



Encouraging bryophyte recording in Ireland: a mini-flora of the Wicklow Mountains

It is often daunting for beginners to take part in bryological recording, but they can make a valuable contribution. This is particularly so in Ireland where there are still many under-recorded areas and records of common species are often lacking. As a demonstration of this, in 2010, one member of the newly formed BBS Dublin Group (Kate Harrington) collected *Mnium hornum* as a new vice-county record for County Kildare!

To encourage new bryologists to undertake recording and gain confidence, I obtained funding to run a small bryological recording project in Ireland in 2010. The main funding source was the Heritage Council (Ireland), with contributions from the BBS and the Dublin Naturalist Field Club (DNFC). The area chosen is in the northern section of the Wicklow Mountains National Park, and extends from Glendoo Mountain in the north, Seefingan (724 m) and the River Liffey in the west, south to the Sallygap and east to Djouce Mountain (725 m). Most of the area is in County Wicklow,

▲ The headwaters of the River Liffey. *J. Denyer*

but it overlaps with County Dublin and includes part of the hectads O01, O10, O11 and O12. This area was chosen as it is close to Dublin and within a National Park, hence easy to access. Another important feature is that, outside of a few bryological hotspots, it contains large areas of relatively species-poor blanket bog that are relatively simple for volunteers to record.

Recording

We decided to undertake recording on a tetrad (2 × 2 km grid square) basis. There were 36 tetrads with at least some of their area within the selected area of the National Park. To maximize recording effort, aerial photography and 1:50,000 maps were used to select a subset of 24 tetrads that contained habitats representative of the whole area. These habitats included mountain tops (11 peaks over 500 m), north- and south-facing rivers, north-facing crags, isolated trees, wet heath, blanket bog (cut-over and intact) and man-made structures such as walls and bridges.

The project was advertised on the BBS website, in *Field Bryology* and the DNFC newsletter, and I was pleased that we soon had 11 volunteers



Joanne Denyer's project to record the bryoflora of the Wicklow Mountains has not only yielded some interesting and rare finds, but has also demonstrated just how much of an impact a team of trained beginners can make working in under-recorded areas.

keen to take part in the project. These volunteers recorded 19 of the tetrads, with the remaining tetrads recorded during group field meetings. The volunteers generally recorded on their own and sent specimens that they were unsure of to me or other BBS referees. Gordon Rothero was particularly helpful and was kept busy identifying many samples from keen volunteers.

Training

At the beginning of the project I held an indoor meeting where participants were introduced to the nuts and bolts of bryological recording: how to use recording cards, submitting vouchers for new vice-county records, the BBS referee system, labelling herbarium packets and record submission. Through the year we held five field meetings led by experienced bryologists. These field meetings were open not only to the project volunteers, but also to DNFC and the BBS Dublin Group members.

◀ Sam Bosanquet manages to keep interest levels high whilst demonstrating forest edge species near Raven's Glen in September. *J. Denyer*



- ▲ Upper Lough Bray, looking south. This is one of the bryophyte hotspots in the area, with north-eastern-facing crags. However, many interesting historic records from this site could not be refound. *J. Denyer*
- ◀ Recorded at Lower Lough Bray in August 2010, *Isothecium holtii* is a 'western' species with a relatively restricted distribution in Ireland. *J. Denyer*

Gordon Rothero led the first meeting to Upper Lough Bray in March 2010, teaching the group the bryophytes of walls, upland rivers and north-facing crags (which necessitated scaling a steep hillside, ensuring that Gordon lived up to his reputation of being a mountain goat!). I led a meeting in May to an area of blanket bog and flushes (much gentler terrain) where we reviewed common upland species. In July, David Chamberlain enticed the group to wade several miles through tall heather to learn about more wet heath and aquatic bryophytes, as well as small leafy liverworts (including the attractive *Calypogeia azurea*). Nick Hodgetts visited us in August and once again we visited Lough Bray



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- ◀ *Oreoweisia bruntonii*, another 'western' species with a relatively restricted distribution in Ireland. Recorded at Lower Lough Bray in August 2010. *J. Denyer*
- ▼ Nick Hodgetts inspires Mathew Jebb and Pat Lenihan to look at wet heath mosses near Lower Lough Bray in the August sunshine. *J. Denyer*

previous records. During the 2010 project, we made 1,109 new records of 191 species. In the relatively well-recorded hectads O11 and O12, we added 57 and 20 new species, respectively, to the total hectad species count. There was relatively little of hectad O10 within the National Park, but we increased the species list by 36 species and in hectad O01, 87 new species were recorded.

Of these records, some were notable as they were of species considered to be rare in Ireland, or were new vice-county records or de-bracketed records. The latter included four in County Wicklow: *Barbilophozia attenuata*, *Brachydontium trichodes*, *Heterocladium wulfsbergii* and *Warnstorfia fluitans*, and two in County Dublin: *Kurzia trichoclados* and *Odontoschisma denudatum*. Records for rare species listed in the forthcoming *Irish Bryophyte Red Data Book* included *Brachydontium trichoides* (Endangered) and *Heterocladium wulfsbergii*, *Leptodontium flexifolium*, *Sphagnum girgensohnii* and *Sphagnum russowii* (all Near Threatened). These records were made by both volunteers and visiting experts, further demonstrating the contribution that relative beginners can make, even in hectads containing some relatively well-known sites.

What was surprising was that much of the project area was bryologically dull, outside of a few diversity hotspots such as Lough Bray, Glendoo Mountain, River Liffey and Raven's Glen. Large areas of blanket bog appeared to have been cut, drained or burnt in the past; much of this facilitated by the construction of a military road across the area in the early 19th century,

to see if we could refind any of the interesting species that had been recorded there historically. We were to remain unsuccessful in this quest, but managed to add new species to the list for this relatively well-recorded site. Our last meeting was in September with Sam Bosanquet, who bravely started the day by demonstrating small acrocarps on a heathy bank! However, this obviously didn't put the group off, as later in the afternoon they happily scaled a steep boulder-strewn slope in Raven's Glen in pursuit of more bryophytes. All of these field meetings were invaluable in helping the attendees to develop their identification and recording skills, and to give them inspiration.

Results

Although one of the main aims of the project was to encourage and train budding bryologists, we were also making new bryophyte records. Outside of a few recording 'hotspots' (such as Lough Bray), much of the project area was under-recorded, and in total there were only 459

allowing easy access to the bog. Accidental fires remain a current threat.

As there are few historic records from the project area, it is difficult to assess the impacts that land-use and climate changes may have had on the bryophyte flora of the area. However, there are a number of 19th century records from Lough Bray. These records include the mosses *Antitrichia curtipendula*, *Bartramia halleriana*, *Campylostelium saxicola*, *Grimmia funalis*, *G. torquata*, *Hamatocaulis vernicosus*, *Sphagnum teres* and *Tetradontium brownianum*, and the liverworts *Blepharostoma trichophyllum*, *Douinia ovata*, *Harpanthus scutatus*, *Lepidozia cupressina* and *Moerckia hibernica*. None of these species have been refound, despite two surveys during the 2010 project (with Nick Hodgetts and Gordon Rothero), surveys in previous years by David Long and Nick Hodgetts, and the BBS meeting in 1975. Some of these species indicate the presence of a basic influence, and yet recent

recording has found the area to be ‘relentlessly acidic’ (Nick Hodgetts, report for National Parks and Wildlife Service). Clearly, it will be worth spending some time to ascertain whether these historic records were incorrect or if there are still some areas we have yet to explore. So if you pass this area, please pop in to have a look!

Lessons learnt

With hindsight, I realized that an indoor meeting, part way through the project, would have been beneficial to provide direct help with sample identification and other questions (which instead were dealt with via email and posting of samples for confirmation).

- ◀ Accidental burning of the blanket bog and heathland threatens bryodiversity. This burnt-out car was seen to the east of Lough Bray. *J. Denyer*
- ▼ *Sphagnum compactum* is a pioneer species on burnt heathland above Lower Lough Bray. *J. Denyer*



- ▲ Gordon Rothero demonstrates lakeshore sphagna on a cold March day at Upper Lough Bray. *J. Denyer*
- ▼ Clearly the end of recording for 2010! This photo was taken in October 2010 on the southern slopes of Seefingan (734 m) looking west to County Dublin and beyond to the plains of County Kildare. *J. Denyer*

Project benefits

There were many positive outcomes from this project. Over 1,000 new records were created, which are freely accessible through the National Biodiversity Data Centre (Waterford), and a range of herbarium specimens were donated to the National Botanic Gardens (Dublin). All records of rare species were given to Neil Lockhart (National Parks and Wildlife Service) for

inclusion in the *Irish Bryophyte Red Data Book* (to be published in 2011). In addition, all records will be made available to the BBS for inclusion in the revised *Atlas of Bryophytes* (to be published after 2012). The Dublin BBS regional group was formed during the project and we now have 57 people on the regular email list. Of these, 34 people attended field meetings during 2010.

The project has highlighted the emerging interest in bryology in Ireland. Future field meetings, projects and training will aim to further develop Irish knowledge and experience, and several of the project volunteers are already involved in tackling under-recorded hectads in County Kildare. All assistance welcome...

Acknowledgments

This project would not have been possible without support and funding from the Heritage Council (Ireland), BBS and DNFC. Thanks are also due to the visiting experts for leading recording meetings (Gordon Rothero, David Chamberlain, Nick Hodgetts and Sam Bosanquet); National Botanic Gardens for use of the herbarium; Wicklow Mountains National Park staff and, most importantly, the volunteer recorders: Christina Campbell, Joanne Denyer, Pat Doherty, Katherine Duff, Maurice Eakin, Melinda Lyons, Nick Marchant, Margaret Norton, Gerry Sharkey, Noleen Smyth and Aisling Walsh.

Joanne Denyer

11 Brendan House, Brendan Road, Dublin 4, Ireland (e joanne@denyerecology.com)

