Euphrasia gibbsiae subsp. *pulvinestris*

Images by Richard Schahinger

FAMILY: SCROPHULARIACEAE

BOTANICAL NAME: *Euphrasia gibbsiae* subsp. *pulvinestris* W.R.Barker, *J. Adelaide Bot. Gard*. 5: 131 (1982)

COMMON NAME: cushionplant eyebright

COMMONWEALTH STATUS (EPBC Act): Not Listed

TASMANIAN STATUS (TSP Act): rare

Description

Euphrasia gibbsiae subsp. *pulvinestris* is a perennial herb up to 13 cm high, ranging from a solitary stem to a few to many densely crowded branches. Leaves are sessile, thick, opposite and decussate, distributed more-or-less evenly along the stems; the uppermost leaves on the main flowering branches are spathulate to obovate in outline, up to 10 mm long, with 1 to 3 teeth on each margin (the longest up to 3 mm long). Flowers are arranged in spikes at the end of the stems; calyx unequally four-toothed, 8 to 10 mm long; corolla 2-lipped: upper lip with two erect or recurved lobes, lower lip with three spreading lobes; flowers white, with yellow blotch on the lower lip behind the lowest lobe, and indigo striations usually confined to the tube and hood, though occasionally extending well out onto the lateral lobes. Stamens 4, anthers 1.5 to 2.1 mm long. Glandular hairs occur on the inflorescence parts and, sometimes, the plant's upper vegetative parts. The taxon has been observed in flower in January and February, though the limits of the flowering season have yet to be determined. Fruit a laterally-compressed capsule up to 10 mm long, with c. 30 seed. (Description from Curtis 1967, Barker 1982.) **Confusing species**: The taxon may co-occur with *Euphrasia gibbsiae* subsp. *gibbsiae;* the striations on the latter's corolla extend well onto the lobes, and glandular hairs occur over all its vegetative parts (excluding roots and the old parts of axes) (Barker 1982). *Euphrasia striata* may be common in adjacent habitat — its corolla is conspicuously striated and its leaves and calyx's outer surfaces are glabrous.

Distribution and Habitat

Euphrasia gibbsiae subsp. *pulvinestris* is endemic to Tasmania, being known from the western half of the Mount Field massif in the State's central south (Barker 1982). It

has been recorded at elevations of 1200 to 1440 metres above sea level, typically growing within pure 'blanket bog' (Barker 1982), a complex of cushion-forming plants (e.g., *Donatia novae-zelandiae, Pterygopappus lawrencei)* also known as bolster heath (Kirkpatrick 1997).

Euphrasia gibbsiae subsp. *pulvinestris:* bolster heath habitat near K Col (top), habit & flower detail (showing the variability in corolla striations)

Key Sites and Populations

K Col, Naturaliste Peak to Mount Field West, Newdegate Pass, Mawson Plateau.

Known Reserves

The only known population occurs in Mount Field National Park within the Tasmanian Wilderness World Heritage Area.

Ecology and Management

Euphrasia gibbsiae subsp. *pulvinestris* is restricted to the alpine zone. Plants in such areas are adapted to harsh and variable conditions, ranging from extremely low winter temperatures, glazing storms and intermittent snow lie, through to hot and dry

summers. Changes to rainfall patterns and an increase in extreme events associated with climate change may pose a risk to the species in the future.

Euphrasia species are semi-parasitic plants that have a wide range of 'host' species (Barker 1982). Eyebrights are insect pollinated, with native bees being the main pollination vector. Dispersal of seed is localised, though movement by water is a likely vector.

Barker (1982) noted that *Euphrasia gibbsiae* subsp. *pulvinestris* and subsp. *gibbsiae* are ecotypically differentiated at Mount Field. Generally only subsp. *pulvinestris* occupies the extensive areas of cushionplants in the summit regions, while subsp. *gibbsiae* occurs in tall alpine heath or low heath where clumps of *Astelia alpina* (pineapple grass) predominate. Barker (1982) observed plants of both subspecies growing side-by-side in the ecotone between pure cushionplants and open low heath, but no morphological intermediates were observed, Barker concluding that there was some barrier to interbreeding, since the two subspecies were flowering simultaneously.

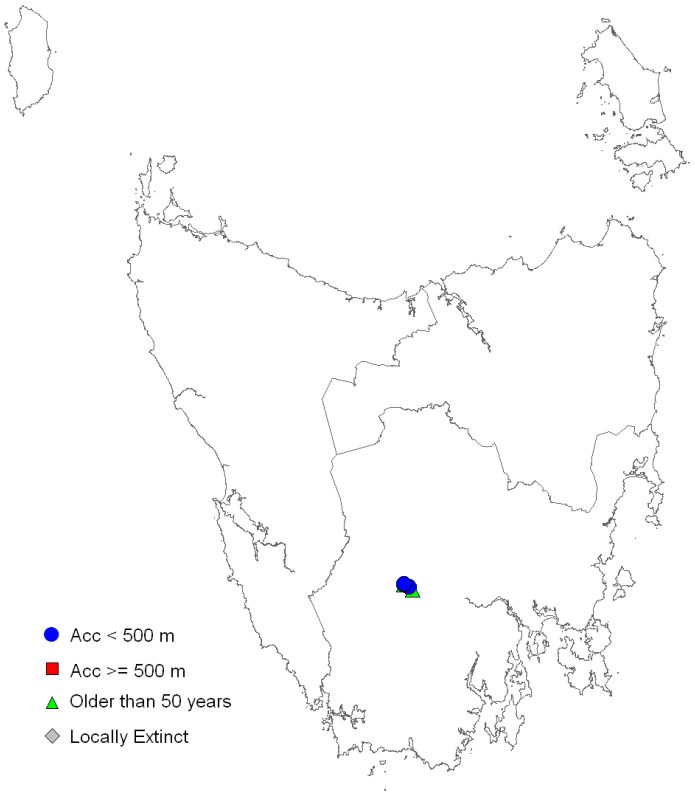
Conservation Status Assessment

Euphrasia gibbsiae subsp. *pulvinestris* was described by Barker in 1982 based on existing collections from 1948, 1960 and 1965, and several collections by the author in January 1971 from the area between Mount Field West and K Col. Barker (1982) noted that the taxon may occur on neighbouring high mountains in the Mount Field massif bearing similar cushionplant expanses. Targeted surveys in January and February 2017 revealed the species to be relatively common in the K Col area (with several hundred flowering plants in an area of at least 3 hectares), and occasional along the track from K Col to Newdegate Pass. Additional surveys of known and potential sites at Mount Field are required before a meaningful reassessment of the taxon's conservation status can be undertaken, including areas of bolster heath on the Mawson Plateau and between Florentine Peak and Tyenna Peak.

Further Information

- Barker, W.R. (1982). Taxonomic studies in *Euphrasia* L. (Scrophulariaceae). A revised infrageneric classification and a revision of the genus in Australia. *Journal of Adelaide Botanical Gard*ens 5: 1–304.
- Curtis, W.M. (1967). *The Student's Flora of Tasmania. Part 3*. Government Printer, Tasmania.
- Kirkpatrick, J.B. (1997). *Alpine Tasmania*, Oxford University Press, Melbourne.

Tasmanian Distribution
(As per Threatened Species Section records, March 2017)



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Date last modified: 20/03/2017

View
www.dpipwe.tas.gov.au/threatenedspecieslists

Contact details
Threatened Species Section, Department of Primary Industries, Parks, Water and Environment, GPO Box 44, Hobart, Tasmania, Australia, 7001. Phone (03) 6165 4340.

Permit
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