



River Medway – Upper Medway Fly Fishers



An Advisory Visit by the Wild Trout Trust April 2015

1. Introduction

This report is the output of a site meeting and walk-over survey of a 2-km stretch of the River Medway near Hartfield in East Sussex.

The request for the visit came from Mr. Brian Harris representing the Upper Medway Fly Fishers (UMFF). The UMFF is a small syndicate of wild trout enthusiasts who have been working hard to improve the fishery in recent years. The group have undertaken a number of habitat enhancement initiatives, including some radical bed raising using imported gravels in partnership with the local Environment Agency (EA) Fisheries Team.

During the 2014 season the group became concerned over issues associated with poor water clarity issues and have been in correspondence with the EA over the likely causes. This particular reach of the Upper Medway is only 4km downstream of Weirwood Reservoir, which is a large pump/storage reservoir intercepting the Upper Medway. It is thought that the issues impacting water clarity may well be derived from the reservoir.

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

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.



Map 1 Medway above Hartfield

2. Catchment and fishery overview

The River Medway rises from springs in the High Weald near Turners Hill in West Sussex and joins the Thames near Chatham in Kent, draining a catchment of approximately 2400km². The Medway is a heavily modified river and has been extensively altered for milling, navigation and flood defence purposes.

The local geology comprises of Hastings Beds which are a nutrient poor mixture of clays and local sandstone.

The Water Framework Directive status for the upper Medway (water body ID 106040018070) lists the river as having poor potential as a heavily modified water body, with targets to meet moderate potential by this year.

This is somewhat disappointing for a headwater stream but probably reflects the likely impacts that the reservoir is having on the morphology of the channel, water quality and ultimately on the overall ecological quality of the river.

3. Fishery overview

The upper reaches of the Medway are known to support both brown trout (*Salmo trutta*), grayling (*Thymallus thymallus*) and mixed coarse fish populations. Historically the upper reaches of the Medway were known to support strong populations of trout and, despite the fragmentation of habitat and fish passage issues caused by the numerous weirs, dams and various structures, the Medway and its tributaries support good numbers of wild trout, wherever there is sufficiently good habitat to support all life stages.

It is highly likely that a limited number of wild Medway trout will naturally smolt and migrate to sea. Evidence for returning sea trout into the Medway system has been collected for decades. In recent years the opportunities for returning sea trout to move further up into the Medway system have been gradually improved via a number of fish pass schemes implemented by the Environment Agency. A key element of the Water Framework Directive is to facilitate free migration for all fish species and although facilitating access for sea trout into the Upper Medway would seem a difficult proposition, any improvement for fish migration is likely to be met with increased numbers of fish pushing further upstream.

3. Habitat assessment

This section of the Upper Medway takes the form of a delightful stream supporting all of the key habitat requirements needed to support a viable population of wild brown trout. The stream has a varied bed topography with classic examples of pool, riffle and glide set within a meandering planform. The channel is, in the main, deeply incised, which is likely to be natural, although this might have been exacerbated by post war drainage work.

The river bed is relatively rich in gravel deposits, with regular outcrops of eroded sand and iron stone which provide ample opportunities for trout spawning (photo

1). In the lower half of the beat, some excellent spawning opportunities have been created through the import of gravels to form shallow riffle and glide sections (cover photo).



Photo 1. Typical section of varied habitat supporting a well-covered pool and a shallow gravelly run with spawning potential.

The banks are liberally dotted with mature alder and ash trees, with occasional thorns and willow trees, providing valuable cooling shade. This aspect of the habitat is crucially important, particularly in a small lowland trout stream located in the South East, where low flows following below-average rainfall could promote elevated water temperatures during the high summer period. There were one or two good examples of willow becoming established on the toe of a slumped bank proving good quality habitat (photo 2).



Photo 2. A good example of a low willow established on the toe of the bank which stabilises the bank and provides valuable low cover for trout.

The UMFF have worked tirelessly to get the stream into a fishable condition by removing fallen trees and scrub. Care must be taken to ensure there is not a desire to make the channel too "tidy". The club have used some of the tree trunks to peg into the channel to successfully create improved holding lies for adult trout (photo 3). This work has undoubtedly helped to maintain the varied bed structure which is vital for all trout life stages, however, there was a distinct lack of scrubby, coarse woody debris, particularly in the margins of shallow runs. This lack of cover in strategic areas could be impacting on fry and parr survival. The club have successfully translocated water crowfoot in an attempt to provide more in-channel cover and in places this has worked well but weed growth was limited to open areas and cannot be established in many of the deeply set and more shaded sections of channel.

It is in some of these sections where more coarse woody debris could be usefully secured into the toe of the bank. The nearer this additional cover can be located to potential spawning sites, the more likely it is that improved survival from fry to parr can be achieved. Additional cover over deeper pool habitat will also benefit adult trout.



Photo 3. Woody debris groyne promoting useful bed scour.

Several iron (ochre) rich springs discharge into this section of the Medway which is typical for many streams that flow through the Weald. The club have attempted to buffer the acidic nature of several of the discharges by revetting the bank and backfilling the local areas with boulder chalk (photo 4).

Attempting to manipulate the natural chemistry of local spring sources is unlikely to have a measurable impact on river pH but may impact the ecology of the immediate area. Opportunities to improve the diversity and density of invertebrates can be achieved via habitat improvements. Again, packing shallow riffle margins with brushwood, which provides both a primary food source for grazing invertebrates, as well as an environment for filter feeders to anchor themselves in the flow, will promote a healthy food web from which trout could benefit.



Photo 4. An iron rich spring source buffered with imported chalk.

A few log weirs have been installed (photo 5) with a notch cut out to provide free fish movement. These structures have promoted some good habitat immediately downstream of the structure but are still having a slight impounding effect on the water immediately upstream, potentially promoting silt deposition. An effective alternative is to install two separate upstream facing logs in a "V" formation (example in photo 6). This configuration has the benefit of concentrating erosive flow velocities towards the centre of the channel and provides a free gap down to bed level, reducing the risks of sediments collecting immediately above the structure.



Photo 5. Full width log with notch on the Medway



Photo 6. An upstream facing V structure with narrow gap made from two separate logs which concentrate the flow and reducing risks associated with upstream deposition.

4. Conclusions

This section of the upper Medway has excellent potential and already supports a good quality wild trout fishery. The club, under the wise guidance of Brian Harris, has made great progress in creating a fishable trout stream. Some excellent work has been achieved, including the establishment of valuable water crowfoot plants, the promotion of improved adult trout holding habitat through the use of flow deflectors and the creation of shallow riffle habitat in partnership with the EA.

Creating the ideal balance between fishable water and improved habitat for trout is always tricky. A good strategy is to promote low, overhanging shade on the outside of bends, or over holding pools and to provide more brushwood cover in the margins of shallow glides and riffles. This will not interfere with access for fishing but could help to significantly boost wild trout survival to adulthood. Examples of brushwood shelves can be seen in photos 7 and 8.

Planting goat willow *Salix caprea*, or possibly thorn trees into the toe of slumped bank margins will help to provide cover and stabilise river banks. Simply trimming up the trees to facilitate a cast is all that's required.

Some good examples of low, overhanging cover can be found in photos 9 and 10.



Photo 7. An example of a brushwood shelf on the River Glaven, Norfolk.



Photo 8. Brushwood packed against the face of an eroding bank on the Great Ouse.



Photo 9. A goat willow planted into the toe of the bank can provide a great cover for trout.



Photo 10. Thorn bushes make valuable riverside trees and provide shelter and a source of food via terrestrial invertebrates.

5. Recommendations

- **Promote more in-channel cover, especially in shallow margins adjacent to spawning sites.**
- **Consider planting some low, scrubby tree species into the toe of slumped banks.**
- **Consider modifying some of the existing full width log weirs into upstream V deflectors.**
- **The WTT would be happy to demonstrate some of the techniques recommended in this report via a Practical Visit (PV) where a Conservation Officer would work alongside members of the UMFF during a work party day.**

Note: All work within 8m of the top of the bank will require a consultation with the EA and may require a formal written Flood Defence Consent prior to any work being carried out.

Acknowledgement

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

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