

## Impacts on rivers

Headwater peatlands help regulate the quality and quantity of flows to downstream areas. In healthy blanket bogs the roughness of the vegetation and its increased capacity to take in water, compared to bare peat, reduces the size of flood peaks. Even relatively small changes in the speed of run off and size of flood peaks can reduce the impacts of flood waters in downstream areas.

Long periods of dry weather can result in water companies needing to take measures to tackle drought. Healthy blanket bogs provide a reliable flow of water to these river systems, making river environments more resilient and bringing benefits to public water supplies.

The restoration we are carrying out as part of Pennine PeatLIFE is one of many tools used to naturally manage flood risk in our landscape and to maintain healthy river environments and water supplies.



# restoring over 1,600 hectares

The programme is restoring over 1,600 hectares of blanket bog, working across the protected landscapes of the North Pennines, Yorkshire Dales, Forest of Bowland and Nidderdale.

The Pennine PeatLIFE project is being led by the North Pennines AONB Partnership in collaboration with Yorkshire Wildlife Trust and the Forest of Bowland AONB Partnership. The project is co-financed by the Environment Agency, Northumbrian Water, United Utilities, Yorkshire Water and European Union LIFE Programme.



# Water in the uplands



## Peninne PeatLIFE delivery partners

**NORTH PENNINES**

Area of Outstanding Natural Beauty



**Yorkshire Wildlife Trust**



## Peninne PeatLIFE is funded by



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# Water in the uplands

A blanket bog in good condition contains a lot of water, with the water table within 10cm of the peat surface. Previous practices, such as digging artificial drains (grips), have drained much of the blanket bog in the North Pennine moors making them drier and lowering the water table. Dried out blanket bogs often have less vegetation cover, with more bare peat susceptible to erosion. This forms hagg edges and gully systems over time.

Grips and gullies have lowered the water table so that much of the peat has become dry and easily damaged. Through Pennine PeatLIFE we are rewetting and revegetating damaged and degraded blanket bogs.

Restored blanket bog

**An estimated 10% of the planet's non-frozen, fresh water is stored in peatlands.**

Peat soils typically contain very high moisture contents, between 600 and 18,000% compared to the mass of dry material in the same volume.

Taking water samples



Damaged blanket bog



Peatland drain (grip)



Rewetted, blocked peatland drain



## Peatlands and water quality

Peatlands are the headwaters for some of the UK's major water supply areas, particularly in the North Pennines where they supply homes and businesses in Yorkshire, the North-East and the North-West.

As peatlands become more degraded, they release more dissolved organic carbon (DOC) into many UK water catchments; DOC creates the brown colour of peaty water. The amount of sediment and fine organic carbon particles in water from degraded peatlands can also be very high. Restoration and revegetation as part of Pennine PeatLIFE is reducing surface erosion, minimising the sediment and particulate organic carbon released. We are also monitoring DOC levels in water where restoration has been carried out, to inform our work for the future.

Removing peat sediment and dissolved organic carbon from water has a significant cost in raw water treatment for water companies. Peatland restoration offers a cheaper and more sustainable option to improve the quality of raw water draining from peat-dominated catchments. When we restore peatlands at the source, rather than solely relying on expensive processes at the water treatment stage, it reduces the use of chemicals and helps to keep water customers' bills low.

Read more at: <https://bit.ly/peatlife>