



## *Leucopogon pilifer* Thready Beard-heath

### Taxonomy

*Leucopogon pilifer* N.A. Wakef.

### 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(ii,iii,iv,v)+2ab(ii,iii,iv,v)

### Species Information

#### Description and Life History

The taxon is a procumbent shrub with branches to c. 30 cm long; branchlets pubescent, soon becoming glabrous. Leaves erect to weakly reflexed, oblong to lanceolate, 3-7 mm long, 0.7-1.3 mm wide, slightly convex, ± concolorous, surfaces glabrous, lower surface indistinctly 3-5-veined, margins long-ciliate (becoming glabrous with age); apex acute, straight. Flowers white, crowded, 4-9 in terminal or upper-axillary spikes 3-6 mm long; bracteoles ovate, 0.9-1.2 mm long, acute, glabrous; sepals ovate, c. 1.5 mm long, acute, glabrous; corolla c. 2 mm long, lobes nearly twice as long as tube, acute, spreading, densely bearded within; anthers with very short sterile tips; ovary 3-locular, glabrous, style c. 0.2 mm long. Fruit ellipsoid, 1.5-2 mm long. The taxon flowers from October to February (VicFlora 2019).

#### Generation Length

The generation length of *Leucopogon pilifer* is estimated to be 25 to 75 (midpoint 50) years. This is based on the ability of the taxon to resprout, an extended pre-settlement fire interval, and the likelihood that recruitment occurs both episodically post-fire and sometimes sporadically in response to localised site disturbance events.

#### Distribution

#### Habitat

The taxon is confined to moist, boggy, grassland and heathland sites (VicFlora 2019).

#### Threats

The taxon is a habitat specialist, threatened by climatic drying, warming, and the increasing risk of repeat fire events due to climate change. The taxon may be threatened by pugging of habitat by livestock and Sambar Deer (*Rusa unicolor*) and, potentially, by feral pigs.

The bushfires of 2019/2020 are believed to have affected around 16% of the taxon's modelled habitat, but the overall effects of the fires are yet to be determined.

### IUCN Criteria

| Criterion A. Population size reduction.<br>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><i>based on any of the following:</i></p> <ul style="list-style-type: none"> <li>(a) direct observation [except A3]</li> <li>(b) an index of abundance appropriate to the taxon</li> <li>(c) a decline in area of occupancy, extent of occurrence and/or quality of habitat</li> <li>(d) actual or potential levels of exploitation</li> <li>(e) the effects of introduced taxa, hybridization, pathogens, pollutants, competitors or parasites</li> </ul>  |                       |            |            |

### Evidence:

#### Eligible under Criterion A3 as Endangered

The population reduction over the next 75 to 100 years is projected to be 30 to 50%, based on (c) and (e) above. Future decline is based on the effects of the identified threats.

#### Eligible under Criterion A4 as Endangered

The population reduction over any 75 to 225 year period, including both past and future (up to 100 years in the future), is estimated to be 35 to 65 (midpoint 50)%, based on (c) and (e) above. The causes of reduction may not have ceased, be understood or be reversible.

Past decline and future decline are based on the effects of the identified threats.

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| Criterion B. Geographic range in the form of either B1 (extent of occurrence) and/or B2 (area of occupancy)   |  |                          |                          |
|---|--|--------------------------|--------------------------|
|   | Critically Endangered<br>Very restricted | Endangered<br>Restricted | Vulnerable<br>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 3,022 km<sup>2</sup>, based on accepted, post-1970 records from the Victorian Biodiversity Atlas (VBA).

Considering the limited dispersal ability of the taxon, the barriers to dispersal, or lack of habitat separating them, the subpopulations can be considered to be severely fragmented.

It is estimated to have two locations. It has a continuing decline in (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 84 km<sup>2</sup>, based on 2 x 2 km grids derived from accepted, post-1970 records in the VBA. As above, it is severely fragmented, has two locations and has a continuing decline in (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 as Data Deficient

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

| Criterion D. Very small or restricted populations  |  |                       |            |  |
|--|--|-----------------------|------------|--|
|  |  | Critically Endangered | Endangered | Vulnerable   |
| Number of mature individuals (observed or estimated)   |  | < 50                  | < 250      | < 1,000  |
| D2. Only applies to the VU category<br>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:<br>AoO < 20 km <sup>2</sup> or<br>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.

VicFlora (2019). Flora of Victoria, Royal Botanic Gardens Victoria: *Leucopogon pilifer*. Retrieved from: <https://vicflora.rbg.vic.gov.au/flora/taxon/73e9a809-3f3d-4ac8-bc0b-a4af14aa10a2>



«*SCIENTIFIC\_NAME*»  
«COMMON\_NAME»