Threatened Species Assessment

Acacia aspera subsp. *parviceps*
Rough Wattle

Taxonomy

Acacia aspera subsp. *parviceps* N.G. Walsh

Plants from the Bacchus Marsh area are intermediate between the two subspecies *aspera* and *parviceps*, and are not convincingly placed in either taxon. These plants have long slender peduncles with long glandular hairs similar to those of *A. aspera* subsp. *parviceps*, however the heads resemble the typical form, being c. 40-50-flowered, with long eglandular bracteoles (VicFlora 2017).

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 B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

Phyllodes 6-26 mm long, usually strongly concavo-convex in section. Peduncles (7-)9-16 mm long, slender, hispid with only gland-tipped hairs, or sometimes also with shorter glandular hairs; heads globular, 4-6 mm diam. (on preserved specimens), (15-)24-35-flowered, cream to pale yellow, bracteoles gland-tipped, shorter than buds. Pods 15-35 mm long, 4-6 mm wide, not or hardly rounded over seeds. The taxon flowers from July to October (VicFlora 2017).

Generation Length

The generation length of *Acacia aspera subsp. parviceps* is inferred to be 25 to 50 years. This is inferred from the likely post-fire episodic recruitment at pre-settlement frequencies of 25-50 years, with some continuous recruitment in response to small-scale localised disturbances.

Distribution

The taxon is restricted in, and endemic to, Victoria. It is known from the northern part of the Brisbane Ranges and nearby Werribee Gorge area (c. 60 km WNW from Melbourne), Beaufort area (c. 140 km WNW from Melbourne), and near Wedderburn (c. 190 km NW from Melbourne) (Walsh 2004; VicFlora 2017). In the Brisbane Ranges and Beaufort areas, plants are common to locally dominant in the lower shrub stratum (Walsh 2004). The Wedderburn population represented by Connock 339 could not be relocated and the size is unknown. The taxon is well conserved in the Brisbane Ranges National Park, and nearby Werribee Gorge State Park (Walsh 2004).

Habitat

The taxon occurs on shallow soils derived from Ordovician sediments (shales, siltstones, sandstones), in dry to moist open forest typically dominated by combinations of *Eucalyptus goniocalyx, E. macrorhyncha, E. tricarpa* in the Brisbane Ranges, and *E. goniocalyx, E. melliodora, E. obliqua*, and *E. aromaphloia* south of Beaufort (Walsh 2004). At most sites in these areas the field layer is dominated by *Joycea pallida* with various low shrubs. There is

no habitat information accompanying the Wedderburn specimen, but open forests of *Eucalyptus tricarpa, E. leucoxylon* and *E. microcarpa* are common in the area.

Threats

Historically, the taxon has suffered decline due to habitat loss to agriculture. Continuing threats to the taxon include fuel management works, urbanisation, weed invasion, competition, increasing rabbit grazing due to climatic drying, Sambar browsing, mass soil movement and inappropriate fire regimes such as repeat fire.

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:

Eligible under Criterion A2 as Vulnerable

The population reduction over the past 75 to 150 years is estimated to be 30 to 45%, based on (b), (c) and (e) above, based on habitat loss to agriculture and other identified threats.

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 75 to 100 years is projected to be 10 to 30%, based on (b), (c) and (e) above, based on the effects of the identified threats.

Eligible under Criterion A4 as Vulnerable

The population reduction over any 75 to 150 year period, including both past and future (up to 100 years in the future), is estimated to be 20 to 35%, based on (b), (c) and (e) above.

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 2,075 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is inferred to be severely fragmented, predominantly anthropogenically at the landscape and naturally at the regional scale, with no known mechanism for long range dispersal.

A single location is based on the observation at all key identified threats apply across the range of the taxon, and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the effects of the identified threats.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 104 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the BA. As above, it is inferred to be severely fragmented, is estimated to have 1 location, and 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				

Evidence:

Ineligible under Criterion C as Data Deficient

No reliable estimate of the total population size for the taxon is available.

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

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 (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Acacia aspera* subsp. *parviceps.* Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/72170b16-8a67-4625-896f-d3328571791f

Walsh, N.G. (2004). Two new wattles endemic to Victoria. *Muelleria, 19*, 3-8.