Advisory Visit

River Whitewater (Wensum), Norfolk

16th September, 2009

1.0 Introduction

This report is the output of a site visit undertaken by Tim Jacklin of the Wild Trout Trust to the River Whitewater (Wensum tributary), on 16th September, 2009. Comments in this report are based on observations on the day of the site visit and discussions with Robin Bunning and Geoff Jennings.

Normal convention is applied throughout the report with respect to bank identification, i.e. the banks are designated left hand bank (LHB) or right hand bank (RHB) whilst looking downstream.

2.0 Fishery Overview

The River Whitewater is a tributary of the Wensum, draining the chalk area north of Dereham, Norfolk, and joining the Wensum near Billingford. The site visited was on Beetley Common and comprised two stocked trout lakes and an 850-metre length (single bank – LHB) of the River Whitewater. The site is controlled by Roosting Hills Trout Fishery which has about 70 members and is part of the Norfolk branch of the Salmon & Trout Association.

A small tributary (the Blackwater) enters the Whitewater at the downstream end of the reach. The Blackwater has a water take-off point which feeds the trout lakes a short distance upstream of the confluence. The lakes are also fed from groundwater springs and have an overflow into the Whitewater upstream of the Blackwater confluence.

3.0 Habitat Assessment

The river is a low gradient channel which has been widened and deepened in the past. The channel is 5 – 6 metres wide, and there are large accumulations of silt on the river bed. Aquatic plant growth was heavy at the time of the visit and the plant community was typical of lowland dredged rivers which have subsequently silted up. Submerged aquatic vegetation is dominated by species adapted to a slow-flowing or stillwater environment, and includes water lilies (*Nuphar* sp.) and submerged bur-reed (*Sparganium erectum*). Emergent aquatic vegetation is also dominated by bur-reed which is present in dense stands within the channel.

Photo 1 Over-wide channel with silty bed and high banks

Photo 2 Bur-reed (*Sparganium erectum*) has colonised large areas of the channel

Photo 3 Aquatic vegetation is more limited in shaded areas

Photo 4 Land use on the RHB is rough grazing in a wet meadow

Mr. Bunning reports increased growth of emergent aquatic vegetation this year compared with previous years. Flows were particularly low at the time of the visit following prolonged dry weather, which may be a contributory factor. It is also worth checking to see if there are any abstractions upstream of this point and whether they may be having an effect.

Where the river channel has been pinched by the stands of bur-reed, the water has scoured away the silt and exposed the gravel bed of the river. There are also limited examples of lateral scour pools on meanders, where the current has scoured a deeper hole and thrown up gravel substrate below. However there were no areas suitable for trout spawning within the main channel.

The left bank is maintained by the angling club and is mown grass with a nettle-dominated fringe alongside the river. There are few trees and bushes on this side. On the right bank there is a marginal fringe of dense, low vegetation dominated by nettles; beyond this is a fenced, low-lying, wet grazing meadow with rough grass and rushes (*Juncus* sp.) which was being grazed by sheep.

The right bank also has more trees and bushes in certain areas, including crack willow, alder, sallows and towards the downstream end of the reach, oaks. Aquatic weed growth within the channel is less vigorous in areas which are shaded by the trees.

At the downstream limit of the reach a small tributary, the Blackwater, enters on the LHB. This stream has areas of pool and riffle habitat, and some gravel areas which are suitable for trout spawning. A small proportion of the flow is abstracted as a feed to the trout lakes on site through a small diameter (approximately 8”) pipe.

Mr. Bunning reported although the river is rarely fished by members, small trout are observed within the Whitewater and it did produce a 3lb brown trout last season. He also reports seeing a dead trout of over 2lb in the higher reaches of the Blackwater, and that there is another small tributary upstream of the fishery that has gravel substrates suitable for trout spawning.

It is very likely that these small, spring-fed tributaries are vital spawning areas for trout which will then drop down into the main river. It is very important to ensure that these small tributaries are protected, and that no

damaging works are allowed to take place (such as dredging or 'ditching out'). The streams are very overgrown, but this is no bad thing in that it provides protection from predation (e.g. by herons) for both larger spawning trout and their offspring.

It is also important to ensure that adult fish have access to the full length of the streams and there are no barriers to migration such as weirs and culverts; an upstream walk should be carried out to check for such things. This could be combined with some gravel cleaning using hand tools like a garden fork.

Photo 5 The Blackwater has some reasonable habitat for trout spawning

4.0 Recommendations

- Protect the small tributaries and ensure no works detrimental to their condition are allowed to take place. Do not be too hasty to clear bankside trees, bushes and vegetation as this provides good cover and protection for fish in such small watercourses.

- Walk the tributary streams to ensure fish have free passage for as far upstream as possible. Take this opportunity to clean gravel areas on riffles by forking over to a depth of about 30 cm (12 inches) to displace fine sediments and improve trout egg survival rates. This should be done in autumn (October) prior to trout spawning.

- Check with the Environment Agency to see if there have been any increases in water abstraction upstream of the fishery which could be contributing to lower flows and increased invasion of the channel by bur-reed.

- Plan and undertake a programme of river channel rehabilitation on the Whitewater. The basis of such a project would be the creation of a two-stage channel with a narrower low-flow channel within the existing reprofiled channel to retain flood flow capacity.

  This could be achieved using the cut-and-fill technique (Figure 1). Measurements taken during the visit (Figure 2) indicate the creation of a berm would need the excavation of a cross-sectional area of approximately 1.375 m^2 of bank. As a very rough guide, if bank reprofiling were carried out over the entire 850-m length of the fishery, this would require the excavation of around 1170 m^3 of earth.

  The project could also include other habitat enhancement features including the introduction of gravel to create spawning areas, and introduction of large woody debris. Further information can be found in the Wild Trout Trust's *Chalkstream Habitat Manual*, in the chapter *Restoring Over-wide Channels.*

Please note: It is a legal requirement that all works to the river require written Environment Agency (EA) consent prior to undertaking any works, either in-channel or within 8 metres of the bank.

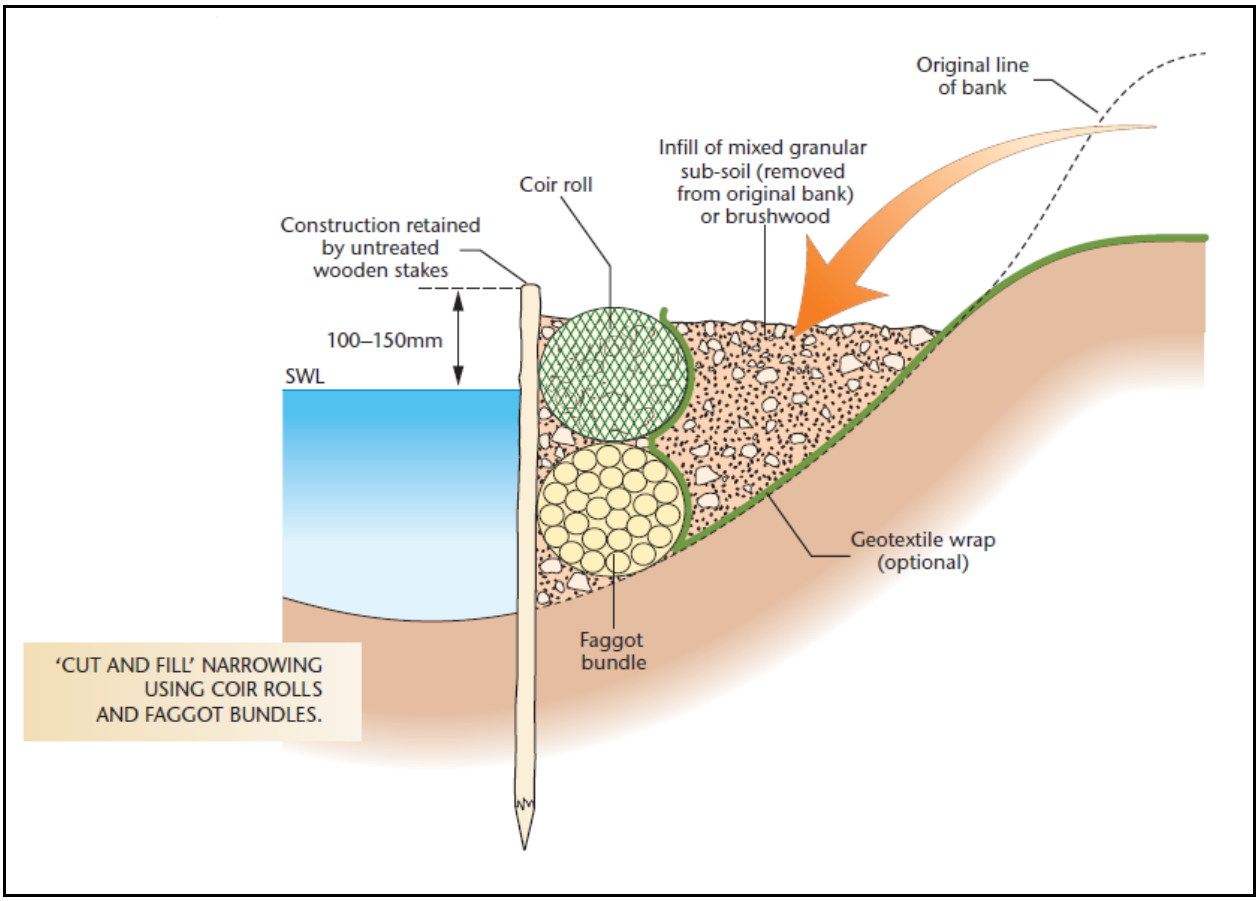

Figure 1 Cut and fill technique for creating a two-stage channel (from *The Chalkstream Habitat Manual*, Wild Trout Trust).

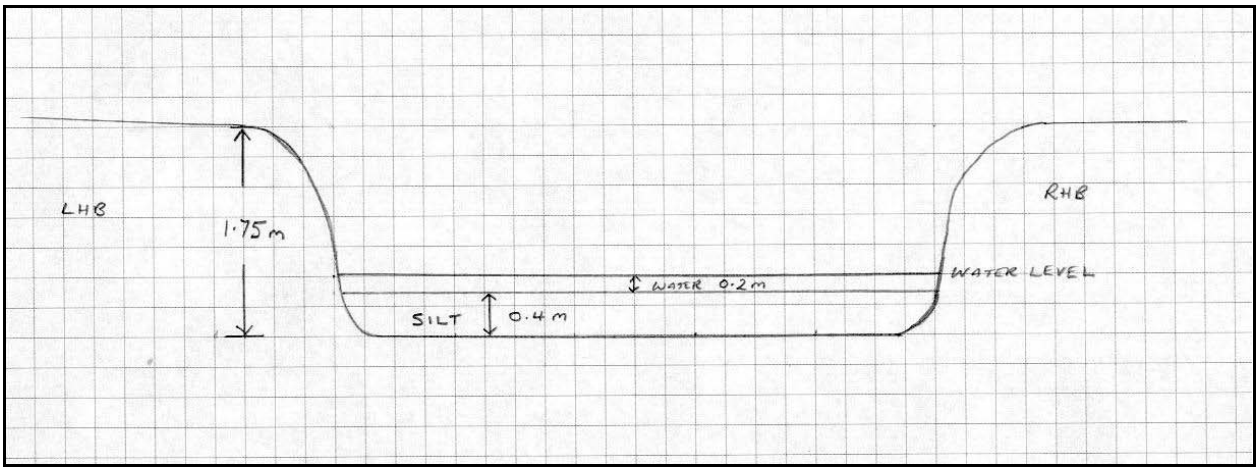

Figure 2 Typical existing cross-section of the Whitewater

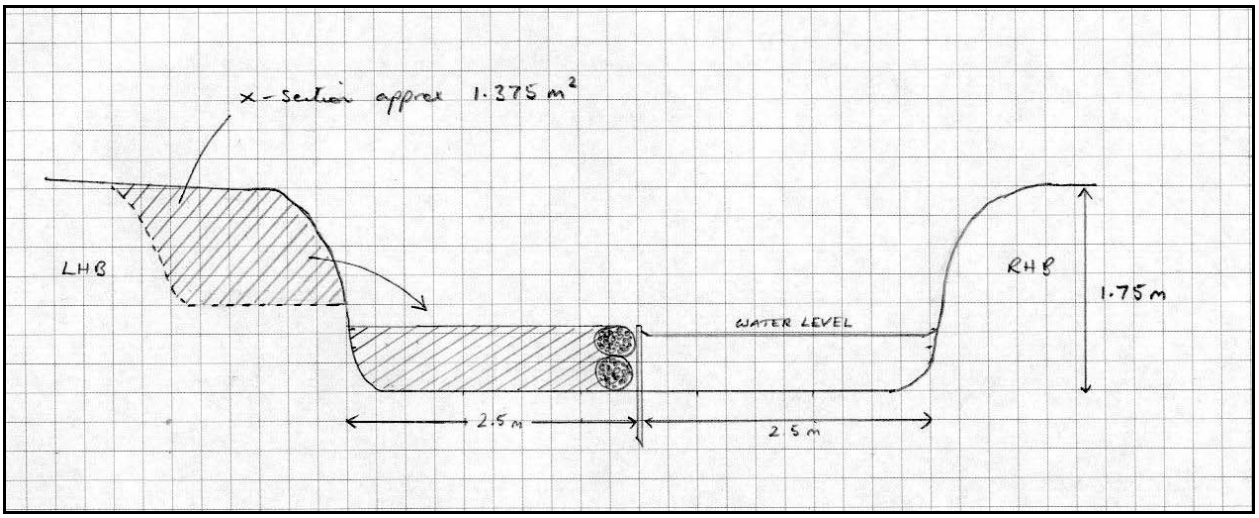

Figure 3 Potential for cut-and-fill to create a two-stage channel.

5.0 Making it Happen

This report makes a number of recommendations for improving river habitats – so what are the next steps to putting this guidance into practice? The WTT see this advisory visit as the first of three phases in delivering the improvements:

1. Advisory visit, report and supplementary guidance (*Wild Trout Survival Guide, Chalkstream Habitat Manual*)

2. Project Proposal - a detailed design of planned works including quantities and costs. This forms the basis for consultation with relevant authorities (Environment Agency, Natural England, etc.) to obtain consents for the work. It is strongly recommended that the Environment Agency is consulted prior to this to identify the scope of the project and any limitations that may apply.

3. Securing funding for the works. Funds can come from a variety of sources including club fundraising, WTT bursaries (up to £1500 seedcorn funding) or the Rods for Conservation scheme (see our website at http://www.wildtrout.org/index.php?option=com_content&task=view&id=154&Itemid=164#sagerods), and grants or partnership funds from a variety of organisations.

The WTT can provide assistance with the preparation of a project proposal and preparation of the relevant consent applications. Also if the works are being carried out to any extent by angling club volunteers (rather than contractors), then the club can apply for a WTT Practical Visit (PV).

The PV involves a visit from WTT advisors to demonstrate the relevant habitat improvement techniques. The WTT will fund the cost of labour (two-man team) and materials up to a total of £1800. Recipient clubs will be expected to cover travel and accommodation expenses of the advisors. The use of specialist plant will be by separate negotiation.

Advisors will demonstrate one or more of the following techniques that are appropriate to the site.

- Tree management (coppice, pollard, sky-lighting)
- Tree Planting
- Fencing (Installation & Repair)
- Stream Narrowing (Faggots, Coir Rolls, Spiling, Islands)
- Flow Deflectors
- Introduction of spawning substrate
- Gravel Jetting
- Introduction / Management of Woody Debris

Note: Recipients of the programme must have received a WTT AV and have obtained the appropriate consents from the Environment Agency, Natural England,etc, prior to arrangements being made to undertake the PV.

Applications for all the above should be made via **projects@wildtrout.org**

6.0 Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for the support that made this visit possible.

7.0 Disclaimer