



Olearia tomentosa Toothed Daisy-bush

Taxonomy

Olearia tomentosa (J.C. Wendl.) DC.

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criterion C1

Species Information

Description and Life History

The taxon is a spreading shrub to c. 2 m high; branchlets and leaf undersurfaces densely tomentose with rusty, tangled, T-shaped hairs. Leaves alternate, petiolate, ovate, 20-70 mm long, 12-45 mm wide, discolourous; upper surface lightly tomentose and/or scabrous, with impressed reticulate venation; lower surface cream to rusty, darker over veins; margin recurved, crenate to distantly serrate, rarely quite entire; petiole to c. 15 mm long. Capitula 35-55 mm diam., terminal, solitary or in loose corymbs; peduncles mostly 2-8 cm long; involucre broadly campanulate, 7-10 mm long; bracts 3-5 seriate, graduating, pubescent, or the innermost glabrous. Ray florets 12-33, white, ligules 12-25 mm long; disc florets c. 30-90, yellow. Cypselas narrow-ellipsoid, often curved, c. 4 mm long, 6-8-ribbed, glabrous, dark brown; pappus bristles pale, 7-9 mm long. The taxon flowers mostly from September to December (VicFlora 2017).

Generation Length

The generation length of *Olearia tomentosa* is estimated to be 10 to 30 years. This is based on the taxon's life form of a small shrub.

Distribution

The taxon is confined to the Howe Range east of Mallacoota Inlet. It also occurs in New South Wales (VicFlora 2017).

Habitat

The taxon occurs in open sclerophyll forest, usually on sandy or granitic loam soils (VicFlora 2017).

Threats

The primary threat to the taxon is increased fire frequency and intensity, and the impacts of feral herbivores, particularly after fires. The bushfires of 2019/2020 are believed to have impacted around 43% of the taxon's modelled habitat. The overall impacts of the fire are yet to be determined, but it is likely that the taxon has been and will be to be threatened by feral herbivores, notably Sambar Deer (*Rusa unicolor*). Drought, hot weather, and repeat fires have the potential to damage or destroy recovering plants and/or seedlings. The taxon's recovery depends on the effective control of the impacts of herbivores and by preventing soil disturbance following fire recovery.

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:

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 30 to 90 years is suspected to be 15 to 35%, based on (c) above.

Future decline is based on the threat of increased fires.

Eligible under Criterion A4 as Vulnerable

The population reduction over any 30 to 90 year period, including both past and, is suspected to be 15 to 35%, based on (c) above. The causes of reduction may not have ceased, be understood or be reversible.

Olearia tomentosa

Toothed Daisy-bush

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:

Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 19 km² and the Area of Occupancy (AoO) is estimated to be 19 km², but other thresholds under this criterion have not been met.

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 <u>C1</u> or <u>C2</u>				
<u>C1</u>	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)
<u>C2</u>	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 Endangered

Olearia tomentosa

Toothed Daisy-bush

It is estimated that there are 500 mature individuals. This is based on approximately 10 records, and it is assumed that most populations consist of about 50 plants each.

There is estimated to be a continuing decline of 10 to 30% within two generations.

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 D as Vulnerable

It is estimated that there are 500 individuals, and 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 (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Olearia tomentosa*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/dcb227a0-5459-4d14-8554-d25ae8a963ed>