Cornwell River Restoration and Wetland Creation

Thames Water: Smarter Water Catchments Programme

River Evenlode Catchment

Evenlode Catchment Partnership

Project Description

The landowner, Alex Ward, approached the Evenlode Catchment Partnership (ECP) to enhance the wetland habitat on three fields in the Cornwell Estate and address the poor water quality in the Chipping Norton Brook. The fields were of low agricultural value typically used for seasonal cattle grazing. The Chipping Norton Brook receives treated and untreated effluent from Chipping Norton Sewage Treatment Works. In times of low flow in summer, most of the brook's water comes from the works. Originally a deeply incised, straightened channel, our vision was to free the river, allowing it to move naturally within the landscape.

Start date: Feb 2021 **End date:** Sept 2024

Project Costs

Total Cost: £339,000

Thames Water Contribution: £88,000

Public Funding:

EA WEIF grant: £105,000

CNL FiPL grant: £146,000

Lower Wetland

Objectives

To create natural river channels, provide room for the river to move and slow the flow to create wetland habitats. Three different designs of wetland were constructed in autumn 2023 by diverting the Chipping Norton Brook.

Upper Wetland: Excavating new channels and backwaters into the field exposed the natural river gravels. The action of the water moving freely in this area has fashioned riffles and deeper water.

Middle Wetland: The topsoil was removed, exposing the river gravels and clay subbase. New channels push the water into the field where it is no longer constrained.

Lower Wetland: This wetland had the least intervention with channels created to push water into the field and re-join the brook lower down. The water can spread widely across the field which has a gentle gradient. The flow has slowed considerably, and vast amounts of sediment have been deposited here already.

Fish Spawning Bed: We constructed a fish spawning bed with gravel, boulders and tree trunks to create slower flowing refuges in steps to allow fish to swim against the fast flow. The gravel bed is the favoured substrate for fish spawning and the faster flowing water keeps the gravel free of sediment.

Outcomes

- 3.4 ha wetland habitat created.
- 3.03 ha species-rich grassland created.
- 1 km of river reconnected to its floodplain.
- 14,500 aquatic plugs planted.
- 175 native broadleaved tree whips planted.
- 25,000 m^3 flood water stored.

Lessons Learnt

- Allow plenty of time and contingencies for disruption due to bad weather.
- Thames Water do not have records of all their services – there is a parallel pipe between Kingham and Chipping Norton.
- Water runs down the gravel filled trench for the foul water pipe in great quantity.
- Don't stand still while walking in soft clay!
- Grant payments that only occur at the end of the project can put a small charity in financial jeopardy.

Future Plans

Ideally, we would like to secure one or more PhD students to study these three different wetlands, looking at:

- How the channels and the ecology change with time.
- How effective the wetlands are at nutrient reduction.

Upper wetland

Project Highlights

Heron and egret arrived within days. Within months we had the first recorded sightings of Green Sandpiper and Ringed Plover. Unusual sightings were Ruff, Osprey and Great Egret.

The water entering the upper wetland is high in nutrients and very turbid. The water exiting the lower wetland is clear with a lower nutrient load, and this is even before many aquatic and marginal plants have established.

Middle wetland

*Images accredited to Wild Oxfordshire

Thames Water

Wild Oxfordshire

Produced November 2024