

Minuria denticulata Woolly Minuria

Taxonomy

Minuria denticulata (DC.) Benth.

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 A2ce+3ce+4ce; B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

Wolly Minuria is usually a much-branched, erect subshrub to c. 30 cm high; young stems densely white-cottony, becoming glabrous, somewhat ridged. Leaves linear, 6-30 mm long, 0.5-1(-3) mm wide, cottony to glabrous, usually some with 2-4 narrow subapical teeth or lobes to 2 mm long. Capitula solitary, terminating branches; involucre bracts linear to narrow-oblongate, 2-4.5 mm long, 0.5-0.9 mm wide, glabrous, acute, margin minutely denticulate, apex sometimes fimbriate; ray florets white to mauve, ligules 2-3.5 mm long. Ray cypselas elliptic, 0.7-1.3 mm long, glabrous, pappus bristles c. 10, c. twice as long as cypselas; disc cypselas linear, glabrous, with pappus bristles dimorphic, the smaller c. 0.3 mm long, often partly fused, the longer 2.2-2.7 mm long. Flowers August to January (VicFlora 2017).

Generation Length

The generation length of *Minuria denticulata* is estimated to be 10 to 30 years. The taxon is a perennial subshrub which is likely to recruit episodically following inundation or optimal rainfall events from a soil-stored seedbank at intervals likely to be determined by La Niña cycles.

Distribution

The taxon is confined to the far north-west, where it extends downstream from Boundary Bend to the SA border. It also occurs in the Northern Territory, South Australia, Queensland, and New South Wales (VicFlora 2017).

Habitat

The taxon usually occurs in clay and clay-loam soils of low-lying seasonally wet areas such as lake beds and roadside drains (VicFlora 2017).

Threats

The taxon is likely to have suffered significant historic decline through habitat loss to agriculture and urban development in at least some districts such as Mildura, Benetook and near Lake Iraak south-east of Red Cliffs, where the only collections are from degraded roadside drainage lines. Occurrences such as these in highly fragmented landscapes are threatened also by competition from invasive exotics such as *Bromus rubens* (Red Brome), *Carrichtera annua* (Ward's Weed), *Medicago minima* (Little Medic), *Mesembryanthemum nodiflorum* (Small Ice-plant) and *Vulpia bromoides* (Squirrel-tail Fescue). The taxon is also likely to be palatable to stock,

rabbits, goats, and native herbivores. The greatest threat to all occurrences, however, is climatic drying which is projected to reduce the reliability of flooding and winter rainfall events, limiting the opportunity for seedbank replenishment and germination, and increasing the risk of seedbank depletion, recruitment failure 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> <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 30 to 90 years is estimated to be 30 to 50%, based on (c) and (e) above.

The taxon is likely to have suffered significant historic decline through habitat loss to agriculture and urban development in at least some districts such as Mildura, Benetook and near lake Iraak south-east of Red Cliffs.

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 30 to 90 years is projected to be 30 to 50%, based on (c) and (e) above.

An estimate of future decline is based on the projected impact of the identified threats.

Eligible under Criterion A4 as Endangered

The population reduction over any 30 to 90 year period, including both past and future, is estimated to be 30 to 50%, based on (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

Minuria denticulata

Woolly Minuria

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 2,790 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented anthropogenically at the landscape scale with the taxon likely to be wind-dispersed at the 10-1000 m scale.

It is estimated to have 2 locations, 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 Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 65 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 2 locations, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

Minuria denticulata

Woolly Minuria

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 insufficient evidence to determine the number of mature individuals.

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. 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



Minuria denticulata
Woolly Minuria

VicFlora (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Minuria denticulata*. Retrieved from:
<https://vicflora.rbg.vic.gov.au/flora/taxon/ffeab656-4763-4142-a3a7-133d73edc514>