

What is the effect of the historic draining of the peat bogs?

Draining peat bogs means water is no longer stored as efficiently in the peat, causing more water to run off the land and flow downstream into already swollen rivers during periods of high rainfall. The peatlands have become dry and consequently are losing more carbon than they can accumulate. The quality of water leaving the peat bogs is deteriorating too. Carbon discolours the water and increases its acidity, which causes problems downstream, especially in the South West where water is abstracted directly from rivers. This raises the cost of water treatment, which ultimately costs customers.

What are we doing?

On Exmoor historic land drains have been blocked up to begin to repair the hydrological function of the peat bogs. This has been done across 2,000 hectares through a partnership involving South West Water, Exmoor National Park Authority, the Environment Agency, Historic England, Natural England and landowners.

What does the science tell us?

A University of Exeter team, led by Professor Richard Brazier, has collected five years of data after installing monitoring equipment at 200 locations to record changes in water levels, water quality and gas fluxes from these damaged blanket bogs.

Preliminary results reveal a significant rise in the water table level of 2.65cm, which translates into a one third reduction in the volume of water leaving the monitoring sites post-restoration. Across the 2,000 hectares of moorland restored by 2015, this represents a significant reduction in water entering the River Exe at times of high rainfall, equating to 6,630 Olympic-size swimming pools.

The team has also recorded significant improvements in water quality as a result of restoration. The highest concentrations of dissolved organic carbon, which contributes to water discolouration, have fallen by up to 30 per cent in line with the reduced rate of stormwater run-off, which may translate into lower water treatment costs and higher carbon retention on the moorland.

By blocking up drainage ditches, the aim is to enhance water storage, improve water quality and facilitate a rise in water table levels, which will allow mire plants to thrive and the peat to accumulate quicker and store more carbon. In the long-term, the region's biodiversity is also expected to benefit.

“This enhanced water storage could, when replicated across the whole of Exmoor, provide a significant buffer against downstream flooding in rivers like the Exe.”

Professor Richard Brazier

6,630

Olympic-size swimming pools of water stored across 2,000 hectares

What's next?

The Exmoor Mires Partnership, funded by South West Water, the Environment Agency and Natural England, plans to restore 500 more hectares of peat bog in 2015-2020 and introduce a Payment for Ecosystems Services scheme to encourage more landowners to manage land for water.