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The Four-country 'Speakers Corner'
Various presenters

The Four-country 'Speakers Corner' will provide conference delegates with a concise UK-wide snapshot of peatland policy and delivery progress across the four countries since the last conference in Derry in October 2025. Held during the Day 1 poster session, this informal interactive format combines one poster from each country with short verbal updates and one-to-one discussion, enabling delegates to hear directly from representatives of devolved governments and statutory bodies. The session is designed to encourage dialogue on current funding, policy developments, delivery progress, monitoring approaches, successes and emerging concerns. To support consistency and comparison, each country poster will address four shared themes: new policy announcements, delivery and targets, monitoring frameworks and plans, and priorities for the year ahead. Posters will remaining on display throughout the conference and will be shared online as a lasting resource.

Mitigation of Methane Emissions from Peatlands – a Role for Micro-propagated *Sphagnum*-associated Methane Oxidising Bacteria?
Allen Gao, BeadaMoss

Peatland restoration often relies on rewetting and re-establishment of Sphagnum moss, yet the microbial processes linked to successful restoration are still poorly understood. In natural peatlands, *Sphagnum*-associated methane-oxidising bacteria can reduce methane emissions, suggesting that these microbes may have an important but under-recognised role in restoration outcomes. This project investigates whether greenhouse-grown, micro-propagated Sphagnum used for peatland restoration already carries functional methanotrophs, where these microbes originate from, and whether they may contribute to methane mitigation after transplantation. Samples were collected from different stages of the cultivation system, including pine bark, fresh BeadaMix®, used BeadaMix®, and BeadaHumok®. Methane enrichment experiments, 16S rRNA gene sequencing, metagenomics, and isolate characterisation were used to trace methanotroph origin and activity. In addition, field sampling was carried out in the Peak District at a densely *Sphagnum*-planted restored site and a degraded untreated control site, collecting *Sphagnum*, peat, porewater, and gas samples to extend the work into real restoration settings. Results so far: greenhouse-grown *Sphagnum* can actively degrade methane, and that methanotrophic signals are also present in the cultivation substrate, suggesting transfer from substrate to moss. Two methanotrophic strains have been isolated and are undergoing genome-level analysis. These findings suggest that micro-propagated *Sphagnum* may contribute to restoration not only as a plant material, but also as a carrier of functionally important microbial communities. This could have practical value for improving the climate benefits of peatland restoration.

Native Trees in Peatland Landscapes
various presenters, National Trust and IUCN UK Peatland Programme

This poster is based on a document produced by the National Trust and IUCN UK Peatland Programme, with input from a range of organisations. It explores the role of native trees within peatland landscapes, advocating a more integrated, process-led approach to ecosystem restoration. Historically, peatlands and woodlands have been managed in isolation, leading to tensions, missed opportunities, and, in some cases, ecological harm, particularly where tree establishment has compromised peatland hydrology. While inappropriate planting can damage degraded peatlands, native trees are a natural component of many peatland systems, especially within ecotones, wet woodlands, and catchment mosaics. Drawing on evidence, case studies, and practitioner experience, we emphasise that restoring hydrological function must be the primary objective, with tree establishment considered in that context. We call for landscape-scale, site-specific decision-making, guided by “the right tree in the right place,” and highlight key knowledge gaps to support more resilient, adaptive conservation.

Sowing Sustainability: Technology-Driven Peatland Supply Chains
Austin Hadley-Shepherd, Ponda

In this poster, Ponda will share a step-by-step journey of restoring peatlands while generating sustainable value. We begin with drone-sown wetland seed pellets, which help degraded sites recover and rewet naturally. Once established, a low-impact Typha (bulrush) seedhead harvester enables efficient collection without harming the ecosystem. The harvested plants are then processed into high-performance fibres, used in products such as BioPuff® insulation for fashion and consumer markets.

Each stage, sowing, growth, harvesting, processing, and manufacturing, demonstrates how technology and ecological principles can work together to restore peatlands, sequester carbon, increase biodiversity, and create climate-positive supply chains. By integrating this paludiculture model with nature-based solutions and natural capital schemes, restoration projects can generate additional income streams, making peatland management both ecologically and economically viable. This poster highlights a scalable, practical approach where healthy peatlands provide ecosystem benefits while producing market-ready, sustainable materials.

Eco-hydrological Guidelines for Peatlands
Emma Taylor, Environment Agency

Hydrology has a fundamental role in peatland condition. Understanding peatland eco-hydrology will help inform condition monitoring, management and restoration of our widely modified and fragmented blanket bog landscapes.

The topographic setting of bogs and the microtopographical features of the surface are both often used to describe them, but between these scales there is a need to characterise the sub-types of habitat present and the water supply mechanisms, enabling their varied responses to external pressures and restoration efforts to be better understood and monitored consistently.
We have developed Eco-hydrological Guidelines for blanket bog and associated habitats in England and Wales, based on the characterisation of sub-types of ombrogenous bog habitat alongside surrounding minerotrophic habitats (fens), through the collection and analysis of field data from all regions.

The guidelines are based on the occurrence of readily observable habitat features, and their application should facilitate rapid site assessment, complementing more in-depth surveys.

Raising water levels in arable peat
Christopher Evans, Natural England

Moss Side Farm is part of the Risley, Holcroft and Chat Moss National Nature Reserve. On this site Natural England are currently demonstrating the Hier Tier Countryside Stewardship Scheme ‘Raise water levels in cropped or arable peat soils to near the land surface’. This is part of the EU Horizon Palus Demos Project which is developing large scale paludiculture sites in England, Ireland and Netherlands. One of the fields at Moss Side Farm has six plots that are establishing hydrological regimes of ‘business as usual drained’, between 30-50 cm below surface and between 10-30 cm below surface, which are the water levels that farmers can claim payments on. We are currently growing two cereal crops on each water level; barley and wheat. Research on gas exchange and biodiversity is being undertaken in partnership with Liverpool John Moors and Manchester Metropolitan, and a Business Plan in partnership with Landscape Finance Lab.

Root oxygen and water table control CO2 – CH4 trade-offs in tropical peatlands
Shaun Allingham, University of Nottingham

Tropical peatlands store vast carbon stocks but are also major sources of methane (CH4), creating uncertainty in climate feedbacks. We conducted a field manipulation experiment in a Panamanian peatland to test how root activity and water table position regulate greenhouse gas emissions. By altering root presence, oxygen supply, and hydrology, we created gradients in peat oxygenation and redox conditions. Lower water tables and intact root systems increased oxygen availability, promoting CO2 emissions while suppressing CH4. In contrast, root exclusion and high water tables reduced oxygen availability, enhancing CH4 emissions. These shifts were strongly linked to changes in the abundance of methane-cycling microorganisms. Our findings demonstrate that small changes in hydrology and vegetation can fundamentally alter carbon loss pathways in tropical peatlands. This highlights a critical trade-off for peatland management and restoration, where interventions that reduce CO2 emissions may increase CH4, and vice versa, with important implications for climate mitigation

BeadaMoss – Scaling Sphagnum Restoration for Flood Management, Carbon Sequestration and Biodiversity
Matt Keniston, BeadaMoss

New university research on micropropagated Sphagnum shows that higher planting densities accelerate peatland recovery and improve hydrological function at catchment scale. Denser establishment increases water-holding capacity, slows runoff, enhances rainfall absorption, and supports downstream flow regulation. Greater biomass also contributes to increased carbon accumulation and reduced wildfire risk through improved moisture retention.
As Sphagnum establishes, it creates the structural conditions needed for diverse peatland plant and wildlife communities. To support this transition, BeadaMoss is expanding production and developing a wider range of sustainably produced vascular moorland plants for restoration partners. We are keen to hear from ecologists and practitioners about which species they would like to see produced.
In response to anticipated demand from the peatland restoration community, BeadaMoss has acquired a new production site that will double capacity, increasing the supply of micropropagated Sphagnum and future vascular plug plants to support large-scale restoration across the UK and Europe.

Does habitat restoration alter wildfire resistance and resilience?
Mike Shewring, RSPB

Wildfire risk is increasing as climate change intensifies fire-prone conditions and land use degrades ecosystems. In temperate systems, ecological restoration is being implemented to enhance biodiversity, restore ecosystem processes, and mitigate climate change. The influence of restoration on wildfire resistance (limit ignition, spread or severity) and resilience (post-fire recovery) remains contested. Synthesising evidence from the United Kingdom and similar systems, we evaluate how habitat condition and restoration trajectories influence wildfire outcomes. Across habitats, wildfire resistance and resilience are governed primarily by hydrological condition, fuel moisture, vegetation structure and composition, and fuel connectivity. Intact, self-maintaining systems—especially wet peatlands—limit severe fire and support more rapid recovery, whereas degraded or simplified systems are more vulnerable. Restoration commonly passes through intermediate states that differ functionally from both degraded and near-natural conditions, sometimes increasing short-term wildfire susceptibility. We conclude that restoration influences wildfire outcomes principally by re-establishing stabilising ecohydrological and structural feedbacks.

Developing innovative techniques for peatland restoration and protection on onshore windfarm sites: evaluating the effectiveness of reusing excavated peat
Heather Johnstone, RWE Renewables and University of Highlands and Islands

The rapid expansion of onshore wind energy in Scotland has increased development pressure on peatland landscapes, where construction activities generate substantial volumes of excavated peat. Despite growing restoration commitments, there is currently no evidence-based framework guiding the sustainable reuse of excavated peat on-site, representing a key gap in peatland restoration practice. This issue is particularly pertinent for sites bordering the Flow Country, designated as a UNESCO World Heritage Site in 2024.
This project aims to develop best-practice guidelines for reusing excavated peat across RWE's onshore windfarm sites. Three sites in Caithness, representing different project stages, are used as lifecycle case studies. Field trials at two sites assess the reinstatement of excavated peat along access tracks. Effectiveness is evaluated relative to degraded baseline conditions, focusing on peat-forming vegetation establishment, hydrological recovery, and peat surface stability.
This research links restoration performance with construction practice to inform scalable peatland restoration strategies.

The impact and efficacy of forest-to-bog restoration in South Wales
Jonathan Walker, Swansea University

The impact and efficacy of forest to bog restoration works in South Wales has been the focus of a research project led by Swansea University. To date, 4.5 years data have been collected from seven experimental sites across conifer plantations within the Welsh Government Woodland Estate on the Rhigos Mountains. The project aims to provide 'process' understanding of the hydrological impact of forestry and post-felling restoration on peatland hydrology (as well as evidence trajectories for vegetation recovery and GHG emissions). To achieve this, novel geophysical survey techniques have been used to measure sub-surface features and hydrological behaviours (ground penetrating radar, self potential and resistivity) that provide new insight to inform models of system change and future land management plans.

Reconstructing Peatland Change: Hydrology, Pollution and Restoration at Fenn's, Whixall and Bettisfield Mosses
Robert Hindson, University of Reading

Peatland restoration is often framed as recovery, but are restored systems truly returning to pre-disturbance conditions? This study examines that question at Fenn's, Whixall and Bettisfield Mosses, a heavily modified lowland raised bog complex.
A multi-proxy approach combines testate amoebae reconstructions of past water-table depth with physical and geochemical indicators, spheroidal carbonaceous particles (SCPs), long-term Natural England vegetation records, and national atmospheric deposition data. Together, these reveal strong legacy effects from industrial pollution, peat extraction, and fire, with elevated metals and nutrient inputs continuing to influence site conditions.
Recovery is spatially variable: some areas show evidence of rewetting, while others remain dry or display signs of repeated disturbance. Rather than uniform recovery, restoration appears to be producing heterogeneous ecohydrological conditions. These findings highlight the complexity of peatland recovery and the enduring influence of past disturbance.

An Accessible GIS Tool for Peatland Restoration Planning
Hagen Ó Neill, Woodrow Sustainable Solutions

We present a bespoke Python-based GIS application developed to support peatland restoration planning by integrating key spatial datasets within an accessible analytical framework. Using peat depth and elevation data, the tool generates peat slide susceptibility maps and flow accumulation models, providing a robust basis for risk assessment. These outputs directly inform the design and placement of interventions, including nature-based measures such as coir logs for stabilisation and hydrological control. To enhance interpretability, the application produces an interactive HTML output using Plotly, enabling users to explore 3D visualisations of water-shedding behaviour and hydrological connectivity in a portable, shareable format. By leveraging open-source tools and an intuitive interface, the application reduces cost and technical barriers associated with conventional GIS software, broadening access to advanced spatial analysis. A transect tool allows users to draw cross-sections across the landscape, dynamically generating profiles that integrate peat depth and topography, supporting efficient and evidence-based peatland management.

Rewilding as a Mechanism for Natural Flood Management in Upland Peaty Catchments in the Lake District
Ellie Micklewright, Arup

In this study two peaty catchments in the Lake District, the rewilded Ennerdale and more traditionally managed Thirlmere, are compared to quantitatively evaluate the potential of rewilding as a mechanism for natural flood management through habitat regeneration and soil restoration. Field observations indicate that upland vegetation communities at Ennerdale exhibited significantly greater vegetation height and dwarf shrub cover, as well as reduced soil compaction, compared to Thirlmere. These differences were largely attributed to lower grazing intensity at Ennerdale. More developed and woody upland vegetation communities and improved soil structure increase the hydrological function of the uplands by increasing surface roughness, interception, evapotranspiration and infiltration, as well as providing better quality habitats to support biodiversity. This celebrates the stakeholder collaboration at ‘Wild Ennerdale’ and shows the potential of rewilding in peatlands to increase resilience to climate change and the biodiversity crisis. Read more here: https://doi.org/10.1002/eco.70119.

Regional and topographic controls on greenhouse gas mitigation in rewetted lowland agricultural peatlands

Saghar Andaryani, Cranfield University

Lowland agricultural peatlands are major greenhouse gas (GHG) sources, but emissions vary with drainage regime, hydro(geo)logical setting and climate. We combined field-scale hydrological modelling with watertable-based emissions functions to estimate CO_2, CH_4 and net GHG balance across the Broads, Somerset Levels and the Fens, and to test how field-scale topography influences rewetting outcomes. Progressively raising regional drain water levels substantially reduced net GHG balance despite increases in CH_4. Under the wettest scenario, total annual CO_2-equivalent emissions declined by about 59% in the Broads and by around 80% in both Somerset and the Fens. The effect of field-scale topographic representation reduced the mitigation benefit by ~0.24% (Broads and the Fens) to 4% (Somerset). This indicates that topography is a much weaker control on emissions than regional drainage setting, climate and hydrogeology.

Four Years On: Rewetting Lowland Peat in a Changing Climate at Honeygar Farm

Paul Tansley, Somerset Wildlife Trust

Rewetting lowland peat is increasingly urgent as climate variability intensifies and global carbon emissions remain high. At Honeygar Farm, in the Somerset Levels, hydrological restoration began in 2022, alongside a wilding approach to management. This has involved isolating fields from the wider drainage network, reducing stocking levels, and changing management practices.
Over four years, these efforts have taken place under climatic extremes, from severe drought to high-intensity rainfall. Despite this, monitoring indicates elevated water tables, transitions toward wetland vegetation, and reduced greenhouse gas emissions, highlighting the mitigation potential of rewetting.
With nearly 30 research projects and a growing programme of visits from academics, farmers, land managers and organisations, Honeygar has become a key demonstration site, informing lowland peat restoration, sustainable finance and peatland science, while illustrating the complexities of restoration in the Somerset Levels. This has led to plans for a Lowland Peatland Research Centre on the site.

Restoring the Balance: The Role of the Sphagnum-Associated Microbiome in Regulating Carbon Dynamics in a Rewetted Blanket Bog

Alice Whittle, Derby University

Peatland restoration often involves hydrological interventions aimed at raising the water table, thus inhibiting carbon loss through aerobic decomposition. However, re-wetting can trigger methane emissions from anaerobic methanogenesis. In near-natural peatlands this is balanced by the natural bio-filtering property of Sphagnum moss. Methanotrophic bacteria found within the Sphagnum-associated microbiome oxidize methane, converting it into a source of CO2 that can be used by the host plant.

This poster brings together work from a project aimed at improving our understanding of how microbial community structure and function respond to peatland restoration techniques, both in the peat profile and in the Sphagnum-associated microbiome. Findings can advance a process-based understanding of microbial dynamics in peatlands, supporting evidence-based enhancement of landscape-scale restoration practices.

Building capacity for peatlands: restoration training at Yorkshire Peat Partnership

Sam Halliday, Yorkshire Peat Partnership

To meet the challenges peatlands face, organisations across the UK and Ireland are scaling up delivery of peatland restoration. The availability of a skilled workforce, and the ability to quickly upskill existing staff in the latest best practices, is key to accelerating this delivery. Yorkshire Peat Partnership (YPP) is striving to meet this need through provision of relevant, reliable training that evolves to embrace the most recent developments in our growing sector. Our training also aims to drive interest in the sector, particularly amongst young people.

YPP has delivered training to working practitioners across the UK and Ireland, and youth within Yorkshire. This poster will report on the development of YPP's peatland training programme and explore the future of peatland training through interactive elements. We will gather opinions from delegates about current and future training needs in the sector, and later share insights via YPP's blog.

Tree diversity of restored peat swamps in Southeast Asia: planting, regeneration, agroforestry or paludiculture?
Stuart Smith, The James Hutton Institute

Tropical peat swamp forests have experienced rapid degradation in recent decades with widespread loss across Southeast Asia. Despite efforts to restore degraded peatlands, there has been limited examination of tree species diversity across reforestation approaches, including tree planting and natural regeneration, and within mixed land-use, agroforestry and paludiculture. Tree planting is a common reforestation method, but plantings are usually species poor. Natural tree regeneration is passive colonisation of degraded peat from intact forests and offers high diversity potential, but there can be selective barriers to species colonisation. Agroforestry involves planting socio-economically valuable species on drained peat, whereas paludiculture is on rewetted peat, yet for both approaches tend to include non-native species. Following a series of comprehensive systematic reviews, we have compiled species records from over 200 reforestation studies and projects across Southeast Asia. Using this database, we present results on the species richness and overlap between reforestation approaches and land-uses.

Regional measurements of CH4 emissions over Europe's largest blanket bog
Stephanie Batten, Royal Holloway, University of London

Peatlands are globally important ecosystems, however also act as significant natural sources of methane (CH4), and large uncertainties exist in the quantification of these emissions globally. Regional scale peatland measurements are required to better constrain the global methane budget. Two flights using a research aircraft (FAAM Airborne Laboratory) were conducted over Europe's largest blanket bog, The Flow Country, Scotland, in August 2023. A SW to NE methane concentration gradient over the 1389 km2 land area was identified, consistent with CH4 emissions downwind of the blanket bog. Using the mass balance technique, average CH4 flux was 0.0968 ± 0.0685 µmol m-2 s-1. Comparison of isotopic signatures of airborne samples (-66.20‰) and multiple ground-based samples in the blanket bog (-63.85‰ and -68.30‰) confirmed their common source. The CH4 flux measured suggests current models (e.g. WetCHARTs) are significantly underestimating this temperate peatland source, highlighting current uncertainties in the global CH4 budget.

Peatlands in Flux: Flora Response to Snow Depth in Northern Scandinavia
Laurie Quincey, University of Bristol

The influence of snow on Arctic peatland productivity remains unquantified. Understanding Arctic flora responses to climate is critical for ecology and society, yet a reliance on satellite data decontextualises and limits research. Data-fusion methodologies can remedy this. This study presents a novel application of random forest modelling, reconstructing 25 years of sub-weekly gross primary productivity at Abisko-Stordalen, Sweden. Eddy covariance data were integrated with 4341 scenes from MODIS, Landsat missions 4-9, and Sentinel-2, with model performances of ~0.7 r2. Snow depth at Abisko-Stordalen Grassland reported a significant positive relationship with gross primary productivity, suggesting snow melt controls conditions favourable for Eriophorum spp. In contrast to literature, Abisko-Stordalen Palsa Mire reported significant browning of ~-34 gCm-2 over 25 years, attributed to waterlogging from thermokarst subsidence. Comparisons with NDVI showed discrepancies, highlighting the importance of accounting for flora diversity and mosaicked landscapes. This study cautions using solely NDVI and recommends multi-index approaches.

Celebrating another record-breaking year for Scotland's Peatland ACTION Partnership restoration efforts
Kirstin McEwan, NatureScot Peatland ACTION

As Scotland extends its long-term ambitions for peatland restoration – aiming to put 400,000 hectares of peatland back on the road to recovery by 2040, the Peatland ACTION Partnership celebrates another successful year.
Peatland ACTION shares the achievements and learnings from across the Partnership that helped restore a record number of hectares, bringing ecological, climate and community benefits to the people of Scotland. As the principal delivery vehicle for Scotland's peatland restoration ambitions, Peatland ACTION highlights their role in Scotland's long-term vision for peatland restoration through the Peatland ACTION Five-year Partnership Plan, Scotland's Climate Change Plan, and wider policies to achieve a just transition to net zero.
Peatland ACTION is the national programme to restore Scotland's peatlands, funded by The Scottish Government and delivered in a partnership led by NatureScot alongside Cairngorms National Park Authority, Loch Lomond & the Trossachs National Park Authority, Scottish Water, and Forestry and Land Scotland.

Monitoring peatland condition using hydrology, ground motion and vegetation biophysical parameters – a holistic approach
Gerardo Lopez Saldana, Assimila

Peatlands are under increasing pressure from climate change, land management and development, yet timely evidence on condition and restoration response remains limited or not fit for purpose. Within the ESA WorldPeatland, we combine Earth observation to characterise peatland hydrology, surface motion and vegetation biophysical parameters, together with carbon modelling to deliver practical indicators for peatland monitoring. Sentinel-1, Sentinel-2, SMAP, MODIS and VIIRS are used to track water level dynamics, surface deformation, land surface temperature, albedo and leaf area index. Time series are detrended, climatologies are generated, and standardised anomalies and trend metrics are derived to detect departures from expected behaviour and identify long-term change. These integrated indicators support assessment of rewetting, early warning of degradation, evaluation of fire risk, and interpretation of restoration progress. Delivered through user-focused online tools, the approach provides scientists, practitioners and policymakers with a scalable basis for peatland conservation, restoration and sustainable management.

The Spatial Footprint of Onshore Wind Infrastructure in Northern Ireland
Patrick Moss, Queen's University Belfast

Understanding the spatial footprint of wind energy infrastructure is essential for improving environmental impact assessment as Northern Ireland works towards meeting the Climate Change Act (2022) targets. The Renewable Electricity Price Guarantee scheme aims to increase installed renewable generation capacity by 40% by 2030, with majority growth expected from onshore wind. This study presents the first comprehensive, open access geospatial database of onshore windfarm infrastructure in Northern Ireland, developed through systematic digitisation of aerial imagery combined with planning portal site maps. The database integrates digitised habitat maps and external spatial datasets (the UKCEH Land Cover Map and the Priority Peatlands Map). A buffer-based spatial modelling approach was applied to quantify infrastructure footprints and assess interactions with surrounding habitats, with particular emphasis on peatland ecosystems. The resulting dataset provides a robust evidence base that, alongside peat depth and condition data, can support future assessments of carbon footprint and cumulative environmental effects.

Peat-DBase: towards a global dataset of peat depth measurements.
Collin van Rooij, Aarhus University

Peatlands have long been overlooked as unproductive land but are now recognized for their critical role in the global carbon cycle. However, they remain poorly mapped and understood, largely due to their complexity. This knowledge gap hinders effective conservation, even as countries like Denmark and the UK are increasingly prioritizing peatland protection and restoration through renewed policy. Substantial peat datasets already exist in Europe, but these are often fragmented and built on different conventions. By harmonizing datasets, Peat-DBase intends to enable researchers, conservationists, and policymakers to utilize global peatland data. An initial version of Peat-DBase has already been published and includes a growing amount of European data, but it remains under active development. We therefore invite peatland researchers worldwide to contribute data to help build a comprehensive resource to support peatland research and conservation.

ACT Peatland – Case Studies of Peatland Restoration in Argyll
Lucy Smith, Argyll Countryside Trust (ACT)

ACT Peatland was established in 2022, funded by NatureScot Peatland ACTION and Esmee Fairbairn Foundation. We aim to make peatland restoration accessible to everyone regardless of the size of their landholding, whilst building the connection local people have with peatlands and improving our understanding of the species that call this landscape home.
ACT Peatland host 2 Peatland ACTION Officers covering Islay, Jura, Colonsay, Kintyre, Knapdale and West Cowal. Over the past year we worked with landowners, site managers and agents to bring over 600ha of peatland back onto the road to recovery. Focusing on two project officer-led projects, Caladh and Coull Farm, we will discuss the design and delivery of peatland restoration in Argyll, the different types of restoration feature we see and how it varies between the mainland and Islay, challenges we overcame and lessons learnt.

Bog Bugs and Beasties: An Overview of the Beetle and Spider Assemblages of Irish Blanket Bogs

Kieran Boyd, Queen's University Belfast

Blanket bogs are a rare peatland that provide a range of ecosystem services including storing water, climate regulation, and supporting biodiversity; however, the vast majority are currently degraded. In Ireland, blanket bogs support a myriad of flora and fauna, including many protected species. Yet, despite their ecological significance, there is limited research on their biodiversity – particularly in relation to invertebrates. This study aims to enhance our understanding of terrestrial arthropod communities of Irish blanket bogs. Pitfall traps were installed in near-natural and degraded areas across three blanket bog sites and collected monthly during the summer of 2024. All of the Beetles and Spiders from each sample were identified to species. The preliminary results show that (1) there is a significant difference in assemblage composition between degraded and near-natural areas and (2) near-natural areas harbour greater numbers of characteristic peatland species.

Mind(ing) the gap between academics, stakeholders and practitioners

Pia Benaud, University of Leeds

Many peatland partnerships have long-standing, imbedded working relationships between stakeholders, practitioners and academics, providing a unique opportunity for direct knowledge exchange. However, the sharing of research findings can be siloed within partnerships and further limited by academic practices and paywalls. Understanding academic publications can be challenging due to dense formal language, an abundance of technical jargon, and unwieldy statistical tests and graphs. This creates an additional barrier to knowledge sharing where the nuance required for interpretating research papers can get lost in translation and results in uncertainty around the strengths and/or gaps within the evidence base. Peer-reviewed publications are also being increasingly centred in policy making through formal evidence reviews, which creates a frustrating barrier to incorporating valueable practitioner-developed knowledge into policy.
We are trying to address these issues through understanding differences between stakeholder perceptions and academic literature, translating dense research findings and broadening the source of the evidence base.

Discharge, Aquatic organic carbon fluxes from an Upland Peat catchment, UK
Qian Zhang, University of Manchester

Large amounts of reduced carbon that had been stored in the geosphere for millions of years have been extracted and oxidised to release energy. This anthropogenic interference in the global carbon cycle has also released oxidised carbon, CO2, into the atmosphere causing a greenhouse effect of the global climate. Peatlands although covering only 3% of the land surface worldwide contains more than 16% of all terrestrial carbon. Small changes in the stored organic carbon, could have dramatic impacts on the concentration of GHGs in the atmosphere. Most of carbon are mobilised through aquatic system indirectly, and it is expected to be larger. Therefore, quantifying the indirect carbon fluxes from a peatland catchment is important. This project aims to understand the hydrological cycle in an upland peat catchment (the Oakenclough catchment, Peak district, UK), evaluate flow pathways and quantify the amount of aquatic organic carbon (AOC) carried by each flow pathways.

Wet woodland on peat edges: Opportunities and challenges
David Smith, George Kohler, South West Peatland Partnership

This poster will explore incorporating areas of wet woodland around edges of peatlands during hydrological restoration approaches. How these edges transition to open rivers will also be discussed alongside best practices and common challenges.

Peat and fire on Dartmoor: Monitoring approaches
Eddie Adam, Ellie Peters South West Peatland Partnership

This poster will present research conducted with the University of Exeter on stream water level and water quality data collected in following a large fire that burned across areas of remote Dartmoor in May 2025. The data, collected across a 10-month period presents comparison between recently re-wetted, and non re-wetted peatlands rainfall-runoff events following the burn.

How the archaeological resource of peatlands is threatened by the same factors threatening peatlands themselves

Jo Higgins, Martin Gillard, South West Peatland Partnership

Peatlands can often be described as ‘natural archives’. The same conditions that form peat (water logged, lack of oxygen) are exactly what preserves history. We know that any threat to the ecosystem is a direct threat to the archaeology and palaeocological record within it. This poster will explore the impacts of this. Examples will demonstrate how, as peat degrades in prolonged dry periods as a result of past drainage and extraction, long buried clues from the past are exposed and destroyed.

Water resources implications of raising water levels in drained lowland agricultural peat in North Somerset

Alexander Jones, JBA Consulting

The North Somerset Peatlands have halved in size since the 1950s, with peat depth dropping by around 0.5m. The North Somerset Lowland Agricultural Peat Water Discovery Pilot (2024–26) integrates carbon and economic assessments with flood risk and water resources modelling to test the feasibility of raising water levels at landscape scale. The Adaptive Water Level Management Plan provides a toolkit to develop peatland restoration projects across the area as opportunities arise.
A key constraint is water availability. Modelling indicates raising water levels may exceed available flow and risk rivers drying during low-flow periods. Modelled summer irrigation demand ranges from 200–350mm, equivalent to 20–180% of local river flows. Methods to collect and store water will be required for restoration at scale.
This highlights a trade-off for decision-makers: when to prioritise rewetting for climate mitigation and resilience, and when to maintain river flows for ecological and societal benefits

Restoration of Headwater Fens in Oxfordshire
Ellie MacDonald, Freshwater Habitats Trust

Spring-fed wetlands are relatively small, heterogenous peatlands that naturally occur in abundance across headwater catchments, supporting many plants and invertebrates not found in other wetlands. They are difficult to map, classify and manage at scale, but are highly vulnerable to land use change, especially in lowland agricultural landscapes. These formerly abundant wetlands have been transformed by three centuries of land use intensification, and, with an historical perspective, the best surviving examples are seen as 'typical' rather than 'exceptional'. At Freshwater Habitats Trust we are working with landowners and partners to restore and manage some of these special wetlands within Oxfordshire, with each site presenting different challenges and lessons learned.

Agricultural peatland restoration for Green Transition: A Danish case-study
Franziska Eller, Asbjørn Emil Hertz, Emil Skole Læsøe, Frank Bondgaard, Mads Lægdsgaard Madsen, Rikke Rørby Graversen, Tobias Sandfeld Jensen, SEGES Innovation P/S

In 2024, the Danish government, together with key stakeholders in agriculture and nature conservation, reached a historic Agreement on a Green Denmark. The agreement aims to secure more nature, a better ecological water status, and a sustainable agricultural transition through restructuring and converting land use and production. A central pillar of this initiative is the introduction of a CO_2e tax on greenhouse gas emissions from agricultural lowland soils rich in organic carbon (hereafter “peatlands”), combined with financial support for their decommissioning. It has been decided that a total of 140,000 drained peatlands, including their marginal areas, will be restored into nature areas or forests by 2030. The presented project seeks to identify the optimal process for peatland restoration in Denmark—from planning to post-rewetting. Through case studies and literature reviews, a detailed model for land use and management is developed to maximize synergies between biodiversity conservation, nutrient removal, and greenhouse gas reduction. The preliminary vegetation analyses indicate that topsoil removal before rewetting is a promising restoration measure to enhance plant biodiversity and remove nutrients, while biomass harvesting seems to be less efficient. Year-round grazing after rewetting seems to be the most effective management measure for ensuring biodiversity.
Stakeholder workshops have gathered knowledge and experience from Denmark and abroad to design efficient management models for restored areas, where multiple landowners must collaborate. The ultimate goal is rational planning and

organization that optimize both ecological and economic benefits. The current results of this project, as well as the identified barriers for successful post-restoration management, will be presented as part of this work.

Peatland restoration in the Humberhead levels
Sarah Pullein, Yorkshire and Nottinghamshire Wildlife Trust

Through the NfC and LAPWDP projects there has been a great amount of peatland restoration activity occurring over the Humberhead levels from greatly increasing farmer involvement and interest in wetting land to large scale bunding and damming projects on some of our largest raised bogs. We wish to share to successes and lessons learnt and look to the future with capital works on farms and innovative drone trials for cotton grass planting.

We also aim to champion partnership working which has been the cornerstone of our success in the project and the amazing help from each and every person lifting the project to greater heights that could be achieved individually