



## How Capel Brook



An advisory visit carried out by the Wild Trout Trust – July 2010

## **1. Introduction**

This report is the output of a Wild Trout Trust advisory visit undertaken on the How Capel Brook, one of a network of small streams feeding into the lower reaches of the River Wye in Herefordshire. The advisory visit was carried out at the request of Mr Peter Day, who owns a stretch of the brook, which flows along the boundary of his property. Adjacent reaches of the stream in the ownership of Mr Peter Clay were also inspected.

Comments in this report are based on observations on the day of the site visit and discussions with Mr. Day.

Throughout the report, normal convention is followed with respect to bank identification i.e. banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream.

## **2. Catchment overview**

The How Capel Brook is one of many small tributaries feeding into the River Wye. The Wye is one of Britain's most scenic and unspoilt rivers. From its source on the barren slopes of Plynlimon Deep in the Welsh Mountains, the River Wye flows through Hay-on-Wye, Hereford and Ross-on-Wye. It continues on through Symonds Yat, Monmouth and Tintern until it reaches Chepstow where it joins the Severn Estuary after a journey of around 130 miles.

The Wye is widely regarded as one of the finest fisheries in Britain, perhaps once England's premier salmon fishery. Today the salmon fishery has declined but the river still attracts anglers from all over the country to fish for salmon, trout and grayling, as well as providing opportunities for superb coarse fishing.

The decline in the Wye salmon populations started approximately 40 years ago and since then great efforts have been made to identify the problems and issues afflicting salmon stocks. The Wye and Usk Foundation was formed in 1995 in response to some of these issues and since gaining charitable status in 2000 has continued to work to improve water quality, habitats and riparian land management in an attempt to restore the river to its former glory. More information about the work of the Foundation can be found at:

<http://www.wyeuskfoundation.org/>

Like many rivers, the ecological and fishery value of the Wye is very dependent on the quality of the many tributaries, large and small, that feed into it. Side streams and tributaries often provide the best opportunities for spawning, both for salmonids and a range of coarse fish species. Restricted access for fish wishing to migrate up and down is often a key bottleneck for rivers in meeting objectives for good ecological condition. Small streams, such as the How Capel Brook are often dammed for a variety of purposes, ranging from agricultural irrigation through to redundant milling structures, power generation and the creation of on-line ornamental lakes. Structures such as these severely fragment habitats and aquatic communities and this issue has been clearly identified in the Environment Agency's River Basin District Plans, drawn up in response to the Government's obligations under the European Water Framework Directive. The

Wye is included under the wider Severn River Basin District Plan. More information about this Plan can be found at:

<http://wfdconsultation.environment-agency.gov.uk/wfdcms/en/severn/Intro.aspx>

The How Capel Brook itself is a small stream running west from the rolling Herefordshire hills that lie to the east of the Wye Valley. These hills are known geologically as the Woolhope Dome and are made of limestone, siltstone, mudstone and shales. The Brook's many tributaries are sourced from this area, before flowing over Devonian red sandstone, so typical of much of the Wye Valley. The red sandstone gives the stream a characteristic "tea" coloured tinge.

### 3. Habitat assessment.

At the time of the inspection, flows in the stream were extremely low following a long dry spell. The stream is a classic surface-fed watercourse and will respond rapidly to rainfall events. Base flows in the headwaters of streams like the How Capel Brook will rapidly drop from mid-summer onwards during any long period without significant rainfall. During such times fish populations, including brown trout (*Salmo trutta*) will seek refuge in deeper, shaded pools where the water will be cooler and the additional cover offers some protection against predators.

One such area where some cover and shade were on offer was under the bridge near to the top boundary of Mr Day's property.



Several small brown trout were seen adjacent to the old bridge. Trout often lurk under bridges as a shaded refuge from predators

Just above the land holdings of Mr Day, the stream runs parallel with the main road. Here the stream had been subjected to some quite intensive marginal

clearance from both banks. Not surprisingly no adult fish were observed within this section due to the lack of any suitable pool habitat or overhead cover. The bed substrate was mainly gravels, with occasional larger stones and cobbles dotted on top. Habitat here was potentially very good for winter trout spawning and for juveniles, although the lack of any significant overhanging cover may deter fish from using this location.



Section adjacent to the main road. The lack of any low, overhead cover will restrict the habitat potential of this reach for trout

A stark contrast to this reach was observed a short distance upstream, where the stream runs alongside some meadows bordered by a thick fringe of mature trees. The river here lies within property owned by Mr Clay. The banks and margins of the stream through this section were largely unmanaged and the channel was extensively overgrown and shaded, mainly by mature alder, thorn and willow trees. A conversation with Mr Clay's game keeper revealed the presence of an old concrete structure that was presumably constructed to facilitate a redundant abstraction. The structure was semi derelict and although it was still impounding the channel, the stream had partially bypassed the weir by eroding a notch around one side.

Access to the stream was extremely difficult here. It is likely however, that the thick cover, coupled with several good holding pools, scoured out due to the presence of fallen trees and woody debris dams, would support decent numbers of trout. The level of channel shading was excessive and certainly not ideal for promoting in-channel invertebrate communities. Research has confirmed that trout populations thrive in environments where there is a good level of shading (ideally approximately 60%) but for invertebrate communities to thrive some

access to direct sunlight is required. As the trout's primary source of food is aquatic invertebrates, as well as those terrestrial bugs that drop into the water from riparian overhead cover, some open sections, where shafts of light hit the stream bed are vitally important for trout productivity.



An old concrete weir and a half fallen willow where the stream is finding a new way through. How many structures like this are blocking trout migration on the How Capel Brook?

Further downstream on the opposite bank to Mr Day's property some clearance of trees and scrub has taken place (cover photo). Care must be taken when undertaking work of this nature that excessive suspended sediments are not mobilised following heavy rainfall and allowed to pour into the stream. Poor survival of trout and salmon eggs is often caused by the effects of silt entering rivers when large areas of soil are exposed during the winter period. This issue has been particularly highlighted in the Wye Valley where changes in agricultural practices have led to significant problems of suspended sediments entering rivers and streams and clogging up critically important spawning sites.

No action is required on this particular site but an awareness of the issue may help when other sites, particularly on sloping land, are being considered for clearance or changes to agricultural practices.

It was also noted that a small composting area had been created adjacent to the left bank. Leachate arising from cut grass or decaying vegetation is extremely polluting, having the ability to drastically reduce the dissolved oxygen content of

water. Composting areas, even of a very modest size, should be located well away from any watercourse.



Seeding the newly exposed track will reduce the amount of suspended sediments running off the slope and into the stream

Generally habitats found within the channel adjacent to Falcon House were very good, with an ideal regime of pool, riffle and glide. All of these habitats are useful for different life stages of brown trout. As a "rule of thumb" principle, retain or encourage low scrubby cover over the pool habitats and ensure that good amounts of direct sunlight hit some of the shallow riffles. This promotes the ideal combination of productive, food rich shallows but with well protected bolt-holes nearby, where fish can escape from the attentions of fish eating birds.

Two further sections of the Brook were inspected. On the first section there was an excellent example of a buffer zone protecting the river from the arable farmland lying further up the valley side. It is not known if this buffer strip complements a land stewardship agreement but if there were buffer zones of this size bordering every section of Wye tributary then the system would be in much better shape. Unfortunately, although the land care issues were well addressed, the channel was heavily influenced by the presence of a very large impounding structure. It was not clear exactly what purpose this weir serves but the adverse effects on upstream habitat was evident. A structure with a head loss of this magnitude will also be a complete block to fish migration on this stream.



This wide buffer strip not only provides a valuable habitat in its own right, it also protects the stream from the adverse effects of nutrient rich sediments running off the cultivated slopes above.



A massive concrete weir fragmenting populations and habitat on the How Capel Brook



A view of the How Capel Brook looking upstream of the weir. Here the channel is deep and sluggish, with a barely detectable flow over a bed of deposited soft sediments. Poor habitat for flow loving fish species.

One of the last sections of channel inspected flowed adjacent to a large off-line lake. Here the channel forms part of some formal gardens and was subjected to some fairly intensive marginal maintenance in places, as well as some ornamental planting regimes.



Mowed margins and gunnera on the banks of stream.

When small streams run adjacent to formal garden areas there is always the temptation to incorporate the maintenance and planting regimes in line with plans for the wider garden. Unfortunately many non-native plants and tightly trimmed or mown banks are not conducive to protecting stream banks during high flow conditions. Fringes of wild native plants and extensive in-channel cover afforded by root bolls, fallen branches and patches of low scrub are not always desirable in garden locations but are extremely important for the ecology of our streams and rivers.

#### 4. Conclusions

The How Capel Brook is an important feeder tributary for the River Wye system and is a delightful ecological resource in its own right. The availability of good quality habitat for trout varies considerably along its length and is compromised by the presence of numerous weirs and impoundments, some of which are semi derelict.

Where the stream has a semi natural plan form and gradient, good trout habitat exists, particularly on those sections where the riparian margins provide some shade and low level cover as well as shafts of direct light.

The value of this stream is principally as an ecological resource, supporting as it does, small trout and bullhead (*Cottus gobio*) populations. Opportunities for angling are probably limited to spring and early summer fishing for very small trout on a catch and release basis. This style of fishing is becoming more popular but on such a small stream as this, fishing effort should be restricted to just a few hours every week or so. There is no reason however why the opportunity to "have a little go" couldn't augment the other recreational activities that are associated with a stay at Falcon House.

**It is a legal requirement that some works to the river may require written Environment Agency consent prior to undertaking any works, either in-channel or within 8 metres of the bank. Any modifications to hard defences will require a land drainage consent on any river designated as "main river". Advice can be obtained from the EA's Development Control Officer.**

#### 6. Recommendations

- Work with local landowners, the W&UF and the EA to identify weirs and structures that currently fragment habitat and fish populations. The removal or lowering of impoundments will dramatically improve the ecological value of the stream.
- Maintenance regimes adjacent to the stream should be light. Never undertake marginal clearance on both banks at the same time.
- Try and promote low scrubby shade over deeper pool areas and encourage direct sun light onto shallow riffle areas.

- Leave as much fallen timber in the stream as possible as a source of primary source of food for invertebrates and as cover for fish.
- On sections of stream that are extensively over grown, consider the option of allowing some low density livestock access for light grazing.
- On sections of commercial farmland, where the stream is unfenced and the stream margins excessively grazed and trampled, create some occasional refuge areas by planting small blocks of marginal native trees such as willow, alder or thorns and protect the area with fencing.
- On sections where the stream enters formal garden areas, avoid marginal planting with non native plants and protect margins with attractive emergent plants such as sedge and yellow flag iris
- On sections of channel that are extensively shaded, some light thinning of the canopy by taking out strategic branches, or coppicing occasional clumps of trees will help boost productivity.

## **7. Making it happen**

There is the possibility that the WTT could help to start an enhancement programme. Physical enhancement works could be kick-started with the assistance of a WTT 'Practical Visit' (PV). PV's typically comprise a 1-3 day visit where approved WTT 'Wet-Work' experts will complete a demonstration plot on the site to be restored. This will enable project leaders and teams to obtain on the ground training regarding the appropriate use of conservation techniques and materials, including Health & Safety equipment and requirements. This will then give projects the strongest possible start leading to successful completion of aims and objectives.

The WTT can fund the cost of labour (two/ three man team) and materials (max £1800). Recipients will be expected to cover travel and accommodation expenses of the contractor.

There is currently a big demand for practical assistance and the WTT has to prioritise exactly where it can deploy its limited resources. The Trust is always available to provide free advice and help to clubs, syndicates and landowners through guidance and linking them up with others that have had experience in improving trout fisheries.

## **Acknowledgement**

The WTT would like to thank the Environment Agency for supporting the advisory and practical visit programmes.

**Disclaimer**

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