



River Test – Oakley Meadows Fishery



An advisory visit carried out by the Wild Trout Trust – June 2011

1. Introduction

This report is the output of a Wild Trout Trust advisory visit undertaken on the Oakley Meadows beat of the River Test in Hampshire. The advisory visit was undertaken at the request of Mr. William Sleeman who part-owns and part-leases the single right bank consisting of 1000m of main river and Test carrier. In addition there are further sections of minor carriers that run across the flood plain linking the Oakley Stream to the main Test and which were probably constructed as part of the original water meadow network.

The fishery is currently run on a semi-commercial basis where paying rods can access a classic mid-Test beat to fish for mainly stocked brown trout (*Salmo trutta*) and grayling (*Thymallus thymallus*). Some wild fish are occasionally taken but it is thought that the current habitat availability for wild fish is limited.

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

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 Test is nationally recognised as the quintessential chalk river and is designated for most of its length as a Site of Special Scientific Interest (SSSI).

The Test has a world-wide reputation for being a first class brown trout fishery. Much of the middle and lower river is heavily stocked with hatchery-derived trout to support often quite intense angling activity. Where good quality habitats are maintained, the river has the capacity to produce viable numbers of wild fish. A major bottleneck to enhanced wild production is thought to be through poor in-gravel egg survival. Comparatively small areas of nursery habitat for juvenile fish also restrict the development of wild stocks. Where good habitats are found and preserved, survival rates of fry are usually very good in the food-rich environment.

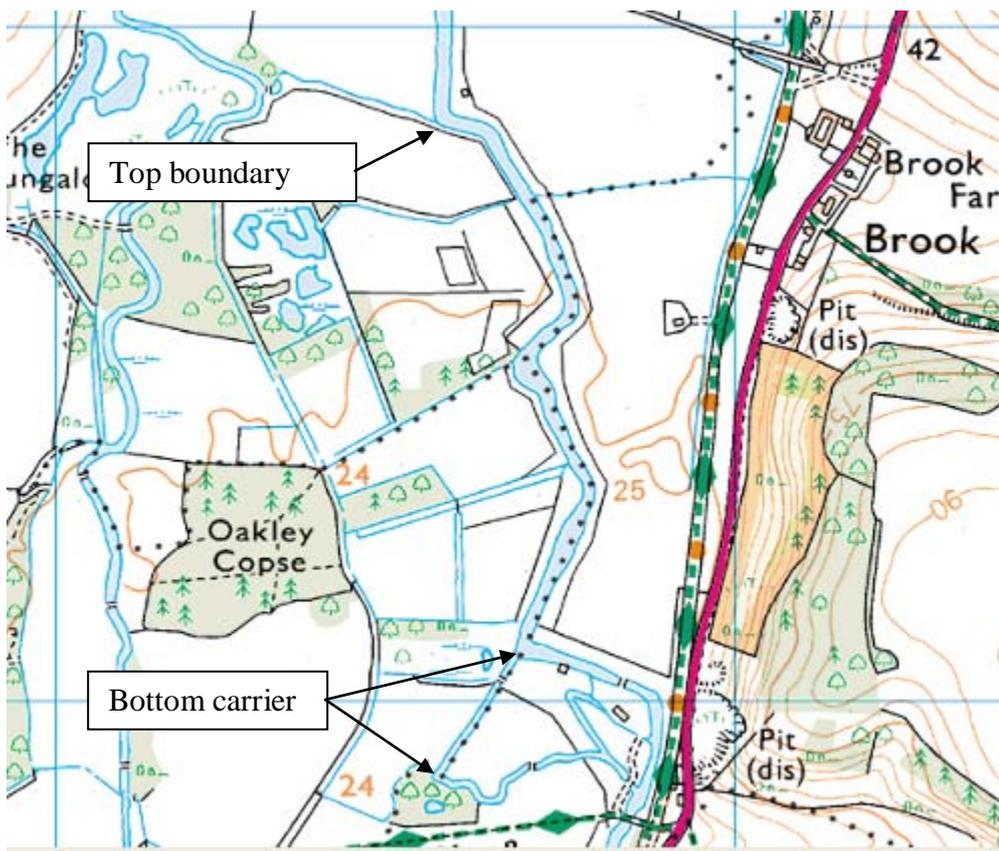
Habitat quality on the Test varies enormously. The river channels are virtually all heavily modified, artificial and originally constructed for power generation or water meadow irrigation. Throughout its length, flow is rarely contained within a single channel and frequently flows are diverted via a plethora of channels, many of which are impounded (dammed) or perched (i.e. raised above the level of surrounding land), and controlled by a multitude of structures, weirs and hatches. This situation has enabled many historical landscape features to be preserved and has also allowed many riparian habitats to benefit from raised

water levels. It has, however, also resulted in poor and fragmented in-channel habitats for flow loving fish species such as trout and salmon (*Salmo salar*).

In the last 150 years, the character of the river has largely been moulded by management regimes designed to facilitate fly fishing for mainly introduced trout. Estimates vary for the economic value of the fishery but the river is undoubtedly an important economic resource for land owners and the local rural economy in general. Some of the middle beats of the river in particular are very intensively managed and fished. On some beats this has reduced the overall quality and diversity of in-channel and riparian habitats.

3. Fishery overview

The Oakley Meadows Fishery is a single bank fishery and shares the river with the Compton Estate who own and control the opposite (LB) bank on the upper three quarters of the fishery and the Lower Brook Fishery which controls the management and fishing rights of the LB of the carrier on the lower section of the fishery. See map below.



Oakley Meadows fishery

The fishery is currently managed for a limited number of paying rods and guests who fish for mainly trout with dry fly and upstream nymph. Currently fish stocking is not co-ordinated and fish are regularly introduced into the beat by all three owners.

Mr Sleeman has noticed significant changes in the characteristics of the beat over recent years, particularly the change from one mainly characterised by water crowfoot (*Ranunculus* spp) to one where emergent strap and pipe reeds (e.g. *Schoenoplectus* sp.) dominate, particularly on the lower carrier section. Modifications to the flow regime have been made by both opposite neighbours, presumably to meet a range of different objectives.

Mr. Sleeman has attempted to improve the quality of the riparian zone by re-grading what was once a high margin in places. This work was carried out in an attempt to promote a thickly vegetated margin that protects the bank from erosion and provide habitat for invertebrates as well as providing an attractive vantage point for angling.

Little active management has occurred on the two carrier streams that feed in to the main river via a combination of local springs and sources from the high level Oakley Stream to the west. Whilst inspecting the small carrier that feeds into the lower section of the main beat, a number of small wild trout were observed.

Considerable opportunities exist to improve the carriers as trout spawning and nursery sites, as well as providing some limited access for wild trout fishing.



The small carrier feeding into the lower section of the Oakley Meadows Fishery. Significant opportunities exist to improve trout production within the carriers

4. Habitat assessment.

4.1 Main River Beat

Habitat quality and quantity for brown trout throughout the main river beat was considered to be poor, even for adult stocked trout. The channel is over wide for the average discharge and very uniform in terms of flow variation and bed topography.

The whole of the main river beat from the fishery top boundary to the start of the lower carrier is characterised by a very wide channel supporting predominately a smooth glide habitat. There is a double bend roughly half way down the fishery which does promote some slight natural variation in water depth and flow pattern, and there are some slightly shallower shoals of thin gravels interspersed with settled fine sediments. The smooth, laminar flows that make up the majority of the fishery support very limited habitat for trout, especially on sections where submerged weed growth is scarce.

Marginal fringe habitat is carefully maintained on both banks, however the fringe on the Oakley Meadows margin is more substantial than that maintained on the opposite LB. A thick, luxuriant fringe of marginal chalk stream emergent plants and herbs is a critically important habitat for all chalk rivers. The plants provide bank-side cover for fish, especially during the winter months, if dead annual plants are not strimmed off but are permitted to trail into the water. They also provide an important refuge and egg-laying area for the adult phase of many species of aquatic invertebrate which are so important for the health of the fly fishery – especially where dry fly fishing is a valued practice. In addition, the plants knit the soft bankside soils together, absorbing river energy and thus protecting banks from excessive erosion. Providing regular access vantage points for anglers to be able to cast a fly is much more beneficial to the health of the river than the linear trimming of banks that is so common on many chalk stream fisheries.

The measures previously taken to lower the height of the bank are to be welcomed. Consideration should be given to an even more radical approach to push the existing bank into the over wide channel to create an even lower, soft margin where a thicker fringe of plants can be developed and the pinched channel used to promote increased mid channel water velocities. Pinned tree trunk/branch or faggot revetment work will be needed to stabilize the toe of any new margin.

Throughout most of this beat the bank edge fell straight down to the river bed/toe of the bank, with either a vertical or steep slope to form a typical trapezoidal shaped channel. The result is a comparative lack of any significant shallows adjacent to the margins. These areas would provide crucially important refuge areas for both juvenile trout and grayling. The lack of high quality marginal cover is compounded by the lack of any significant tree cover. It has been widely recognised that trees play a critically important role in maintaining good quality trout habitat, providing shade to keep water cool in summer, as a source of terrestrial invertebrates for food and root systems that both bind the

banks and provide refuges from predators. Ideally river channels benefit from a mixed habitat under a canopy of dappled light and shade. The excessively wide nature of the channel means that the provision of some low level shade in the marginal areas is even more important.



A typical mid Test scene on the Oakley Meadows Fishery. Wonderful for casting but disappointing for fish.



Efforts are made to encourage some differentiation between the opposite fisheries by encouraging some weed islands to develop. This is sensible but extremely difficult to manage in terms of securing equitable flow splits for both fisheries

Although difficult to inspect, river bed gravels appeared to be mainly thin, poorly sorted and heavily infiltrated with fine sediments. It is possible that the current lack of significant beds of crowfoot is compounding the problem of siltation.



One of the few sections of shallow water where there is potential for spawning although the gravels are currently flat and silt laden. An ideal site for LWD flow deflectors.

4.2 Lower carrier

At the bottom of the main beat the river splits, with the main channel swinging sharp left to run down and around the Lower Brook House. The carrier channel that then forms the bottom part of the fishery runs on for a further 200m to the bottom boundary. This section used to support significant beds of water crowfoot but is now dominated by submerged branched burr reed (*Sparganium sp*) and stands of emergent pipe reed (*Schoenoplectus sp*) and mares tail (*Hippuris vulgaris*).

Recently, changes to the flows have been promoted by the introduction of a gravel ramp at the top of the carrier and a further ramp/weir located just downstream of the fishery on the water managed by Lower Brook. The measures appear to have been undertaken in an attempt to push a greater proportion of the flow down the main channel, rather than the carrier. Unfortunately, the effect of the bottom weir is to impound or 'back up' the water and this is having an adverse effect on habitat quality within the carrier section. Species such as water crowfoot are reliant on vigorous water velocities. The subtle increase in depth and reduction in water velocities resulting from the new weir is promoting a detrimental change in the ecology of the carrier.



Large rock ramp placed into the carrier channel just below the bottom boundary of the Oakley Meadows Fishery.



Plants normally associated with bank side areas now inhabit central channel locations on the carrier



Shoal of stones and gravels placed into the head of the carrier.

The material placed into head of the carrier is slightly less problematic as it backs up an already deep and homogenous section of main channel. It will, however, be restricting the amount of flow available to the carrier channel below.

If these works were carried out with the required EA Land Drainage Consent then it is surprising that there was no consultation over the potential impacts of both ramps. It is also unlikely that such works would have received consent without further works to mitigate against the adverse impacts.

A possible compromise solution to put to your neighbour might be for him to be able to retain the top ramp (which will divert more water via the main channel) but to consider the removal of the bottom ramp, which is severely impacting on habitat quality. This action should pull what water you do receive into the carrier through at a much faster rate and at a lower level. This change to flow should help restrict the encroachment of emergent plants and help to re-establish water crowfoot and produce a much more trout friendly environment within the carrier.

4.3 Side carriers

Stream bed gravels and bed gradient appear to be the limiting factor for the spawning potential of the side carriers. The first small carrier that was inspected has significant potential to be developed and improved as a spawning and nursery stream, as well as possibly providing the occasional early season day for a rod interested in small stream wild trout fishing. The number of naturally-

produced trout that are displaced from small side streams such as this can make a significant contribution to the stock in the main river. Providing improved habitat on carriers such as this makes sound economic sense, as well as providing more interest in the fishing on offer.

A key aspect of habitat quality within the carriers will be to utilise the natural gradient that currently exists. Identifying reaches where good seams of gravel are present and then trying to encourage strong water velocities through these sections will help to promote good quality spawning habitat. Currently, the water is being backed up in places, notably at one location by a culvert which provides access to an adjacent meadow.



Culverted access bridge not only impacts habitat quality upstream but may deter fish migration.

Some long sections of both carriers are currently quite heavily shaded. It is important in any spawning stream to retain as much brash and low scrubby cover as possible and any woody material that is thinned out to promote more light can be usefully used in the channel to sort gravels and promote local scour of the stream bed. An ideal regime of 60% shade to 40% direct sunlight is a useful guide to aim for.

If the amount of suitable spawning gravels (10 – 40mm) is scarce then you might consider importing material as road access to the carrier is very good and several sections could be recharged with fresh gravels to create good quality spawning sites.



Section of channel adjacent to the access road where the addition of some gravels and LWD would help to promote spawning opportunities.



On open runs consider planting the odd sallow to shade out and control the encroachment of reed

The carrier that enters the main river at the top boundary also offers great potential to augment the stock, particularly as small fish that are naturally displaced will feed right into the very top of the fishery. Production from the carriers can be "collected" in the main channel if there is sufficient habitat created for juvenile fish within the whole fishery.

5. Trout stocking

It is understood that all three fishery interests with access to this stretch of water are stocking with hatchery-derived trout. The lack of any coordination or a stocking plan between all three parties could lead to excessively high densities of fish introduced to the river at the same time. At best this practice will be wasting time and money, as it is highly likely that stock will quickly drop downstream looking for individual lies if the density is too high. At worst, the practice is damaging to hopes of locally building a larger wild component to the stock.

It is not known whether the trout introduced are mixed-sex, fertile stocks or all-female, sterile stocks (triploid). There is mounting evidence that interbreeding between domesticated farmed trout and wild fish can lead to lower fitness and survival amongst the offspring, reducing the numbers of river-bred fish in the population. Policies within the Environment Agency's National Trout & Grayling Strategy reflect this concern, and by 2015 all farmed trout stocked to rivers will be required to be sterile, all-female triploids, or derived from local broodstock.

6. Conclusions

The main river beat has great potential for enhancement. It will be extremely difficult to make the required improvements without an agreed plan that is acceptable to your neighbours. Radically pinching the channel in key locations to promote a narrower, meandering planform, as well as the use of LWD flow deflectors to promote bed scour and kick up shallow gravel ramps will promote the diversity in habitat that this reach (like so many on the middle Test) currently lacks. This will benefit stocked trout as well as helping to intercept juvenile wild fish that drift downstream, making the fishery much more sustainable and interesting to fish.

The issues associated with the flow split into your bottom carrier need to be resolved. Negotiations to remove, or at least radically lower the new rock ramp below your bottom boundary is a priority. Without the water velocities generated by lowering this structure it is hard to see how good quality in-channel habitats can be restored.

The current maintenance regime with respect to the marginal fringe needs to be amended. If a radical change in the bank profile proves to be too difficult to achieve then some improvements can be made by locally squashing the existing margin down further towards the river and encouraging a thicker fringe to develop. This should not be uniformly topped, but rather trimmed to waist height in key fishing locations and left to grow tall in others. The fringe should then be folded into the river margins in the late autumn to provide improved cover for juvenile fish and then lightly thinned when the new growth comes through in the spring. Anglers may need to work a little harder to cover particular individual

fish under this revised regime. However, the provision of such refuge areas will dissipate angling pressures for a proportion of your total fish stock and encourage a greater overall density of fish. Opportunities for more interesting angling are also provided by fish holding station close to natural "cover". Such changes will need the co-operation of your neighbour, especially if the changes benefit only your neighbour's rods. Perhaps the T&I Association can be encouraged to broker some agreements over sustainable maintenance that all parties can sign up to that will bring benefits to the whole fishery.

Pegging in large tree trunk flow deflectors onto the few shallow gravel shoals that do exist will help to promote some local lies as well as sort gravel which might then be useful for improved winter spawning.



[A large tree trunk deflector pegged into the Oakley Stream](#)

Currently the whole section of main river is in need of much more shading. Long term data sets recording water temperatures on the Test and Itchen already indicate that water temperatures are steadily on the increase. Planting with a mixture of native riverside trees such as ash and alder will help to provide some cooling shade if carefully located. Low scrubby trees such as thorn and willow can be planted to promote improved bank-side cover for fish. A grant is currently available for fishery interests on the middle Test who might wish to consider a tree planting scheme. Any planting scheme will require on-going maintenance in the future.

The existing small side carriers provide an excellent opportunity for development into high quality spawning and nursery streams. Maintaining a balance of dappled light and shade and improving in-stream cover and bed diversity by pegging in both LWD and coarse wood debris (CWD) will help maintain productivity and reduce predation pressures. Consideration should be given to removing the hydraulic throttles such as the bridge culvert. Spawning

opportunities could also be boosted through the introduction of fresh gravels to locations where good vehicular access exists.

The Test has many reaches which resemble sections of linear pond, rather than what it is reputed to be – the finest chalkstream fishery in the world. It would be a wonderful legacy to deliver a project that radically changes a middle Test beat into one that can support good stocks of wild trout as well as stocked fish. There is significant support available should you consider embarking on such an ambitious programme of improvements and I am sure that the Test & Itchen Association as well as the newly formed Wessex Chalk Stream and Rivers Trust will be keen to support you. Funding might also be available via the Environment Agency and/or Natural England. The Wild Trout Trust will also be very keen to support such a project.

6. Recommendations

- Raise your concerns with your neighbour over the impact that the newly installed ramp weir is having on habitat quality on your lower beat. If necessary seek support and action from the T&I Association and the Environment Agency to ensure a satisfactory outcome.
- Open up a dialogue with the Compton Estate to explore options for a radical enhancement scheme that will improve the fishery as a whole. Options should include major channel narrowing from both sides to increase the channel sinuosity and the construction of permanent islands to locally increase water velocities either side. All parties should seek support from the EA, NE, and T&I as such a scheme would have much wider benefits for the ecology of the river and may well attract some external funding.
- If a consensus on a radical large-scale scheme cannot be reached then there are still options to improve the RB by pushing high sections of bank into the channel behind a pegged-in revetment. A lower and wetter marginal zone should be aimed for to promote a thick, luxuriant fringe of chalk stream plants and herbs. Where the narrowing promotes elevated water velocities, use pegged-in tree trunk deflectors to promote a more varied river bed profile.
- Consider a programme of tree planting to provide more high-level shade and low-level marginal cover.
- The side carriers have considerable potential to produce good numbers of wild trout for the main fishery. Undertake some light thinning of the canopy where the shading is very heavy and also consider tree planting on those reaches that are particularly open. The creation of two or three new gravel ramp spawning sites is possible by importing gravels on to those reaches where existing gravels are thin.

- Explore options for removing the culverted bridge and replace it with a conventional bridge. Ensure the invert of the new bridge is set below the existing bed level and cover with gravels.
- Leave as much fallen woody material in the carriers as possible. If it falls in an undesirable location then move it and secure it.
- Attempt to coordinate your stocking activities with the opposite fisheries to avoid introducing excessive densities of fish. Any more than 2 adult trout per 100m² of channel is likely to result in downstream displacement.

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.

The WTT can fund the cost of labour (two/ three man team) and materials (max £1800). 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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