

Thamnobryum angustifolium (Holt) Nieuwl.

Derbyshire feather-moss

Status: **Critically Endangered (CR)** B1,2c

Class: Bryopsida

Order: Bryales

Family: Neckeraceae

Description and biology. This is a medium-sized, pale green, dendroid pleurocarp with shoots up to 4 cm long, often encrusted with calcareous material below. It can be distinguished from the common *Thamnobryum alopecurum* by the structure of the branch leaves, which are narrower, very strongly toothed, parallel-sided and have a broad nerve (Furness and Gilbert 1980; Hodgetts and Blockeel 1992; Holt 1886). The leaves of *T. cataractarum* are less strongly toothed but have an even broader nerve. *T. angustifolium* grows on a shaded limestone rock face in a wooded ravine, where it is inundated for much of the year by a torrent of water that emerges from a small cave just above it. The water flow, and the moss, often dry out completely in the summer. Sporophytes are unknown.

Distribution and habitat: Endemic to Europe. The entire world population of this moss is restricted to a single site in Derbyshire, within an SSSI, where the main colony covers about 3 m² on a single rock face, with small subsidiary colonies on boulders in the stream bed just downstream.

History and outlook: *T. angustifolium* is at risk because of the extremely restricted extent of the population. Collecting by botanists is a significant threat, as the plant is conspicuous, the population very small and the site well known. The size of old herbarium specimens suggests that the shoots are now smaller than they used to be, perhaps because of over-collecting. Reduction in water flow, due perhaps to lowering of the water table or climatic changes, is also a serious threat. The overall extent of the plant was reduced during 1996 and 1997 by drought, when the water flow from the cave was much diminished from the norm. However, it was flowing well again in late 1997 and regular monitoring is now underway to determine whether the plant is recovering. Initial observations suggest that it is doing so, with fresh green shoots appearing from areas that had appeared dead following the drought. Irresponsible activities relating to caving may be a significant threat to this species. For example, large areas of rock are sometimes excavated in order to make small caves more accessible, and there is known to be an interest among cavers in finding the source of the stream that emerges at the *Thamnobryum* site. A notice has been placed at the entrance to the cave alerting cavers to the proximity of a rare plant and EN is monitoring the situation carefully. Water pollution may also be a potential threat. *T. angustifolium* is a prime candidate for taking into cultivation as an insurance against disappearance from its only known site. A Biodiversity Action Plan has been written for this species, and it is included on a list of the world's most threatened bryophytes (Hallingbäck and Hodgetts 2000). *T. angustifolium* is endemic to Derbyshire.

References: Furness, S.B. and Gilbert, O.L. 1980. The status of *Thamnobryum angustifolium* (Holt.) Crundw.. *J. Bryol*, 11: 139—144.

Hallingbäck, T. and Hodgetts, N. (compilers). 2000. *Mosses, Liverworts, and Hornworts. Status Survey and Conservation Action Plan for Bryophytes*. IUCN/SSC Bryophyte Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK.

Hodgetts, N.G. and Blockeel, T.L. 1992. *Thamnobryum cataractarum*, a new species from Yorkshire, with observations on *T. angustifolium* and *T. fernandesii*. *J. Bryol*. 17: 251—262.

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