

Pomaderris cotoneaster Cotoneaster Pomaderris

Taxonomy

Pomaderris cotoneaster N.A. Wakef.

Current conservation status

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

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 1992).

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

Proposed conservation status

Critically Endangered in Victoria

Criterion A2ce

On the basis of the most current (2001) information, the species is known by single individual in Victoria. Although it is unlikely that this is truly the only population, a number of targeted searches have failed to find others, and the possibility of targeted browsing by e.g. Sambar Deer (*Rusa unicolor*), although not explicitly included in this calculation, suggests a precautionary principle approach here is warranted, and delivers an assessment of CR.

Species Information

Description and Life History

The taxon is an erect shrub to 4 m tall. Young stems have a short whitish stellate tomentum. Leaves are elliptic, mostly 15-30 mm long and 10-15 mm wide. The leaf apex is obtuse to emarginate (i.e. sometimes indented thus resembling the horticultural cotoneaster, to which it is not related). The upper surface of the leaf is generally bristly, with hairs scattered to very sparse; at least some hairs are stellate. The lower surface has a fine white mat of loose stellate hairs. Secondary veins are impressed on the upper leaf surface and strongly raised on the lower surface. Flowers are cream-coloured and occur in short leafy panicles. Petals are absent. The hypanthium, sepals and ovary occur with long simple whitish hairs (DECCW (2009)). It is an obligate seed regenerator, and recruitment is probably fairly steady at a low rate with pulses post-fire or post-flood.

Generation Length

The generation length of *Pomaderris cotoneaster* is estimated to be 10 to 30 years. This is inferred from likely post-fire episodic recruitment at pre-settlement frequencies of 15-50 years, with some continuous recruitment in response to small-scale localised disturbances (e.g. floods for riparian occurrences). The longevity is plausibly 20-50 years.

Distribution

The taxon is known from south-eastern mainland Australia. In Victoria it has been recorded only from the upper Genoa River area near the NSW border. There has been only one recorded occurrence of the taxon, of a single individual, since 1950 (MEL records).

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Habitat

The taxon typically inhabits dryish forest, usually associated with rivers, but generally above the zone off influence of normal river levels - but subject to occasional flooding. Soils are usually rather shallow, often amongst rocks. The 2001 collection describes the habitat as 'rocky riparian open scrub'.

Threats

The taxon is threatened, as far as is known, by its extreme rarity in the event of random disturbance (fire, flood, browsing). It could possibly be targeted for browsing by Sambar for browsing (as some other *Pomaderris* species are known to be), and increasing Sambar numbers in a remote area where control is unlikely makes this a real threat.

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>based on any of the following:</p>	<p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>
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Evidence:

Eligible under Criterion A2 as Critically Endangered

The population reduction over the past 30 to 90 years is inferred to be 50 to 90%, based on (c) and (e) above.

This estimate is based on a single individual recorded in 2001.

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

Eligible under Criterion A3 as Endangered

The population reduction over the past 30 to 90 years is suspected to be 0 to 100% (midpoint 50%), based on (c) and (e) above.

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There is no compelling evidence (history of disturbance, weed invasion) to suggest current conditions are less suitable than those of up to 90 years ago. However the possible small size of the population makes it highly vulnerable to stochastic impacts. It could be any of increasing, stable or decreased to extinction.

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:

Ineligible under Criterion B

The Extent of Occurrence across the taxon's range is estimated to be 4 km², the Area of Occupancy is estimated to be 4 km² and it has one location, but there is insufficient evidence to determine whether there is a continuing decline.

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 <u>C1</u> or <u>C2</u>				
<u>C1</u>	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)
<u>C2</u>	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				

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Evidence:

Ineligible under Criterion C as Data Deficient

The number of mature individuals is estimated to be between 0 and 10, 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 km ² or number of locations ≤ 5 [Ⓜ]

Evidence:

Eligible under criterion D as Critically Endangered.

There is no compelling evidence (history of disturbance, weed invasion) to suggest current conditions are less suitable than those of up to 90 years ago. Although information on populations, past or present, is too meagre to nominate a credible number, there has been only one recorded occurrence of the species (of a single individual) since 1950 (MEL records), so it is fair to estimate a range between 0 and 10.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

DECCW (2009). *National Recovery Plan for Pomaderris cotoneaster (Cotoneaster pomaderris)*. Department of Environment, Climate Change and Water (NSW), Hurstville.

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

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