Threatened Species Assessment

Bauera sessiliflora
Grampians Bauera

Taxonomy

Bauera sessiliflora F. Muell.

Current conservation status

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

Proposed conservation status

Endangered in Australia

Criteria B1ab(iii,v)+2ab(iii,v)

Species Information

Description and Life History

The taxon is a scrambling or dense wiry shrub to c. 2 m high; young stems hispid, usually with hairs of 2 distinct lengths. Leaflets narrowly elliptic to obovate, 4-15 mm long, 2-5 mm wide, sparsely hispid to scabrous-pubescent; margin entire, or rarely, crenate, slightly recurved. Flowers c. 10-15 mm wide, sessile, axillary, often on very contracted lateral shoots and appearing clustered; sepals 6 or 8, narrowly triangular, 2-3 mm long; petals as many as sepals, narrowly obovate, deep rosy-pink or magenta; stamens up to twice as many as petals, slightly longer than sepals, dark purple; ovary inferior, styles spreading, slightly exceeding stamens and elongating with age. Fruit ovoid, 2-3 mm long, hispid, apparently indehiscent, usually maturing a single smooth, ovoid seed, c. 2 mm long. The taxon flowers mostly from September to December (VicFlora 2017).

Generation Length

The generation length of *Bauera sessiliflora* is inferred to be 50 to 75 years. This is based on a plausible pre-settlement mean fire interval of 45-70 years, noting that only the most severe landscape scale bushfires are likely to incinerate the specific habitat of this taxon. It is also based on the likelihood that the taxon will recruit from seed episodically following the most extreme fire events. There is no clear evidence that the taxon suckers either in the field or in cultivation, but individual plants are large and sprawling with a longevity likely to be at least 30-50 years or more.

Distribution

The taxon is endemic to the Grampians, occurring throughout all but the southern part of the range (VicFlora 2017).

Habitat

The taxon is a habitat specialist confined to narrow strips of riparian vegetation and shallower drainage lines, and occasionally in small gauges or rock ledges, particularly in the vicinity of waterfalls. It is moderately common in damp depressions, beside streams and in rocky gullyheads (VicFlora 2017).

Threats

The greatest threat to the taxon is climatic drying, which is exacerbated by the projected increase in fire intensity, size and frequency, and also the likely impact of targeted browsing by deer and goats. The taxon tends to occur in smallish drainage lines and it is rarely encountered in drier and steeper upslope drainage lines, which have been

observed to be readily scoured in flood events particularly those following intense fire. The taxon is also rarely encountered along major streams, which are at risk of flooding and silting, as has been observed post-fire. When post-fire recruitment events coincide with severe summer drought and targeted browsing, the risk of recruitment failure is particularly high.

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

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 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 722 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented naturally at the landscape scale on account of the habitat specificity of the species and narrow, linear extent of suitable habitat. The taxon has no known mechanism for long distance dispersal and each local occurrence is isolated from all others by extensive areas of unfavourable habitat.

A single location is based on the pervasive threats identified which occur across the restricted range of the taxon.

It has a continuing decline in (iii) and (v) above, based on the current and projected impact of the identified threats..

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 116 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, the taxon is severely fragmented, has 1 location, and has a continuing decline in (iii) 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:

Ineligible under Criterion C

It is estimated that there are 1,000 to 5,000 (midpoint 2,000) mature individuals, but other thresholds under this criterion have not been met.

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

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. Retrieved from: https://www.environment.vic.gov.au/__data/assets/pdf_file/0021/50448/Advisory-List-of-Rare-or-Threatened-Plants-in-Victoria-2014.pdf

VicFlora (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Bauera sessiliflora*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/db3edae8-b90d-4c2c-a404-847a6d0f6066