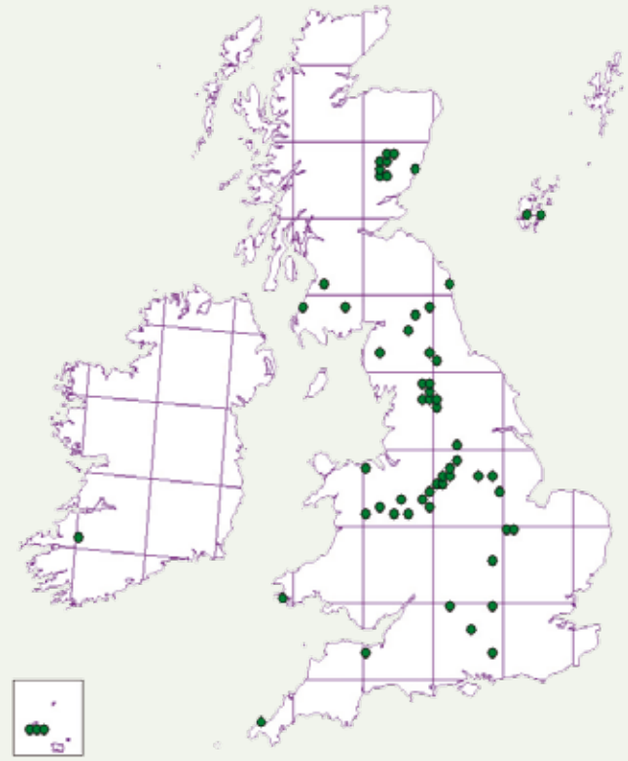
BRECOG update: 5 years remaining

With just 5 years remaining in which to contribute data to the BRECOG project, **Jeff Bates** provides an update and describes how the requirement to sample only target hectads is being relaxed.

The BBS project to collect detailed data on the habitats, fruiting characteristics and physiology of common British bryophytes (BRECOG) has progressed significantly since I produced my last update in June 2010 (see the BBS website). I will limit myself here to comments on the field survey to which all members are welcome to contribute. To remind you, the project will allow us to construct graphs for each widespread species showing its abundance in response to environmental factors (e.g. substrate pH, slope and aspect, shading, soil type and depth, higher plant cover), the frequency and timing of fruiting, and its associations with other bryophyte species. Moreover, if sufficient data are obtained, it should be possible to compare these features between geographically/climatically contrasted regions of the British Isles. After a somewhat slow start, the dataset for this survey has now (mid-August 2011) reached 330 microhabitat samples (=cards), based on 1,878 quadrats and obtained from 60 hectads (see map). The best represented hectad is SD86 (Malham Tarn, etc.) with 23 cards submitted so far and 20 or more cards have also been recorded in NY22, SK27 and SP85.

Recording was stimulated early in 2011 by an informal weekend gathering (18–20 March) at Blencathra, a well-appointed residential field centre in the northern Lake District administered by the Field Studies Council. Eight hardy souls, with ages ranging from twenty-something to eighty-something, formed a good-natured and positive recording team, and the limited numbers at least meant that unnecessary duplication of effort was avoided. Luckily, we missed a 'white-out' at the Centre by one week although there was still plenty of snow visible on the higher fells. On the Saturday, we surveyed a range of common habitats at around 300 m altitude in Glenderaterra, a large sheep-grazed

◁ View south of St Cyrus NNR, Kincardineshire, where we sampled areas of building marram dune, fixed dune turf, andesite cliffs (fossil seacliffs) and seashore rocks (30 June 2011). *J. Bates*



△ Map showing hectads covered by the BRECOG project as of August 2011.

◁ The Blencathra group. A chilly lunch gathering in Glenderaterra, near Blencathra Field Centre on 19 March 2011. *From left to right*: Jeff Bates, Rhydian Beynon-Davies, Theo Loizou, Rachel Carter (behind the rushes), Joan Egan, John O'Reilly and Diane Dobson. *Joyce Bates*

valley drained by rocky streams and flushes, with abundant rock outcrops and an old lead mine. On Sunday morning, we restricted ourselves to a small but classic upland oak wood lower down in the same valley. Most of the major habitats present were sampled, including the woodland banks, different height zones on oak trunks, rotting logs, cliffs by the substantial stream and emergent rocks within it. Three quadrats from the latter habitat contained *Heterocladium wulfsbergii*, a species that had not previously been recorded in Cumberland (v.-c. 70). Other less common bryophytes that turned up in

▽ Jeff sampling water chemistry by a riverside rock in Glenderaterra Beck. The quadrat here was one of three containing *Heterocladium wulfsbergii*, new to v.-c. 70 (20 March 2011). *Joyce Bates*

our quadrats during the course of the weekend included *Anastrepta orcadensis*, *Barbilophozia atlantica*, *Hylocomiastrum umbratum* and *Sphagnum russowii*.

The spring and summer field meetings of the BBS offered other opportunities in 2011 to sample bryophytes for BRECOG. During the Upper Wharfedale meeting (see full report on p. 56) five members devoted some of their time to this activity, clocking-up 163 quadrats from 32 microhabitats. I personally enjoyed sampling an eclectic range of environments often containing common calcicoles such as *Ctenidium molluscum*, *Neckera crispa* and *Tortella tortuosa*, but liberally sprinkled with less common taxa such as *Cololejeunea calcarea*, *Metzgeria pubescens*, *Mnium thomsonii*, *Orthothecium rufescens*, *Pedinophyllum interruptum*, *Plagiopus oederianus*, *Porella arboris-vitae* and *Sanionia uncinata*, plus a rare example of fruiting *Rhytidiadelphus squarrosus* that ensured the work was never dull. Our observations also included some in grassland

◁ Rachel Carter and Joan Egan sampling the basal zone community of an oak in Glenderaterra, near Blencathra Field Centre, Cumberland, 20 March 2011. *J. Bates*

communities where the calcifuge *Racomitrium lanuginosum* was growing centimetres away from calcicoles such as *Scapania aspera* and *Tortella tortuosa*; botanical chalk and cheese! At Scargill House, a dry-stone wall lining one side of the car park where we gathered each morning supported a respectable growth of many of the typical limestone bryophytes, as many members noted. The flora of this wall was eventually immortalized for the BRECOG dataset by Martin Godfrey.

During the Angus week of the summer meeting my wife and I recorded a further 25 microhabitats (127 quadrats), mostly in acidic upland environments. As in the spring meeting we encountered a range of less common bryophytes in our samples (e.g. *Anastrophyllum minutum*, *Anthelia julacea*, *Arctoa fulvella*, *Blepharostoma trichophyllum*, *Cololejeunea calcarea*, *Encalypta*

◁ Inside Grass Wood, near Grassington, Wharfedale. In this area we sampled the bryophytes of the limestone boulders and those on the bases of the mature sycamores which were the only substantial trees in this ash-dominated habitat, (10 April 2011). *J. Bates*

ciliata, *Kiaeria blyttii*, *Orthotrichum rupestre*, *Tetralophozia setiformis*) as well as the 'bread and butter' bryophytes of moorland and coastal dunes. We believe we may have found one or two species not discovered by the rest of the party engaged in general hectad recording, which is perhaps an additional justification for recording small areas intensively.

Since we started the exercise a few years ago I have increasingly realized that the strategy of employing 'target' 10-km squares has been counter-productive because of our very small survey team. Too frequently the systematically chosen target squares turn out to be dull ones, whereas their neighbours may contain a richer selection of bryophyte habitats which we have been ignoring. Several would-be recorders have told me that dull, remote squares do not encourage their participation. For that reason we are relaxing the focus on 'target' hectads. Instead, participants are now requested to submit data from any hectads in Britain and Ireland. You will not go far wrong if you sample communities that appear interesting to you or those you consider characteristic of the area. As reasonable progress is currently being made, it is anticipated that sufficient data will have been gathered to bring this survey to a close at the end of 2016. A revised version of the 'instructions' is now available on the BBS website.

I hope the foregoing will entice a few more BBS members to support the BRECOG cause. You will find your identification skills truly tested as it is often necessary to put names to very scrappy material. There is also an enjoyable camaraderie and interflow of knowledge when, during meetings, we work in pairs. Despite the challenges, a few of us at least are finding the activity a compulsive and rewarding one. Following the success of the Blencathra meeting, it is planned that another collaborative recording weekend will be organized in early 2012, possibly in South Wales. All with an interest in bryophyte ecology are welcome to attend. Details of this will be posted on the BBS website in due course.

△ Jeff sampling mossy boulder scree in a deep ravine, Step Gill, Upper Wharfedale. The boulder community was dominated by *Loeskeobryum brevirostre*, *Eurhynchium striatum*, *Thuidium tamariscinum* and *Rhytidiadelphus loreus* (12 April 2011). *Joyce Bates*

Jeff Bates
Please send all completed BRECOG cards to my private address: 56 King Edwards Road, Ascot, Berkshire SL5 8NY (**e** j.bates@imperial.ac.uk)