



River Blackwater – Manor Farm



An advisory visit carried out by the Wild Trout Trust – January 2012

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on a reach of the River Blackwater adjacent to Manor Farm near Plaitford in Hampshire.

The request for the visit was made by the landowner, Hillary Harper. Comments in this report are based on observations on the day of the site visit and discussions with Ms. Harper and Ms. Penny Scott, the owner of a section of the right (southern) bank.

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 overview

The River Blackwater rises just to the east of Red Lynch on the northern fringes of the New Forest. From here it flows south easterly for approximately 16km before joining the River Test at the upstream end of its tidal range. The Test has an international reputation as one of the finest chalk stream fisheries in the world. The Blackwater, by contrast, is not a chalk stream but rises from a network of small surface fed streams and gutters running over mainly tertiary clays and gravels. The Blackwater has long been recognised as a crucially important spawning tributary to the main River Test and is thought to be the destination of choice for the bulk of the migratory sea trout (*Salmo trutta*) that enter the system. Unlike the River Test, the Blackwater does not enjoy any high level statutory protection as a Site of Special Scientific Interest (SSSI).

Hampshire is widely regarded as a mecca for trout anglers due to the world famous chalk stream fisheries that support exceptionally good populations of larger than average brown trout. The Blackwater is not a 'base rich' chalk stream but an acidic spate river. Spate rivers are noted for having huge variations in flow with a rapid response to rainfall, and are not inherently stable like chalk streams which are fed largely from groundwater. They are often naturally low in nutrients and trout in such rivers can often be numerous but of a small average size. A proportion of the trout residing in streams like the Blackwater have developed a life strategy that relies on a migration to sea to feed and grow before returning to spawn. This anadromous lifestyle allows them to reach a size that will produce a large number of eggs and therefore give the population a better chance of success (sea trout are often predominantly hen fish and will mate with much smaller males, including small resident brown trout). Fish that leave the Blackwater after two or three years as 4 to 6 inch trout smolts, spend one to three years at sea before returning as large (many in excess of 10lb in weight) adult sea trout.

It is highly likely that a large proportion of the trout that are naturally produced on the Manor Farm water will eventually migrate to sea. Smolt migrations

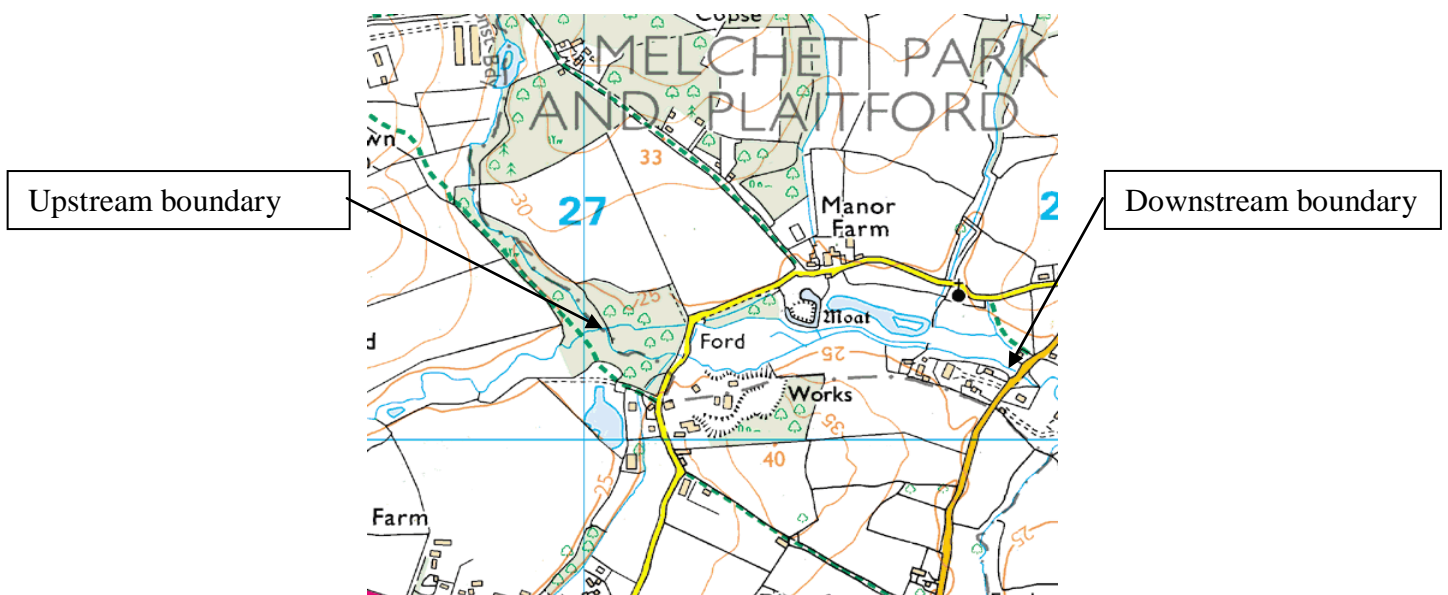
generally take place at night during April, and sea trout may return at any time during the late summer and autumn to spawn in December.

3. Fishery overview

The section of river at Manor Farm lies near the top end of the Blackwater catchment and is not currently used for fishery purposes. The upper reaches of the Blackwater are known to support populations of brown trout (*Salmo trutta*) as well a number of conservationally designated species such as bullhead (*Cottus gobio*) and brook lamprey (*Lampetra planeri*). The river also supports eel (*Anguilla anguilla*), which in recent years have seen stocks diminished in line with a European-wide crash in eel numbers. The Blackwater also holds some coarse fish, which are generally regarded as escapees from the plethora of small on- and off-line lakes that are dotted throughout the Blackwater valley. Some recruitment of flow loving coarse fish species occurs in the lower reaches of the river. The Blackwater is best known for the significant numbers of sea trout that run the river in the autumn and early winter on spawning migrations.

It is believed that in a wet year, sea trout will penetrate up to the Manor Farm beat and beyond. It is understood that there are several major impoundments located further downstream that act a significant barrier to upstream migration. The Environment Agency (EA) have plans in place to build fish passes on at least two of these structures, which could make a significant difference to the number of sea trout that penetrate upstream to the Manor Farm beats.

The request for advice and information regarding the management and potential fishery value of the river is largely driven by a desire by the owners to look after and nurture the conservation value of the river corridor as a whole.



4. Habitat assessment.

The Blackwater adjacent to Manor Farm supports a wide range of good quality salmonid fish habitat. For wild trout to flourish, they require a range of habitats for all life stages, including:

- shallow glide habitat flowing over a bed of loose clean gravel for spawning,
- shallow broken riffles and well covered margins as fry and parr habitat,
- deeper pools and runs for adult fish to reside safely.

The Manor Farm beat has it all.



A typical section of the Blackwater. The water quality is considered to be very good and is naturally slightly "tea" coloured due to the precipitation of iron from local springs.

Long sections of the river sit within a deeply incised channel. On some sections this might be due to the natural characteristics of the channel but it is also likely to be due to previous dredging work, carried out on most rivers in the south during the period leading up to and after the Second World War. The section at Manor Farm also skirts an ancient moat and it is thought that the river here has been re-aligned, possibly during medieval times.

Through most of the section the river sits adjacent to grazing meadows with a comparatively heavily wooded buffer strip, mostly fenced from grazing animals. The large numbers of trees coupled with the comparatively steep banks results in a heavily shaded channel. Recent work carried out by the Forestry

Commission on New Forest Streams has highlighted the importance of tree shading to trout populations by mediating temperature rises during warm sunny periods. Trout are a cool water fish and in spate streams, more rather than less shade is considered to be valuable. That said, it is understood that some heavily shaded streams are less productive than those where there is a dappled light and shade regime. Advice for fishery managers suggest that 60% shade to 40% light is the best regime to aim for. As a general rule of thumb, low level shading over pool habitat and shafts of light hitting shallow riffle habitat is likely to produce the best environment for trout.



Extensive alder root systems proving important cover for fish, as well as promoting some elevated water velocities through the pinched gap in mid-channel. Superb habitat

On a few sections there was extensive alder (*Alnus glutinosa*) tree cover. Alders have wonderful root systems that provide habitats for fish and are also extremely useful in binding the banks together and reducing bank erosion. Without any management alder trees can become tall and leggy and are occasionally in danger of all falling at the same time. If some tree work is to be contemplated then coppicing small random blocks of alder will promote new growth and preserve the trees. Do not coppice long swathes of alder as this will result in multi-stemmed re-growth, which may well result in even heavier shading and a maintenance liability.

Significant conservation work has already been undertaken, with the provision of a substantial buffer zone between the top of the river bank and the start of the meadows. These areas are enormously valuable for native plants and wildlife and the effort already undertaken to control non native plants, such as Himalayan Balsam, will help native species to flourish and improve bank stability. The marginal zones are also incredibly important as a refuge area for

the adult phase of many of the aquatic river invertebrates such as mayflies, caddis fly (sedges) and alder flies.



A nice wide buffer strip between river and meadow



Evidence of recent tree works undertaken on Penny Scott's land. Some woody material left to rot in the channel is considered to be extremely valuable.

A considerable debris dam has started to form on one section of the river. Large woody debris (LWD) within the river channel is a key component of good river habitat.

LWD is a general term referring to all wood naturally occurring in streams including branches, stumps and logs. Almost all LWD in streams is derived from trees located within the riparian corridor. Streams with adequate LWD tend to have greater habitat diversity, a natural meandering shape and greater resistance to high water events. Therefore LWD is an essential component of a healthy stream's ecology and is beneficial in maintaining the diversity of biological communities and physical habitat.

Traditionally, many land managers and riparian owners have treated LWD in streams as a nuisance and have removed it, often with uncertain consequences. Stream clearance can reduce the amount of organic material necessary to support the aquatic food web, remove vital in-stream habitats that fish will utilise for shelter and spawning and reduce the level of erosion resistance provided against high flows. In addition, LWD improves the stream structure by enhancing the substrate and diverting the stream current in such a way that pools and spawning riffles are likely to develop. A stream with a heterogeneous substrate and pools and riffles is ideal for benthic (bottom dwelling) organisms as well as for fish species like wild trout.

Very occasionally some debris dams do get a little too large and the tell tale signs are when the water no longer percolates through and under the branches but just flows over the top. When the underside of the debris dam becomes sealed with leaf litter and sediment then the height of the river bed upstream of the structure can start to rise as sediment is deposited in the naturally impounded section of river. In extreme cases these dams will also restrict access for migrating fish. Cutting the odd strategic branch will help to ensure that the debris dam does not become a problem.



The beginnings of a substantial debris dam.



First class spawning habitat. Unlike on main river Test, the gravel quality on the Blackwater is ideal for trout spawning. The lack of calcium and vigorous spate flows ensure that the seams of gravel that are present are loose and sediment free.

4. Conclusions

Overall habitat quality on the Manor Farm beat of the Blackwater is very good for trout. The stream is an absolute delight and supports the full range of habitat types required to sustain a healthy trout population.

Only one or two small trout were seen on the day but for every one seen there will be a hundred that successfully hide! There is no doubt that the stream also has some value as a small, low-key fishery. It will not sustain lots of angling pressure but I believe that any small stream wild trout enthusiast would enjoy, and even be prepared to pay for a few hours fishing on this delightful stretch. If the EA can successfully improve access for migrating sea trout downstream, then there might even be the chance of a sea trout at the back end of the season in September or October following a decent lift in water levels.

On the downside, the river here will be naturally nutrient poor, slightly acidic and comparatively unproductive in terms of invertebrate food sources. The river is, however, well supplied with plenty of over-hanging tree branches which will supply sources of terrestrial invertebrates, as well as the leaf litter and coarse woody debris that is so important as a primary source of food for various species of aquatic invertebrate. Resident trout will be small but beautifully formed!

Some concern was expressed over the possible impacts of the ford, which crosses the river near to the top boundary. A good method of assessing any

possible water quality issues associated with the ford, or possibly low level pollution from the nursery located upstream, is to undertake an occasional “kick” sample. This involves using a fine mesh invertebrate net and kick/sweeping a shallow patch of river bed to sample aquatic insects. The methodology is widely employed as part of the Anglers Monitoring Initiative and more information is available from the River Fly Partnership at www.riverflies.org

8. Recommendations

- Continue with the current low-key maintenance regime.
- Aim for a dappled light and shade regime of 60% shade to 40% light.
- Do not coppice too many alders at once.
- Discuss progress on fish pass work with the local EA Fisheries Officer.
- Take a relaxed attitude towards fallen woody material within the channel but monitor any significant debris dams. Intervene if the dam becomes sealed and the bed level upstream starts to rise.
- Continue to keep on top of Himalayan balsam.
- Invite friends and family to have a try at small stream trout fishing. The stream is an asset and many people would love to have access.
- Explore options for self-monitoring of water quality through the River Fly Partnership.

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. Any modifications to hard defences will require a land drainage consent on any river designated as “main river”. Advice can be obtained from the EA’s Development Control Officer.

7. Making it happen

There is the possibility that the WTT could help to start an enhancement project. We could potentially help to draw up a project proposal (PP) which could be used to support any application for Land Drainage Consent. The PP might also be used as a document to be shared with potential partners as a vehicle for raising project funding.

Alternatively, physical enhancement works could be kick-started with the assistance of a WTT ‘Practical Visit’ (PV). This approach is probably more

appropriate for works to the side carriers. PV's typically comprise a 1-3 day visit where 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.

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.

Acknowledgement

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

Disclaimer

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