



THE GREAT WEIR-FISHING EXPERIMENT

Paul Gaskell and John Tyzack try, as scientifically as they can, to establish where the better fishing lies – above or below these man-made structures

HERE WE ARE on the banks of a fantastic wild fishery – one with a chequered past of pollution and degradation. We have come to fish the urban River Don in Sheffield on a section looked after by the local “Trout in the Town” group.

While the pollution may have largely disappeared, the legacy of past industry still lingers with the existence of many barriers to fish movement which can make trout and grayling vulnerable to being “penned in” during an accidental spill of toxic material. Furthermore, these barriers to movement

prevent all gravel-spawning species (as well as migrating weed-spawning fish such as roach) from moving between their adult feeding lies and the preferred spawning habitat. Quite obviously, free movement is a very valuable thing, so surely we can just fit a fish-pass and everything is good to go... right? Well, as viewers of the TV programme *QI* might suspect, this is a little bit of a trap. Fish-passes can be vital, but only as a very last resort. Sounds weird? Read on...

The problem is that impassable weirs not only cause a river to be carved up into “chunks” within which fish must find a habitat to complete their entire life cycle, they also



PHOTOGRAPHS: JOHN PEARSON

On the section below the weir a small island splits the flow. Here John fishes the channel on the true right bank.

make the habitat much poorer in the “ponded” sections upstream of the barrier. We all know the bits, the water that looks like a canal above the weir, with the really tasty looking weir pool below it.

However, the most seductive thing about the “ponded” sections is that even a single rising fish will show up like a beacon in such flat water. Furthermore, in the still water fish will often rove around and a single fish can produce many rises. Here is the issue, though. It has been observed, by comparing “pre” and “post” fisheries sampling data, that the removal of weirs has resulted in a tenfold increase in trout, sea-trout and salmon numbers directly upstream of the “ex-weir”. But try convincing any angler who either enjoys the good fishing right at the foot of the weir, or can see all those rises in the impounded water upstream, that removing the weir will make dozens of great spots that are just as good as the single, decent weir pool they are familiar with. Furthermore, there are the risks of higher summer water temperatures and longer retention of pollution spills in ponded sections (along with restricted potential to migrate away from these stresses) which can put fish populations at risk.

So that’s why we find ourselves here, 300 m below the aptly named “Niagara” weir in Sheffield. We have ourselves a fully automated fish-sampling device in the form of six-times national rivers champion John Tyzack, a stopwatch and two little tally counters of the kind used to count rows of stitches in knitting. One counter will record fish caught downstream of the weir, and one will record those caught upstream. We also have *Fish On* cameraman John Pearson to photograph proceedings.

The idea is to fish for 90 minutes over a

rig on my 10 ft rod, which, with hindsight, was a little too long for comfort on this stretch. The flies were both small weighted Sedge Pupae about 3 ft apart, one tan and the other green. My red-and-yellow indicator was positioned within the leader to clearly show any takes.

“Well, it was an amazing 300 m and 90 minutes! I landed 32 fish, split about equally between grayling and trout. With a shorter rod and fewer minutes spent in the trees, this would undoubtedly have been a much higher number! I’d say about a third of the fish were tagged under the chin, which will be a useful means of checking their ability to navigate the newly installed fish-pass when it comes to spawning time.

“Fish came from every run in that 300 m. It was wonderful fishing and I loved every bit of it. Strangely, only two of the fish came from the large weir pool itself...

“After a short refreshment break, it was time for the second half and Paul asked me to fish the next stretch of 300 m, beginning at the top of the weir. What a difference! It was like a canal – deep and slow – and I was faced with a very different challenge for the next hour and a half.

“However, we did spot a few half-hearted rises just above the lip of the weir so I set about them with a small dry Midge pattern. Slow, silted-up stretches of waterways tend to be dominated by chironomids, so I was reasonably confident of picking something up... which eventually I did, but only after 50 minutes or so had elapsed. It’s much harder to fish these slower sections, and fish density is difficult to estimate as they tend to move around far more. I may have been casting at one or two roving fish, or at a dozen different ones. It was impossible to say.

“Even a single rising fish will show up like a beacon in such flat water”

300 m stretch below and then 90 minutes over a 300 m stretch above the weir. The downstream stretch includes the weir pool – but is massively dominated by riffles, glides and pocket water. The upstream stretch is the flat, canal-like water (the first riffle where the ponding effect of the weir is lost is probably 450 m upstream). John takes over the story to give his approaches and a summary of the blow-by-blow action...

“I’ve never been described as a ‘fully automated fish-sampling device’ before (well not to my face, anyway!) This was an extremely interesting day in many ways for me and I was salivating at the prospect of fishing the water Paul took me to first of all. Below the weir the Don had a very varied nature of bouldery pockets, gravel runs and deep pools. It looked as though it just *had* to contain fish.

“I kicked off with a standard double-nymph

“I tried a streamer. This is often a good way of catching fish quickly in slacker water when there’s little rising, but I didn’t get so much as a follow. I tried dry-flies, such as Klinks and Sedges, fished blind under the far-bank cover, but to no avail. I tried the same double-nymph rig that had been so productive in the faster, shallower water below the weir, but really only to eliminate it as a method (it, too, failed).

“I was running out of ideas and (as luck would have it) time, and when Paul completed the 90 minutes, I had only that one small brownie on the dry Midge pattern to show for my efforts.

“I thought I’d seen most things that can happen around rivers in my time, but there was a genuine ‘first’ on this day. Playing a small grayling to the net below the weir I noticed a young heron on the far bank watching me in an interested fashion. As I



The official score from below the weir (yellow counter) and above it (green counter) during the

The view from the top of the fish-pass looking downstream over the lip of the weir – along with the tools of the

“I tried a streamer. This is often a good way of catching fish quickly in slower water when there’s little rising”

The flat, impounded water that spans around 450 m upstream of the weir. Time for another fly

Orange tag added by local EA fisheries staff to track the efficacy of the newly installed fish-pass

The moment the heron pounced – surprising John, the score-keeper and the



Two on the same cast taken from the super-productive water below the weir.

“The water upstream of the weir cannot support the full life cycle of trout”

lowered my eyes to net the fish, the heron took off, swooped on the hapless grayling and flew back to the bank, where it duly swallowed its stolen meal! Come to think of it, I don't know whether Paul counted that fish in my 32...”

Post-experiment (writes the aforementioned Paul) we decided to have JT fish for just five minutes on the first riffle upstream of the ponding effect of the weir. Three fish were landed, with three missed takes – in stark contrast to the preceding 90-minute slog.

To sum up, the fishing around the foot of the weir itself was not particularly productive on the day in question. But the lack of impoundment downstream produced such varied habitat in this 300 m section that everything was represented: deep bend pool, glide, riffle, pocket water. Consequently, the fish were able to choose within that short reach exactly the habitat they wanted.

In contrast, there was only one kind of habitat available upstream – slow, silty-bottomed flat water. Few fish were feeding in this area on the day in question, and these were largely forced to seek available feeding lies farther upstream in the streamier water. In fact, because this canal-like water is only good for a few kinds of invertebrates, the fishing will only be good on a few occasions throughout the year (hatches of midge, caenis and Mayfly). Wild fishing requires wild fish populations, and the ponded water upstream of the weir cannot support the full life cycle of trout as there are simply no spawning opportunities. Any catchable fish in this section will have arisen from good habitat upstream which (by luck rather than design) is connected to that pool.

On the other hand, short sections of deep pool habitat that have formed spontaneously in the downstream reach provide those “slow water” fishing opportunities when the food is plentiful in that kind of water. Not only that, the deep pool habitat is slap bang next to streamy water that will fish brilliantly the rest of the time (and also provides spawning and juvenile habitat within a single reach).

In short, the fishing below the weir is “as good as or better than” the impounded water all year round. The simple reason for this is the widely varying “patchy” nature of the habitat.

What can be done to improve your river? Well, before doing anything, consultation with the local regulatory authorities for flood risk and development control, the landowners and other parties with jurisdiction over the structure is essential. Probably the best option on spate rivers (once all suitable permissions have been granted) is to “encourage” the weir to degrade naturally over time – often, removing a few pieces of the upper structure will give the spate flows enough to work with. Alternatively, controlled removal (perhaps in stages) of full courses of stone to allow the upstream riverbed to re-align itself gradually, or the creation of “notches” in only part of the cross-section of the weir, can be undertaken. As a last resort, it is important to allow at least some fish to move over or around the structure using a fish-pass.

Factfile

The Wild Trout Trust can advise on options for easing fish-passage (both low- and hi-tech). More details, including how to join and contact numbers for advice on any of the issues covered in this series on www.wildtrout.org
Tel: 023 9257 0985.

