

Working Together for Healthy Water and a Healthy Environment

We all have a part to play in looking after our becks, rivers, lakes and their surrounding habitats and as a land manager you can do much to make a difference to the quality of water.

The Conserving Coniston & Crake project and South Cumbria Rivers Trust are working with farmers and managers across five catchment areas looking at ways in which positive changes can be made to how land is managed for healthier watercourses. These changes benefit farmers and their livestock as well as local communities and the surrounding environment. They will also help in compliance of the new *Farming Rules for Water 2018*.

Carrying out improvements could enhance the capital value of your holding and increase opportunities for further grants in the future.

South Cumbria Rivers Trust through Conserving Coniston & Crake can advise, plan, project manage and fund a variety of practical options for you, saving you time and money and making improvements for your livestock and the environment.

Bank erosion and Engineered Woody Structures (EWS)

Erosion is a natural process but a lack of management of riverbanks can lead to a variety of problems in the future. Naturally occurring woody debris only needs to be removed if it is causing erosion as some can be beneficial for in-river habitats and species and to slow flow and even reduce erosion. Fencing is also recommended in cases of serious bank erosion.

In the past hard revetment work has been carried out using stone/gabion baskets but without maintenance these can fall into disrepair and fail. This type of hard engineering can also result in accelerated water flow causing erosion and damage further downstream. By using green engineering techniques, the energy of the water is broken up and reduced in power., lessening the possibility of erosion and flooding downstream.

Types of green engineering

Brash bundles or 'fascines'

Fascines act to re-stabilise the river bank in a number of ways. These bundles of wood material diffuse the rivers energy reducing its erosive force on the bank. The fine brash material also acts to trap any soils eroded from the bank to prevent loss of the material downstream. The installations are not permanent, they are designed to break down over time but last sufficiently long for tree and plant roots to develop within the bank. This method of bank protection is combined with fencing and tree planting for maximum effect.



an eroding river bank. Notice the lack of plant and tree roots to hold the bank together.



bundled brash material (fascines) tied into the riverbank to defuse erosive energy of the river.

Bank erosion and Engineered Woody Structures (EWS)

Further examples of work carried out by South Cumbria Rivers Trust. Fascines were used to help retain land and prevent soil washing directly into the watercourse. The fascines retain sediment and will begin to stabilise the bank over time.



block stone revetment just downstream which has failed to protect the bank leaving a large gap between the block stone and the bank.



brash bundle installation entirely intact 3 years after installation and following "Storm Desmond" December 2015.

Tree Root Plates and Root Wads

Tree root plates and root wads are used in a similar way to fascines and brash bundles, but are generally on a larger scale. These installation function in the same way, dissipating the rivers energy preventing erosion.



An eroding river bank. The fence line is coved with sheep wool indicating the area remains accessible to grazing. This has contributed to the lack of bankside vegetation and associated stabilisation of the soil structure.



Completed installation of green engineering root wad bank protection.

Bank erosion and Engineered Woody Structures (EWS)



Diagram on the left shows a cross sectional view pf the root wad installation. Diagram on the right to indicate a plan view of the root wad installation.

Agricultural benefits to green engineering

- Prevent loss of land, keeping valuable soil reserves in place
- Reduce soil and sediment runoff
- Minimise the risk of water pollution
- Fencing protects livestock falling from unstable banks minimising the risk of injury
- Find a use for coppiced materials/fallen trees

Environmental benefits to green engineering

- Fish refuge sites created
- Naturalisation of banks
- Reduced sediment entering watercourses improving the conditions for fish spawning downstream



Further examples of engineered woody structures but on a smaller scale. Selected trees are felled at the bankside and anchored into place with steel cable. This mimics natural processes but in a controlled way.

These are particularly beneficial to aquatic wildlife as well as some bird species.

Conserving Coniston & Crake/South Cumbria Rivers Trust will

- Advise, plan and project manage the all the work including any water course consent, planning permission and contractor liaison **for free**.
- Carry out additional improvements such as fencing and tree planting as appropriate.



Farming Rules for Water 2018

From April 2018 all farmers in England will need to follow some new rules to protect water quality. The rules will ensure that farmers use fertilisers efficiently and avoid water pollution through surface runoff and soil erosion, standardising good farm practices that many will already be performing.

There are eight new rules; five for managing fertilisers and manure and three for managing soil.

The Environment Agency will be responsible for managing compliance with these new rules and will be carrying out checks.

Catchment Sensitive Farming

Your local Catchment Sensitive Farming (CSF) Officer can also give training and advice on practical solutions tailored to you and your farm.

The CSF Officer can talk to you about the availability of grants, business solutions that save money & time as well as the environmental benefits to making positive changes.

Here to Help You

South Cumbria Rivers Trust through Conserving Coniston & Crake can discuss options and offer solutions that meet you and your needs as long as there are benefits to the watercourses on your land. Installations have, on other farms, saved the land manager/farmer time and money and improved conditions for livestock and the wider environment.

We can advise, plan, project manage and fund a variety of practical options for you, on a one-to-one basis so will look at any other bespoke options for farming improvements that impact positively on water quality. Together, we will review your current situation, identify potential opportunities and then develop an action plan. More information sheets are available for:

- De-culverting & beck re-naturalisation
- Fencing & gates
- Stream crossings and tracks
- Feeding and drinking areas
- Reducing water loss and clean water separation

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The Farmer Network - www.thefarmernetwork.co.uk

National Farmers Union - www.nfuonline.com

