

Androcalva tatei Trailing Commersonia

Taxonomy

Androcalva tatei (F. Muell. ex Tate) C.F. Wilkins & Whitlock

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)c(iv)+2ab(iii)c(iv); D

Species Information

Description and Life History

The taxon is a prostrate or procumbent shrub, c. 40 cm across, stellate-tomentose. Leaves oblong or ovate, 1.5-5.5 mm long, 0.8-2.2 mm wide, entire or 3-lobed, the margins recurved, upper surface sparsely hairy and green, undersurface stellate-tomentose and white, subsessile or petioles to 2 mm long; stipules narrowly triangular, 1-2 mm long. Inflorescence 2-4-flowered. Calyx segments 2.5-3.5 mm long, whitish, the outer surface with robust stellate hairs, the inner surface with smaller stellate and simple hairs; petals shorter than or about as long as calyx, with a broad base and an elongate ligule, mainly pale pink but with a crimson spot near the base; staminodes 5, 3-lobed, glabrous, the inner lobe lanceolate, the lateral lobes much smaller and linear. Capsule not seen. The taxon flowers in September (VicFlora 2017).

Generation Length

The generation length of *Androcalva tatei* is estimated to be 45 to 90 years. By analogy with other taxa of *Androcalva*, the taxon is likely to recruit episodically post-fire from long-persistent soil-stored seedbanks. The pre-settlement fire intervals were plausibly in the 50-90 year range.

Distribution

In Victoria, the taxon is known from a single locality in the Sunset Country south of Werrimull. Its occurrence represents a major disjunction with the South Australian populations, which are from Eyre Peninsula (VicFlora 2017).

Habitat

In Victoria, the taxon grows in mallee-spinifex associations on deep sand (VicFlora 2017). The landform is described as dune crest, although the floristic composition suggests a heavier soil profile than deep white sands, which are indicative of orange Woorinen Mallee sands.

Threats

There is no evidence to indicate whether the taxon has suffered significant historic decline through habitat loss, since the only known Victorian occurrence is within the Murray-Sunset National Park.

Current and future threats are likely to include modified fire regimes, and browsing by feral goats and native herbivores, notably kangaroos whose population density is promoted by access to nearby farmland.

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;"><i>based on any of the following:</i></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:

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, since the only Victoria occurrence is highly disjunct from the closest interstate record which is on the Eyre Peninsula in South Australia, 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 (iii), based on the current and projected impact of the identified threats.

It has extreme fluctuations in (iv) above. By analogy with other taxa of *Androcalva*, the taxon is inferred to be subject to significant fluctuation in population size of successive cohorts in response to fire intensity and recruitment success.

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 estimated to be severely fragmented, has 1 location, has a continuing decline in (iii) and extreme fluctuations in (iv) 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

The taxon is estimated to have 35 mature individuals, however 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:

Eligible under Criterion D as Critically Endangered

The taxon is estimated to have 35 mature individuals, based on field observations.

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 (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Androcalva tatei*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/5983d7c7-a487-4774-880c-96a321ab8898>