River Winn – Higham Farm, Bells Yew Green.

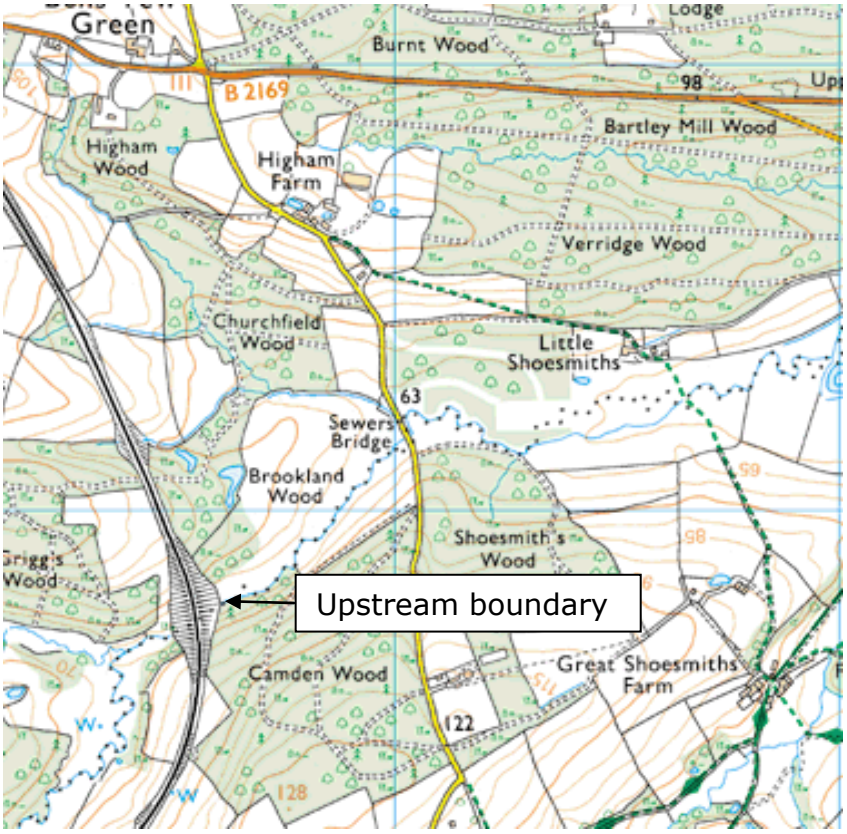
An advisory visit carried out by the Wild Trout Trust – October 2012

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on a 1.5km stretch of the River Winn, a second order tributary of the River Medway in Kent (NGR TQ 620 351). This section of river is owned by John and Sarah Hodson.

The request for the visit was made by the owners, who are keen to sympathetically manage their river and to explore opportunities for the development of a wild brown trout (*Salmo trutta*) fishery. Comments in this report are based on observations on the day of the site visit and discussions with the owners.

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 Winn is an upper tributary of the River Teise which is a tributary of the River Medway. This tributary is largely unaffected by the significant modifications to the River Teise which were carried out in the 1950s further downstream near Horsmonden. The stream is upstream of the reservoir at Bewl, which discharges into the River Teise via the River Bewl. Although there are historic mills and forges in the area (for example, in and around Frant), the stream on this stretch is apparently not significantly modified by man – an unusual situation in the South East.

The underlying geology in the catchment is sandstone and mudstone with superficial deposits of alluvium (clays, silt, sand and gravel).

Land use in the immediate catchment of the stream appears to be very benign with areas of deciduous woodland and pasture with a light grazing regime.
The gradient results in active natural forces of erosion and deposition, and the varied channel morphology reflects this.

The stream is not identified as a waterbody in the Water Framework Directive. The nearest site is downstream at the Bartley Mill stream, which is identified as 'heavily modified' - a description that does apply to this stream.

Bartley Mill Stream		
		View data
Waterbody ID	GB106040018240	
Waterbody Name	Bartley Mill Stream	
Management Catchment	Medway	
River Basin District	Thames	
Typology Description	Low, Small, Siliceous	
Hydromorphological Status	Heavily Modified	
Current Ecological Quality	Moderate Potential	
Current Chemical Quality	Does Not Require Assessment	
2015 Predicted Ecological Quality	Moderate Potential	
2015 Predicted Chemical Quality	Does Not Require Assessment	
Overall Risk	At Risk	
Protected Area	Yes	
Number of Measures Listed (waterbody level only)	-	

3. Habitat assessment

In summary, the quality of the in-stream habitat is excellent. The gradient and flows have resulted in the ideal sequence of pools, riffles and glides, providing habitat for all life stages of trout. The following photographs and comments illustrate some of the key habitat features on this stream.

Adult pool habitat:

A pool that has formed on the outside of a bend. A very good holding spot for adult trout

The twigs and branches at water level provide good overhead cover to this pool, making trout feel secure from predators. The roots of the tree will provide a bolt hole and resting lie for adult trout.

Bank-side trees:

Alders on the river bank have good root systems which form excellent refuges and resting lies for trout. The canopy level shade helps to keep water in the pools cool during summer droughts. Too much shade can be an issue and will limit the growth of in-river plants and invertebrates. A mix of 50/50 dappled light and shade is a good yardstick, which means some coppicing would be beneficial in the shady stretches, particularly on the south facing bank.

Spawning habitat:

Outcrops of ironstone, formed into gravels, provide good spawning opportunities for trout. Trout like to spawn in loose gravel, free from silt and with a good flow of water. Spawning gravels can be 5mm-50mm in size, with smaller fish preferring smaller gravels.

Juvenile habitat:

Juvenile trout will hold in riffles like this. Any ‘brashy’ cover or grasses or sedges that have folded into the margins should be retained as they will protect juveniles from predation, particularly from herons and egrets who like a clear ‘walkway’ into the river. More cover can be added in bare bank areas by securing brash bundles to the bank.

Woody Debris:

Naturally fallen branches, trees and tree roots add complexity to the habitat, helping to scour pools and sort gravels as well as providing extra cover from predation. Woody debris and accumulated leaf litter is also the food source for detritus eating invertebrates such as freshwater shrimp (*Gammarus)* - a key part of the staple diet for trout.

Many landowners are concerned about fallen trees in a river and are naturally inclined to remove any large fallen trees. However, large woody debris is part of the natural process of change in a river. A fallen tree may scour a pool or erode a bank over time. This is a positive process and helps to create the complexity of habitat that trout and other river wildlife require. If there are concerns over the excessive erosion of a bank, or if the woody debris poses a risk of blocking a bridge or culvert, then consider repositioning the tree and securing it. Remove it only as a last resort. Information on how to safely secure large woody debris is described in our habitat manuals and downloadable as a PDF from the WTT website library. A series of short videos on the website demonstrate the techniques.

This is a good example of a log providing good cover for trout. Positioning and pinning naturally fallen woody debris in this way is particularly effective on riffles to provide cover for juvenile trout.

Culvert:

The one section on the reach surveyed which showed the heavy influence of man was at the very top of the reach. All trout (not just sea trout) migrate upstream to spawn and this culvert under the railway embankment may be a barrier to migration. The culverted section appeared relatively short and not excessively steep, so is probably not a significant issue.

Inappropriate bank protection:

Corrugated tin used as bank defence is inappropriate as it is unnatural and biologically sterile, and often ineffective as the river in spate will exploit any weakness and cut behind the metal. More importantly in this section below the Sewer Bridge, there appear to be no erosion issues to worry about, so we would recommend removing it.

A good way of regularly monitoring the water quality is to monitor the quantity and variety of invertebrate species in the river as they rapidly reflect any decline in water quality. Carrying out a periodic "kick sweep" sample at two or three locations will provide data and evidence as well as providing an interesting insight into the ecology of the river. The Riverfly Partnership offers advice and training via the River Monitoring Initiative. Further information can be obtained at:www.riverflies.org

The habitat below the Sewer Bridge is generally excellent!

Himalayan balsam

The non-native plant Himalayan balsam *Impatiens glandulifera* was present throughout this reach at moderate levels. This non-native plant is undesirable because its suppression of other ground vegetation, coupled with its winter die back, combine to leave extensive areas of bare bank, contributing to excessive erosion. The control of Himalayan balsam can be achieved by physical or chemical means:

Physical Control

The main method of control, and usually the most appropriate, is pulling plants by the root before they flower and set seed (usually in June or July). Working parties are the best means of doing this.

Grazing access appears to work in some areas. This could be continued, but needs to be carefully controlled and balanced with preventing overgrazing of desirable species, damage to coppice re-growth or damage to river banks. Access in late spring or early summer before the balsam has flowered would be ideal. In areas inaccessible to livestock, physical or chemical control is recommended.

Chemical Control

Before using weedkillers alongside waterways it is necessary to contact the Environment Agency and obtain their written consent. It is recommended to only use suitably qualified contractors.

Himalayan balsam can be controlled with a weedkiller based on glyphosate, such as Roundup. Glyphosate is a non-selective, systemic weedkiller that is applied to the foliage. It is rendered inactive on contact with the soil or water, so there is no risk of damage to the roots of nearby plants or plants in the water, but care must be taken that the spray doesn't drift onto their foliage. Glyphosate is most effective when weed growth is vigorous. This usually occurs at flowering stage but before die-back begins; with most weeds, this is not earlier than mid-summer.

It may take a couple of seasons to obtain good control due to the germination of more weed seedlings.

Himalayan balsam flower. Easy to hand pull prior to setting seed pods.

Himalayan balsam can rapidily shade out other native plants leaving banks vulnerable to winter erosion.

5. Fishery potential

This section of Winn would be of interest to any wild trout enthusiast. Currently the river would present a real challenge to even the most experienced fly fisherman; however, with a little light tree work and repositioning of in-channel woody debris the river would be perfectly fishable, even for a comparative beginner. The river would not be able to sustain intense angling pressure but good quality sport could be expected for any competent fly fisherman provided that the river is not over fished. Angling should ideally be restricted to two or three days a week at the most.

Any fishing activity would need to be strictly controlled and although some bait fishing tactics might be acceptable on rare occasions, particularly for children who may not be able to wade or fly fish, the trout fishing would be best protected if the method was restricted to fly only on a "catch-and-release" basis. This is perfectly acceptable to most modern trout anglers, who enjoy the challenge of catching a wild fish on the fly and are not necessarily interested in turning their catch into a meal. With fly fishing and catch-and-release tactics the fishery can sustain regular visits. Bait fishing (e.g. with worms) has the major disadvantage that trout tend to swallow the bait and become deeply hooked, leading to high rates of mortality post-capture, even where catch-and-release fishing is intended.

Fly fishing for brown trout can commence from 3rd April, with the season ending on the 30th October. Anglers would need to be in possession of a valid Environment Agency rod licence (available on-line, or from a local post office) but the responsibility for complying with angling legislation is with the angler and not with the fishery owner. Further information about the local EA byelaws is available via the EA website.

6. Recommendations

- Carry out some coppicing of alders, especially adjacent to shallow riffle and glide habitat. Use woody material won from tree work to secure into the channel to improve habitat. Further information on all aspects of river management can be found in various WTT publications at www.wiltrout.org

- Continue with efforts to eradicate Himalayan balsam.

- Carry out some trial angling sessions to gain useful feedback on fishery performance

- Maintain a tight control on angling access and fishing methods and ensure the river is not fished too often.

- Consider undertaking some monitoring of water quality by carrying out occasional surveys of invertebrate communities.

Acknowledgement

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

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