River Rother – Cowdray Estate

Advisory Visit April 2018

Key Findings

- **The fishery at Cowdray is very typical of the middle reaches of the river, with only limited sections supporting good quality habitats for salmonid fish species.**
- **Spawning and nursery habitat is limited to a few short shallow runs at either end of the fishery, with the Costers Brook providing spawning opportunities for the middle reaches.**
- **The local geology coupled with the legacy of intensive channel modification and local arable farming practices severely impacts the rivers natural productivity.**
- **Fallen woody material provides essential habitat for invertebrates and cover for fish and where possible should be left in place, or moved and secured.**
- **Tree management to preserve bank-top trees and a programme of tree planting is required to provide a succession of river side trees for future bank defences.**
- **The river here lends itself to a wild mixed fishery rather than a managed stocked fly fishing beat.**
- **If some stocking is to continue. Limit the range of stocking to the downstream sections where the banks are lower and access for elderly anglers is easier.**

1.0 Introduction

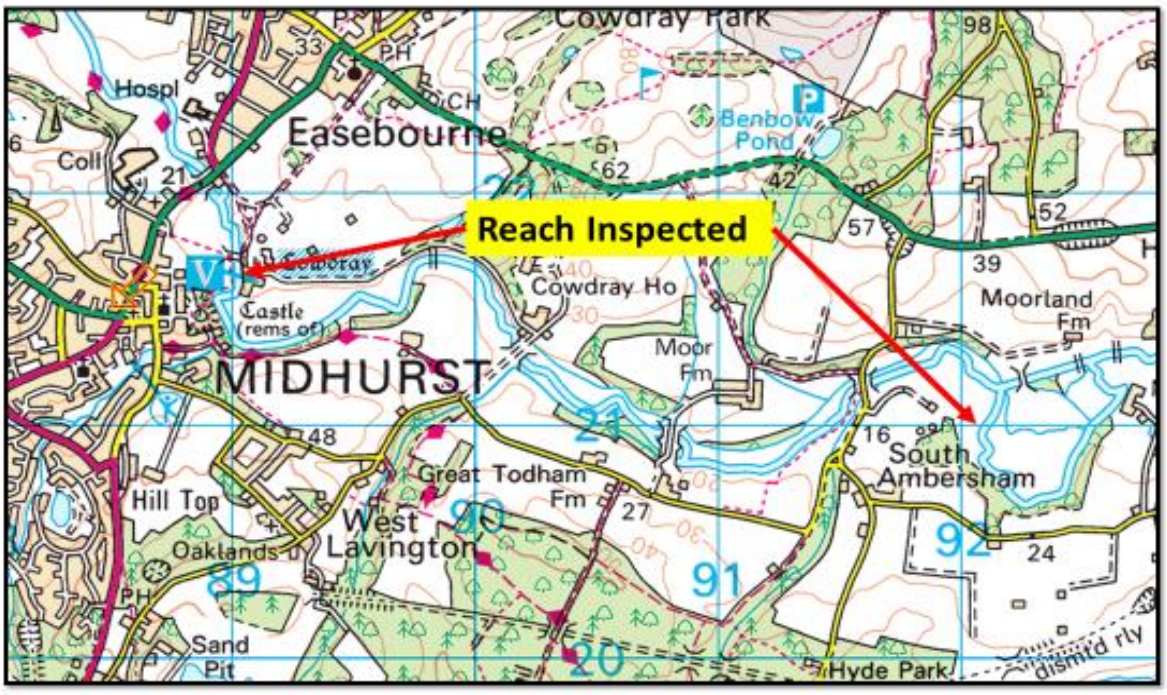
This report is the output of a site visit to the Cowdray Estate Fishery on the Western Rother downstream of Midhurst. The visit follows an earlier joint site visit in 2016 with the Arun Rother Rivers Trust (ARRT) where project options were identified and submitted by ARRT.

The request for the visit came from Mr. Nick McDonald who is Assistant Estate Surveyor at Cowdray. Mr McDonald has the responsibility of looking after the Estate fishery, which is currently managed in-house as a stocked fly-fishery for both season and day rods. Opportunities for tuition are also available via the Estate's ghillie, Mr Mark Williams.

Mr. McDonald is keen to explore opportunities for improving the fishery and in particular actions that might help to improve the wild component of the stock. The current brown trout (S*almo trutta*) stocking programme was also discussed and is explored in more detail in section 4. Trout Stocking.

Included in the report is a short section that explores an alternative model for managing the fishery.

Comments in this report are based on observations made during the site visit and discussions on the day with Mr. McDonald and Mr. Williams from the Estate. Normal convention is applied with respect to bank identification, i.e. left bank (LB) or right bank (RB) whilst looking downstream. Upstream and downstream references are often abbreviated to u/s and d/s, respectively, for convenience. The Ordnance Survey National Grid Reference system is used for identifying specific locations.



Map1. River Western Rother. © streetmap

River	Western Rother
Waterbody Name	Western Rother
Waterbody ID	GB 107041012810
Management Catchment	Arun and Western Streams
River Basin District	South East
Current Ecological Quality	Moderate Status
U/S Grid Ref inspected	SU 8902721713
D/S Grid Ref inspected	SU 9213321042
Length of river inspected	4.0km

Table 1. Overview of the waterbody. Information sourced from

http://environment.data.gov.uk/catchment-planning/WaterBody/GB107041012810

2.0 Catchment Overview

The western Rother (Waterbody ID 107041012810) has been assessed as being in 'moderate status' under the Water Framework Directive although the river is known to be both over abstracted and over licensed for abstraction under the EA's Catchment Abstraction Management Plan. The middle and lower Rother are failing WFD targets for siltation pressures and impoverished fish communities. The WFD assessment process for the upper Rother does not reflect the fact that the local trout population is performing well where suitable habitat is found.

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 that percolate from springs rising through the chalk to the west and south, as well as springs on the greensand ridge to the north. The Rother then flows due east to Hardham, where it joins the Arun 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 here. 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 bed 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 draining both the chalk downs to the south and the northern greensand ridge. Access all the way upstream to the headwaters above Sheet is extremely difficult as numerous weirs and old milling structures block and delay migration. Some fish have been reported as far upstream as Sheet following a high-flow autumn.

Water quality is generally good, particularly in the upper reaches, however several pollution incidents have resulted in low-level fish mortalities upstream of Midhurst

The river suffers periodically from low flows, and the intensive nature of the local agricultural land-use can put enormous pressure on the river. Large quantities of water are removed for spray irrigation and intensive arable and salad crop production has led to concerns over increased siltation derived from finely tilled soils in the surrounding valley slopes. The huge quantities of fine sediment finding their way into the Rother are thought to be compounded by intense rainfall events, which appear to becoming more regular over the last few decades.

The Rother has been extensively modified, with the river downstream of Midhurst utilised as a navigation channel, constructed in the late 1700s but abandoned for commercial use in the 1880s. The river still has the legacy of the

old navigation with several weir structures still present, including a significant impoundment at the bottom of the Cowdray reach. The Wild Trout Trust provided input into a project proposal drawn up by the Arun Rother Rivers Trust, which made suggestions for opening up the old natural loop of the Rother, potentially creating improved habitats for fish as well improved access for migration.

3.0 Habitat Assessment.

At the time of the site visit, river flows were high and carrying significant colour following heavy rain, making any accurate assessment of the quality of the river bed extremely difficult.

This section of the Rother is typical of the middle reaches of the river, set within a deeply incised channel lined by soft, friable river banks. Most of the important in-channel cover for trout is provided by the root systems of river-side trees, such as Alder (*Alnus glutinosa)* and goat willows (*Salix caprea)* and occasional ash trees (*Fraxinus excelsior).*

It is understood that from the late spring and summer months on, the river supports submerged weed growth, which would typically be submerged ribbon weeds such as burr reed (*Sparganium sp),* with occasional clumps of starwort (*Callitriche sp)* and water crowfoot (*Ranunculus sp)* particularly in sections where the bed is firm and flow velocities are high.

Maintaining plenty of direct sun light to those comparatively rare shallow sections of river will help submerged plants to thrive. The weed itself is critically important in providing habitat for a range of invertebrate species, as well as providing in-stream refuge for a range of fish species of all life stages. Sections of river bed that are dominated by thick layers of soft, shifting sand will make it difficult for rooted plants to become established. This to some extent is a natural problem for the Rother and is linked with its geology, however, the sand burden is exacerbated by local land use issues.

Additional cover is available in areas where fallen woody material has either formed into stable debris dams (photo 1) or where tall, leggy trees have partially fallen into the channel (photo 2). This woody material within the channel, although unsightly, is very important in helping to drive valuable changes in the shape of the river bed and banks, as well as providing crucially important refuge areas for fish. Winter cover is naturally sparse on the Rother and a tangled matrix of fallen brushwood can help to reduce predation pressures, particularly providing fish with a safe bolt-hole from winter feeding cormorants (*Phalacrocorax carbo*).

Full channel width debris dams (photo 3) can sometimes be a problem and a watching brief should be kept to insure that the dam does not get completely occluded with fine material, resulting in a weir forming. All the while the debris dam has some under-shot flow, then it is unlikely that sediment transport is going to be significantly interrupted and free access for migrating fish can also be maintained.

Unfortunately debris dams as indicated in the photograph can act as a trash boom, collecting all manner of discarded detritus. It is hoped that the current political campaign highlighting the issues associated with discarded plastics will gradually see a decrease in the amount of waste discarded into our rivers. In the meantime, debris dams can serve a useful purpose by collecting rubbish but of course the responsibility for collecting and disposing of trash usually falls with the riparian land owner.

Photo 1. One of several woody debris dams.

Photo 2. Fallen brashy trees proving good winter cover.

Photo 3. Full-width debris acting as a floating boom. Who will remove the rubbish?

A key concern to many riparian owners on the Rother is bank erosion (photo 4). As previously stated, the banks are butter-soft and when woody material falls into the channel it can exacerbate bank erosion but equally fallen woody material can help to protect vulnerable banks when it is packed into the toe of the bank and consists of a tight matrix of brushwood. This very much depends on the orientation of any fallen trees to the flow and whether or not the given tree helps to slow down flows adjacent to the toe of the bank, or conversely force elevated flows against undefended margins, where bank erosion is most likely to occur.

Bank erosion should be viewed as a completely natural process on any healthy river system and should only be a concern when valuable infrastructure is threatened, or when erosion levels significantly change in response to alterations in land management, or changes in bankside flora. On this section of the Rother, it is notable that some river banks are vertical (cliff-like) in nature and poorly defended with few well-developed root systems. This was particularly evident on some sections, where a lack of marginal trees coupled with grazing pressures have led to banks being more vulnerable to erosion. The presence of non-native plants such as Himalayan balsam exacerbates these pressures by leaving key bank-side areas potentially devoid of the binding root systems usually provided by a thick under-story of native plants. Intensive grazing pressures can add to the cocktail leading to bank slumping.

A notable exception to concerns over bank erosion is where there are any outcrops of eroded gravels, either derived from flints, or small local outcrops of eroded sand or iron stone. It was not possible on the day of the visit to identify any river-bed, or bank-side seams of gravels. When these areas are identified, actively encouraging bank erosion via strategically securing large tree trunk sections into the channel to free-up fresh gravels is a good option for promoting improved gravel spawning habitat. These eroded bank and bed gravels normally settle into valuable ramps in the form of gravel bars, or occasionally full channel-width riffles. These areas are of critical importance for many species of spawning fish, including trout and are also favoured areas for many specialised aquatic invertebrates.

Photo 4. The far un-defended bank eroding in response to fallen debris adjacent to the LB.

Sensitively managing these trees, will be critically important in helping to moderate bank erosion and in developing improved habitat for fish. Bankside trees on the Rother system are dominated by alder. Alders have wonderful vertical root systems, providing stability for the river bank, as well as complex sub-surface habitats as the exposed roots feather out down the toe of the bank.

Unfortunately alder trees in the Rother valley are suffering from a combination of disease (*Phytophthora*) and a lack of management. Lower down the Rother valley, disease is leading to a catastrophic loss of mature trees, with little or no succession of any species coming through to replace them. Sections of bank where there are a single line of mature, leggy alders, all of a similar age, are particularly vulnerable. What tends to happen is that without selectively coppicing out the odd stand, all the trees reach the end of their lives at a similar time and topple, in rapid succession. Coppicing out short sections, particularly of any trees exhibiting symptoms of disease, can prolong their life, re-growing as a multi-stooled trunk and replacing the single leggy tree-trunk but also preserving the valuable complex root system.

In one particular section there were thick stands of dogwood (*Cornus sanguinea*) which is believed to be a UK native species but one that is rarely seen on river banks (photo 5).

Photo 5. Dogwood colonising the toe of the bank and providing valuable cover for fish.

Any tree or shrub species that colonise the lower toe of the bank, as opposed to the top of the bank are considered to be extremely valuable. River-side species that are capable of providing this type of cover are goat willow (*Salix caprea*), elder (*Sambucus nigra*) and the thorn species.

Towards the lower reaches of the fishery there is clear evidence of the banks being bunded (photo 6). These bank-top bunds could be the remains of side cast dredgings dumped during decades of routing channel dredging, or possibly as a result of the channel being artificially perched, or raised to create more head for historical milling. The remains of what appears to be an old wing wall of a structure (photo 7) was evident in the reach just upstream of Ambersham bridge. Removing sections of these bunds back will enable improved flood plain connectively, potentially lowering water velocities during any bank-full flood event and may reduce bank erosion pressures. Actions like this can also contribute towards reducing flood risk to vulnerable infrastructure further downstream

Photo 6. Where the top of the bank is raised above the adjacent flood plain. Cutting a wide notch in the bund would improve flood plain connectivity

Photo 7. The remaining wing an old structure, possibly a milling impoundment or a relic of the old navigation system.

Downstream of Ambersham bridge is the outlet from the nearby Midhurst Waste Water Treatment Works (photo 8). This outfall is tucked well away from public

view and although discharging near to the Cowdray bottom boundary it will be impacting on local water quality. There was no suggestion that there was anything wrong with the effluent quality on the day of the site visit but many landowners and angling clubs are now regularly monitoring the performance of waste water discharge points by setting up sites for biological monitoring. The practise of self-monitoring these sites and sharing data with the water company is a good way of ensuring that the water company does not get complacent over routine maintenance and their own monitoring of effluent quality.

There is shallow glide habitat approximately 200m downstream of this outfall and this would be a suitable site for carrying out kick/sweep samples to monitor local fly life. Both the local Rivers Trust and the South Downs National Parks Authority are keen to support voluntary water quality monitors and the network of individuals and groups carrying out riverfly monitoring on the Western Rother is growing. For more information visit www.riverflies.org

Photo 8. Treated sewage effluent from Midhurst WWTW discharging into the main river.

In this same reach there is a valuable backwater habitat (photo 9) which looks to have once been the former course of the river that was modified during the construction of the navigation. Connected channels or backwater bays are extremely rare habitats on the Rother system and are usually very transitory, often filling up with sand following the cut-off of old meander bends. In this particular case, the backwater has remained viable probably by a flushing flow during out-of-bank flooding events. Backwaters that are connected to the main channel make wonderful habitats for a variety of species and are particularly

valuable as a refuge for coarse fish fry. They also provide winter refuge areas for fish of all life stages when the river is racing through during a bank full flood. This backwater could be improved to make it an even more valuable habitat for fish.

Photo 9. Relic channel that is still connected to the main river. A rare and valuable habitat.

4.0 Stocking

Whilst many land owners, clubs and commercial fisheries still stock rivers and streams with domesticated farm-reared trout, increasingly more fishery managers are realising the benefits of investing in better habitat management and a reduction or cessation of stocking, to see increasing numbers of wild trout repopulating the river. Fishing for wild fish in a wild environment is infinitely more rewarding than catching stocked fish but there is no doubt it can be a challenge for some, particularly on a river like the Western Rother where wading is sometimes necessary and can be challenging.

The following text has been pulled together by my colleague Gareth Pedley and encompasses many of the issues associated with trout stocking which impact on wild trout and may help with any decision-making process:

> The native trout populations of Britain possess great genetic diversity, being the product of several separate colonisations following the last ice age. Many are now further distinct from each other, having adapted to their local environments over time. The natural genetic variability of these populations makes them amazingly resilient and adaptable to changing environmental conditions, which they should continue to do providing human impacts upon them and their habitats can be limited.
>
> However, over the last 150 years, human impacts upon fish populations have increased exponentially, with major issues arising from the way in which we manage our land and rivers. To compound these issues, direct interference with wild fish populations has also increased, with large numbers of hatchery-bred fish being introduced to rivers.
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> The artificial mating that occurs within hatcheries bypasses vital chemical and visual aspects of mate selection; a process that ensures mate compatibility and maximises the fitness of wild fish. Stocked fish (both diploid and triploid), are also affected by domestication and selection for the farm environment, even within one generation in the hatchery (so this includes fish from wild brood-stock schemes). After all, farmed fish are the individuals that have survived within a concrete raceway, earth pond or tank etc. and are therefore poorly adapted for the very different conditions of a natural river. Adaptation to a farm environment is cumulative, with genetic diversity, natural behaviours, and survival rates when released to the wild all decreasing with each generation in captivity.
>
> Stocking fish therefore produces a *'no-win'* situation: if they don't successfully reproduce in the wild, or are infertile (triploids), they are simply a negative impact upon the ecosystem; if they do survive long enough to breed, their offspring have much poorer survival than the offspring of wild fish. This poor survival is also why, even after a long history of stocking, the genetic integrity of the wild population often remains intact and, after cessation of stocking, the farmed fish genes are

often quickly bred out of a population. However, stocked fish do still temporarily take up space and resource within a river that could have been used by wild fish. Naïve stocked fish also make an easy target for predators, potentially increasing predator survival rates, attracting greater densities of predators, and increasing the negative impact they have on a river.

So, what is the other option?

Natural rivers (without stocking) have a far greater capacity to produce and hold healthy fish populations. A major key to the success of wild salmonids is their life strategy: over-production of offspring that are then subject to density-dependant mortality. The greater the habitat availability in any year, the greater the number of trout that will survive, thereby mitigating for mortalities and annual fluctuations in the population. This also means that underperforming populations can be increased by improving habitat quality.

As soon as they emerge from the gravel, trout fry disperse throughout the available habitat, constantly competing to maintain territories. This ensures that the fittest, dominant fish control the best lies, with easy feeding for low energy expenditure. They will then remain there until they challenge for a new territory or are displaced by a more dominant individual. Wild fish production therefore ensures habitat is fully utilised and a river holds the optimal number of fish, with the available space being naturally repopulated each year. Such efficient habitat utilisation is impossible to achieve through artificial stocking or alongside stocking, because stocked fish disrupt the wild population structure, territories and hierarchies.

Wild fish constantly defend their adopted territory and strive to stay within it, while stocked fish have little affinity or suitability to the arbitrary areas in which they are stocked. A large proportion of fish stocked into rivers therefore leave the stocking location or lose condition and die within a short time (particularly during high flows). Consider where the thousands of fish stocked in previous years are at the beginning of each season and why there is even a requirement to restock. In contrast, un-stocked wild fisheries provide some of the best fishing early season, as the fish take advantage of early-season hatches to regain condition after the winter.

Consequently, most angling clubs actually report increased catches after ceasing stocking, as demonstrated by the ever-increasing number of case studies on the WTT website - www.wildtrout.org/content/trout-stocking. There is sometimes a lag period as the wild fish population begins to recover from any impact of stocking but increased catches of juvenile trout are often reported from year one.

An excellent video produced by Wild Fish Conservancy North West documents how the state of Montana in North America ceased stocking after realising the major negative impact it was having – www.youtube.com/watch?v=U_rjouN65-Q&app=desktop

If trout stocking is to continue at Cowdray then it is recommended that perhaps the Estate should experiment with the stock densities and frequency of introduction to try and work out an optimal stocking policy. Working out the ratio of catches to the number of fish stocked is critically important for any fishery manager and all rods should be recording the number of fish caught, returned, or killed to enable a detailed catch analysis to be worked up at the end of each season. In well managed stocked fisheries anglers can be expected to catch in excess of 80% of the fish introduced. If the rods are catching less than 20% then it suggests that the management policy needs to be reviewed.

Many factors will influence catch returns, including river flows (at the time of introduction), adult trout habitat, fishing effort, catch and release, individual angler effort, which is also influenced by weather, and the competence of the individual rods. The aim of the exercise is to build up a picture of how both stocked and wild fish respond to the policy so that the rods enjoy top quality sport that also ensures value for money. There are a number of case studies on our website which clearly describe anglers' catches increasing against a backdrop of reduced stocking.

There are a number of factors to consider when stocking domesticated trout into rivers. The Rother in the early spring will be a comparatively hostile environment, with limited food availability. Even when natural food is readily available, domesticated stocked fish are not always well adapted enough to efficiently exploit it. When stocked too early, or in high densities, domesticated farm-reared fish will either flea downstream, or simply lose condition and/or die.

To maximise catch efficiency and minimise waste and damage to wild stocks it is recommended that stocking should be "little and often" rather than with one or two drops a season. Efforts should be made to spread the stocked fish out, trickling two or three at the most into any likely looking pool. Even at these densities, fish will still be displaced through competition for high quality lies. Shallow, pacey reaches are best left un-stocked, as these will be more attractive for wild fish and can be difficult environments for fish reared in benign stew ponds.

Many anglers these days return their catch, including stocked fish. Returning a stocked fish to be later caught by another rod could obviously boost the catch return but ideally all stocked fish should be killed before the end of the season. Some clubs are now introducing mandatory "catch and kill" for stocked fish in September and October to ensure that there is less competition for wild fish approaching the crucial spawning time.

To build a more interesting and vibrant fishery on the Rother it will be essential to return all wild fish alive. Many clubs these days have their stocked fish marked or tagged so that rods can easily distinguish between a wild fish, and one that can be taken for the pot.

5.0 Conclusion

The middle reaches of the Rother supports an attractive and diverse environment. Habitat quality for flow-loving, gravel spawning fish species is at a premium but we do know that where habitat quality is favourable the river can and does support a good quality fishery.

The majority of wild trout and coarse fish that reside within the Cowdray reach are almost certainly migrating up to comparatively small areas of high quality habitat found in tributaries, such as the Costers Brook and in the reaches of shallow, gravelly riffle such as that found immediately downstream of North End Weir at the very top end of the fishery and also on sections near the bottom boundary. It is those high quality spawning and nursery sites found in the upper sections of the Cowdray Estate that are going to contribute the most to the Cowdray fishery.

Maintaining complex and well covered habitat in lower reaches of the Costers Brook, as well as over any potential spawning sites (shallow gravel runs) is going to be of critical importance. On the main river, managing trees so that more direct light can reach the bed of shallow sandy glides will help with weed growth and general productivity. Maintaining tree shade and cover, particularly low cover that kisses the surface of the water over any deeper pool habitat, or on the outside of bends is also very important and will encourage adult fish to hold station.

Effective management of the trees and woody material will help to create improved habitats for fish and opportunities for the rods. It is essential to retain as much low-level, fallen and trailing woody material as possible, so the key message is to "move it but don't remove it". Woody material can be configured and secured to help maintain diversity in the shape of the river bed and create habitat opportunities for trout of all life stages. Some coppicing of alder trees, particularly those that might be "leggy" or showing signs of disease will help to preserve valuable root systems and also allow in extra light to the channel. The WTT can help with a Practical Visit to demonstrate how these techniques can be successfully employed.

In areas where the soft banks have failed and collapsed (photo 6), it is recommended to plant up the toe of bank to potentially stabilise the banks. This will help to create a marginal habitat and also a safe, low vantage point for fishing.

Sometimes these "slumped" margins naturally vegetate but on the Rother, where the banks can be pure sand, plants either need to have their roots in wet areas, contiguous with river levels, or have a supporting matrix such as a brushwood mattress to help support them in their early stages of development.

Live willow can be used successfully to halt erosion but will need regular maintenance and may not be desirable in areas where angling access is required. An alternative here might be root wads of local native emergent aquatic plants such as sedge (*Carex sp*), sweet grass (*Glyceria maxima*), or reed

canary grass (*Phalaris sp*) . It is essential that all these plants have their roots permanently wet. These low fringes of emergent plants are rare on the Rother but they do exist and can provide excellent bank protection, as well as crucially important habitat, especially for the adult phases of aquatic insects. They can also provide an ideal front cover for a fishing margin. The toe of the bank will require access to direct sun light for planting to be successful.

Photo 10. A section of typical Rother bank failure, in this case caused by a fallen tree opposite. These low, exposed areas can be stabilised with rooted plants to form a low, natural margin rather than a sandy cliff.

Agricultural diffuse pollution is a massive issue in the Rother catchment. Encouraging farmers and estate tenants to leave wider uncultivated field margins and to intercept sediment pathways can make a big difference in helping to keep soils and bound-up nutrients on the land, rather than in the river. Simple measures such as contour ploughing and relocating gateways away from the bottom slopes of arable fields can all help to reduce diffuse pollution pressures.

In areas where the channel is shallower, the river is likely to be more suitable for supporting wild trout. Improved angling opportunities can be expected for the angler prepared to wade. Creating a few areas where the more active and adventurous rods can slip into the channel in chest waders will help them access areas where bank fishing is virtually impossible. Strategically deploying rope ladders, secured with driven stakes during the season can help anglers safely clamber in and out of the channel. This type of angling won't be for everyone.
A review of the overall objectives for the fishery would be wise. The Rother does not naturally lend itself to the classic Victorian model for a riverine trout fishery. The comparatively turbid water coupled with very high banks and comparatively

impoverished fly life can make the Rother a challenging environment for all but the most experienced of anglers. With the comparatively long stretches of water available and the huge cost of farm reared stocked trout versus the modest number of rods the water is likely to attract means that perhaps alternative fisheries management model should be considered.

Currently the Estate is marketing and managing the fishery as a classic stocked fly fishery as promoted and still adopted on many of the country's famous chalkstream beats. Unfortunately it can never compete but it could be very attractive for South East based anglers looking for an interesting mixed fishery.

The Estate is obviously struggling to balance the needs of the anglers who are attracted to this type of fishery because of the natural characteristics of the river and the requirements to maintain lots of fallen woody material in lieu of luxuriant weed growth. An alternative model is to abandon the stocking, syndicate the fishery or let it to a local club and allow rods to fish the river on an "any method" basis. Perhaps a small syndicate where the rods have the responsibility for carrying out their own maintenance but in return have access to a glorious environment where they can fly fish for wild trout during the mayfly or perhaps target late summer evenings using the sedge but are also able to access the water from October onwards for coarse fishing. Perhaps also market the opportunity to connect with a Rother sea trout on light spinning gear?

This may well attract local "all-rounders" and although will not generate large revenue, will reduce outlay on stocking and the requirement for continual maintenance in trying to make the Rother something it doesn't naturally lend itself to.

If it is deemed essential to maintain the stocked element of the fishery then consider splitting it up into beats and just stock the bottom meadow, where the bank height is much lower and lends itself more to bank fishing and let the upper reaches to a syndicate of all-rounders on an any method basis.

Lastly reconsider the options set out in the ARRT project proposal to open up the old Ambersham loop. This section has huge potential and has not been subjected to the dredging bucket. As such there will be gravel rich sections ideal for wild trout and coarse fish spawning.

6.0 Recommendations

- Take a relaxed approach to fallen woody material. Only move it and re-secure it when it is essential to avoid excessive bank erosion. The WTT can help with a training day via a WTT Practical Visit (PV).

- Consider coppicing marginal leggy alders to preserve root systems and promote low bushy cover.

- Consider planting some low scrubby tree species, or emergent reed sods into the toe of slumped river banks to create improved holding opportunities for adult trout. Concentrate on areas with access to direct sunlight.

- Coppice out clumps of trees that are heavily shading shallow glide habitats to win more sunlight and promote improved weed growth.

- Discuss measures designed to reduce diffuse pollution pressures with the Estate tenants.

- Consider monitoring water quality via invertebrate surveys, especially just downstream of the Midhurst WWTW. Training is available.

- Do not discount the concept of restoring the Ambersham loop. This project has huge potential for creating a much improved fishery.

- Note that before undertaking works, Environmental Permits may be required from the Environment Agency.

- Re-evaluate the model for how the fishery is to be marketed and managed. The Rother lends itself to any-method fishing for all-round anglers seeking access to an attractive wild environment.

- If trout fishing only is to continue then consider dividing the fishery up into "wild wading beats" with no stocking and easier stocked beats but with improved trout holding habitat and access where the older members can still access the river for effective fly fishing.

- Review the trout stocking programme. Reduced stocking densities may well lead to improved catch rates. Stocking with lower densities but more frequently will result in a better catch return for the same total number of fish stocked and put less pressure on wild stocks.

- Encourage the rods to record all catches and review fishery performance annually.

- Make sure the rods can distinguish between stocked fish and large wild trout. "catch and release" for wild trout will be essential to help build the wild component of the stock.

- Attempt to take most of the stocked trout out towards the back half of the season.

7.0 Making it Happen

We have produced a 70 minute DVD called 'Rivers: Working for Wild Trout' which graphically illustrates the challenges of managing river habitat for wild trout, with examples of good and poor habitat and practical demonstrations of habitat improvement. Additional sections of film cover key topics in greater depth, such as woody debris, enhancing fish stocks and managing invasive species.

The DVD is available to buy for £10.00 from our website shop www.wildtrout.org/product/rivers-working-wild-trout-dvd-0 or by calling the WTT office on 02392 570985.

The WTT website library has a wide range of materials in video and PDF format on habitat management and improvement.

7. Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for their continued support of the advisory visit service which is supported by funding from rod licence sales.

8. Disclaimer

This report is produced for guidance; 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.