



Partnerships case study: Trees and water – River Derwent

TREE PLANTING PARTNERSHIPS IN THE RIVER DERWENT CATCHMENT

Working with landowners on floodplain and riparian planting projects

Following the devastating floods experienced 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 run off 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 overran 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.



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

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 controlling both water quality and quantity. In particular, the review 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

The review's findings have been published in a report – *Woodland for Water: Woodland measures for meeting Water Framework Directive objectives* – and a report summary has been produced by the Forestry Commission and the Environment Agency.

Visit: www.forestry.gov.uk/fr/INFD-8JHELN



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 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.

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 flooding to prepare.

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.



Stainburn Hall planting with volunteers in Feb 2011 Some of the 3,000 trees planted at Derwent Ings

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 Cocker mouth 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 Trust is committed to helping people create woods on their land in order to realise the many benefits they can bring – especially those linked to water quality and management. In order to achieve this we provide the following:

Good quality advice and guidance

We produce targeted publications and online guidance on woodland creation and the benefits of tree planting for a variety of landowners. We have also set up a central woodland creation enquiries service and a team of specialist woodland creation advisors who can offer site visits and advice based on four decades of planting experience. Our advisors work closely with landowners offering help with the design of planting schemes, sourcing funding and working with volunteers.

Our MOREwoods scheme has been particularly successful – 579 hectares of new native woodland have been created on 518 sites since it began three years ago. It is available to landowners with a minimum of one hectare (2.5 acres) for planting and will be used to help deliver floodplain woodland creation in the South West of England as part of a partnership project with the Environment Agency.

Funding to help incentivise planting

We recognise that some landowners lack the resources to plant trees and existing grant payments often fail to provide the necessary incentive, so the Trust has in certain cases provided all or some of the funding. We are also looking at innovative funding models and securing corporate funding for our woodland creation projects.

Partnership working

Our regional teams work with local partners on projects, contributing the Trust's expertise in tree planting, sourcing grant funding, people engagement and communications. In addition, we have a dedicated Partnerships team that ensures a coordinated approach to all our partnership projects.

A recent partnership project has involved us planting 10ha of new native woodland on farm land near Bassenthwaite Lake in the Lake District, as part of the Heritage Lottery Fund-supported 'Bassenthwaite Reflections'. The trees are expected to help slow and reduce the amount of silt going into the lake.

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