Threatened Species Assessment

Gingidia harveyana
Slender Gingidia

Taxonomy

Gingidia harveyana (F. Muell.) J.W. Dawson

Current conservation status

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

Proposed conservation status

Endangered in Victoria

Criterion B2ab(i,ii,iii,iv,v)

Species Information

Description and Life History

The taxon is an erect herb to 50 cm high. Leaf-lamina to 18 cm long; leaflets (5-)9-13, lowermost dissected, segments linear or linear-lanceolate, 1.5-5 cm long, 1.5-5 mm wide, acute, margins entire; petiole to 20 cm long. Umbels with 5-10 very unequal rays to 8.5 cm long; peduncles to 26(-40) cm long; pedicels unequal, 5-22 mm long in fruit; bracts subulate, 6-15 mm long; bracteoles linear-subulate, 1.5-2.5 mm long. Petals white, c. 0.6 mm long. Fruit 6-9 mm long, ribs more or less equal. The taxon flowers from November to January (VicFlora 2019).

Generation Length

The generation length of *Gingidia harveyana* is estimated to be 10 to 20 years. *Gingidia* is a taprooted herb, and other well-known taprooted herbs such as *Taraxacum* are known to live between 10 and 20 years.

Distribution

In Victoria, the taxon is confined to subalpine areas from Mt Blue Range, Dargo High Plains, and Bogong High Plains east to the Nunniong Plateau, and the NSW border from the Cobberas and Davies Plain south-east to Little Bog Creek near Bendoc. The taxon also occurs in New South Wales and the Australian Capital Territory (VicFlora 2019).

Habitat

The taxon is confined to subalpine grasslands and grassy woodlands near streams and bogs (VicFlora 2019).

Threats

Like other alpine members of the Apiaceae, the taxon is palatable and selectively browsed by introduced herbivores such as cattle, feral horses, Sambar Deer (*Rusa unicolor*), and hares. As a result, browsing, particularly by feral horses, is now a major threat.

As with many other alpine taxa, the effects of climate change such as increased fire frequency, prolonged drought, and warmer temperatures are threats to the taxon, as well as repeat fires, the risk of fires in peaty soils, and post-fire impacts. The taxon is also threatened by weed invasion, largely as a consequence of alpine grazing, and shrub invasion, largely as a consequence of climatic drying and increasing fire risk.

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

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.

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 Vulnerable

The Extent of Occurrence (EoO) across the taxon's range is estimated to be 5,306 km^2, based on accepted, post-1970 records in the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to have 1 location, as all sites of occurrence are in high altitude areas subject to the same threats. Consequently, all individuals can be rapidly affected by these threats in a short period of time.

It has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the impacts of the identified threats, notably the effects of climate change, and increased grazing pressure applied by introduced herbivores.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 135 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), (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 C as Vulnerable

It is estimated that there are 1,200 to 3,000 mature individuals. This is based on reported counts of 10, 75, 100, 200, and 500 individuals. Using these numbers, and an assumption that the average subpopulation comprises of between 20 and 100 mature plants for the remaining 18 to 20 subpopulations, an estimate of between 1,200 and 3,000 mature individuals is given.

There is estimated to be a continuing decline, and the number of mature individuals in each subpopulation is less than 1,000.

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.

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Gingidia harveyana.* Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/9390c917-85f2-4227-a660-3122deafe173