Threatened Species Assessment

Acacia tabula
Wombargo Wattle

Taxonomy

Acacia tabula Molyneux & Forrester

The taxon was previously regarded to be a dwarf variant of *Acacia buxifolia*. It is somewhat intermediate between *A. infecunda* and *A. nanopravissima*, and it is speculated that it may be a stabilised hybrid between ancestral forms of these two taxa (Molyneux & Forrester 2008; VicFlora 2016).

Current conservation status

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

Proposed conservation status

Critically Endangered in Australia

Criteria B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C2a(i,ii); D

Species Information

Description and Life History

The taxon is a small erect shrub 25-50 cm high, 20-45 cm wide; extending asexually by the production of ramets; branchlets glabrous. Phyllodes 6-17 mm long, 0.8-2.5 (- 4.2) mm wide, inequilateral, narrowly oblong, elliptical, eccentrically mucronate, grey-green, glabrous; midnerve evident, adaxial width mostly wider than abaxial, seldom of equal width; gland evident, 1.5-4.5 (-6.5) mm above pulvinus. Inflorescence racemose; flower heads globular, axillary, one per axil; raceme axis (5-) 8-10 (-12) mm long, racemes of (5-) 8-10 heads. Peduncles 1.5-3 mm long. Flowers five-merous, 3-4 mm diameter, 5-8 flowers per head, yellow, infecund. The taxon flowers late August to early October (VicFlora 2016).

A. tabula spreads by suckering and does not seem to set fruit. It co-occurs with *A. infecunda* (previously regarded to be a dwarf variant of *A. boormanii*) and *A. nanopravissima* (previously regarded to be a dwarf variant of *A. pravissima*). All three taxa are restricted to the same location, and are apparently sterile (VicFlora 2016).

No hybridisation with any other species has been observed in the wild, although it should be noted that this taxon is likely to have a hybridogenous origin. It is proposed, on the basis of both chemical and morphological analysis, that cross-breeding between fertile ancestors of *A. infecunda* ms. and *A. nanopravissima* ms. resulted in the creation of a third entity in the area, *A.tabula* ms.

Generation Length

The generation length of *A. tabula* is suspected to be 100 years. The taxon is only known to produce vegetatively, so the generation length is more or less indefinite. Generation length cannot, by definition, be determined in a vegetatively reproducing taxon, so an arbitrary figure of 100 years has been used.

Distribution

The taxon is endemic to the Wulgulmerang district in East Gippsland, Victoria, where it is currently known by a single small population on the Wombargo Range in the upper catchment of Little River, a tributary of the Snowy River. The population comprises of small fragmented stands in close proximity, extending across a slope

overlooking, and south of, Splitters Creek, near Benambra-Limestone Road (Molyneux & Forrester 2008). The taxon is confined to the Monaro Tablelands bioregion.

Habitat

The taxon occurs in a dry sclerophyll woodland and heathland habitat on rocky slopes with soils derived from Devonian acid rhyolites. The habitat is often dominated by *Eucalyptus rubida*, *E. pauciflora,* and *E. dives,* with an understorey of low heathland and grassland taxa on lower and mid-slope sites of northern aspect (Molyneux & Forrester 2008).

Threats

Threats include browsing by Sambar deer or feral horses, particularly during the vulnerable suckering following intense fire, with the risk exacerbated by extreme drought stress. It should be noted that the threat of extreme drought and repeat fire events are projected to increase as a consequence of climatic drying.

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:

Ineligible under Criterion A

There is insufficient evidence to determine whether there has been or will be a reduction in population sufficient to meet any threshold for Criterion A.

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 Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 4 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA). The EoO has been made equal to the AoO to ensure consistency with the definition of AoO as an area within EoO.

The taxon is estimated to be severely fragmented since there is no capacity for long-distance dispersal, and therefore no realistic capacity for recolonisation in the event of local extinction.

It is estimated to have 1 location, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the current and projected impact of the identified threats.

Eligible under Criterion B2 as Critically Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 4 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, the taxon is severely fragmented, has 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:

Eligible under Criterion C2 as Critically Endangered

It is estimated that there is 1 mature individual. The number of mature individuals is based on the idea that the taxon may comprise of no more than a single genetic individual or genet (Molyneux & Forrester 2008). The taxon cannot produce seed, but it can be considered mature in the sense that it can flower.

The number of mature individuals is inferred to continue to decline, the number of mature individuals in each subpopulation is 50 or fewer, and the percentage of mature individuals in one subpopulation is 90-100 %.

The taxon is subject to continuing decline in population size due to the identified threats.

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 D as Critically Endangered

The taxon is estimated to have 1 mature individual.

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

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Molyneux, W.M. and Forrester, S.G. (2008). Three new *Acacia* species (Fabaceae*:* Mimosoideae) from East Gippsland, Victoria. *Muelleria, 26*(1), 51-56.

VicFlora (2016). Flora of Victoria, Royal Botanic Gardens Victoria: *Acacia tabula*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/f63ada81-091e-4177-8bd1-8625b0f25c04