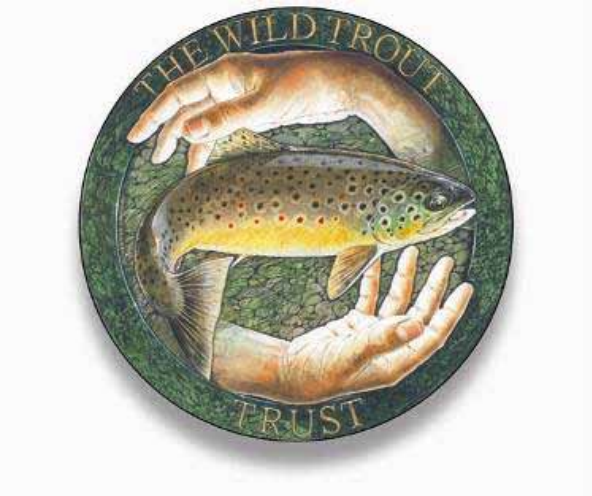

HABITAT ADVISORY VISIT TO THE RIVER CLUN, SHROPSHIRE UNDERTAKEN BY VAUGHAN LEWIS, WINDRUSH AEC LTD ON BEHALF OF MR CHRIS COOKE

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1.0 Introduction

This report is the output of a site visit undertaken by Vaughan Lewis, Windrush AEC Ltd to the River Clun, near Clunton, Shropshire on 17 December 2007. The visit was undertaken on behalf of the Wild Trout Trust. Information contained within the report was obtained from observations on the day of the site visits, and discussion with Chris Cooke, the owner of the fishery.

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 Clun rises near to Anchor, very close to the Welsh border, and joins the main river Teme near to Lentwardine. Surface geology of the river was dominated by sandstone.

The downstream limit of the fishery was near to the village of Clunton. Recent restoration work had been undertaken to a mill at this location. The reconstruction of the old mill leat, weir and control structures had resulted in the prioritisation of flow down the low level channel. This had not only reduced the flood risk to the mill property itself, but had probably also been ecologically beneficial. However, it had reduced the recreational fishing opportunity on the LB for the length of the old mill channel.

Walking upstream, the main river channel had a relatively steep gradient, with a meandering planform. There was a well-developed pool-riffle sequence, with abundant cobble/gravel substrate. The gravel was generally large, flat and 'shaley' looking, and perhaps more suited to spawning Atlantic salmon *Salmo salar*. Pockets of smaller sized gravel suitable for brown trout *Salmo trutta* spawning were present however throughout the fishery. The gravel was generally un-imbedded, with a moderate loading of entrained sediment.

Throughout the fishery, the banks of the river were fringed with deciduous trees, mainly alder *Alnus glutinosa*, ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus*. The extensive tree root system of these trees provided ample cover for larger juveniles and adult fish, whilst there was an abundance of Large Woody Debris (LWD) in the channel arising from these trees. In places, accumulated LWD had formed extensive dams, with the stream morphology significantly changed downstream as a result.

Typical LWD dam

The soft, friable sandstone banks were very vulnerable to erosion. This process was exacerbated by overgrazing by agricultural stock. In places, the bank was almost devoid of vegetation cover, with extensive areas of bare bank. In areas where the bank profile was steep, this had resulted in block failure and the rapid loss of significant amounts of grazing land.

Where the profile was more shallow, constant grazing and trampling, particularly by sheep, had resulted in linear erosion pathways to the rear of riparian trees. Over time, this erosion pattern resulted in the weakening of root holdfasts, with the trees eventually toppling into the river adding to the LWD. Where permanent barbed wire fencing or temporary electric fencing had been erected, the overgrazing was less apparent and the rate of erosion significantly reduced.

There were also sections of the river were arable cropping had been undertaken unacceptably close to the river, further exacerbating erosion issues.

Some sections of the river were relatively heavily shaded by riparian trees. Some limited coppicing had recently taken place on the RB.

Overgrazed and badly eroded bank

Soil around bankside alder trees badly eroded by sheep grazing

Himalayan Balsam *Impatiens glandulifera* was abundant throughout the fishery. Suppression of ground vegetation by this plant, coupled with its winter die back combined to leave extensive areas of bare bank, and contributing still further to excessive erosion.

A small RB stream entered near to the Hurst. This was traditionally an important spawning tributary for brown trout. Its present status is not known.

Some sections of the upstream end of the fishery were overwide, largely due to overgrazing and subsequent erosion. There were some very small stands of water crowfoot *Ranunculus* Spp present. This apparently is a relative newcomer to the river having not been present here is the recent past.

3.0 Fish stocks

The River Clun supports a moderate stock of wild brown trout *Salmo trutta,* and grayling *Thymallus thymallus*. Historically, Atlantic salmon *Salmo salar* utilised this reach of the Clun for spawning. Quantitative electrofishing surveys were undertaken by the then Severn Trent Water Authority (STWA) in the 1980's, showing a mix of sizes of brown trout at a moderate biomass of 8-10 gm^{-2}, along with small numbers of juvenile salmon. Some experimental introductions of juvenile salmon were undertaken by STWA with mixed results.

No contemporaneous data were available for comparison purposes. However, results from the very low angling pressure on the water suggest that recruitment has remained strong, but numbers of medium-sized fish have declined.

4.0 Recommendations:

· The Clun was characterised by a very large volume of LWD over much of its length. Indeed, it had probably the biggest accumulations of LWD in any stream I have recently visited. Generally, the LWD was of great benefit to the river channel, helping to form a diverse instream habitat, scouring the bed, sorting the substrate (there were some excellent examples of clean, recently scoured spawning gravel piles) and providing ample cover for a range of species. Its beneficial impact would be even greater if the banks were fenced, reducing the overall rate of erosion (see below). There should be a presumption in favour of retaining the LWD, removing it only when there is unacceptable erosion to the banks or where it is clear that it poses a significant flood risk.

Current Environment Agency policy nationally is to encourage LWD in headwater streams with an associated low flood risk, in order to slow discharge rate through a reach and encourage out of banks flow during high water events. This provides a degree of attenuation helping to reduce flood risk in more populated downstream reaches. Consultation with the local Environment Agency Flood Risk Management Team would be of benefit in order to establish a management protocol for the fishery with respect to LWD.

· The most significant issue with respect to this reach of the River Clun was the excessive erosion caused by grazing agricultural stock. The banks were very badly

affected in some locations, with large block failures of bank and destabilising erosion around the base of riparian trees the typical outcome. If the fishery is to be improved, then it is imperative that this issue is addressed. Ideally, a wide ungrazed buffer strip of at least 10m would be created by the erection of permanent or temporary fencing, during periods of grazing. The wide buffer strip is important not only to create a zone of coarse grasses that are effective in capturing sediment and water from overland run-off, but also to allow the development of a strong root zone over time. Without this, erosion will continue at an unacceptable pace, necessitating the continual relocation of any fencing erected. Much of the RB is understood to be in an extant Environmentally Sensitive Area scheme making it possible to obtain partial funding for provision of suitable fencing under a revised conservation plan.

In addition to the erosion linked to grazing stock, the arable regime was, in places, causing an unacceptable risk of erosion by ploughing too close to the bank top. Recent changes to agricultural funding place a responsibility on farmers to avoid this type of soil erosion. Under cross-compliance conditions linked to the Single Farm payment, each holding is obliged to formulate a soil conservation plan. This should include measures to avoid large volumes of sediment entering watercourses from cultivated land. It should be possible to establish 6m buffer zones alongside watercourse under the Entry Level Scheme, potentially providing the necessary 'points' to qualify for the £30/ha payment.

· Where the river was relatively heavily shaded by riparian trees it would be prudent to undertake a programme of limited, rotational coppicing. By carefully coppicing selected stands, particularly of alder, the growth of valuable fringing vegetation would be enhanced. Care should be taken not to open up the channel excessively; a ratio of say 60:40 shaded to open channel is generally believed to be a good target. Depending on the extent and timing coppicing, it may be necessary to obtain a felling licence from the Forestry Commission prior to commencement of operations.

· The presence of Himalayan balsam is undesirable. It is classified as an alien invasive weed species. There is no policy for its control on a catchment basis, with no authority having a remit to undertake this work. Despite this, it may be possible for the limited control of the large stands of balsam present along the banks of some areas of the river. Chemical control with the herbicide glyphosate when the plant is actively growing in early spring should be effective. Alternatively, the plants can be cut at ground level before the flowering stage (June) or they can be pulled up by the roots and disposed of by composting or burning unless seeds are present.

Note that the use of glyphosate or any other herbicide on or near water requires the consent in writing of the Environment Agency.

· It would be useful to ascertain if the Hurst Stream is still utilised by spawning trout. Walking the stream at night with a torch is perhaps the best way of directly observing spawning activity. Indirect assessments can be made by counting the excavated trout redds in the channel. If the stream is being used extensively, it is important that it is maintained in good condition by minimising fine sediment input, fencing to reduce erosion and by maintaining a balance between shad and light as described elsewhere in the recommendations.

· Note that all works to bed or banks of the river or within 8m of its banks requires 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 prior to any work commencing.

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