



Habitat Advisory visit to Clatford Farm,
River Kennet, undertaken by Vaughan
Lewis, Windrush AEC Ltd on behalf of Mr
and Mrs Johnson

March 2004

1.0 Introduction

This report is the output of a site visit undertaken by Vaughan Lewis, Windrush AEC Ltd to Clatford Farm, River Kennet, Wilts, on 25 March 2004. The visit was sponsored by the Wild Trout Trust as part of its commitment to support the protection and enhancement of brown trout stocks.

Comments in the report are based on observations on the day of the site visit, and discussions with Sally-Ann Johnson of Clatford Farm. 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.

2.0 Habitat assessment

The River Kennet is a lowland chalk stream. The flora is rich and diverse and has the highest known average species richness of any lowland river in Britain. Upstream of Newbury the Kennet is typified in the more 'natural' reaches by the presence of stream water-crowfoot communities. The Kennet has a high diversity of aquatic invertebrates including nationally scarce species. A number of internationally, nationally and locally rare/protected invertebrates, mammals and birds are also present within the river corridor. This fact is recognised by the designation of the river between Marlborough and Woolhampton Bridge as a Site of Special Scientific Interest (SSSI).

Clatford Farm lies upstream of Marlborough, and is hence outside of the SSSI. The perennial head of the River Kennet is generally held to lie in this reach, although the river does periodically dry up as far downstream to Marlborough, on an approximately 1 in 10 year average. There are a number of borehole abstractions in the upper Kennet catchment..

The fishery holding of the farm runs from 150m upstream of the site of the old mill (SU153688) to Clatford Roadbridge (SU159688), a distance of some 600m. The agricultural land adjacent to the river has been placed into Countryside Stewardship as part of the development of the farm's conservation plan.

Upstream of the Old Mill, the river was slightly incised, with a berm of excavated river bed material visible on the RB. The channel was overwide and relatively shallow (0.3m) with little instream or marginal cover. Fine sediment was present over much of the bed of the river, with limited areas of clean gravel. The channel planform and bed profile were both very uniform, with little sorting of bed material or variation in depth. Some small stands of brooklime *Veronica beccabunga*, water cress *Rorippa nasturtium-aquaticum* and water forget-me-not *Myosotis scorpioides*, were noted in marginal areas. No submerged vegetation was present in the channel.

Adjacent to the mill, a section of bank was eroding badly, partly as a result of overgrazing of the steep banks. As a consequence, a length of stock fencing was close to falling into the river.

A shoal of approximately 30 brown trout *Salmo trutta* (mean length 30cm) was noted in a slightly deeper area of water in this reach. Their behaviour and similar size suggested that they were of fish farm origin and had been recently stocked in the river.

Land use on both banks was semi-improved pasture with some evidence of an old water meadow system on the RB.



Upstream of the site of the Old Mill

Downstream of the mill, the channel remained over-wide, with limited variation in planform or bed profile. There was abundant gravel in this reach, of suitable size for spawning and juvenile brown trout. However, there was little sorting of the substrate, with fine sediment overlying the gravel in most areas. There was again virtually no submerged vegetation or other in-channel cover. Some more extensive beds of marginal vegetation were present, including stands of reed canary grass *Phalaris arundinacea*. Low weirs had been constructed using Sarsen stones in an effort to increase flow variation, scour and sorting of bed materials.



Overwide channel upstream of bridge, with Sarsen stones introduced to create a low level weir



Two mature brown trout alongside a section of marginal vegetation

In-channel habitat downstream of the farm access bridge remained similar. Several brown trout to 1kg in weight were noted in this section.

3.0 Discussion and management recommendations

This reach of the River Kennet will always be vulnerable to seasonal drying out, particularly during low flow years. It does however have significant potential value as a spawning and nursery area for brown trout, and as a holding area for adult trout during years of sustained flow.

In addition to these concerns regarding flow, there is a paucity of both instream cover and suitable habitat for adult brown trout. These two issues are inter-related. The lack of large woody debris (LWD) in the channel limits scouring of the bed and the sorting of substrate vital in the creation of deeper pools. Large woody debris (LWD) is an integral component of stream ecology. The benefits for retaining it 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.

It is recommended that selected limbs of some of the poplars or willows that are programmed to be cut down along the LB of the fishery are felled into the channel. They should then be trimmed, staked and wired in place, with their tops facing downstream. The felled trees should not occupy more than one third of the width of the channel.

The brushings arising from the felling of the trees should be used to create faggot bundles. The over-wide channel can then be selectively narrowed using faggot bundles retained behind willow poles. Fine sediment will rapidly accumulate within the structure of the faggots, consolidating them and encouraging the growth of marginal vegetation. Details of the use of faggots and other habitat enhancements, are provided in the attached Wild Trout Trust 'Guide to Improving Trout Streams'.

In addition to increasing the amount of LWD in the channel, the large number of Sarsen stones present along the banks should be utilised in order to create upstream facing groynes and /or low curved weirs. The latter structures should be constructed with their convex side facing upstream, and should remain submerged during normal summer flow. All groynes and weirs should be carefully keyed into the banks to prevent erosion at these vulnerable locations.

The success of brown trout egg hatching can be enhanced by cleaning of spawning gravels. The quality of the gravel can 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 Environment Agency is 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.

The fencing at the upper end of the fishery should be removed and re-erected at least 10m back from the top of the riverbank. This will allow the growth of coarse vegetation which will be beneficial in reducing erosion and aiding bank stability.

Extensive and well documented habitat enhancements similar to those recommended in this report have been undertaken in recent years on the River Kennet between Axford and Ramsbury by a partnership of Thames Water, the Environment Agency, Action for the River Kennet (ARK) and local fisheries interests. It is strongly recommended that a visit is made to the site to see the benefit to riverine habitat of this work.

4.0 Legal Requirements

All work to the river bed or its banks within 8m of the watercourse, will require written consent from the Environment Agency, under the Land Drainage Act/Water Resources Act. Contact Peter Hempstead, Environment Agency, Isis House, Howbery Park, Wallingford, OX10 8BD. (Tel: 01189 535000).

Water vole survey. This is an essential pre-requisite of any enhancement work where water voles are suspected to live. It is an offence under the Wildlife and Countryside Act (1981, as amended) and the Countryside and Rights of Way Act 2000, to intentionally or recklessly damage, destroy or obstruct access to any structure or place a water vole uses for shelter or protection, or to disturb a water vole whilst it occupies such a place.