River Allen – Allendale Centre

An Advisory visit by the Wild Trout Trust – April 2012

1. Introduction

This report is the output of a Wild Trout Trust visit undertaken on a short section of the River Allen where it runs adjacent to the Allendale Centre in Wimborne in Dorset at NGR SU 011 011. This section of the River Allen is classified as being in Good Ecological Condition under the Water Framework Directive and is identified in the Environment Agency's River Basin District plan as water body ID no. GB108043011090.

The WTT was asked by Andy Bryant, Facilities Manager for the Allendale Centre, to inspect the river with a view to providing some feedback on recent management initiatives and to provide suggestions on further measures that could be taken to improve in-channel and riparian habitat.

Comments in this report are based on observations on the day of the site visit and discussions with Andy Bryant.

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. Catchment and fishery Overview

The Allen is a delightful chalkstream that rises as a winterbourne near Monkton Up Wimborne in Dorset and flows south for approximately 16 km before joining the larger River Stour in Wimborne Minster. The name Wimborne is derived from "twin-bournes" with the oldest parts of the town located on land situated between the confluence of the Stour and the Allen.

The River Allen is a Wessex chalk stream 'gem' and has a reputation as an excellent fishery supporting good stocks of wild brown trout *Salmo trutta.* The river also supports grayling *Thymallus thymallus* and indigenous stocks of coarse fish. As recently as 1973 the river was also considered to be an important salmon *Salmo salar* spawning stream with good numbers of fish running up as far as Witchampton Mill. Since then, salmon stocks on the Stour have largely collapsed.

The section of Allen running through Wimborne is heavily modified due to urban development. Despite the obvious pressures arising from the urban setting, the section of river running through the town is known to support good stocks of fish, which in part may well be due to good quality habitat in-channel habitat for salmonids and flow loving cyprinid fish species.

A key factor to consider when discussing options for maintenance and enhancement is the presence of white-clawed crayfish *Austropotamobius pallipes*, which still thrives in the Allen. The crayfish is a protected species under Annex II of the European Habitats Directive. This species is under huge threat nationally and the Allen population represents one of the very few that still exists in the south. This section of river is also likely to support bullhead *Cottus gobio* and brook lamprey *Lampetra planeri*, two species also protected under Annex II.

3. Habitat assessment

The section of river running adjacent to the Allendale centre comprises approximately 100m of modified channel flowing through the urban centre of Wimborne. The channel is a straight shallow glide running over an unsorted gravel and fine sediment river bed. Habitat quality is enhanced near the top boundary where the channel is slightly pinched, and this has promoted elevated water velocities.

Although the channel is constrained by hard bank-side development, particularly adjacent to the public footpath running parallel with the LB, there is still a soft, semi natural toe to the banks in most areas. The RB adjacent to the Allendale Centre supports a range of marginal native and ornamental plants species. Efforts to control dense shading and open up a vista to the river have been sensitively undertaken.

Some in-channel cover for juvenile fish is to be found in central channel locations in the form of the occasional larger stone and bricks, however both marginal and in-channel cover was limited. At the time of the visit, in-channel weed growth was scarce, but it is understood that the section supports emergent ribbon weeds, which are probably a combination of common club rush, burr reed or reed sweet grass. Some small beds of submerged water crowfoot (photo 1) were seen near to the top boundary. This plant provides a high quality refuge for fish, as well as being a favoured habitat for several species of aquatic invertebrate. Opening up the canopy by removing some branches from tall river-side trees will help to promote improved crowfoot growth. One large horse chestnut tree growing out from the RB would benefit from some surgery to one or two overhanging branches. Woody material won from this operation could be usefully used to enhance in-channel habitat quality (more information in the recommendations section of this report.)

The very shallow margins in areas adjacent to the RB are potentially very valuable habitat and often rare on chalk rivers, especially in an urban context where the channel is often constricted by hard revetment. These shallow marginal zones would be even more valuable if there was improved low-level scrubby cover, particularly during the winter period when annual plants die back.

Overall the section provides reasonable habitat for juvenile fish. There are, however, opportunities to further enhance the section by enabling more light to penetrate through to the centre of the channel which will encourage weed growth. River margin habitat could also be improved by providing more low-level scrubby cover by introducing woody brash and planting some goat willow, or sallow *Salix caprea*.

Currently, the section as a whole lacks any significant variation in depth profile. Promoting a more varied riverbed topography, which in turn will create improved lies for larger adult fish and enhanced spawning opportunities is discussed in section 4.

Photo 1

4. Conclusions

A key habitat bottleneck is the lack of any significant variation in the shape of the riverbed. The flat nature of the bed and the lack of any sorting of river bed material compromises the reach as a high quality spawning site and also restricts the holding capacity for larger brood fish.

Improvements could be achieved through the introduction of several large woody debris (LWD) flow deflectors (diagram 1). These flow deflectors can be used and configured to encourage a range of natural river processes, from eroding and scouring bed material to encouraging deposition in vulnerable river margins. In an urban context, great care must be taken to ensure that any planned works do not pose an enhanced risk of flooding. The use of any deflectors must be configured in a way that does not adversely impact on flood conveyance, or pose a risk from structures breaking away and causing a blockage against downstream bridges or weirs. Formal Land Drainage Consent is required when undertaking river works and an early consultation with the Environment Agency is recommended.

The introduction of small (less than 2m) long LWD flow deflectors is unlikely to exacerbate flood risk and it is recommended that two or three deflectors are installed in the centre of the channel to promote much needed scouring of the river be. It is highly likely that the bed gravels are compacted and the crust

cemented with calcium carbonate deposits. Once installed, the river bed gravels immediately below and to the sides of the deflectors should be broken up with a large fencing spike (photo 4). This will allow the soft bed material to be blown away and the gravels to be graded by the river, creating pots to hold fish and clean gravel ramps for spawning. The LWD deflectors also provide ideal cover for crayfish.

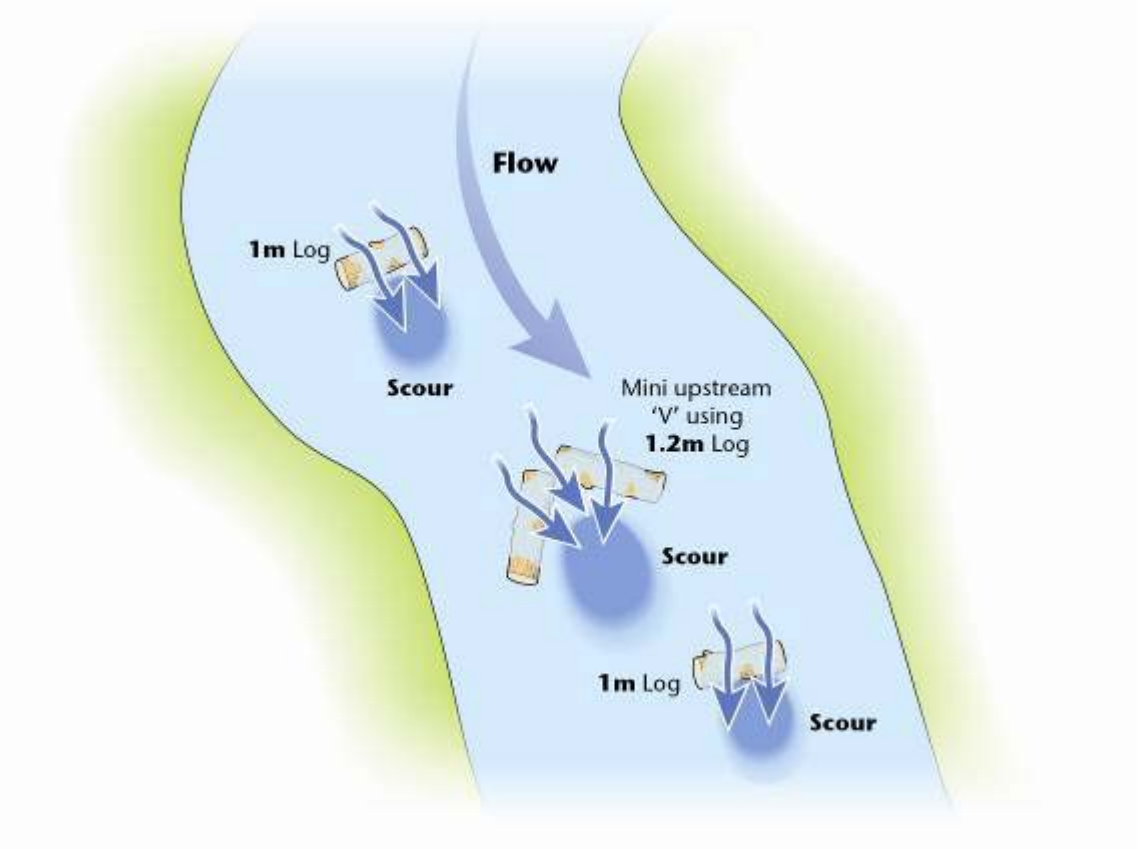

Diagram 1

Bed scour will always take place at right angles to the deflector so care should be taken to ensure that they are not configured in a way that puts pressure on the bank. The flow deflectors can be secured with chestnut stakes and wire, or they can be drilled out with an auger and nailed to the bed with sections of steel re-enforcing bar (photo 2&3). It is important to ensure that there are no service pipes or cables running beneath the riverbed before driving any stakes into the riverbed.

Photo 2

Photo 3

Photo 4

Improved cover in the shallow margins can be achieved by pegging in brash bundles (photo 5), or creating ‘tree sweepers’ by laying in small trees such as thorns and securing the trunks to either a live tree stump, or to a driven stake (photo 6). The idea is to provide a scrubby matrix of cover where small fish will feel comfortable and be safe from predators such as herons.

Additional cover for crayfish and juvenile trout can be achieved by dotting some larger flints into shallow fast flowing sections (photo7).

Photo 5

Photo 6

Photo 7

Low over hanging cover can be encouraged by planting one or two sallow whips at 45° to the water level. The whips should be pushed into the margins a little above normal winter water levels. Although these trees will require on-going maintenance, they do not grow too large and provide ideal low level cover for a range of fish species. A mature sallow is shown in photo 8.

Photo 8

5. Recommendations

- Thin the chestnut canopy and use branch material to make two or three flow deflectors.
- Break up the crust of gravels in areas adjacent to the flow deflectors to promote eroded pots in the river bed and loose ramps of clean gravel.
- Provide improved cover in the river margins with brash bundles or tree sweepers contructed from brashy trees cabled to a live trunk or stake.
- Intoduce some large flints or local stones to create lies for small fish in fast shallow sections and habitat for crayfish.
- Plant a couple of overhanging sallows to promote marginal cover.

Acknowledgement

The WTT would like to thank the Environment Agency for supporting the advisory and practical visit programmes.

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