

THE RIVER COVER – COVERDALE, YORKSHIRE

**Advisory Visit Report Undertaken on behalf of
The Wild Trout Trust
By Ron Holloway MIFM
(R H Associates)**

On 18th September 2002-09-27



River Cover – Coverdale -- Yorkshire.

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Upper River Cover – Advisory Visit Report
18th September 2002.

This Advisory Visit was undertaken by Ron Holloway (R H Associates) on behalf of the Wild Trout Trust (WTT) in the company of Stephen Mawle (Landowner) and David Bamford (Environment Agency Fisheries Officer).

Objective of Visit:

The objective of this visit was to look at the River Cover and its catchment and to pinpoint and identify the limiting factors that may be controlling wild, and native, salmonid survival and also any factors which may be restricting the holding capacity for fish in the upper river system and its tributaries.

To suggest any actions which could be undertaken to address the identified problems and which would improve survival and holding capacity of all life stages of the native brown trout and seatrout. To advise on any restoration/habitat enhancement work which, in the long term, would maintain and enhance not only the native and wild stock of fish but all other native flora and fauna within the catchment. To encourage further similar work to be initiated on the other reaches of the river downstream through to the confluence of the River Cover with the River Ure. To establish a sub catchment fisheries and wildlife programme that will maintain, restore and protect the habitat for all flora and fauna, for the controlled use and benefit of the owners, local community and visitors.



Upper River Cover - No.2.

Background:

The Mawle family have owned the property which includes the entire catchment of the upper River Cover since the mid 1980's. The land management is now such that the uplands and moors have been de-stocked, or there is a greatly reduced stocking density of grazing animals. Future management suggests that this policy will continue. An improved water retention programme on the moorlands is on the way to reduce the effectiveness of the manmade moorland land drains. This programme should help to reduce the effects of storm events by holding water back on the hills and releasing it over a longer period of time. There is also an ongoing programme of fencing off the more vulnerable areas of the river and this will continue as necessary. A tree planting programme of deciduous trees is also ongoing.

There is one major tributary which enters the River Cover from the North Moor and which appears to have seriously re-profiled much of the river downstream of its confluence. This problem may be resolved if the proposed hydro scheme is implemented which will significantly reduce the effects of storm events impacting on the main stream. Until this scheme is implemented, it must be understood that any

work conducted below the confluence will be subject to damage in any future flood events.

A good mean base flow is maintained by quality springs that feed many of the feeder streams at the top of the catchment. The river has never dried up in living memory (anecdotal evidence).



No.3. Problem Tributary.

Even in extreme high flows, the upper river rarely tops its banks though a great deal of re-profiling of large rocks and cobble is evident. The make up of the substrate is predominantly bedrock with large rocks and cobble and little or no sorted gravel above the waterfall. Below the falls the substrate is rock and cobble but more beds of sorted gravels are visible. There are some areas of bank erosion, though none is very serious. Water quality is good (See EA Report).

Invertebrate studies have yet to be undertaken in the upper catchment of the river but, again, anecdotal evidence from the EA Officers while electro-fishing, suggests there is a reasonable population and diversity of aquatic invertebrates, particularly below the falls.

An electro-fishing survey was undertaken by the EA following my visit and this was done on Monday the 23rd September. Dave Bamford and his team undertook this valuable survey and forwarded a copy of the results.

Five thirty metre sites above the waterfall were surveyed which yielded only a couple of trout, both of which were in good condition. No young of the year were found, though several 20cm adults were found directly above the falls. As noted in the initial visit spawning gravels in this upper section are almost non-existent.



No.4. Problem Falls!

The six survey sites below the falls turned out to be pleasantly revealing with good numbers of trout representing various year classes with one very large trout of 50 cm (4lb plus) being turned over. Furthermore, good numbers of bullhead were observed but no other species of prey fish were found.

Subsequent survey sites downstream produced trout of all life stages with a reasonable number of mature adults. Visual observations suggest that there are a few suitable spawning sites available in the lower waters.

Conclusions:

Above the Main Falls.

Although there are a few resident trout above the falls and those which are there suggest that the almost impassable falls and lack of spawning gravel are the main controlling factors in this area. What resident fish there are would originate from parents that managed to negotiate the falls only when water levels allowed and which coincided with their spawning run. This is a happening that may only occur once in five or ten years.

Actions:

1. Construct a rock weir, or two if necessary, below the foot of the falls but within the rock gorge. This weir(s) will raise the level of the water below the falls which will allow more spawning fish to ascend upstream throughout a wider range of river flows. It should be noted that a good plunge pool is retained below the foot of the falls which will provide a constant standing wave in the flow which, in turn, assists leaping fish to negotiate the obstacle.
2. Consideration should be given to creating several weir pools upstream of the falls by constructing several upstream pointing V weirs with substantial rock. The upstream V shape of the construction will help to maintain its stability in high flows (pictures 5 and 6 to illustrate).



No.5. Before



No.6 After

3. Consideration should be given, once these pools have been constructed, to placing several tons of 20 to 30mm gravel into these upper manmade pools. The substrate here being mainly of bedrock, this gravel will dissipate downstream in high flows, however, in the pools created by the substantial V rock weirs, much of the gravel will be trapped and will provide a more permanent spawning area in this barren reach.
4. Once these constructions have been completed, ensure that the banks are protected from livestock and that banksides are planted with indigenous, deciduous trees. These trees are essential providers of terrestrial insects that fall onto the stream as well as offering shade in the summer and leaf litter in autumn will make an excellent food source for several species of aquatic insects.

Below the Falls:

It is suggested that below the main falls, the main controlling factor is the lack of adult fish holding pools. The heavy spate flows have re-sorted large quantities of substantial rock and cobble and has infilled most of the original deeper holding pools and created a more lamina stream bed of large rock and cobble.



No.7. Weir Pool Construction.

Actions:

1. Create a further series of rock weir pools from the large quantities of natural rock available. Care should be given to the construction of these weirs with substantial rock being used which will remain stable and which will withstand the most powerful flows. Along this stretch these weirs should be over engineered rather than under engineered and sufficient rock be used to provide adequate protection from erosion around the weirs when overtopped in high flows. (See illustrations)
2. Where necessary, further planting of suitable spawning gravels should be considered.
3. Provide fencing for protection from livestock.
4. Continue tree planting programme with indigenous, deciduous trees, as before.



No.8 Before



No.8 After

General Comments:

In my opinion, the River Cover from its sources on the moors right down to the lower end of the property, has great potential for the improvement of resident stocks of native and wild brown trout. Furthermore, if the suggested changes are made and maintained, a transitory population of seatrout can be expected.

Due to the natural violent nature of the river, some of the envisaged constructions will need periodic maintenance so this should be planned for and allow for easy access with machinery at each site. It is suggested that the weirs should be placed where relatively easy access for machinery is available. The only exception to this being the construction of the weir(s) in the main gorge below the waterfall.

By establishing more permanent areas of spawning gravels and creating deeper holding pools for larger fish, along with the fencing and the right tree planting, then the major controlling factors will have been addressed. It should be understood that whatever work is completed, it will require annual, or bi-annual, maintenance if good trout habitat is to be maintained. Deciduous tree planting is essential, not only for the

provision of shade but for the encouragement of the insects which they harbour and the leaf litter they provide for aquatic insects.

The electro fishing survey shows that there are no young of the year trout above the falls, but below there is a good representation of various year classes of trout, plus a healthy stock of bullheads. It is suggested that besides lack of habitat, cannibalism may also be a major controlling factor in young of the year survival, particularly above the falls (although its nice to see a 4 pounder in the stream, it may well be beyond its sell by date as it has probably done more damage to the stream feeding on the young of the year!) With the envisaged improvement of habitat, young of the year survival should improve.

It is suggested that the whole project be split into three one year programmes – i.e. first year above the falls, second year below the falls, and third year the lower end.

If the Forestry people who are responsible for the repair of the gabion walling could be persuaded to replace the broken gabions with well placed substantial rock, then this would be all to the good.

With regard to funding assistance for the programme, it is suggested that a clearly described and well costed plan for the three separate years be prepared so that this could be presented to the EA, EN, Yorkshire National Park, the Wild Trout Trust etc., along with an application for match funding assistance.

It is difficult at this stage to advise on costs as the majority of the materials are natural and available on site, except perhaps for the fencing, gravel and tree planting. Close liaison with the Environment Agency is recommended who will be able to assist with costings for most of the work. Land drainage consents will probably not be much of a problem here and further good work on improving the water retention up on the moors should be ongoing.

Finally, it is recommended that if a Hi-Mac plus driver is hired to do construction work, that the EA (Dave Bamford) is present for at least the first day to supervise on the requirements necessary for the correct siting and construction of the weirs, particularly below the falls. In my opinion, that once completed, this enhancement project will substantially improve the native and wild stocks of trout in the Upper River Cover, together with the attendant natural flora and fauna.

I wish the project every success.

Appendix to Cover Report



Suggested weir pool construction

Acknowledgements

I would like to thank Steven Mawle for an excellent lunch and for showing such welcome enthusiasm for the project. Also thanks to Dave Bamford (EA Fisheries) for his help on the day and for all the subsequent work undertaken and information given.



Surprise surprise!



Surprise again!