

South West Peatland Partnership

The use of stone and peat to achieve hydrological restoration of deep peat blanket bog and valley mires in the UK's South West.

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Peatland restoration innovation

The peatlands of Exmoor, Dartmoor and Cornwall are industrial landscapes, sculpted by human activity. Impacts of historic activities such as burning, peat cutting, military exercises and tin streaming are still causing damage to this day.

The South West Peatland Partnership (SWPP) is implementing innovative ways of working in large erosion features (>1.5m deep by >1.5m wide). These features often carry large volumes of water off the peatland and have a large draw down effect on the water table. The aim of these works is to trap sediment, slow the flow of water, and restore the hydrology within large gullies and streams.



Figure 1: Before stone dam installation



Figure 2: After stone dam installation

Using stone

SWPP have been using stone to aid restoration of valley mires. These stone dams have been used in gullies and ditches up to 3m deep and 3m wide that have a large flow of water throughout the year.

Stone was used in Figure 2 because it created a semipermeable dam that allowed water to be held and spread out across the peatland but also dispersed the energy removing erosive force out of the water.



Figure 3: Illustrations created to show the often transformative use of stone as a restoration method

These dams have been utilised where historic environment restrictions have meant that peat cannot be used and dams not able to be keyed into the banks of the gully.

Each dam contains ~50 tonne of stone, moved to site using a tracked dumper and positioned and compacted by a 6 tonne excavator. The excavator built its way across, fully compacting the stone as it was dropped by the tracked dumper. Once built to the desired height, turfs were packed on the backside of the dam to maintain a high water table year round.

Peat dams

SWPP have been constructing large peat dams to restore the hydrology in areas that are damaged by past management practices which have left large hags on the edge of the peat mass, with significant volumes of peat isolated and hydrologically disconnected.

The blocks are used to link up the large isolated islands of peat and raise the water table. They are only used on deep peat areas and on a flat or slack gradient.

The large peat dams are made by:

- Removing the turf from the block location (the base and side of the gully)
- Peat is then won by excavating the smaller isolated hags and from reprofiling of hag edges
- Any further peat that is needed is won from small borrow pits to make up the volume needed for the dam
- The dam is constructed 10-20cm higher than the surrounding ground
- The dam is then completely turfed alongside the borrow pits and the reprofiled edges.

To ensure these dams do not blow, we use multiple dams and step them down in height so that they support each other.



Figure 3: Large newly-created peat dam

