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THE IUCN-UK PEATLAND PROGRAMME AND THE YORKSHIRE PEAT PARTNERSHIP

Rob Stoneman

Yorkshire Wildlife Trust, United Kingdom

**Corresponding author: Rob.stoneman@ywt.org.uk*

The United Kingdom (UK) straddles the British Isles, islands that lie off the western reaches of the Eurasian mainland. With a temperate air and ocean flow lapping onto the shores of the UK, these islands are marked by an intensely temperate and oceanic climate. In winter, warmed by the Gulf Stream that circulates past the British Isles from the Caribbean to the Arctic, temperatures only infrequently fall to below zero degrees centigrade. Likewise, summer temperatures are depressed the Atlantic such that over 20°C days are considered warm. Cloudiness and rain are the norm rather than the exception although England and Scotland have a marked rainfall variation from west to east; parts of Cumbria on the west coast of England have annual rainfall totals of over 3,000mm; just 400 km SE in Cambridgeshire, rainfall can be as low as 500mm. In short, much of Britain experiences a mild wet climate – the ideal conditions for peat formation.

British peatlands are commonly sub-divided into bog (rain-fed only) and fen (rain and ground-water fed), although fenland systems show greater variation in vegetation and chemistry depending on the nature of the groundwater (Wheeler and Proctor, 2000). In turn, bogs are commonly subdivided into two very distinct types of peatlands: (1) Lowland raised bogs, which were always a rare habitat and have been highly damaged or completely removed through peat cutting and conversion to agricultural land. These peatlands normally form through ecological succession from lakes through a wet woodland and fen stages. (2) Upland and western blanket bog where peat forms directly on saturated ground as a result of a hyper-oceanic climate in which rain falls on over 150 days per year. These bogs literally blanket the landscape. Whilst many of these peatlands have been heavily modified through burning, grazing, drainage and air pollution, blanket bog still forms one of Britain's largest extents of semi-natural habitat with large areas forming the UK's only recognisably wilderness areas in, for example, the Flow Country in north-east Scotland and the Isle of Lewis north-west of the Scottish mainland.

Peatlands in the UK have long been regarded as a waste-land, areas of land ripe for 'improvement', mainly for agriculture, recreational shooting and to mine peat, originally as a domestic fuel and more recently for horticultural peat-based growing media. Lindsay (1993) noted that peatlands were a 'Cinderella' habitat – one of Britain's most important habitats but mostly over-looked despite their importance for wildlife, for their cultural value in many parts of Britain and other 'ecosystem services'. Such thinking was brought to the fore by a Consortium of Non-Governmental Organisations (NGOs) leading a campaign to conserve peatlands. High profile nature conservation cases during the 1980s and 1990s highlighted the issue, including a campaign to remove tax breaks for tree planting that had blighted the Flow Country during the 1980s (the tax break was reversed in 1988) and to stop peat extraction at Thorne and Hatfield Moors, Yorkshire (peat extraction ceased in 2002). The European Habitats Directive, brought into English and Welsh law through the 1994 Habitats Regulations, was another major driver for the conservation of peatlands in that the Directive identified both raised and blanket bog as well as certain types of fen for designation as Special Areas of Conservation.

In the uplands, the Peak District National Park, through their *Moors for the Future* Project, began work to restore highly damaged blanket bog in the Southern Pennines of England – pioneering work that began to look at landscape scale restoration. In the lowlands, progress was more fragmented, although in Scotland, the Scottish Wildlife Trust led on the development of a strategy to conserve their lowland raised bogs (Stoneman, 1993). Elsewhere restoration work was on a site-by-site basis.

This fragmented situation led a group of restoration practitioners, peatland scientists and policy makers to gather together at a workshop in London in 2008. The workshop concluded that there was an overwhelming need for a programme of actions to deliver large scale peatland restoration across the UK with a focus around the conservation quartet of partnership, science, policy and practice. A key driver for this programme was the recognition of the multiple benefits of peatland including their role in helping to mitigate climate change. Based on this consensus, the Peter De Haan Charitable Trust provided funding for a three year programme of work. Subsequently, this programme was adopted by the IUCN-UK Committee as this provided an effective umbrella for the NGO, Government and the scientific community to come together. Short-term funds have enabled the programme to extend to 2018.

The programme had five original aims: (1) to inform policy and legislation; (2) to champion peatlands and their plight particularly to decision-makers; (3) to improve knowledge and understanding; (4) to improve information sharing across the peatland community and (5) to promote good practice particularly amongst the land management community and identify economic opportunities for better land management. Some of the more notable successes are highlighted here to demonstrate progress.

A particularly important aspect of the programme was to bring together and informally coordinate the peatland conservation community. The programme provided a common platform to meet, inform each other and share ideas. Over the last six years, the programme has run five conferences across the UK – in Bangor (Wales), Durham and York (England), Stirling and Inverness (Scotland) – held numerous workshops and developed a shared web-resource (<http://www.iucn-uk-peatlandprogramme.org>) to publish common materials. This work is critical as it has helped build a momentum around the benefits and need for peatland restoration across the country and given individuals and organisations the confidence and information to be more ambitious.

Significantly, this better coordinated community of peatland conservationists were brought together in a Commission of Inquiry (Bain *et al.*, 2011) to gather together up-to-date knowledge from science, policy and practice and provide an authoritative assessment of the available evidence, based on peer-reviewed scientific consensus. The inquiry process commissioned 12 topic based reports as well as engaging hundreds of people through two of the conferences (at Durham University in 2010 and Stirling University in 2011) and an open public inquiry held in Edinburgh. A core panel of experts coordinated the Inquiry supported by an Advisory Panel drawn from land management, scientific and Government organisations and agencies. The Inquiry drew out the core ecosystem service benefits of peatlands – as one of Britain’s most important carbon stores, the largest remaining semi-natural habitat in the UK, a source for 70% of Britain’s drinking water and as national treasures in terms of their archive of environmental and cultural change. It recognised that many peatlands were highly damaged such that the peat is wasting away contributing to greenhouse gas emissions rather than absorbing and storing carbon from the atmosphere. It set out the cost-effectiveness of peatland restoration, noting that the more damaged a peatland becomes, the greater the cost to Society. Crucially, the Inquiry built a consensus that recognised that peatlands in good condition should be conserved and damaged peatlands restored in turn requiring effective Government policy, necessary funding and coordinated action. The UK has about 2.3 million ha of blanket and raised bog, of which 1.8 million is damaged in some way. The Inquiry set a target of 1 million ha of peatland in conservation management by 2020.

In addition to the Inquiry publication, the IUCN-UK Peatland Programme has enabled a variety of other publications. After a land manager workshop that exposed an issue around the identification of moorland into upland heath and blanket bog (two rather distinct habitats that require different management interventions to conserve), the programme facilitated the Field Studies Council to publish a simple field guide to Sphagnum mosses (O’Reilly and Tratt, 2011). The programme also published two publications to demonstrate restoration success that highlight restoration case-studies both in the UK (Cris *et al.*, 2011) and internationally (Cris *et al.*, 2014). In addition, as part of the Programme’s commitment to improve understanding, a series of topic briefings were published on specific issues¹². More recently, the special symposium of the British Ecological Society and the Peatland Programme formed the basis of a review of peatland restoration and ecosystem services (Bonn *et al.*, 2016). Likewise, the programme has updated the Bog Management Handbook (Brooks and Stoneman, 1997) that was originally published as part of the Scottish Lowland Raised Bog Project. The new version can be found as a freely available on-line resource¹³.

The IUCN-UK Peatland Programme has also been responsible for developing the Peatland Code. This is a mechanism by which businesses can help fund peatland restoration projects. The code is a voluntary standard that quantifies carbon emission reductions of restored peatlands designed to ensure environmental credibility so that businesses can invest in pre-selected projects with confidence that their funds will return clear carbon benefits, enabling them to meet corporate social responsibility targets.

All this work has helped to facilitate a step-change in Government policy and action. Significantly, at the IUCN-UK Peatland Programme York Conference in 2012, the four Environment Ministers of the United Kingdom¹⁴ signed a joint letter setting out a statement of intent *“to protect and enhance the natural capital provided by peatlands in the UK and British Overseas Territories.”* The letter set out four critical intentions: (1) land management policies to protect peatlands; (2) funding through agri-environment schemes; (3) development of private funding mechanisms to support peatland restoration and (4) a commitment to further research.

An example of this increased Government and private commitment to peatland conservation is drawn from Yorkshire, where the charity Yorkshire Wildlife Trust (YWT) has spearheaded the Yorkshire Peat

¹² See: <http://www.iucn-uk-peatlandprogramme.org/resources/iucn-briefing-notes-peatlands>

¹³ See <http://www.iucn-uk-peatlandprogramme.org/resources> to access links to the on-line version

¹⁴ Nature conservation policy operates under devolved governance within the UK, *i.e.* it is devolved to Northern Ireland, Wales, Scotland and England.

Partnership. This programme was developed in 2009 by scoping out the scale of the issue across Yorkshire. Of the 70,000 ha of upland blanket bog across the region, over 40,000 ha are highly damaged, having been drained, burnt and over-grazed by sheep to the point that much of the peatland resource is characterised by areas of bare peat, deep drainage gullies and a network of cut drains, most of which were cut using agricultural subsidies from the 1960s to 1980s.

To help restore this damage, YWT developed a partnership of organisations ranging from National Park Authorities and Government Agencies to landowner interests and private companies, such as Yorkshire Water. A team of restoration officers were developed who could undertake surveys, set out restoration management plans, liaise with land-owners/managers, develop funding agreements, let and manage contractors to undertake restoration work and facilitate a substantial regulatory and administrative requirement to enable peatland restoration.

Over the last six year, the team has surveyed over 37,000 ha of peatland, undertaking over 21,000 individual surveys of vegetation, damage characteristics and peat depth. This has enabled over 23,000 ha of peatland to come into restoration management involving the damming of thousands of kilometres of drain through the installation of around 300,000 dams.

The £12 million of funds for this work come from a range of sources although the most important funding mechanism is the rural development programme of the Common Agricultural Policy that can fund environmental improvements on farmed (in this case grazed) land. Yorkshire Water, recognising the significant benefits that could accrue in terms of water quality, have also invested substantial funds to restore peatlands in drinking water catchments whilst further funds have derived from Government Agencies – the Environment Agency and Natural England – and charitable sources.

The Yorkshire Peat Partnership represents a substantial restoration initiative but is just one of many big peatland restoration projects across the UK. To the south of the Yorkshire partnership area is the even more expansive work of the Peak District National Park; to the north it is the North Pennines Area of Outstanding Natural Beauty team that takes the lead. There is a long way to go before the million ha target set by the IUCN-UK peatland programme is reached but substantial progress is being made. Our longer-term aim is to bring all 1.8 million ha of peatland into conservation management of some form. If the UK is able to return its peatlands from systems that emit carbon to the atmosphere to a system that absorbs carbon then that sends a strong signal to the world community that peatland conservation can make a substantial difference in the battle to resolve catastrophic climate change.

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