



Podolepis laevigata Buloke Podolepis

Taxonomy

Podolepis laevigata Gand.

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* (SAC 2016).

Proposed conservation status

Critically Endangered in Australia

Criteria A2ce+3ce+4ce; B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a herb to 40 cm tall, possibly renewed annually from perennial rootstock. It exhibits several stems which are produced annually from a thickened persistent rootstock. These are erect, unbranched and glabrous or glabrescent. The key features which separate the species from other similar taxa are: the linear basal and cauline leaves and plants \pm glabrous or glabrescent except for prominent axillary hair tufts on basal leaves. In general appearance *P. laevigata* resembles *P. linearifolia*, but differs mainly in the intermediate involucre bracts having an obtuse apex and broader claws, and the rosette leaves having conspicuous tufts of axillary basal hairs. The two species also grow in different habitats. The taxon flowers from September to November (VicFlora 2015).

Podolepis are annual or perennial herbs, often with cobwebbed eglandular and glandular hairs. The genus is endemic to Australia and there are about 20 species, occurring in all states (SAC 2016).

Generation Length

The generation length of *Podolepis laevigata* is inferred to be 25 to 50 years. This is based on the taxon's habit that is inferred from herbarium specimens, suggesting that it is possibly renewed annually from a thickened persistent perennial rootstock (Jeanes 2015).

Distribution

The taxon is apparently endemic to Victoria, where it has been found in the Wimmera, Riverina, and Midlands Natural Regions (Jeanes 2015). There are few collections of this taxon, the most recent of which was made in 1986 by Cliff Beauglehole on a roadside 9 km north-east of Murtoa. It appears that it may have always been localised, and there is no evidence that it occurs in any biological reserves (Jeanes 2015).

Habitat

Most of the collections for the taxon are old and the labels contain no information on habitat. However, given the known distribution, it is possibly found mainly in Buloke (*Allocasuarina luehmannii*) and Grey Box (*Eucalyptus macrocarpa*) woodland on heavy non-calcareous soils (Jeanes 2015).

Threats

If the taxon persists anywhere in the state, it is at grave risk of local extinction due to continuing habitat loss and degradation, weed invasion, browsing by stock and rabbits, recruitment failure, and inbreeding depression. It occurs in habitat (Buloke/Grey Box woodlands) that has been widely cleared in the past (SAC 2016).

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 style="text-align: center;"><i>based on any of the following:</i></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 Critically Endangered

The population reduction over the past 75 to 150 years is inferred to be 80 to 100%, based on (c) and (e) above.

Past reduction is based on the extensive clearing of its Buloke/Grey Box woodlands habitat (Jeanes 2015). There are few collections of this taxon, there is no evidence that it occurs in any biological reserves, and it is possibly extinct (VicFlora 2015).

The causes of the reduction may not have ceased, be understood or be reversible.

Eligible under Criterion A3 as Critically Endangered

The population reduction over the next 75 to 100 years is suspected to be 99 to 100%, based on (c) and (e) above.

The most recent collections of the taxon were taken in 1986 and 1932 and it is unlikely that any subpopulations persist in the state.

Eligible under Criterion A4 as Critically Endangered

The population reduction over any 75 to 150 year period, including both past and future (up to 100 years in the future), is inferred to be 90 to 100%, based on (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 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 the AoO as an area within the EoO.

The most recent record is a 1986 specimen collected by Cliff Beauglehole on a roadside 9 km north-east of Murtoa. There is no evidence to suggest the taxon persists at this site and there is a high likelihood that the taxon is now extinct. If it still exists, it has one location.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above. If the taxon persists anywhere in the state, it is at grave risk of local extinction due to continuing habitat loss and degradation, weed invasion, browsing by stock and rabbits, recruitment failure and inbreeding depression. Therefore, the population size is inferred to be in continuing decline.

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 km² grids derived from accepted, post-1970 records from the VBA. As above, it has one location and has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

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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:

Ineligible under Criterion C as Data Deficient

There is insufficient evidence to determine the number of mature individuals.

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 inferred to be very restricted.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

Jeanes, J.A. (2015). Studies in *Podolepis* (Asteraceae: Gnaphalieae). *Muelleria*, 33, 21-59.

SAC (2016). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 875 *Podolepis laevigata*.

VicFlora (2015). Flora of Victoria, Royal Botanic Gardens Victoria: *Podolepis laevigata*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/933cfdc9-f5f9-454d-9c82-26cd82cab79b>