Case Study

Pearls of wisdom

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WOODLAND
TRUST

CASE STUDY

Pearls of wisdom

Starting in 2012, over 6,250 trees have now been planted along 6km of river

Riverside tree planting boost for freshwater pearl mussels

The River Clun is an important part of the Shropshire landscape. Beginning its journey in the Clun Forest just north of Anchor, it flows through the Shropshire Hills Area of Outstanding Natural Beauty (AONB) before joining the River Teme in Herefordshire.

The lower part of the river is home to a rich and diverse array of plants and animals including otters, salmon, brook lamprey and grayling, and is protected as a Site of Special Scientific Interest (SSSI) and Special Conservation Area (SCA).

It is also one of the few places in the UK where rare and endangered freshwater pearl mussels still survive.

But the River Clun is changing. Loss of alder trees along the river, together with intensive grazing, has had an impact not only on the water quality, but also on the bank structure. This has led to heavier sedimentation and erosion and, as a result, higher nutrient levels within the river.

The freshwater pearl mussels live downstream, so their survival is not just affected by what happens locally but also by activities undertaken upstream and within the wider catchment.

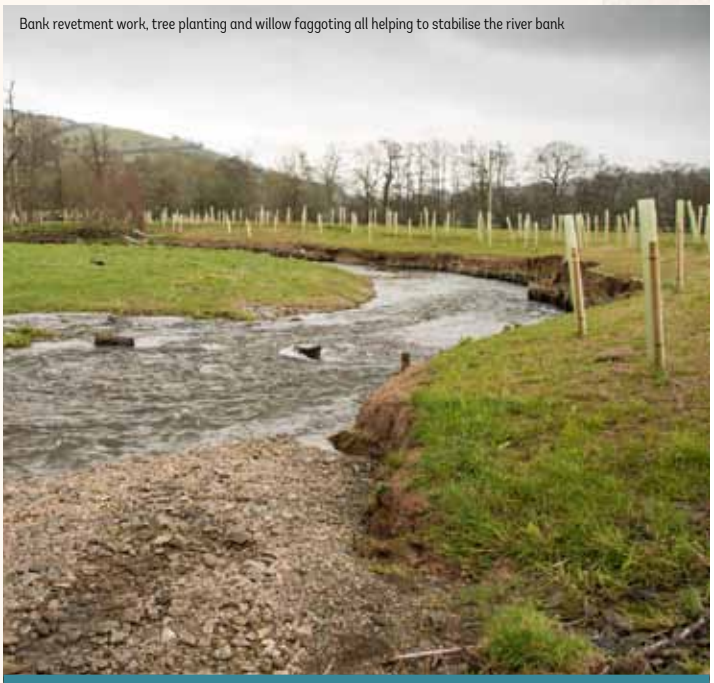
"This is an amazing project. It is what success looks like – where partners and local people work together to make a positive, well thought through and lasting difference. By planting along the River Clun we are showing just how crucial trees are to key species, wider ecosystems and the environment as a whole."

Stuart Holm, Woodland Creation Adviser

Under pressure

Farmers along the river have been battling erosion – seeing valuable agricultural land washed away every year. Bankside trees help prevent erosion as their roots bind and protect soils, but many of the trees are alders which have been hit hard by disease, leaving more of the river bank vulnerable to erosion.

This isn't just a problem for farmers. Silt is washed downstream, settling in the gravel beds and forming an impenetrable layer which prevents the mussels from burrowing and breeding.



Bank revetment work, tree planting and willow faggoting all helping to stabilise the river bank

Key facts:

The problem:

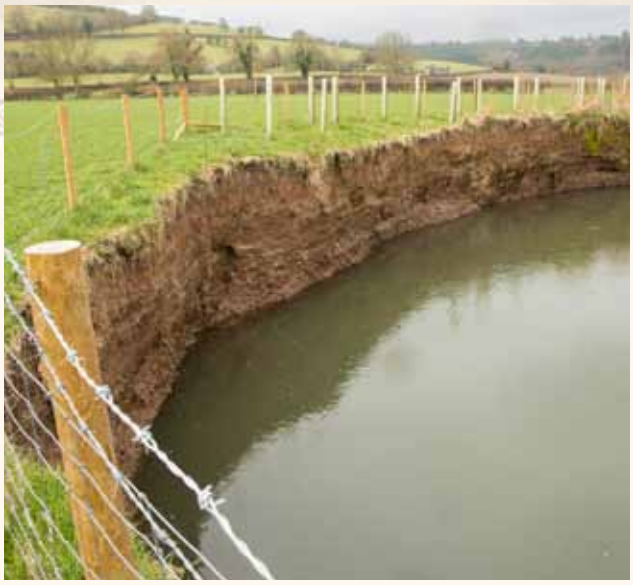
- Intensive grazing has increased fertiliser and nutrient run-off into the river.
- Diseased trees have left banks vulnerable to erosion, increasing the pressure on grazing land.
- Silt and soil are being washed downstream, impacting the viability of the mussel beds.

The solution:

- Trees help bind the river bank, reducing erosion and filtering out pollutants and nutrients.
- Tree roots help ensure more water permeates deeper into the soil, so reducing the amount of surface water run-off.
- Shade provided by riparian trees cool the water, helping the mussels, fish and other species that live in the river.

River rescue plan takes root

Farmers, residents and organisations all recognised action was needed. Several ideas were considered, with preference for a soft-engineering solution such as willow faggot revetments. Graduated banks and woven willow help to lessen the full force of the river and its impact on the banks.



Bank erosion - the fence was placed two metres from the edge of the bank only one year ago

Since 2012, more than 6,250 trees have been planted along six kilometres of river frontage, with further planting planned for the future. By working with farmers and landowners, the Woodland Trust and the Environment Agency have identified several areas where tree planting, fencing and bank stabilisation work could bring benefits to the water body.

These trees will help local landowners protect the river banks from further erosion, prevent livestock from easily entering the waterways and help filter out pollutants and nutrients before they enter the water.

Keep cool

As well as filtering out pollutants and particles, trees have another important role to play. Freshwater pearl mussels thrive best in cool water with a stable temperature. As the trees grow they will provide shade along the river, keeping the water cool and constant; helping mussels, fish and other species adapt to climate change.

The future's bright

Hopes are high that the River Clun will once again thrive as a healthy habitat.

Farmers are better able to protect their valuable land through tree planting and the installation of willow faggot revetments, while biodiversity benefits from the provision of a cleaner environment and new habitats.

There is more to be done, but it is hoped these trees will go on to play a vital role in the landscape for years to come.

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. In addition, we can 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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Environment Agency

A freshwater pearl mussel in the river

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