



Bevern Stream SDNPA CIL Project 2019

Ouse & Adur Rivers Trust

Location:

Bevern Stream.

TQ 41672 16332 to TQ 41672 16332

Ownership:

We are very grateful to the landowners at Knowlands Farm for their permission to undertake this project and on-going support for OART's work.

Background:

The Bevern Stream is a lower tributary of the River Ouse, with a rural sub-catchment covering 37.4Km². Rising from springs in the chalk of the South Downs, near Ditchling, it flows east for 18.3km to meet the River Ouse above Lewes. The stream suffers from a lack of morphological diversity which enables water to flow rapidly along a relatively straight, deep, channel. As a result, peak flows rapidly meet the main River Ouse and exacerbate flood risk to Barcombe Mills and further downstream at Lewes.

Project Need:

The Bevern, like many Sussex rivers, has been heavily modified over past decades leaving a mostly uniform river channel lacking in flow variation and habitat diversity. A detailed walkover survey of the Bevern Stream, by OART in 2017, highlighted opportunities to enhance in-channel habitat whilst providing natural flood management (NFM) solutions to reduce flood risk to downstream properties.

Project Aims:

- Slow the flow of in-channel water to help reduce downstream flood peaks
- Restore natural processes to improve the streams ability to manage flood water
- Alter land management to reduce surface water run-off
- Enhance the quality of in-channel and riparian habitat for wildlife



Channel BEFORE installation of a debris dam



Channel AFTER installation of a debris dam



New fencing created buffer strips along the river

Project Summary:

Slowing the flow:

Woody debris of different sizes and ages was anchored securely, with chestnut stakes, to both sides of the watercourse creating leaky dams. Debris dams increase channel roughness, slow the flow and give a potential reduction in flood peaks downstream to flood-affected communities. Large woody material also increases flow variation and provides a greater complexity of habitats for aquatic wildlife.



Restoring natural processes:

Low-level wetland berms were created from chestnut stakes and backfilled with brushwood. The berms were created to alter channel morphology, trap sediment from the water and cushion the banks from the force of the river to help prevent erosion. Native marginal plants in the form of pre-planted coir were used to kick start plant growth on the new berms and add to the seed bank downstream.



Adding gravel to enhance spawning habitat for fish

Altering land management:

Stock fences were erected across two meanders to create riparian buffer strips/areas. These will exclude cattle and sheep and allow natural regrowth of bank-side vegetation. Altering the land management from pasture and allowing natural regeneration of shrubs and trees will help to intercept more water and slow surface run-off allowing it time infiltrate into the soil. The buffer compartments have the added benefit of helping to improve biodiversity through the provision of increased habitat and food resources.



Enhancing habitat:

Seven bulk bags of land-dug flint gravel were added to supplement the existing natural gravel substrate and increase the quality and quantity of spawning habitat available to fish species. The Bevern stream is a key habitat for spawning sea trout, *Salmo trutta* (a UK priority species). The gravel augmented into the channel was angular land-dug flint shingle, matched as closely as possible to the size of that naturally occurring within the sub-catchment.

Monitoring and project Impact

It is difficult to be sure how these small scale measures will impact further down the catchment but what is certain is only a catchment based approach to flooding downstream will have any significant impact. The Ouse & Adur Rivers trust is committed to playing its part in this work

Funding:

SDNPA Community Infrastructure Levy (CIL) for the enhancement of green infrastructure and strategic flood management.

Acknowledgements:

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Contact & Further information:

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Volunteers building berms