

Cryptandra myriantha Western Cryptandra

Taxonomy

Cryptandra myriantha Diels

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criteria B1ab(iii)+2ab(iii)

Species Information

Description and Life History

Decumbent to erect shrub c. 40 cm high; branchlets without spines. Leaves shortly petiolate, terete, 2-5(-10) mm long, 0.5-1 mm wide, grooved beneath, glabrous and sometimes minutely tuberculate, midrib beneath with simple and/or stellate hairs; stipules ovate, to 1.7(-2.5) mm long. Flowers subsessile (pedicels 0.3-0.5 mm long), solitary or in short racemes of up to 10; bracts brown, ovate, 1-2.2 mm long, acute, ciliate on margins; perianth campanulate, 1.5-2.5 mm long, white, sometimes ageing to pink; basal tubular part to c. 0.5 mm long, glabrous or with sparse stellate hairs; sepals c. 1-2 mm long, pubescent with sparse simple hairs, stellate hairs sparse or absent; petals 0.7-1 mm long; style indistinctly lobed at summit, glabrous. Fruit 2-2.5 mm long. Flowers May-September (VicFlora 2014).

Generation Length

The generation length of *Cryptandra myriantha* is inferred to be 15 to 60 years. There are no observations of the only Victorian occurrence to indicate life history of this taxon, however by analogy with related taxa, it is suspected to be a fire-sensitive obligate seed regenerator largely reliant on fire for episodic recruitment. Episodic recruitment is estimated to be 15-45 years or more based on pre-settlement fire intervals. Recruitment is based on a soil-stored seedbank which is likely to persist beyond the longevity of the last cohort of mature individuals which is suspected to be 15-45 years.

Distribution

The taxon is currently known from a single 1979 collection from mallee vegetation in the Little Desert south of Nhill in the Western Wimmera (VicFlora 2014).

Habitat

The taxon was collected in 1979 growing on disturbed ground by roadsides in association with Mallee eucalypts, suggesting the habitat is Mallee vegetation marginal to the deep sand Mallee characteristic of the Little Desert National Park.

Threats

The most plausible threats to the taxon are roadside management, climatic drying and warming resulting in an increased risk of extreme drought events, as well as the imposition of an unfavourable fire regime. In particular, the

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current practice of applying planned burns across the Little Desert National Park increases the risk of repeat fire events at intervals below the tolerable fire interval of the taxon, with an increased risk of seedbank depletion and exhaustion. The increasing risk of extreme drought events also increases the risk of recruitment failure, exacerbating the risk of seedbank depletion and exhaustion.

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.

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 EoO has been made equal to the AoO to ensure consistency with the definition of AoO as an area within EoO.

The taxon is estimated to be severely fragmented as the only Victorian subpopulation, which is at the eastern limit of its national range, is highly disjunct from other interstate records. The probability of recolonisation in the event of local extinction is remote.

It is estimated to have 1 location. There has been only one Victorian collection, and its situation is likely to be precarious, and all identified threats would operate this location. It has a continuing decline in (iii) above, based on 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 (iii) 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 the current population size of the only known Victorian occurrence of the taxon which is known from a single 1979 collection.

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:

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 myriantha*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/17a5d14e-c3a2-4643-bfcc-fb158d124ff8>



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