

# After the floods

## Restoring riverbanks in north west Cumbria

2,000 trees were planted along the river bank and 400 were planted on a nearby farm after extensive flooding



Examples of bank destabilisation on Paplava Farm at Cockermouth following flooding in 2009

Following devastating floods in the north west of England, the Woodland Trust has been working in partnership with landowners in the River Derwent catchment to help them plant trees on their land. These woodland creation projects will help stabilise banks, slow flood water and reduce the likelihood and impact of floods in the future.

### The challenge

The River Derwent catchment, which lies within north west Cumbria, collects its water from the wet uplands of the Lake District. It is already a very wet area, but a combination of low woodland cover, a relatively impermeable underlying geology, and upland soils compacted by many years of grazing results in very high levels of runoff and the potential for flooding.

High river levels are common after rain but a major flood event took place in November 2009 when Keswick, Cockermouth and Workington experienced extreme water levels. In Cockermouth, 885 properties were flooded and overall six bridges were destroyed by flood water. For many local landowners, the flood water destabilised established river banks and over-ran farmland.

Many measures have since been taken to restore land and riverbanks, reduce the impact of future floods and prevent the likelihood of such extreme flooding again. Amongst these, trees and woods are proving to have a vital part to play and the Woodland Trust is helping ensure woodland solutions are available to landowners in the area.

### Our contribution

The Trust has been working in partnership with others, including Catchment Sensitive Farming officers, the Derwent Rivers Trust and Environment Agency, to help landowners restore their riverbanks and farmland through tree planting.

Our woodland creation advisor has spent time with each landowner in order to understand their needs and explain

### Woodland for water

A review conducted by Forest Research has set out comprehensive evidence of the vital role that woods and trees can play in water management.

It found that:

- Trees and woods planted along rivers and on floodplains can mitigate flooding through greater water use, higher infiltration rates of forest soils, and greater hydraulic roughness of floodplain and riparian woodland
- The binding action of tree roots can help to strengthen and stabilise river banks, reducing erosion and bank collapse
- Riparian woodland can moderate a stream's microclimate and help alleviate the predicted rise in water temperatures and increased risk to freshwater life
- Riparian woodland buffer strips can act as potential nutrient 'soaks' helping remove nitrate and phosphate pollutants present in surface runoff
- Woodland creation could be an effective local measure for reversing the rising nitrate levels in some groundwaters
- Riparian woodland buffer areas can provide effective protection for streams and groundwaters from pesticide applications on adjacent land by intercepting aerial drift and trapping pesticides bound to sediment in runoff
- Woodland creation can be used as a measure to reduce the greater threat of diffuse pesticide pollution from agriculture
- Woodland can control runoff and reduce soil erosion and sediment delivery – slowing down the flow of flood water.

Visit: [www.forestry.gov.uk/fr/INFD-8JHELN](http://www.forestry.gov.uk/fr/INFD-8JHELN)



Stainburn Hall planting with volunteers in Feb 2011



Some of the 2,000 trees planted at Derwent Ings

the benefits that trees and woodland can provide. Through this personal advisory service, and with the provision of some financial support, we have been able to deliver many hectares of woodland creation in the catchment.



Peter Leeson

Trees planted at Paplava on the Derwent, west of Cockermouth.

### Stainburn Hall Farm

Stainburn Hall Farm is a dairy farm near Workington which has around one kilometre of river frontage. It was particularly badly affected by the 2009 floods with floodwater covering 11 hectares of land.

With Trust assistance, the owner John Farries planted 2,000 trees along the river bank and in other blocks on his land. These trees will help stabilise the banks and contribute to other work in the catchment aiming to slow future flood waters – giving valuable extra time for local communities to prepare for flooding.

Our woodland creation advisor also arranged for a local community tree planting group – Diggin' the Trees – to spend a day planting trees on John's land.

### Paplava Farm

Flood water had swept away approximately half an acre of Paplava Farm land adjacent to the River Derwent, although a few existing mature trees had helped stabilise and retain some areas of the bank. Our advisor worked with owner Roger Pope to identify areas for tree planting and around 400 trees have now been planted on the farm with funding from the Woodland Trust.

### Derwent Ings

Natural England had already agreed to fund new fences on land owned by farmer David Hodgkiss, as part of the Cockermouth Flood Recovery Project. With our involvement the project expanded to include the planting of some three hectares of trees which should help deliver multiple benefits including the reduction in severity and impact of future floods, enhanced biodiversity and reduced diffuse pollution.

## How the Trust can help

The Woodland Trust is working with partners across the UK on projects that will benefit water quality, reduce flood risk and improve the ecology of the water environment. Our projects are cooling rivers, slowing surface water run-off, stabilising banks and preventing pollution while also delivering numerous other benefits to farmers, landowners and communities.

We would be happy to hear from organisations and individuals who are looking to achieve these water management objectives in order to explain further how trees might help. We can point you in the right direction for evidence and tools to help you develop a project, as well as put you in touch with others who have taken a similar approach.

In some circumstances the Trust may be able to help fund the delivery of tree planting in water projects, but even if we can't directly fund your project we will be able to provide advice and support to enable you to identify other funding sources.

We have a range of materials available that can be used to engage with landowners and encourage them to integrate trees into their farms. We also have a team of advisors who can speak directly with interested landowners, visiting sites and drawing up planting schemes.

#### FOR MORE INFORMATION CONTACT:

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Volunteers planting trees high in the catchment of the St John's Beck