

Acrotriche depressa Wiry Ground-berry

Taxonomy

Acrotriche depressa R. Br.

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(iv,v)+2ab(iv,v); C1+2a(i,ii); D

Species Information

Description and Life History

The taxon is a perennial shrub to c. 80 cm high; branchlets puberulent-hispidulous. Leaves widely spreading or reflexed, triangular to ovate-lanceolate, 1.5-5 mm long, 1.5-3 mm wide, mucronate, base sometimes cordate, glabrous to scabrous above, lower surface glaucous with few subparallel veins, those furthest from mid vein with branches radiating to margin; margins slightly recurved, usually serrulate. Flowers in c. 15–30-flowered spikes clustered on branches toward base of plant; spike 15-30 mm long; bracteoles 1.1-1.2 mm long; sepals 2-2.6 mm long; corolla pale green; tube 2.4-2.9 mm long; lobes 1.1-1.3 mm long; ovary 2-locular, style c. 0.8 mm long. Fruit ovoid, 8-10 mm long, dark purple at maturity, densely puberulent (VicFlora 2019).

Generation Length

The generation length of *Acrotriche depressa* is inferred to be 5 to 50 years. This is based on the generation length of a congeneric taxon.

Distribution

In Victoria, the taxon occurs in Lowan Mallee. It was previously known from two collections sometime in the late 1800s or early 1900s, and it was presumed to be extinct in Victoria. However, it was rediscovered in 2009 near Kaniva near the border with South Australia. It also occurs in Western Australia and South Australia.

Habitat

In South Australia, the taxon occurs in sclerophyll forest, mallee scrub and heath on limestone and sandy ironstone. In Victoria, the taxon grows in *Eucalyptus costata*, *E. dumosa* and *E. leptophylla* dominated mallee community, on beige-coloured sand. Associated species include *Melaleuca lanceolata*, *M. wilsonii*, *M. uncinata*, *Babingtonia behrii*, *Spyridium eriocephalum*, *Calytrix tetragona*, *Goodenia varia*, *Dianella admixta*, *Austrostipa mollis*, *Cassinia complanata*, and *Eutaxia microphylla*.

Threats

The taxon is potentially threatened by clearance for agriculture, as the single site is privately owned. The taxon is also threatened by invasive non-native/alien species. Currently the site is relatively weed free, but it is surrounded by agricultural country, so invasion by weeds in the future is possible. In addition, droughts may have a high impact.

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:

Eligible under Criterion A2 as Endangered

The population reduction over the past 15 to 150 years is inferred to be 50%, based on (c) above.

It is expected that the population was larger than it is currently, and decline was due to habitat decline, land clearing and fragmentation.

Eligible under Criterion A3 as Endangered

The population reduction over the next 15 to 100 years is projected to be 50%, based on (c) above.

Future decline is unknown, however, since the plants are currently in private land, it is possible that land clearing will occur in the future.

Eligible under Criterion A4 as Endangered

The population reduction over any 15 to 150 year period, including both past and future (up to 100 years in the future), is estimated to be 50%, based on (c) above.

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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).

Considering all the individuals occur on the same area of private land and land clearing is the main threat, it is estimated to be one location.

It has a continuing decline in (iv) and (v) above, based on the current and projected impact of the identified threats. This includes include possible weed invasion affecting the habitat quality. Specifically, depending on the species and density of the weeds, they may affect the recruitment of the taxon or compete for resources (i.e. light).

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, it is estimated to have 1 location and has a continuing decline in (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:

Eligible under Criterion C1 as Critically Endangered

It is estimated that there are 30 to 40 mature individuals. This is based on direct observation during field work.

A continuing decline of 25% is estimated to occur within one generation.

Eligible under Criterion C2 as Critically Endangered

It is estimated that there are 30 to 40 mature individuals, there is an inferred continuing decline, the number of mature individuals in the single subpopulation is 50 or fewer and the percentage of mature individuals in one subpopulation is 100 %.

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 30 to 40 mature individuals.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.



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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

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Acrotriche depressa*. Retrieved from:

<https://vicflora.rbg.vic.gov.au/flora/taxon/e71ae16d-44d7-42b0-ae15-8f8bbc025bc0>