



Thryptomene micrantha Ribbed Thryptomene

Taxonomy

Thryptomene micrantha Hook. f.

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria A2bce+3ce+4bce; B1ab(ii,iii,v)+2ab(ii,iii,v)

Species Information

Description and Life History

The taxon is a spreading to erect shrub, 0.5-1.5 m high. Leaves obovate, 4-6 mm long, 1-2.5 mm wide, shortly petiolate, slightly concave above, not keeled below; apex rounded. Flowers white, sometimes pinkish in bud, 1-3 in upper leaf axils; pedicel to 1 mm long; hypanthium more or less cylindrical, c. 2 mm long, smooth, ribs 10, prominent; sepals slightly larger than petals, ovate, 1-2 mm long; petals ovate, c. 1 mm long; stamens 5, filaments less than 0.5 mm long; ovary small, near summit of tube; ovules 2. Flowers mainly August-November (VicFlora 2015).

Generation Length

The generation length of *Thryptomene micrantha* is estimated to be 20 to 40 years. This is based on a longevity of perhaps 40 years, a pre-settlement fire interval plausibly in the 20-40 year range, and the likelihood that episodic fire-induced mass recruitment greatly exceeds the proportion of recruitment responding continuously to small scale soil disturbances.

Distribution

The taxon is found in the Gippsland Lakes area (e.g., Sperm Whale Head), with isolated inland occurrences north of Licola. Old records from the Grampians, and a 2003 collection from the lower Glenelg River area link the eastern Victorian occurrences to those of South Australia, but the status of these intervening populations requires further investigation (VicFlora 2015).

Habitat

The taxon occurs mostly in heath or heathy woodland on sandy soils near the Gippsland Lakes, but also occurs in low shrubland on exposed rocky slopes north of Licola (VicFlora 2015).

Threats

The taxon is potentially threatened by inappropriate fire regimes and climatic warming and drying which, synergistically, increase the risk of recruitment failure in response to repeat fire events and extreme drought stress. Plants are recorded to be obligate seeders, with a complex seed dormancy mechanism, making frequent fire a serious threat. The taxon is reported to be susceptible to infection by *Phytophthora cinnamomi* (DPIPWE 2011).

Thryptomene micrantha

Ribbed Thryptomene

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 Endangered

The population reduction over the past 60 to 120 years is estimated to be 30 to 50%, based on (b), (c) and (e) above.

Past reduction is estimated to be as high as 50% due to land clearing, particularly between Yarram and Lakes Entrance. Historic records from the Grampians suggest it may have also occurred there in the past.

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

Eligible under Criterion A3 as Endangered

The population reduction over the next 60 to 100 years is suspected to be 30 to 70% (midpoint 50%), based on (c) and (e) above.

Increased fire frequency, particularly at inland sites, is a serious threat to this taxon, and together with broader effects of climatic drying may cause a considerable reduction in the next 100 years.

Eligible under Criterion A4 as Endangered

The population reduction over any 60 to 120 year period, including both past and future (up to 100 years in the future), is estimated to be 30 to 50%, based on (b), (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

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Ribbed Thryptomene

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 B1 as Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 2,629 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

It is estimated to have 2 locations as each subpopulation may be variably affected by bushfire or stochastic events.

It has a continuing decline in (ii), (iii) and (v) above based on the current and projected impact of the identified threats, such as inappropriate fire regimes, the frequency and intensity of bushfires, and climatic warming and drying.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 100 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon is estimated to have 2 locations and has a continuing decline in (ii), (iii) and (v) above.

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Ribbed Thryptomene

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 C1 or C2				
C1	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)
C2	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

It is estimated that there are 5,000 to 12,000 mature individuals, but other thresholds under this criterion have not been met.

Criterion D. Very small or restricted populations		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 estimated that there are 5,000 to 12,000 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. Retrieved from: https://www.environment.vic.gov.au/__data/assets/pdf_file/0021/50448/Advisory-List-of-Rare-or-Threatened-Plants-in-Victoria-2014.pdf



Thryptomene micrantha Ribbed Thryptomene

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VicFlora (2019). Flora of Victoria *Thryptomene micrantha*. Retrieved from:
<https://vicflora.rbg.vic.gov.au/flora/taxon/9690ed5b-55e5-4c27-b413-57a4e5fbd37b> Accessed 10/5/2019.