

Threatened Species Assessment

Hibbertia notabilis Howe Guinea-flower

Taxonomy

Hibbertia notabilis Toelken

Hibbertia notabilis is superficially very similar to *H. aspera*, but readily distinguished from that taxon by the greater number of stamens and greater number of ovules. It is likely that at least some Victorian Biodiversity Atlas (VBA) records of *H. aspera* in the Howe Range are *H. notabilis*. The taxon closely resembles *H. hirticalyx*, and may be better treated at subspecific rank within that taxon. It is somewhat intermediate between *H. aspera* and *H. hirticalyx*.

Current conservation status

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

Proposed conservation status

Vulnerable in Victoria

Criteria C1; D1+2

Species Information

Description and Life History

Dense shrub up to 80 cm high; branches densely pubescent to villous. Vestiture of tubercle-based stellate and long simple hairs. Leaves obovate to oblanceolate, 4.1-9.2 mm long, 1.4-4.8 mm wide, pubescent to glabrescent above, with mainly simple hairs, or just persistent tubercle-bases, stellate-pubescent below; petiole 0.3-0.8 mm long; apex truncate and \pm emarginate, rarely rounded; margins narrow, revolute, distant from the scarcely raised central vein. Flowers on peduncles 2.5–6.1 mm long, terminal on long and short branches, subtended by 1 linear bract, 1.6-2.1 mm long, usually less than half the length of sepals; sepals 4-4.5 mm long, unequal, stellate-tomentose with scattered, much longer simple hairs; petals broadly obovate-cuneate, 5-8.6 mm long, yellow; stamens 10-12(-15), filaments usually connate for about half their length; carpels 2, stellate-pubescent. Flowers Sep.-Oct. (VicFlora 2017).

Generation Length

The generation length of *Hibbertia notabilis* is estimated to be 15 to 40 years. This is estimated based on the taxon's life form of a low shrub, and a moderate disturbance regime (i.e., fire) that leads to its recruitment/turnover. The pre-European fire interval was perhaps 20-30 years in the habitat that the taxon occurs in.

Distribution

The taxon is restricted to coastal ranges in south-eastern Australia (i.e., Howe Range in Victoria). It is also found in NSW.

Habitat

The taxon grows in open forest dominated by *Eucalyptus sieberi* (Silvertop Ash) and *Angophora floribunda* (Rough-barked Apple) on the coastal ranges on either side of the border between New South Wales and Victoria (Toelken 1998).

Threats

The taxon is potentially threatened by inappropriate fire regimes and climatic warming and drying which, synergistically, increase the risk of recruitment failure in response to repeat fire events and extreme drought stress.

Weed invasion is not currently a threat, and it is unknown if deer pose a threat of any sort as this was not evident based on very limited field 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>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:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under Criterion A2, and the future population reduction does not meet the threshold for eligibility under Criterion A3.

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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:

Ineligible under Criterion B

The Extent of Occurrence (and the Area of Occupancy across the taxon's range are both estimated to be 8 km², but other thresholds under this criterion have not been met.

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				

Evidence:

Eligible under Criterion C as Vulnerable

It is estimated that there are 150 to 1,000 (midpoint 500) mature individuals. This estimate is based on notes recorded on the 2016 herbarium specimen, which indicates that the taxon is very common at the site.

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There is estimated to be a continuing decline of 10% within three generations.

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 Vulnerable

The taxon is estimated to have 150 to 1,000 (midpoint 500) mature individuals.

Eligible under Criterion D2 as Vulnerable

The taxon is inferred 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.

Toelken, H.R. (1998). Notes on *Hibbertia* (Dilleniaceae) 2. The *H. aspera-empetrifolia* complex. *Journal of the Adelaide Botanic Gardens* 18(2):107-160.

VicFlora (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Hibbertia notabilis*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/1a8fd9f9-6665-4e10-86bf-ecd833dd192a>