



Viola fuscoviolacea Dusky Violet

Taxonomy

Viola fuscoviolacea (L.G. Adams) T.A. James

Disjunct low-altitude populations in the South Gippsland - Gippsland Lakes area are in unusual habitats for the taxon, and may warrant taxonomic investigation (VicFlora 2015)

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)

Species Information

Description and Life History

The taxon is a stoloniferous perennial herb. Leaves tufted; lamina broadly ovate to ovate-rhombic, 5–7 mm long, 4–9 mm wide, base cuneate (or rarely almost truncate), tapering to petiole, apex obtuse, margins scalloped to coarsely toothed; petioles narrowly winged, 1–2.5 cm long; stipules free, linear-lanceolate, 1–5 mm long, lacinate. Flower-scapes 2–25 mm long, shorter than or just exceeding leaves, bracteoles below middle. Sepals lanceolate, 1.5–2 mm long, acute, basal appendages small; petals 2–3 mm long, blackish-violet (rarely paler), lower (anterior) petal obovate-elliptic, c. 2 mm wide, without spur; lateral petals entire, bearded. Capsule ovoid, 4–7 mm long. Flowers mostly December-January (September-November in lowlands) (VicFlora 2015).

Generation Length

The generation length of *Viola fuscoviolacea* is inferred to be 20 to 40 years. This is based on its assumed longevity, vegetative reproduction, and continuous recruitment by seed. Reproduction is both vegetative (where vegetative ramets are separated from the parent) and by seed.

Its fire response is unknown, but it is probably fire sensitive and recovers post-fire from a soil stored seedbank of unknown longevity. Its breeding system is undocumented, but it seems unlikely that it has cleistogamous (self-pollinating in bud) flowers, nor is it known whether it can be self-pollinating or self-fertile, or only outbreeding. Pollination is by insects, most likely by solitary bees, for an assumed nectar reward, and seeds are explosively dispersed from the capsules, not more than several metres. Whether or not secondary dispersal by ants occurs is unknown, however it is common in the genus.

Distribution

V. fuscoviolacea occurs in eastern Victoria in montane to alpine locations, and also in the lowlands east from Wilsons Promontory to the Gippsland Lakes area.

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Habitat

The taxon occurs on permanently moist peaty substrates around montane swamps and cold air drainage lines from c. 1,000 m above sea level, to treeless alpine herbfields and peatlands and high-rainfall subalpine Snow Gum woodlands.

The lowland populations in the South Gippsland - Gippsland Lakes area occur in *Lepidosperma longitudinale* sedge swamps and *Melaleuca ericifolia* scrub.

Threats

Threats to the taxon include climate change (decreased rainfall, increased evaporation, and extreme temperatures); drying of springs and soaks; increased frequency and intensity of fires; peat fires; environmental damage to hydrology, soils and vegetation; structural damage to plants by Sambar Deer (*Rusa unicolor*), feral cattle, and horses; and weed invasion.

The January 2003 bushfires were extreme in intensity and were extremely damaging to *V. fuscoviolacea* and its habitats, such as in the headwaters of Tambo River where one of the largest metapopulations of the taxon occurred (Carr and McMahon 2018; Carr *et al.* 1988)

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

The past population reduction does not meet the threshold for eligibility under criterion A2, and 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 B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 128 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the Victorian Biodiversity Atlas.

The taxon is inferred to be severely fragmented based on its limited dispersal ability, the barriers to dispersal, and/or the lack of habitat separating the subpopulations. Such fragmentation precludes the possibility of recolonisation in the event of local extinction.

It has a continuing decline in (i), (ii), (iii) and (iv) above based on the current and projected impact of the identified threats, such as climate change, drying of springs and soaks, increased frequency and intensity of fires, peat fires, environmental and structural damage, and weed invasion.

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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

There is insufficient evidence to determine the number of mature individuals.

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 estimated to be very restricted.

Criterion E (Quantitative Analysis) was not addressed as the taxon does not have a detailed Population Viability Analysis.

References

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