Threatened Species Assessment

Westringia glabra
Violet Westringia

Taxonomy

Westringia glabra R. Br.

Willis (1967) recognised 3 varieties, with isolated plants in the northern Grampians and Lerderderg areas considered distinct entities. However, these varieties are no longer accepted, with the taxon instead being treated as a variable species.

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criterion B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is a shrub 0.5-1 m high. Leaves in whorls of 3 or 4, rarely opposite, narrow-ovate to -elliptic, 12-20(-50) mm long, 3-4(-11) mm wide, length-to-width ratio 4-5.1, both surfaces sparsely to very sparsely hairy or glabrous, margin entire and usually slightly recurved; petiole c. 1 mm long. Bracteoles 1.5-2 mm long. Calyx green, outer surface sparsely hairy (rarely densely hairy), tube 3-3.5 mm long, lobes triangular to narrowly triangular, 3-3.7 mm long, 1-1.5 mm wide, lobe-to-tube ratio 0.9-1.1; corolla 8-10 mm long, pink to pale purple with maroon dots. Flowers throughout the year (VicFlora 2021).

Generation Length

The generation length of *Westringia glabra* is inferred to be 20 to 40 years. Little is known on the longevity of this taxon as plants occur in widely different habitats and generation length may differ between eastern and western populations. Events such as fire and major flood are likely to promote germination of this taxon, so this inference is based on likely disturbance frequency in the habitat.

Distribution

The taxon has a disjunct distribution in Victoria in the northern Grampians, Lerderderg Gorge, and more commonly in East Gippsland.

Habitat

The taxon frequently occurs in skeletal soils, often on steep rocky slopes, and often associated with river gorges.

Threats

In some areas, particularly western Victoria, plants are likely to be at risk from climatic warming and drying which may possibly cause mortality of mature plants and seedling recruitment as rain in these seasonally inundated river systems becomes less reliable.

Invasion by weeds may also be a threat to plants, particularly by riparian weeds such as *Solanum pseudocapsicum*. For some subpopulations, their small size and limited genetic diversity may also be a long-term threat.

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%

A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.

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.

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*]

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.

based on any of the following:

(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 Vulnerable

The population reduction over the past 60 to 120 years is estimated to be 20 to 40%, based on (b) and (c) above. The causes of reduction may not have ceased, be understood or be reversible.

Eligible under Criterion A4 as Vulnerable

The population reduction over any 60 to 120 year period, including both past and future (up to 100 years in the future), is estimated to be 20 to 40%, based on (b) and (c) 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 km²	< 5,000 km²	< 20,000 km²
B2. Area of occupancy (AOO)	< 10 km²	< 500 km²	< 2,000 km²
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 184 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

It is estimated to have 3 locations, with disjunct subpopulations in the Grampians, Lerderderg/Bacchus Marsh, and East Gippsland which may be variably affected by bushfire or stochastic events.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above based on the current and projected impact of the identified threats, such as climatic warming and drying and weed invasion.

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, however plant numbers in East Gippsland are far more abundant than isolated populations in western Victoria. Presumably, there are 1,000s to 10,000s of plants in Victoria, predominately in East Gippsland.

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 km2 or number of locations ≤ 5

Evidence:

Ineligible under Criterion D

There is insufficient evidence to determine the number of mature individuals and the taxon is not 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

VicFlora (2021). Flora of Victoria, Royal Botanic Gardens Victoria: *Westringia glabra.* Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/4de202f8-59bf-4675-80c4-bca8872ff549