



Peatland Programme

COMMISSION OF INQUIRY ON PEATLANDS

Summary of Findings



The IUCN UK Commission of Inquiry on Peatlands has brought together over 300 contributors from over 50 organisations drawing on a wide range of expertise from science, policy and practice. It comes at a crucial time, with high level strategic decisions being made at a national and international level on climate change, biodiversity, water and agriculture, which will impact on the way we manage our peatlands and how we pay to keep them in a healthy state. The Inquiry's findings clearly demonstrate the value of healthy peatlands to society, the damage which has been done to them, and the huge liability of doing nothing to repair this damage.

Peatlands are areas of land with a naturally accumulated layer of peat. These are formed under waterlogged conditions from carbon rich, dead and decaying plant material. In the UK mosses, mainly *Sphagnum* species, are the main formers of peat.

Peatlands are found in at least 175 countries – from the tropics to the poles – and cover around 4 million km² or 3% of the world's land area. In Europe, peatlands extend to ca. 515,000 km². The UK is amongst the top ten nations of the world in terms of its total peatland area. The UK has between 9-15% of Europe's peatland area (46,000-77,000 km²) and about 13% of the world's blanket bog – one of the world's rarest habitats. There are three main types of peatland in the UK: blanket bogs, raised bogs and fens. The international importance of the peatlands found in the UK give it an especial responsibility for their management and conservation.

The IUCN UK Commission of Inquiry on Peatlands has gathered up-to-date knowledge from science, policy and practice. The assessment focuses on blanket bog and raised bog peatlands, because they represent over 95% of all UK peatland habitat and offer an opportunity to make early and substantial progress in delivering a combination of economic, social and biodiversity gains. However, we recognise that lowland, river and groundwater-fed fen peatlands are also vital carbon stores, as well as existing and potential areas of rich biodiversity, which have also been subject to intensive and damaging management. Fen peatlands share many of the issues affecting rain-fed peatlands but with distinct differences in terms of their functions, threats and pressures, which merit further investigation.

A multidisciplinary team of experts produced the Assessment Report that this document summarises. It provides an authoritative assessment of the available evidence, based on peer-reviewed scientific consensus about the state of peatlands, the impacts of different activities on peatland ecosystems and the services they provide and the benefits of restoring and conserving them. The assessment explores mechanisms and processes for peatland conservation action, recognising the different social, economic and environmental drivers. The evidence-gathering approach was inclusive, engaging individual land managers as well as a wide range of organisations, which in itself has helped to foster joint action for peatland conservation and restoration.

The Assessment Report sets out the main conclusions, highlighting gaps and opportunities for further action. It identifies ways to secure additional funding and develop expertise to help land managers restore the UK's peatlands and to allow decision makers to take better account of their multiple benefits.

“Peatland conservation is a prime example of a nature-based solution to climate change but we urgently need to switch from aspiration to action to secure the benefits that peatlands provide.”

Julia Marton-Lefèvre, Director General, International Union for the Conservation of Nature



KEY FACTS

Peatlands provide essential services to society, globally, nationally and locally.

Peatlands are vitally important in the global carbon cycle and UK greenhouse gas budgets. They represent the single most important terrestrial carbon store in the UK. Blanket and raised bog peatlands cover around 23,000 km² or 9.5% of the UK land area, with current estimates indicating they store at least 3.2 billion tonnes of carbon. A loss of only 5% of UK peatland carbon would equate to the total annual UK anthropogenic greenhouse gas emissions. Healthy peat bogs have a net long-term ‘cooling’ effect on the climate.

Peatlands include the largest remaining semi-natural habitats in the UK. Our peatland habitats host nationally and internationally important biodiversity. Many of the typical peatland species, however, are showing marked population declines. The best available evidence suggests that less than 20% of the UK’s peatlands are undamaged. The remaining peatlands are eroded, modified or destroyed through extraction or conversion to other land uses. Even the best protected sites (under EU wildlife legislation) have suffered, with less than 50% in a favourable condition. However, much of the damage could still be reversed. British Overseas Territories also support large areas of peatlands, particularly in the Falkland Islands, with estimates of over 5,470 km² of deep blanket peat.



Peatlands are important for drinking water. In the UK, 70% of all drinking water is derived from surface water that comes mainly from upland catchments, which are generally peat dominated. Healthy peatlands provide high-quality water that is much cheaper to treat for drinking - damaged peatlands produce higher concentrations of organic ‘brown water’ carbon, which has to be removed at high cost.

Peatlands are national treasures. They provide a sense of place for many communities. As waterlogged soils, peat deposits provide a rich archive of cultural and environmental change stretching back over 10,000 years. Peatlands have preserved some of the oldest and most intriguing archaeological remains including roads, tracks, houses and settlements, monuments, artefacts and bog bodies. The archive, that is peat itself, has contributed greatly to our understanding of global climate change.

Peatlands have been identified as a priority for action under international agreements. Global agreements such as the UN Convention on Biological Diversity (CBD), the UN Framework Convention on Climate Change (UNFCCC) and the Ramsar Convention on Wetlands include obligations and opportunities for countries to maintain and restore peatlands. These agreements highlight the need for policies and funding to better reflect the value of peatland habitats for the services they provide. At an EU level, legislation on wildlife and water also recognises the importance of peatlands. By drawing on the work of a wide range of public-body and private partnerships, the UK Government and devolved administrations have an opportunity to demonstrate good practice in peatland protection and restoration to other European countries and globally.



Peatlands rely on water. When drained, peatlands waste away through oxidation, adding carbon dioxide to the atmosphere – then, they are a liability. A variety of activities have resulted in peatlands being damaged including drainage for agriculture or forestry, track building and peat extraction. Fire, overgrazing, climate change and atmospheric deposition can exacerbate the effects of drainage. Lowered water tables on peat bogs encourage the growth of plant species that do not easily form peat or that actively degrade the existing peat stock, resulting in losses of soil carbon and emissions of carbon dioxide to the atmosphere.

Damaged peatlands are expensive. Damaged and degraded peatlands place a substantial financial burden on society because of increased greenhouse gas emissions, poorer water quality and loss of other ecosystem services. Damaged peatlands may also exacerbate costly flood events, when water is rapidly conveyed from peatlands through drainage ditches and erosion gullies into downstream areas.

Peatland restoration is cost-effective. The cost of peatland restoration is considerably lower than the ongoing costs to society from leaving peatlands damaged. Early intervention also has lower restoration costs. Peatland restoration is cost-effective in reducing emissions of carbon to the atmosphere, improving water quality (reducing the costs for drinking water treatment) and conserving biodiversity. Peatland restoration can also help with climate change mitigation and adaptation. Funding for peatlands under current government schemes, particularly through the Common Agricultural Policy (CAP), can be an effective means of supporting management and restoration, but there is no doubt that more could be done through current funding instruments. Peatland restoration also presents new funding opportunities through links with business and industry, carbon markets and payments for delivery of ecosystem services within agri-environment schemes. This in turn could lead to better support for rural communities and the creation of green jobs.

The UK has world leading expertise in peatland restoration. The UK has globally relevant examples of peatland restoration and considerable land management expertise in tackling different forms of peatland damage, with many demonstrable successes. This creates an opportunity for peatland restoration to make a positive contribution towards meeting the UK's biodiversity objectives and ambitious targets to reduce greenhouse gas emissions. There are several successful landscape scale restoration projects in the UK, for example blanket bog restoration in the Flow Country in Scotland, Lake Vyrnwy and Migneint in Wales, Exmoor, Dartmoor, Peak District and Pennines in England and restoration of lowland raised bogs in Cumbria, Lancashire, and Northern Ireland.



Damaged peatlands are substantially less resilient to climate change than healthy ones. Given rapid climate change, which is likely to impact widely and adversely on biodiversity, soils, water supply and quality, there is an even more urgent need for action to protect and restore peatlands. Available evidence suggests that a healthy peatland is a more resilient peatland in the face of environmental change. Good management and restoration also help to secure peatland wildlife and ecosystem services, under a changing climate. Restoration therefore helps to safeguard important goods and services into the future and, at the same time, can help to meet the UK's emission-reduction targets. Not restoring peatlands will lead to increased greenhouse gas emissions from damaged peat carbon stores under a changing climate.

Peatland natural capital is not fully represented in national accounting. The fact that the true value of peatlands and the costs of damaging them are not reflected in the resources available to conserve them represents a clear example of market failure. The value of peatlands as a carbon store and in mitigating climate change is not yet fully taken into account in the national greenhouse gas inventory. In addition, there are monitoring gaps in relation to the state of peatlands, progress towards biodiversity objectives, delivery of ecosystem services and application of policy measures such as agri-environment schemes. Improvement in these areas would allow better accounting and reporting of progress against government objectives and international obligations.

“Science has shown that peatlands deliver important services to society. We need to continue to understand more about their condition and resilience whilst getting on with conserving and restoring them, so that we can ensure the best for their long-term future.”

Tim Burt, Professor of Geography, Durham University



PEATLANDS: AN URGENT AGENDA

Securing the benefits we derive from peatlands requires an urgent step-change in action to redress past damage. A speedy response to protect and restore our peatlands under a changing climate is challenging – but will cost us dear if we delay.

This Inquiry therefore calls for the multiple benefits of peatlands to be understood and appreciated. Our vision is for the UK's peatlands to be functioning to their full natural potential. There should be no further loss of near-natural peatlands in the UK, and all recoverable peatlands should be restored to a peat forming state, resilient to climate change and with long-term safeguards. **Our four-pronged peatland strategy comprises:**

- **Conserving** peatlands in good condition, through management that maintains a favourable state, and preventing further damage to healthy peatlands (even the best protected peatland sites have suffered, with less than 50% in a favourable condition, so the first priority must be to prevent any further deterioration).
- **Restoring** partially damaged peatlands through land-use changes and active habitat management to return them to a peat forming state with typical peatland vegetation and animal species (including blocking drainage ditches, altering livestock numbers or adjusting burning management).
- **Intervening** to repair severely damaged peatlands through major operations, such as woodland removal, gully blocking and re-vegetating bare peat.
- **Communicating** the contribution peatlands make to meeting environmental, economic and social goals – critically, to help combat climate change and to halt the loss of biodiversity.





We need strong public and business policy responses to achieve this, focused on three actions:

- a. Introducing a UK and devolved government **policy framework** to protect and maintain existing peatlands and ensure restoration of damaged areas. Peatland policy objectives and delivery should be ‘joined-up’ across climate change, biodiversity, water, heritage, development and access legislation.
- b. Ensuring the necessary **funding** is in place to protect and restore the UK’s peatlands. This requires continued use of the key funding streams, such as the EU Common Agriculture Policy (CAP), and maximising any additional opportunities through forthcoming reform. Other funds should be sought through the EU Environment – LIFE+ Programme, with additional core government funding alongside the development of business investment in ecosystem services.
- c. **Coordinating action** to encourage partnerships to secure an effective evidence base, with monitoring and reporting on progress, along with knowledge exchange, education and advice.

Targets and timescales

The management and restoration of the UK’s peatlands is an ambitious goal, with best estimates of 2.3 million ha of blanket and raised bog, of which around 1.8 million ha is damaged in some way. By creating a better framework to integrate public and business policies and by putting the right funding mechanisms in place, we should be able to secure a much better future for our peatlands by 2050. A positive interim target would be to work towards having 1 million ha of peatlands in good condition or under restoration management by 2020 – a timescale consistent with UK and international biodiversity objectives as well as commitments to tackle global climate change.

MOVING TOWARDS HEALTHIER PEATLANDS

a. Policy framework

We need to muster the considerable peatland expertise and potential resources across the public and private sectors to achieve the scale and urgency of action required, recognising the challenges of the current economic climate.

- a1. Clear government signals need to empower public bodies, the private sector, NGO's and communities to maintain and restore peatlands.
 - Establish a UK wide, coordinated, funded peatland restoration delivery programme with agreed areas, targets and timescales, reflecting international commitments on peatlands.

- a2. Coordination and cooperation across government sectors and agencies would help deliver peatland biodiversity objectives and secure ecosystem benefits.
 - Recognise the important role of peatlands under all relevant public body duties, e.g. climate change mitigation and adaptation, biodiversity conservation and water regulation.
 - Take forward opportunities for delivery of landscape and cross-catchment scale projects with cooperation across different administrative boundaries.
 - Establish a high-level peatland group to facilitate cross agency coordination and to report on progress against peatland objectives.

- a3. Develop an ecosystem-based approach to peatland policy.
 - Adopt an ecosystem-based approach with healthy functioning peatland habitat as the shared goal, rather than simply maximising individual services from peatlands.

- a4. Have better collaboration across public bodies, business, NGOs, and communities with stronger connections between end-beneficiaries and those delivering services on peatlands.
 - Support collaborative working at the site level to deliver peatland management and restoration, showcasing good examples nationally and internationally.
 - Explore mechanisms to encourage better connection between peatland managers and beneficiaries of the ecosystem services.



b. Funding

There are opportunities to greatly improve the sharing of costs experienced by society in terms of damaging impacts to water, loss of biodiversity and carbon emissions and the support given to the management of peatlands. Put simply, we want to vastly reduce these costs. Support towards this includes direct government and business funding along with government action to facilitate international funds, business and private investment for peatland management and restoration.

b1. Improved funding through the CAP, both Pillar I direct payments and Pillar II Rural Development Programmes (especially agri-environment and forestry measures) for peatland management and restoration.

- Improve the alignment of funds within the four UK country programmes to the provision of benefits for biodiversity, climate change and water.
- Ensure appropriate payment levels and integration with private/public funding initiatives to incentivise land managers and cover the costs of providing public benefits from peatlands.

b2. Use public and private resources in a coordinated way to support peatland restoration and management.

- Establish core government funding specifically to support peatland projects, and encourage public bodies and the business sector to work jointly in funding peatland work.

b3. Development of new sources of funding for peatland conservation and restoration.

- Explore opportunities to support business-led carbon investment in peatlands including developing a Peatland Carbon Code.
- Support water company investment in upstream land management.
- Explore other funding opportunities such as payment schemes for ecosystem services, biodiversity offsets and habitat banking.



c. Coordinated action

c1. Establish nationally coordinated and funded peatland accounting.

- Monitor the state of peatlands.
- Report on progress towards biodiversity targets and delivery of international and national objectives, greenhouse gas emissions savings and other ecosystem service benefits.
- Assess the effectiveness and progress of policy measures, including agri-environment measures.

c2. Provide support for a UK peatland hub for information and consensus building, training and partnership working between scientists, policy advisers, businesses and land managers.

- Provide a one-stop shop for information.
- Showcase cost effective and flexible solutions for peatland restoration and management through demonstration sites.
- Facilitate effective collaborations between policy, practice and academic research.

c3. Encourage trans-disciplinary research on peatlands.

- Provide solutions for effective peatland conservation/restoration.
- Improve the evidence base for the services that peatlands provide and the effects of restoration.

c4. Communicate the importance of peatlands, highlighting their benefits to society including market and non market values.

- Build on the wealth of peatland projects and stories to provide the tools for wider communication, engaging expertise to incorporate peatlands more extensively in media and education.

CONCLUSION

Throughout the course of this Inquiry, it has been evident that there is a large community of interested people and organisations willing to help deliver the vision for peatlands – but needing the right signals and support. We now want to see a significant shift in public attitudes and support towards realising the immense value of peatlands in making the planet healthier for us – and for nature.

Front cover image © Laurie Campbell/SNH
Blanket bog in the Pennines © Moors for the Future
Blanket bog of the Flow Country, Forsinard © RSPB
Functioning blanket bog, Forsinard © Norman Russell
Sphagnum © Norman Russell
Peatlands are an important visitor attraction © Norman Russell
Results of grip damming © Andrew Keen
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Restored blanket bog after ditch blocking © Exmoor National Park Authority

All contributing materials, including technical reviews,
submissions to the Open Inquiry and conference proceedings,
are available on the IUCN UK Peatland Programme website
www.iucn-uk-peatlandprogramme.org/resources



Peatland Programme

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“Making a commitment to maintain and restore peatlands in line with national and international biodiversity objectives offers the prospect of wider carbon and water benefits. There is clear evidence on the benefits of peatlands to society and, critically, mounting experience on how to manage them across the UK.”

Susan Davies, Director of Policy and Advice, Scottish Natural Heritage

“We’ve always had a strong ecological case for investment in peatlands, thanks to the work of the Peatland Programme we now have a compelling economic case too.”

Jonathan Hughes, Director of Conservation, Scottish Wildlife Trust

“Peatland management remains both influenced and dependent on continued agricultural infrastructure, of farms and crofts. As we move from the past policy drivers which intensified environmental pressures, we now need the right incentives for farmers to help deliver the peatlands in a state that provides wider benefits.”

Jonathan Hall, Head of Rural Policy, National Farmers Union Scotland

“There appear to be few downsides to peatland restoration and a real potential for cost savings in providing long term public water supply. Peatland restoration offers a more sustainable future in water quality terms, as we’re addressing the causes of poor water quality, not treating the worsening symptoms.”

Andrew Walker, Catchment Development Leader, Yorkshire Water

“With an increasing responsibility to deliver more sustainable land management, peatlands demonstrate how this can be done with minimal outlay in comparison with other less understood interventions.”

Ian Crosher, Peat, Soils & Climate Change Adaptation, Natural England

“Looking after our peatbogs goes hand in hand with good game management, and repairing damage enhances the environment we rely upon for our livelihoods.”

Lindsay Waddell, Chairman, National Gamekeepers Organisation

“Peatland restoration in Wales is beginning to achieve real benefits for biodiversity and carbon – and increasingly on a landscape scale. However, long-term funding support is needed to expand this work from its initially modest beginnings into an ambitious national peatland restoration programme that reflects the biodiversity and wider ecosystem service value of these fantastic places.”

Peter Jones, Peatlands Ecologist, Countryside Council for Wales

“Peatlands are a crucial component of the Earth’s interacting landscape, biosphere and climate systems. It is therefore right that we should do all we can to protect peatlands so that they can continue to support a healthy Earth system and provide a wide range of global, national and local benefits for future generations.”

Joseph Holden, Professor of Physical Geography, University of Leeds

