Threatened Species Assessment

Parantennaria uniceps
Parantennaria

Taxonomy

Parantennaria uniceps (F. Muell.) Beauverd

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

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

Species Information

Description and Life History

Leaves are sessile, linear, mostly 5-12 mm long, 0.5-2 mm wide, rigid, glabrous, apex acute, mucronate, base scarious and stem-clasping, concave above. Capitula 4-6 mm diam., females more slender than males and finally pedunculate; involucral bracts lanceolate to oblong-elliptic, 3-5 mm long, obtuse or acute, brown or purplish. Florets purple, about as long as bracts; corolla c. 4 mm long. Cypselas 0.5-1 mm long; pappus 3-4 mm long. Flowers December-February (VicFlora 2017).

Generation Length

The generation length of *Parantennaria uniceps* is suspected to be 100 to 200 years. This plant is a prostrate creeping herb of short alpine herbfield vegetation, which roots at the nodes and forms localised patches by vegetative growth. It is assumed to be long lived, with a very slow generational turnover. The very small number of genets and very much higher number of ramets support this proposition. A generational turnover of 100-200 years is suggested as functional in the absence of any more definitive information.

Distribution

The taxon is extremely rare in Victoria, where it is apparently confined to the Bogong High Plains (VicFlora 2017).

Habitat

The taxon is found in moist low alpine herbfield (VicFlora 2017).

Threats

Threats to the taxon include the effects of climate change such as decreased rainfall, decreased snowfall, and drying of springs and soaks, post-fire soil erosion and silt deposition, trampling by humans, and soil disturbance and pugging by feral animals, notably deer, horses, and previously cattle. It is also vulnerable due to its extreme localisation within a very restricted geographical area and presumed small number of actual genets. The total area occupied by the taxon appears to be at most a few hectares. While hares have been noted are present at a site, their apparent level of impact was not clarified.

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 A3 as Endangered

The population reduction over the next 100 years is suspected to be 20 to 50%, based on (b), (c) and (e) above.

While substantial future declines (to possible local extinction) are anticipated, the extent of this over the relevant period is purely conjectural.

Eligible under Criterion A4 as Vulnerable

The population reduction over any 300 to 600 year period, including both past and future (up to 100 years in the future), is estimated to be 20 to 40%, based on (a), (b), (c) and (e) above.

Past VROTPop counts suggest a true decline at all monitored sites, despite the lack of reliable information for past reductions because there have been no dedicated surveys for this taxon.

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 B1 as Critically Endangered

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 8 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

It is estimated to have 1 location as all key identified threats apply across its range and can rapidly affect all individuals of the taxon present.

It has a continuing decline in (i), (ii), (iii) and (v) above based on the impacts of the identified threats, such as the effects of climate change, and trampling and disturbance by humans and feral animals.

Eligible under Criterion B2 as Critically Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 8 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon has 1 location and has a continuing decline in (i), (ii), (iii) 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:

Ineligible under Criterion C as Data Deficient

There is insufficient evidence to determine the number of mature individuals. Past counts at sites associated with the heads of Middle Creek have been based on vegetative tufts, which can measure up to a thousand or more in very small areas. The number of actual genets involved is much smaller: Neville Walsh suggested a population of possibly around 50 plants, and confidently less 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 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

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 (2017). Flora of Victoria, Royal Botanic Gardens Victoria: *Parantennaria uniceps*. Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/99ee1b51-c1a8-4648-bf59-6d6d0dbf85b2