



**Rivers Loddon and Blackwater
Swallowfield Fishing Club**



April 2016

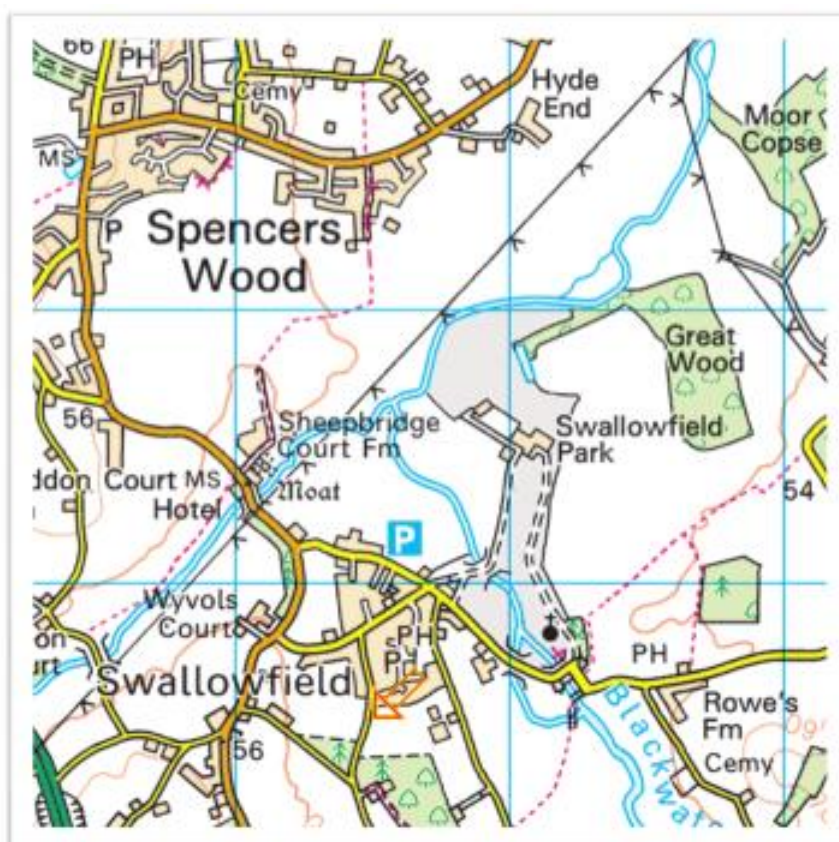
1. Introduction

This report is the output of a site visit to the confluence of the Rivers Loddon and the Blackwater at Swallowfield in Berkshire. The rivers here are fished and managed by the Swallowfield Fishing Club (SFC). Further information about the SFC can be found at: www.swallowfieldfishingclub.co.uk

The request for the visit came from Mr. Russ Hatchett from the SFC and Mr. Martin Moore, Chairman of the Loddon Fisheries and Conservation Consultative (LFCC).

The request for advice was prompted by concerns relating to the lack of suitable spawning sites and the loss of instream cover, particularly habitat that was provided by large woody material and any implications this might have for the quality of the local fishery.

Comments in this report are based on observations on the day of the site visit and discussions with Mr. Hatchett, Mr. Moore and Mr. Dave Randall, club committee member. Normal convention is followed with respect to bank identification, i.e. banks are designated Left Bank (LB) or Right Bank (RB) whilst looking downstream.



Map 1. Loddon and Blackwater at Swallowfield Park © streemap

The lower Loddon is designated under the Water Framework Directive as Water body ID no. GB106039023160 and the Blackwater as GB106039017290. The site inspection was carried out on the bottom 0.6km of the Blackwater in Swallowfield Park (National Grid Reference SU 729 650) to the Loddon confluence (SU 725 656) and then downstream for a further 1km on the main river, to a point on the edge of the Park at SU 734 660.

2. Catchment overview

The River Loddon rises from the chalk aquifer just to the East of Basingstoke and flows North East, picking up significant quantities of water discharged via the Basingstoke Waste Water Treatment Works before again being augmented by high quality water supplied via the River Lyde. Further flow is derived from the Bow Brook which enters the system from the West at Sherfield-on-Loddon. The Bow Brook drains a large area of relict heathland comprised of mainly sands and gravels in the areas south of Tadley and Bramley, reducing the alkalinity and introducing a slightly more flashy nature to the river.

Despite the non-groundwater influences, the upper reaches of the Loddon are characterized by clear water flowing over a mainly flint gravel substrate, with all the features of stable flow and luxuriant macrophyte growth associated with high quality chalk stream environments. To this end, the river from Standford End upstream has historically been managed and preserved to support a high quality brown trout *Salmo trutta* fishery.

From Standford End downstream, the river flattens out to drain a geology dominated by sands, clays and gravels with flow further augmented by the Blackwater system. The Blackwater drains a large urban conurbation, with all of the issues associated with numerous waste water discharges and rapid run-off. The quality of the lower Blackwater is enhanced downstream of Riseley where the river is joined by the Whitewater tributary. Downstream of Swallowfield the Loddon continues to flow North East, draining the conurbations lying to the South and East of Reading before joining the Thames at Shiplake.

Long sections of the Loddon have been subjected to intensive dredging works, characterized by bank-top levees. Significant quantities of gravel will have been removed from the river bed in an ill-advised attempt to improve local land drainage. The bank-top levees can be clearly identified at Swallowfield Park where they can impact on flood plain connectivity. Rather than reducing local flood risk and the protection of high quality agricultural land, the net result is water trapped for longer in certain locations, resulting in the loss of fish unable to find their way back to the river.

The middle and lower reaches of the Loddon support a high quality coarse fishery and is particularly noted for its excellent coarse fish population and in particular specimen barbel *Barbus barbus*, much valued by the local angling clubs. Occasional specimen sized brown trout are also found in the lower reaches of the Loddon as well as very occasional migratory sea trout.

The Loddon system has an active Consultative group which has been working hard in recent years in partnership with the Environment Agency to identify and

tackle issues adversely impacting the ecology of the river. Further information about the LFCC can be found at: www.lfcc.org.uk

3. Fishery Overview

The sections of river controlled by the SFC have for many years enjoyed a reputation for supporting a high quality fishery, particularly for specimen sized coarse fish and notably some exceptional barbel like the specimen highlighted below.



The Blackwater was historically grossly polluted with very poor quality water emanating from inadequate waste water treatment plants servicing the large conurbations of Aldershot, Ash, Northcamp, Frimley, Camberley and Sandhurst. Credit must go to the local water company and the regulators for gradually improving the quality of effluent taken by the Blackwater to a point where it now regularly supports brown trout as well as a healthy coarse fish population. Even in the late 70s and early 80s, when long reaches of the middle Blackwater were virtually fishless, the lower section at Swallowfield Park always supported a quality fishery.

Increased predation pressures and the arrival of non-native signal crayfish have subtly changed the nature of the fishery to one where the density of fish appears to be lower but the average size much bigger. One particular fish that appears on the club website (photo 1) and which highlights the potential of this fishery to produce extraordinary specimens is a brown trout taken by an angler targeting barbel. Very few rivers in England have the capacity to produce fish of this quality.



Photo 1. Incredible Blackwater brown trout, highly likely to be a crayfish eating machine.

4.1 Habitat Assessment

4.2 Blackwater

The section of lower River Blackwater running through the Swallowfield Park currently supports a wide variety of habitat for flow-loving, gravel spawning fish species. The club have managed the riparian tree cover sensitively and allowed significant quantities of fallen large woody material to remain within the channel to help scour pool habitats and promote the development of bars of clean, loose gravel which have the potential to provide good spawning conditions for spring/summer spawners such as dace *Leuciscus leuciscus*, chub *Squalius cephalus* and barbel. Where any large trees fall over, it is a good idea to nip off the end of the trunk to avoid a full-width debris dam forming. Most large fallen trees are stable but increased stability can be gained by either wiring the trunk down to the river bed with driven posts, or drilling out the trunk and securing it to the bed with driven steel re-bar.

The use of woody material to provide improved habitat for coarse fish is a comparative rarity but the benefits can be clearly seen in sections where the club have left fallen trees in situ. There are a number of varied and ecologically valuable woody debris features on this section of the Blackwater, promoting a diverse habitat for both coarse and game fish. The security of fallen trees can be improved by attaching a catch cable to the trunk and cabling and clamping it to its own stump. Swallowfield Fishing Club are aware that these valuable features

require regular inspection to ensure that they do not pose additional flood risk, or threaten the integrity of the banks from lateral erosion pressures (photo 2).

In addition to the benefits derived from the large woody material, the reach also supports good examples of submerged complex brushwood (photo 3), mainly supplied via partially submerged goat willow *Salix caprea*.



Photo 2. A large fallen tree in the process of scouring out a pool and throwing up a fresh supply of clean gravel.



Photo 3. A low scrubby willow which has been allowed to encroach out into the channel providing a safe haven for fish from avian predators.

Low, scrubby tree species such as goat willow, hawthorn *Crataegus mongyna* and Elder *Sambucus nigra* have the potential to provide the low, complex structure that can help create essential refuge areas from predators, as well as micro habitats for small fish in times of high flow conditions. The fruits of the elder tree are also an additional source of autumn food and are often favoured by chub that also gravitate to the low, overhanging cover provided by such species.

Despite the numerous examples of best practice with regard to the trees that are present, the section as a whole appears to lack tree shading. The Blackwater is known to contain a very high proportion of treated waste water and is rich in dissolved nutrients. Emergent weed growth in this river can be very dense, which although useful in providing additional habitat for invertebrates and fish, can, in some places render access for angling very difficult. Encouraging additional shading, particularly planted up along the South West LB could help to check the growth of some emergent plants and provide fishable water but also with the provision of essential cover.

Planting low sallows couldn't be easier. Simply cut stakes, or whips off existing trees during the dormant winter period and push the whips into the selected margin just a fraction above normal winter levels. Always ensure that the toe of whip is well below water level and ideally cranked over at 45 degrees, pointing down and across the channel.

4.2 Loddon

The section of Loddon controlled by the Club appears to lack the same level of channel shape diversity as found on the lower Blackwater, with the majority of the reach inspected being comparatively wide and slow flowing, particularly near the lower end of the fishery (photo 4). It is not clear if this reach is artificially impounded by the weir structures located approximately 2km downstream at Arborfield Bridge. These weirs have in recent times been modified and made passable for fish by the EA via the construction of a new bypass channel. It is possible that the impoundment has been lowered and that over time the channel at Swallowfield Park will slowly improve as a direct result of the water being pulled through slightly faster and lower. This is hypothetical but there is no doubt that in a comparatively flat catchment, the lowering, or complete removal of a weir located even 2km downstream can sometimes result in dramatic improvements in the quality of fishery habitat found in the impounded reaches above.

Recently the Park owners have undertaken some significant tree works by clear felling and removing significant numbers of large trees, thought to be mainly crack willows *Salix fragilis*. The purpose of the tree works is not entirely clear but it has in all probability reduced the number of in-channel features and therefore reduced the fish holding capacity of the reach as a whole. Some of the larger landscape trees such as the poplar *Populus sp*, or horse chestnut *Aesculus hippocastanum* do not provide the same quality habitat that low, overhanging species can provide. Perhaps there is scope to increase the quantity of low level shade and cover with a strategic tree planting and management programme for both banks.



Photo 4. A wide, featureless section in need of low cover to create improved fish holding areas.



Photo 6. Tree shading on this reach of the LB is virtually non-existent.

A key habitat requirement for a lowland mixed fishery on rivers like the Loddon and the Blackwater is the provision of connected shallow backwater habitat. The reduction in the numbers of small juvenile coarse fish making it through to adulthood can often be linked to downstream washout associated with summer flooding events, which now appear to be frequent, almost annual events rather than a rarity.

Creating new backwater habitat is a relatively cheap and straight forward method in helping to retain critically important coarse fish fry. This is not a new concept and these backwaters have been dug and monitored on numerous lowland rivers, usually with instant proven benefit. Well-designed backwaters not only help to support summer fish fry but also provide good winter holding habitat, especially for relatively weak swimming species such as roach *Rutilus rutilus* and bream *Alburnus alburnus*.

The location of new backwaters are usually dictated by logistics rather than any particular strategic considerations. Good access to a long reach tracked excavator is obviously essential. Selecting a spot where the banks are already low, or widening an existing small bay, or ditch line are all perfectly good examples of where backwater habitat can be created. An early consultation with the EA will be required and written permissions may be needed before any digging out of the river bank, or side-casting of spoil can be contemplated. However, the creation of cattle drinking bays is exempt under the new permitting regulations that replace the old Flood Defence Contenting process.

Backwaters function best if the inlet neck of the bay is taken down to bed level and graded back into the bay. Deep central areas should then be slowly battered back on a shallow sloping gradient. Ideally backwaters should have access to plenty of direct sunlight to promote primary food production. Fish take-up and improved survival rates can be enhanced with the provision of loose brushwood pegged into shallow margins to create micro habitats for fry and provide additional protection from predators.

Backwaters will require a rolling programme of maintenance. The inlet neck in particular will be prone to rapid siltation. Hiring in a machine for a day once every three to five years represents good value for money against the value of the stock that can be retained through the construction and maintenance of well-designed backwater habitats.



Photo 7. Recently constructed backwater on the Western Rother. When monitored, this new habitat supported seven different species of juvenile fish. The backwater doubles up as a cattle drinking bay, now fenced off from the river.

4. Conclusions

The Rivers Loddon and Blackwater at Swallowfield Park represent an excellent example of how to sensitively manage a high quality lowland coarse fishery. Further improvements can be achieved via the provision of more low, scrubby cover and continued efforts to make the shape of the river bed more diverse with the introduction and management of large woody material.

The number of mature river-side trees is quite low and a planting programme with low, bushy native species will help to combat excessive weed growth, particularly on the Blackwater, as well as create improved holding habitat for fish, particularly adult fish. Utilise the opportunity to plant areas that were previously shaded by mature landscape trees on the Loddon beat. Continue with the programme of hinging mature trees into the margins but ensure replacements are planted to ensure a future supply. The Woodlands Trust may be a good source of information and support for any tree planting initiative.

Explore the options of creating connected backwater habitats on both the Blackwater and the Loddon. It would be logical to create backwaters as near to the upstream boundaries of both arms of the river as possible but any backwater will benefit the system as a whole, no matter where it's located.

Providing a diverse and well covered habitat for fish is just one element in ensuring a thriving fishery exists for the enjoyment of the membership. Water quality will always be an important aspect of fishery protection and development. Both rivers are under so much pressure that it is well worth undertaking some basic self-assessment of water quality via a DIY monitoring programme.

Many anglers and angling clubs now actively participate in coordinated water quality monitoring through the River Fly Partnership. Undertaking regular invertebrate monitoring of sites on both the Loddon and Blackwater will help to build up a picture of your invertebrate community and critically give early warning of any water quality problems that might be responsible for a dip or loss of a particular species that would normally be present. This simple biological monitoring tool has already helped numerous landowners and clubs identify issues previously not picked up in the EA routine monitoring programmes. For further information about how the scheme operates and for information about training go to www.riverflies.org

At the time of the site visit the presence of non-native plants such as Himalayan balsam *Impatiens glandulifera* was not immediately apparent. Keeping on top of this and other non-native plants will help to create improved bank protection and reduce sediment input.

5. Recommendations

- The Swallowfield Fishing Club should continue with the excellent management programme for dealing with fallen trees and woody material within the channel.
- Consider a programme of tree planting with native species such as willow, hawthorn and elder to replace lost landscape species such as poplar and chestnut on the banks of the Loddon. Plant willows as low to the toe of the bank as possible.
- Look to plant up areas of the South West bank of the Blackwater to create improved low cover and help tackle excessive macrophyte growth.

- Identify potential areas which could accommodate connected backwater habitat and seek out permissions from the landowners, permissions from the EA and support for funding.
- Explore the options for undertaking some self-assessment of invertebrate communities to monitor long term water quality.
- Redouble efforts to control non-native species by looking to build relationships with community groups where large numbers of volunteers can be mobilised.
- It is understood that the LFCC and the SFC have been actively involved in the Loddon Rivers Week initiatives. It is worth exploring the idea of encouraging neighbouring clubs to actively get involved and there is always potential for further training, if required, which the WTT can help to facilitate:

<http://www.wildtrout.org/content/river-habitat-workshops-and-practical-visits>

6. Making it Happen

The WTT can provide further assistance to help implement the above recommendations. This includes help in preparing a project proposal with more detailed information on design, costs and information required for obtaining consents to carry out the works. If required, a practical visit can be arranged to demonstrate habitat improvement techniques. Demand for these services is currently high but WTT is able to provide further advice and information as required. Further advice on fund-raising can be found at <http://www.wildtrout.org/content/project-funding>

7. Acknowledgement

The Wild Trout Trust would like to thank the Environment Agency for their continued support of the advisory visit service.

8. 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. Accordingly, 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 comments made in this report.

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 <http://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:
<http://www.wildtrout.org/content/index>