



Grevillea patulifolia Swamp Grevillea

Taxonomy

Grevillea patulifolia Gand.

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criteria B1ab(i,ii,iii,v)+2ab(i,ii,iii,v)

Species Information

Description and Life History

The taxon is an erect to trailing shrub 0.2–1.6(–2.5) m high, sometimes root-suckering. Leaves entire, narrowly elliptic to sublinear, straight, 1.5–3.5 cm long, 1–1.5 mm wide; upper surface of leaf faintly scabrous or granular especially along veins; margin angularly refracted at 120° or more relative to the distinctly convex upper surface (leaf obliquely elliptic in cross-section), usually enclosing the lower surface either side of midvein. Conflorescences c. 1 cm long, sessile, regular and umbel-like or rarely subsecund; perianth pale pink to mauve (occasionally white?), outer surface with appressed hairs, inner surface with a more or less profuse beard opposite the ovary; pistil 8–8.5 mm long, ovary stipitate, glabrous, style pink or white, with minute hairs or papillae just below apex, pollen presenter oblique. Fruits glabrous. Flowers August–February (VicFlora 2016).

The taxon is a post-fire resprouter, reproducing only by seed. Recruitment is continuous with a post-fire pulse from a soil stored seedbank of unknown longevity. Flowers are pollinated by insects, thus gene-flow is at a short-distance only. Seeds are passively dispersed, and secondary dispersal is assumed to be by ants which eat the elaisome and bury the seeds.

Generation Length

The generation length of *Grevillea patulifolia* is suspected to be 30 to 50 years. This is based on typical longevity of *Grevillea* plants (N. Marriott pers. comm.), and the mode of recruitment.

Distribution

The taxon occurs in the Mallacoota area in far East Gippsland, as well as in NSW north to the Sydney area. A Bemm River locality is recorded in VicFlora (2016), but Makinson (2000) considers this doubtful.

Habitat

The taxon grows in moist heath or woodland-heath associations, in sandy soils at elevations near sea-level.

Threats

Threats to the taxon include the effects of climate change such as reduced rainfall, increased evaporation, and extreme temperatures, as well as increased frequency and intensity of fire, inappropriate timing of prescribed fire,

impacts of fire control activities, weed invasion, nectar-robbing by exotic honeybees, and Cinnamon Root-rot Fungus.

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

There is insufficient evidence to determine whether there has been a reduction in population under criterion A2. The future population reduction does not meet the threshold for eligibility under criterion A3.

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 AoO as an area within EoO.

The taxon is estimated to have one location based on the suite of threats operating across the subpopulation, notably the effects of climate change, increased frequency and intensity of fire, and weed invasion. It has a continuing decline in (i), (ii), (iii) and (v) above, based on the impacts of the identified threats.

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 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon is estimated to have 1 location, and has a continuing decline in (i), (ii), (iii) 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:

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

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

Makinson, R. O. (2000) *Grevillea*, *Flora of Australia* 17A:1-460.



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Olde, P., and Marriott, N. (1994). *The Grevillea Book: Volume 3*. Kangaroo Press: Kenthurst.

VicFlora (2016). Flora of Victoria, Royal Botanic Gardens Victoria: *Grevillea patulifolia*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/6135b427-34d0-4b60-b7a5-6db615ac8e97>