

Threatened Species Assessment

Cryptandra speciosa subsp. *speciosa* Mountain Cryptandra

Taxonomy

Cryptandra speciosa subsp. *speciosa* A. Cunn. ex Kellermann & Udovicic

This taxon was previously referred to *C. tomentosa* var. 2 in Victoria. (VicFlora 2014).

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criteria B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is usually a twiggy to divaricate shrub to c. 1 m high; branchlets lacking spines. Leaves usually clustered; petioles 0.2-0.7 mm long; lamina more or less terete, 2.5-5 mm long, 0.5-1 mm wide (rarely more), grooved beneath, upper surface glabrous, smooth, midrib beneath with simple hairs; stipules triangular, 1.1-2 mm long, acute. Flowers in axillary clusters or very short racemes, up to 10 per cluster/raceme; bracts dark brown to black, broadly ovate to elliptic, 2-4.6 mm long, obtuse, ciliate on margins; pedicels 0.5-1 mm long; perianth tubular, 5-7 mm long, white; basal tubular part 2.5-3.5 mm long, with appressed simple hairs overlying stellate hairs, at least in the upper part; sepals 2.6-4 mm long, with hairs as in the upper part of the tube; petals 1.2-1.6 mm long; style minutely 3-lobed at summit, stellate-hairy in lower third. Fruit 3-4 mm long. Flowers June to October (VicFlora 2014).

Generation Length

The generation length of *Cryptandra speciosa* subsp. *speciosa* is estimated to be 35 to 70 years. This is based on a potential longevity of 25-50 years or more and the likelihood that the taxon recruits both episodically, in response to rare fire events at pre-settlement intervals of 35-70 years or more, and sporadically or opportunistically, in response to localised site disturbance events and seasonal conditions, from a persistent soil-stored seedbank. It is unclear whether the taxon is capable of resprouting following fire, or whether it is a fire-sensitive obligate seed regenerator.

Distribution

The taxon is apparently restricted in Victoria to the Upper Snowy River near the New South Wales border. It is also in New South Wales, the ACT and Queensland (VicFlora 2014).

The taxon has been collected only twice in Victoria: in 1962 by Keith Rogers on the Snowy River above Willis, and in 1989 by James Turner on the banks of the Snowy River, 1.5 km downstream from Sandy Creek, arguably from the same subpopulation as the 1962 collection.

The only known Victorian occurrence is highly disjunct from the next closest records near Cooma and Bredbo in New South Wales.

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Habitat

The taxon is recorded in Victoria only from rain-shadow woodland on the banks of the Snowy River (VicFlora 2014). James Turner records the habitat of the taxon as the rocky banks of the Snowy River.

Threats

The taxon may be threatened by targeted browsing by Sambar Deer (*Rusa unicolor*) or feral horses, particularly during drought or early recruitment, and by severe flood events which may dislodge adult plants.

In the longer term, the taxon may also be threatened by climatic drying and warming which may increase the risk of adult mortality and recruitment failure and, in combination with repeat fire events at intervals approaching the tolerable fire interval of the taxon, with an increasing risk of seedbank depletion and local extinction.

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>	<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>
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Evidence:

Ineligible under Criterion A

There is insufficient evidence to determine whether there has been or will be a reduction in population sufficient to meet any threshold for Criterion A.

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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 B1 as Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 4 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented since it is highly disjunct from all interstate occurrences, and therefore the probability of recolonisation in the event of local extinction is remote.

It is estimated to have 1 location, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the current and projected impact of the identified threats.

Eligible under Criterion B2 as Critically Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 4 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon is severely fragmented, has 1 location, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

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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 as Data Deficient

There is no available estimate of population size for the taxon.

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:

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.

VicFlora (2014). Flora of Victoria, Royal Botanic Gardens Victoria: *Cryptandra speciosa* subsp. *speciosa*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/078d5170-2433-41e3-b351-79b143fd0858>