



Habitat Advisory visit to the River  
Great Ouse, Rectory Farm, Tingewick,  
undertaken on behalf of George Eaton  
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December 2004

## **1.0 Introduction**

This report forms the output of a site visit to the River Great Ouse, Rectory Farm, Tingewick on 8 December 2004 on behalf of the landowner, Mr. George Eaton. Information in the report is based on observations on the day of the visit and additional comments provided by George Eaton.

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 Ouse rises near to Farthinghoe, Northamptonshire, draining eastwards and entering the Wash at King's Lynn. The Rectory Farm reach of the river runs downstream from the Tingewick to Water Stratford road (SP652341) to just below the old railway crossing (SP 663344) upstream of Tingewick Mill, a distance of some 2km.

Downstream of the Tingewick roadbridge, both banks of the river were overgrazed by agricultural stock, with a consequent paucity of overhanging bankside vegetation and significant sections of eroded bank. At the upper end of the stretch, there was a short section of gravel dominated riffle, with a steep gradient. Below this, the river had a meandering planform with an abundance of deeper water, suitable for adult brown trout and some shorter lengths of riffle spawning habitat. A small number of freshly cut trout redds were visible on the riffles.



**Over-grazed banks adjacent to riffle downstream of Tingewick road bridge**



### **Freshly disturbed gravel (redd) at site of trout spawning activity**

Over much of its length, the river channel was heavily incised ( $>1.5\text{m}$ ), with a spoil bank visible on the RB, evidence of past dredging activity. The resulting channel was over-wide and over-deep. As a consequence, flow velocity in the summer has often been low, allowing the extensive growth of emergent vegetation including reed canary grass *Phalaris arundinacea* and common club-rush *Schoenoplectus lacustris*, which in some cases, totally occluded the channel. This had at times, significantly reduced the available open water area, diminishing angling opportunity during the summer months. At some locations, the emergent vegetation growth had begun to consolidate marginal areas of silt. In addition, there were short sections where mid-channel growth had spilt the flow, with the result that small islands had begun to appear.



**Heavy growth of emergent vegetation with part formed 'island'**

Significant amounts of Large Woody Debris was present throughout the fishery in the form of fallen trees and branches. This was creating valuable cover and was assisting in the scouring of the bed and sorting of the substrate.



**Woody debris dam deflecting current on the inside of a bend and encouraging the creation of a marginal silt shelf**

2m or 6m wide uncultivated buffer strips were present alongside the banks of the river in all arable fields, with full benefit being made of the conservation opportunities presented under the current agri-environment schemes. Significant bank clearance work had taken place, with large numbers of tree pollarded/coppiced in order to improve access and reduce shading of the channel.

Towards the lower end of the fishery, the character of the fishery changed, with more extensive areas of deep water and an almost total lack of shallow riffle areas suitable for trout spawning and recruitment. Good numbers of perch, chub, roach and other coarse fish were present throughout the fishery, but particularly in this downstream section.

**3.0 Fish stocks**

No stocking had taken place in this reach of the river for more than 5 years. Some stocking of brown trout is understood to have taken place on nearby fisheries, although no details were provided of numbers or size of fish stocked.

The intensity of angling at the Rectory Farm fishery has been low, partly due to the overgrown nature of fishery in mid-summer. Despite this, the catch returns maintained by George Eaton show reasonable numbers of fish have been consistently caught. Weights of individual fish caught exceeded 1.5kg., with the excellent growth rates and large size attained probably reflect the presence of Signal crayfish *Pacifastacus leniusculus* .

#### 4.0 Recommendations

A number of key management recommendations arose during and following the site visit to Rectory Farm:

- The relative paucity of shallow, gravel dominated riffle habitat was probably limiting recruitment of brown trout to the fishery, with very restricted sections of habitat suitable for both spawning and juvenile lifestages. Addressing this deficit would be relatively expensive, requiring the introduction of imported gravel of a size suitable for spawning trout. One possibility would be to consolidate the small islands of emergent vegetation that were present throughout the fishery (see photograph above) using faggot bundles, placing gravel in the faster flowing channels created on either side of the island. This would create short sections of flow dependent spawning habitat for trout and chub.
- It might also be possible to make use of deep substrate incubation boxes in order to effectively bypass the trout spawning 'bottleneck'. Basically, these are gravel filled boxes, approximately 0.6m in each dimension, that are filled with suitably sized gravel and seeded with 10,000 - 20,000 trout eggs. A water feed at the bottom of the box allows the eggs to incubate and hatch. Once they reach the swim-up fry stage, they leave the box via the overspill pipes, stocking themselves into the river. In effect, they are naturally reared fish without the unhelpful behavioural modifications associated with hatcheries. More details on incubation boxes can be found on the Wild Trout Trust web site [www.wildtrout.org](http://www.wildtrout.org) or in Volume 2 of the Trust's magazine, *Salmo trutta*. They have significant value as educational tools, with linkage into the farm's expanding programme of educational visits obvious.

The one drawback is the lack of any obvious sites for locating one or more boxes. A head of water of around 0.5m is required to 'drive' the boxes. Typically, a sluice, weir or redundant ram pump would be utilised. If such a location could be found on the river, then the use of a deep substrate box is recommended.

- The quality of the short sections of suitable spawning gravel could be improved by establishing a regime of cleaning spawning gravels each September. This can be achieved by either manual raking, or by the use of high-pressure water jets. Care must be taken to clean riffles rotationally, with only short sections being treated annually. It is important that the EA are contacted prior to any cleaning of gravel, due to the possible discoloration of water in the river resulting from the operation. The same concerns dictate that downstream neighbours should also be forewarned of the operation.
- There are sections of the fishery in which the banks have been over-grazed and poached by agricultural stock, resulting in loss of valuable marginal cover and mobilisation of fine sediment into the water. In order to reduce the damaging impacts of stock grazing, these sections should be securely fenced, in order to create a marginal buffer strip. Maximum benefits are obtained when these strips are at least 10m wide. However, significant improvement to riparian habitat can still occur with narrower buffer strips.

- The growth of the emergent weed is very extensive during the summer months, largely as result of the previous heavy dredging undertaken, that has resulted in an over-deepened channel and an associated reduction in water velocity. Removal of all of the weed is not practical or desirable. However, it is possible to manage the weed in order to maintain sections of open water. This can be achieved by either manual cutting (chain scythes), mechanical cutting (hydraulic powered cutter mounted on 360 excavator) or by the use of herbicide. Of these options, the best in terms of its cost, lack of environmental disturbance and practicality is probably the herbicide.

The only appropriate herbicide cleared for use near to and in water is glyphosate (sold as 'Roundup', Roundup Pro Biactiv etc). It is a selective, translocated herbicide that is used to treat the actively growing plant once its leaves have emerged from the water. Glyphosate offers a cheap and environmentally sensitive option (it is inactivated on contact with water and sediment) for the treatment of emergent vegetation.

Glyphosate can be used to selectively remove small stands of emergent vegetation, creating runs and sections of clear water where required. It can be also be used carefully in order to shift sediment from strategic locations by training the river's flow to scour these areas.

Detailed advice on the use of herbicides can be obtained from the Centre for Aquatic Plant Management [capm.org.uk](http://capm.org.uk). The written consent of the Environment Agency is required for the use of glyphosate.

- There was a significant amount of Large Woody Debris (LWD) in the channel. This was of great importance to the fishery, both in terms of the cover it provided and its ability to cause scour of the river bed. The benefits for retaining LWD are clearly laid out in the recent EA R&D document, "Large Woody Debris in British Headwater Rivers". Key conclusions of the report include:

- An increase in both mean flow depth and velocity and variability of both parameters.
- The development of high physical habitat diversity both in-channel and in the floodplain. Removal of LWD reduces both habitat quality and availability for juvenile and adult brown trout.
- Although active LWD dams may impair upstream migration of fish at low flows, they rarely do so at high flows.
- LWD have significant benefits to the control of run-off at the catchment scale.
- River and riparian management has important effects on the distribution and character of dead wood accumulation within the river system.

The report also provides recommendations for the management of LWD, the most important of which is "although there are certain situations that may require wood removal to eliminate stream blockage, the wisest management is no management". Building on this simple truism, it is recommended that before any future work to remove LWD from river channels is undertaken, the wider implications of the proposal on the whole river system are considered, rather than just the potential (in many cases unproven) benefits to salmonid populations. In addition, the impact of planned riparian tree work on the supply of LWD to the river should be considered.

In some circumstances, it may be beneficial to allow trees to fall into the channel, provided the risk of increased flooding is acceptable.

In order to manage LWD effectively on the Rectory Farm fishery, it is important that a balance is struck between the benefits of retention of timber within the river channel, and access for angling. It is also important that the Environment Agency is made aware of an adopted policy to retain LWD in the channel, in order to prevent its removal during routine management operations undertaken by the Agency.

- The fishery at Rectory Farm does offer the opportunity to generate a small annual income. It would be possible to run a syndicate of between 6-10 rods, for a mixed brown trout and coarse fishery. Typically, a rod might expect to pay >£100 for the privilege of fishing the river for mixed species. In order to protect the fragile trout sticks present in the river, it would be important for a policy of catch and release to be the norm, with fish killed only in exceptional circumstances. If this policy were not to be adopted, then it is likely that the stock of trout present, and their average size, would decline over time
  
- 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 club.