

Acacia stictophylla Dandenong Wattle

Taxonomy

Acacia stictophylla Court ex Maslin & D.J. Murphy

Specimens with unusually wide phyllodes may resemble *A. leprosa* var. *uninervia*. This taxon is distinguished from *A. stictophylla* by the gland being c. 2 mm above the pulvinus. More generally, singled-veined varieties of *A. leprosa* can be distinguished from *A. stictophylla* by the shorter bracteoles that do not exceed flower buds, fewer flowered heads (*A. leprosa* has up to c. 30 flowers per head), and shorter, appressed to sub-appressed hair on peduncles (VicFlora 2018).

Acacia stictophylla may also be confused with *A. cognata*, which is distinguished by its phyllodes having 3 (or rarely 5) veins (the phyllodes must be examined carefully because the veins flanking the rather prominent midrib are often very fine), and are less obviously resinous-punctate (VicFlora 2018).

Putative hybrids between this taxon and *A. paradoxa* occur in the foothills of the Dandenong Range, where it seems also to hybridize with *A. howittii* (VicFlora 2018).

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 A2bce+3bce+4bce; B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C1

Species Information

Description and Life History

The taxon is an aromatic, single-stemmed shrubs, 2-4 m high; branchlets not or hardly flexuose, with glabrous or minutely hairy ribs. Phyllodes narrowly elliptic to lanceolate-elliptic, (4-)5-10 cm long, (2-)3-6(-12) mm wide, straight or slightly curved, thin, acute to short-acuminate, sometimes obtuse-mucronate, resinous-punctate, sometimes viscid, glabrous or margins and main vein with appressed hairs; vein 1, lateral veins few and obscure, sometimes forming a faint continuous longitudinal vein near the phyllode margin; gland 0-0.5 mm above pulvinus. Peduncles (1-)2(-4) per axil, sometimes in very short racemes (rachis c. 1 mm long), tomentose, hairs rather long and lax, basal bract usually caducous; heads globular or obloid (in bud), 8-11 mm diam., 30-50-flowered, light yellow to lemon yellow. Flowers 5-merous; sepals united. Pods linear, 2-6 cm long, 3-4 mm wide, charcaceous, glabrous or with very sparse, minute appressed hair; seeds longitudinal, obloid, 3.5-4.5 mm long, shiny, black, funicle twice folded, aril terminal. The taxon flowers from August to November (VicFlora 2018).

Generation Length

The generation length of *Acacia stictophylla* is inferred to be 35 years. This is based on a longevity that is plausibly in 25-35 year range and primarily episodic recruitment based on pre-settlement fire frequency in *Eucalyptus obliqua*, *E. radiata*, *E. goniocalyx*, *E. cephalocarpa*, *E. baxteri* (forest form), *E. dives* moist forest of 25-50 years and nominally 35 years.

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Distribution

The taxon is restricted to the Dandenong Ranges where it is often locally common. A single early collection from Myrning Creek (NW of Bacchus Marsh) is thought to be mislabelled or possibly from cultivated material. The occurrence of this taxon near Elmore in the north requires further confirmation (VicFlora 2018).

Habitat

The taxon occurs in the riparian zone on hillsides in tall forest and open woodland (VicFlora 2018). Most occurrences are associated with *Eucalyptus obliqua*, *E. radiata*, *E. goniocalyx*, *E. cephalocarpa*, *E. baxteri* (forest form) and *E. dives* moist forest.

Threats

This taxon is threatened across most of its extant range by continuing and severe habitat degradation due to ongoing peri-urban development resulting in habitat fragmentation and severe habitat modification. Those subpopulations in parks and reserves are also at risk of recruitment failure in response to the increasing risk of repeat fire events and targeted browsing pressure by Sambar Deer (*Rusa unicolor*), rabbits and, potentially, also macropods. In addition, all subpopulations are at increasing risk of mortality due to extreme drought stress particularly during early recruitment.

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 105 years is inferred to be 75%, based on (b), (c) and (e) above.

Past decline is based on extensive pastoral and urban development and habitat fragmentation.

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 100 years is projected to be 50 to 75%, based on (b), (c) and (e) above.

Future decline is based on the effects of the identified threats. The taxon is threatened across most of its extant range by continuing and severe habitat degradation due to ongoing peri-urban development resulting in habitat fragmentation and severe habitat modification. Those subpopulations in parks and reserves are also at risk of recruitment failure in response to the increasing risk of repeat fire events and targeted browsing pressure by Sambar, rabbits and, potentially, also macropods. In addition, all subpopulations are at increasing risk of mortality due to extreme drought stress particularly during early recruitment.

Eligible under Criterion A4 as Endangered

The population reduction over any 105 year period, including both past and future (up to 100 years in the future), is inferred to be 70%, based on (b), (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 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 B1 as Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 720 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented anthropogenically at the landscape scale across the range of the taxon, with individual occurrences isolated at spacings exceeding the dispersal range of the taxon, which has no specialised mechanism for long-distance dispersal.

It is inferred to have 2 locations, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above based on the current and projected impact of the identified threats, such as severe habitat degradation, repeat fire events, targeted browsing pressure by herbivores, and extreme drought stress.

Eligible under Criterion B2 as Endangered

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The Area of Occupancy (AoO) across the taxon's range is estimated to be 156 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon is estimated to be severely fragmented, and is inferred 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			

Evidence:

Eligible under Criterion C as Endangered

It is estimated that there are 1,000 to 5,000 mature individuals. Population size is based on a few records of large populations of hundreds of individuals. It should be noted that many records refer to very small population sizes in highly fragmented peri-urban landscapes.

There is estimated to be a continuing decline of 40 to 60% within two generations.

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 ² or number of locations ≤ 5

Evidence:

Eligible under criterion D as Vulnerable

The taxon is estimated to be very restricted.



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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

VicFlora (2018). Flora of Victoria, Royal Botanic Gardens Victoria: *Acacia stictophylla*. Retrieved from:
<https://vicflora.rbg.vic.gov.au/flora/taxon/787e2ae6-114e-4755-be47-77db6efce9a6>