Western Rother – Wenham Manor Syndicate

An advisory visit carried out by the Wild Trout Trust – May 2008

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on the Wenham Manor reach of the Western Rother on 20th May 2008.

The WTT was approached by Mr Chris Sparkes, who is the secretary of the Wenham Manor Syndicate, to provide some general advice on the current status and management of their trout fishery and in particular on any opportunities for improving the wild component of their stock.

The comments and recommendations made in this report are based on the observations of the Trust's Conservation Officer, Andy Thomas, and discussions with Mr Sparkes. 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.

The Western Rother is the main tributary of the River Arun and rises from a combination of deep greensand springs near Longmoor and small streams flowing southeast from the chalk hanger near Hawkley and Emphott. The Wenham Manor beat lies approximately 2 miles to the east of Petersfield and one mile below the outfall of Petersfield Sewage Treatment Works. From here the river gently meanders eastwards through the flat sandy flood plain before joining the tidal Arun at Hardham.

Much of the Rother is characterised by the soft sand substrate, which is to be found from near its source on the heath at Longmoor, throughout its length. River bed gravels, such as they are, tend to be derived from broken outcrops of sandstone with small quantities of flint. Although strong populations of wild brown trout are to be found upstream of Petersfield, generally low densities of both trout and coarse fish are found throughout the bulk of the middle reaches, only improving on some sections where a firmer substrate and better habitats can be found.

Water quality is generally accepted to be good and the river does support a strong population of sea trout which run the lower and middle river and tend to spawn in small tributaries running north from the chalk derived South Downs. Occasional pollution incidents have been reported in the area, with a serious pollution occurring last year on a tributary called the Tillmore brook, which enters the Rother a few miles upstream.

The river is known to suffer periodically from low flows and the intensive nature of the adjacent agricultural land use can put enormous pressure on the river when large quantities of water are removed for spray irrigation. In recent years a move towards salad crop production has lead to concerns over increased siltation derived from finely tilthed soils in the flood plain and surrounding catchment and is thought to be compounded by intensive rainfall events regularly experienced during the last decade.

The Wenham Manor syndicate is a comparatively small club of approximately 20 members who lease the fishing from a local farmer and annually stock brown trout to provide adequate sport for their members. Although the fishing rights extend for approximately 2 miles, most of the fishing takes place on the top half

of the fishery. This fishery is too far upstream to enjoy any of the Rother sea trout but the river does support modest numbers of grayling and the odd chub, as well as low numbers of wild brown trout.

2. Description of the Fishery

The Wenham Manor beat is very typical of large lengths of the middle Rother. It is characterised by the steep, butter-soft sandy banks with the river itself set well down within the channel, often making bank fishing extremely difficult.

The fishing club lease the rights from a local farmer and all maintenance and management of the fishery is the syndicate's responsibility. The naturally unstable nature of the banks, which often leads to heavy erosion, with subsequent loss of marginal trees, means the syndicate is struggling to manage the work load that some might expect is required to keep the fishery in good condition.

Typical bank slip common to the Rother

The loss of marginal trees and the mobile nature of the river channel should not generally be of concern to the fishing club. The considerable quantities of large woody debris (LWD) found throughout the entire length of the fishery was a refreshing sight and is to be kept whenever possible. This is particularly important on this fishery, where the comparatively hostile nature of the sandy

substrate provides poor habitat for a diverse aquatic macroinvertabrate community. The general cover and channel morphology derived from the local erosion promoted by the woody debris is also essential in providing habitat and a refuge for both stocked and wild trout.

Debris dams can provide shape and form to the channel as well as habitats for fish and invertebrates

Some modest sized beds of aquatic plants were observed where the substrate was firm and sufficient light allowed to penetrate into the channel. Water crowfoot *Ranunculus* sp., starwort *Callitriche* sp., ribbon or strap weed *Sparganium* sp. and several species of pondweed *Potomogeton* sp. were seen, usually on the shallower sections identified as some of the most productive parts of the fishery.

Beds of submerged and emergent aquatic plants should be encouraged on this river. Although water crowfoot is synonymous with riverine trout fisheries, even the beds of sparganium and potomogeton provide valuable habitat in what is sometimes a comparatively sterile channel. River keepers regularly remove such plants on some southern rivers and are often disappointed when crowfoot fails to grow in its place. Each plant has a preferred habitat niche dependant on flow, depth, substrate and light availability and the crowfoot in particular will only flourish where all of these factors are favourable.

As the fishery is primarily dependant on stocked fish to provide sport, ensuring that there are sufficient “comfortable” lies should ensure that most will settle and take up residence post stocking. That said, there are opportunities for wild

production and mimicking some of the habitats found further upstream will help the syndicate to encourage and develop the wild component of the stock. Of critical importance here is to identify those areas where the combination of sufficient gradient and gravely substrate can be utilised to provide spawning and nursery habitat.

A shallow run supporting crowfoot and good quality trout habitat

Potential spawning site

On those sections where the weed growth was poor and there was little to promote scour or upwelling, it may be possible to improve the holding potential for trout by introducing LWD. The river is prone to heavy spates and any material introduced into the channel will need to be securely pinned to the bed

or bank to ensure it doesn't cause any additional flood risk. Tips on using LWD to promote trout habitat can be found in the WTT Wild Trout Survival guide.

A good example of a piece of LWD that is potentially providing a comfortable lie for a trout

The quantity and size of conducive spawning sites on the Wenham Manor beat was comparatively modest. It is likely that most of the wild trout found throughout the reach are derived from downstream drift from reaches further upstream. Here good quality spawning and nursery sites are relatively abundant and it is highly likely that some fish will be displaced through density dependant competition. That said, there were several areas identified that could promote spawning and provide sufficient habitat for modest numbers of juvenile trout.

Spawning success in terms of egg to fry survival is often surprisingly good on these sandy rivers where reasonable gradients are present and decent substrates are available . Where they sometimes struggle to compete with some of the chalk derived southern rivers is in terms of growth rates, which although near to average nationally, are somewhat poor compared to other local rivers.

To ensure that spawning trout are given the best chance of success, it might be worth giving the spawning riffles a rake or jet wash in the early autumn to shake out the coarse sand and give any trout willing to utilise the sites the best possible chance of success. Inspecting these sites annually in the mid December to mid January period for evidence of redds should give an indication of preferred sites and can be used as a measure of success. More redds equals more trout!

WTT Director Simon Johnson using a high pressure pump to blast silt from a potential spawning site

One possible course of action that can potentially boost trout production on rivers with limited spawning habitat is to import new spawning substrate. Care must be taken to identify suitable sites as raising river bed levels can adversly effect upstream habitats by backing up the levels and encouraging deposition.

Downstream of an exisiting structure or low weir and on a straight run of channel is often the best site to choose. The spawning riffle should be at least

20m long and have a depth of gravel of at least 30cm with the aim of ending up with a normal summer water depth of approximately 25cm.

The principle is to line the bed initially with large flint rejects and stone and then top dress with mixed angular river gravels of 15 to 50 mm. Ideally the riffle should have a gentle downstream slope of approximatly 1 in 10 but having a gentle ramp up to approximatly the front third of the riffle and then a gentle slope down over the remainder also works well. The riffle should be very slightly dished in the centre, however, in reality the gravels are often relocated following the first spate. This should not be a concern on a straight run where generally the material will lock and settle into a natural looking riffle.

Construction of spawning riffles will require the assistance of a specialist contractor and hydraulic excavator. It is highly unlikely that suitable material will be available on site or locally but gravels have been introduced into the Rother at Shopham Loop. These were obtained from quarries in the Chichester area and were deemed suitable for this river.

It is a legal requirement that some works to the river may require written Environment Agency consent prior to undertaking any works, either in-channel or within 8 metres of the bank. Introducing a new spawning riffle will require a land drainage consent. Advice can be obtained from the local Development Control Officer.

New spawning riffle

During the inspection the author identified several areas of potential concern relating to some of the activities undertaken by the riparian owner. A large portable pump was in operation abstracting water to irrigate an adjacent crop. Heavy winter rains and good recharge to the upstream aquifers should ensure decent flows throughout the summer but irrigation methods of this type have been identified as a real issue for the Rother in low flow years. Good cooperation has been brokered by the Environment Agency with some of the local land owners who have agreed to coordinate and alternate their abstraction timing, thus reducing impacts to river flows. It is hoped that the landlord is fully aware of the need to protect the river during low flow periods.

Abstracting water from the Wenham Manor beat

An example of poor practice was observed on the RB margin near to the bottom of the section examined. A section of bank has been stock fenced but unfortunetly the fence line has been placed far to close to the top of the bank. To enable cattle to be able to see the margin the bank has been subjected to an application of herbicide. This has resulted in a loss of rooted plants so vital in tying together the fragile sandy soils. Although the fencing was comparatively new, one section has already been lost to a bank collapse. Ideally the farmer should be persuaded to take the fence line back at least two metres from the top of the bank.

New fence lost to bankside erosion

Plants killed with herbicide leaving the bankside vulnerable to erosion

One area in which the syndicate could make improvements is through some sensitive tree work. The fishery as a whole is not drastically over shaded but the provision of a dappled light regime is usually best to promote in-channel weed growth and will also enable marginal plants to flourish which provides additional protection for the toe of the bank.

The marginal trees were dominated by willow and alder with some dense hawthorn. Willow and alder are both amenable to coppice and pollarding techniques, which preserves the tree and the valuable root systems but takes weight off the unstable banks. Trees such as goat willow or sallow when subjected to a low pollard often provide a low scrubby marginal habitat that both provides cover to trout but also enables valuable light to reach the centre of the channel.

Goat willow with valuable low cover. This tree will benefit from a gentle face up in the winter.

Tree works should never be undertaken during the bird nesting season. Care should also be taken not to disturb roosting bats. Low marginal overhanging branches can play a vital role in providing a supply of terrestrial food items as well as cover from predators. Leaving this rich habitat but opening up the higher canopy to allow incident light to hit the centre of the channel is the ideal balance to aim for.

3. Fish Stocks

Fishery survey data collected in 2006 obtained from the Environment Agency indicates that the reaches upstream of the Wenham Manor fishery are generally performing well with good numbers of wild brown trout recorded. Sites sampled at Penns Place and at Adhurst both produced biomasses in excess of 20 gm/sqm with densities in excess of 0.3 fish/sqm. Sites surveyed below Rogate were generally much less productive.

Currently the syndicate is reliant on stocking trout to provide sufficient sport. Stocking has been carried out using all female sterile trout in line with the Environment Agency's National Trout and Grayling Fisheries Strategy. The WTT support the use of triploids to reduce the genetic risks to wild stocks where stocking is deemed necessary.

Reports from the members have suggested that these fish have not risen to the fly so freely this season. It is possible that the lack of free rising fish this year is indicative of poor hatches of fly.

4. Conclusions

The Wenham Manor beat is located downstream of the naturally productive wild trout water found on some of the upstream reaches of the River Rother. The river is comparatively marginal for wild trout production due to its low gradient and sandy substrate. That said, there is scope for encouraging improved production of wild trout by improving spawning and nursery habitats and any enhancements carried out to provide additional holding habitats will also benefit the stocked trout, which are currently essential in providing a viable trout fishery on this reach.

5. Recommendations

- Undertake a programme of sensitive tree management, ensuring that as much LWD is retained within the channel as possible
- Implement an autumn programme of spawning improvements by raking or pump washing potential spawning sites
- Consider the possibility of creating new spawning and nursery habitats by importing and introducing new spawning substrates
- Undertake to build up an improved understanding of the needs of both wild and stocked trout with the fishery owner and other members of the syndicate.
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- Ensure that future trout stocking programmes do not adversely impact on wild stocks by keeping instantaneous stocking densities low and using sterile fish.

6. Making it happen

There is the possibility that the WTT could help the syndicate to start an enhancement programme. Physical enhancement works could be kick-started with the assistance of a WTT 'Practical Visit' (PV). PV's typically comprise a 1-3 day visit where an approved WTT 'Wet-Work' experts will complete a demonstration plot on the site to be restored. This will enable project leaders and teams to obtain on the ground training regarding the appropriate use of conservation techniques and materials, including Health & Safety equipment and requirements. This will then give projects the strongest possible start leading to successful completion of aims and objectives.

The WTT can fund the cost of labour (two/ three man team) and materials to a maximum of £1800. Recipients will be expected to cover travel and accommodation expenses of the contractor.

There is currently a big demand for practical assistance and the WTT has to prioritise exactly where it can deploy its limited resources. The Trust is always available to provide free advice and help to clubs, syndicates and landowners through guidance and linking them up with others that have had experience in improving trout fisheries.

Insert something about WTT assistance to scope a project, AV bursary (possibly to pay for prep of project spec and Bill of Quants); we have a Southern EA pot of cash for this from Lawrence. Contact EA fisheries a possible source of project funding.