

Pomaderris aurea Golden Pomaderris

Taxonomy

Pomaderris aurea N.A. Wakef.

A low, compact form occurs in the Holey Plains State Park and this form was once known as *P. humilis*.

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 A3bce+4abce; B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a shrub 0.5-2 m high; branchlets loosely grey- or rusty-villous. Leaves ovate or elliptic, 15-50 mm long, 8-20 mm wide, obtuse or acute, upper surface subvelutinous with stellate and/or simple hairs, lower surface with sparse rusty, subappressed simple hairs (denser on veins) overlying dense greyish stellate hairs, secondary veins apparent; stipules 4-9 mm long, deciduous. Inflorescence a rounded or c. pyramidal panicle, c. 3-5 cm diam.; bracts deciduous or weakly persistent. Flowers golden yellow, greyish externally with close stellate, and mid-dense simple hairs; pedicels 2-3 mm long; hypanthium 1.4-1.8 mm long; sepals 2-2.5 mm long, deciduous; petals narrow- to broad-spathulate, 1.5-2 mm long; disc absent; ovary virtually inferior, summit simple-pubescent, style branched in upper half. Operculum membranous, c. half mericarp length. Flowers from September to October (VicFlora 2014).

Generation Length

The generation length of *Pomaderris aurea* is estimated to be 30 years. This is based on a longevity of 15 to 20 years, and a plausible pre-settlement fire interval of 30 to 45 years. The taxon is assumed to be fire sensitive, typically recruiting episodically post-fire with some continuous recruitment in exceptional seasons and occasionally resprouting following low intensity fire events.

Distribution

The taxon is apparently endemic in Victoria but is likely to be found in New South Wales. The taxon is scattered in the east and north-east (e.g. Holey Hill, Stockdale, Jamieson, Bright, Beechworth, Corryong, Bruthen and upper Genoa River areas) and ascending near the Nunniong Plateau and Mt Elizabeth (VicFlora 2014).

Habitat

The taxon is scattered in dryish foothill forests and heathy woodlands in the east and north-east, ascending into wetter montane forests on and near the Nunniong Plateau and Mt Elizabeth (VicFlora 2014).

Threats

Past threats include habitat loss to pine plantation establishment, particularly in the north-east, as well as agriculture in marginal districts e.g. Ovens catchment; and habitat modification due to weed invasion and mining

Pomaderris aurea

Golden Pomaderris

activity e.g. at Bright. Continuing threats include wallaby browsing, and potentially browsing and antler rubbing by Sambar Deer (*Rusa unicolor*). Future threats include climate change-driven elevated temperatures, more frequent and severe droughts, and increased fire frequency, intensity and extent. There is an increased risk of repeat fire events at intervals below the tolerable fire interval for the taxon, and recruitment failure due to extreme drought stress and targeted browsing. Subpopulations at Holey Hill, previously described as *Pomaderris humilis*, have been monitored with an observable decline due to browsing, defoliation and galling by insects and drought-induced mortality.

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 A3 as Endangered

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

The projected future reduction is based on the increased risk of mortality and recruitment failure due to climatic warming and drying, increasing fire frequency, intensity and extent, and targeted browsing by wallabies and Sambar.

Eligible under Criterion A4 as Endangered

The population reduction over any 90 year period, including both past and future, is inferred to be 30 to 50%, based on (a), (b), (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

Past reduction is based on habitat loss to pine plantation establishment, marginal agriculture and the impact of weed invasion and mining activity. Future reduction is based on the threats described in A3 above.

Pomaderris aurea

Golden Pomaderris

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 B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 148 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is estimated to be severely fragmented naturally at the regional and landscape scales, and as a result of land use change. It has a patchy distribution with most occurrences isolated from other occurrences at separations far exceeding the dispersal range of the taxon, which has no specialised mechanism for long-distance dispersal.

It is estimated to have 2 locations. It has a continuing decline in (i), (ii), (iii), (iv) 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				

Pomaderris aurea Golden Pomaderris

Evidence:

Ineligible under Criterion C as Data Deficient

There is insufficient evidence to determine the number of mature individuals.

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 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

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 (2014). Flora of Victoria, Royal Botanic Gardens Victoria: *Pomaderris aurea*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/6e8685bb-cb99-4b5e-b7ee-d40a16784a09>