very low with approximately 300 mature individuals scattered across a known extent of occurrence of less than 1km² and the area of occupancy is about 120 metres x 30 metres, or 3600 m². Subsequent surveys have increased the original known population size, however the species has not been found in any other locations.

The species is potentially threatened by grazing impacts from kangaroos, increasing salinity levels and road maintenance activities.

As a result of its very restricted geographic distribution, low number of mature individuals and potential threats the species is **eligible** for listing as **critically endangered** under criterion 2 and **vulnerable** under criterion 4.

Recovery Plan

The Committee considers that there should be a recovery plan for this species. Specific management actions are needed to address the threats to the Ballerina Orchid. This includes possible translocations to establish new populations. A recovery plan is considered necessary to implement and manage these actions.

6. Recommendation

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

***Caladenia melanema* (Ballerina Orchid)**

- (ii) The Committee recommends that there be a recovery plan for this species.

Associate Professor Robert J.S. Beeton

Chair

Threatened Species Scientific Committee

References cited in the advice

A. Brown (personal communication). Threatened Flora Coordinator. Western Australian Department of Conservation and Land Management.

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Hopper S. & Brown, A. (2001). "Contributions to Western Australian Orchidology. 2, New Taxa and Circumscriptions in *Caladenia* (spider, fairy and dragon orchids of Western Australia)". *Nuytsia* 14: 141–143.

State Salinity Council (2000). Natural Resource Management in Western Australia The salinity strategy. Government of Western Australia.