

Prostanthera nivea var. *nivea* Snowy Mint-bush

Taxonomy

Prostanthera nivea var. *nivea* A. Cunn. ex Benth.

Current conservation status

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

Proposed conservation status

Vulnerable in Victoria

Criteria A2c+3ce+4ce

Species Information

Description and Life History

The taxon is an erect to spreading shrub, 1-4 m high, not aromatic; branches 4-ridged, glabrous to densely covered with white appressed hairs (hoary), glands inconspicuous. Leaves sessile, linear to c. terete, 10-50 mm long, 0.5-2 mm wide, glabrous to densely covered with white appressed hairs (hoary), glands inconspicuous, base narrowly cuneate, decurrent, margin entire, flat to involute, apex obtuse or subacute. Flowers appearing axillary, often crowded towards the ends of branches in a leafy spike-like inflorescence; bracteoles persistent, minute and c. 0.5 mm long, c. 0.2 mm wide, to linear and leaf-like, 2-4 mm long, 0.3-0.5 mm wide. Calyx 6-8 mm long, tube 3-4 mm long, adaxial lobe 3-5 mm long (enlarged in fruit); corolla white to mauve, with yellow spots in throat, 14-18 mm long; anther appendage c. 1.5 mm long. Flowers September-December (VicFlora 2018).

Generation Length

The generation length of *Prostanthera nivea* var. *nivea* is inferred to be 5 to 30 years (midpoint 20 years). This is based on the taxon being a relatively fast-growing shrub that readily replaces itself at intervals depending on rainfall and climatic conditions.

Distribution

The taxon occurs in dry rocky areas, associated with granite outcrops such as at Mts Hope, Terrick Terrick, Kooyora and Pilot, and the You Yangs, also in rocky gorges such as Lerderderg Gorge, Pyrete Range, and the Brisbane Ranges, stony areas on the Werribee Plains, and some sandy areas to the west such as Teasdale Timber Reserve, Barwon Heads, and Anglesea areas.

Habitat

The taxon occurs in shrubland and open woodland associated with granite outcrops, sedimentary rocky gorges, basalt stony rises, some sandy areas on the coast, and on the volcanic plains.

Threats

The taxon has suffered historic declines due to land clearing. It is threatened by the impacts of deer throughout its range, and grazing by rabbits as well as livestock in some areas. It is hardy and drought tolerant.

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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>based on any of the following:</p> <ul style="list-style-type: none"> (a) direct observation [except A3] (b) an index of abundance appropriate to the taxon (c) a decline in area of occupancy, extent of occurrence and/or quality of habitat (d) actual or potential levels of exploitation (e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites 			

Evidence:

Eligible under Criterion A2 as Vulnerable

The population reduction over the past 15 to 90 years is inferred to be 30 to 50 (midpoint 40%), based on (c) above.

Past reduction is based on past land clearing throughout the taxon's range.

The causes of the reduction may not have ceased, be understood or be reversible.

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 15 to 90 years is suspected to be 5 to 30%, based on (c) and (e) above.

The upper bound is based on the projected impacts of deer throughout the taxon's range. The lower bound is based on the limited spread of deer.

Eligible under Criterion A4 as Vulnerable

The population reduction over any 15 to 90 year period, including both past and future (up to 100 years in the future), is inferred to be 20 to 40%, based on (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

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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:

Ineligible under Criterion B

The Area of Occupancy (AoO) across the taxon's range is estimated to be 256 km², but other thresholds under this criterion have not been met.

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			

Evidence:

Ineligible under Criterion C

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It is suspected that there are 8,000 to 40,000 mature individuals, but the qualifier is too weak, and other thresholds under this criterion have not been met.

Criterion D - Very small or restricted population [Ⓜ]			
[Ⓜ]	Critically Endangered [Ⓜ]	Endangered [Ⓜ]	Vulnerable [Ⓜ]
Number of mature individuals (observed or estimated) [Ⓜ]	<50 [Ⓜ]	<250 [Ⓜ]	<1,000 [Ⓜ]
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. [Ⓜ]	- [Ⓜ]	- [Ⓜ]	D2 - Typically: [¶] AoO < 20 km ² or number of locations ≤ 5 [Ⓜ]

Evidence:

Ineligible under Criterion D

It is suspected that there are 8,000 to 40,000 mature individuals which exceeds the thresholds for criterion D.

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.

VicFlora (2018). Flora of Victoria, Royal Botanic Gardens Victoria: *Prostanthera nivea* var. *nivea*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/19d8e98e-45ad-43c6-8e07-65e7bd0f2969>