

# Tree Moss *Climacium dendroides* in Shropshire

Lisa Barlow reports on how a charismatic species could be used as a recording tool to indicate habitat quality.

Lists of plant indicator species, or axiophytes, are a useful tool for measuring habitat quality and determining conservation priorities (BSBI, 2012). A prerequisite for a 'good' axiophyte is ease of identification, thus bryophytes are often overlooked as potential axiophytes because they are generally perceived as difficult to identify and/or requiring microscopic examination. However, the moss *Climacium dendroides* is arguably one of the easiest British bryophyte species to identify because of its highly

characteristic tree-like form. As such, its value as a potential axiophyte was assessed as part of an MSc dissertation submitted to the University of Birmingham in 2012 by the author.

In order to assess the axiophyte value of *Climacium dendroides* in Shropshire, historic records were obtained from the National Biodiversity Network Gateway (NBN, 2012) and aerial maps used to select sites for which new distribution data could be gathered with targeted fieldwork. The field survey was carried

▽ *Climacium dendroides* habitat at Ashes Hollow, Long Mynd, February 2012. Alan Boardman





△ *Climacium dendroides* with characteristic tree-like shoots. Alan Boardman

out from October 2011 to March 2012 at 40 of the 46 known sites for *Climacium dendroides* in Shropshire and records requested locally via the Shropshire Botanical Society newsletter.

The resulting data were analysed to assess the current status of *Climacium dendroides* in Shropshire and the conservation importance of the sites at which it occurs was taken into account. The study found that 1) prior to 1912, *C. dendroides* was recorded in 23 hectads, making it at most a 'widespread' species according to the British Bryological Society criteria (Preston *et al.*, 2009); 2) post 1912 losses occurred at 13 sites; these losses were mostly related to changes in land use, for example at Betton Pool where intensive agriculture and fishing have altered the gradient of the bank which gives *Climacium* the fluctuating water level it often prefers; 3) the 2011-2012 survey placed *Climacium* in the 'local' species category (Preston *et al.*, 2009), with its distribution now confined to 12 hectads.

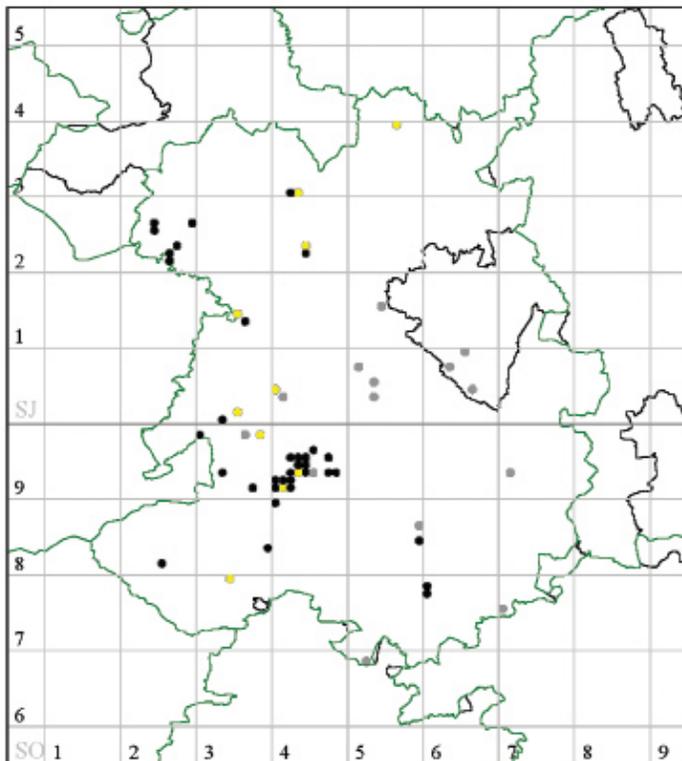
Losses of *Climacium dendroides* appear to have occurred at the following sites in Shropshire in the last 100 years: Marton Pool; Earl's Hill; Brown Moss; Llanhowell Farm; Lawley; Marehay Farm and Hope Coppice.

*Climacium dendroides* has a localised distribution in Shropshire, with mainly small, single-sex and potentially vulnerable populations. For example, Sinker recorded *Climacium* as 'frequent' in 1962 at its site in Crosemere (Sinker, 1962) whilst during the 2011-2012 survey only a single small population was seen there on a tussock. However, because of the paucity of historical abundance data the 'true' decline of *Climacium* at its known sites is difficult to assess.

The majority of modern (2011-2012) *Climacium* sites in Shropshire are base rich and of good habitat quality. The most surprising exception was the car park at Sweeny Hall Hotel (Morda, south of Oswestry) thanks to a record from Dan Wrench. Thus, it cannot be excluded that historic recording efforts focused mainly on nature reserves and 'good quality habitats' and therefore are not representative of the true past distribution of *Climacium*.

### Conclusions

According to the BSBI criteria, an axiophyte should occur in fewer than 25% of a county's hectads and be at least 90% restricted to sites of



◁ Distribution map showing apparent losses of *Climacium dendroides* at the monad scale in Shropshire before (grey) and since (yellow) 1912. Post 2000 records, including those made during the 2011-2012 survey are shown in black.

conservation importance. This study shows that *Climacium dendroides* is a suitable axiobryophyte in Shropshire because it is easily identifiable, is 92.77% restricted to sites of conservation importance, and occurs in fewer than 25% of the county's hectads.

However, this study was clearly limited by the paucity of historic records and thus highlights the importance of accurate biological records for current and future conservation efforts.

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Please contact the author for further information, records or a PDF of this study.

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