So far, so good - The Border Mires Kielder Forest, Northumberland/Cumbria

Forestry England

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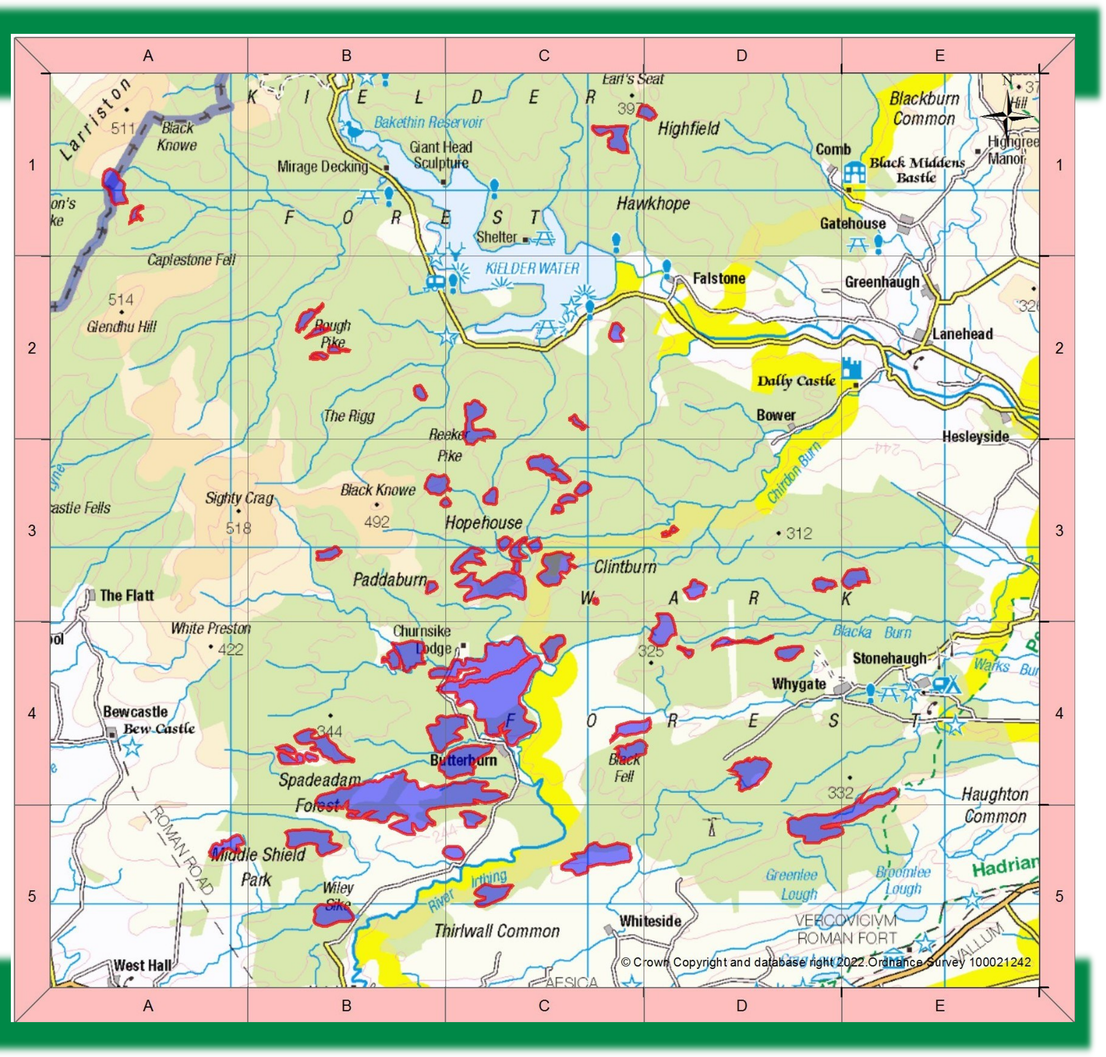
The Border Mires

A collection of 58 areas of exceptionally deep peat totalling over 2000 ha spread across west Northumberland and East Cumbria, between Hadrian's Wall and the Scottish Border (see map to right) make up the Border Mires. The topographical, climatic, geological, and historical circumstances which have resulted in such a concentration and quality of Mire habitats are very specific and set the Border Mires apart from mire complexes elsewhere. Their recent history has been inextricably tied with the development of Kielder Forest started almost a century ago.

Although the Border Mires have retained a more natural, less degraded state than many peatlands across the UK they did not escape the impact of human activities entirely. Luckily their importance started to be recognised as far back as the 1960's and since then efforts to protect and restore the border mires have gone from strength to strength. Key among those was the establishment of the Border Mires Management Committee in 1986 which continues to oversee and coordinate restoration and management of the Border Mires to this day.

Unlike many peatlands where extraction, pollution and erosion have led to large scale loss of natural mire vegetation, the work required to restore the Border Mires has generally centred on hydrological reinstatement and removal of non-native trees. Those restoration efforts stretch back over 50 years, having started with volunteer delivered ditch blocking in the 1970's. Since then a series of significant EU and UK public funding schemes have made possible large scale restoration across hundreds of hectares of mire habitats. In 2021 the Border Mires Committee secured further funding of ~£1 million, this time from the Nature For Climate Peatland Grant Scheme (NCPGS), to deliver another round of restoration work across nine of the border mires totalling over 800 ha in total.



Before / After

Recent Progress

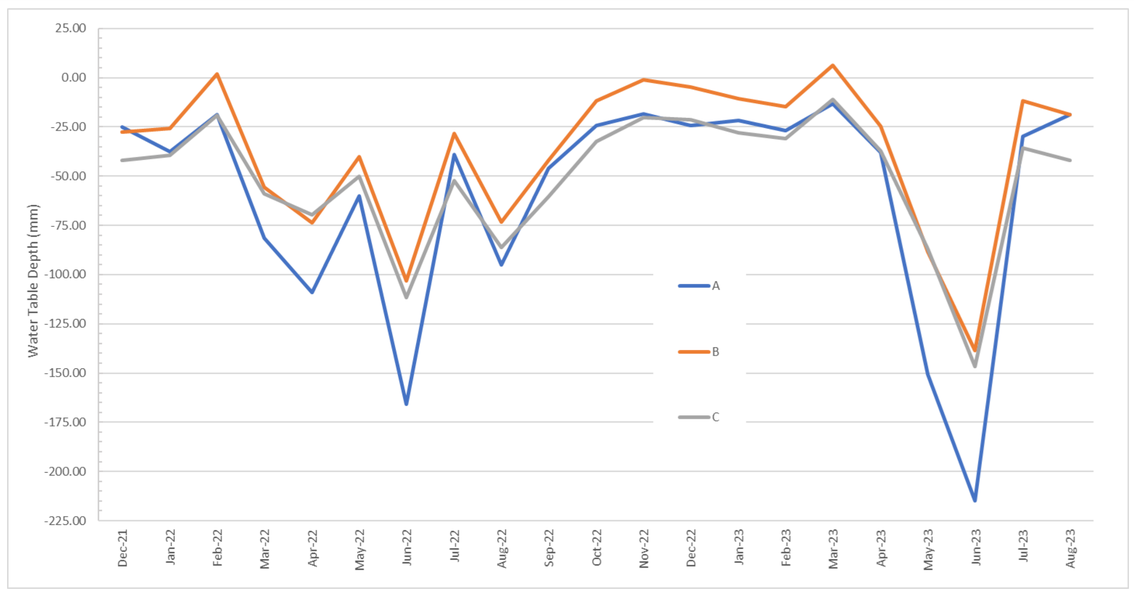
Over the last year Forestry England have, through a combination of the NCPGS funded project and FE's core land management budget (see before and after images on left):

- Cleared by hand cutting ~58 Ha of scattered conifer regeneration from 5 mires
- Mulched ~64 Ha of dense re-generation or failed commercial crop from 4 mires
- Blocked ~7500m of linear drainage features on 4 mires
- Installed ~7150 m of bunding to prevent sub-surface and overland flow on 3 mires
- Monthly monitoring of 245 Dipwells across 9 mires
- Began trialling a remote monitoring system utilising satellite transmission tech.

Tree removal has been achieved by large scale hand cutting of scattered re-gen, and mechanised mulching where trees are more dense. Despite the large areas listed above, only a small proportion of these trees are the result of intentional planting, rather they are self-seeded, either following a harvesting operation in the area, or from an adjoining crop. This project has sought to expand buffer zones between commercial crops and open habitats to reduce the risk of future re-generation onto the open mires.

The re-wetting techniques used are also tried and tested with linear features bloacked exclusively with peat dams. But bunding is a technique that has not been used extensively by Forestry England in the past. The current project has given FE an opportunity to trial this method, and the results have been impressive, especially when used to address dense networks of forestry plough lines from previous ground preparation. In extreme cases, it is used in combination with ground smoothing / stump flipping so that the ridge and furrow topography is reprofiled before the water level is raised.

The monitoring programme has started to produce hydrological baselines which show clear seasonal trends (example below from Butterburn Flow). A trial remote monitoring system has been installed alongside some of the manual monitoring infrastructure to allow direct comparison between the data sets in due course. This will help in informing future options for remote monitoring comparing benefits in data resolution and health and safety considerations against set up and operating costs.



What's Next?

There are already 29km of ditch blocking, 16km of bunding and ~190 ha of tree removal programmed in over the next 18 months or so. But this is still only the start of what is to come.

The Border Mires Committee are exploring various funding opportunities which may facilitate further work across the >11,000 ha of peat habitats in the Forestry England estate in the North. Several of those funding options also reach beyond the forest estate in partnership with neighbouring land-owners, and addressing adjacent and hydrologically linked habitats such as riparian corridors, and the species which occupy them.

This work will also cover effective implementation of the Natural England / Forestry Commission guidance on restocking on peat following harvesting as relevant areas come up for harvest.

The Border Mires Committee is comprised of Forestry England (North District), Northumberland Wildlife Trust, Natural England, Northumberland National Park Authority, University of Newcastle upon Tyne and the Ministry of Defence. The Committee was established in 1986 to oversee conservation of the Border Mires and associated peatland habitats in the area.

Forestry England · Northumberland Wildlife Trust · Natural England · Northumberland National Park · Newcastle University · Ministry of Defence