Euphrasia collina subsp. *deflexifolia*

Euphrasia collina subsp. *deflexifolia*. N. Lawrence.

FAMILY: SCROPHULARIACEAE

BOTANICAL NAME: *Euphrasia collina* subsp. *deflexifolia*, (Gand.) W.R.Barker, *The Endemic Flora of Tasmania* 6:477 (1978)

COMMON NAME: eastern eyebright

COMMONWEALTH STATUS: (*EPBC Act*) Not Listed

TASMANIAN STATUS: (*TSP Act*) rare

Description

A relatively short-lived (up to 3 to 5 years) perennial herb. **Stems:** The stems are erect and much branched. In flower, the plant is up to 50 cm tall. **Leaves:** The leaves are arranged in opposite pairs at right angles to one another. They are crowded on the vegetative branches, which is also true for the lower parts of the flowering branches, however, the upper parts are much sparser. The leaves are variable in size. On the vegetative branches they are between 4-5 mm long and broad in shape. The leaves on the flowering branches are much larger at approximately 12 mm long, however they are only slightly broader than the leaves on the vegetative branches. Upper leaves can have a covering of oily hairs. The leaves are semi succulent, toothed and are sometimes stalkless or with a very short stalk. **Flowers:** The flowers are in racemes (succession of flowers along stem, oldest ones at base) and are situated at the ends of the branches. The flower stalks are slender, with floral bracts (leaf-like structures associated with flowers) that are similar to the foliage leaves but with a dense covering of oily hairs. The flowers are variable in size and are hooded with the lower lip larger than the upper. The flowers can be white, pink or purple with widely spreading, three lobed lower lips. They can sometimes have a yellow spot on the lower lobe below the anthers. The stamens (male flower parts) have red-brown coloured anthers (containing pollen) each with a short projection (awn) into the throat of the flower. Peak flowering occurs in early spring with some autumn flowering. **Fruit:** The fruit is a capsule, which is slightly flattened and oblong in outline and between 7-8 mm long and 2.5-3.0 mm broad (description from Barker 1982). **Confusing species:** *Euphrasia collina* subsp. *deflexifolia* can be distinguished from other subspecies of *Euphrasia collina* as it has glandular hairs on upper leaves and bracts, it branches above ground level and it has an elongated apical bud cluster above the first open flowers.

This species is currently undergoing taxonomic review. *Euphrasia collina* subsp. *deflexifolia* most likely includes taxa described as *Euphrasia collina* subsp. *gunnii* (previously known as *Euphrasia gunnii)* and *Euphrasia collina* subsp. *tasmanica* (Barker 1982, 1987, 2007). This notesheet treats occurrences attributed to the above entities as *Euphrasia collina* subsp. *deflexifolia.*

Ecology and Management

This relatively short-lived species requires disturbance to create open patches of ground to ensure germination and hence the above-ground persistence of populations. In the absence of fire and grazing, the presence of tracks will enable the persistence of this species by creating the open environment that is required. Populations are generally relatively small due to the limited availability of suitable habitat. Population size is also determined by moisture availability, as the new seedlings require a relatively high level to survive. The species is semi-parasitic and high moisture levels are required until it parasitises hosts through root attachments. The non-host specific semiparasitic nature of the species makes it indirectly susceptible to additional threats, such as *Phytophthora cinnamomi* if it occurs in habitat such as heathland with a high proportion of susceptible species.

The failure to locate many previously recorded populations in recent years despite apparently suitable conditions for re-establishment from a soil seed bank suggests that this taxon is in decline. For example, the outlying population near Launceston has not been seen since 1970, suggesting a significant decline in the species distribution. Its recruitment requirements make the species susceptible to the effects of climate change, evidenced by the trend towards warmer, drier summers in recent times.

A parcel of unallocated Crown land behind Stieglitz on St Helens Point holds an important coastal population. It is in the process of being recognised as a reserve because of the occurrence of a large number of threatened flora species on the land.

This species has been included in the lowland *Euphrasia* Recovery Plan (Potts 2000). The main objectives of this plan include the following:

1. Securing protection of existing populations from potentially detrimental changes in land use or disturbance patterns.
2. Recovering declining populations by management of habitat.
3. Developing mechanisms to manage populations in the long term.

The main actions involve the identification of populations including taxonomic work to ensure these species can be correctly and effectively managed. Protection and recovery will also involve further investigation of the species' ecology and the possible use of fire as a management tool.

Insects are the most likely pollination vector for this species (A. Hingston pers. comm.).

Conservation Status Assessment

There is no immediate need for reassessment of *Euphrasia collina* subsp. *deflexifolia*. Reassessment will be required should occurrences on the Tasman Peninsula be described as a different taxon. These occurrences can be readily distinguished by a distinct yellow spot in the corolla.

Further Information

- Barker, WR 1982, 'Taxonomic Studies in Euphrasia L. (Scrophulariaceae) a Revised Infrageneric Classification, and a Revision of the Genus in Australia', *J. Adelaide Bot. Gard*., vol.5, pp.1-304.
- Barker, WR 1987, 'Taxonomic studies in *Euphrasia* L. (Scrophulariaceae). V. New and rediscovered taxa, typifications, and other notes on the genus in Australia' *J. Adelaide Bot. Gard*., vol.10, pp.201-221.
- Barker, WR 2007, *Euphrasia tasmanica* Gand. Formally reduced to a subspecies in *E. collina* R.Br. *J. Adelaide Bot. Gard*., vol.21, pp.93.
- Potts, WC 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.
- Potts, WC 2000, *Recovery Plan for Threatened Tasmanian Lowland Euphrasia Species,* Department of Primary Industries, Water and Environment, Hobart.

Preceding text last modified 13/8/2003.

Following updated 25/10/2016.

Survey Time and Habitat Guide (*black* = best, *dark grey* = possible, *light grey with slash*=poor time to survey, as guided by collection dates of specimens and records)

Euphrasia collina subsp. *deflexifolia*	Spring						Summer						Autumn						Winter					
eastern eyebright	S	S	O	O	N	N	D	D	J	J	F	F	M	M	A	A	M	M	J	J	J	J	A	A

- Flowering plants are required to confirm the identity and aid detection of this relatively short-lived (up to 3 to 5 years) perennial herb. Peak flowering of most subpopulations occurs in late spring to early summer with some autumn flowering in suitable seasons. Flowering of some subpopulations peaks in late September and these subpopulations tend also to have a reasonable autumn flush of flowers. Subpopulations may be short-lived, being dependent on gap forming disturbance and abundant rainfall to promote re-establishment from soil stored seed.
- *Euphrasia collina* subsp. *deflexifolia* occurs in open woodland or heath (sometimes extending to forest), often associated with road edges, tracks and depressions near the headwaters of creeks. Its habitat is associated with the availability of open patches of ground maintained by fire or other disturbance, the proximity of low vegetation and relatively high soil moisture in spring.

Distribution

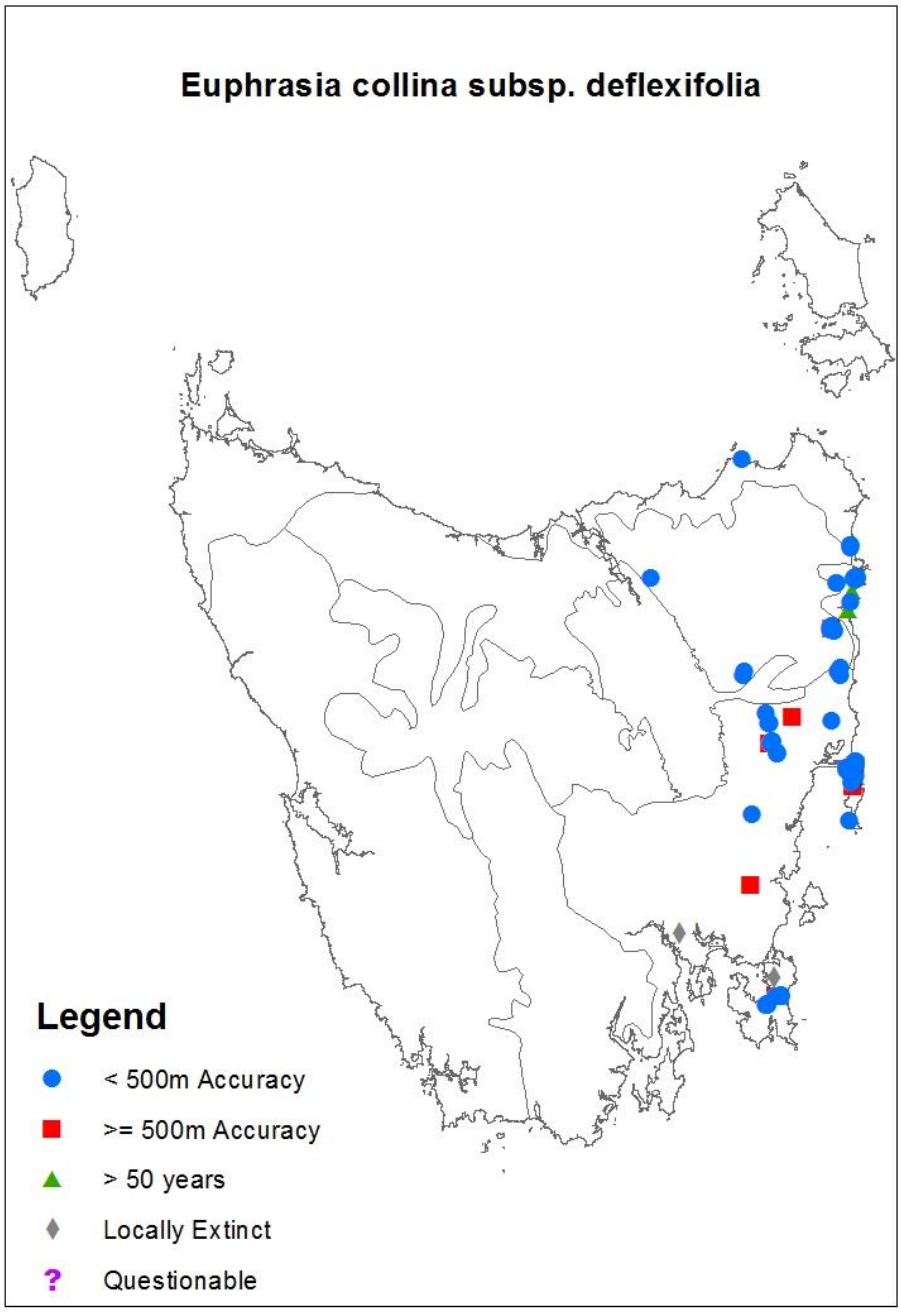
This species is endemic to Tasmania.

Known Reserves

Reserved in the Douglas-Apsley National Park, Freycinet National Park, Bay of Fires Conservation Area, Cheeseberry Hill Conservation Area, Coles Bay Conservation Area, Lost Falls Conservation Area, St Helens Conservation Area, Waterhouse Conservation Area, Castle Cary Regional Reserve and Snow Hill Regional.

Tasmanian Distribution

(Natural Values Atlas May 2015)



Cite as:

Threatened Species Section (2016). *Notesheet for* Euphrasia collina *subsp*. deflexifolia *(eastern eyebright)*. Department of Primary Industries, Parks, Water and Environment, Tasmania.

View

http://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

It is an offence to collect, disturb, damage or destroy this species unless under permit.