Threatened Species Assessment

Ozothamnus alpinus
Alpine Everlasting

Taxonomy

Ozothamnus alpinus Anderb.

Current conservation status

Categorised as Rare 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)

Species Information

Description and Life History

The taxon is a compact shrub to 1(-1.5) m high; branchlets densely cottony, viscid. Leaves spreading, narrow elliptic, 4-10(-13) mm long, 2-3 mm wide, glabrous or glabrescent above, densely cottony and yellow-resinous beneath, apex obtuse, margins recurved; petioles 1-2 mm long. Inflorescences hemispherical, 18-24 mm diam. Capitula 25-60, dull-yellow to magenta (particularly in bud), cylindric, 5-6.5 mm long, 1.5-2 mm wide; involucral bracts 15-19, innermost spathulate, with lamina elliptic, 1.5-2.5 mm long, spreading, flat, white, margin entire; receptacle bracts 0-3; female florets absent; hermaphrodite florets 3-6. Cypsela cylindric, 1-1.5 mm long, densely papillose; pappus bristles 3.5-4 mm long, apex tapering. Flowers February-March (VicFlora 2019). Like most *Asteracea,* the taxon is likely to be pollinated by insects (Hingston and McQuillan 2000).

Generation Length

The generation length of *Ozothamnus alpinus* is estimated to be 30 to 50 years. DELWP's Vital Attribute database suggests that the taxon is able to regenerate by seed or resprout following fire, but is intolerant of establishment in mature vegetation. It requires five years to reach reproductive maturity, lives for up to 50 years, and has seeds that survive 50+ years in the soil. Fires are rare in the alps, occurring perhaps once or twice a century, and the flush of plants after fire should live to old age in undisturbed vegetation. Therefore, the average plant age is likely to be at the older end of the range.

Distribution

The taxon is recorded from Mts Wellington, Feathertop, and Hotham, and the Bogong High Plains (VicFlora 2019).

Habitat

The taxon is generally confined to margins of wet alpine heathland and shrubland (VicFlora 2019), and can be an important component of wet heathland (Wahren et al 1999).

Threats

Subpopulations and habitat of the taxon are considered at risk from disturbance, weed invasion, increasingly dry conditions from declining rainfall, and the consequent increase in severity and intensity of bushfires. Edge-of-bog habitat may be disturbed by feral horses and deer across its major location, and many occurrences are within ski resorts where they may be subject to habitat degradation.

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 A2 as Vulnerable

The population reduction over the past 90 to 150 years is estimated to be 10 to 40%, based on (c) and (e) above.

The causes of reduction may not have ceased, be understood or be reversible.

Eligible under Criterion A3 as Vulnerable

The population reduction over the next 90 to 100 years is projected to be 10 to 30%, based on (c) and (e) above.

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 1,980 km², based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

The taxon is estimated to be severely fragmented considering its limited dispersal ability and the lack of habitat separating individuals.

It is estimated to have 2 locations, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above based on the impacts of the identified threats, such as disturbance, weed invasion, increasingly dry conditions from declining rainfall, and an increase in the severity and intensity of bushfires.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 192 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA.

As above, the taxon is severely fragmented, has 2 locations, 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:

Ineligible under Criterion C

It is estimated that there are 6,000 to 20,000 mature individuals, but other thresholds under this criterion have not been met.

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. 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

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