A BBS survey of bryophyte habitats

All BBS members are invited to participate in a survey of the habitats of British bryophytes that is being organized by the recently formed Bryophyte Ecology Group (BRECOG) as **Jeff Bates** describes.

Apart from some finer details (including tracking changes in species that are rapidly expanding or declining), we now know fairly accurately how the majority of bryophyte species are distributed in Britain and Ireland, but objectively collected and fine-scaled information on their habitats, reproductive biology and competitive relationships is scarce or wanting for even the most common species.

The Bryophyte Habitats Survey departs from previous BBS endeavours in involving the use of quadrats to record the abundance (percentage cover) of mosses and liverworts, and some simple data on reproductive biology, in typical bryophyte habitats within selected 10-km squares. Recorders should give preference to the target grid squares shown in Fig. 1 so that we obtain a balanced picture, but we will also accept records from other 10-km squares that you chose to study. Within a square, each habitat that you select needs to be matched to one of 34 environmental settings (e.g. Co1, coastal dune; BF2 – valley bog, poor fens and flushes; Wo2, coniferous woodland; BE4, roads and pavements) and to one of 10 major substratum types (e.g. A, soil; C, tree bark; D, dead wood; H, tarmac). You then record up to ten quadrats positioned at random within the selected habitat and enter your visual estimates of percentage cover on a recording card that guides you through the sampling process. Sampling includes noting information on shade (7-point scale), slope, aspect, soil or water depth, and tree or branch girth, and small samples of soil or bark are removed for later pH measurement. Bark habitats are restricted to certain tree species and trunk or branch zones to ensure comparability between regions. A standard rectangular quadrat of 50 x 25 cm is used to delimit the vegetation samples in all cases except for shrub (*Corylus*, *Salix*, *Sambucus*) branches where a narrower unit (50x12.5 cm) is employed.

What use is to be made of the information? At the moment the data are being entered into a computer database (Microsoft Access) which

offers great flexibility in how they may be interrogated. We can summarize the information in the form of graphs showing abundance of a species in relation to individual factors like slope, pH, altitude or mean rainfall. We may also compare these relationships among different habitats (e.g. bark versus rock), or compare the ecological responses of species in regions with different climates (e.g. upland versus lowland).

A similar approach may offer insights into whether competitive interactions are important for bryophytes: we might compare the mean abundance or fruiting of a species in samples where a potential competitor is present and those where it is absent. Producing a classification of bryophyte communities was not a primary justification for the project as bryophytes are just one component of more complex communities in very many instances; however, it is inevitable that the associations between species will be analysed to help us understand bryophyte–environment relationships. It would be informative to know which species have the most similar ecological profiles to any given species. In conjunction with the habitats survey, I have also begun compiling a separate database for published physiological data about British bryophytes. During summer 2007 I employed one of our undergraduate students for a six-week period to obtain some basic physiological data on light and desiccation responses of common British bryophytes to add to the database and I plan to repeat this exercise in future years. The ultimate aim is to publish a summary of these data in an 'Ecological Compendium' for common British bryophytes which I hope will be authored by those who contributed to the data collection. It would be a valuable tool in conservation, land management and ecological research.

△ Fig. 1. The 211 target 10-km squares of the bryophyte habitats survey.

The bryophyte habitats survey is a very ambitious project, but one that can be brought to fruition with your help. Obviously, it will take longer to complete if you do not become involved! Quadrat sampling will not suit everyone and it is not an activity that combines easily with the more traditional type of botanical excursion. However, there are new insights to be gained from a more intimate acquaintance with a small patch of ground or bark and, as in the recent survey of arable land (SBAL), new records are already being made in unexpected places. If you are working alone, you are unlikely to sample more than two or three habitats in a morning or afternoon, so to explore the major habitats in a 10-km square adequately is likely to require a number of visits over a year or two.

Local BBS recording groups might consider devoting one of their winter excursions, or perhaps a half day, to quadrat sampling in one of their local target squares. Given sufficient notice and subject to availability, I am willing to attend personally to provide encouragement. You can find a detailed account of the recording procedure, including a list of the simple equipment required, a downloadable field card and instructions for soil pH and texture analysis on the BBS website by clicking on 'Activities' and then 'Bryophyte Ecology Group'. The sampling is easier to do than it is to describe on paper and it may be advantageous for you to attend the annual weekend workshop of BRECOG for first-hand experience. In 2008 this will be based at Malham Tarn Field Centre, Yorkshire, 7–9 March (local secretary, Martin Godfrey).

Jeff Bates
Department of Life Sciences, Imperial College London, Silwood Park Campus, Ascot, Berkshire SL5 7PY (e j.bates@imperial.ac.uk)

Correction to the bryoflora of south-western Patagonia

In *Field Bryology* 93, Inventory and conservation of the bryoflora of south-western Patagonia (pp. 2–8), I mentioned that the moss *Grimmia orbicularis* had been collected from El Morro (Chico) growing on a basalt plug and that on arrival in the UK and after subsequent microscopic examination this taxon was new to Latin America.

Before sending this record to Tom Blockeel for inclusion in New national and regional bryophyte records, I sent the moss to Ron Porley (Natural England) for confirmation. Ron, not being entirely happy with the determination, sent it to Eva Maier (Germany) for her opinion. Eva has determined this collection as the Patagonian endemic *G. humilis* known only from Argentina and Chile. This species differs from *G. orbicularis* in its plane leaf margins, shorter basal cells and cucullate calyptra.

Subsequent research revealed that this species had previously been recorded from El Morro Chico, leg, Deguchi 26407(HIRO).

Howard Matcham
(e hwlgmatch@yahoo.co.uk)