

# NSW SCIENTIFIC COMMITTEE

## Final Determination

The Scientific Committee, established by the *Threatened Species Conservation Act 1995* (the Act), has made a Final Determination to list the terrestrial orchid *Caladenia montana* G.W.Carr as a VULNERABLE SPECIES in Part 1 of Schedule 2 of the Act. Listing of Vulnerable species is provided for by Part 2 of the Act.

The Scientific Committee has found that:

1. *Caladenia montana* G.W.Carr (syn. *Arachnorchis montana* (G.W.Carr) D.L.Jones & M.A.Clem.) (family Orchidaceae) is described as: “Leaf 80–120 x 8–12 mm. Flower stem 100–250 mm tall, 1-flowered. Flowers 40–60 mm across, greenish cream to cream, sometimes with reddish markings; sepals with dark red or brownish clubs 8–15 mm long. Dorsal sepal incurved, 30–40 x 2–3 mm. Lateral sepals divergent, 30–40 x 3–3.5 mm, decurved. Petals similarly arranged, 25–33 x 2.5–3 mm. Labellum 10–12 x 7–9 mm, mostly maroon, base paler; margins with 6–8 pairs of red teeth to 1.5 mm long; tip decurved. Calli to 1.3 mm long, red, uncrowded, in 4 or 6 rows” (Jones 2006).
2. *Caladenia montana* occurs in New South Wales (NSW) and the Australian Capital Territory (ACT) and the Victorian high country. In NSW the species occurs in the Southern Tablelands near Brindabella and Tumut (Jones 2006; Backhouse 2011).
3. *Caladenia montana* is restricted to high montane areas 700–1000 m a.s.l. where it grows in well-drained loam on slopes and ridges of montane forest among an understorey of shrubs (Jones 2006). Flowering occurs from October to January. Flowers are pollinated by a wasp from the genus *Phymatothynnus* and is not the same species of wasp that pollinates *C. clavigera* as described in Backhouse (2011) (C. Bower *in litt.* October 2015).
4. The number of mature individuals of *Caladenia montana* is estimated to be low. Voucher specimens have been collected from 16 locations in NSW and the ACT but there is little information about the number and size of individual populations. Three populations of this species found in Bago State Forest range from eight to 40 individuals and the populations found in Tumut and Brindabella are estimated to contain fewer than 200 plants (P. Branwhite *in litt.* August 2005, July 2007). The known total population of *C. montana* in NSW and the ACT is therefore considered to be fewer than 350 extant plants. Estimates of population size can be difficult for ephemeral orchids because they are only observable at certain times of the year and often only flower under the right environmental conditions. In addition, the maturity of an individual plant can only be assessed when it is flowering.
5. The extent of occurrence for *Caladenia montana* is approximately 6,180 km<sup>2</sup> based on a minimum convex polygon enclosing all mapped occurrences of the species, the method of assessment recommended by IUCN (2014). The polygon was created by using all records of occurrence in NSW and the ACT and extending it to the border with Victoria. The area of occupancy (AOO), using the 16 vouchered locations of *C. montana*, is estimated to be 56 km<sup>2</sup> based on 2 x 2 km grid cells, the scale recommended for assessing AOO by IUCN (2014).
6. According to herbarium records, *Caladenia montana* has been found in Brindabella and Namadgi National Parks, Tidbinbilla Nature Reserve (ACT) and in the Bago and Maragle State Forests. Post-disturbance invasion of weeds is an on-going threat as are grazing and trampling by cattle, wild horses and pigs (P. Branwhite *in litt.* August 2005). Populations near roads may be threatened by illegal collecting and damaged by recreational vehicles (P. Branwhite *in litt.* August 2005; D. Binns *in litt.* December 2005). Given the high elevation of localities of a number of populations of *C. montana*, it

# NSW SCIENTIFIC COMMITTEE

is possible that climate change may also have an adverse effect on this species. 'Anthropogenic Climate Change', 'Invasion of native plant communities by exotic perennial grasses' and 'Predation, habitat degradation, competition and disease transmission by feral pigs *Sus scrofa* Linnaeus 1758' are listed as Key Threatening Processes under the Act.

7. *Caladenia montana* G.W.Carr is not eligible to be listed as an Endangered or Critically Endangered species.
8. *Caladenia montana* G.W.Carr is eligible to be listed as a Vulnerable species as, in the opinion of the Scientific Committee, it is facing a high risk of extinction in New South Wales in the medium-term future as determined in accordance with the following criteria as prescribed by the *Threatened Species Conservation Regulation 2010*:

## Clause 9 Low numbers of mature individuals of species

The total number of mature individuals of the species is observed, estimated or inferred to be:

(c) low.

Dr Mark Eldridge  
Chairperson  
Scientific Committee

Exhibition period: 05/08/16 – 30/09/16

Proposed Gazettal date: 05/08/16

## References:

Backhouse GN (2011) 'Spider-orchids—the genus *Caladenia* and its relatives in Australia.' (Gary Backhouse: Melbourne)

IUCN Standards and Petitions Subcommittee (2014) Guidelines for Using the IUCN Red List Categories and Criteria. Version 11. Prepared by the Standards and Petitions Subcommittee.

<http://www.iucnredlist.org/documents/RedListGuidelines.pdf>

Jones DL (2006) 'A complete guide to native orchids of Australia including the island territories.' (Reed New Holland: Sydney)