Notice of the Determination for provisional listing of a critically endangered species on an emergency basis

The NSW Threatened Species Scientific Committee, established under the *Biodiversity Conservation Act 2016* (the Act), has made a Determination for provisional listing, on an emergency basis, of the species, *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium as a CRITICALLY ENDANGERED SPECIES in Part 1 of Schedule 1 of the Act. Provisional Listing of a Critically endangered species on an emergency basis is provided for by Part 4 of the Act.

What happens next?

This species will be listed as a Critically endangered species when the Provisional Listing Determination is published on the Legislation website <u>www.legislation.nsw.gov.au.</u>

In the near future the Committee will make a Preliminary Determination regarding this proposal which will be place on public exhibition. Public submissions will be invited at that time.

Professor Caroline Gross Chairperson NSW Threatened Species Scientific Committee

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Determination for provisional listing of a Critically endangered species on an emergency basis

The NSW Threatened Species Scientific Committee, established under the *Biodiversity Conservation Act 2016* (the Act), has made a Determination for provisional listing, on an emergency basis, of the species, *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium as a CRITICALLY ENDANGERED SPECIES in Part 1 of Schedule 1 of the Act. Provisional Listing of a Critically endangered species on an emergency basis is provided for by Part 4 of the Act.

Summary of Conservation Assessment

Prasophyllum sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium was found to be Critically endangered in accordance with the following provisions in the *Biodiversity Conservation Regulation 2017*: Clause 4.3(a)(d)(e i,iii).

The main reasons for this species being eligible are (1) it has a very small population (only 89 individuals); (2) it has an very restricted geographical range (EOO and AOO of 4 km²) and occurs as a single population at only one location; (3) there is observed continuing decline due to pig predation; and (4) that this population extends onto a road easement (the main access road in Mount Canobolas State Conservation Area (SCA)) and as such is at high risk from inadvertent damage from road users and during road maintenance and inappropriate development.

The NSW Threatened Species Scientific Committee has found that:

1. Prasophyllum sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium (Mount Canobolas Leek Orchid) was described by Jones (2019) under the name *Paraprasophyllum canobolense*. Jones (2019) described the species as a "Robust, glabrous, terrestrial, tuberous herb 40-70 cm tall. Tubers not seen. Leaf terete, 30-60 cm long, dark green; base 4-5 mm across, reddish purple; free lamina 10-20 cm long, erect to suberect, green, tip often withered at anthesis. Inflorescence a dense spike 8-12 cm long, consisting of c. 12–25 flowers. Floral bracts ovate, c. 4 mm long, c. 4 mm wide, bluntly apiculate. Ovary narrowly obovoid, 4.5–5.5 mm long, 2.5–3 mm wide, green, shiny, at c. 60° to the rachis. Flowers subsessile, opening widely, 15–20 mm long, 15–18 mm across; sepals greenish brown to brown; petals white, with a brownish band; labellum lamina white; callus yellowish green with a white margin. Dorsal sepal decurved, ovatelanceolate, 9–11 mm long, c. 4 mm wide, 3 darker striae prominent; apex subacute. Lateral sepals free, widely divergent (to 18 mm apart), erect and recurved, linearlanceolate, 9–11 mm long, c. 2.5 mm wide; base curved; margins strongly involute throughout. *Petals* spreading or the tips incurved, spathulate 10–11.5 mm⁻long, c. 3 mm wide at the dilated apex, white with a pinkish central band, distal margins widely dilated, irregular, apex subobtuse. Labellum sessile, white; proximal half porrect, sharply bent back at more than right angles near the middle, the distal half recurved, often extending back through the lateral sepals. Labellum lamina oblong in outline when flattened, 10-12 mm long, 4.5-5 mm wide; basal part oblongelliptic, flat or shallowly curved when viewed from the side; proximal margins

shallowly curved, entire; distal margins undulate and also finely but irregularly crenulate; apex obtuse. *Callus* ovate-oblong in outline, 5–6 mm long, *c*. 3 mm wide, yellowish green with a white margin, raised, channeled, extending just beyond the labellum bend, the base with a prominent fleshy dark green thickening; apex shallowly emarginate. *Column* porrect from the end of the ovary, *c*. 4 mm long, *c*. 3.5 mm wide, visible from the side in the gap between the dorsal sepal and the petals; appendages narrowly oblong, slightly falcate, *c*. 3.5 mm long, *c*. 0.8 mm wide, shorter than the stigmatic plate, white or pinkish. *Anther* ovate, *c*. 2.5 mm long, *c*. 2 mm wide, purple-brown, about as wide as the stigmatic plate, shorter than the rostellum. *Pollinarium c*. 3 mm long; viscidium ovate, *c*. 0.4 mm long, white; hamulus ligulate, *c*. 0.5 mm long, slender; pollinia narrowly clavate, *c*. 2.5 mm long, yellow, sectile. *Stigma* narrowly elliptical-quadrate, *c*. 2 mm long, *c*. 2 mm wide; rostellum about as high as the appendages. *Capsules* not seen."

- 2. Jones (2019) states that Paraprasophyllum canobolense [Prasophyllum sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium] has affinity to Paraprasophyllum odoratum (R.S.Rogers) M.A.Clem. & D.L.Jones [accepted] name Prasophyllum odoratum R.S.Rogers], but differs by its larger flowers (15-20 x 15-18 mm cf. 13-17 x 9-12 mm in P. odoratum), widely spreading tepals, distinctly spathulate petals (cf. linear-tapered in P. odoratum), labellum with finely but irregularly crenulate margins (cf. undulate in P. odoratum) and relatively broad ovate-oblong callus plate c. 3 mm wide (cf. narrowly tapered callus plate c. 1.5 mm wide in *P. odoratum*); also with *Paraprasophyllum jeaneganiae* (D.L.Jones) M.A.Clem. & D.L.Jones from which it can be distinguished by its non-gibbous lateral sepals (cf. gibbous in P jeaneganiae), narrower labellum with an ovateoblong callus (cf. wedge-shaped in P. jeaneganiae) and column with the anther about as wide as the stigmatic plate (cf. anther much narrower than stigmatic plate in P. jeaneganiae). The NSW Herbarium does not currently recognise Paraprasophyllum as a genus, with all taxa retained within Prasophyllum. As no jurisdictions (except Tasmania) recognise Paraprasophyllum as a generic segregate, the agreed concept of Prasophyllum includes Paraprasophyllum (B. Lepschi in litt. November 2024).
- 3. *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium is endemic to New South Wales (NSW) and is known with certainty only from Mount Canobolas near Orange in the Central-west of NSW. It grows on the broad upper slopes and ridge tops in grassy open forest in freely draining basaltic loam at *c*. 1,100–1,200 m elevation. Recent surveys (Bower 2020) and subsequent surveys and monitoring in the reserve have revealed *P.* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium is confined to 89 individuals and an area of 50 ha within the Mount Canobolas SCA.
- 4. Prasophyllum sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium has a very restricted geographic distribution, with an extent of occurrence (EOO) of 4 km² and and area of occupancy (AOO) of 4 km² based on a 2 x 2 km grid (as recommended for assessing AOO by IUCN, 2024), based on individuals recorded in spring 2018 and 2019 (Bower 2020) and subsequent monitoring.
- 5. Jones (2019) states that *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium flowers freely after fire but is rarely seen in

overgrown habitat. *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium is a 'fire-stimulated species' (Jones 1988; Duncan 2012) that flowers profusely in the spring after a summer wildfire. It is thought that almost the entire dormant population flowered in 2018 in response to the February 2018 fire.

- 6. The only known population of *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium grows at the road verge on embankments and 33% of the population occurs within the 20 m easement either side of the main road, which is under the jurisdiction of local government. Planned redevelopments, undertaken to improve traffic flow, parking and toilet facilities and provide lookout platforms and interpretive materials at the summit will undoubtedly increase visitor traffic and the need for access road improvements. Any drainage work, maintenance or road widening could do serious damage to the population. 'Clearing of native vegetation' is a Key Threatening Process under the *Biodiversity Conservation Act 2016*. 'Land clearance' is a Key Threatening Process under the *Environment Protection and Biodiversity Conservation Act 1999*.
- 7. *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium is subject to a high level of ongoing pest animal disturbance, particularly feral pig predation of underground bulbs. The last three years have seen a significant increase in pig activity with around 21% of the total number of tagged plants likely to have been taken out by pigs. 'Predation, habitat degradation, competition and disease transmission by feral pigs (*Sus scrofa*)' is a Key Threatening Process under the *Biodiversity Conservation Act*.
- 8. The area where *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium occurs is subject to a high level of ongoing blackberry (exotic *Rubus* spp.) invasion that has increased exponentially since the fires (H. Zimmer pers. obs. April 2020).
- 9. Under the *Biodiversity Conservation Act* 2016 a species is eligible to be provisionally listed as, in the opinion of the NSW Threatened Species Scientific Committee:
 - (a) the species:
 - (i) although not previously known to have existed in New South Wales, is believed on current knowledge to be native to New South Wales, or
 - (ii) is subject to an immediate and significant threat of extinction, or
 - (iii) was presumed to be extinct or extinct in the wild but has been rediscovered, and
 - (b) the species is not listed in Schedule 1 as an endangered or critically endangered species.
- 10. *Prasophyllum* sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium is eligible to be listed as a Critically endangered species as, in the opinion of the NSW Threatened Species Scientific Committee, it is subject to an immediate and significant threat of extinction.

Assessment against Biodiversity Conservation Regulation 2017 criteria

The Clauses used for assessment are listed below for reference

Overall Assessment Outcome:

Prasophyllum sp. Canobolense (C. Bower ORG 7797) Australian National Herbarium was found to be Critically endangered under Clause 4.3(a)(d)(e i,iii).

Clause 4.2 – Reduction in population size of species (Equivalent to IUCN criterion A) Assessment Outcome: Data deficient

(1) - The species has undergone or is likely to undergo within a time frame
appropriate to the life cycle and habitat characteristics of the taxon:

	(a)	for critically endangered	a very large reduction in population				
		species	size, or				
	(b)	for endangered species	a large reduction in population size,				
			or				
	(c)	for vulnerable species	a moderate reduction in population				
			size.				
(2) - 1	The d	etermination of that criteria is	s to be based on any of the				
follow	following:						
	(a)	direct observation,	direct observation,				
	(b)	an index of abundance appropriate to the taxon,					
	(c)	a decline in the geographic distribution or habitat quality,					
	(d)	the actual or potential levels of exploitation of the species,					
	(e)	the effects of introduced taxa, hybridisation, pathogens, pollutants,					
		competitors or parasites.					

Clause 4.3 - Restricted geographic distribution of species and other conditions (Equivalent to IUCN criterion B)

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Assessment Outcome: Critically endangered under Clause 4.3(a)(d)(e i,iii)
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The g	The geographic distribution of the species is:							
	(a)	for o	critically endangered	very highly restricted, or				
		spec	cies					
	(b)	for e	endangered species	highly restricted, or				
	(c)	for v	ulnerable species	moderately restricted,				
and a	at lea	st 2 c	of the following 3 condition	ons apply:				
	(d)	the p	the population or habitat of the species is severely fragmented or					
		near	nearly all the mature individuals of the species occur within a small					
		num	number of locations,					
	(e)	ther	there is a projected or continuing decline in any of the following:					
		(i)	(i) an index of abundance appropriate to the taxon,					
		(ii)	the geographic distribution	n of the species,				
		(iii)	(iii) habitat area, extent or quality,					
		(iv)	(iv) the number of locations in which the species occurs or of					
			populations of the species,					
	(f)	extre	extreme fluctuations occur in any of the following:					
		(i)	an index of abundance ap	propriate to the taxon,				

	(ii)	the geographic distribution of the species,
	(iii)	the number of locations in which the species occur or of
		populations of the species.

Clause 4.4 - Low numbers of mature individuals of species and other conditions

(Equivalent to IUCN criterion C)

Assessment Outcome: Endangered under Clause 4.4(b)(e i,iiAll,B)

The e	The estimated total number of mature individuals of the species is:							
	(a)	for o	critically	/ endai	ngered	very low	, or	
		spec	cies					
	(b)	for e	endang	ered s	pecies	low, or		
	(C)	for v	vulnera	ble spe	ecies	moderat	tely Ic	OW,
and e	either	of th	ne follo	owing	2 conditions	apply:		
	(d)	a co	ntinuin	ig decl	ine in the nur	nber of m	nature	e individuals that is
		(acc	ording	to an i	index of abur	ndance ap	oprop	riate to the species):
		(i)	for cr	itically	endangered s	species	very	large, or
		(ii)	for er	Idange	red species		large	e, or
		(iii)	for vu	Inerab	le species		mod	lerate,
	(e)	both	of the following apply:					
		(i)	a con	a continuing decline in the number of mature individuals				
			(acco	(according to an index of abundance appropriate to the				
			species), and					
		(ii)	at lea	t least one of the following applies:				
			(A)	the number of individuals in each population of the species				
				is:				
				(I)	for critically	endanger	ed	extremely low, or
					species			
				(II)	for endange	red speci	es	very low, or
				(III)	for vulnerab	le species	5	low,
			(B)	all or nearly all mature individuals of the species occur				
				within one population,				
			(C)	extreme fluctuations occur in an index of abundance				
				appropriate to the species.				

Clause 4.5 - Low total numbers of mature individuals of species (Equivalent to IUCN criterion D)

Assessment Outcome: Endangered under Clause 4.5(b)

The to	The total number of mature individuals of the species is:					
	(a)	for critically endangered	extremely low, or			
		species				
	(b)	for endangered species	very low, or			
	(C)	for vulnerable species	low.			

Clause 4.6 - Quantitative analysis of extinction probability (Equivalent to IUCN criterion E) Assessment Outcome: Data deficient

The pro	The probability of extinction of the species is estimated to be:					
(a) for critically endangered	extremely high, or				
	species					
(b) for endangered species	very high, or				
(0) for vulnerable species	high.				

Clause 4.7 - Very highly restricted geographic distribution of species– vulnerable species (Equivalent to IUCN criterion D2) Assessment Outcome: Vulnerable under Clause 4.7

For vulnerable	the geographic distribution of the species or the number of
species,	locations of the species is very highly restricted such that the
	species is prone to the effects of human activities or
	stochastic events within a very short time period.

Professor Caroline Gross Chairperson NSW Threatened Species Scientific Committee

Supporting Documentation:

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