

Sussex Flow Initiative case study:

Leaky dams at Fore Wood, Crowhurst

Rina Quinlan and Fran Southgate



Project summary

Fore Wood is a 56 hectare (138 acre) woodland in East Sussex, which includes a Site of Special Scientific Interest (SSSI). Its steep ghyll woodland streams and sandstone ravines, where rare ferns and bryophytes grow, offer a great opportunity to create natural leaky dams that slow the flow of water and hold it back in times of high rainfall. Footpaths through the woodland flood regularly in winter, and there are opportunities to increase winter access through Natural Flood Management (NFM).

At least 50 opportunities to install NFM measures were identified in Fore Wood. These include:

- Creating 'leaky dams' in ghylls and ditches, including tree heads, gully stuffing and ditch top diverters
- De-silting ponds
- Blocking surface water flow paths with brush bundles and other natural woody material
- Improving flood flow into minor washland storage areas

Site & catchment characteristics

Approximate Grid Ref	TQ 75637 12806
Catchment	Powdermill Stream, Combe Haven
Land use	Ancient Woodland
Soil type	Ashdown beds with an overlay of Wadhurst Clay.

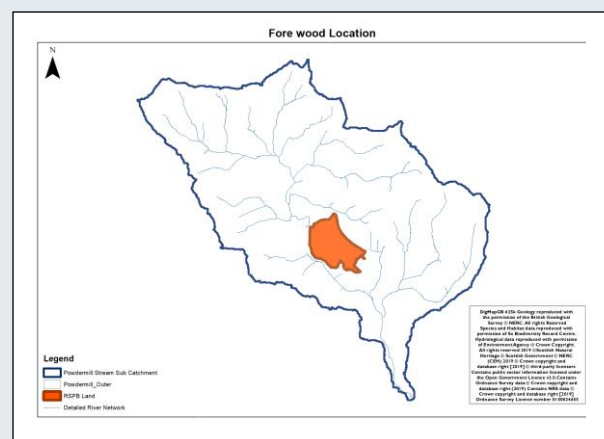


Figure 1. Location - Fore Wood, Crowhurst

Background information

Fore wood is on the edge of Crowhurst village, 1.5 miles south of Battle. It is owned and managed by the RSPB.

The woodland is designated as Ancient Semi-Natural Woodland, and it includes a Site of Special Scientific Interest (SSSI). It is within the High Weald Area of Outstanding Natural Beauty (HW AONB).

The Powdermill catchment is naturally steep and fast flowing. When it rains hard, water flows down the streams very quickly, and creates flood surges which cause localized flooding to properties in and around Crowhurst. Flooding in Crowhurst has occurred regularly in recent years.

Project outputs

The RSPB volunteers supplied 30 locally made brush bundles for the project.

Nearly 50 leaky dams were installed and we estimate that each dam can slow around a tonne of water per rainstorm.

Matt Twydell, Fore Wood Warden says:

“The Sussex ghylls are an important habitat for a range of wet woodland species and have their own microclimate which is important for several species of bryophyte.”

Slowing the flow in the woodland not only helps to alleviate flooding further down the catchment, it also helps improve our wet woodland habitat, increases the dead wood habitat available, and minimizes the potential drying of the woodland during droughts and from climate change.”

Further work is planned on pond and washland restoration, and leaky dams.

Flood Risk Consent

An Ordinary Watercourse Land Drainage Consent was required from East Sussex County Council, at a small cost. Consent was also acquired from Natural England for work carried out in the SSSI ghyll stream sections of the wood.



Figure 2. Volunteers installing leaky dams

Multiple benefits

Natural Flood Management provides a huge range of ‘natural capital’ benefits to people and wildlife. As well as storing and slowing water, “leaky dams” help to provide important habitat for a range of aquatic and terrestrial species. They also help to improve water quality by filtering sediment and pollutants, and they help streams to naturalise and regenerate more heterogeneous habitat for fish and other species. Natural wood in streams helps to regulate local and regional climates by storing carbon, mitigating drought, and cooling stream water. There are additional community health benefits provided by access to nature and volunteer days.

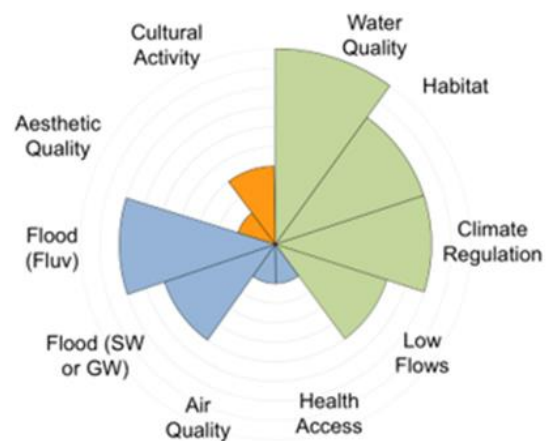


Figure 3. Types of benefits provided by Leaky Dams¹ · EA multiple benefits

Collaboration & funding

The project relied on a good relationship with the landowners and involved SFI working closely with a range of partners including Sussex Wildlife Trust, the RSPB, the County Council and the Environment Agency.



Project funding	Funding was provided by RSPB, Sussex Wildlife Trust & Environment Agency
Overall cost and cost breakdown	<p>The total cost of the project was :-</p> <p>5 days SFI Project Officer time & 3 days SFI Project Manager: £1,575 + Travel £187.50</p> <p>Equipment and tools: £120 brush bundles + £97.02 Tools</p> <p>Volunteer costs: £20 + RSPB volunteer costs</p> <p>Other: £50 OWC land drainage consent</p> <p>In kind contributions: Landowner / Partner staff hours £1,500 + Travel approx. £135</p> <p>Volunteer time: 12 x £150 and 3 x £250 (chainsaw licenses) = £2,550</p> <p>TOTAL Cost Approx. £6,317.52 ; CASH Cost Approx. £2,264.52</p>

Future work

SFI will continue to work closely with landowners in the Powdermill catchment to identify other opportunities for NFM.

If you own land locally and would like to learn more about using leaky dams to prevent flooding please contact us.



¹ Environment Agency (2017) Working with Natural Processes: One page summaries [accessed here: <http://bit.ly/2nTyDq8>]

For more information please contact sussexflowinitiativepm@gmail.com or visit our website [here](#)