



## River Wey – Headley Wood Farm



An advisory visit carried out by the Wild Trout Trust – December 2008

## 1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on the River Wey at Headley Wood Farm on the Surrey Hampshire borders.

In 2006 the Wild Trout Trust undertook an advisory visit which is attached to this report in appendix 1. The advice and recommendations set out in that report are still valid today.

This report was carried out at the request of the fishery owner, Mr Peter Whitfield. Mr Whitfield is passionate about wild trout and he has worked hard to protect and improve this 2-mile stretch of river for many years. Mr Whitfield was particularly keen to get an opinion on enhancing a section of river where some flow deflectors had been previously deployed.

The comments and recommendations made in this report are based on the observations of the Trust's Conservation Officer, Andy Thomas, the Trust's Director, Simon Johnson and discussions with the owner and his estate manager Mr Porter.

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. Description of the river.

The River Wey at Headley is on the southern branch of the Wey, which rises from deep greensand springs in the Haslemere area. From here the river flows initially south west through Liphook before swinging west and then north to join the northern arm at Tilford in Surrey.

The South Wey supports a remarkably strong wild brown trout *Salmon trutta* population in its upper reaches. A combination of good water quality associated with a lack of any significant intensive agriculture and naturally unimpacted channel morphology has enabled trout to flourish. A general lack of use and lack of active channel maintenance has also contributed towards wild populations flourishing.

Trout populations in the upper south Wey tend to be characterised by high densities of small fish when compared to other Southern rivers. These two characteristics are almost certainly linked. Growth rates improve as the densities decrease the further down the system you travel. The river at Headley Wood is right on the cusp of where trout stocks tend to give way to conditions more favourable to coarse fish populations. Here the river undoubtedly benefits from downstream drift of juvenile trout displaced from those sections upstream of Bordon where the habitat is excellent and densities are high. With more space and good holding conditions wild stocks have the potential to grow on which makes this particular beat a very attractive fishery.

The top of the beat at Headley Wood Farm lies approximately 1km below the large conurbation of Bordon. The river has on occasions suffered from a number

of significant pollution events which has resulted in fish deaths or the loss of aquatic invertebrates. Water quality in the last few years has improved and fish populations and invertebrate communities have recovered significantly.

The section inspected was from the bottom boundary of the fishery up to the access road which roughly represents the bottom half of the fishery. This section is bisected by a low weir just upstream of the adjacent lake. This is an old structure and the river bed upstream has largely re-graded to form good quality holding water. Unusually, the section upstream of the structure is generally regarded as one of the most productive sections of the fishery.



Old weir halfway along the beat

Habitat quality for adult fish is on the whole quite good throughout the reach. The channel morphology is varied with some nice deep pools interspersed with glides and some riffle habitat. Spawning and juvenile habitats are fairly limited with only comparatively short sections providing opportunities for trout recruitment.

On sections where the gradient drops out and flows become slower the bed tends to be smothered in a layer of soft sand. This type of substrate is known to be fairly hostile for aquatic plants and invertebrates and therefore only has limited appeal for trout. A comparative lack of in-channel woody debris and low overhanging marginal cover compounds the lack of available habitat on these

sections. Making these areas more attractive for trout to lie up in will be the key to improving this fishery.



A wide shallow riffle near the bottom of the fishery. Good juvenile trout habitat



A good steep gradient but very little in-channel cover



A post and chicken wire flow deflector. Deflectors pointing downstream can make the channel even wider



A series of chicken wire groynes. Some habitat has been created but better results can be achieved with tree trunk deflectors.

Most of the marginal trees along the river at Headley Wood are alder *Alnus glutinosa* with the occasional ash *Fraxinus excelsior* and oak *Quercus robur*. These trees have very useful root systems that provide support for the banks and can offer refuge for fish. The river does however lack any significant low, overhanging scrubby cover that is potentially so valuable, particularly in the winter months when weed beds are impoverished. Rivers that have good stands of goat willow or sallow *Salix caprea* often provide excellent cover for fish, a refuge from predators and a source of terrestrial food items.



A goat willow fringed margin on the Meon. This will provide cover even in the winter.

Long stretches of the Wey at Headley Wood are comparatively tidy. Sections of river found upstream of Borden are often totally neglected and littered with tree debris. It is no coincidence that these sections are also well populated with wild brown trout.

| The presence of large woody debris (LWD) has been shown to be extremely important in several respects:

- An increase in the variety of flow patterns, depths and localised velocities.
- Development of high in-channel physical habitat diversity
- 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 harmful: 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 spawning 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.



A good example LWD in the River Itchen. Water hitting the underside of this live willow will be forced down creating a fantastic lie for adult trout and blowing up gravels into a spawning riffle downstream.

There is obviously a need to get the right balance between habitat for fish and access for angling but there is no doubt that wild trout thrive in rivers with lots of woody debris and low scrubby margins.

### 3. Conclusions

The Wey at Headley Wood Farm is ideally located to benefit from displaced juvenile trout looking for good holding water. Breaking up the areas of smooth laminar flow with imported LWD will create more attractive holding areas and provide a primary source of food and habitat for invertebrates.

The series of chicken wire groynes currently installed are unsightly and poorly located. Structures pointing downstream will promote scour likely to undermine the banks and make the channel even wider. These groynes should be removed and replaced with one or two tree trunks pinned to the bank and bed. Details on this and other lowland river habitat restoration techniques can be found in the WTT Chalkstream habitat manual.

Winter marginal cover is very scarce. A programme coppicing back tall plantation trees and planting small shrubby willows will provide the ideal combination of dappled light and shade favoured by wild trout.

Some spawning will be taking place on those comparatively short sections of gravel riffle and glide that are present. Time spent cleaning these known sites in October may well give a significant boost to your local trout production.



Gravel cleaning using a backpack leaf blower.

**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 Development Control Officer.**

#### **4. Recommendations**

- Embark on a programme of tree management and tree planting. Remove some of the high level trees (soft woods) that potentially block out light to the channel and margins. Promote low cover through the planting of goat willow which will improve the productivity and holding capacity of the reach as a whole.
- Retain as much LWD within the channel as possible. If it is in the wrong place then move it to another location.
- Remove the current flow deflectors and replace them with large tree trunk deflectors located pointing upstream at a 50 to 70 degree angle to the bank.
- Spend some time in October cleaning the gravels on existing known spawning sites.

#### **5. 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 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/ three man team) and materials (max £1800). Recipients will be expected to cover travel and accommodation expenses of the contractor.

Alternatively the Trust may be able to help in the development of possible project plans for the creation of new spawning and nursery habitats.

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**

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.

## **Appendix 1.**

### **WTT Advisory Report**