Chalk stream riffle (left) and leaky dam at Tathwell Grange (right) (LWCS)

Farming in Protected Landscapes
Lincolnshire Wolds National Landscape

Chalk Stream Restoration and Natural Flood Management

A collaborative project between 2 farms to manage existing habitats to improve water quality and species diversity, and improve management of water flow further downstream

Brief background:
Having previously collaborated on a scheme to manage hedgerows over 3 farms, the farms at Tathwell Grange and Scamblesby Thorpe developed a further project focused on managing water features on the 2 farms, to identify links needed to create landscape recovery on a small scale and the benefits of carbon storage within these habitats.

Chalk streams are a key rare habitat to the local area and preserving and protecting these for the future reinforces the character and biodiversity of the Lincolnshire Wolds.

Managing the water resource and its quality will become increasingly important as populations grow and climate change increases the potential for droughts and flooding events.

The scheme will store water during wet times releasing water in drought periods. The leaky dams will reduce soil erosion during times of heavy rain.

Weir and gauge to measure aquifer recharge (LWCS)

Measuring the water flow to recharge the aquifer will be one of the key successes of the leaky dams. This is being managed in conjunction with Lincoln University to get a better understanding of how the hydrology of the chalk aquifer works.

Species diversity and abundance increasing over time will be key to the chalk stream restoration. Measuring species diversity within the aquatic habitat will show future improvements.

Background about the project:
This scheme is part of the wider Bain catchment and will be linking key habitat within the landscape which will allow free movement of flora and fauna.

Managing the chalk stream and creating the leaky dams allows more shelter in the aquatic habitat and better habitat for niche flora and fauna. Wetland creation and managing the chalk stream will sequester more carbon; having adjacent margins of greater flora diversity further increases this process.

The leaky dams will hold water back in times of severe rainfall preventing flash flooding and allowing time for the valuable water to infiltrate into the soil and recharge aquifers improving water stability/security/quality.

Measuring water flows and being able to quantify aquifer recharge could be upscaled to increase recharge in other water catchments.

The project builds in opportunities to have educational events to promote this work through the general public and industry partners.

Lincolnshire Wolds Outdoor Festival Guided Walk (LWCS)

What the project delivers:

- 1040 metres of chalk stream restoration implementing riffles to increase aquatic habitat while increasing oxygen levels and potential spawning opportunities.
- Implementation of NFM through 5 leaky dams to improve water quality with the reduction of sediment load in times of high flow
- taking accurate measurements looking at improving aquifer recharge which has a direct benefit to all from agriculture production to public drinking water, as well as increasing water flows in times of drought in spring-fed watercourses and related biodiversity benefits

Key Outcomes for the Lincolnshire Wolds National Landscape:

- The landscape delivers more for nature, farmers and the public, including climate change mitigation/adaptation and other natural capital services
- Support and encourage agricultural practice that protect, enhance and restore wildlife habitats across the Wolds
- Creation and expansion of areas of habitat to help secure larger, better connected and managed, and biodiversity loss is reversed
- Nature and culture increasingly underpins the economy and supports local services.
- Skills and knowledge around traditional rural skills and natural and cultural heritage have increased.
- To support innovative diversification projects that work with local communities and businesses to create, inspire and support sustainable farming and farm buildings

Facts on funding the project:
FiPL Grant awarded: **£24,422**, at an intervention rate of **80%** of the project costs
The project delivers for the FiPL themes of **Climate**, **Nature**, **People** and **Place**