Project Monitoring on a Shoestring

Following best practice can contribute data to national datasets and ongoing research, bringing added value to your work.

Consistency with ongoing external data collection

Natural England (2) highlight the need to "develop consistency in monitoring approaches so as to enable possible future collation of peatland monitoring data as a single database resource". Analysis of that report (2) produced a list of simple monitoring techniques that could be easily used by a small team of project officers, volunteers and students, and replicated in future beyond the life of the project. A shorter companion document from Natural England ‘TIN097 - Guidelines for monitoring peatland restoration’ was also published to help projects devise suitable methodologies. Priority has been given to sites that may address gaps in the existing evidence base (3).

Using Vegetation Monitoring as a Proxy for Studying Greenhouse Gas Fluxes

Collection of quadrat data has allowed us to highlight baseline variation between intact mire habitat and the areas to be restored. The GEST system designed to use vegetation data as a proxy for Greenhouse Gas Flux measurements in Belarus (4) has yet to be properly calibrated for use in the UK, but clearly has great potential for demonstrating wider benefits. Simple adjustments to the survey methodology have brought it into line with the methods used in Belarus. This allows us to start collecting quadrat data that can feed into that work. By the time follow-up monitoring begins, it is hoped that the quadrat data will be able to produce good estimates of changes to the carbon budgets of our sites.

Peat Depth Measurements Compatible With National Peat Depth and Carbon Storage Project

Peat depths across sites have been assessed using a simple probe, to prioritise the largest peat reserves and identify degraded inactive blanket peat. Data collection follows methods recommended for the recent project to compile a national metadata layer of peat depths in England, so our results can be of wider use outside of the project. The patchy distribution of our acidic valley mires means that they are often missing from existing peat soil datasets, despite being frequent in the Lake District.

Invertebrate Sampling as a Proxy for Water Quality Monitoring Downstream

Recent work at Leeds University (5) has shown rapid changes in benthic invertebrate species composition downstream from grip-blocked catchments, suggesting they make a useful proxy for measuring stream water quality. The Environment Agency have funded us to restore an eroding peatland to help meet Water Framework Directive objectives. We hope to monitor changes in invertebrate species here, using volunteers previously trained by the Riverfly Partnership.

Humification as a measure of peat degradation

Whilst the Von Post scale is a simple method to assess the degree of peat humification (decomposition) in the field, it cannot be used for statistical analysis of variation between sites, or over time following restoration. This would require laboratory facilities that we don't possess, so we are advertising this to students as a discrete project that could be studied for a dissertation, with the potential to be repeated at intervals by others. By finding students to repeat monitoring and analyse trends, success of short-term projects can still be monitored after the project has finished.

Testing Innovative Restoration Techniques

As a small project working on several small sites, we are able to experiment with new techniques. The Lake District mires have a particularly high biodiversity value (6), with a range of rare valley, flush, basin and raised mire types within/near to blanket peat, and population centres for a range of scarce peatland plants. Most of the mires have been damaged in the past and require restoration, but it had never been attempted before. Combination wood/peat dams have been used recently to spread water flows through drained valley mires, and stone sediment traps in flush mires on shallow peat. Bare peat restoration is trialling cut rush, cottongrass etc with heather seed & Sphagnum.