



## **Stanbridge Stream – Rother Tributary**



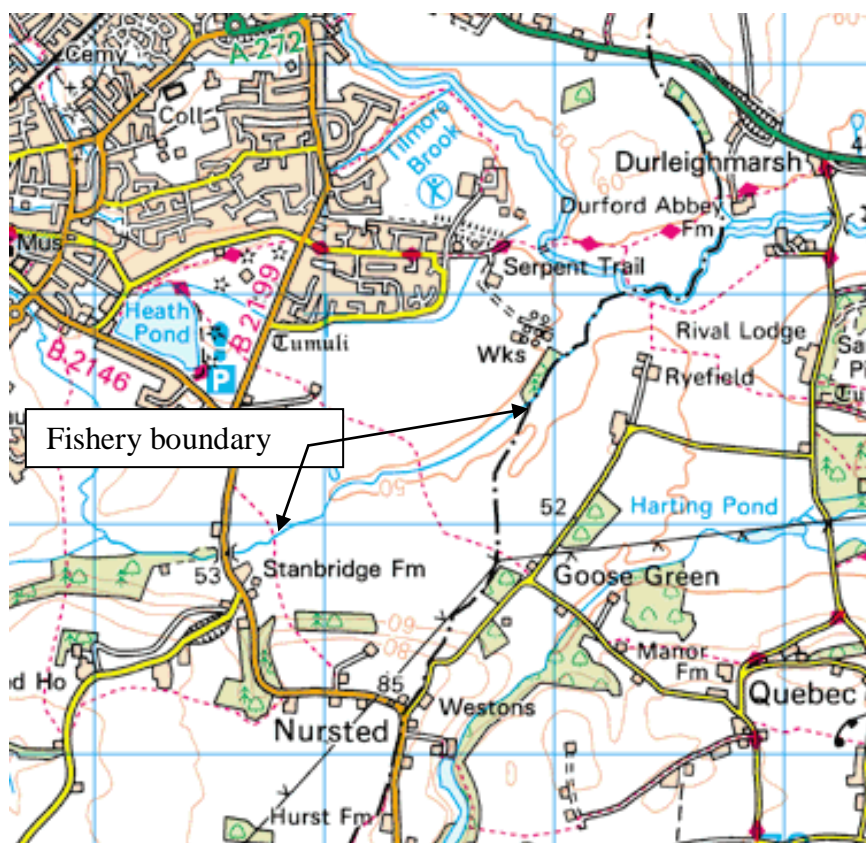
**An advisory visit carried out by the Wild Trout Trust – May 2013**

## 1. Introduction

This report is the output of a Wild Trout Trust Advisory Visit (AV) undertaken on a 1.5-km section of the Stanbridge Stream, also locally known as the Criddle. The Stanbridge Stream is a tributary of the Western Rother and the reach inspected ran from National Grid Reference SU 758219 down to SU 768225.

The request for the visit was made by Greg Adlam, who along with his father, lease sporting rights from the land owner at Stanbridge Farm. Mr Adlam is interested in exploring the possibility of developing this Western Rother tributary as a possible site for a trout fishery. Comments in this report are based on observations on the day of the site visit and discussions with Mr Adlam.

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.



Stanbridge Stream Site Map

## 2. Catchment overview

The Stanbridge Stream has been designated as being in “Moderate Status” under the Water Framework Directive (WFD). The middle and lower Rother are failing WFD targets for siltation pressures and have impoverished fish communities.

Stanbridge Stream		
		<a href="#">View data</a>
<b>Waterbody ID</b>	GB107041012790	
<b>Waterbody Name</b>	Stanbridge Stream	
<b>Management Catchment</b>	Arun and Western Streams	
<b>River Basin District</b>	South East	
<b>Typology Description</b>	Low, Small, Calcareous	
<b>Hydromorphological Status</b>	Not Designated A/HMWB	
<b>Current Ecological Quality</b>	Moderate Status	
<b>Current Chemical Quality</b>	Does Not Require Assessment	
<b>2015 Predicted Ecological Quality</b>	Moderate Status	
<b>2015 Predicted Chemical Quality</b>	Does Not Require Assessment	
<b>Overall Risk</b>	At Risk	
<b>Protected Area</b>	Yes	
<b>Number of Measures Listed (waterbody level only)</b>	3	

Summary of Water Framework Directive information for the River Rother taken from Environment Agency (EA) web site

The Western Rother is the main tributary of the River Arun and rises from the chalk hanger near Hawkley. The Rother is augmented by a number of small streams, including the Stanbridge Stream, that percolate from springs rising from the chalk to the west and south, as well as springs that rise from the greensand ridge to the north. The Rother then flows due east to join the Arun at Hardham at the head of the tidal river.

Much of the Rother is characterised by a soft sand substrate, a function of the local greensand geology. River bed gravels are relatively scarce. Those that are present tend to be derived from two principle sources: either from broken outcrops of sandstone, or from the small quantities of flint that have eroded from the streams that drain the chalk slopes. 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 through the middle reaches where the substrate is quite soft and habitat relatively uniform. However, localised sections that possess a firmer substrate and more varied habitat support better fish populations.

The Rother supports a good population of migratory sea trout which run the lower and middle river and tend to spawn in small tributaries. Access all the way to Petersfield is extremely difficult as numerous weirs and milling structures block and delay upstream migration. Some fish have been reported as far upstream as Sheet following a high flow autumn so it possible that the odd sea trout has found its way into the Standbridge Stream.

Water quality is generally good, particularly above Petersfield. Occasional pollution incidents have been reported in the area, with a serious incident occurring a few years ago on the Tillmore Brook, which enters the Rother a short distance downstream of Sheet.

The main river suffers periodically from low flows, and the intensive nature of agricultural land use downstream of Petersfield can put enormous pressure on the river. Large quantities of water are removed for spray irrigation and in recent years intensive arable and salad crop production has led to concerns over increased siltation derived from finely tilled soils in the flood plain and surrounding valley slopes. The huge quantities of fine sediment finding their way into the Rother are thought to be compounded by intensive rainfall events regularly experienced during the last decade.

### **3. Local Fishery Overview**

There is no doubt that this stream, like several other Rother tributaries, plays a critically important role as a spawning and nursery site. This stream will be providing a regular trickle of both coarse fish and wild trout *Salmo trutta* into a section of the main Rother where high quality spawning and nursery sites are at a premium. Good access for fish wishing to migrate both up and downstream are therefore essential to the health of both the stream and the main river.

Very limited information is available regarding fish communities residing within the Stanbridge stream. Brown trout and chub (*Leuciscus cephalus*) have been captured in the past and it is thought that roach (*Rutilus rutilus*) are also present. The latter, potentially along with other still water species may well have been flushed from a connected still water that is located on the Buriton arm of the Stanbridge Stream a short distance upstream.

It is highly likely that this lower section of the Standbridge Stream will support a similar fish fauna to the Western Rother and therefore the reach is also likely to support eel (*Anguilla anguilla*), Bullhead (*Cottus gobio*) and Brook Lamprey (*Lampetra planeri*), all of which are important conservation species. The Rother locally also supports a small grayling (*Thymallus thymallus*) population as well as a range of other coarse fish species.

A single fishery survey was carried out in 2001 by the Environment Agency on the Standbridge Stream upstream of the B2146 road crossing. A 150-m section of stream was surveyed and produced 41 trout with an average length of 22cm, with a density of 1 trout per 9.4 m<sup>2</sup> of channel. This is considered to be indicative of a very healthy population.

#### **4. Habitat assessment**

The Stanbridge Stream supports some reasonably good quality habitat for all trout life stages. The stream has a gentle meandering plan-form and a varied bed topography of pool, riffle and glide. The stream is however deeply incised (photo 1) in places; a legacy of old land drainage works, and sits well down with comparatively steep sided banks. This restricts the amount of sunlight reaching the river bed, which in turn will impact on the streams productivity.



Photo 1. Typical section of Stanbridge stream with comparatively steep, vertical banks

The stream has a gentle gradient but there is sufficient stream power to generate some light bank erosion.

Outcrops of eroded river gravels (photo 2) were present although not numerous. It is thought there are sufficient spawning sites to populate the reach with a viable wild trout population. Optimal spawning sites are more prevalent in the middle and lower reaches of the beat and ensuring that there is a least one good spawning site right at the upstream end of the fishery would ensure that all reaches are kept well topped up with wild fish. This is discussed in more detail in the recommendations section of this report.

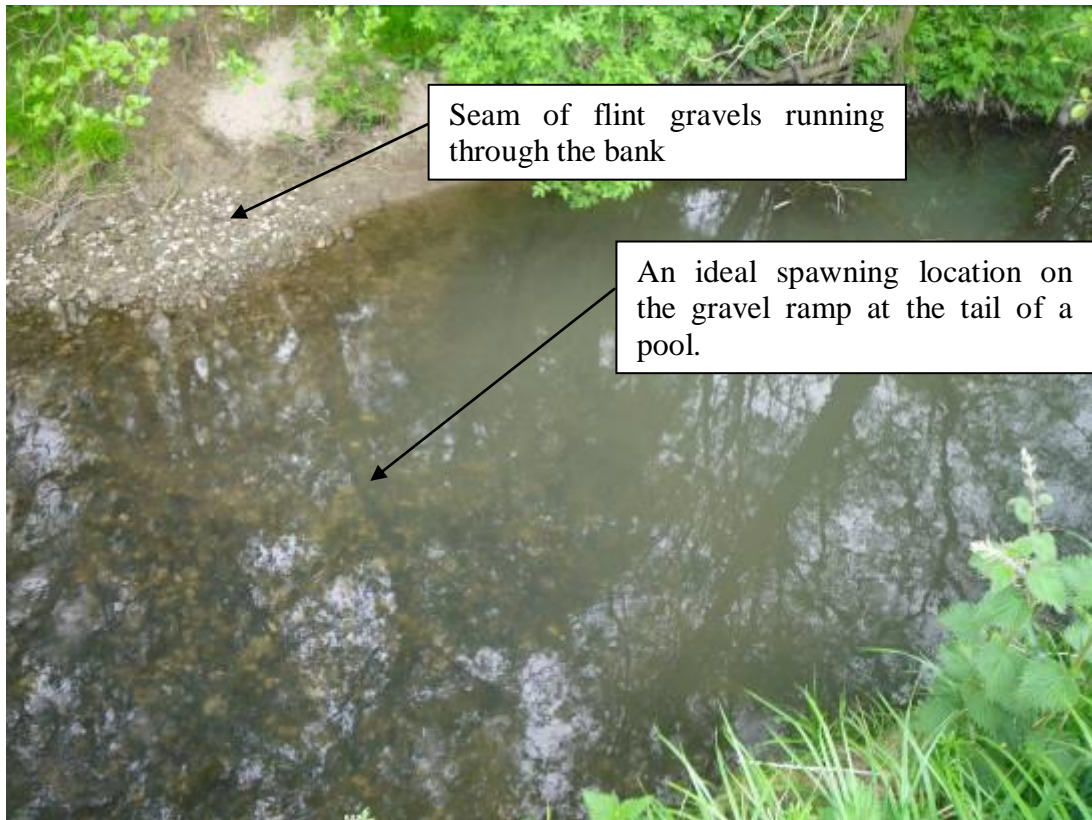


Photo 2. A pool rising up over a shallow ramp of eroded gravels. Good spawning location

There were numerous small pools, ideal for holding adult trout. Many of these pools work well, due to the presence of low, overhanging cover. The overhanging cover helps to provide fish with some security from avian predators and are sites that are likely to be favoured by the larger adult fish. Brown trout are very territorial and in such a small stream there may well be just a single fish defending each pool.

A careful balancing act is required when considering how to manage the riparian cover on such a small stream. Removing the very odd branch to facilitate a cast is all that is needed. If too much of the cover is removed then the trout may well vacate the lie in search for one with more cover.



Photo 3. An example of a good holding pool for adult trout. A pinched neck into the pool provides elevated water velocities which stop the pool from silting up and which carry food items into the lie. The low shading provided by the willow makes this a safe and attractive pool for a trout.



Photo 4. Another good lie for trout just downstream of a swift shallow run. Easing out the fence post and removing a small amount of the overhanging cover to facilitate a cast is acceptable. As much water-level cover as possible should be retained.

Several long sections of channel were devoid of any significant shading (photo 5). Some cover for fish was available via undercut banks. Planting the odd sallow or thorn bush to promote low scrubby cover will make these sections more attractive for fish.



Photo 5. Open section like this would benefit from some planting with occasional low scrubby trees.

Some good quality habitat was provided by alder tree root systems (photo 6). On sections where tree cover and associated root systems are absent, improved cover can be created by importing large woody debris (LWD) and coarse woody debris (CWD).

The presence of LWD has been shown to be extremely important in several respects:

- An increase in the variety of flow patterns, depths and localised velocities.
- Development of high in-channel physical habitat diversity
- Significant benefits to the control of run-off at the catchment scale. Woody Debris helps regulate the energy of running water by decreasing the velocity. Thus the 'travel time' of water across the catchment is increased.

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 by 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. This is often unnecessary and harmful: 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.

CWD is valuable because it often provides a matrix of submerged cover, similar to that provided by tree root systems. Laying and securing CWD into the toe of a stream margin can help to stabilize eroding banks and provide a safe bolt hole for a small fish.

Details on how to manage and use woody debris can be found in the WTT Habitat Manuals and in the Wild Trout Survival Guide, all available via the WTT website at [www.wildtrout.org](http://www.wildtrout.org)



Photo 6. Submerged alder roots providing good quality micro habitat for juvenile trout.

#### **4. Angling opportunities**

The angling potential of this stream is obviously limited because of its physical size. At the time of the site visit, the stream was flowing well following an above average year for rainfall. As the season progresses, flow will probably drop away and access for viable fly fishing may well become much more difficult. The best opportunities for fly fishing will therefore be in the spring and early summer, with high summer and back end fishing much more difficult.

A careful balance will need to be struck between opening up sections to fly-fishing and ensuring that there is sufficient habitat to hold wild fish. A sustainable approach is to maintain a balance of plenty of low and in-channel cover whilst trimming out the odd branch to facilitate a cast into likely looking holding pools.

The stream would not be able to sustain intense angling pressure but some good sport could be expected provided that the river is not over fished. Angling should ideally be restricted to two or three days a week, for a maximum of two rods at any one time. The fishing opportunities would need to be strictly controlled and 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 taking any fish for the table. With fly fishing and catch-and-release tactics the stream will be able to sustain some regular angling activity.

Fly fishing for brown trout can commence from 3<sup>rd</sup> April, with the season ending on the 30<sup>th</sup> 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. It is however helpful if the fishery owner is aware of the local byelaws and can provide at least some information. Further information about the local EA byelaws is available via the EA website.

#### **5. Trout stocking**

There was some debate about the options for stocking the fishery with farm reared brown trout. As the stream is physically very small, realistically a 10" fish would be a good one and a 12" trout a monster. The 2001 EA survey did produce fish of this size and even a modest sized wild trout can provide tremendous sport on a light fly rod.

Farm-reared trout are expensive and will require EA consent for introduction. The EA is enforcing the mandatory use of all female sterile (triploid) stocks for introductions into rivers and streams in an attempt to protect the genetic fitness of wild brown and sea trout stocks. Stocking such a small stream with domesticated fish could put a huge strain on resident wild stocks through increased competition and predation. Larger farm reared fish would also find the local environment difficult and there is every chance that stocked fish would simply vacate the reach, especially after any slight increase in flows following

heavy rainfall. Stocking is therefore not recommended as a management option for providing a viable fishery on this stream.

## **6. Conclusions**

The Stanbridge stream is a critically important trout spawning and nursery stream which helps to augment stocks for the River Rother system. In wet autumns it is possible that the stream is being used by migratory sea trout as well as resident browns. Maintaining good access for migrating fish (both upstream and downstream) is therefore very important.

Some low key fly fishing activity is feasible, especially in the April to the end of June period when flows should be strong and the channel wide enough to accept an accurate cast. The stream is too small to sustain stocked farm-reared fish and fly fishing for resident wild fish, with appropriate small stream tackle would be sustainable and by far the most cost effective option.

A light touch is need when undertaking any work to improve access for fly casting. Without lots of cover, particularly low overhanging cover most of the fish will migrate out of the reach.

The stream already supports some good habitat for all trout life stages but could be further improved through the use of locally sourced woody debris. Some light coppicing of some of the heavily shaded areas will provide useful material that can be pegged into the channel to promote bed scour and increased cover.

Spawning opportunities at the very top end of the beat are a little thin. It is possible to provide improved spawning opportunities by creating one or two spawning sites with imported 10-40mm angular river gravels. Support and guidance on exactly how and where this technique could be used can be obtained from the WTT Conservation Officer.

Some sections of the headwaters of this stream pass through a semi urban environment as well as agricultural land. With very few interested parties keeping a close eye on this stream, it would make sense to undertake some regular self monitoring of the invertebrate community. The Riverfly Partnership provide help and support for individuals and groups interested in undertaking river fly monitoring work. Acquiring the skills to be able to sample a few simple aquatic bug species will help to provide peace of mind that the water quality of the stream is performing well. Further information about the river fly monitoring initiative can be found at [www.riverflies.org](http://www.riverflies.org)

## **6. Recommendations**

- Leave as much fallen woody debris in the channel as possible. If fallen wood is causing an access issue then move it and secure it but don't remove it from the channel.

- Consider introducing more brashy woody debris into shallow margins on shallow sections between pools. These areas will not be of interest to the angler but are critically important for the trout juvenile life stages.
- On long sections of open channel, consider undertaking some low level tree planting using bushy species such as willows and thorns.
- Regulate and restrict angling activity to fly only, catch-and-release, with a maximum of two anglers fishing on any one day and fishing activity undertaken on a maximum of three days a week.
- Protect the fishery by ensuring that any invited anglers comply with local byelaws.
- Consider improving spawning opportunities at the top end of the beat. Top dressing the tail of the plunge pool below the small weir with imported 10-40mm angular gravels may provide a good site for one or two redds.
- Consider joining the River Fly Monitoring initiative.

**It is a legal requirement that some works to the river may require written Environment Agency consent prior to undertaking those 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 a project via a Project Proposal (PP) or a Practical Visit (PV). PV's typically comprise a 1-3 day visit where approved WTT 'Wet-Work' experts will complete a demonstration on the site to be restored. This will enable fishery managers to obtain on the ground training regarding the appropriate techniques and materials required to enhance trout habitat. 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 (if required) of the PV leader.

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 organisations and landowners through guidance and linking them up with others that have had experience in improving river habitat.

## **Acknowledgement**

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

## **Disclaimer**

This report is produced for guidance and not for specific advice; no liability or responsibility for any loss or damage can be accepted by the Wild Trout Trust as a result of any other person, company or organisation acting, or refraining from acting, upon guidance made in this report.