

## Full details

All details held on the selected case study are shown below.

Went live on	Title	Reference
3 Aug 2011	UK upland peat: advice on mitigating climate-related loss and safeguarding 'ecosystem services'	SID0354

### Synopsis

Half the UK's upland peatlands will be vulnerable to climate change by 2050. QUEST was part of a partnership summarising available knowledge and producing an 'implications for policy' brief that Defra used in its UK Climate Change Risk Assessment.

### Description

QUEST, in partnership with the Environment Agency, established a network of scientists, industry, NGOs and agencies (including Defra and DECC) to produce an 'implications for policy' brief on climate change and upland peat loss.

The brief summarised a special issue of the journal *Climate Research*, entitled *Climate Change and the British Uplands*, which combined research and analysis by QUEST and other network members.

The researchers had modelled how man-made climate change is likely to shrink the area where regional climates support upland peat bogs. Nine different models all predicted that the UK 'climate space' associated with peatlands will shrink. And although the researchers did not address whether this change would lead to sudden or gradual change in the peatlands themselves, they did conclude that more than 50 per cent of the UK's peat will be vulnerable to change by 2050. That remains true whether or not greenhouse gas emissions are reduced.

The problem is serious. Peatlands cover about 15 per cent of the UK, store about half of all our land-based carbon, and have huge landscape value. They also provide important 'ecosystem services' by absorbing airborne pollutants and regulating how water flows through the landscape, with implications for both flooding and water quality.

Annual carbon losses are up to 100 tonnes per square kilometre in eroding peat catchments; water industries in at least 65 percent of all peatland catchments are concerned about rising water colour, and wildfires are already bringing huge damage costs. Climate change will exacerbate such problems.

The brief outlined options to make peatlands more resilient, and to reduce the risk of losing valuable services. It covered biodiversity, water, green house gas emissions and land management. For each of these it summarised the likely effects of climate change and suggested actions to offset or adapt to these impacts.

The findings have become part of the UK Climate Change Risk Assessment, prepared for Defra. After seeing the brief and special issue, Iain Brown, one of the Assessment's authors (based at the Macaulay Land Use Research Institute, Aberdeen), asked if the 'bioclimate' map could be included in the Assessment because it was 'much more robust' than previous information.

Judith Stuart, from Defra's Soils Policy Team, is now preparing an 'evidence paper' for Defra, that will underpin the development of future peat policy in England. She comments that the *Climate Research* special issue was 'very useful', adding that 'there are so many interesting and relevant papers... I have been weaving the information into policy work on peat.'

This research was supported by NERC's QUEST (Quantifying and Understanding the Earth System) programme.

### References and links

#### Hyperlinks

- [1. Climate Research - Climate Change and the British Uplands - a special issue](#)
- [2. QUEST - Climate change and uplands peat loss: implications for policy](#)

### Impacts

#### Actual impacts

Policy

#### Impact evidence

Defra has used the findings in its UK Climate Change Risk Assessment. And Judith Stuart, from Defra's Soils Policy Team, is now preparing an 'evidence paper' for Defra, that will underpin the development of future peat policy in England. She commented that the *Climate Research* special issue was "very useful", adding, "there are so many interesting and relevant papers..... I have been weaving the information into policy work on peat."

<b>Research and funding</b>	
<b>Funding type</b>	Research Programme
<b>Classification</b>	
<b>Science themes</b>	Climate system, Biodiversity, Sustainable use of natural resources, Environment, pollution and human health
<b>Science areas</b>	Freshwater, Terrestrial
<b>Policy areas</b>	Biodiversity, Climate/environmental change and impacts, Land use, Natural resources, Nature conservation, Pollution, Tourism, Water
<b>Keywords</b>	sustainable resources, Biodiversity, Environmental change, Peatlands