

THREATENED SPECIES LISTING STATEMENT

Hairy cliff eyebright, *Euphrasia phragmostoma*

W.R.Barker 1982



Status

Tasmanian *Threatened Species Protection Act 1995*

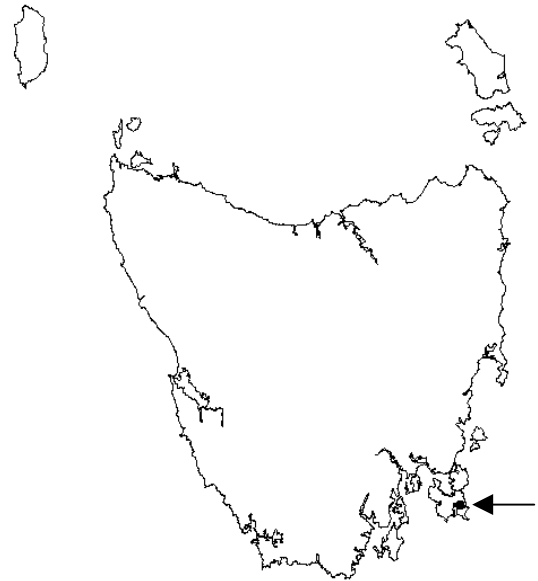
.....vulnerable

Commonwealth *Environment Protection and Biodiversity*

Conservation Act 1999.....Vulnerable



Wendy Potts



Description

Hairy cliff eyebright is a short lived perennial herb or undershrub, generally surviving 3 to 5 years. It is reliant on recruitment from seed in gaps kept open by exposed conditions on cliff faces. Peak flowering occurs in November to December. The flowers are largely pollinated by native bees and self pollination can occur. Eyebrights are semi-parasitic, forming attachments to roots of surrounding vegetation.

Hairy cliff eyebright has an upright to straggling habit. Plants are usually no more than 40 cm in height and can occasionally grow to a large diameter with hundreds of branches though they are more commonly found with less than fifty. The leaves are covered in glandular hairs, and occur in opposite pairs with alternate pairs arising from the stem at right angles to each other. The leaves just below the first flower are 8 to 17 mm long and 5 to 10 mm wide, with a short squat apex and up to 3 teeth on either side. The leaves appear semi-succulent and the underside has characteristic darker patches of glands typical of most eyebrights.

The branches terminate in an inflorescence consisting of up to about 15 flowers arranged in pairs similarly to the leaves. The flowers consist of a hood of two fused petals and a skirt of three fused petals. The petals are creamy white and can have faint purple lines extending from the throat. The flowers are relatively large for Tasmanian eyebrights being about 20 mm along the back of the flower and 14 mm wide at the front.

Hairy cliff eyebright belongs to the family Scrophulariaceae and is in a group of eyebrights (*Euphrasia* Section *Phragmostomae*) with an extremely long pair of anther awns that protrude into the throat of the flower. Species of this group also differ from other eyebrights in that the flowers are scented, the scent being sweet and sweaty. The group is now restricted to cliff faces on the Tasman Peninsula and *Euphrasia phragmostoma* can be distinguished from the other members, *Euphrasia* sp. 'fabula' and *Euphrasia amphisysepala*, by a consistent covering of hairs on the leaves.

Distribution and Habitat

Hairy cliff eyebright is endemic to Tasmania. The only extant population is restricted to a 1.6 kilometre stretch of coastal cliffs on Dolomieu Point extending from Bivouac Bay to the unnamed point before Thumbs Point on the Tasman Peninsula. It occupies about 0.7 hectares in total. Hairy cliff eyebright is restricted to coastal dolerite

cliff faces and tends to be found on relatively moist and shady ledges, rock crevices and on patches of bare ground extending from the base to the tops of cliffs where the vegetation is not too dense. The species may extend away from the cliff edge after fire but will retreat to the cliff faces as the vegetation thickens.

Important Locations

Locality	1:25,000 mapsheet	Year last seen	Area (ha)	Number of mature plants
Dolomieu Point Tasman National Park	Hippolyte	1996	0.7	700
Marion Bay, on mountain top		1892	extinct	0

Threats, Limiting Factors and Management Issues

Hairy cliff eyebright is now restricted to one population on the Tasman Peninsula. An old collection from a mountaintop near Marion Bay is suggestive of a once wider distribution. However, suitable habitat on the Forestier Peninsula, and further north on Hellfire Bluff, Cape Bernier and the Glenloth Cliffs on Maria Island has been searched for the species, without success.

Hairy cliff eyebright faces relatively few threats due to its coastal cliff face habitat and total occurrence in a National Park. Even though the species is short lived and the population is dependent on continual recruitment from seed, the necessary gaps for recruitment are maintained by exposure to the elements. Population size is likely to be relatively stable though it may temporarily decrease with storm damage and drought and a temporary increase is likely as the population extends away from the cliff edge after fire. Management will be restricted to monitoring and prevention of cliff top activities that may impact adversely on the population or its habitat.

The primary reason for the rarity of the three cliff face eyebrights appears to be the lack of suitable continuous habitat and poor seed dispersal mechanisms. Hybridisation also appears to have played a role in the rarity of hairy cliff eyebright as the two species occurring on cliff faces near the only population appear to have arisen as a result of introduction of genetic variation through hybridisation. Barriers to hybridisation have been shown to be poor for the cliff face eyebrights and with other eyebrights occurring nearby allowing occasional hybridisation events, small populations and a high turnover of generations, conditions are conducive to rapid speciation.

Conservation Assessment

Population Estimate

Hairy cliff eyebright was originally collected in the early 1890s by the Reverend Bufton and was not rediscovered until 1974 when found at Dolomieu Point. No other populations have been verified, despite dedicated survey at flowering time when plants are easier to find. Estimation of population size is difficult due to the cliff face habitat, a short life span and year to year variations in recruitment from seed. In 1995, population size was estimated to contain approximately 700 mature individuals. The size of the population is limited by the area of cliff face habitat available. As the openness of the habitat required for recruitment is maintained by exposure, the population size is likely to be relatively stable. A temporary decline is likely following storm damage or drought and a temporary increase is likely as the population extends away from the cliff edge after fire.

Reservation Status

Hairy cliff eyebright occurs in the Tasman National Park.

Assessment Criteria

Hairy cliff eyebright meets the criteria for listing as vulnerable on the Tasmanian *Threatened Species Protection Act 1995* because

- there are typically less than 1,000 mature individuals in total

It qualifies as Vulnerable using the 1994 IUCN (World Conservation Union) Red List criteria.

Recovery Program

Objectives

- prevent the loss or degradation of known populations

Existing Management

Hairy cliff eyebright is included in the Recovery Plan for threatened Tasmanian lowland *Euphrasia* species. Implementation of the plan commenced in 1997. Due to a perceived lack of manageable threats, management will be restricted to monitoring and prevention of cliff top activities likely to adversely influence the species. A draft management plan has been prepared for the Tasman National Park.

Actions Needed

- verify reports of populations and search suitable areas for new populations
- determine change in population size and range following fire
- monitor known populations at intervals of 5 to 10 years for threats and declines

Information Needed

- determine whether there are any more populations in existence
- determine response to fire

Management Advice

For the land owner/land manager

- assess the need to fire cliff edge vegetation if the fire interval becomes greater than 20 years, taking the needs of other species into account

For everyone

- search for new populations in November to December when the plants are in full flower
- help us to monitor known populations, particularly at flowering time

Further Information

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Specialist Advice: Wendy Potts, Threatened Species Unit, Department of Primary Industries, Water and Environment.

Source Material

References

Barker, W.R. 1982. Taxonomic studies in *Euphrasia* L. (Scrophulariaceae). A revised infrageneric classification, and a revision of the genus in Australia. *J. Adelaide Bot. Gard.* 5:1-304.

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Collier, P.A. 1990. Rare taxa in the genus *Euphrasia* L. from lowland south-eastern Tasmania. *The Tasmanian Naturalist.* 103:1-5.

Potts, W.C. 1997. *The conservation biology of threatened lowland Euphrasia taxa in south-eastern Tasmania.* Report to Environment Australia for Endangered Species Unit Project number 428. Parks and Wildlife Service, Department of Environment and Land Management, Hobart.

Potts, W.C. 2000. *Recovery Plan for Threatened Tasmanian Lowland Euphrasia Species.* Department of Primary Industries, Water and Environment, Hobart.

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Prepared by: Wendy Potts

Review Date: 2006 or as new information is received.

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View: <http://www.dpiwe.tas.gov.au>

& follow the links to Natural Environment, Threatened Species, then List of Threatened Species.

Permit: It is an offence to collect, possess or disturb this species unless under permit.