



Acacia flexifolia Bent-leaf Wattle

Taxonomy

Acacia flexifolia A. Cunn. ex Benth.

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criterion B2ab(ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a bushy, spreading shrub, usually to 1.5 m high; branchlets with appressed, minute hairs and scurfy between the prominent resin-ribs. Phyllodes linear to narrowly linear, normally kinked or bent upwards a few mm above the base, 1-2 cm long, 0.7-2.5 mm wide, dull green to grey-green, glabrous, sometimes glutinous, often slightly dilated at apex, obtuse; midrib markedly raised, very close to adaxial margin and often contiguous with it towards apex. Peduncles mostly 2 per axil, 2-4 mm long, resinous, hoary, basal bract persistent; heads globular, 3-10-flowered, pale yellow or lemon-yellow, resinous. Flowers 5-merous; sepals united. Pods narrowly linear, to 10 cm long, 2-3 mm wide, curved, thinly coriaceous, brown; seeds longitudinal, oblong-elliptic, 4-5 mm long, shiny, brown, aril terminal. The taxon flowers from June to October (VicFlora 2019).

Generation Length

The generation length of *Acacia flexifolia* is estimated to be 20 to 40 years. This is based on a plausible pre-settlement fire interval of 35-45 years or more and the inference that the taxon is a fire-sensitive obligate seed regenerator (OSR) recruiting episodically post-fire with some opportunistic recruitment in response to localised site disturbance events.

Distribution

The taxon extends into north-central Victoria. The taxon also occurs in Queensland and New South Wales (VicFlora 2019). The taxon is primarily associated with Box-Ironbark Forest, extending into adjacent Grey Box flats.

Habitat

The taxon grows on shallow soil in open-forest or mallee scrub (VicFlora 2019).

Threats

The taxon is likely to have suffered significant historic decline throughout its Victorian range in response to habitat loss and degradation due to agricultural activity. Current and future threats include the imposition of anthropogenic fire regimes, intensive browsing, recruitment failure, decline and alteration in pollinator availability and ecological imbalance in native plant competition.

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> <ul style="list-style-type: none"> (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 60 to 120 years is estimated to be 20 to 30%, based on (c) and (e) above.

The taxon is likely to have suffered significant historic decline throughout its Victorian range in response to habitat loss and habitat degradation as a result of agricultural activity.

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 216 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA)

The taxon is estimated to be severely fragmented naturally at the regional and landscape scales and anthropogenically at the landscape scale. Geographically discrete occurrences are separated at distances likely to exceed the dispersal range of the taxon, which has no specialised mechanism for long-distance dispersal. The only plausible dispersal mechanism is myrmecochory (dispersal by ants), which operates at the metre scale only.

Two locations can be identified based on landscape context, with occurrences in highly fragmented rural landscapes subject to a wide range of site-specific stochastic threats which are unlikely to operate within parks, reserves and sympathetically managed freehold.

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

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

There is insufficient evidence to determine the number of mature individuals. There is no available estimate of the number of mature individuals for the taxon.

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 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



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VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Acacia flexifolia*. Retrieved from:
<https://vicflora.rbg.vic.gov.au/flora/taxon/18b6651c-5635-4fe2-8d54-0b5d59daa795>