

NSW SCIENTIFIC COMMITTEE

Preliminary Determination

The Scientific Committee, established by the Threatened Species Conservation Act, has made a Preliminary Determination to support a proposal to list the orchid *Prasophyllum bagoense* D.L.Jones as a CRITICALLY ENDANGERED SPECIES in Part 1 of Schedule 1A of the Act and, as a consequence, to omit reference to *Prasophyllum bagoensis* D.L.Jones from Part 1 of Schedule 1 (Endangered species) of the Act. Listing of Critically Endangered species is provided for by Part 2 of the Act.

The Scientific Committee has found that:

1. *Prasophyllum bagoense* D.L.Jones (family Orchidaceae) is described as: “terrestrial herb, 25–40 cm high. Leaf to 20–35 cm long, dark green with reddish to purple base. Inflorescence 15–30-flowered, moderately crowded to crowded. Flowers pale tawny green, fragrant. Dorsal sepal narrowly ovate-lanceolate, 6–7.5 mm long, 3–3.5 mm wide, deflexed. Lateral sepals free, linear-lanceolate, 6.5–7.5 mm long. Lateral petals upswept, widely spreading, linear, 6.5–7.5 mm long, 1.3–1.5 mm wide. Labellum very shortly stalked; lamina 5.5–6 mm long, 4–4.5 mm wide, broadly ovate-lanceolate in outline when flattened, constricted in the distal half; erect, slightly recurved in the distal half; apex just projecting through the lateral sepals, the margins proximally irregular, irregular and crenulate distally. Callus plate ovate-oblong, constricted in the distal half, 3–3.7 mm long, 2–2.5 mm wide, raised, fleshy, shallowly channelled centrally, green, extending 2/3 of the distance to the labellum apex, glabrous. Capsule obovoid, 4–5 mm long, c. 3 mm wide, pale green, shiny.” (Royal Botanic Gardens & Domain Trust PlantNet, accessed June 2013).
2. The species was published by Jones (2000) as *Prasophyllum bagoensis*. This epithet had an incorrect ending which has been corrected in accordance with Article 32.2 of the International Code of Nomenclature (McNeill *et al.* 2012). The species is now correctly known as *P. bagoense*.
3. *Prasophyllum bagoense* flowers from December to January and fruits from December to March. Plants are insect-pollinated, probably by a wasp species and are not known to reproduce vegetatively; they are reliant on seed germination for recruitment of new plants. This species flowers freely without fire stimulation (TSSC 2012).
4. The geographic distribution of *Prasophyllum bagoense* is very highly restricted. *Prasophyllum bagoense* is a NSW endemic and is currently known from a single population east of Tumbarumba. This is likely to represent the full extent of the species range (D Binns *in litt.* July 2013; TSSC 2012). The species occurs in sub-alpine treeless plain at an elevation of approximately 1160 m in an alpine bog/heathland community in moist to wet shallow clay loam (Jones 2000, 2006) as well as in adjacent eucalypt woodland (TSSC 2012). The species occurs in State Forests Crown leases and adjoining private property. There were previous sightings of the species in the mid-1970s at a site c. 5 km away, but it has not been relocated there despite repeated surveys. Targeted searches (2003–2005) for additional populations in similar habitats, in good flowering years, within a 100 km radius were unsuccessful (TSSC 2012). The extent of occurrence and the area of occupancy are estimated to be 4 km². The AOO was calculated to be within a single 2×2 km grid square, the scale recommended for assessment by IUCN (2011).
5. The number of mature individuals of *Prasophyllum bagoense* is estimated to be very low. The numbers of above-ground *P. bagoense* fluctuate, possibly dependent on season (TSSC 2012)

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with observation records of 20–80 individuals in 2000–2003, 6 in 2008, 30–40 in 2010 and c. 30 in 2012 (name withheld *in litt.*, June 2013). For a subset of the population Beretta (2012) reported 20–30 flowering individuals in 2008, 7 in 2011 and 3 in 2012. Because of the fluctuating numbers it is difficult to determine if the population is stable or declining.

6. *Prasophyllum bagoense* is threatened by a number of factors associated with changing hydrology, domestic and feral animals, and weeds. There has been a reduction of water flows into the sites occupied by the species as a result of construction of large farm dams since 1999, and increased channelisation of flow. Soil disturbance by domestic stock, feral pigs and horses has contributed to the degradation of the site (NSW Scientific Committee 2004). The exotic perennial grass Yorkshire fog (*Holcus lanatus*) is present at the site and, without control, its impact on *P. bagoense* through competition is likely to increase. Grazing and mowing have had deleterious effects in parts of the species range. 'Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands', 'Predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*)' and 'Invasion of native plant communities by exotic perennial grasses' are listed as Key Threatening Processes under the NSW *Threatened Species Conservation Act* 1995.
7. *Prasophyllum bagoense* D.L.Jones is eligible to be listed as a Critically Endangered species as, in the opinion of the Scientific Committee, it is facing an extremely high risk of extinction in New South Wales in the immediate future as determined in accordance with the following criteria as prescribed by the *Threatened Species Conservation Regulation* 2010:

Clause 7 Restricted geographic distribution and other conditions

The geographic distribution of the species is estimated or inferred to be:

- (a) very highly restricted,
- and
- (d) a projected or continuing decline is observed, estimated or inferred in the key indicator:
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity of the species.

Clause 8 Low numbers of mature individuals of species and other conditions

The estimated total number of mature individuals of the species is:

- (a) very low,
- and
- (d) a projected or continuing decline is observed, estimated or inferred in the key indicator:
 - (b) the geographic distribution, habitat quality or diversity, or genetic diversity of the species.

Associate Professor Michelle Leishman
Chairperson
Scientific Committee

Proposed Gazettal date: 11/10/13
Exhibition period: 11/10/13 – 06/12/13

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References:

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- IUCN Standards and Petitions Subcommittee (2011) Guidelines for Using the IUCN Red List Categories and Criteria. Version 9.0. Prepared by the Standards and Petitions Subcommittee. <http://www.iucnredlist.org/documents/RedListGuidelines.pdf> (accessed 24 June 2013)
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- NSW Scientific Committee (2004) *Prasophyllum bagoensis*. Final Determination to list an endangered species under the Threatened Species Conservation Act 1995. NSW Scientific Committee, Sydney
<http://www.environment.nsw.gov.au/determinations/PrasophyllumBagoensisEndSpListing.htm> (accessed 24 June 2013)
- Threatened Species Scientific Committee [TSSC] (2012) Advice to the Minister for Sustainability, Environment, Water, Population and Communities.
<http://www.environment.gov.au/biodiversity/threatened/species/pubs/84276-listing-advice.pdf> (accessed 24 June 2013)