Advisory Visit Report

River Wharfe, Yorkshire Dales

On Behalf of Huby Angling Club

19th July 2007

Giving wild trout a future…

www.wildtrout.org

The Grayling Society

1.0 Introduction

This report is the output of a site visit undertaken by the Wild Trout Trust and jointly sponsored by the Grayling Society, on the River Wharfe on 19th July 2007.

Comments in this report are based on observations on the day of the site visit and discussions with Huby Angling Club (HAC) committee members and Mr John Shannon of the Environment Agency (EA) Fisheries Dept.

Normal convention is applied throughout the report with respect to bank identification, i.e., the banks are designated left hand bank (LHB) or right hand bank (RHB) whilst looking downstream.

HAC control 2.5 miles of single and double bank fishing on the middle reaches of the Wharfe. (see pool map). Formed in 1967 HAC have some 36 members paying £150 per annum in subscriptions.

This section of river contains populations of both trout and grayling, and some coarse fish notably pike and chub. The EA are likely to classify the river as a Native Trout Water under the Trout & Grayling Fisheries Strategy, and consent the annual stocking of some 200 domesticated adult and 1000 fingerling diploid brown trout each year. Further to this the Wharfe has been identified by the local EA Fisheries Dept as having priority status for capital conservation project works.

The club is very concerned over the apparent lack of recruitment of all three life stages of wild trout (fry, juvenile, adult) and wish to develop a management plan in a bid improve the wild fishery through sustainable management and habitat improvement projects.

Fly life in the river appears excellent with various species of up-winged flies (e.g. Blue Winged Olive, Yellow May) and caddis present.

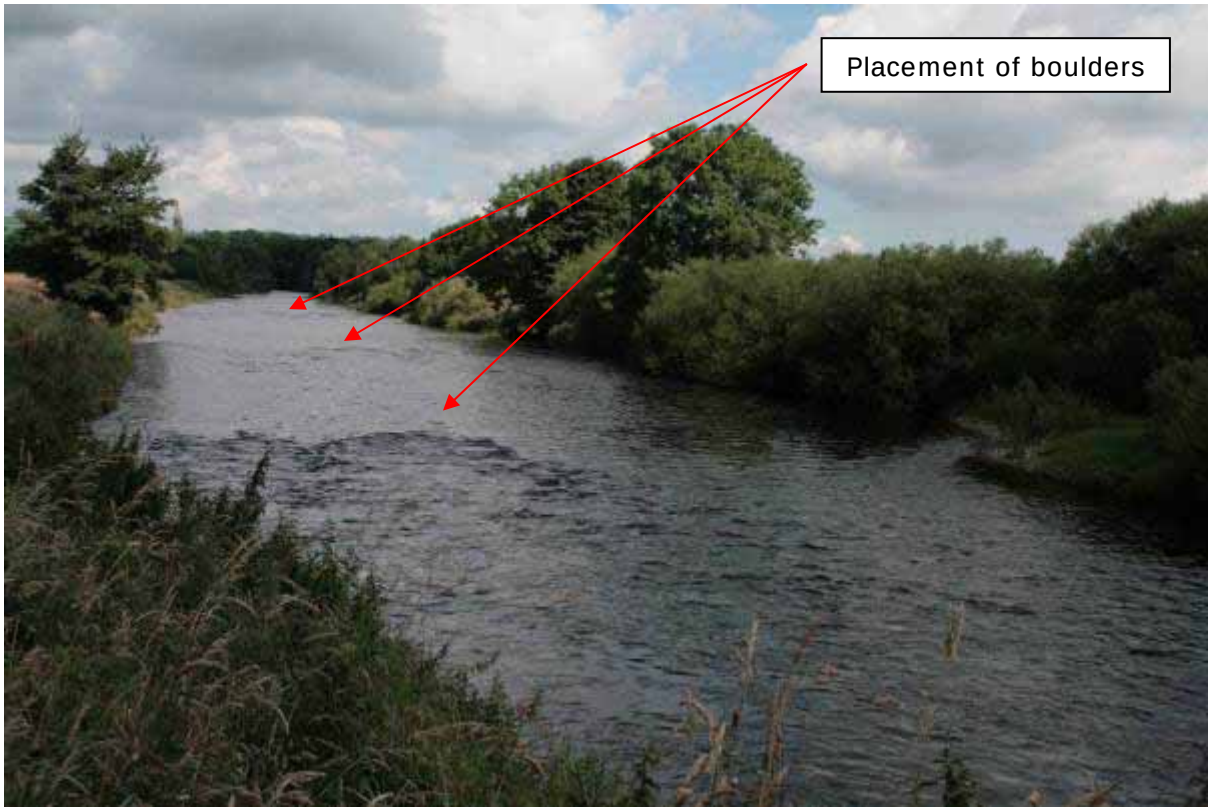
Oliver Edwards – streamside sampling!

Huby Anglers – Pool Guide, River Wharfe

1	-	Viaduct Run	5	-	Top Island Run	9	-	Pinnacle Wood
2	-	Farm Run	6	-	Paradise Corner	10	-	Middle Pool
3	-	Mill Stream	7	-	Bottom Island	11	-	Willow Glide
4	-	Belt Wood	8	-	Wescoe Hill	12	(Feeder beck	

2.0 – Site Description & Issues

At the bottom boundary of the fishery the river is in excess of 20m wide and is characterised as a long shallow, uniform reach in excess of 300m long.



However, there is an almost complete absence of Large Woody Debris (LWD), e.g. fallen trees and branches in the channel. The presence of LWD has been shown to be extremely important in several respects.

- An increase in mean flow, depths and velocities.
- Development of high in-channel physical habitat diversity
- LWD can have significant benefits to the control of run-off at the catchment scale. Woody Debris helps regulate the energy of running water by decreasing the velocity. Thus the 'travel time' of water across the catchment is increased.

LWD is a general term referring to all wood naturally occurring in streams including branches, stumps and logs. Almost all LWD in streams is derived from trees located within the riparian corridor. Streams with adequate LWD tend to have greater habitat diversity, a natural meandering shape and greater resistance to high water events. Therefore LWD is an essential component of a healthy stream's ecology and is beneficial by maintaining the diversity of biological communities and physical habitat. Traditionally many land managers and riparian owners have treated LWD in streams as a nuisance and have removed it, often with uncertain

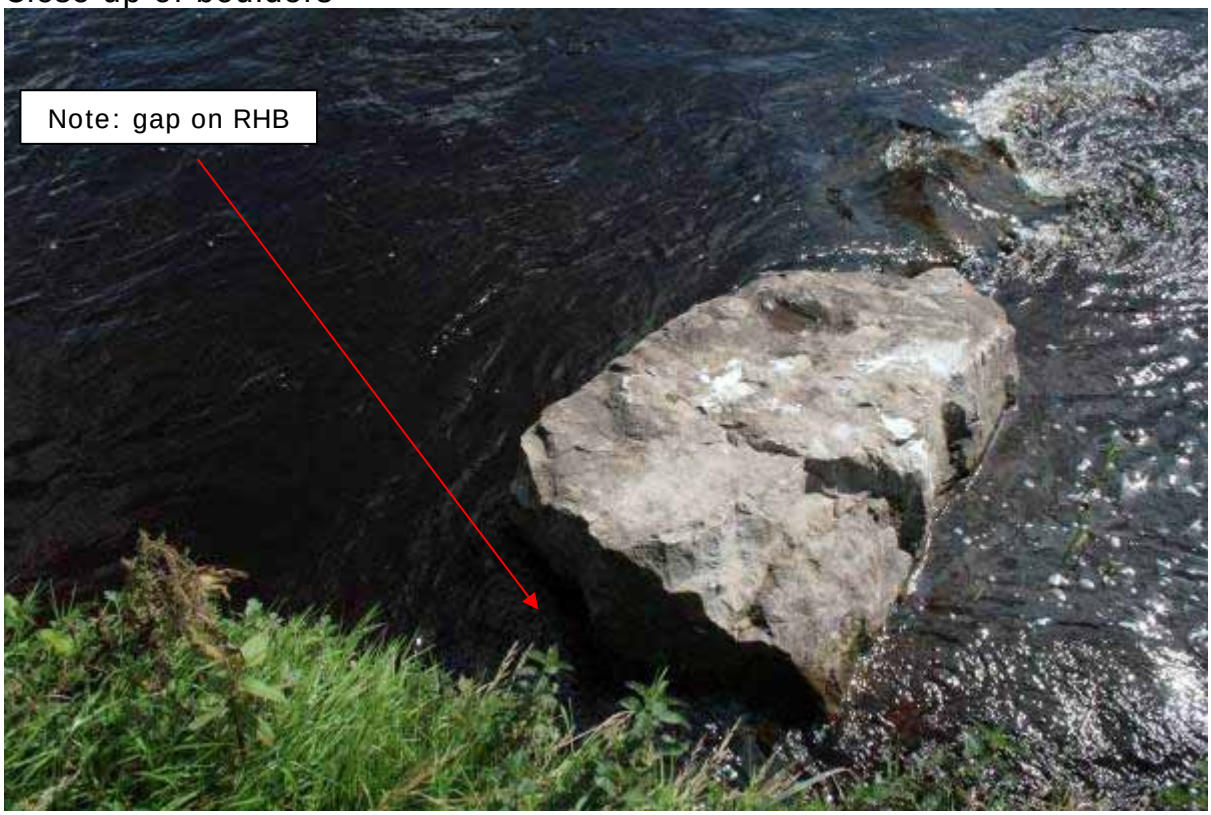
consequences. This is often unnecessary and perhaps harmful to high quality streams such as the Wharfe. Stream clearance can reduce the amount of organic material necessary to support the aquatic food web, remove vital in-stream habitats that fish will utilise for shelter and spawning and reduce the level of erosion resistance provided against high flows. In addition LWD improves the stream structure by enhancing the substrate and diverting the stream current in such a way that pools and riffles are likely to develop. A stream with a heterogeneous substrate and pools and riffles is ideal for benthic (bottom dwelling) organisms as well as for fish species like wild trout and grayling

It should be of no surprise that in this section the only willows overhanging the RHB are good fish holding areas
(Oliver Edwards - *pers.comm*)

The main fish holding habitat in this section on the RHB

In a bid to create pool habitat the EA introduced several very large limestone boulders and these have created deeper scour pools: a much needed variation in the profile of the riverbed. A boulder croy has been installed on the RHB and is causing some localised erosion to this bank. If left un-checked this could cause a significant problem. Croys and deflectors need to be placed facing upstream and securely ‘keyed’ into the bank to stop the river eroding the banks behind these features.

Close up of boulders



Boulder Croy – facing downstream and not keyed into the bank.

Resulting erosion caused by the boulder croy.

At the very bottom of the reach and on land leased by the West Riding Anglers there is a spawning stream on the RHB. The banks were completely encroached with Himalayan Balsam and thus it was difficult to ascertain its likely suitability as a spawning and nursery area for wild trout and grayling.

Potential spawning stream / nursery area?

In the area known as ‘Middle Pool’ there has been removal of LWD from the RHB. **The importance of LWD to wild trout and grayling cannot be overstated**

The club should adopt a policy of leaving LWD in river unless it is causing significant problems. As a guide the following simple check list has been developed by the West Country Rivers Trust:

1. Is the debris fixed, if yes then continue to 2, if not continue to 5.
2. Is the debris causing excess erosion by redirecting the current into a vulnerable bank? If yes then go to 5 if not then go to 3.
3. Would fish be able to migrate past it (take into account high river flows). If yes got to 4, if no go to 5.
4. **Retain the woody debris in the river**.

5. Extract the debris.

Note: If the debris dam needs to be removed but there is still a significant amount of the root system attached to the bank then it is recommended that the stump be retained for its wildlife habitat value and its stabilising effect on the bank.

Site of unnecessary LWD removal on the RHB

There is widespread growth of Himalayan Balsam on both LHB and the RHB.

Himalayan balsam (*Impatiens glandulifera*) is a relative of the busy Lizzie and is known by a wide variety of common names, including Indian balsam, jumping jack and policeman's helmet. It is a tall, robust, annual producing clusters of purplish pink (or rarely white) helmet-shaped flowers. These are followed by seed pods that open explosively when ripe, shooting their seeds up to 7m (22ft) away. Each plant can produce up to 800 seeds.

Introduced to the UK in 1839, it is now naturalised, especially on riverbanks and increasingly in waste places and has become a problematical weed. Himalayan balsam tolerates low light levels and, in turn, tends to shade out other vegetation, impoverishing habitats.

The area from 'Walkers Flat' through to Paradise corner contains some areas that may be suitable for some main river spawning. The active geomorphology in the reach has given rise to some vegetated mid-river shoals and islands.

Potential main river spawning sites.

The river goes through areas of open grazing and tree lined banks, the later providing some valuable cover for adult trout and grayling. There is still a lack of ‘in-channel’ LWD.

Good pool: riffle sequence / tree cover below ‘Belt Wood’

As the river skirts Belt Wood the RHB has good overhead tree cover with some in-channel LWD.

Belt Wood

Both upstream and downstream of the farm the land is grazed on the RHB. The banks downstream are relatively steep which has dissuaded cattle from poaching the banks to get drinking water. Upstream of the Mill Farm the RHB comprises a low level berm which is unfenced and has been grazed and subsequently poached by cattle entering the river. The LHB comprises good growth of willow which is an on-going source of LWD.

Downstream of Mill Farm

Upstream of Mill Farm

3.0 – Recommendations

The following are recommendations to improve both the status of the wild trout and grayling populations and biodiversity in general.

It is a legal requirement that all the works to the river require written Environment Agency consent prior to undertaking any works, either in-channel or within 8 metres of the bank. It may also be a requirement under the Wildlife and Countryside Act 1981 that all proposals are scrutinised by Natural England conservation officers.

Local EA Fisheries and Development Control staff should be contacted at the earliest opportunity to discuss any recommendations arising from this report that the club may wish to pursue.

The major concern of the club is the apparent lack of recruitment of wild trout and possibly grayling. This could be the result of either of poor spawning success, or the subsequent survival of the progeny. Even where there is poor spawning success, good survival of young fish can compensate for this to an extent. All three major lifestages of trout benefit from abundant bankside and / or in-stream cover to ensure a strong population. Observations made on the day of this visit (river levels 1ft+ high than mean summer level) indicate that this vital habitat type is limited throughout the 2.5 miles of the fishery. This is especially true for in-stream cover in the form of LWD.

In all probability there are catchment issues which may be also limiting the production of wild fish. Unsustainable drainage practices in the headwaters of the Wharfe may cause the river to become more flashy in nature. This may result in wash out of trout and grayling eggs and alevins out of the system when they are at their most vulnerable during winter floods. LWD increases bed stability and provides a valuable refuge for juvenile life-stages and may help to mitigate the effects of flash flooding.

It would be a worthwhile exercise for the club to understand the status of spawning areas which trout and grayling may use in the main stem upstream, and in accessible tributaries. These areas are the engine rooms of rivers and there maybe habitat quality issues limiting them as both spawning and nursery areas.

To this end it is recommended that the club ask the Environment Agency to undertake a fishery survey of the main river and spawning streams. There may also be partnership opportunities with the Yorkshire Dales Rivers Trust (YDRT) who are embarking upon a similar study on the Ure, part-funded by the Wild Trout Trust.

As a plan of action it is recommended the club takes a holistic approach to managing its fishery. To this end there are immediate actions the club can undertake to improve habitat. It is essential that these are combined with getting involved in catchment issues that will ultimately drive the long term sustainability of trout and grayling stocks in the Wharfe.

3.1– Habitat Restoration

3.1.1 - LWD

The club should seek to adopt the LWD management protocol recommended on page 8 of this report. In the short-term the club should ‘introduce’ LWD

A little and often programme needs to be adopted with regard to tree management on the fishery to achieve a good balance of LWD, light and shade. Willows can be ‘trained’ to hang over the channel by nicking the trunks and pushing them over.

Arisings from this tree work could be used to install LWD. It is recommended to introduce upstream facing submerged log deflectors (single or paired) to create localised scour pools in the margins and mid-channel. LWD will need to be securely ‘keyed’ into the bank and possibly the river bed using posts or rebar and wire to avoid problems of washout. Another option would be to ‘hinge’ trees, leaving them still connected to stumps, again for added security these can be secured to the bed of the river using posts and wire. Arisings from future tree work undertaken by the club could be bundled into ‘faggots’ and pinned into the margins, thus creating much needed overhangs for trout to use for refuge.

Example of hinged LWD on River Derwent (Co Durham)

3.1.2 – Fencing

A fence should be installed upstream of Mill Farm as a matter of some urgency. Unhindered access by stock to the river is causing bank-side poaching which is leading to the loss of valuable vegetated margins. It is suggested that a buffer strip of at least 9 metres be created. Formalised ‘post and rail’ cattle drinks can be created to facilitate safe, clean access for stock.

The fence line should be placed well back from the bank in a straight line to avoid trash getting caught on wires (causing ‘blow-out’) during peak flows.

Example of a post and rail cattle drink

3.1.3 – Partnerships

To address catchment issues the club should seek to work in partnership with local EA Fisheries Dept (John Shannon) and the Yorkshire Dales Rivers Trust.

The EA may be able to assist with fisheries surveys of both the main river and spawning streams. This will provide vital information on the structure of trout and grayling populations and will guide future management efforts.

The Wharfe has been identified as a ‘Priority River’ by the EA and as such they may well be in a position to consider applications for funding for habitat projects.

It is also recommended that the club get involved and supports the catchment work of the Yorkshire Dales Rivers Trust.

The Yorkshire Dales Rivers Trust was established as a Registered Charity in 2004 in order to provide a concerted and holistic approach to the protection and enhancement of the rivers and catchments of the Swale, Ure, Nidd and Wharfe.

4.0 – Making it all happen!

This report makes a series of recommendations that aim to improve biodiversity and the status of the wild trout and grayling populations in the Wharfe.

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 an 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-man team) and materials (max £1800). Recipients will be expected to cover travel and accommodation expenses of the contractor. The use of specialist plant will be by separate negotiation.

Wet-work experts will demonstrate one or more of the following techniques that are appropriate to the site.

- Tree management (coppice, pollard, sky-lighting)
- Tree Planting
- Fencing (Installation & Repair)
- Stream Narrowing (Faggots, Coir Rolls, Spilling)
- Flow Deflectors
- Introduction of spawning substrate
- Gravel Jetting
- Introduction / Management of Woody Debris

Further assistance with project funding can be provided through the WTT's 'Rods for Conservation Scheme'. Clubs typically raise £750-1500 from these initiatives. See www.wildtrout.org for more details.

Note: Recipients should have received a WTT AV and have obtained the appropriate consents from the relevant authorities, prior to arrangements being made to undertake the PV. WTT can advise on this.

Applications for all the above and the Rods for Conservation initiative should be made via **projects@wildtrout.org**

Huby Angling Club should discuss this report with local EA Fisheries Officer John Shannon who was present at the AV. The EA will be able to provide further technical advice and possibly assistance with project funding. The club are reminded that all works within rivers and within 8m of the bank will require written permission from the Environment Agency.

5.0 - Disclaimer

This report is produced for guidance only and should not be used as a substitute for full professional advice. Accordingly, no liability or responsibility for any loss or damage can be accepted by the Wild Trout Trust as a result of any other person, company or organisation acting, or refraining from acting, upon comments made in this report.