



Maireana lobiflora Lobed Bluebush

Taxonomy

Maireana lobiflora (F. Muell. ex Benth.) Paul G. Wilson

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 B1ab(iii)+2ab(iii)

Species Information

Description and Life History

Prostrate or decumbent perennial; taproot long and somewhat fleshy; branches woolly, to c. 15 cm long. Leaves alternate, linear to oblanceolate, 5-10 mm long, silky-hairy. Flowers bisexual, the lobes immersed in dense woolly hairs. Fruiting perianth saucer-shaped, 5–9 mm diam., leathery, truncate or very broadly tapered to base; entire, or divided by the radicular slit, or 5-lobed, with 5-10 erect, club-shaped appendages 2-4 mm long attached around the orifice. Fruits from September to April (VicFlora 2019).

Generation Length

The generation length of *Maireana lobiflora* is estimated to be 10 to 30 years. This is based on a longevity of plausibly >10 years, a pre-European settlement fire interval probably in the 20 year range and intervals between good rainfall seasons of roughly every 8-10 years. Longevity is also inferred from similar, small-sized species such as *M. enchylaenoides* (Wingless Bluebush), *M. humillima* (Dwarf Bluebush), and *M. pentagona* (Hairy Bluebush), which have a tough woody rootstock. Plants potentially live significantly longer than 10 years. The woody rootstock would enable the plant to survive fire and drought.

Distribution

The taxon is known only from the Lake Tyrell area and the central Sunset Country. It is also found in Western Australia, South Australia and New South Wales (NSW).

Habitat

The taxon is known only from loamy soils, occurring in old mallee, Belah (*Casuarina pauper*) woodland or grassland communities. In western NSW, it grows in sandy soils in, or near, drainage lines and depressions and around lakes (Cunningham *et al.* 1981).

Threats

Subpopulations and their habitat are considered to be at risk from soil disturbance, weed invasion, landscape and habitat fragmentation, and increasingly dry conditions from declining rainfall. Climatic warming and drying, as a result of climate change, leading to extreme drought stress and repeat fire events, increase the risk of recruitment failure.

The consequences of small population size may be an issue for some of the subpopulations, as is lack of genetic exchange between other subpopulations.

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:

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 Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 2,794 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

Considering the limited dispersal ability of the taxon, the barriers to dispersal, and lack of habitat separating them, the populations can be considered to be severely fragmented.

It is estimated to have two locations. It has a continuing decline in (iii) above, based on the impacts of the identified threats.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) 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 two locations and a continuing decline in (iii) above.

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				

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Evidence:

Ineligible under Criterion C as Data Deficient

It is inferred that there are 400 to 1,000 individuals, but this qualifier is too weak and other thresholds under this criterion have not been met.

The only indication of abundance is from notes on two of the four collections of the taxon; "Scattered to common" and "Localised in small colonies where it may be quite numerous." It is impossible to know what 'quite numerous' means, so the estimate of mature individuals is very basic. Plausibly at least 100, and perhaps over 250 plants, occur at two of the sites. It can be assumed that a similar number of plants occur at the other two sites.

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

The taxon is inferred to be very restricted.

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

References

Cunningham, G.M., Mulham, W.E., Milthorpe, P.L. and Leigh, J.H. (1981). *Plants of western New South Wales*. Soil Conservation Service of N.S.W.

DEPI (2014). *Advisory list of rare or threatened plants in Victoria - 2014*. Department of Environment and Primary Industries, Melbourne.

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Maireana lobiflora*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/570d1e38-a940-4703-a934-0c286ba86261>