



Habitat Advisory visit to the River
Great Stour, Harville Farm, Wye, Kent
undertaken on behalf of Richard
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1.0 Introduction

This report forms the output of a site visit to the River Great Stour, Harville Farm, Wye, Kent on 3 February 2006 on behalf of Richard Woodfine. Information in the report is based on observations on the day of the visit.

Throughout the report, normal convention is followed, with right bank (RB) and left bank (LB) of the river identified when looking downstream.

2.0 Fishery Description

The River Great Stour runs north east from Wye, discharging into the North Sea near to Sandwich, Kent. It is a largely rain fed river.

The river at Harville Farm, Wye had been heavily modified. The downstream limit of the fishery was delineated by the presence of a large impounding weir, the modern manifestation of an historic mill structure. It is understood that the weir is operated by the Environment Agency (EA) as part of its flood defence strategy for the catchment.

The influence of the weir was very apparent in the reach above it, with the river impounded, overwide and overdeep.



River near the downstream limit of the fishery

The instream habitat of the river was uniform, with deep glide and pool habitat universal throughout the fishery. A wide, rough pasture buffer strip was present along both banks of the river. There were few trees present in any section of the fishery.

The river had been subject to regular heavy maintenance dredging by the EA and its predecessors, with recent dredging believed to be undertaken on an annual basis. Significant piles of excavated fine sediment were present on the LB over the majority of the fishery. Closer inspection revealed large numbers of mollusc shells present within the spoil.



Deposited spoil on banks of the river

As a result of the dredging, the LB was virtually denuded of any emergent vegetation. There was however, a reasonably well-developed fringe of vegetation on the RB for much of the fishery, in particular around an old pond site near to the downstream end of the fishery.

Throughout the fishery, there was no habitat suitable for spawning or juvenile brown trout.

3.0 Fish stocks

No data were available regarding fish stocks in the river. However, it is likely that it holds numbers of mixed coarse fish species, probably including amongst others, roach *Rutilus rutilus*, chub *Leuciscus cephalus* and pike *Esox lucius*.

4.0 Recommendations

The Great Stour at Harville Farm was not suitable for sustaining a population of brown trout, with the habitat present more likely to support mixed stocks of coarse fish. Notwithstanding this fact, a number of recommendations are made below with reference to the fishery.

- The EA should be asked to provide data from recent and historic fish surveys near to Harville Farm. The Agency will periodically undertake routine surveys at index sites on key rivers, presumably including the Stour. These data are in the public domain and will prove to be of great benefit to any detailed development plan for the fishery.
- Impacts on spawning and/or early lifestages of species such as, roach, chub, barbel, bream and gudgeon are generally regarded as the most critical for controlling year class strength. Impacts could potentially be of a direct nature, for instance due to a reduction in the availability of habitat, or indirectly through a reduction on habitat quality, for instance due to locally increased summer water velocity, resulting in fry “wash-out”, during high flows in the summer period.

- The habitat requirements of larval and juvenile coarse fish are reported in a number of papers. Generally, coarse fish thrive in areas with well-developed marginal and submerged vegetation, and low velocity refuge areas, providing both abundant food and sanctuary from damagingly high water velocity.
- There is little doubt that the regular dredging undertaken by the EA has and will continue to have a detrimental impact on the availability of this habitat type to the detriment of the river's fish population. If fish stocks in the river are to be optimised, the present policy of annual dredging should be challenged, with the EA asked to provide justify quantified justification (modelling) of the associated benefits to flood risk.
- The lack of riparian trees should be addressed. Stands of trees should be planted close to the river bank in order to increase both bank stability (via the growth of root systems) and cover for fish (root systems and overhanging branches). The abundance of species such as chub is strongly positively correlated to the presence of overhanging branches, particularly where weed rafts are allowed to develop.
- Water quality within the river should be ascertained. Regular samples of river water quality will be taken by the EA. They will assess compliance of the river's quality against so-called River Ecosystem (RE) targets. The Agency uses a system of General Quality Assessment (GQA) to monitor this compliance. These results are available to the public.
- In addition to water quality samples, the biological quality of significant watercourses is also routinely assessed by use of macroinvertebrate communities. Sampling of invertebrate communities is carried out by 'kick sampling'. This involves disturbing substrate by foot and capturing displaced invertebrates with a standard 1mm mesh sampling net for a timed 3 minutes. The physical characteristics of each site, including depth, substrate and flow type, a subjective assessment of turbidity and any other relevant observations are recorded, along with estimates of algae and macrophyte cover.

Invertebrates are subsequently identified to species, genus or family level. The number of individuals found within each family is recorded as the actual number where fewer than ten were found, and then to the nearest 10, 100 or 1000 where 10-99, 100-999 or 1000+ were found.

Each genus of invertebrate is assigned a score, based upon its pollution tolerance, with the least pollution tolerant having the highest score. By totalling the sum of the scores, the Biological Monitoring Working Party (BMWP) score is calculated for each sample. The higher the score, the better the water quality of the watercourse from which the sample was taken. The Riverine InVertebrate Prediction and Classification System (RIVPACS) is a computer programme that can predict the BMWP that should be expected to occur at a site under clean water conditions. A significant discrepancy between the predicted and actual BMWP scores would be a clear indication of poor water quality at the site.

By comparing data from macroinvertebrate sampling and recorded chemical water quality with published river quality targets and statutory consents, a clear idea of

water quality in a fishery can be obtained. In the event that water quality appears to be poorer than would be expected, then it is likely that it could be affecting trout stocks adversely.

In combination, an assessment of chemical water quality and biological water quality will give a clear indication of the overall quality of the river.

- Note that all works to bed or banks of the river or within 8m of its banks require the written consent from the Environment Agency under the Land Drainage legislation. The introduction of any fish or eggs into any inland water requires the consent of the EA under the Salmon and Freshwater Fisheries Act, 1975. It is imperative that all relevant consents are obtained by the landowner.

5.0 Disclaimer

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