Threatened Species Assessment

Myoporum floribundum
Slender Myoporum

Taxonomy

Myoporum floribundum A. Cunn. ex Benth.

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 1991).

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

Proposed conservation status

Endangered in Victoria

Criteria B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C2a(i)

Species Information

Description and Life History

The taxon is a spreading shrub to c. 3 m high, glabrous; branches often horizontal to drooping, sparsely or obscurely tuberculate. Leaves alternate to opposite, lax, usually drooping, narrow-linear, mostly 2-11 cm long, 1-2.5 mm wide, apex acute, margins entire; sessile. Inflorescences 6-8-flowered; pedicels 1-3 mm long, glabrous. Flowers secund on upper side of branches; sepals ovate-lanceolate, 1-1.5 mm long, acute, valvate, glabrous; corolla 3-5 mm long, glabrous outside, with long scattered hairs inside, white, unspotted; stamens long-exserted; ovary and style glabrous. Fruit obloid, 2-3 mm long, 2-2.5 mm wide, compressed, truncate. Flowers mainly Oct.-Jan (VicFlora 2021).

Myoporum is normally insect-pollinated (Armstrong 1979) and not typically bird-pollinated (Ford *et al* 1979). It has no known mechanism for long-distance dispersal.

Generation Length

The generation length of *Myoporum floribundum* is estimated to be 30 to 50 years. Vital attribute data suggests that taxon regenerates from soil-stored seed post fire (not all seed germinates at once), and, also has resprouting capability, hence is not considered particularly sensitive to fire (DSE 2003). It is tolerant of establishment in mature vegetation. It is a medium-lived perennial (10-50 years), but time-to-reproductive-maturity and longevity of soil seed bank are unknown (may be considered juvenile for more than 5 years as per other *Myoporum* species). Given its lack of sensitivity to fire, and that it is not preferentially grazed by native animals, then most plants are likely to live to a long age in undisturbed vegetation and develop a soil seed bank. Under undisturbed conditions, the generation time is likely to be like other high-altitude shrubs, probably 30-50 years.

Distribution

The taxon is very rare in Victoria in the Snowy River catchment north of Gelantipy (VicFlora 2021). The biggest subpopulations are west of Wheelers Saddle and along the Ingeegoodbee Track (DSE 2003).

Habitat

The taxon is apparently confined to rocky, lightly forested slopes in rain-shadow areas of the Snowy River catchment north of Gelantipy (VicFlora 2021).

Threats

The taxon is not considered sensitive to fire, but the impact of increased fire frequency and intensity is not known (DSE 2003). It may require at least 5 years to reach reproductive maturity (as per other *Myoporum* species), so could be impacted by fires at short intervals. It is not considered to be grazed to any amount due to the high resin content of this genus (DSE 2003) but the impacts of grazing are unknown. Deer, whose numbers are more numerous, may be less deterred by the resin than native animals.

Road widening is a key threat to a few 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%

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:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under criterion A2, and the future population reduction does not meet the threshold for eligibility under criterion A3.

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 Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 442 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented and is estimated to have 1 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.

The taxon is estimated to be severely fragmented based on its limited dispersal ability, the barriers to dispersal and/or the lack of habitat separating them. Such fragmentation precludes the possibility of recolonisation in the event of local extinction.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 68 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, the taxon is estimated to be severely fragmented, is estimated to have 1 location and has a continuing decline in (i), (ii), (iii), (iv) and (v) 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				

Evidence:

Eligible under Criterion C as Endangered

It is estimated that there are 300 to 1,000 mature individuals. All known populations of this species are near roads, so there could be many undiscovered populations further away from roads (DSE 2003), given that it is found on rocky slopes that are difficult to access. Most records have less than 1% cover, suggesting that they are found as scattered individuals rather than groups. One population of 175 plants (the largest known population) was found at Wheelers Saddle, but these appeared to be resprouts rather than post-fire germinants, so the number of individual plants was not known (D. Tonkinson per. comm.) There are 49 records in the VBA, of which some are no longer found (DSE 2003). Assuming that each record is associated with 5 plants, and assuming that the records capture a quarter of the total population, then numbers are likely to be under 1000 plants, albeit with considerable uncertainty.

There is an estimated continuing decline, and the number of mature individuals in the largest subpopulation is fewer than 250.

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:

Eligible under criterion D as Vulnerable

It is estimated that there are 300 to 1,000 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

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SAC (1991). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 145 *Myoporum floribundum*

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