Threatened Species Assessment

Pomaderris ledifolia
Sydney Pomaderris

Taxonomy

Pomaderris ledifolia A. Cunn.

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

The taxon is a delicate shrub 1-2 m high; branchlets greyish- or rusty-pubescent. Leaves narrow-elliptic, 6-25 mm long, 2-4 mm wide, acute; margins plane or weakly recurved, upper surface glabrous, lower surface sericeous with shining, greyish simple hairs (rusty on midrib) obscuring the underlying stellate hairs, secondary veins not apparent; stipules 0.8-1.5 mm long, deciduous. Inflorescences subumbellate, 1-2.5 cm wide, 2-20-flowered; bracts deciduous. Flowers yellow, externally moderately to densely simple-pubescent; pedicels 2-4 mm long; hypanthium c. 1 mm long; sepals 2-2.5 mm long, deciduous; petals narrow-spathulate, 1.5-2 mm long; ovary virtually inferior, summit simple-pubescent, style branched near base. Operculum membranous, c. two-thirds as long as mericarp. The taxon flowers from September to November (VicFlora 2014).

Generation Length

The generation length of *Pomaderris ledifolia* is estimated to be 5 to 20 years. This is based on a longevity of plausibly 30 years, a pre-settlement fire interval plausibly in the 60 year range (most sites are in relatively fire-protected areas) and the likelihood that episodic fire-induced recruitment greatly exceeds the proportion of recruitment responding continuously to small scale soil disturbances.

Distribution

The taxon is known only in Victoria from Mt Kaye (summit area) and Tuloch Ard Gorge along the Snowy River. It also occurs also in south-east New South Wales (VicFlora 2014).

Habitat

The taxon is known from dryish open forest/mallee on hard, rocky sites with shallow soils overlying granite (Mt Kaye) or sedimentary (Tuloch Ard gorge) parent material. Despite its proximity to river at the Tuloch Ard Gorge site (ca 50 m), it occurs well above the flood level and outside the riparian zone. Associated taxa at the Tuloch Ard site include *Eucalyptus elata* (mallee form), *Platysace lanceolata, Ozothamnus obcordatus,* and *Rytidosporum longifolium.*

There are no associated taxa noted with the Mt Kaye specimens.

Threats

The taxon is potentially threatened by climatic warming and drying which increases the risk of recruitment failure in response to repeat fire events and extreme drought stress. The extreme rarity of the taxon elevates these risks. Its dry, rocky, steep, and open habitat is considered unlikely to render it particularly susceptible to browsing by Sambar Deer (*Rusa unicolor*).

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

The environmental conditions at the two sites. Mt Kaye and Tuloch Ard Gorge, are considered to be sufficiently dissimilar to treat these as two distinct locations.

It is estimated to have a continuing decline in (iii) above based on the current and projected impact of the identified threats, such as climatic warming and drying.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 12 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon has two locations and has 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				

Evidence:

Ineligible under Criterion C

It is inferred that there are 100 to 500 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 D2 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

Benson, D., and McDougall, L. (2000). Ecology of Sydney plant species Part 7b Dicotyledon families Proteaceae to Rubiaceae, 1017-1202.

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

VicFlora (2014). Flora of Victoria, Royal Botanic Gardens Victoria: *Pomaderris ledifolia*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/ac1db6aa-9ab4-4bfd-98df-4c56990cab15