

Pomaderris subplicata Concave Pomaderris

Taxonomy

Pomaderris subplicata N.G. Walsh

Current conservation status

Listed as Vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 1994).

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

Proposed conservation status

Critically Endangered in Australia

Criterion B1ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a shrub, 1-2 m high with stellate-hairy branchlets. Leaves are ovate to obovate, 3-10 mm long, 2-6 mm wide, broadly obtuse, flat to V-shaped in transverse section, both surfaces finely stellate-hairy, whitish below, sometimes with scattered larger rusty stellate hairs, secondary veins obscure. Flowers are aggregated in small subterminal axillary clusters. Flowers are yellow, externally stellate-hairy, on 1-2.5 mm long stalks. The taxon flowers in October (VicFlora 2019).

Generation Length

The generation length of *Pomaderris subplicata* is estimated to be 45 to 70 years. This is inferred from the taxon's likely post-fire episodic recruitment at pre-settlement frequencies.

Distribution

The taxon is endemic in Victoria and is apparently confined to a few small subpopulations near Carboor in the Myrtleford area (VicFlora 2019).

Habitat

The taxon grows in dry woodland on shallow soil derived from sedimentary rock (VicFlora 2019).

Threats

The taxon is at risk from climatic drying resulting in likely recruitment failure, potential adult mortality, and a potential shift from its current grassy habitat to increasingly shrubby understory which may lead to increased competition. The projection for climatic drying in north-eastern Victorian valleys is possibly less extreme than elsewhere in Victoria, but nevertheless severe.

Other threats to the taxon include the risk of bushfire, planned burning, targeted browsing and antler rubbing by Sambar Deer (*Cervus unicolor*), and the impact of edge effects including weed invasion by *Rubus fruticosus* spp.

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agg. (Blackberry) on moister lower slopes and *Hypericum perforatum* (St John's Wort) on upper slopes as well as downslope, and *Acacia floribunda* naturalisation (Glen Johnson personal observation).

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 style="text-align: center;">} 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:

Eligible under Criterion A2 as Endangered

The population reduction over the past 135 to 210 years is suspected to be 20 to 50%, based on (c) and (e) above.

Although the taxon has almost certainly experienced significant historic decline, the proportion of this decline which has occurred in the last three generations is difficult to estimate in the absence of longitudinal observations or monitoring data.

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

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 100 years is suspected to be 15 to 30%, based on (c) and (e) above.

This is based on the suspected impacts of the identified threats.

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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 Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 82 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented anthropogenically at the landscape scale.

The taxon is considered to occur in one location as all key identified threats apply across its range and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the impacts of the identified threats, notably climatic drying, increased bushfires, browsing and rubbing by Sambar Deer, and the impact of edge effects.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 32 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 (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:

Eligible under Criterion C2 as Vulnerable

It is estimated that there are 250 to 600 mature individuals, based on monitoring results.

The number of mature individuals is estimated to continue to decline, and there are fewer than 1,000 mature individuals in each subpopulation.

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 are 250 to 600 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

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



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SAC (1994). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 329 *Pomaderris subplicata*.

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Pomaderris subplicata*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/cece6b31-57bd-4476-b65b-f744ec2bbad5>