Threatened Species Assessment

Saxipoa saxicola
Rock Poa

Taxonomy

Saxipoa saxicola (R. Br.) Soreng, L.J. Gillespie & S.W.L.

Current conservation status

Listed as threatened under the *Flora and Fauna Guarantee Act 1988* as *Poa saxipoa* (SAC 1991).

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

Proposed conservation status

Endangered in Victoria

Criteria B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v); C2a(i)

Species Information

Description and Life History

Tufted or shortly rhizomatous, glabrous perennial, culms erect, to 60 cm high. Leaves rather stiff; blade flat or somewhat folded, becoming closely folded when dry, abruptly tapered to a bluntish apex, to 25 cm long and 5 mm wide (when flattened); ligule membranous, truncate but jagged, or pointed in the centre, 1-5 mm long. Inflorescence a narrow, contracted panicle with rather few, short, appressed branches, to 12 cm long and 2 cm wide (but commonly 5 cm × 1 cm). Spikelets plump, (2-)3(-4)-flowered, 4-7 mm long, often with purplish and straw-coloured bands; glumes 3-nerved or the lower sometimes 1-nerved, subequal 3-4 mm long, firm; lemma 5-nerved, 3-4 mm long, keeled but not strongly compressed, firm, ciliate along margins below midway, otherwise glabrous; web absent. Flowers Dec.-Feb.

Generation Length

The generation length of *Saxipoa saxicola* is estimated to be 3 to 15 years based on the credible frequency of suitable habitat being unsuitable, primarily through drought. It has a maximum longevity of potentially more than 15 years, but probably not as long-lived as the many more robust alpine Poaoids.

Distribution

The taxon occurs in the Victorian alps from the Cobberas to the Bogong High Plains. There is one record from near Mt Hotham and two isolated records from the Snowy Range, south of Mt Howitt.

Habitat

The taxon inhabits heathland/grassland communities, mostly above c. 1500 m (but as low as ca 1300 m at Bennisons Plain) and is usually associated with rocks. Sites tend to be on the damp end of the grassland/shrubland spectrum, and occasionally support closed heaths that include *Richea continentis*, but not sphagnum-dominated forms of these communities. On the Cobberas mountains, the taxon appears to occupy more exposed, elevated rocky sites. At Mt Hotham it was collected from the margin of a large snowpatch community (notes from MEL herbarium specimens and N. Walsh, pers. obs.).

Threats

Although associated with alpine communities that are likely to reduced and become drier because of climate change, the taxon is not restricted to wet sites and may have at least moderate capacity to persist under somewhat drier conditions. Most sites are above the altitudinal treeline or at least in treeless vegetation. Encroachment by trees into currently treeless areas would probably jeopardise some populations. Grazing, principally by horses, is an acting threat on the Bogong High Plains and Cobberas areas. The known Bennisons Plain site (a small population, N. Walsh, pers. obs.) is probably on private land, subject to summer grazing by cattle.

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:

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 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 B1 as Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 4,650 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

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

It is estimated to have 1 location. It has a continuing decline in (i), (ii), (iii), (iv) and (v) above, due to loss of habitat through climate change, and/or herbivory by grazing animals

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 72 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, the taxon is projected to be severely fragmented, is projected to have 1 location and has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

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:

Eligible under Criterion C2 as Endangered

It is estimated that there are 650 to 2,000 mature individuals. About 15 sites are supported by Herbarium vouchers. Of these, three have estimates of local population sizes (ca, 50, 30, 10 plants). On the assumption that it is not a common or locally dominant taxon anywhere and extrapolating such that known sites represent one-third of existing sites, an estimate of 45 sites x 30 plants per site appears plausible (1350 in all)/. A buffer of about 50% above and below establishes limits of population estimate.

The number of mature individuals is projected to continue to decline, and the number of mature individuals in each subpopulation is fewer than 250.

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:

Eligible under criterion D 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

DEPI (2014). *Advisory list of rare or threatened plants in Victoria - 2014*. Department of Environment and Primary Industries, Melbourne.

SAC (1991). Flora and Fauna Guarantee Scientific Advisory Committee: Final Recommendation on a Nomination for Listing. Nomination No. 177 *Poa saxipoa*

VicFlora (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Saxipoa saxicola.* Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/292689fa-f0d5-4d85-a0a5-e5f8d407840e