

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 *Pterostylis alpina* R.S.Rogers 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. *Pterostylis alpina* R.S.Rogers (family Orchidaceae) is described as: “Terrestrial herb. Rosette leaves 3–5, scattered on the basal part of the stem, ovate to elliptic or obovate, 2–6 cm long, 10–15 mm wide, margins entire; sessile. Scape to 30 cm high; stem scabrous. Flower c. 3 cm long, erect, dark green and white. Apex of galea flat or slightly decurved. Dorsal sepal acute to subacute. Lateral sepals loosely embracing the galea leaving a lateral gap; sinus broadly notched when viewed from the front, protruding prominently in an abrupt curve when viewed from the side; free points linear-tapered, c. 20 mm long, reflexed behind the galea. Petals broad, subacute. Labellum narrow-ovate to lanceolate, 13–18 mm long, c. 3 mm wide, brown, curved forwards above the middle, subacute, distal third protruding from the sinus in the set position.” (PlantNET, April 2015).
2. *Pterostylis alpina* occurs in New South Wales (NSW), the Australian Capital Territory (ACT) and Victoria. In NSW the species occurs in the Southern Tablelands south from Bondo State Forest.
3. *Pterostylis alpina* grows in moist forests on foothills and ranges, extending to montane areas but not alpine regions. It is often found on sheltered southern slopes near streams in rich loam. Flowering occurs from August to October (PlantNET, April 2015; Jones 2006).
4. The number of individuals of *Pterostylis alpina* is estimated to be low. It is known from 10 vouchered populations and possibly three other sightings in the Southern Tablelands of NSW. Populations of this species range from a single individual to tens of individuals (P. Branwhite *in litt.* August 2005, July 2007) to several hundreds of individuals (D. Binns *in litt.* December 2005). One population in the Brindabella Range has apparently not recovered from wildfires in 2003 (P. Branwhite *in litt.* July 2007). The total population of *P. alpina* in NSW is estimated to be fewer than 1,000 extant plants. Estimates of total 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 *Pterostylis alpina* is approximately 27,600 km² 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 of Victoria. The area of occupancy (AOO), based on the 10 vouchered populations of *P. alpina*, is estimated to be 64 km² based on 2 x 2 km grid cells, the scale recommended for assessing AOO by IUCN (2014).
6. According to herbarium records, *Pterostylis alpina* has been found in Kosciuszko National Park and both Buccleuch and Bondo State Forests. In addition, populations have been found in Bago and Clarkes Hill State Forests (P. Branwhite *in litt.* August 2005, July 2007) and in Bondo and Bago State Forests (D. Binns *in litt.* December 2005). Current threats are feral animals, notably horses, damaging the understorey areas (P. Branwhite *in litt.* August 2005, July 2007; D. Binns *in litt.* December 2005). Post-disturbance invasion of weeds such as Blackberries and introduced grasses (P. Branwhite *in litt.* August 2005) is an on-going threat as are wildfires and changed fire regimes which can have a

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considerable impact on fire-sensitive species. Given the high elevation of localities of a number of populations of *P. alpina*, it is possible that climate change may also have an adverse effect on this species. 'Anthropogenic climate change' and 'Invasion of native plant communities by exotic perennial grasses' are listed as Key Threatening Processes under the Act.

7. *Pterostylis alpina* R.S.Rogers is not eligible to be listed as an Endangered or Critically Endangered species.
8. *Pterostylis alpina* R.S.Rogers 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 number 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:

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)

PlantNET (The NSW Plant Information Network System) (2015) Royal Botanic Gardens and Domain Trust, Sydney

<http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Pterostylis~alpina>

(accessed 20 April 2015)