

Dryopoa dives subsp. B Grampians Mountain-grass

Taxonomy

Dryopoa dives subsp. B sensu Weiller (2009)

Current conservation status

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

Proposed conservation status

Vulnerable in Australia

Criterion D2

Species Information

Description and Life History

The taxon is an annual or short-lived, often slightly glaucous perennial, hardly tufted, culms erect, typically less than 1 m (rarely to 1.8) high, 3- or 4-noded. Leaves glabrous; blade flat to 50 cm long and 2 cm wide, lightly scabrous; ligule membranous, 8-20 mm long, indistinctly veined, often translucent. Inflorescence a broad open panicle, usually purplish, 15-50 cm long, the lower branches to 25 cm or more and often drooping. Spikelets 3-7-flowered, 7-10 mm long, wholly green or tinged purple; glumes 3-nerved, scabrous on the nerves, the lower 5-7 mm long, upper glume 6-8 mm long, smooth, or scabrous along keel only; lowest lemmas 6-7.2 mm long, smooth, firm-textured except for the thinly membranous apex; palea subequal to lemma. The taxon flowers from November to February (VicFlora 2015).

The taxon is apparently short-lived and rare in mature or undisturbed forests (VicFlora 2015).

Generation Length

The generation length of *Dryopoa dives* subsp. B is estimated to be 50 to 80 years. This is based on the likelihood that, like subsp. *dives*, the taxon recruits episodically post-fire at pre-settlement intervals of 50-80 years or more. This is supplemented by more continuous recruitment in response to localised disturbance events such as landslip, flood damage, tree uprooting or animal activity. The taxon is suspected to be less dependent on fire for recruitment than subspecies *dives*, which is an exemplary key fire response taxon.

Distribution

The taxon is known only from a few collections on the Mt William Range in the Grampians (VicFlora 2015). Specifically, the taxon has been collected or recorded near the summit of Mt William, on the Major Mitchell Plateau, on 2nd Wannan Creek 2.5 miles upstream from Grampians Road on the west side of the Mt William Range and at Mt Thackeray in the Victoria Range.

Habitat

The taxon is known only from a few collections amongst rocks and near watercourses on the Mt William Range in the Grampians (VicFlora 2015).

At 2nd Wannan Creek the taxon is associated with *Poa labillardieri*, *Goodenia ovata*, *Juncus pallidus* and *Lepyrodia flexuosa*. At Mt Thackeray the taxon is recorded at 940 m elevation in association with *Eucalyptus*

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victoriana, *E. baxteri* and *E. obliqua* with understorey dominants *Leptospermum turbinatum*, *Leucopogon neurophyllus* and *Acacia obliquinervia*. On the Major Mitchell Plateau the taxon is recorded at an elevation of 750 m in association with *Eucalyptus* aff. *serraensis* (Mt William), *Leucopogon neurophyllus*, *Boronia latipinna*, *Correa lawrenceana* var. *grampiana*, *Banksia saxicola*, *Leptospermum scoparium* and *L. turbinatum* (VicFlora 2015).

Threats

The taxon is threatened by climatic drying, which is projected to result in a progressive contraction in the extent and quality of its habitat. This is based on an inferred dependence on higher soil moisture, since the reported habitat range includes gully heads and watercourses at higher elevations, with the stronghold being the Major Mitchell Plateau and associated upper slopes.

Current and projected increases in fire frequency, intensity and landscape scale are not considered a threat to the taxon since any anthropogenic fire interval is likely to remain well above the tolerable fire interval (TFI) for the taxon. The TFI is likely to be in the 2-5 year range, with each successive fire-promoted cohort expected to successfully replenish the long-persistent soil-stored seedbank.

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>	<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>
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Evidence:

Ineligible under Criterion A

There is insufficient evidence to determine whether there has been or will be a reduction in population sufficient to meet any threshold for Criterion A.

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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 across the taxon's range is estimated to be 40 km² and the Area of Occupancy is estimated to be 16 km², 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 the total population size. It should be noted that the population size and density at any one site is likely to fluctuate between recruitment events, with successive cohorts detectable only at very irregular intervals.

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. It has an AoO of 16km² and one location, such that this restriction makes the taxon capable of becoming Critically Endangered or Extinct within a time frame of one or two generations, due to the identified threats, notably climatic drying.

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 (2015). Flora of Victoria, Royal Botanic Gardens Victoria: *Dryopoa dives* subsp. B. Retrieved from:

<https://vicflora.rbg.vic.gov.au/flora/taxon/7c879f87-7a11-44c6-9304-3c29df626547>