

## *Pomaderris helianthemifolia* subsp. *minor* Blunt-leaf Pomaderris

### Taxonomy

*Pomaderris helianthemifolia* subsp. *minor* N.G. Walsh & Coates

This is one of the three subspecies of *P. helianthemifolia* that occurs mainly north of the Dividing Range.

### 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 A2ce+3ce+4ce; B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C2a(i)

### Species Information

#### Description and Life History

The taxon forms shrubs 1-2 m high; branchlets greyish to rusty, stellate-pubescent, rarely with scattered simple hairs. Leaves narrow-obovate, (5-)6-9(-13) mm long, 2-4 mm wide, obtuse, margins recurved, upper surface hispid with simple hairs, lower surface greyish and densely stellate-pubescent, midrib with sparse simple hairs, secondary veins obscure; stipules 1-2.5 mm long, deciduous. Inflorescence of small pyramidal panicles, terminal and/or upper-axillary, usually c. 20-50-flowered; bracts deciduous. Pedicels 1-1.5 mm long. Flowers cream or yellow, externally stellate-pubescent, with scattered simple hairs; hypanthium 0.5-1 mm long; sepals 1.5-2 mm long, deciduous; petals absent; disc hispid with simple and/or stellate hairs; ovary superior, glabrous, style branched near base. Capsule indented at apex; operculum membranous, sub-equal to mericarp, or indistinct. Flowers October-November.

#### Generation Length

The generation length of *Pomaderris helianthemifolia* subsp. *minor* is estimated to be 5 to 30 years, inferred from likely post-fire episodic recruitment at pre-settlement frequencies of 20–50 years with some continuous recruitment in response to small-scale localised disturbances. The longevity is plausibly 20-50 years.

#### Distribution

The taxon occurs mainly north of the Dividing Range, in the catchments of the Big, Rose, Buffalo, King and Wonnangatta Rivers, with an old outlier by the Campaspe River, now most likely flooded by the formation of Lake Eppalock.

#### Habitat

The taxon occurs mostly in moist open forest and shrubland in upper-riparian situations - not observed to be truly riparian, occurring up to c. 100 m from river at (e.g. King River near Lake William Hovell). Soils may or may not be extensively rocky (N.Walsh, pers. obs.). Associated species include *Eucalyptus dives*, *E. radiata*, *E. mannifera*, *E. viminalis*, *E. camphora*, *Acacia dealbata*, *Callistemon sieberi*, *Coprosma quadrifida*, *Kunzea ericoides* s.l., *Leptospermum obovatum*, *L. lanigerum*, *Lomatia myricoides*, *Mirbelia oxylobiooides*, *Pomaderris aspera* and *Prostanthera lasianthos*

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### Threats

The taxon has been observed to be selectively and substantially browsed by Sambar Deer (*Rusa unicolor*), Neville Walsh, pers. obs., to the extent that nearly all fruiting branches may be stripped of leaves and fruit in early summer. Some plants in more protected sites (within thickets of other, unattractive species.) remain relatively untouched).

Collectors notes on one MEL sheet from Goughs Bay (near Mansfield) has 'Some plants dying, presumably a consequence of drought.'. Future drying conditions are likely to lead to some reduction in overall population number and may threaten the existence of some subpopulations. Increased fire frequency is unlikely to jeopardise replenishment of the soil seedbank.

Some populations nearer streams and in roadside situations are subject to threat of weed encroachment.

### 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 Endangered

The population reduction over the past 15 to 90 years is inferred to be 50%, based on (c) and (e) above.

The population is inferred to have declined through land clearance (several extant populations abut cleared land), flooding of habitat through dam construction and weed invasion.

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 next 15 to 90 years is projected to be 20 to 50%, based on (c) and (e) above.

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This is based on an assumption of increasing threat of browsing by Sambar leading to low seed set and ultimately reduced recruitment. Some risk of increased losses through drought, and weed threat high in linear (e.g. roadsides, narrow stream reserves) settings are likely through climate change-induced drought.

## Eligible under Criterion A4 as Endangered

The population reduction over any 15 to 90 year period, including both past and future, is projected to be 20 to 50%, based on (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

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 <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
B2. Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
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 3,450 km<sup>2</sup>, based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented naturally at the subregional scale and anthropogenically at the landscape scale at separations that are likely to exceed the dispersal range of the taxon. Some dispersal by seed along watercourses is likely but to an unknown extent. Subpopulations occur across a number of catchments and dispersal between these is considered unlikely.

It is estimated to have 1 location, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above in response to the identified threats.

### Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 72 km<sup>2</sup>, based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it is estimated to be severely fragmented, to have 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 Endangered

It is estimated that there are 500 to 5,000 mature individuals, based on an estimated 50 subpopulations of between 10 and 100 plants each.

The number of mature individuals is projected to continue to decline, and the number of mature individuals in each subpopulation is between 51 and 250.

The taxon is projected to have a continuing decline in population size in response to the identified threats.

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 <sup>2</sup> or number of locations ≤ 5

### Evidence:

#### Ineligible under criterion D

It is estimated that there are 500 to 5,000 individuals which exceeds the thresholds for criterion D.



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

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Pomaderris helianthemifolia* subsp. *minor*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/77b4e11b-2846-4d32-836a-59b5376f5b08>