



## *Olearia brevipedunculata* Rusty Daisy-bush

### Taxonomy

*Olearia brevipedunculata* N.G. Walsh

Many records of *O. phlogopappa* are misapplied to this taxon in Victoria from Snowy Range, Mt Howitt, and Mt Buller. The illegitimate name *O. phlogopappa* var. *subprepanda* (DC.) Willis has previously been misapplied to this taxon in mainland Australia (Walsh, 2004).

*O. brevipedunculata* is distinguished from *O. phlogopappa* by its short peduncles and more or less concolorous leaves that retain a moderate cover of stellate hairs on the upper surface (VicFlora 2016).

### 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 A3ce+4ce; B1ab(i,ii,iii,iv,v)+2ab(i,ii,iii,iv,v)

### Species Information

#### Description and Life History

The taxon is a shrub to c. 1 m high; branchlets whitish-grey, with dense, minute, stellate hairs. Leaves alternate, sessile to subsessile, elliptic, oblong or obovate, 5-16.5 mm long, 2-6.5 mm wide; upper surface greyish, with mid-dense stellate hairs; lower surface whitish-grey, rarely yellowish when young, densely stellate-hairy; venation largely obscured by hair; margin entire to irregularly and shallowly crenate. Capitula 15-22 mm diam., solitary and terminal, sessile or on short peduncles not exceeding the subtending leaves at anthesis but sometimes elongating to 15 mm long in fruit; involucre ± hemispherical, 4-7 mm long; bracts 3-4-seriate, graduating, pubescent. Ray florets 12-22, white, ligules 5-10 mm long; disc florets 14-30, yellow, glabrous or with a few short papillae at the tips of the lobes. Cypselae flattened-cylindric, obscurely 6-ribbed, 2-3 mm long, sericeous, sometimes glandular; pappus bristles 4-6 mm long. The taxon flowers from December to January (VicFlora 2016).

#### Generation Length

The generation length of *Olearia brevipedunculata* is estimated to be 15 to 40 years. This is based on the observation and monitoring of populations of taxa with similar life forms, which suggests that recruitment can take many decades, and that individual plants may be very long-lived, possibly even several decades.

#### Distribution

The taxon is occasional in the Bogong High Plains and adjacent alpine areas, usually above the treeline. There is also an isolated record from Mount Buffalo and near Mt Kent, and there were some old records from Mt Hotham, but the taxon is apparently now locally extinct there. The taxon also occurs in New South Wales (VicFlora 2016).

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### Habitat

The taxon occurs in shrubland and heathland, as well as in alpine areas in open heath and on the margins of grassland, often near rocky sites or the edges of treelines (VicFlora 2016). It is generally associated with reasonably damp areas.

### Threats

The taxon is threatened by changes in hydrology and by drying of habitat. The drying of mountain tops and reduction in snow cover will make conditions in this habitat much harsher and is likely to cause mortality. Grazing by cattle at Mt Hotham has apparently caused the taxon to become locally extinct there, presumably due to trampling and erosion, and the expansion of deer into alpine areas is likely to have similar effects that cattle once had. Many plants occur in a ski resort, therefore there is a risk of poor management of the taxon, and increased infrastructure for skiing.

### 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%

  

<p>A1 Population reduction observed, estimated, inferred or suspected in the past and the causes of the reduction are clearly reversible AND understood AND ceased.</p> <p>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.</p> <p>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]</p> <p>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.</p>	<p>based on any of the following:</p>	<p>(a) direct observation [except A3]</p> <p>(b) an index of abundance appropriate to the taxon</p> <p>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</p> <p>(d) actual or potential levels of exploitation</p> <p>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</p>
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### Evidence:

#### Eligible under Criterion A3 as Endangered

The population reduction over the next 45 to 100 years is projected to be 30 to 50%, based on (c) and (e) above. Future decline is based on the projected impact of the identified threats.

#### Eligible under Criterion A4 as Endangered

The population reduction over any 45 to 120 year period, including both past and future (up to 100 years in the future), is projected to be 30 to 60%, based on (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

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Past decline is based on the historic impact of cattle grazing, and ski-field infrastructure development and maintenance.

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 km <sup>2</sup>	< 5,000 km <sup>2</sup>	< 20,000 km <sup>2</sup>
B2. Area of occupancy (AOO)	< 10 km <sup>2</sup>	< 500 km <sup>2</sup>	< 2,000 km <sup>2</sup>
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 450 km<sup>2</sup>, 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, the barriers to dispersal, and the lack of habitat separating subpopulations.

It is estimated to have 4 locations, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above, based on the current and projected impact of the identified threats.

#### Eligible under Criterion B2 as Endangered

The Area of Occupancy (AoO) across the taxon's range is estimated to be 104 km<sup>2</sup>, based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, the taxon is severely fragmented, has 4 locations, and has a continuing decline in (i), (ii), (iii), (iv) and (v) above.

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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 inferred that there are 1,000 to 40,000 mature individuals, but this qualifier is too weak and 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 km <sup>2</sup> 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.

Messina, A., Walsh, N. G., Hoebee, S. E., and Green, P.T. (2014). A revision of *Olearia* section *Asterotriche* (Asteraceae: Astereae). *Australian Systematic Botany*, 27, 199-240.

VicFlora (2016). Flora of Victoria, Royal Botanic Gardens Victoria: *Olearia brevipedunculata*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/9030074a-11cd-4aaf-87d6-05664f488e4e>