

Dampiera purpurea Mountain Dampiera

Taxonomy

Dampiera purpurea R. Br.

Current conservation status

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

Proposed conservation status

Vulnerable in Victoria

Criterion D2

Species Information

Description and Life History

The taxon is an erect shrub to 1 m high; stems terete, ribbed, white- or golden-tomentose with branched hairs, or scabrous. Leaves sessile or shortly petiolate, obovate to elliptic, 9-60 mm long, 5-42 mm wide, upper surface glabrescent, often scabrous, lower surface grey- or golden-tomentose, margins entire or toothed. Inflorescence branches 3-5-flowered, (1-)2-9 together in upper axils, with golden branched hairs; peduncles 5-15 mm long; pedicels 1-3 mm long; bracteoles linear-oblong, 2-4 mm long. Sepals 0.2-0.5 mm long, obscured by hairs; corolla 12-15 mm long, purple or blue inside, grey- to black-tomentose outside, wings 1.5-2.5 mm wide. Fruit obovoid, 4-5 mm long, tomentose, ribbed. The taxon flowers mainly from September to December (VicFlora, 2018).

Generation Length

The generation length of *Dampiera purpurea* is suspected to be 50 years. A nominal generation time of 50 years is based on a plausible pre-settlement fire frequency of 45-75 years, and the inference that the taxon is likely to be a fire-sensitive obligate seed regenerator which recruits episodically post-fire from a persistent soil-stored seedbank with only a low level of continuous recruitment in response to localised site disturbance events. The longevity is estimated to be 30-50 years.

Distribution

The taxon has a disjunct distribution, with local concentrations in the Licola district in Central Gippsland, the Upper Snowy district in East Gippsland, and the Corryong, Walwa, and Mount Lawson districts in the far North East region.

Habitat

The taxon is confined to dry forests and scrubs, usually on rock outcrops or cliffs (VicFlora, 2018). On the summit of Mt Mittamatite, the taxon is recorded in open rocky Grass Dry Forest.

Threats

There has been some historic decline of the taxon in response to habitat loss to agriculture, though most occurrences are in remote sites unsuitable for agriculture. Repeat fire at intervals below the tolerable fire interval (TFI) for the taxon is a low risk since the dry and often rocky habitats are unlikely to accumulate sufficient fuel to carry fire at intervals approaching the TFI. The most plausible long-term threats include the increasing risk of adult

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mortality and recruitment failure in response to extreme drought events, although the taxon is observed to be quite drought tolerant under current climatic conditions.

The bushfires of 2019/2020 are believed to have impacted around 29% of the taxon's modelled habitat. The overall impacts of the fire are yet to be determined.

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:

Ineligible under Criterion A

The past population reduction does not meet the threshold for eligibility under criterion A2. There is insufficient evidence to determine whether will be a future reduction in population size (criterion A3).

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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:

Ineligible under Criterion B

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 17,913 km² and the Area of Occupancy (AoO) is estimated to be 82 km², based on accepted, post 1970 records from the Victorian Biodiversity Atlas, but other thresholds under this criterion have not been met.

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				

Evidence:

Ineligible under Criterion C as Data Deficient

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There is no available estimate of population size for the taxon in Victoria.

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:

Eligible under Criterion D2 as Vulnerable

The taxon is estimated to be very restricted. The taxon has a restricted distribution, occurring in 3 locations, such that this restriction makes the taxon capable of becoming Critically Endangered or Extinct within a time frame of one or two generations, in response to the identified threats, notably the increasing risk of adult mortality and recruitment failure in response to extreme drought events.

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.

VicFlora (2018) Flora of Victoria, Royal Botanic Gardens Victoria: *Dampiera purpurea*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/4ebe5acc-b7df-45bc-b49d-6d9a91541b51>