

Pappochroma tasmanicum Tasmanian Fleabane

Taxonomy

Pappochroma tasmanicum (Hook. f.) Hook.f.

This taxon is similar to, and possibly confused, with *P. bellidioides* or *P. paludicola*.

Synonym *Eigeron tasmanicus*

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criteria B1ab(i,ii,iii,iv,v); C1+2a(ii)

Species Information

Description and Life History

The taxon is a rhizomatous herb, forming solitary rosettes or occasionally dense colonies, to 15cm high in fruit. Leaves spatulate or narrowly obovate, with or without long petiole-like base, 10-50mm long, 3-9mm wide, concave, glabrous, thick-textured, often purplish near base, entire or with a few callus-teeth; apex obtuse. Peduncle unbranched, with linear bracts, elongating slightly in fruit. Capitula turbinate; involucre bracts oblong, 3-6mm long, glabrous, or minutely ciliate; ray florets 1-3-seriate, ligules white to purplish, 2-3.5mm long, more or less erect, exceeding involucre by 1-2mm. Peduncle elongating slightly in fruit. Cypselas flattened, oblong-elliptic, c. 2.5mm long, glabrous; pappus bristles c. uniform, 2.5-3 mm long. The taxon flowers from December to February (VicFlora 2019).

Generation Length

The generation length of *Pappochroma tasmanicum* is estimated to be 10 to 40 years. It is a perennial herb that is known to respond well to disturbance, including fire, but recruitment is probably not explicitly linked to fire events. Plants that have been growing at the Royal Botanic Gardens Victoria for 4 years are still yet to flower, so in nursery conditions generation time will be much longer than 5 years.

Distribution

In Victoria, the taxon is known only from the Baw Baw Plateau. It also occurs in Tasmania (VicFlora 2019).

Habitat

The taxon occurs on damp, peaty soils in broad, treeless depressions (VicFlora 2019).

Threats

The taxon is considered at risk from habitat disturbance, weed invasion, increasingly dry conditions from declining rainfall, and a consequent increase in the severity and intensity of bushfires. Plants occur in close proximity to a ski resort and are potentially at risk from poor management of this area.

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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 A3 as Endangered

The population reduction over the next 30 to 100 years is projected to be 20 to 50%, based on (c) above.

Eligible under Criterion A4 as Endangered

The population reduction over any 30 to 120 year period, including both past and future (up to 100 years in the future), is estimated to be 20 to 50%, based on (c) above. The causes of reduction may not have ceased, be understood or be reversible.

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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 Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 12 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 have 1 location as all key identified threats apply across its range and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above as a result of increased warming and drying of wetlands, and increased frequency of fire, which is traditionally largely absent in this landscape.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 12 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon has 1 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:

Eligible under Criterion C1 as Critically Endangered

It is estimated that there are 110 to 250 mature individuals. This is based on herbarium notes from a collection in 2011 (MEL 2338250 and 2338345), with 'about 100 plants seen over...1 hectare' on Baragwanath Flat and 'about 10 plants' on Currawong Flat.

A continuing decline of 10 to 30% is observed to occur within 1 generation, based on potential climatic drying and increased fire frequency.

Eligible under Criterion C2 as Critically Endangered

It is estimated that there are 110 to 250 mature individuals.

The number of mature individuals is estimated to continue to decline based on the impacts of the identified threats, and the percentage of mature individuals in one subpopulation is 90-100%.

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 Endangered

It is estimated that there are 110 to 250 mature individuals.



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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 (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Pappochroma tasmanicum*. Retrieved from:

<https://vicflora.rbg.vic.gov.au/flora/taxon/44102b8b-df68-46c6-a921-5e9a2380c38b>