

Prostanthera saxicola var. *bracteolata* Slender Mint-bush

Taxonomy

Prostanthera saxicola var. *bracteolata* J.H. Willis

There are four varieties of *P. saxicola* with only one in Victoria. The classification of this taxon is under review implying that it may be elevated to a higher rank.

Current conservation status

Categorised as Rare in the 2014 Advisory list of rare or threatened flora (DEPI 2014).

Proposed conservation status

Endangered in Victoria

Criterion B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is an erect to prostrate shrub, often spindly with intertwined branches, 0.1–2 m high; branches sparsely to moderately hairy, hairs antrorse. Leaves scattered, sessile, linear to narrow-oblong or -ovate, 5–9 mm long, 0.5–1 mm wide, base narrowly cuneate, margin incurved or inrolled. Flowers in leafy racemose inflorescences, appearing axillary; bracteoles 1.6–3 mm long, 0.3–0.5 mm wide. Calyx 4–5 mm long, tube 2–3 mm long, adaxial lobe 1.5–2 mm long (slightly enlarged in fruit); corolla white to pale mauve (rarely bluish), 8–10 mm long; anther appendage 0.5–0.8 mm long. Flowers September–December (VicFlora 2018).

Its fire response is unknown, but it is possibly fire sensitive. Reproduction is by seed only, and recruitment is continuous and pulsed after fire from a presumably long-lived soil stored seedbank. It is pollinated by solitary bees, and possibly the exotic honeybee. Its breeding system unknown, but it is probably predominantly outbreeding. Seeds are passively dispersed and there is likely to be no secondary dispersal mechanism. Gene-flow in the taxon is likely to be only a few tens of metres.

Generation Length

The generation length of *Prostanthera saxicola* var. *bracteolata* is suspected to be 30 to 50 years. This is based on its longevity and continuous recruitment.

Distribution

The taxon is widespread in Victoria on the Great Dividing Range, east of the Grampians, extending to the western edge of East Gippsland.

Habitat

The taxon occurs in heathland, dry sclerophyll forest, and woodlands on rocky sites and rock outcrops on a range of sedimentary geology such as sandstone, siltstone, and mudstone.

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Threats

Threats to the taxon include the effects of climate change such as decreased rainfall, increased evaporation, and extreme temperatures; increased frequency and intensity of fires; soil loss on bare, post fire substrates resulting from severe rainfall events; damage to plants and browsing by Sambar Deer (*Rusa unicolor*) and other deer taxa; weed invasion; and browsing by goats and rabbits.

IUCN Criteria

Criterion A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4			
	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3, A4	≥ 80%	≥ 50%	≥ 30%
<p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>A2 Population reduction observed, estimated, inferred or suspected in the past where the causes of the reduction may not have ceased OR may not be understood OR may not be reversible.</p> <p>A3 Population reduction, projected or suspected to be met in the future (up to a maximum of 100 years) [(a) cannot be used for A3]</p> <p>A4 An observed, estimated, inferred, projected or suspected population reduction where the time period must include both the past and the future (up to a max. of 100 years in future), and where the causes of reduction may not have ceased OR may not be understood OR may not be reversible.</p> <p style="text-align: center;">based on any of the following:</p> <p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>			

Evidence:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under criterion A2, and the future population reduction does not meet the threshold for eligibility under criterion A3.

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Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy)			
	Critically Endangered Very restricted	Endangered Restricted	Vulnerable Limited
B1. Extent of occurrence (EOO)	< 100 km ²	< 5,000 km ²	< 20,000 km ²
B2. Area of occupancy (AOO)	< 10 km ²	< 500 km ²	< 2,000 km ²
AND at least 2 of the following 3 conditions:			
(a) Severely fragmented OR Number of locations	= 1	≤ 5	≤ 10
(b) Continuing decline observed, estimated, inferred or projected in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) area, extent and/or quality of habitat; (iv) number of locations or subpopulations; (v) number of mature individuals			
(c) Extreme fluctuations in any of: (i) extent of occurrence; (ii) area of occupancy; (iii) number of locations or subpopulations; (iv) number of mature individuals			

Evidence:

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 168 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is inferred to be severely fragmented considering its limited dispersal ability, the barriers to dispersal, and the lack of habitat separating individuals.

It is projected to have a continuing decline in (i), (ii), (iii), (iv) and (v) above based on the identified threats, particularly climate change, altered fire regimes, weed invasion, and Sambar Deer damage.

Criterion C. Small Population size and decline				
		Critically Endangered	Endangered	Vulnerable
Number of mature individuals		< 250	< 2,500	< 10,000
AND at least one of <u>C1</u> or <u>C2</u>				
<u>C1</u>	An observed, estimated or projected continuing decline of at least (up to a max. of 100 years in future):	25% in 3 years or 1 generation (whichever is longer)	20% in 5 years or 2 generations (whichever is longer)	10% in 10 years or 3 generations (whichever is longer)
<u>C2</u>	An observed, estimated, projected or inferred continuing decline AND least 1 of the following 3 conditions:			
(a)	(i) Number of mature individuals in each subpopulation	≤ 50	≤ 250	≤ 1,000
	(ii) % of mature individuals in one subpopulation =	90 – 100%	95 – 100%	100%
(b) Extreme fluctuations in the number of mature individuals				

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Evidence:

Ineligible under Criterion C as Data Deficient

No reliable estimate of the total population size for the taxon is available.

Criterion D - Very small or restricted population ^α			
^α	Critically Endangered ^α	Endangered ^α	Vulnerable ^α
Number of mature individuals (observed or estimated) ^α	<50 ^α	<250 ^α	<1,000 ^α
D2 - Only applies to the VU category [¶] Restricted area of occupancy or number of locations with a plausible future threat that could drive the species to critically endangered or Extinct in a very short time. ^α	- ^α	- ^α	D2 - Typically: [¶] AoO < 20 km ² or number of locations ≤ 5 ^α

Evidence:

Eligible under criterion D2 as Vulnerable

The taxon is estimated to be very restricted.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

DEPI (2014). *Advisory list of rare or threatened plants in Victoria - 2014*. Department of Environment and Primary Industries, Melbourne.

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