HOLDING BACK THE FLOOD: LESSONS FROM THE EVENLODE RIVER BASIN NEAR OXFORD.

What happens when we work with nature instead of against it?

2007

In 2007, devastating floods hit a village located near the Littlestock Brook river, part of the Evenlode catchment. Decades of land drainage, straightened rivers, and compacted soils mean less water soaks into the ground and more water flows quickly downstream, increasing flood risk for downstream villages

Solutions are being tested to slow water on agricultural fields

The goal ? Slow the flow before it reaches the village.

Woody leaky dams

Field corner bunds

Wet woodland plantations

WORKING WITH THE LANDSCAPE

A range of "sponge" measures are implemented:

🪵 **Woody leaky dams** to slow stream flow.
💧 **Inline ponds** & **field corner bunds** to store excess runoff.
🌳 **Wet woodland plantations** to improve infiltration.

WHAT & HOW WE MEASURE

To understand the integrated effect of these measures, we monitor:

Water: we measure rainfall, water levels in bunds, river and ponds, and stream flow.

Soil: we measure its moisture hourly, and seasonally we assess soil bulk density, organic matter, and other parameters.

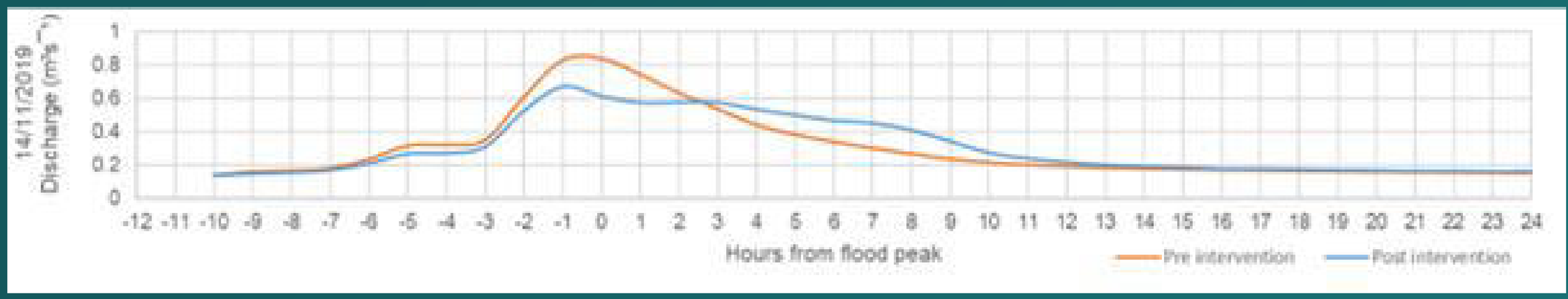
Sediment: we measure how much soil is "caught" in bunds and ponds instead of washed away.

Biodiversity: we measure aquatic invertebrates and macrophytes developping in the ponds and corner bunds.

PRELIMINARY RESULTS

A storm in 2024, similar to the one that caused flooding in 2007**, did not lead to flooding in the village.**

Monitoring shows that **flood peaks are reduced and delayed.**



Monitoring shows **enhanced biodiversity,** as **ponds and bunds** have evolved into **valuable habitats.**

KEY TAKEAWAYS:

1 **Combining different sponge measures reduces flood risk.**

2 **Long-term effectiveness of sponge measures depends on regular maintenance and should be reflected in future funding schemes.**

3 **The long term success of sponge measures depends on how society manages trade-offs: here, the farmer must leave part of the field uncultivated, which reduces income. Current funding helps, but long-term support is uncertain.**