



Peatland Programme

‘Investing in Peatlands: The Climate Challenge’

Conference

**28th - 29th September 2010
Durham University**

**Conference outputs from
workshops and plenary discussion**

Conference – Key Suggestions for Actions

The IUCN Conference 'Investing in Peatlands: The Climate Challenge' on 28th -29th September 2010 was attended by over 200 delegates with representatives from science, policy and land management.

The conference presentations can be downloaded from <http://www.iucn-uk-peatlandprogramme.org/news/conference2010> .

The conference held eight workshops on key peatland issues which provided input to the IUCN UK Commission of Inquiry on Peatlands and the wider IUCN UK Peatland Programme. The workshops identified key messages which were discussed in the plenum session.

Plenum Panel

- Martyn Howat, Chair, IUCN UK Peatland Programme Commission of Inquiry
- Dr Andrew Coupar, Scottish Natural Heritage
- Dr Harriet Orr, Principal Scientist Climate Change, Environment Agency
- Simon Thorp, Secretary, Scotland's Moorland Forum
- Andrew Walker, Catchment Development Leader, Yorkshire Water
- Prof Andrew Watkinson, Director, Living With Environmental Change
- Sir Graham Wynne, Patron of IUCN UK Peatland Programme Commission of Inquiry

The eight key suggestions for actions from the conference are:

1) **Effective Restoration of Peatlands**

Existing UK restoration projects are vital for delivery and demonstration of ecosystem services from peatlands. Restoration of peatlands, especially to Sphagnum rich communities, with appropriate subsequent management is pivotal to increase their resilience in the face of climate change and thereby safeguard the sustained delivery of services to millions of people.

2) **Wider Land Use Strategy & Economic Incentives for Restoration**

To ensure a restoration delivery mechanism, a wider land use strategy is needed to embed peatland restoration in policy to foster and target the provision of peatland ecosystems where they deliver at their optimum. This needs to be supported by economic incentives, and linking to agri-environment support payments, e.g. payments for ecosystem services for restoration. Other options include financing restoration through carbon markets and introducing a peat levy for peat extraction.

3) **Collaboration & Better Communication**

Collaborative working and early and continuing engagement with all stakeholders is key to success in peatland restoration. There is a need to engage the land managing sectors to unlock potential with local farmers. There also needs to be better communication between interests group. The historic environment workshop identified a need to develop better targeted messages for different stakeholder groups. By addressing the 'sense of place' and harnessing localism, we can better understand why peatlands are valued by local communities and visitors. This will be key to engage people and enhance the relevance of peatlands.

4) **Development of Good Practice & Standardisation of Methods**

There is a need to develop good practice for restoration and maintenance of peatlands to achieve best results for biodiversity and other ecosystem services. Good practice guidance

is not only needed for techniques, but for the whole project management from assessing the sites and considering eg. the palaeo-record in advance to developing the monitoring and analysis design. This needs a standardisation of habitat and condition descriptions across the UK as well as of management and monitoring activity to ensure consistency of information gathering and reporting. It was suggested to use the 'Mires for Moors' monitoring plan as template.

5) Coordinated Monitoring & Demonstration Sites

There was a strong call for long-term coordinated monitoring targeted at restoration benefits. A large-scale programme with nested experiments across the UK with land managers on board as experimenters is needed to assess the effects of restoration across a range of ecosystem services. Key variables need to be monitored with agreed methodologies to reduce uncertainty. In addition, the peat archive provides opportunity for long term (>50 year) monitoring of change and adaptation to climate and land use change.

6) Communicate Evidence – Solutions Research

The Commission of Inquiry on Peatlands was asked to summarise evidence in a matrix of 'No regrets' (effects of management on ecosystem services, costs, uncertainty - traffic light systems on which interventions work, probably work, or are experimental). The IUCN UK Peatland Programme was asked to articulate knowledge gaps and communicate these in compelling way to funders and policy makers. Andrew Watkinson, LWEC, called for a look forward with solutions research aimed at delivering vibrant peatlands in a changing world.

7) Advocacy

The plenum panel called for the benefits of peatland ecosystems to be communicated in single, clear and powerful messages. The economic importance of peatlands, e.g. for water companies and customers, needs to be realised and communicated. Restoring peatlands needs a budget, but the option of 'doing nothing' is much more costly.

8) UK Peat Hub

The conference endorsed the proposal for the development of a UK Peat Hub as a national coordination point for peatland management, policy and research. The Hub should deliver up-to-date science-policy knowledge exchange and provide coordination, clarity & cooperation (C³) of information and agendas. The LWEC programme and the RELU 'Sustainable Uplands' project will now work with IUCN UK Peatland Programme and its partners to develop a working group towards initiating UK Peat Hub.

Workshop R1 & 5 Peatland condition & Biodiversity

Chair: Andrew Coupar, Scottish Natural Heritage

The workshop started with two short presentations to stimulate debate:

- Richard Lindsay, University of East London - Living Peatlands
- Jonathan Hughes, Scottish Wildlife Trust - Managing peatlands for biodiversity

The following action points were agreed as key suggestion for action from the three workshop focal questions

- **Return peatlands to a more natural state (Sphagnum rich?) with appropriate subsequent management**
- **Need to define 'good practice' with respect to biodiversity**
- **Standardisation – of habitat/condition descriptions and management/monitoring activity**

R1/5 a) State of Peatlands: How do we make the best use of the information we have, given that it is incomplete and difficult to aggregate? How do we fill the information gaps - and what are the priorities? How do we balance resource requirements for inventory/monitoring with those for management/restoration?

R1/5 b) Biodiversity: What are the barriers to good practice and how do we break them down? How do we manage for biodiversity and multiple services at sustainable levels?

R1/5 c) Biodiversity: How do we 'climate-proof' our peatland biodiversity?

Write up to follow

Workshop R2 - Climate Change and Peatlands

Chair: Pete Smith, University of Aberdeen

The workshop started with two short presentations to stimulate debate:

- Judith Stuart, Defra - Defra peatland greenhouse gas overview
- Jo Clarke, Grantham Institute of Climate Change - Peatland viability in the face of climate change

The following action points were agreed as key suggestion for action from the three workshop focal questions

- **Rewet and restore for Sphagnum restoration**
- **Restoration will improve resilience of peatlands in the face of a changing climate, and thereby safeguard ecosystem services**
- **Develop matrix of no regrets in peatland management: effects on GHG, cost per GHG unit and certainty**

- **Long-term monitoring needed, targeted at assessing restoration benefits**

R2 a) What further evidence do we need to quantify the GHG implications of peatland restoration particularly in relation to Government climate change targets and possible carbon offset schemes?

- Look after/ return Sphagnum
- Rewetting
- Interaction between different drivers & processes
- Adaptive management – act on 'no regrets' first, do sensitivity matrix
 - GHG Potential
 - Cost per unit GHG
 - certainty
- Site specific information needed
- Investment in monitoring through time
- Information exchange needed
- Evidence on management limited to few sites, expand
- Better information needed o LRB – urgency to act

R2 b) How good is our understanding of the possible impact of climate change for peatlands – how do we best manage for the risks and uncertainties of climate change?

- Pristine peatlands/ active peatlands are more resilient to climate change
- High quality monitoring required: do we get win-win-win solutions
- Set resilience levels - °C change
- Avoid CH4 shunt vegetation

R2 c) How can we best deliver action for peatlands under climate change policy?

- Peat levy on peat extraction/ ban extraction
- Target action under Agri-environment schemes and include non-SSSIs
- Improve robustness of evidence
- Better science/policy communication
- Government commitment to protect resource

Workshop R3 – Peatland Hydrology

Chair: Harriet Orr, Environment Agency

The workshop started with two short presentations to stimulate debate:

- Chris Evans, CEH Bangor- Water quality regulation from peatlands
- Andrew Walker, Catchment Development Leader, Yorkshire Water- Water from peatlands – an industry perspective

R3b What are the monitoring requirements to assess impact of restoration on peatland hydrology? How to achieve this?

1. **IUCN to highlight knowledge gaps based on scientific consensus (see below) and use these in a compelling way to influence research and infrastructure funding organisations**
2. Develop best practice guidance on monitoring and analysis design. Use the SW Water 'Mires on the Moors' project to do this (key contact Sean Arnott, EA)
3. **Traffic light system for managers ie which interventions are ok, which probably work and which are experimental or highly uncertain** (could be based on Paul Lund's matrix)
4. Develop protocol for monitoring water table levels
5. Design small scale and larger scale studies to show the effects of land management on flood hydrographs. Do this by building on existing monitoring and modelling activity to test the predicted effects of restoration against measured benefits
6. Influence and coordinate bigger funding pools NERC – BESS (Biodiversity and Ecosystem Service Sustainability) , Macronutrients and LWEC

R3a What do we know of the benefits of peatland restoration in relation to water quality, flood management, over what timescales? What further work is needed to fill gaps?

1. IUCN UK Peatland Programme to clarify points of apparent conflict which may be resolved by identifying benefits over relevant time and space scales
2. **IUCN to develop guidance on how to target restoration in catchments**
3. Address geographical gaps in information – peatland condition
4. Develop consistent messages and target specific audiences
5. IUCN to articulate benefits of restoration and advise on which are sustainable into the future

R3c How do we manage peat catchments in a changing climate? What are the related policy/legislation – can support be better targeted delivery of peatland restoration?

1. Lowland bogs included as WFD waterbodies in Scotland – what about England?
2. Ask conservation agencies to look at non-designated sites
3. Guidance on targeting actions for water quality on non-designated sites
4. Provide clarity around does burning lead to poor water quality?
5. Support analysis of SCAMP and other water industry initiatives as if no evidence is derived this funding mechanism will stop
6. Lobby on CAP reform so that payments for 'profits foregone' for lower grazing on peat becomes a payment for asset protection of water quality and carbon

Notes on question R3b Facilitators Harriet Orr & Zoe Frogbrook

- JNCC review gave some guidance on how to do baseline monitoring – should link with this.
- The group in this session were all research and technical people rather than policy or management so this may have affected the focus of actions.
- Set up forum to talk to land owners
- Evaporation impacts of land practice on peatlands largely unstudied and is a knowledge gap

Notes on question R3a facilitators Peter Worrall (UU) and Patricia Bruneau (SNH)

- Benefits – more to it than just water quality. Scale of study! Delay effect time and spatial effect. Scale of study not able to pick effect and mechanisms.

- Flood management – need targeted catchment management approaches
- Consistency of message = communication of research outcomes/benefits, directions of change and quantification of change
- Sphagnum is not necessarily the key species for restoration of peatland
- Further work needed –
 - Timescale=?study
 - Geographical gaps
 - Funding long-term research/monitoring
 - How to accelerate vegetation away for heather mosaic (fast), DOC as pollutant
 - Upscaling of study. Catchment approach and transfer to other sites
 - Communicate degree of uncertainty
 - Right messages for right audience
- Benefits – cost benefit assessment of ecosystem service including floods. What do we know? Restoration benefits are multiple but what are dis-benefits? Restoration towards what? Sustainability of benefits. Where can't you restore peatlands. Is conflict between retaining water in peat time? Should these studies be highlighted? Do we want Heather or sphagnum?
- What is wrong with restoration?
 - Expensive
 - Food security
 - Access
 - Pondscape downhill – cascade effect?

Notes on question R3c – facilitators Robert Brotherton and Jill Labadz

- Resilience is key
- Repair hydrology at mesotope level at landscape units
- Link Climate change Act with F&WM Act – *not sure if this just Scotland*
- Need peatland focussed legislation
- Exciting that Water Industry now using money for catchment work UU were 1st but other water companies joining in – this needs to mainstream (?)
- Grazing down on 20 years ago but still too high on blanket bog in winter
- Putting ecosystem services into policy/legislation – where is this best placed?
- If forestry has a commission why not a peat commission?
- Inclusion of peaty podzols
- Policy rather than legislation – key is getting on and fixing hydrology not worrying about stuff
- Most policy is based around land management but needs to be about fixing hydrology
- Has the upland PSA target helped restore hydrology? – Yes now only 4% in unfavourable condition

Workshop R4 – Peatland Restoration

Chair: Martin Evans, The University of Manchester

The workshop included thought provoking presentations on large scale restoration of upland peatlands to stimulate debate from:

- Paul Leadbitter, North Pennines AONB Partnership
- Chris Dean, Moors for the Future
- Tim Thom, Yorkshire Dales National Park Authority

The discussion was focussed on three main questions.

R4 a) How do we best learn from restoration projects which do not have monitoring or publication of results?

- 1) The first group directly addressed the question and emphasised the importance of shared local knowledge. The role of site visits and demonstration projects was emphasised. Several contributors noted that statutory agencies may hold data on unmonitored sites and that there would be significant benefit from collating existing regulatory monitoring data. There was also significant support for a national centre pro-actively developing knowledge transfer activities and providing a one stop shop for land managers on peatland issues. The IUCN proposal of a peatland hub was, in general, viewed favourably.
- 2) The second group of comments looked forward and emphasised the importance of minimising unmonitored projects. Comments included the suggestion that anything is better than nothing, and that even periodic photography of sites was of great value. There was a clear sense that new projects should have monitoring, but a recognition of the resource implications. Several comments suggested that grant giving bodies should be lobbied to look more favourably on costing for monitoring, and also crucially for analysis of the monitoring data. Further development of partnerships with universities was suggested to aid with analysis. Production of 'site reports' should be encouraged, these need not be quantitative but if collected in one place, perhaps a peatland hub would form a valuable resource.

R4 b) How can we better support land managers to deliver peatland restoration?

The discussion largely focussed on agricultural support methods. The group called for the removal of perverse incentives which counter restoration and suggested that there should be a shift from agri-environmental schemes to ecosystem service schemes along the lines of the Welsh Glastir programme. There was discussion of whether this should explicitly link to carbon storage and the conclusion was that it was strongly preferable to link payments to a full range of ecosystem services. There was a strong view that any revised scheme should minimise form filling.

A second strand of the discussion focussed on partnerships of various types. It was suggested that restoration projects should engage at the earliest opportunity with farmers and land owners and that delivery should include co-operative working between groups of land owners rather than single payment holders. The view was also expressed that joined up policy was required from both public and private promoters of peatland restoration.

R4 c) What are the effects of restoration on biodiversity and ecosystem services and over what timescales? How do we set restoration aims?

There were two major areas of discussion under this heading.

- 1) A large number of contributors recognised biodiversity as a key target of restoration. A range of aspects of biodiversity were emphasised including downstream impacts on

aquatic ecology and below ground microbial communities in addition to peatland birds and flora. The view was also expressed that biodiversity benefits need to be incorporated in a wider framework of ecosystem benefits.

- 2) A second strand of discussion focussed on setting restoration aims. Several contributors favoured the use of palaeoecological techniques, both to set restoration targets, and possible as a novel method of monitoring progress (e.g. testate amoebae). It was agreed that restoring hydrology was a fundamental aim and that whilst there are some quick gains full bog restoration requires timescales of tens of years.

General points

Although much of the discussion related to upland bogs there was specific recognition that lowland bog restoration is important. In particular it was noted that whilst upland and lowland restoration practice has much in common there is a need for site specific action. In particular restoration of lagg systems around lowland bogs is a distinctive feature of lowland bog restoration practice.

The workshop agreed on two key action points. The first was support for some form of national coordination body for peatland management, policy and research.

The second was a call for more direct linking of agricultural subsidy to ecosystem benefits, and in the case of peatlands to the range of ecosystem services which restoration can deliver.

Workshop R6 - Peatland Historic Environment

Chair: Jen Heathcote, English Heritage

The workshop included a stimulating presentation to start the debate:

- Nikki Whitehouse, Queen's University, Belfast - Conservation lessons from the Holocene record in "natural" and "cultural" landscapes

R6 a) What are the challenges & conflicts of managing peatlands for the historic environment? How do we address these?

COMMUNICATION

- Communication challenge – improve access to local knowledge & grey literature about places and the value of local site studies to inform management decisions.
- Communication barriers – difficulties in understanding how to talk to other audiences (stakeholders) & target messages, e.g. sharing information we hold about characteristics such as peat depth.
- Challenge - widening focus away from blanket bogs, i.e. mire, lowland bog, raised bog, archaic fen.
- Challenge - widening discussion of biodiversity to include all biodiversity (e.g. insects) not just plants.
- Challenge – improve recognition of the influence of past land use practices on habitat development, i.e. that past change has impact (positive, negative & neutral) on current peatland character.

- **Key challenge = packaging what we know for other's to use so they benefit from better understanding of peatlands & how they function over long (>50 year) time scales.**

- 'CONFLICT' [not really conflict, just more challenges!]
- Peatlands are good for archaeology but our understanding of archaeological distribution within them is partial and needs to be improved to enable better understanding of real risks.
- Increase synergy in the field [not sure what this means].
- Types of risks & threats depend on nature of peatland.
- Restoring peatland: does it alter archaeology? No, it doesn't have to if you do it sensitively. Call for regional and/or site-specific assessment of archaeological value prior to restoration [challenged within the group leading to discussion about levels of appropriate assessment (desk-based versus field investigation) & proportionality to proposed work].
- Understanding of site heritage value & function needs strategic direction.

R6 b) How can we foster better communication & collaboration between interest groups (e.g. short advice docs)?

- **Key issue = Harness localism & sense of place: make better use of 'sense of place' informed by archaeology, environmental change, understanding of how the character of places and landscape has developed through time and understand what it is about them that is valued by residents &/or visitors.**

- Concept of landscape development & cumulative effects (natural & cultural) must be integrated into scientific and public communication of why an area looks the way it does.
- Develop better use of humanities perspectives on communication and engagement.
- Rural landscape contexts may need attention as features signalling past land-use may be less tangible/obvious.
- Movement of information into communities to foster intimate engagement with what changes conservation sector want to make and why – facilitate detailed information exchange about particular places (oral histories, anecdotal evidence, as well as scientific data exchange).
- Historic environment sector (archaeologists & palaeoecologists) need to learn 'new' language that other people can understand to enable them to engage with the ideas that we believe are transferrable to neo-ecologists & land managers.
- targeting stories to particular audiences through sophisticated use of local media, i.e. placing stories you want seen by a particular group (e.g. farmers) when you know they will be reading local paper for other news e.g. market sales.

- **Key issue = better understanding of which groups we (HE sector) want to engage with and why: target more sophisticated messages to specific audiences, i.e. there are different messages for different groups, e.g. policy makers, local communities, conservation practitioners, site managers.**

- Utilise community/volunteer involvement for collecting data & monitoring conditions.
- Better use of innovative media to disseminate information: eg, visual, Internet, YouTube, apps.

- **Critical message for all stakeholders = Dynamism & flux is inherent to ecosystems & isn't a bad thing. Understanding thresholds is important.**

R6 c) What can we learn from peatlands as palaeo-ecological archive for managing them in a changing climate?

- Past vegetation changes & spatial reconstructions.

- **Understanding relevant bog processes to inform current management or 'restoration'.**
- **Understanding past burning record (natural/anthropogenic)**

- Economic value of landscapes under different management regimes.
- Inform the creation of new bogs, not just 'restoration'.
- Which plant taxa are best for fastest peat development.
- Bogs are more than a C issue, they are intrinsically important ecosystem.
- Site visits to peat sections can be used to demonstrate changes through time in vegetation & accumulation rates via site stratigraphy.

- **Peat archive provides opportunity for long term (>50 year) monitoring of change & adaptation. With caveat – large variability exists even within bog systems – what is representative?**

- Integration of historic/documentary record with palaeo-ecological data.
- Multi-proxy investigations are very important.

- **All restoration projects to consider the potential for and/or data from palaeo-ecology in advance of works. This created some debate with cases for and against. Those again cited reasons of inappropriate proportion to the works being proposed (i.e. putting right post-war drainage systems) or that the scale of works rendered HE mitigation uneconomically viable. There is much work to be done on aligning the appropriate & proportionate use of evaluation, assessment & mitigation methods for potential impacts on HE & producing guidance for implementing conservation works.**

Workshop R7 - Fire management on peatlands

Chair: Martyn Howat

The focus was on the impact of fire management on bog habitat and the delivery of bog restoration, not on moorland burning on heathlands. Key recommendations were based around three focal issues. The workshop started with three brief presentations

- Martin Gillibrand, secretary Moorland Association - Burning as a management tool - A landowner perspective
- Colin Legg, University of Edinburgh - Fire on peatlands
- Adrian Yallop, University of Cranfield – Burning on peatlands

R7 a) What are the challenges and agreements on effects of burning on ecosystem services?

- **Wider Land Use Strategy or economic drivers needed to take ecosystem services to where they deliver the optimum,**
e.g. move grouse moors onto lower ground away from deep peats
- High Sphagnum vegetation cover is better in providing short sward structure supporting golden plover and dunlin densities and providing carbon benefits.

R7 b) How can we arrive at better joint-up working?

- Engagement needed, address relevance to land managers
- **Talk & Listen to land managers in the right language**
- Need for definitions and baselines
- Derive research agenda from the community
- **Establish links between ecosystem goods and Economic drivers**
- **National co-ordination: clarity, coordination & collaboration (C³)**

R7 c) What further studies would best help improve our understanding?

- **Need for large-scale nested experiments across UK with land managers on board as experimenters with agreed methodologies/indicators to be able to cross-compare results and draw conclusions taking all ecosystem services into account and assess effects of fire regimes,** see also FIREMAN and EMBER projects
- Studies needed at multiple scales: catchment and plot scale – assess mechanisms linking scales
- Risk based assessment required – causal relationship between managed burns and wildfire. Studies needed to address both fire regimes: wildfire and management burn impacts on ecosystem services
- Regional variation important, seasonal variation important
- Distinguish deep peat from other areas: adequate habitat description needed for comparison effects to be judged
- Analysis of peat archive to determine past effects of fire and recovery times and routes
- Determination of relationship of fire regime and Sphagnum growth/ distribution
- Assess distribution of different burning regimes across UK

Workshop R8 - Policy & sustainable management

Chair: Vicky Swales, Head of Landuse Policy, RSPB Scotland

The workshop started with two short presentations to stimulate debate:

- Ian Condliffe, Land Management and Agri-environment Consultant - Peatland policy changes on the horizon
- Andrew Clark, Head of Policy Services, National Farmers Union - Living peatland landscapes – the issues

R8a How effective are current policies at delivering peatland conservation and restoration?

Key action: a range of policy instruments – advice, regulation and incentives - are already used to deliver peatland restoration and management (with agri-environment measures being particularly important). There are various ways to improve these including Monitor and Focus farms to improve knowledge and skills, strengthening Environmental Impact Assessment and cross compliance regulations and ensuring long term agri-environment agreements e.g. 10-20 years. But limited public funding means greater emphasis will need to be given to market measures.

- Agri-environment schemes are a key mechanism for delivering restoration and management but range of ways to improve including wider coverage, better targeting and longer agreements e.g. 10-20 years
- Single Farm Payment is not targeted but is helping to keep some farmers/land managers in business – income position of many upland farmers is poor and unsustainable
- PSA targets have helped to drive some improvements in habitat management and restoration
- Monitoring is weak – we don't always know the impacts of schemes – and this needs to improve
- Regulation is often weak – EIA and cross compliance could do more to protect existing peatlands and contribute to sustainable management
- Many areas of land are managed under tenancies which can restrict/influence management activities
- Advice and knowledge are key and need to be improved e.g. through Monitor and Focus farm type activities as well as others. A cultural change is also needed in the uplands so that farmers see the value of 'other' products from land management such as carbon and biodiversity as well as more traditional food production
- A balance of advice, incentives and regulation are needed
- Growing interest in market mechanisms and private sector funding e.g. carbon markets and water companies helping to support peatland restoration

R8b How do we best support peatland restoration particularly (funding, advice and regulation) in a period of budget cuts? What is needed to design effective payment for ecosystem services schemes?

Key action: push for a peat levy to discourage consumption of peat for horticulture by raising the retail price. The aggregates levy provides a model and a levy is relatively straightforward to implement. The technical performance of peat alternatives is now good. More generally, need to address contradictions in policy with some measures effectively supporting intensive agriculture and others promoting environmental quality. Paying farmers effectively to pollute and then asking water rate payers to bear the cost of clean-up is likely to be increasingly challenged.

- The (garden) performance of non-peat composts is now superior to peat-based ones
- A levy on peat (including imports) would reduce the price differential and encourage less usage for gardens
- This could be run through the existing aggregates levy to keep admin costs down
- HMT accept the logic and it might raise £60m - £90m per year
- However, HMT accepted the logic 20 years ago and have always shied away because of high admin costs relative to tax take

- The tax take would (hopefully) decline over time, but in anycase would not necessarily be available for peatland projects (i.e. aggregates tax goes mainly on National Insurance reductions for employers and some sustainability projects)
- Peatland management to reduce flooding and wildfire risk should be of interest to the insurance industry
- The insurance industry is generally comfortable with risk probabilities and thus can cope with the uncertainties surrounding peatland management
- However, gaining their greater involvement is politicized by existing tensions around (e.g.) state-provision of flood control infrastructure and the distribution of gains between industry and consumers
- In any case, it is catchment management of a mosaic of land uses over more than just peatland that delivers such risk reductions

- Payments for carbon sequestration and storage would be great
- But are plagued by scientific uncertainties – even more so than for forestry (e.g. using peatland area would be too crude)
- And public perceptions of being paid for not damaging carbon stores are even less positive than for sequestration offsets

- There remain fundamental policy inconsistencies between (esp.) agriculture and the environment
- For example, why should water companies (and thus their customers) have to pay farmers to mitigate diffuse pollution when the same farmers are already in receipt of taxpayer support?

R8c What potential benefits can we get from CAP reform, Kyoto protocol and what new policy opportunities are there in the UK to deliver functioning peatlands?

Key action – use carbon markets (compliance and voluntary) to unlock new funding to protect the peatland resource (carbon stock) and use CAP funding from both P1 and P2 to support long term management (carbon sequestration), recognising the risk of farmland abandonment in the absence of adequate support.

Points made during the discussion:

CAP reform

- less money in P1, retreat from the hills means opportunities for other farmers (restructuring)
- recognise current and potential future contribution of agri-environment funding
- need to build ecosystem services as public goods into P2
- need to think about using P2 measures more widely, not just the agri-environment measure
- LFA review/CAP reform is opportunity to secure P1 natural handicap funding specifically for peat soils, in addition to P2 agri-environment payments for ecosystem services

Kyoto protocol

- include wetlands as a specific category in Kyoto 2 (Cancun), then can implement via K2 mechanism or the voluntary market
- the issue of verification could be a problem

Policy opportunities in the UK

- UK peatland carbon code within LULUCF GHG accounting
- combine K2 carbon credits with CAP P2 funding for management
- improve use of P2 by:
 - valuing environmental public goods properly;
 - enabling the use of other funding sources as match funding for P2
 - using more of the tools in the P2 toolbox

Workshop R9 - Peatlands and Renewable Energy

Chair: Dr Pat Thompson, Upland Policy Officer (RSPB)

The workshop started with two short presentations to stimulate debate:

- Dali Rani Nayak, Research Fellow University of Aberdeen - Windfarm and peat carbon payback model
- Jane MacDonald, Environmental Manager SSE Renewables - Environmental Impact Assessment on Peat

R9 a) What are the strengths/weaknesses of the windfarms and peatland carbon calculator?

Strengths

Quick to apply/carry out

The model includes life-cycle (of the development) analysis

Empirical

Peer-reviewed

Demonstrates key areas of uncertainty

Identifies need for monitoring to reduce uncertainty

Links to regional targets – highlights benefit of development on mineral soils (sites)

Can be used to examine (look) at different development options

Weaknesses

Doesn't include subsequent developments e.g. cumulative effects

Effects of drainage has a major impact on model output

Weakened by quality of understanding of impact of trees on peatlands

Validation methodology rather spurious

Key point: Model demonstrates key uncertainties e.g. land management/hydrology effects on GHG emissions – and need for monitoring of GHG on existing windfarms and in relation to management

R9 b) What information is required to ensure good assessment of EIA of windfarms?

Noted that EIA assesses local impacts only. Also need to consider longer-term and cumulative impacts. The EIA process only includes competent parties. However, the EIA and ES is only part of the overall assessment within scope of planning system

The strength of EIA is the collation and interpretation of breadth of data – that ultimately forms the body of evidence that supports/questions a development. Process helps ensure that all relevant stages are complete and that the right data is gathered/assessed and

reported on in a consistent (standard) manner EIAs are formally lodged and held for future reference

A number of constraints were identified including – A lack of good ecological contractors, poor guidance on what an EIA must include and poor opportunity for sharing best practice across developments (because of lack of cross-working between local authorities, developers etc). Participants identified a need for post-construction monitoring to help inform future developments.

Key point: EIA should include best available data, presented in consistent manner and incorporated into body of report and ES. Assessment of impacts should be based on available data – where data is lacking, developer should be encouraged to gather relevant data.

R9 c) What evidence is required to deliver good quality mitigation packages?

What does mitigation mean in this context?

Group identified a range of needs to consider

- Micrositing
- Baseline monitoring e.g. existing information, local knowledge, water quality, met data
- Need for good quality habitat surveys to NVC level
- Work to agreed good practice methodologies to build up a national body of knowledge
- Need a major emphasis on analysis/interpretation of monitoring results
- Results of post construction monitoring critical to future operation of a development and to other developments elsewhere. Is 25 years long enough for monitoring?

The need for monitoring after decommissioning depends on planning consents. Such monitoring is critical to assessment of long-term effects of any given development.

What are local benefits of development and/or suggested mitigation. Range of stakeholders include land users (some may not be local), NGOs, statutory bodies, communities.

Group identified a need for:

- Good communication
- Knowledge sharing
- Collaborative working

Key point: Collaborative working with early and continuing engagement with all stakeholders is vital