

### LOOKING AFTER WHAT YOU'VE GOT

If you are lucky enough to have good habitat already, good management is crucial. Protect the riparian zone, retain woody debris and low/in-stream cover, carefully manage channel shading, and ask the WTT for advice!

### RE-ESTABLISHING THE RIPARIAN ZONE

**PROBLEM:** Unrestricted livestock access, overgrazing and bank trampling is widening and shallowing the channel, preventing the growth of varied riparian vegetation which shades the river, provides trout cover and over-wintering habitat, binds the banks and buffers against land use impacts.

**SOLUTION:** Stock-proof fencing set well back from the river and drinking points. Work with land managers to minimise land use impacts.



# Protecting and restoring your river

Words: Tim Jacklin.

Illustration: Rob Burns

River restoration is often mentioned in these pages and is the ultimate aim of the Wild Trout Trust and many other organisations. Restoration is not only about making improvements for fish and wildlife, but finding solutions that are accepted by the local community and landowners and which will work in the long term. The natural processes of erosion, sediment transport and deposition make rivers dynamic, constantly changing systems. It is important to understand and work with these processes for projects to be successful.

Rivers are made by their catchments – if the catchment is healthy, floods and droughts are moderated and sediment delivery, erosion and deposition occur at natural

rates. Catchments with lots of concrete and tarmac, or few trees and lots of land drainage generate higher flood peaks (and lower drought flows) which can be quickly transmitted downstream in channelized rivers. Re-establishing the natural floodplain connection and function should be a priority for restoration projects, particularly in light of climate change.

Whilst there are many approaches to restoration, the following pages illustrate some common problems and solutions. Most of these are within the reach of angling clubs and community groups. Remember, the key points for success are to set clear goals; agree these with all involved; work with the river's natural processes and plan for future monitoring and maintenance.

### SOFT BANK REVETMENT

**PROBLEM:** Excessive rate of soil erosion creates steep, unstable banks.

**SOLUTION:** Various soft revetment techniques using brushwood, Christmas trees, willow spiling, etc. to slow flow, encourage silt deposition and vegetation and slow the rate of erosion. It also provides good habitat for juvenile trout and riverflies.

*NB: More stable, vertical earth banks can be valuable for nesting birds (kingfisher, sand martin); leave these sites alone – take advice if unsure.*



## PRESERVE AND RESTORE

### GOOD LAND USE PRACTICE

Good relations with the land manager alongside your river are very important. Get to know yours, understand each other's point-of-view and work together to benefit the river.

### INVASIVE PLANTS

**PROBLEM:** Non-native Himalayan balsam and Japanese knotweed smother native plants and leave banks bare in winter and vulnerable to erosion.  
**SOLUTION:** Arrange working parties to pull balsam. Try and take a catchment approach, working with others. Seek specialist advice for dealing with knotweed – do not flail or strim (it will propagate from tiny fragments).



### CULVERTS AND CROSSINGS

**PROBLEM:** Poorly designed culverts prevent fish, invertebrates and natural sediments from moving freely.  
**SOLUTION:** Ideally replace the culvert with a better design (bridge or arch with natural bed), or construct an easement to facilitate fish passage.



### WEIRS AND WATER DIVERSIONS

**PROBLEM:** Weirs block fish passage, disconnect habitats and impoverish upstream habitat. Water diversions can deplete river flows and divert downstream migrants (e.g. sea trout smolts).  
**SOLUTION:** Ideally remove the weir, or improve fish passage with an easement or fish pass. Maintain as much flow as possible in the main channel. Lobby against insensitive development of water diversions (e.g. inappropriate hydropower).



### IN-STREAM FISH HABITAT

**PROBLEM:** The legacy of straightening, bed-lowering and widening for land drainage or flood defence has left a simplified channel, lacking habitat diversity.  
**SOLUTION:** Introduce structure such as logs, root wads, and boulders which change flow patterns, dig holes and move sediment. Restoring natural processes (re-meandering and floodplain reconnection) represents the ideal solution, moderating flows and reducing downstream flooding.



### WASTE DISCHARGES

**PROBLEM:** Effluent from sewage works, combined sewer overflows, factories and road run-off can impact upon water quality.  
**SOLUTION:** Monitor river invertebrates to check water quality (join the Riverfly Partnership Anglers' Monitoring Initiative). Report pollution incidents immediately to the appropriate authority.

