Veronica ciliolata subsp. *fiordensis*

ben lomond cushionplant

TASMANIAN THREATENED FLORA LISTING STATEMENT

All images by Richard Schahinger

Scientific name: ***Veronica ciliolata*** subsp. **fiordensis** (Ashwin) Meudt, *Austral. Syst. Bot.* 21: 413 (2008)

Family: Scrophulariaceae

Common Name: ben lomond cushionplant (Wapstra et al. 2005)

Name history: *Chionohebe ciliolata, Pygmea ciliolata*

Status: *Threatened Species Protection Act 1995*: **vulnerable**

Environment Protection and Biodiversity Conservation Act 1999: **Vulnerable**

Distribution: Endemic status: **Within Australia, occurs only in Tasmania**

Tasmanian NRM Region: **North**

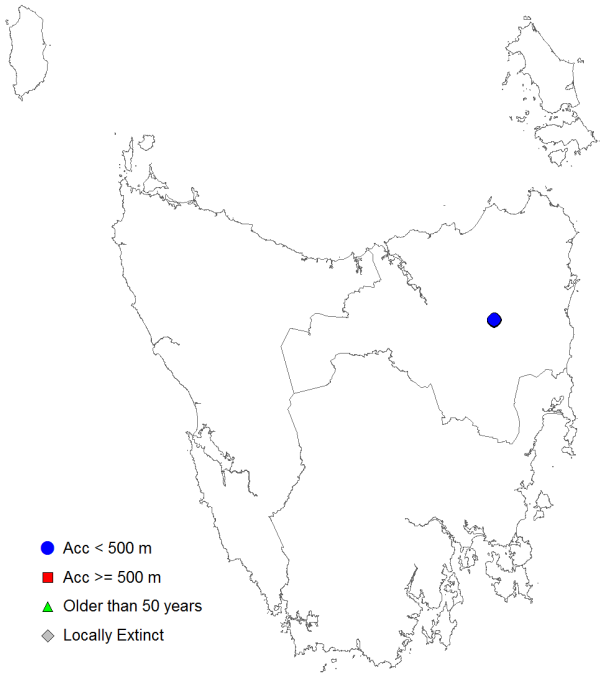

Figure 1. Distribution of *Veronica ciliolata* subsp. *fiordensis* in Tasmania, showing Natural Resource Management regions

Plate 1. *Veronica ciliolata* subsp. *fiordensis* showing cushion habit

SUMMARY: *Veronica ciliolata* subsp. *fiordensis* is a cushion-forming plant in the Scrophulariaceae family. It is known from a single location in Tasmania, Hamilton Crags in Ben Lomond National Park, where it extends over about 800 m. The species occurs exclusively on Jurassic dolerite, at altitudes between 1470 and 1530 metres above sea level. The total population is estimated to be in the order of several thousand plants. The species' localised alpine character puts it at some risk from climate change and chance events. Monitoring of known sites is required to inform management, and further survey is also required.

IDENTIFICATION AND ECOLOGY

Veronica ciliolata subsp. *fiordensis* is a cushion-forming plant in the Scrophulariaceae family. Flowering occurs from December to February. Wagstaff and Garnock-Jones (2000) note that related species are obligate out-crossers with dioecious flowers, and pollination via insects.

Description

Veronica ciliolata subsp. *fiordensis* forms dense, compact cushions up to 40 to 50 cm in diameter, with small white flowers set amongst its light green foliage. The cushions are usually tightly compacted and rather rigid, 2 to 4 cm high. Its leaves are stiffly imbricate, 2.5 to 4 mm long by 1.5 to 2 mm wide, narrow-ovate to ovate-spathulate, subacute to acute, ciliate (hairy) more or less to their base, though often few and appressed near the tip except for a prominent apical tuft. The calyx is 3 to 4 mm long and divided two-thirds the way or more into 5 to 6 linear lobes, the lobes being hairy for most of their length on their outer surface as well as the margins. The corolla is white, 6 to 7 mm long, the tube longer than the calyx, with 5 obtuse lobes. Capsules are about 2 by 2 mm, glabrous or hairy at apex.

[Description adapted from Allan (1982) and Davies & Davies (1989).]

Confusing Species

Veronica ciliolata subsp. *fiordensis* is the only native Tasmanian species from the Scrophulariaceae family to adopt a cushion-like habit. The species' floral and leaf features readily distinguish it from the two other cushion plants likely to be encountered on the Ben Lomond plateau, *Abrotanella forsteroides* and *Pterygopappus lawrencei* from the Asteraceae family (Curtis 1963; Davies & Davies 1989; Kirkpatrick 1997). The leaves of *Abrotanella forsteroides* are narrow and dark green, and the tip of the leaves extend into a single hair, while the leaves of *Pterygopappus lawrencei* are shaggy-haired. Habitat can also be a useful guide. *Veronica ciliolata* subsp. *fiordensis* prefers well-drained conditions, whereas the other two species grow in poorly drained areas.

Plate 2. *Veronica ciliolata* subsp. *fiordensis*: foliage

DISTRIBUTION AND HABITAT

Veronica ciliolata subsp. *fiordensis* is known from New Zealand and Tasmania. In Tasmania, the only known locality for this species is at Hamilton Crags on Ben Lomond (Figure 1). The total area of occupancy is 3 to 4 hectares, with an extent of occurrence of 0.18 km^2 and a linear range of 800 m.

Veronica ciliolata subsp. *fiordensis* occurs within low open alpine shrubland at altitudes of 1470–1530 m above sea level. The species grows on skeletal soils derived from Jurassic dolerite, or in rock crevices and between boulders where no obvious soil exists (Davies & Davies 1989; Kirkpatrick 1997).

Table 1. Population summary for *Veronica ciliolata* subsp. *fiordensis* in Tasmania

	Subpopulation	Tenure	NRM Region *	1:25000 mapsheet	Year last (first) seen	Area occupied (ha)	Number of mature plants
1	Hamilton Crags	Ben Lomond National Park	North	Giblin	2016 (1973)	3 to 4	c. 5,000

* NRM region = Natural Resource Management region

Plate 3. *Veronica ciliolata* subsp. *fiordensis*: habitat at Hamilton Crags

Associated species include the grasses *Poa costiniana* and *Deyeuxia monticola*, and the herbs *Ewartia catipes* (Davies & Davies 1989). Plants observed growing within *Veronica ciliolata* subsp. *fiordensis* cushions include *Chionogentias* sp., *Gaultheria depressa*, *Oreomyrrhis* sp., the fern ally *Lycopodium fastigiatum,* and grasses.

POPULATION PARAMETERS

Within Tasmania, the total population size is estimated to be about 5,000 mature individuals.

The presence of *Veronica ciliolata* subsp. *fiordensis* in Tasmania was first noted in the early 1970s on the Ben Lomond plateau (Ratkowsky & Ratkowsky 1974). The Ben Lomond plateau and other alpine areas in northeastern Tasmania have been subject to intensive botanical surveys in the period since (Davies & Davies 1989; Davies & Davies 1990), with targeted surveys for *Veronica ciliolata* subsp. *fiordensis* in 2005 and 2016 (unpublished data held by the Threatened Species Section, DPIPWE, Hobart). Given the level of past survey efforts, the likelihood of *Veronica ciliolata* subsp. *fiordensis* populations being discovered outside its currently known extent of occurrence is considered to be low.

RESERVATION STATUS

The known *Veronica ciliolata* subsp. *fiordensis* population in Tasmania occurs within Ben Lomond National Park.

CONSERVATION ASSESSMENT

Listed as rare on the original schedules of the Tasmanian *Threatened Species Protection Act 1995* under the name *Chionohebe ciliolata;* uplisted to vulnerable in 2008 as part of the Act's five-year review, satisfying criterion D2:

'Its geographic distribution is precarious for the survival of the species and is limited'.

THREATS AND LIMITING FACTORS

Threats include inappropriate development of the Ben Lomond plateau, climate change and stochastic events.

Development proposals: Ben Lomond National Park is recognised as being an invaluable reserve for the conservation of alpine flora communities, but it is also the main focus of downhill skiing in Tasmania (Parks & Wildlife Service 1998). The species grows on a rocky ridge 200 to 300 m east of a designated skifield development area zone. Expansions to the ski-field area at Ben Lomond and associated slope-grooming pose a potential threat to the species, albeit one unlikely to be realised given the prediction of less snow in future. The development of mountain bike trails at Hamilton Crags has been mooted, which if realised has the potential to have a local impact on the species.

Climate change: The trend towards a warmer climate may adversely affect *Veronica ciliolata* subsp. *fiordensis*, with the eventual contraction of its alpine habitat.

Stochastic events: The limited extent of *Veronica ciliolata* subsp. *fiordensis* makes the species particularly susceptible to losses from stochastic events such as drought and pathogens.

MANAGEMENT STRATEGY

The main objective for recovery of *Veronica ciliolata* subsp. *fiordensis* is to ensure that there is no decline in the only known population.

What has been done?

- Areas known to support *Veronica ciliolata* subsp. *fiordensis* have been included in the 'natural zone' managed by the Tasmanian Parks & Wildlife Service (PWS). It is PWS policy to limit facilities in the 'natural zone' above 1240 m elevation to signs and marked walking tracks or cross-country skiing routes (Parks & Wildlife Service 1998).
- Survey work targeting *Veronica ciliolata* subsp. *fiordensis* was conducted in December 2005 and January 2016, with several monitoring transects set up during the latter period.
- Seed has been collected for long-term conservation storage at the Tasmanian Seed Conservation Centre, part of the Royal Tasmanian Botanical Gardens, Hobart (Wood 2014).

What is needed?

Agencies, groups or individuals may assist with some or all of the following recovery actions. Coordinated efforts may achieve the best and most efficient results.

- measures to prevent damage from recreational activities on the Ben Lomond plateau, including walking, mountain biking and ski tracks;
- formal monitoring to determine population trends, the species' life history attributes, and the impact of climate change;
- extension surveys to be undertaken during the taxon's peak flowering period, from December to February, targeting well-drained rocky areas in Tasmania's northeastern alpine zone;
- provision of information and extension support to relevant Natural Resource Management Committees, local councils, government agencies, development proponents and the local community on the locality, significance and management of the known subpopulations and potential habitat.

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Prepared in 2008 under the provisions of the Tasmanian *Threatened Species Protection Act 1995*. Taxonomy updated in October 2011; revised in June 2016.

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