

Notes from workshop on peatland research priorities

ECCI Building, High School Yards, Edinburgh EH1 1LZ

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Attended by Scottish Natural Heritage, James Hutton Institute, IUCN, Birmingham University, Crichton Carbon Centre, Forest Research, Scottish Environment Protection Agency, University of the Highland and Islands, Scottish Government, ClimateXChange.

Purpose of the workshop:

"Interest in peatlands, certainly within the policy and research arenas, is probably higher than it has ever been. This is mostly because of the recognition of the importance of peatlands in the context of climate change. However there is also an increasing awareness of the importance of peatlands for the numerous other public, and private, benefits derived from them.

Given this context, it is reasonable that those involved in resourcing, developing and implementing land use policy and management want their decisions to be informed by the best available evidence.

This requires good communication within and between policy, land management and research communities to ensure compatible agendas and effort.

This meeting is part of the communication effort."

Scottish Natural Heritage

The broad theme for the discussion was *"Prescriptions for restoration of peatlands: doing it better & prioritisation"*

SNH are currently producing a Peatland Plan for Scotland and are seeking to determine where Scotland wants to be and how to get there.

The group assembled a set of questions that summarised what they would like to know:

High level questions:

- What are the unknowns?
- Where is the consensus (critical evaluation of the current state of knowledge)?
- How do we structure and target the science?
- How do we undertake critical evaluation (policy advice for balancing economic & ecosystem service benefits with restoration cost)?
- How do we balance the short term (3-5 year) horizon with the long term view needed?

More specific questions:

- How will climate change interact with peatland and to what extent will differential degradation rates influence the arrival at a tipping point?
- What are the implications for crossing a tipping point in GHG balance, biodiversity, water and the economic consequences?
- Better understanding of the field data protocols to measure GHG fluxes. What progress has been made to identify proxies that can be measured using remote sensing?
- What is peatland work aiming to achieve? Multiple ecosystem-services (ES) based benefits or purely GHG and carbon (avoided soil erosion or aqueous losses) related benefits?
- Metrics are needed for peatland condition that address water quality, biodiversity and resilience
- How can historical data (paleogeographic and previous restoration data) be better used?
- How do you disentangle and interpret multiple land-use impacts?
- How much understanding is there of the range of different peatland vegetation types/ mixes?
- What is the impact of trees grown on peatland on multiple ES? What is the long term impact on GHG of forestry on peatland?
- How should the carbon stock in degraded peatland be accounted for when looking at the GHG costs/benefits of building wind farms? What timelines should be used for peatland restoration efforts in calculating emissions?
- What mechanism can be adopted to promote/support peatland measurement across sites and agencies?

Site details and long term monitoring and data

There was a discussion around how information about sites under study can be better shared and how measurements can be harmonised. It was recognised that good baseline data is key and that data from studies associated with wind farm development could provide useful baseline data. The needs for sharing data on the state of peatland after restoration and using controls to study where no intervention has taken place. There is also a need to improve the categorisation of the starting states of peatlands. Timescales involved need decadal duration for measurements.

There is a need for the science (monitoring & modelling) to be sufficiently mature and agreed to enable funding to be attracted in.

The sharing of data demands agreed protocols both on measurement and on allowing data to be made available between agencies. The 10 year research scope should aim to establish:

- What has and can be learned from peatland restoration projects?
- What should be done to manage peatland better?
- Which sites (peatland type) should be priority for research & for restoration?
- What are the research gaps?

It was agreed that an inventory of vulnerable blanket bogs should be established. The availability of rich aerial photographs over time that could assist in generating timelines of peatland status was discussed.

One focus should be addressing the next (i.e. 2019) phase of SRDP funding to address how payments can be best targeted. Another focus should be to actively monitor where restoration work associated with wind farms has been undertaken and its impacts, with possible agreements in place with wind farm operators to incentivise monitoring/ measurement projects. What is needed is better information on the cost-effectiveness which obviously has some commercial considerations to address.

Body to drive forward peatland research

The meeting discussed the need for a peatland champion located in or close to the Scottish Government who can enable the removal of barriers and can lobby for peatland related interests to be highlighted.

It was recognised that peatland management impacts a number of policy areas:

- Water
- GHG and climate change
- Biodiversity
- Agriculture
- Soil
- Economics

The meeting felt that IUCN and others should seek funding to develop a Peatland Plan building on the Peatland Code. It was felt that it is important that this does not duplicate other work that might be planned in SG.

It was felt that a group encompassing the SG and NDPS as well as NGOs should be assembled. Any overall approach should take an ecosystem approach to evaluation (not just a GHG view) considering water, GHGs, biodiversity, other societal services and values, economics, forest and soil science. It should focus on data sharing and building 10+ year data sets.

Naturally eroding peatland sites

There was discussion on whether some eroding peatland should be deemed to be naturally eroding and protected in its eroding state rather than assume that all eroding peatland should be restored to a non-eroding state. This could be the focus of research to establish whether peatland does naturally erode even after grazing control measures have been put in place. There was discussion on what peatland protection measures are used and what gaps exist in being able to definitively say what effects they have.

Agri-economics

Research is needed into the economics of peatland restoration and the opportunity costs of alternatives to restoring peatland in terms of the income for landowners. Some of the alternative costs and benefits should extend to activities like fishing and forestry and the level of support needed to attract landowners to seeking money for restoration. There is considered to be a need to build up evidence to inform what future incentives may be required and the benefits likely to accrue to landowners and other local interests.

It was agreed that more reliable science is needed to secure the financial benefits of peatlands and to prioritise actions. Doing so may clarify incentives for landowners to restore and protect peatlands.

The meeting identified that peatlands may hold financial value in relation to (among others) fisheries, corporate 'green' credentials and reducing flood risk.