Threatened Species Assessment

Ammobium alatum
Winged Everlasting

Taxonomy

Ammobium alatum R. Br.

Current conservation status

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

Proposed conservation status

Critically Endangered in Victoria

Criterion B1ab(ii,iii,v)c(iv)

Species Information

Description and Life History

The taxon is a perennial or facultative annual, erect, white-woolly herb 60-100 cm high; stems usually much branched, prominently winged. Basal leaves petiolate, narrow-lanceolate to spathulate, 10-30 cm long, 5-15 mm wide, acute to acuminate, base attenuate and sometimes more or less hastate; cauline leaves few, bract-like, 2-8 cm long, sessile. Capitula 10-20 mm diam.; involucral bracts 5-10 mm long, white, margins irregular, usually longer than florets; receptacle scales oblong to oblanceolate, herbaceous initially, becoming hardened and rigid, blackish-brown, with an irregular truncate apex and prominent mucro. Florets bright yellow; corolla c. 5 mm long. Cypselas linear, 2.5-4 mm long, rugose, dark brown; cup of pappus c. 0.5 mm long, awns to 1 mm long. The taxon flowers mainly from November to April (VicFlora 2019).

Generation Length

The generation length of *Ammobium alatum* is estimated to be 2 to 10 years. The taxon is a perennial or facultative annual. The populations probably arise stochastically in response to dispersal events, such as floods or recruitment opportunities.

Distribution

In Victoria, the taxon is confined to East Gippsland where it is uncommon along the Snowy River, and a historic collection from 'Genoa'. It unclear whether 'Genoa' refers to the township in Victoria, or Genoa River in which case the location could be in NSW of Victoria.

The taxon is known from three collections held at MEL: an 1887 Bauerlen specimen from the 'Genoa', 1973 Willis collection from Willis near the NSW border, and a 1980 James Turner collection from the Snowy River ca 100 m downstream from end of New Guinea jeep track. Outside Victoria, the taxon is indigenous in Queensland, native and naturalised in NSW, and naturalised in SA and Tas. There is a possibility that the plants in Victoria are not native.

According to McDougall (2004), outside Victoria the taxon appears to be an itinerant, and weedy in much of its range. McDougall (2004) commented that it is difficult to determine the exact natural range of the taxon, at least in south-east NSW. McDougall (2004) also commented that although riparian populations, such as the Snowy River population, may be within natural vegetation, their vegetation is often the product of flood events that carry seed downstream from disturbed areas. McDougall (2004) also commented that it is therefore tempting to postulate that

the Victorian (Snowy River) populations were derived from roadside populations of uncertain origin status upstream at Jindabyne.

Habitat

In Victoria, the taxon it occurs along the sandy or gravelly banks of the Genoa and Snowy Rivers. In NSW, it grows in grassland and woodland, sometimes covering extensive areas, common on roadsides; widespread, north from Jindabyne area. In south-east NSW at least, the taxon seems to occur solely on disturbed roadsides. In northern NSW, it has been recorded in forests of various Eucalyptus species (*E. caliginosa, E. dalrympleana, E. laevopinea, E. nobilis, E. obliqua, E. pauciiflora, E. viminalis*) on plateau and rocky cliffs (McDougall 2004).

Threats

The site was revisited in the late 1990s by the most recent collector of the taxon, and the whole area was found to be an impenetrable mat of blackberries 2 m high. The area is also heavily grazed by feral animals, and a large bushfire also passed through that area in 2014 (James Turner pers. comm. 20 Feb 2019). The collector had also visited the other side of the river several times since 1980 but did not see any individuals of *A. alatum*.

The taxon is potentially threatened by climatic warming and drying which might result in drying of the rivers, and increasing the risk of recruitment failure in response to extreme drought stress.

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 6 to 30 years is suspected to be 30%, based on (b), (c) and (e) above.

There is no reliable information for past reduction because there have been no dedicated surveys for this taxon. The most recent visits to the area was in the 1990s by the original collector, and it was found that blackberries have infested extensive areas. This has likely resulted in the decline in the extent and quality of the habitat, and, by implication, a decline in the population size, although this is difficult to substantiate.

Eligible under Criterion A4 as Vulnerable

The population reduction over any 6 to 30 year period, including both past and future, is estimated to be 10 to 30%, based on (b), (c) and (e) above.

No population information for this taxon as there have been no dedicated surveys for this taxon. However, given that the area has increasingly been invaded by blackberries, and that grazing by feral animals has increased, it likely that the extent and quality of the habitat will continue to decline.

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

It is inferred to have 1 location. It has a continuing decline in (ii), (iii) and (v), based on the current and projected impact of the identified threats, including weed invasion (i.e. blackberries), grazing by feral animals and, possibly, an increasingly drying and warming climate.

It has extreme fluctuations in (iv) above. The populations probably arise stochastically in response to dispersal events, such as floods or recruitment opportunities. The fluctuations in the number of mature individuals are likely to approach a ten-fold magnitude.

Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 12 km², based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, the taxon has 1 location, a continuing decline in (ii), (iii) and (v), and extreme fluctuations in (iv).

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. Collectors' field observations make no statement of population size but the population size unlikely to have exceeded 250 plants.

It is worth noting that the taxon is distinct enough to have been noted during incidental surveys or incidental observations, and therefore an absence of recent collections might reflect an absence or decline in the population size.

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:

Ineligible under Criterion D as Data Deficient

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

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.

McDougall, K. (2004). Winged Everlasting, *Ammobium alatum* - threatened species, weed or itinerant? *The Victorian Naturalist, 121*(6), 284-288.

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Ammobium alatum.* Retrieved from: https://vicflora.rbg.vic.gov.au/flora/taxon/5dee2ae7-741d-483b-99f1-ce31cb4315f2