

Leptospermum multicaule Silver Tea-tree

Taxonomy

Leptospermum multicaule A. Cunn.

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria A2bce; B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a spreading shrub, branched near base, to 1.5 m high; bark on smaller stems smooth, shedding in stringy strips. Leaves linear or narrowly elliptic to narrowly obovate, 2-10 mm long, 1-2.5 mm wide, glabrous on upper surface, silky on lower surface; apex acute, incurved; margins flat to incurved. Flowers 6-8 mm diam.; hypanthium c. 2 mm long, silky or silky on lower half, glabrous on upper; pedicel to 1 mm long; sepals triangular, c. 1 mm long, glabrous on outer surface (occasionally with ciliate margins), persisting on fruit; petals 2-2.5 mm long, white or flushed pink; ovary 3-locular, apex shortly silky all over. Fruit deciduous, hemispherical, 3-3.5 mm diam., surface silky to sparsely silky (finally glabrous); seeds c. 1 mm long, with a reticulate surface pattern. The taxon flowers from October to November (VicFlora 2017).

Generation Length

The generation length of *Leptospermum multicaule* is estimated to be 30 to 50 years. This is based on an estimated, pre-settlement, fire frequency for lower slopes and more sheltered aspects. It is also based on the assumption that there is likely to be fire-cued pulse recruitment in addition to any significant continuous recruitment.

Distribution

The taxon is rare in Victoria, where it is known from the north-east, at Mitta Mitta River, Everton and Beechworth areas. The taxon also occurs in New South Wales and the Australian Capital Territory (VicFlora 2017).

Habitat

The taxon is known only from woodland communities on dry hillsides (VicFlora 2017).

Threats

The taxon is threatened by grazing by native herbivores, including kangaroos, and livestock. Weed competition from exotics such as **Rubus fruticosus* (Blackberry), especially at Myrtleford and Mitta Mitta, and also exotic grasses, especially **Anthoxanthum* spp. is also a threat.

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 A2 as Endangered

The population reduction over the past 90 to 150 years is estimated to be 50 to 90 percent (midpoint 65%), based on (b), (c) and (e) above.

Past decline is based on the effects of the identified threats.

The causes of the reduction may not have ceased, be understood or be reversible.

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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 Endangered

The Extent of Occurrence across the taxon's range is estimated to be 3,412 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented, naturally at the subregional and landscape scale based on its restriction to sites with no specialised mechanism for long-distance dispersal. The only known vectors for seed dispersal are ants which limits biotic dispersal to the metre scale.

It is estimated to have one location. It 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 across the taxon's range is estimated to be 36 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it is severely fragmented, has one location and has a continuing decline in (i), (ii), (iii), (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:

Ineligible under Criterion C

It is estimated that there are 100-200 to 1,000-2,000 mature individuals, but 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 Vulnerable

It is estimated that there 100-200 to 1,000-2,000 individuals.

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: *Leptospermum multicaule*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/a8f68490-7a7f-4fdb-9cc3-e9365b6f8b38>