



Pultenaea platyphylla Flat-leaf Bush-pea

Taxonomy

Pultenaea platyphylla N.A. Wakef.

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria B2ab(iii,v)

Species Information

Description and Life History

The taxon is an erect, rigidly branched shrub to 1.5 m high; stems angled, hairy when young. Leaves alternate, oblanceolate, 8-20 mm long, 3-6 mm wide; apex emarginate; upper surface glabrescent, darker than lower; lower surface glabrous; margin flat; stipules c. 1.5 mm long, closely appressed to stem. Inflorescence terminal, head-like, of more than 5 flowers; bracts ovate, 4-5 mm long, slightly hairy, margins ciliate, deciduous at anthesis; enlarged stipules persistent at base of pedicels; calyx 5-7 mm long, densely silky-hairy; bracteoles attached at or above middle of calyx tube, oblanceolate, 3-4 mm long, extending beyond lobes, hairy, apex finely serrate; standard 8-9 mm wide; ovary and base of style hairy. Pod flat, exserted from calyx. The taxon flowers from September to November (VicFlora 2019).

Generation Length

The generation length of *Pultenaea platyphylla* is estimated to be 20 to 40 years. This is based on a longevity of plausibly 30 years, a pre-settlement fire interval plausibly in the 20-40 year range, and the likelihood that episodic fire-induced mass recruitment greatly exceeds the proportion of recruitment responding continuously to small scale soil disturbances.

Distribution

The taxon is restricted to granite outcrops on dry northern slopes (e.g. Warby Range and Beechworth areas). The taxon also occurs in New South Wales (VicFlora 2019).

Habitat

The taxon occurs on granite outcrops in dry open forest and woodland with Stringy-bark and gum-bark eucalypts and *Callitris* (VicFlora, 2019).

Threats

The taxon is potentially threatened by imposed anthropogenic 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. A population that occurs along roadsides between Avenel and Benalla and may be at risk of clearing and road expansions. It is unclear if browsing pressure by native or feral animals is a potential threat to this taxon.

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The bushfires of 2019/2020 are believed to have impacted more than 16% of the taxon's modelled habitat. The overall impacts of the fire are yet to be determined.

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:

Ineligible under Criterion A

The taxon has not undergone declines that meet the threshold to satisfy any of criterion A.

The magnitude of future decline in population size is difficult to estimate with any confidence since the identified threats are likely to act stochastically and with unpredictable intensity.

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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:

Eligible under Criterion B1 as Vulnerable

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 11,431 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

It is estimated to have 2 locations, as despite having a disjunct distribution across a large area, all populations are subject to the same key threatening process (i.e., prolonged drought). However, plants not in conservation reserves between Avenel and Benalla may also be at risk from land clearing and are, therefore, treated as a second location.

It has a continuing decline in (iii) and (v) above based on the impacts of the identified threats, such as climatic drying and increased fire frequency.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 197 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it has 2 locations and has a continuing decline in (iii), and (v).

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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 C1 as Vulnerable

The taxon is estimated to have 5,000 to 20,000 mature individuals. The current population estimate is difficult to calculate as there is a lack of population size data. Herbarium records and anecdotal observations indicate that plants are usually localised, but quite common where they occur. It is estimated that most 2 x 2 km² grids are likely to consist of 100-400 mature individuals.

There is estimated to be a continuing decline of 10 to 25% within three 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:

Ineligible under criterion D

The taxon is estimated to have 5,000 to 20,000 mature individuals, which exceeds the thresholds for criterion D.

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:



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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: *Pultenaea platyphylla*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/07d81b40-280d-4936-8596-5532cda3e02d>