

Reviving a river

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Photos: **Craig Easton**

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way up the Irwell to spawn since the Industrial Revolution.

“My dream has always been to see the return of migratory fish to my river,” Mike says. “When I was a child, my dad used to say: ‘We are driving over the river now, hold your breath!’ And I was upset because I was fishing mad and couldn’t fish on my own river.”

For Mike, the presence of migratory fish has always been the acid test of a good river. Mike and a few fishing friends resurrected Salford Friendly Anglers (first founded 1817) in 2009. By then, the fusty old club had dwindled to almost nothing, but they threw open its doors, made it free to join, and with skilful employment of social media, membership currently stands at 2,635.

One of the keys to Salford Friendly Anglers’ effectiveness is its ability to turn support in front of the computer into grassroots action out on the ground. That might be a litter pick – collecting city flotsam that finds its way onto the riverbank – or efforts to control non-native invasive plant species, such as Japanese knotweed and Himalayan balsam.

On the day I visited, it’s a Riverfly Partnership training day, in which Salford Friendly volunteers are trained in monitoring the invertebrate life of the river. We’re on the banks of the Irwell near Whitefield, just outside Manchester. The flies we see around the river spend most of their life cycle beneath the water and in the riverbed as nymphs or larvae, and the species

present and in what numbers give a good indication of a river’s health.

The volunteers are taught the same monitoring techniques as those used by the Environment Agency, with results fed into a national database. The efforts of these citizen scientists at 1,100 partnership sites around the UK contribute to the Environment Agency’s work and act as an early warning system for pollution incidents.

LIVING THE FLY LIFE

Our tutor for the day is Dr Adam Moolna, who has been monitoring the Irwell’s fly life for the past four years. He has watched the river returning to health during that time, but he doesn’t like the term ‘river restoration’, preferring ‘river rehabilitation’.

“I understand ‘restoration’ to be returning something back to the state it was at a defined time,” says Adam. “Whereas we want to ‘rehabilitate’, to bring the Irwell back into people’s lives.”

The previous week, Adam had been on the River Irk, an Irwell tributary, with Year 6 children from Crab Lane Primary School. Although the river is around the corner, hardly any of the 40 children had been there before.

“Maybe two had actually had their feet in the river,” says Adam. “But now they have discovered it, so many were asking how they can get involved with fishing, how they can do more of this.”

The Irk is known locally as the ‘Dirty Irk’ and is some way behind the Irwell in terms of water quality. When

AN ILLUSTRATED GUIDE TO RESTORING A RIVER

The Wild Trout Trust is dedicated to protecting the wild brown trout and its habitat. Here, director Shaun Leonard shares some of the techniques the charity uses to make our neglected rivers good places for these beautiful fish to live again.

PROTECTING RIVERBANKS

“A major impact on rivers is from agriculture,” says Shaun. “Run-off and livestock access to rivers is hugely damaging.” **Fencing** (3) is one of the simplest, most effective, things we can do to improve the health of our rivers, because it stops livestock eroding the riverbank. Under the weight of cattle or other grazing animals, riverbanks tend to collapse (4). Once weakened, they are washed away, which makes the river flow wider and shallower – a poor habitat for trout. On this bend, the bank has been restored using brash (5) freshly cut from the felled willow, packed tight and secured with rows of stakes (6), thus narrowing the channel, making the water flow faster and deeper.

Eventually plants will flourish on the restored bank. “When you get **communities of plants** growing on riverbanks (7), they have different root lengths and densities, and that is good for binding rivers together,” says Shaun.

A healthy river margin also filters run-off from surrounding land – phosphates and nitrates from fertilisers, which reduce water quality, and so biodiversity.

PLANTING THE MARGINS

The Wild Trout Trust talk about ‘roughening’ the river margins. “A popular technique,” says Shaun, “is to **hinge trees** into the river (8) – keeping them alive so they are still attached to their stump, part cut-through, then felled into the margins. Hinged trees provide lots of habitat for fish fry, invertebrates and plants, and it is a very simple technique.” **Alder, hazel** and **willow** are well suited to this treatment.

“Lots of **aquatic insects** need this margin,” says Shaun. “They need to be able to crawl out of the river when they hatch, or down it when they lay eggs. The critical thing is that you get a connection between the river and the terrestrial habitat.”

Coppicing riverside trees (9) reduces the shade on the river, allowing dappled light on to the water and encouraging herbaceous plantlife on the banks.



This outaway image allows us to look beneath the water to see how life can be brought back to rivers like the Irwell, with kingfishers (1) and dippers (2) thriving amid abundant plant life. With an improved habitat and insects to eat (see box overleaf), fish begin to colonise the once-toxic waters.

GOING WITH THE FLOW

Flow deflectors are large objects that are dropped into the river. On smaller rivers they may be the aforementioned hinged trees, **logs** (10), or **felled trees** (11); on a large river they may need to be big boulders, as logs would just be swept away. “It is about deflecting the current, and using the energy of the river to create diversity,” says Shaun. Divert the flow, and that energy will create a ‘scour hole’ in one place, a **gravel bank** (12) in another, and over time will produce what Shaun refers to as “a sort of lumpy eggbox effect” on the river bed, all of which provides good habitat. “A **scour hole** (13) might be a great place for a trout to live, and the stuff that

was in the hole is pushed up as a gravel bank somewhere else, which might be a great place for another trout to spawn.” The careful use of flow deflectors can allow a river to function in a more natural way.

THE PROBLEM WITH WEIRS

“We want to get rid of weirs,” says Shaun. “The bed of a river is naturally mobile, and if you put a weir in the way, it interrupts the natural movement of stones and gravel.” In a natural, healthy river, gravel is eroded towards the top of a river, and moves naturally down. It will form its own rhythm of **riffles** (14), or faster, shallower

sections over gravel, and deeper pools. Weirs prevent this. “The area upstream of a weir is an ecological desert, by and large,” says Shaun. “Everything settles up behind it, the big stones, the gravels, the silt. Whatever gets layed up behind gets overlaid by silt, and that creates a poor environment for organisms.”

Another reason weirs are not popular with the WTT is that they prevent the movement of fish. “All species of fish move at almost all stages of their life-cycle,” says Shaun. “If you stick a weir in the way, it prevents their natural migration.”

The weir in the illustration (15) has been partly demolished to allow water to flow more freely.



LEFT Tutor Dr Adam Moolna demonstrates how to use the sampling net (consistency is important) ABOVE Wild brown trout have returned since the Irwell’s rehabilitation



Children from Crab Lane Primary School enjoyed investigating the buglife on the River Irk, finding freshwater shrimp, hog louse and leeches
LEFT Different species are sorted into individual containers for closer examination and counting



Adam sampled the river with the children, they found freshwater shrimp, hog louse and some leeches, which can all tolerate lower oxygen levels.

WIDENING THE NET

By contrast, on our day on the Irwell, we found lots of upwing nymphs, caddis, and stoneflies, suggesting a healthier river. On a river in full health, such as one of the Derbyshire limestone streams, we would expect to find many more of the same, plus some of the far fussier mayfly larvae.

Salford Friendly Anglers are forming the Mersey Basin Rivers Trust to get non-anglers involved. “We want to get the public interested in the sampling, because it draws them into the bigger picture of pollution,” says Mike. “Realising that these things can impact the flies they see in the river, that clean water has a different set of insects to dirty water, is a great way of getting people involved.”

Angler Nick Carter spent his childhood upstream on the Irwell, near Ramsbottom, before moving to Salford. He remembers the river when it ran with different colours every day from the textile mills near his house. He’s been involved with Riverflies monitoring for five years, and as a result is about to embark on an MSc in biological recording, and is starting his own ecological consultancy.

“People are passionate about these urban rivers, they mean a lot,” he says. “If there is a pollution incident, it makes the blood boil. You think: ‘Why are they getting away with this?’ Some people don’t realise how precious life is in these rivers. When they’ve been virtually devoid of life, to then catch a fish-of-a-lifetime out of one is very important.”

So how close is Mike to achieving his dream of seeing salmon in the Irwell? “They are knocking on the door,” he says. He thinks three lock gates on the Manchester Ship Canal are stopping them. “We know the fish want to come, and that the water quality is sufficient because of the wonderful trout we are catching in inner city areas,” he says. “But these gates are stopping them.”

Building three fish passes would cost about £1.5m. But to Mike, it is about more than money. “It uplifts the human spirit,” he says. “I don’t think anyone can have a bad day if they see a kingfisher on the river, or a salmon leaping, it lifts the soul. That element of it is priceless.” ☺

FURTHER INFORMATION Find out more about Salford Friendly Anglers at www.salfordfriendlyanglers.co.uk

• For the Wild Trout Trust go to www.wildtrout.org



Andrew Griffiths lives in the Peak District and writes features about the countryside and the people who live and work there. His passion is fly-fishing rivers for wild brown trout.

RIVER FLY FIELD GUIDE

BLUE-WINGED OLIVE FLY

The blue-winged olive fly is often found in gravels or among weed on faster flowing rivers. It likes cleaner water, making it a good indicator of water quality.



CADDIS

The adults fly on summer nights. Caddis larvae spin silk, and may make cases from small particles of stone and sundry materials, while others live freely in the river.



STONEFLIES

A key indicator species of clean, oxygenated, running water. Adults aren’t strong flyers so crawl over bankside vegetation to find a mate.



MIDGE

Varied, unspectacular and often overlooked, midges can be present in huge numbers. They are a staple of the river diet for many species, both fish and bird.



HOG LOUSE

It can tolerate low oxygen levels in the water, so is often found in rivers in poor condition. If there are too many, there could be a problem.



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