

An area in the upper reaches of the Cairn Beck catchment was identified as a candidate for wetland creation. The site exhibited a highly straightened, incised ditch with little/no biodiversity present.

It was agreed with the landowner to develop the area into a better-connected wetland environment that will improve both biodiversity and natural flood management.

## Design

A mixture of 3 techniques were used:

### 1: Lowering the channel banks and creating scrapes



This encourages the river to re-connect with its floodplain and create good wading bird habitat, so trees will not be planted in this section. Livestock will be allowed into this area for two weeks of the year.



### Section 2: In fill of channel



Approx. 40m of the channel was infilled to allow the river to find its natural course and wet up the floodplain.



### Section 3: Woody debris dams

These 2 structures are based on Beaver Dam Analogues (BDA's) which have been used as a river restoration technique in America.

Wooded structures were created in the channel to allow water to seep through but also build up sediment behind them to raise the bed level and therefore encourage water out onto the floodplain. As there are no fish in this section there are no concerns about fish movement.

This is a trial for ERT and will be monitored over time.



The whole wetland area will be fenced off using ClipEx fencing (metal posts which will last for 30 years and are quicker/easier to install).

All additional watercourses have been fenced off and as a result some pipe work and troughs have been installed for livestock drinking access.



### Project outcomes

#### Natural flood management

- More water to be held in the floodplain wetland environment.
- Water will move more slowly through the landscape which will help towards slowing the flow downstream.
- Tree planting will roughen the land surface which will slow down surface water flow and intercept rainfall.
- This catchment contributes to flooding in Warwick Bridge which is a Community at Risk of flooding, it is therefore a priority area to carry out flood mitigation work.



#### Biodiversity

- More habitat for riparian wildlife will be created by re-connecting the river to the floodplain, providing ideal conditions for farmland wading birds, such as lapwing.
- Tree planting will provide bird and bat habitat.
- Natural regeneration will occur as a result of fencing off the wetland area.

### Building a woody debris dam



Put in a series of posts across a storm channel to form the skeleton of the dam.



build up the level of the dam with soil, and cover with hessian.



Weave willow to capture any sediment.



Continue weaving willow until you reach the top of the posts.



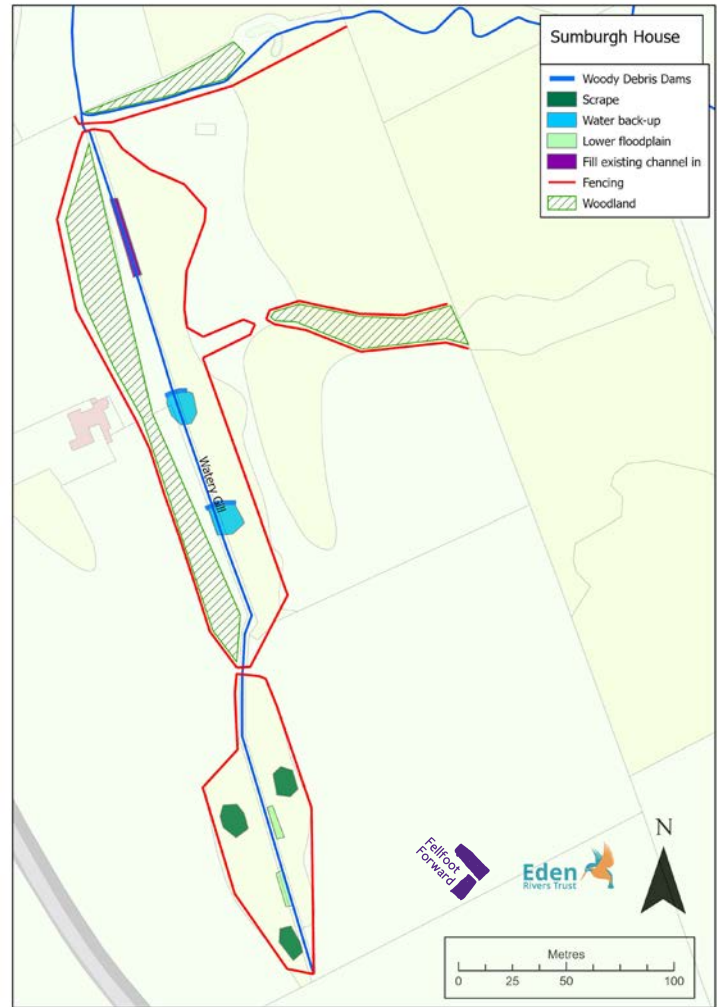
Finished. Check to see if any minor fixes are needed during dry spells .



In action - water collecting in the new woody debris dam.

## Project costs

Fencing, gates, materials	£ 13,094.64
Fencing labour	£ 2,620.00
Water troughs	£ 679.06
Ground work (scrapes, infilling, pipework)	£ 5,880.00
Trees inc. labour	£ 1,050.00
Woody dam construction	£ 600.00
<b>Total:</b>	<b>£ 23,923.70</b>



## Project partners, funders and thanks

### Contractors:

IJ & G Prudham: Graham Prudham, Richard Ridley

**Landowners:** Jimmy and Tom Stobart

**Funders:** Defra/Environment Agency, North Pennines AONB (Fellfoot Forward's Better Becks project)

**Consents:** Cumbria County Council

### Eden Rivers Trust:

Hilary Clarke (Project Manager), Jenny Garbe

Find out more about our Cairn Beck projects at [edenriverstrust.org.uk](http://edenriverstrust.org.uk)

