Threatened Species Assessment

Maireana georgei
Slit-wing Bluebush

Taxonomy

Maireana georgei (Diels) 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 A2bce; B2ab(iii)

Species Information

Description and Life History

Erect, open-branched shrub to c. 80 cm high; branchlets woolly-tomentose. Leaves alternate, semi-terete, 6-13 mm long, fleshy, silky-hairy at least when young. Flowers bisexual, perianth lobes ciliate to shortly woolly. Fruiting perianth 14-20 mm diam., glabrous except for perianth lobes, flat at apex; tube obconical, c. 6 mm wide at apex, thick-walled, weakly ribbed or wrinkled in upper half; wing broadly elliptic, often c. saddle-shaped, shining brown or pinkish; radicular slit apparent on wing but not extending down tube. The taxon fruits from September to October (VicFlora 2019).

Generation Length

The generation length of *Maireana georgei* is inferred to be 10 to 50 years. Recruitment appears to be episodic and anecdotal observations indicate population booms are associated with drier years with, reductions in populations associated with wetter years. The taxon has little ability to persist in the seedbank, with seed longevity less than 12 months. Plants grown in garden settings by the assessor have persisted for 10 years and have shown little sign of stress or senescence.

Distribution

The taxon is recorded in Victoria in the Sunset Country and near Kulwin (east of Hattah). It is also found in Western Australia, New South Wales and South Australia.

Habitat

The taxon is found predominantly on heavier, loamy soils of interdune swales. It is also found throughout the Murray Scroll belt on slight rises associated with non-eucalypts.

Threats

The taxon occurs on fertile soils, and much of the habitat is expected to have been lost to agricultural clearance, mostly wheatfields, as well as horticulture and urban expansion around Mildura.

The ongoing threat of grazing by introduced herbivores (rabbits and goats) continues, although its prickly nature makes is not preferred by stock or kangaroos. On inter-dune swales it may be susceptible to increasing drought.

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%

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

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.

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*]

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.

based on any of the following:

(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 150 years is inferred to be 40 to 80% (midpoint 60%), based on (b), (c) and (e) above.

The past population reduction is based on loss of habitat, predominantly due to agricultural clearance.

The causes of the reduction are reversible, understood and have ceased.

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 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
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 Vulnerable

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 18,662 km² based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented at the landscape scale. The seeds do not carry for any distance in wind and there are few vectors, so they move little more than a few metres from the parent.

It is suspected to have two locations. The main threats apply to all populations, but may operate at different intensities on public and private land.

It has a continuing decline in (iii) above, as result of ongoing grazing by stock and introduced herbivores.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) is estimated to be 172 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 has a continuing decline in (iii), due to ongoing herbivore impacts and increasing drying and warming.

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 10,000 to 100,000 mature individuals, which exceeds the thresholds for Criterion C.

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 km2 or number of locations ≤ 5

Evidence:

Ineligible under Criterion D

It is estimated that there are 10,000 to 100,000 mature 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 (2016). Flora of Victoria, Royal Botanic Gardens Victoria: *Maireana georgei* Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/4cfa05d9-6ee0-4480-b3bd-fb30c349d78b

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