RSPB Scotland

Realising the Benefits of Peatlands

Overcoming policy barriers to peatland restoration

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Summary

Scotland's peatland landscapes have enormous potential as a natural solution to limiting dangerous climate change. Peatland habitats are also well known for their unique and special wildlife. However, the needs of Scotland's peatlands have been ignored for too long. As a consequence, a large proportion of our peatland areas are degraded and contributing to climate change rather than helping to fight it.

Peatlands can only fulfil their potential if they are in a functioning and healthy state. But our use and management of peatlands, both past and present, and the policies that drive this, have led to significant damage. Current policies are often failing to deliver sustainable peatland restoration and management, and can actually conflict with and block its achievement. Landscape-scale peatland restoration - and the many benefits it can provide - is a long way from being realised.

To address this, RSPB Scotland is calling for the following:

- The Scottish Government must commit new funding to restore at least 600,000ha of peat bog habitat in Scotland by 2016, in order to protect the stocks of carbon locked up in peat soil, prevent further erosion and loss to the atmosphere, and realise the multiple benefits and services that arise from functioning peatland habitats.
- Policies must be updated, adapted and aligned to remove the remaining policy barriers to landscape-scale peatland restoration and protection.
- Government needs a new vision for peatland restoration and an overarching strategy and action plan to coordinate the efforts of all organisations involved in achieving it.
- In addition to central Government taking a lead, the policies and practices of Government Agencies, public bodies and industry must be aligned with this new restoration agenda.

1. Introduction

Peatlands have the potential to be a natural solution to reducing greenhouse gas emissions. They hold a vast stock of carbon in their soils and can add more by sequestering carbon from the atmosphere. But this natural carbon capture and storage ability can only happen if peatland habitats are healthy and functioning. To get to that state many areas of degraded and damaged peatland, which are currently losing carbon, need to be restored.

RSPB Scotland has called for peatland restoration[1] for many years, recognising them as a fantastic habitat for some of our rarest wildlife. More recently, the value of peatlands as a store and sink for carbon has been acknowledged.

It is widely accepted that peatlands are a huge store of carbon. This store needs to be protected to help limit climate change and thus benefit people in Scotland and the world. Research into the carbon benefits of restoration techniques is no longer in its infancy and the consensus is that restoration is beneficial for the climate. RSPB Scotland and others have been seeking political and financial commitment to turn this knowledge into action. In addition to knowledge, money and political commitment the right policies need to be in place to make restoration happen. There is no single policy in existence which can make restoration happen at the scale needed. Achieving the restoration goal will require existing land use and other policies to work together for the common good.

In 2010, the Scottish Government clearly identified policies which support peatland restoration in its Carbon-Rich Soils discussion paper[2]. But as the Royal Society of Edinburgh's report 'Facing up to Climate Change'[3] highlighted, there are barriers in policy which hinder the progress toward coherent approaches to reduce GHG emissions. The Land Use Sector is no exception to this lack of joined up policy to support sustainable land use outcomes. This report reviews the policies and land use practices which influence peatland use and management, and which promote peatland restoration. It identifies where the barriers to restoration are and how these can be overcome to realise their natural carbon capture and storage potential.

[1] RSPB Scotland. The Peatlands of Scotland: The urgent need for restoration and conservation. http://www.rspb.org.uk/Images/thepeatlandsofscotland_tcm9-224528.pdf
[2] Scottish Government, Management of carbon-rich soils – Overview and discussion paper, http://www.scotland.gov.uk/Resource/Doc/921/0109512.pdf
[3] http://www.royalsoced.org.uk/enquiries/climate_change/index.htm

2. Peatlands background

Peatlands are naturally dominated by sphagnum moss vegetation which thrives in cool wet conditions. Peat is formed below the living surface layer as the dead remains of bog mosses and other plants are preserved in wet, acidic conditions, creating a set of unique landscapes and habitats. This peat soil builds up over millennia and can reach depths of over five metres in places.

Peatland habitats cover 1,727,000 hectares of Scotland, 22% of the land area[4] and overlay deep peat reserves. The habitat types covered are blanket bog, upland flushes and mires, lowland raised bogs and fens. Shallower (less than 30cm deep) peaty and organo-mineral soils contain less carbon, are frequently agriculturally managed and are also often associated with wetland habitats such as rivers, lochs and pools. These cover approx. 60% of Scotland's land area.

This report focuses mainly on policies affecting the deep peat habitats as opposed to the peaty soils. However, some land use policies will have an influence on both peatland habitats and peaty or carbon-rich soils.

2.1. Importance of peatlands

Peatlands are important for a number of reasons. They are:

- An internationally important wildlife habitat
- A huge store of carbon
- A significant carbon sink
- A regulator of water flow and water quality
- A place for sport and recreation
- A place of employment
- Culturally significant and a valuable archive of our past.

Almost 20% of peatland habitat in Scotland is designated under national and international wildlife conservation legislation. Birds of European importance found on peatlands include black-throated diver, greenshank, short-eared owl and dunlin. Other wildlife include red deer, sundew and mountain hare. Unfortunately, approx. 40% of sites are in unfavourable condition (38% of upland (blanket) bogs, 42% of lowland raised bogs, and 39% of upland fens/marshes/swamps).

[4] Chapman S. J., Bell J., Donnelly D., Lilly A., 2009, Soil Use and Management, Volume 25, Issue 2, pages 105–112,

Currently, there is a heavy focus on the benefit of peatlands for assisting Scotland in achieving climate change targets. Peatlands have the potential to sequester a million tonnes of carbon[5] per year from the atmosphere[6]. This carbon is then locked up and stored in the peat soil. Of greater importance is the carbon stock within Scotland's soils which has been calculated at 3 billion tonnes of carbon – 1,620 (MT) million tonnes (Chapman et al 2009) in peatlands. The carbon stored in Scotland's soils is 20 times the amount stored the whole of the UK's forest biomass[7]. However, approximately half of all peatland has been degraded through inappropriate burning, tree planting, drainage (moor gripping) and inappropriate grazing regimes. Annual loss of carbon from degraded peatlands is on average 4.6t CO_2 eq per hectare per year[8]. It has been estimated that by restoring 600,000ha of blanket bog 2.7Mt CO_2 eq could be stopped from entering the atmosphere each year and every year into the future[9].

2.2. Restoration

Peatlands are only able to provide the valuable services which are of importance to human well-being where the habitat is in a functioning and healthy state. However, the use of peatlands by land owners and land managers, for a variety of purposes, has led to damage to the fragile habitat and soil. When peat becomes open, dried and exposed, the vegetation changes and the carbon in the soil oxidises and is lost to the atmosphere – adding to climate change. It also becomes more susceptible to erosion by water and wind.

The scale of damage varies, from bare peat soils and deeply eroded gulleys, to heather and cotton grass dominated vegetation, and determines the ease and speed of restoration. Peatland restoration involves creating the right conditions for sphagnum moss to re-colonise and thus secure the integrity of the carbon in the soil. Most crucial is rewetting the soil by manipulating the water table. Other activities depend upon the nature of the damage, for example, removing grazing animals or non-natural vegetation, such as trees. On large areas of bare peat the greatest need may be to stabilise and re-vegetate the soil.

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[5] RSPB. The Peatlands of Scotland: The urgent need for restoration and conservation. http://www.rspb.org.uk/Images/thepeatlandsofscotland_tcm9-224528.pdf

[6] Active, undamaged peatlands accumulate carbon as organic matter at a rate of at least 50 tonnes of carbon per km^2 per year (Billett *et al.* 2010; Worrall *et al.* 2010a).

[7] IUCN. http://www.iucn-uk-peatlandprogramme.org/sites/all/files/091201BriefingPeatlands_andClimateChange.pdf

[8] IUCN. http://www.iucn-uk-peatlandprogramme.org/sites/all/files/100218Briefing_Peatlands_andGreenhouseGasEmissions.pdf

[9] IUCN reference, as above.

RSPB Forsinard nature reserve in the Flow Country – A case study

In 1988, following a major campaign led by the RSPB and the Nature Conservancy Council, a network of Sites of Special Scientific Interest (SSSIs) was established to protect the Flow Country of Caithness and Sutherland. This 400,000 ha area of blanket bog was under threat from landscape-scale draining of the bog and non-native conifer planting. Tax breaks, which had promoted the planting, were removed later that year, effectively ending the widespread practice. Most of the key areas are now protected as the Caithness and Sutherland Peatlands Special Area of Conservation (144,000 ha) and Special Protection Area (146,000 ha).

In 1995, the RSPB acquired Forsinard Estate in the heart of the Flow Country, thanks to contributions from RSPB members and supporters. EU LIFE funding also supported the wider work in the early years which included piloting a variety of habitat restoration techniques. This work took a leap forward in 2001 through a £2.8 million partnership project run of the RSPB, SNH, the Forestry Commission and Plantlife, funded again by LIFE Nature. It brought conservationists, foresters and the Highland Council together to restore damaged blanket bog and led to the publication, in 2005, of SNH's strategy for 'The Peatlands of Caithness and Sutherland'*.

Since the initial acquisition, RSPB Scotland has added to the Forsinard reserve by purchasing or leasing more blocks of land in the Flows. A purchase in 2011 brought RSPB Scotland's holding to approximately 20,000ha. Drains have been blocked across 16,500ha of bog and 2,200ha of trees have been felled. The Scottish Government provided £200,000 in 2010 for the RSPB and SNH to carry out research on peatland restoration. RSPB Scotland's continuing aim is to improve the overall condition of the remaining areas of intact bog and to restore areas lost to forestry. In time, the important populations of breeding birds and other wildlife will return.

* http://www.snh.org.uk/pdfs/scottish/nhighland/PeatlandsStrategy.pdf

3. Policies and barriers to peatland restoration

For peatland restoration activity to happen dedicated funding and people are needed. We also need the right policy environment if it is to happen at a sufficient scale. This section identifies a range of policies and practices which influence the restoration, use and management of peatlands and carbon-rich soils. It identifies the policy barriers to restoration which hinder peatland restoration, and causes them to fail to deliver climate change benefits.

3.1. Overarching Policies

In May 2011, the Scottish National Party was returned to power in Holyrood with a manifesto which pledged to "take action to protect and restore peatlands". This followed the preceding SNP administration's investigation of the value of peatlands as a carbon sink and store, and warming to the call for restoration. As a result action which works towards restoration is already included within a number of overarching Government policies.

The Scottish Soil Framework, published in 2009, contains a long list of policies in place for protecting Scotland's soils and includes actions to promote peatland restoration through the SRDP and to coordinate wider work.

March 2011 saw the publication of Scotland's first Land Use Strategy. The ecosystems approach and need for multiple benefits from land use are enshrined in the vision for land use and management in the Strategy. The Strategy recognises peatlands as valuable in the fight against climate change.

Recommended policy change

- The SNP Government must make firm its promise to take action to restore peatlands with commitment to funding, coordination and policy change where needed.
- The Land Use Strategy must be applied across Government to direct other relevant strategies and policy. Its Action Plan must be strong and aim to solve land use conflicts which block peatland restoration.

3.2. Biodiversity Policy

Peatlands are important for biodiversity, supporting a unique assemblage of wildlife. Scotland has some of the best and most extensive remaining peatland habitats anywhere in the world. This is recognised by domestic and European land designations. As discussed above, unfortunately, approx 40% of designated peatland sites are in unfavourable condition.

The Scottish Biodiversity Strategy (SBS) provides the statutory underpinning to biodiversity policy in Scotland including how Scotland fulfils its commitments under the Convention on Biological Diversity and the EU Biodiversity Action Plan. However, the implementation plans for the Strategy are weak because the actions they specify, which could drive effective protection and restoration, are vague and unambitious – failing to reflect or deliver the Strategy's vision.

Despite the failings of the biodiversity process until now, there is hope that the process can be reinvigorated. The new UN 2020 targets set in Nagoya provide goals to aim for, especially target 15 which relates to peatlands[10]. A new EU Biodiversity Strategy is in place to drive improvements and sets a 2020 target for biodiversity conservation[11]. Scottish Natural Heritage has a new structure which includes a specific, cross-cutting biodiversity work programme. Part of this programme will be to 'refresh' the Scottish Biodiversity Strategy to reflect the new EU and UN targets.

The Public Bodies Biodiversity Duty under the Nature Conservation (Scotland) Act 2004 requires all public bodies to work to benefit biodiversity in carrying out their business. RSPB Scotland has concerns that this duty is widely ignored and weakly enforced.

Recommended policy change

- Actions arising from the Scottish Biodiversity Strategy should be given statutory footing, and clear expectations regarding who will do what, and by when. The revised Scottish Biodiversity Strategy should specify a target and ensure the means to deliver peatland restoration at a significant scale.
- Government must put pressure on Public Bodies to act according to the requirements of their Biodiversity Duty in order to realise peatland restoration and sustainable management.

[10] UN Convention on Biological Diversity, 2010 - http://www.cbd.int/sp/targets/
[11] http://ec.europa.eu/environment/nature/biodiversity/comm2006/2020.htm

3.3. Climate Change

The Climate Change (Scotland) Act was unanimously passed by the Scottish Parliament in 2009 and sets the legal basis for tackling climate change in Scotland including an ambitious interim target of a 42% reduction in greenhouse gases (GHGs) by 2020. The Scottish Government's plan of action on reducing GHGs is set out in its Report on Proposals and Policies (RPP). Peatland restoration is included in this document but only as a Supporting Policy. This means that it is recognised by Government but is not a priority policy for tackling climate change, and at the current time there is no funding for action on peatland restoration at a scale appropriate to the need.

The Farming for a Better Climate (FFBC) initiative is included as a policy in the RPP. This encourages farmers to adopt practices which reduce emissions or lock carbon in soil and vegetation. It may have an influence on peat soil management, including in peatlands, but at present there is no publically available data to show the influence of FFBC or the level of uptake of climate beneficial farming measures.

Government policy on adaptation to the impact of climate change is currently covered by the Scottish Adaptation Framework. This is the precursor to a statutory Adaptation Programme to be published in 2013. Peatland restoration practices are likely to be beneficial in preparing Scotland and it's wildlife for a future climate. At present, this document contains action plans with actions which will facilitate peatland restoration but few deliverables to actually kick start this process at the current time and at an appropriate scale.

Recommended policy change

- Government must boost peatland restoration to policy status in the RPP by committing new funding to restore at least 600,000ha of peat bog habitat by 2016.
- Farming for a Better Climate must be given a higher profile in the farming sector with increased effort to assist farmers in recognising the benefits of the measures, especially those which increase the carbon content of soils.
- The statutory Adaptation Programme in 2013 must include action to restore ecosystems and thereby optimise the valuable services which come from ecosystems, including peatland habitats. These are needed to prepare Scotland for an uncertain future.

3.4. Forestry

Government policy no longer encourages the siting of new forestry plantations on important peatland habitats in Scotland. It now recognises that new forestry has to be properly located and designed to protect this key wildlife and carbon resource. Unfortunately, Scotland's peatlands are still scarred by the plantations encouraged by earlier forestry policies. These peatlands have yet to be properly restored to their former ecological health and extent, to benefit wildlife and to help tackle climate change.

The current Scottish Forestry Strategy[12] recognises the biodiversity importance of the appropriate location of new woodland, as well as the need to restore priority open ground habitats, such as peatlands. The current Scotland Rural Development Programme (SRDP) includes positive peatland restoration measures to benefit wildlife including removal of forestry plantations and restoration of natural water levels, which can also help protect carbon stores. However, the SRDP's Woodland Improvement Grant limits the clearance of trees from peatlands to only 20% of a woodland area, even where the whole area is in need of restoration.

Forestry Commission Scotland consents the removal of trees for peatland habitat restoration under the forestry Environmental Impact Assessment process and associated felling licensing. The Nature Conservation (Scotland) Act 2004 introduced an important change to felling licensing permitting the restoration of important open ground habitats, including peatland, without the mandatory replanting of trees. The Scottish Government's Policy on Control of Woodland Removal[13] acknowledges the need for restoration of important open ground habitats, including peatlands, without the need for so-called 'compensatory' forestry planting.

Recommended policy change

- The Scottish Government must take a strategic and more ambitious approach to the restoration of peatland, from inappropriately located forestry plantations on the National Forest Estate and private land. Incentives should be aligned to bring forward felling on afforested open ground habitats, such as peatlands.
- Forestry Commission Scotland's practice guidance and conditions on tree planting must be changed, to stop the replanting of trees on restorable peatlands following felling.

[12] Scottish Executive (2006), *The Scottish Forestry Strategy*.
http://www.forestry.gov.uk/pdf/SFS2006fcfc101.pdf/$FILE/SFS2006fcfc101.pdf
[13] Scottish Government (2009) *Policy on the Control of Woodland Removal.*
http://www.forestry.gov.uk/pdf/fcfc125.pdf/$FILE/fcfc125.pdf & Scottish Government.
http://www.forestry.gov.uk/pdf/WRpolicyguidance17March2010.pdf/$FILE/WRpolicyguidance17March2010.pdf

- The UK Forestry Standard must be changed, during its review due in 2011, to stop the replanting of damaging forestry plantations, following felling, on important and restorable peatland habitats.

3.5. Agriculture and Rural Development

The majority of Scotland's rural areas receive support through the Common Agricultural Policy. The vast majority of this comes as direct payments based on historical levels of production support with the Scotland Rural Development Programme (SRDP) providing other payments which aim to increase economic, social or environmental benefits.

To receive direct support through the Single Farm Payment, farmers have to comply with basic standards to prevent environmental harm (cross compliance). Certain cross compliance measures can be beneficial for peat management, e.g. measures on soil management, grazing practice, muirburn and permanent pasture.

Currently, the largest part of the SRDP is the Less Favoured Area Support Scheme (LFASS) which pays for maintaining grazing livestock but is not linked to the carrying capacity of the land, nor its ecological requirements. Indeed the land grazed with high stocking densities in the past, continues to receive the greatest levels of support.

Agri-environment schemes within the SRDP, can pay for peatland management. Uptake of measures to benefit peatlands has been generally low and may be due to a number of factors including the level of the payments available.

Recommended policy change

- A new CAP, due for 2014, must be better directed towards paying for the provision of public goods.
- While direct support continues, it should provide a baseline of protection for peatland and carbon-rich soils through strengthened cross compliance requirements and the addition of environmental top-ups, such as a permanent pasture requirement.
- The Scottish Government should be seeking an increased share of EU Rural Development funding in order to pay for the activities such as peatland restoration through the SRDP.
- Peatland restoration should be regarded as a high priority for the next SRDP and receive increased funding. Payments available for peatland restoration should be reviewed to ensure they incentivise restoration activities which are currently not financially attractive.

- LFASS should be realigned to support more sustainable High Nature Value grazing systems.
- Better advice provision is needed to target measures, assist farmers in collaborating as groups, and ensure environmental priorities are delivered.

3.6. Energy – Renewables on Peatland

Often the ideal location for onshore windfarm development in Scotland, in energy terms, is on upland peatland blanket bog or carbon-rich soils but the installation of turbines and service tracks can degrade the peat resources leading to carbon losses. RSPB Scotland believes that renewable energy should play a key role in tackling climate change and contribute to the Scottish Government target of generating 100% of electricity demand from renewable sources by 2020. But, wind energy developments must be designed, located and constructed in ways that avoid environmentally sensitive areas of peatland as well as ensuring that peat carbon losses are minimised. The wind farm industry also has a major role in restoring previously damaged peatland habitat.

Guidance such as the 'Windfarm and peatland good practice principles[14]' and 'Environmental good practice during windfarm construction'[15] are important in ensuring that standards of best practice are adhered to during windfarm construction and management. The Scottish Government has also developed a carbon calculator to assist developers in calculating the impact of wind farm developments on the soil carbon stocks held in peats[16].

Recommended policy change

- All windfarm developers must commit to following the guidelines in place and every reasonable effort should be made to avoid significant adverse environmental effects on peatlands. Agreements should also be reached through full and open stakeholder engagement to ensure habitat restoration is properly planned and managed.
- Government should work with the renewables industry to improve understanding of the impact of windfarms on peatlands and improve its tools and guidelines.

[14] Wind Farm and Peatland Good Practice Principles: http://www.scottishrenewables.com/news/conservation-groups-and-renewable-developers-agree/
[15] Good practice during windfarm construction: http://www.snh.org.uk/pdfs/strategy/renewables/Good%20practice%20during%20windfarm%20construction.pdf
[16] Calculating carbon savings from wind farms on Scottish peat lands: http://www.scotland.gov.uk/Publications/2008/06/25114657/0

3.7. Water Industry

The majority[17] of Scotland's drinking water comes from peatland-dominated catchments. Degradation of peatland habitat increases levels of Dissolved Organic Carbon (DOC) in water, which results in water discolouration and so requires treatment using coagulants that bind the DOC. This is not only costly; it is carbon intensive and brings the risk of harmful disinfection by-products[18]. Climate change is likely to increase DOC in water, which could escalate current treatment costs. Therefore, from a drinking water perspective alone, it is in the public interest to ensure healthy peatlands.

How Scottish Water invests financially to achieve drinking water and environmental standards is regulated by the Water Industry Commission, the Drinking Water Quality Regulator and SEPA through the 'Quality & Standards' investment process. In the past, investment has been centred on installing expensive 'end of pipe' treatment to remove pollutants, such as DOC. The current Q&S III investment programme period has stipulated that Scottish Water can use £3 million pa to facilitate sustainable land management in five catchments in Scotland from 2010-2015. This gives huge potential for investment in peatland restoration to improve water quality at source while delivering other associated benefits such as habitat restoration for biodiversity and protection of the carbon stocks. Sustainable management of peatlands and carbon-rich soils across Scotland would contribute to achieving Water Framework Directive objectives. It would also help Scottish Water to comply with the Public Bodies Climate Change Duty under the Climate Change Act and its duty to further the conservation of biodiversity under the Nature Conservation Act.

Recommended policy change

- Scottish Water and its regulators must focus on delivering safe drinking water to the public in the most carbon-efficient ways, including through sustainable land management and peatland restoration.
- Scottish Water's Sustainable Land Management Fund (in Q&S III, 2010-2015) should invest now in peatland restoration and must deliver multiple benefits, including water quality.
- Ministerial Objectives for Q&S IV must require investment in peatland restoration and ongoing sustainable management of Scotland's peatlands, with the outcome of improved water quality.

[17] It is widely reported that 70% of drinking water comes from peatland-dominated catchments.
[18] http://www.dwqr.org.uk/public/national-water-quality/top-ten-parameters#item10

3.8. Sporting management

Moorland, including areas of blanket bog, has been intensively managed primarily through heather burning and predator control for private sporting interests for several centuries. Management of land aiming to ensure a good supply of deer and grouse for shooting or salmon and trout for fishing can have damaging effects on fragile peatlands. Muirburn on grouse moors, especially on damaged deep peat areas, can lead to peat fires. Deer can cause trampling or browsing damage on deep blanket bogs at stocking density greater than 1 per km^2. (Higher stocking rates are appropriate where other less fragile habitats also exist across an estate). River engineering and drainage to maintain flow rates for angling can erode peat and dry out the peat soils.

Few regulations exist to control activities and ensure the provision of public goods from private estates in connection with management for sporting. A voluntary approach including codes of practice has generally been relied upon as a delivery mechanism by successive Governments. River engineering issues, however, are covered by the Controlled Activities Regulations[19] but need better enforcement.

The Scottish Joint Agency Working Group on Deer coordinates efforts to reduce deer numbers in designated areas for nature conservation, implementing control orders under the Deer (Scotland) Act 1996. However, whilst powers to intervene to reduce deer numbers in the public interest outside designated sites exist, and where serious damage to the public interest is confirmed, these powers have not been used to date. There is also joint agency guidance on the funding and location of deer fencing, which is designed to minimise the risk of impacts on woodland grouse populations arising from poorly sited deer fencing. The recent Wildlife and Natural Environment Act 2011 (WANE Act) has updated the 1996 Act, including the introduction of a new Code of Sustainable Deer Management.

Also as part of the WANE Act, the Scottish Government has reformed the outdated legislation relating to muirburn practice in Scotland. These new measures will necessitate a review of the Muirburn Code, which is included in cross compliance.

Recommended policy change

- The expected review of the Muirburn Code should be extended to control wildfires, which may damage peatlands and provide other measures for peatland protection. Any

[19] The Water Environment (Controlled Activities) (Scotland) Regulations 2011, http://www.legislation.gov.uk/ssi/2011/209/contents/made

further review by the Scottish Government of muirburn dates should ensure that damage to peat soils and associated wildlife is minimised.

- The new Code for Sustainable Deer Management must present a clear and transparent pathway for Government to intervene to reduce deer numbers on all peatlands where deer cause damage, not just on designated sites.

3.9. Planning Policy

The vast majority of planning decisions are made by local planning authorities in accordance with the relevant development plan for an area. Relevant policies within the National Planning Framework (NPF)[20] and Scottish Planning Policy (SPP)[21] also need to be considered. Both of these national policies recognise the value of peatlands for carbon storage and biodiversity, and afford relatively substantial protection to sites, at least those of higher conservation value. However, there is no information on how effectively national policy is being implemented at the local level.

Peat for horticultural use is on the whole extracted from lowland raised bog areas despite alternatives to peat being widely available. Current planning policy means that commercial peat cutting could be acceptable in areas of degraded peatland. However, in some degraded peatland areas it is possible to stabilise and protect the carbon stores and even restore the habitat, so peat cutting could be preventing restoration of important carbon stores and areas of habitat.

Local planning authorities also decide most applications for other types of development on peatland, such as the opencast extraction of coal deposits lying beneath peatlands. In these cases, the peat is removed and damaged, releasing carbon, to expose the underlying coal.

Recommended policy change

- National policy in Scotland should be changed to introduce a general presumption against any new or extended commercial peat cutting and encourage restoration or management of existing degraded sites to protect the remaining store of carbon.
- The practice of coal extraction from beneath blanket bog must be ended for the double climate benefit of reducing fossil fuel use and protecting the stores of carbon.
- Additional monitoring should be put in place to ensure local planning authorities are implementing national policies on the protection of peatlands.

[20] http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/npf
[21] http://www.scotland.gov.uk/Topics/Built-Environment/planning/National-Planning-Policy/newSPP

4. Policy recommendations

This report has highlighted the barriers to peatland restoration within a range of sectoral policies. **The Scottish Government must address the recommendations set out above in order to enable widespread protection and restoration of peatlands**.

In addition, the above analysis shows that Scotland also needs effort to solve some overarching barriers. To make peatland restoration happen we need the following from policymakers:

- **Commitment** - the Scottish Government must fully commit to a new vision of landscape-scale peatland restoration. All stakeholders need to embrace and share the new vision of how restoration can be achieved through the principles set out in the Land Use Strategy.
- **Coordination –** the Scottish Government needs a new overarching strategy and action plan to coordinate peatland restoration and the efforts of all organisations involved in achieving it.
- **Policy change**– Individual policies must be reviewed and changed, to:
    - Ensure existing policies are fully implemented and deliver restoration.
    - Promote restoration and sustainable management of peatlands, by making it easier to achieve these goals or more attractive to those managing the land.
    - Ensure that they aim to deliver multiple benefits from land use, especially protection of the carbon stores and sequestration capabilities.
- **Funding** - A mix of funding and associated delivery mechanisms is needed to secure restoration. The cost/benefit of delivering services, such as clean water, needs to be re-evaluated to show the value of ecosystem approaches. Private investment should be investigated too.
- **Regulation** – regulation or controls which are designed to stop damaging activity should, as a matter of urgency, be enforced or strengthened by authorities to avoid further emissions. Private companies and individuals should not be allowed to put profits before peatland protection which benefits all of society. Rather, policy and funding changes should incentivise sustainable management.

5. Conclusions

The needs of Scotland's peatlands have been ignored for too long. As a consequence, the policies we have today often fail to support sustainable peatland management and restoration, and can actually conflict and block its achievement. Policies and land use norms which influence the use or management of peatlands are not fit for purpose when aiming to deliver the large-scale peatland restoration needed, and as a consequence some peatland is contributing to climate change rather than helping to fight it.

In the past, policies have been designed for their own purposes and somewhat in isolation and, in the worst cases, their influence on peatlands has been negative, causing degradation. **The remaining policy barriers to peatland restoration must be removed.** Individual policies with their own aims and objectives do not always pull together and create synergies towards peatland restoration and achievement of climate change goals. **Policies need to be updated, adapted and aligned in order to make peatland restoration and protection happen at a landscape scale.** In doing so, policies on land use and management must move away from the single use outcomes, such as food production, and aim to maximise multiple benefits, as required by Scotland's Land Use Strategy.

In addition to central Government taking a lead, the **policies and practices of Government Agencies, public bodies and industry must be aligned with this new restoration agenda.**

Policies which influence the way peatland is used and managed need to be enhanced, aligned or redesigned in order to promote the restoration of damaged peatlands and realise their natural carbon capture and storage potential.

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