



Pimelea treyvaudii Grey Rice-flower

Taxonomy

Pimelea treyvaudii F. Muell. ex Ewart & B. Rees

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criteria A2ce; B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a shrub 20–30 cm high; stems glabrous; nodes prominent. Leaves opposite, shortly petiolate, more or less narrowly elliptic, 6–37 mm long, 1–10 mm wide, concolorous or paler below, glabrous. Inflorescence terminal, a many-flowered head; receptacle well-developed; involucre bracts 9–11, sessile, narrowly ovate, narrower than subtending leaves, 6–15 mm long, 1–4 mm wide, glabrous outside, hairy inside, fringed at least toward base, cream at base, green above and sometimes purplish, persistent. Flowers bisexual, glabrous inside, white; floral tube c. 10–12 mm long, ovary-portion glabrous in basal half, with long antrorse hairs above, style-portion longer than ovary-portion, with medium-sized and minute hairs, circumscissile above ovary; sepals spreading, 3–5 mm long, glabrous inside; pedicel hairy; stamens shorter or longer than sepals; anthers opening laterally or somewhat laterally; style exerted. Fruit dry, enclosed. Flowers October-January (VicFlora 2018).

The taxon is fire sensitive and killed by moderate fires; its longevity is unknown but is probably predominantly outcrossing. Pollinated by insects, probably mostly by moths attracted to the floral scent in the evening for a nectar reward. Seeds dispersed passively or by wind, forming a soil-stored seedbank of unknown longevity. Recruitment by seed only, continuous but with a strong post-fire pulse.

Generation Length

The generation length of *Pimelea treyvaudii* is suspected to be 30 to 50 years. This is based on fire frequency (for a fire-sensitive species) and continuous recruitment of new individuals.

Distribution

The taxon occurs in north-east Victoria from the Strathbogie area to Pine Mountain, north of Corryong.

Habitat

The taxon occurs in open grassy or shrubby woodland or forest on slopes of granitic and sedimentary geology.

Threats

Threats to the taxon include climate change (decreased rainfall, increased evaporation, extreme temperatures); increased frequency and intensity of fire; inappropriate timing of fire (winter-spring); soil loss on bare post-fire substrates resulting from extreme rainfall events; roadworks; mining and quarrying; and weed invasion.

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 Endangered

The population reduction over the past 90 to 150 years is suspected to be 50%, based on (c) above.

Past reduction is based on historic habitat reduction, particularly for pine plantations, and past and present threats, especially weed invasion.

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

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 90 to 100 years is suspected to be 30%, based on (c) above.

This is based on the expected threats, particularly climate change and weed invasion.

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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 9095.1 km², based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The taxon is inferred to be severely fragmented as subpopulations are widely scattered in the landscape over c. 200 km south-west to north-east, and most sufficiently distant to preclude recolonisation via pollen or seed dispersal.

It is projected to have 1 location, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above, due to the identified threats.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 120 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon is severely fragmented, 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:

Ineligible under Criterion C as Data Deficient

No reliable estimate of the total population size for the taxon is available.

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

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

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

References

Australian Virtual Herbarium

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