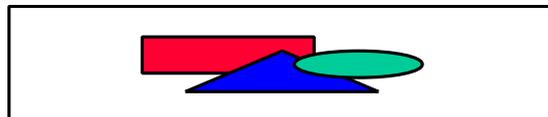




Habitat Advisory visit to the River Rea,
Worcestershire
undertaken by Vaughan Lewis, Windrush
AEC on behalf of Newnham Rea Fishing
Syndicate
April 2002



1.0 Introduction

This report is the output of a site visit undertaken on 19 April 2002 by Vaughan Lewis, Windrush AEC to the Newnham Rea Fishing Syndicate's (NRFS) water on the River Rea, Worcestershire. The visit was sponsored by Orvis, as part of its commitment to support habitat enhancement schemes through the offices of the Wild Trout Trust.

Comments in the report are based on observations on the day of the site visit and discussions with Roy Wilson. Throughout the report, normal convention is followed with respect to bank identification i.e. banks are designated Left hand Bank (LHB) or Right Hand Bank (RHB) whilst looking downstream.

2.0 The fishery

NRFS is a small syndicate, currently having 16 members. Maximum membership is nominally set at 25. The club controls a long section of the River Rea, a sandstone dominated tributary of the River Teme. The site visit and this report concentrate on Beats 6 and 7 (Roy Booton's Water).

2.1 Beats 6 and 7 (Roy Booton's Water)

The channel was heavily incised within sandstone banks, with clear evidence of past dredging activity provided by spoil deposits along the LHB. The banks were heavily treed with a variety of species including alder *Alnus glutinosa*, sycamore *Acer pseudoplatanus* and goat willow *Salix caprea*. During the summer, dense stands of Himalayan balsam *Impatiens glandifera* cover much of the banks. Large clumps of butterbur *Petasites hybridus* were strongly associated with gravel and sand point bars, formed on the inside of meanders.

Beats 6 and 7 of the Rea formed a large meander in the river. Within this meander, the river had a sinusoidal planform, with a well defined pool-riffle sequence, and stable gravel and sand dominated point bars on the inside of bends. There were extensive shallow areas dominated by mixed gravels of a size suitable for spawning brown trout. The EA apparently constructed two short riffle sections some eight years ago. Heavy deposits of fine sand and silt overlaid much of both the natural and constructed gravel riffles, potentially reducing both the hatching success of salmonid eggs and the subsequent recruitment of juvenile salmonids to the fishery.

Fly hatches on the river are apparently robust, with good numbers of large dark olives *Baetis rhodani*, mixed sedges *Trichoptera* and an excellent mayfly *Ephemera danica/vulgata* hatch. A cursory inspection under stones on the riffles revealed large numbers of Baetid nymphs, cased caddis and shrimp *Gammarus pulex*.

There was very little submerged weed present in the river, with small stands of the water moss *Fontinalis antipyretica* the only real cover provided by vegetation. The extensive tree root systems, fallen timber and the large, undercut slabs of bed-rock provided additional cover within the channel.

The river holds a stock of wild brown trout and numbers of chub, dace, eel and bullhead. It was previously an important salmon spawning stream, with 5 salmon parr caught during a recent Environment Agency (EA) electrofishing survey undertaken in 1999 (see attached results sheets). Grayling were once common in the Rea but have declined significantly over the past ten years. The electrofishing survey resulted in the capture of a single grayling. Other fish caught during the survey included 10 dace, 2 eel and 6 brown trout (length 11.9cm - 29.3 cm).

The club has not stocked any fish to the river for at least 5 years. Good catches (10+) of wild brown trout between 20cm and 30cm in length are made by syndicate members.

No water quality, water resource or macro-invertebrate data are held by the syndicate.

Statutory agencies with an interest in the river include the EA (Area fisheries office at Shrewsbury. Contact Chris Bainger on 01743 272828).

3.0 Management Recommendations

The physical structure of the Rea was generally excellent, despite past dredging activities. There were adequate lengths of habitat suitable for all lifestages of brown trout. However, the large volumes of fine sand and silt entering the river seriously impacts on the recruitment of trout and other rheophilic fish species, whilst potentially affecting the abundance and diversity of macrophytes and macroinvertebrates. These sediments enter the river in a diffuse manner throughout the reach walked and probably over much of the rest of the Rea catchment. The friable nature of the sandstone geology results in heavy erosion if the vegetation cover is removed or damaged. Mechanisms that expose the banks to increased erosion include heavy grazing by farm stock and overshadowing by riparian trees.

The NRFS stretch of the Rea has clearly been heavily grazed in the past, although there was no stock in the fields on the day of the site visit. In order to prevent damage to the banks in the future, it is recommended that consideration be given to putting the riverside fields into an agri-environment scheme such as Countryside Stewardship. These initiatives promote low level agricultural activity for the benefit of wildlife, with compensation paid to the farmer for any resulting lost income. Alternatively, grants are available for the erection of fencing to prevent stock access to the banks. If this option were considered, a suitably constructed stock watering area would need to be constructed. Details of scheme availability can be obtained from the local DEFRA office or the Farming and Wildlife Advisory Group (FWAG - contact either Mike Williams 01544 318716 or Worcester FWAG office on 01905 768913).

With regard to tree shading, it would be of great benefit if a regime of rotational coppicing/pollarding could be established alongside the Rea. The aim of this should be to decrease shading, allowing the growth of vegetation on the banks, whilst retaining valuable tree root systems. Arisings from the tree cutting could be utilised to create faggot bundles that could be used to protect eroding sections of the riverbank or for the creation of stick pile otter holts. Details of the use of faggots are provided in the Wild Trout Trust's (WTT) Guide to Improving Trout Streams sent to the syndicate. Grants for this type of work may be available through an agri-environment scheme; it is my understanding that such an agreement is in place on another section of the syndicated Rea holding. It should be noted that consent is required from the EA for any works to the bed or banks of the river or within 8m of it.

Whilst it is important to open up the tree canopy to allow greater light penetration, it is vital to allow as much large woody debris (LWD) including tree branches, fallen trees etc, to remain in the channel as possible. Provided that the LWD does not compromise flood defence interests, then it should not be removed. LWD is vital in promoting, amongst others, the sorting of gravels, the detention of sediment, the provision of habitat, both for invertebrates and fish, and pH buffering.

Brown trout recruitment can be improved by cleaning lengths of suitable spawning gravel. A regime of cleaning gravels each September should be established. This can be undertaken by either manual raking, or by the use of high-pressure water jets in order to break up compacted gravels and remove excess silt. 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.

The growth of water crowfoot *Ranunculus* can be promoted by the installation of woven willow "snow-shoes" in the channel. These simple willow structures catch small sections of *Ranunculus* and provide it with an anchor point whilst it grows.

The syndicate should ensure that it monitors water quality and water resources in the River Rea. All significant discharges from sewage treatment works and industrial premises have a statutory consent standard imposed by the EA. Compliance with these standards is regularly monitored by the EA. Results are published on a public register, available for inspection at the EA's office or by post. It is important that the club finds out the major discharges into its fishery and in the reaches of the Rea for at least 5km upstream. Compliance with statutory consent standard can then be checked on a regular (annual?) basis. Failure to comply with the standards allows the club to mount a prosecution or to claim civil damages via the Angler's Conservation Association. The EA should enforce this legislation, but have from time to time not been as rigorous in this matter as would be expected.

Water resources of the rivers can be viewed in a similar way; changes to climatic patterns have affected precipitation, whilst agricultural drainage has modified surface water run-off significantly. Again, the only practical route open to the club to influence drainage patterns is via the adoption of agri-environment schemes by landowners. The club should obtain details from the EA of all licensed abstractions affecting the Rea; clearly abstractions for a considerable distance upstream will affect river flows. The impact of groundwater abstractions should not be overlooked. These may have a significant impact on the Rea catchment.

The club should establish a good working relationship with the EA's fishery section, asking to be kept informed of any future significant applications for abstraction or discharge consents.