

Grevillea rosmarinifolia subsp. *glabella* Smooth Grevillea

Taxonomy

Grevillea rosmarinifolia subsp. *glabella* (R. Br.) Makinson

G. rosmarinifolia subsp. *glabella* forms natural hybrids between *G. alpina*, *G. chrysophaea* and perhaps *G. steigliziana*, as well as between cultivated taxa and hybrids in gardens. It has naturalised in a number of locations and is quite weedy.

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 A3ce; B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a shrub to 2 m tall (usually much less), resprouting after fire. It reproduces only by seed from a soil-stored seedbank of unknown longevity, with recruitment continuous or pulsed after fire. It is assumed to be self-sterile i.e. an obligate outcrosser, as in many *Grevillea* taxa. It is pollinated by honeyeaters, thus gene-flow is in the order of several hundred metres only. Seeds are passively shed, and secondary dispersal is by ants only a few tens of metres, which bury the seeds after eating the elaisoms.

Its leaves are linear-subterete, are mostly very crowded on short lateral branchlets, and are pungent. The lower leaf surface is fully enclosed by revolute margina. The leaves are 8–15 mm long and 0.7–0.8 mm wide. It flowers from August–November (VicFlora no date).

Generation Length

The generation length of *Grevillea rosmarinifolia* subsp. *glabella* is suspected to be 30 to 70 years. This is based on the longevity of *Grevillea* taxa in general (N. Marriott pres. comm), its post-fire resprouting capacity, and the continuous recruitment in this subspecies.

Distribution

The taxon occurs in central southern Victoria, and north-west Victoria.

Habitat

The taxon occurs in open heathy or grassy woodlands, and mallee scrub on soils derived from a variety of geologies.

Threats

Threats to the taxon include the effects of climate change such as decreased rainfall, increased evaporation, and extreme temperatures, as well as altered fire regimes including increased frequency and intensity of fire, impacts of fire-control activities, and inappropriate timing of fire. Other threats include roadworks, damage to plants by off-road

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vehicles, weed invasion, nectar-robbing by introduced honeybees that are not effective pollinators, Cinnamon Root-rot Fungus, decreased bird pollination as the honeyeater guild declines due to reduced flowering and fragmentation of co-occurring floral resources, and hybridisation between *in situ* and exotic *Grevillea* taxa and horticultural hybrids.

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> <p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>			

Evidence:

Eligible under Criterion A2 as Vulnerable

The population reduction over the last 90 to 210 years is suspected to be 30%, based on (c) and (e) above.

Past decline is based on the suite of threats operating, particularly climate change, weed invasion, and historic anthropogenic habitat loss.

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

Eligible under Criterion A3 as Endangered

The population reduction over the next 90 to 100 years is suspected to be 30 to 50%, based on (c) and (e) above.

The suspected future decline is based on the suite of threatening processes, 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 B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 52 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is estimated to be severely fragmented naturally and anthropogenically at the regional and landscape scales, with no specialised mechanism for long-range dispersal.

It is estimated to have 1 location, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the impacts of the identified threats.

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 <u>C1</u> or <u>C2</u>				
<u>C1</u>	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)
<u>C2</u>	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				

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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 population			
	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

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