



Peatland Programme

Peatlands and Climate Change

Peatlands provide environmental services of economic and social importance including carbon storage, biodiversity and water management. Damage to peatlands is a significant source of greenhouse gas emissions responsible for climate change. Peatlands are important in the management of water catchments and in a damaged state can exacerbate flooding problems that are likely to get worse under climate change.

In the UK, peatlands should be able to continue functioning under the impacts of a changing climate, provided they are brought into good condition. Restoration of peatlands offers climate change mitigation by stemming greenhouse gas emissions and brings adaptation benefits in helping alleviate flood problems and maintaining important biodiversity under a changing climate.

Peatlands and Greenhouse Gas Emissions

Damage to peatlands from drainage, burning, agriculture, forestry, and extraction cause significant emissions of greenhouse gases, for centuries, as the carbon store is depleted. **Covering an estimated 3 million hectares (12% of the UK land area), deep peat provides a store of at least 3000 million tonnes of carbon, which is twenty times as much carbon stored in the whole of the UK's forest biomass.**

Peatlands sequester carbon as the plants grow and are preserved as peat. In a healthy condition, the UK's peatlands could be delivering over 3 million tonnes of carbon dioxide sequestration per annum. However it is the rapid loss of the carbon store, built up over several millennia that is of the greatest concern for climate change.

Ten million tonnes of carbon dioxide per year are being lost to the atmosphere from the UK's damaged peatlands. Much of the UK's peatland resource is in a damaged condition and may be losing between 3 and 30 tonnes carbon dioxide per ha per year depending on how badly affected the site is. There is sufficient evidence to show that it is possible to halt the peatland losses through habitat restoration and that this will have greenhouse gas benefits. There are concerns about methane emissions from rewetted peatlands as this is a highly potent greenhouse gas. However, the evidence suggests that any methane emissions are likely to be small in relation to the overall greenhouse gas losses from a damaged peatland.

Peatland restoration is also a cost effective means of addressing climate change, compared with other carbon abatement methods such as afforestation and renewable energy. Restoring peatlands can be considered a natural form of carbon capture and storage, preventing release of carbon from damaged bogs and preserving it for potentially millions of years.

Delivery of the UK Biodiversity Action Plan target to restore 845,000ha blanket bog by 2015 could bring emissions savings of 1.5 million tonnes carbon dioxide per year.

Meeting this target to restore damaged peatland in the UK could avoid a global social carbon cost of £32 million each year. This is in addition to the costs benefits of improved water management and other services.

Topical issues

Forestry on peatlands

After extensive peatland damage in the 1980s from conifer planting, Government forestry policy now supports the removal of such trees for peatland habitat restoration. Studies suggest that retaining plantations on peatlands would result in net greenhouse gas emissions, as the losses from the peat outweigh the gains made by the growing trees. Restoration helps reduce the carbon losses as well as bringing biodiversity benefits

Windfarms on peatlands

Wind turbines and associated access infrastructure if built on sensitive peatlands has the potential to negate the carbon benefits of the development and damage important peatland features. Applying good practice in locating, designing and managing windfarms can reduce environmental conflict and secure maximum carbon savings.

National accounting for peatland emissions

Methodologies for national carbon accounting under the Kyoto protocol do not fully address the savings made from peatland restoration and discussions are underway to address this. The UK could demonstrate leadership in accounting voluntarily for peatland restoration, under the UK Greenhouse Gas Inventory. This would put us in good stead for any future mandatory system.