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Peatlands and the water industry

Covering 20% of Scotland in both upland and lowland settings, peatlands are a vital part of our natural capital, forming Scotland's iconic landscape and underpinning industries worth billions of pounds to the local economy. In good condition, these habitats provide a range of natural capital and ecosystem service benefits. However, **80% of UK peatlands are in a degraded or damaged condition** and this creates a number of problems for land users and costs to society.

Perception of peatlands and that of their value is changing. This is due, in part, to a realisation by policy makers and the wider public that the UK's peatlands are intrinsically valuable and their natural assets and services can increase society's economic and environmental resilience. The UK National Ecosystem Assessment (2011) valued the benefits associated with inland waterbodies, including peatlands, at £1.5billion.

Water quality issues

70% of UK drinking water originates from upland, often peat dominated, catchments. Peat losing carbon through habitat degradation is a global environmental issue, but also a local issue for water quality and drinking water provision. If raw water taken from the environment is poor quality (discoloured with sediment and dissolved compounds) then there is a cost to the water companies and their customers in additional water treatment.

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Natural capital benefits of healthy peatlands

Peat soils store large amounts of carbon over long time periods. **UK peatlands hold 3.2 billion tonnes of carbon.** Damaged peatlands release 3.7 million tonnes per year which equates to the equivalent annual carbon emissions of c. 1.5 million households.

Vegetation: healthy peatlands support peat forming vegetation which has water regulating properties; filtering and slowing the movement of water over the land surface helping to improve the quality of water reaching rivers and lochs. The vegetation protects the peat soil beneath, preventing erosion and loss of carbon.

Biodiverse, highly specialised wildlife: Peatland landscapes sustain iconic game species, which support sport and tourism industries in Scotland, as well as supporting a wide range of rare species and breeding birds.

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Every day, Scottish Water provides 1.34 billion litres of clear fresh drinking water to its customers. Much of this is captured in reservoirs from peatland catchments before then being treated to the highest possible standard. Scottish Water therefore takes a keen interest in ensuring the raw water received from peatland catchments is of a high quality and protected from the impacts of degraded peat soils. **When peat soils become degraded it can result in colouration which makes the raw water harder to treat**, and there is an EU Directive requirement to remove the by-products. This additional treatment can come at a cost:

- It is energy intensive
- It requires additional additives during treatment
- It generates additional waste to landfill and associated tax payments
- Additional treatment infrastructure is required to remove water colour, often at a cost of £millions per water treatment facility. This results in **escalated cost of water treatment associated with peatlands in poor condition.**

Customers pay for additional treatment costs through their water bills. However, **improving raw water quality before it gets to the treatment works is vastly more cost effective.** This can be achieved with peatland restoration.

Taking steps to improve water quality

Restoring peatland functionality is key to reducing colouration and improving raw water quality.

Recovering the hydrology and improving coverage of peat forming vegetation will:

- Help to provide cleaner water to reservoirs
- **Restore the natural capital reserves of the habitat**, benefitting the diversity of wildlife that depends upon it and increase provision of ecosystem services such as carbon sequestration and storage.
- **Allow the peatland habitats to be more resilient to climatic changes**, thus reducing water treatment costs in the long-term.

Scottish Water has already begun work to survey, monitor and inform the future restoration of Scottish peatlands.



For further information on the natural capital benefits of peatlands or any other aspect of the IUCN UK Peatland Programme contact:

"The use of earth observation data to assess peatland areas within their source water catchments will help to focus restoration activities to preserve important sources of drinking water. This not only helps to protect the environment but will potentially reduce the cost of providing a clear fresh public water supply. Scottish Water is looking to work with land owners who manage land within our drinking water catchments to help improve and restore areas of peat."



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Restoration works have been carried out by private water companies elsewhere in the UK under projects that seek to protect existing natural capital and deliver improvements in these assets.

Severn Trent Water (West England/East Wales)

In the Bamford catchment alone, Severn Trent Water spend at least £2000 per week during the summer, increasing to as much as £4000 per week in the winter months to remove peaty sediment from drinking water. In FY 2010-11 removal of 11,500 tonnes of sediment to meet drinking water standards on particulates cost them £160,000.

United Utilities (North West England)

Sustainable Catchment Management Plans (SCaMP) during 2005 to 2010 led to the restoration of 20,000ha of upland catchments. The conservation improvements were considerable for this habitat, with 96.6% of the 13,000ha of SSSI restored to favourable or recovering status. Monitoring of these areas is starting to show that improved peatland habitat condition is beginning to reduce turbidity and colouration of raw water from these restored catchments.

Future work

The IUCN UK Peatland Programme leads the Scottish Forum's Natural Capital & Scotland's Peatlands Project Group. To support the Project Group's vision of Scotland's peatlands being in a healthy condition, we plan to work with the water industry to:

- Understand the benefits of peatland restoration to Scotland's water industry.
- Explore the cost benefits of healthy peatlands to the water industry, across the UK and internationally.
- To build partnerships between existing organisations to help with effective land management for improved peatland catchment water quality and to help to monitor the service delivery and natural capital stock in these restored peatlands.

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