



Advisory Visit

River Swift, Warwickshire on behalf of
Warkwickshire Fly Fishers

13th June, 2008



1.0 Introduction

This report is the output of a site visit undertaken by Tim Jacklin of the Wild Trout Trust on the River Swift, Warwickshire on 13th June 2008. Comments in this report are based on observations on the day of the site visit and discussions with John Burton, Roger Hextall and Steve Smith of the Warwickshire Fly Fishers Club (<http://www.warwickshireflyfishers.co.uk/>).

The club has around 90 members and has a mixture of stillwater and river fisheries in the Midlands. The club have had control of the fishery on the River Swift for seven years.

Normal convention is applied throughout the report with respect to bank identification, i.e. the banks are designated left hand bank (LHB) or right hand bank (RHB) whilst looking downstream.

A previous Wild Trout Trust advisory visit to this site was carried out by Vaughan Lewis (Windrush AEC) in March 2005. The current visit was to assess progress with the implementation of recommendations made in 2005, and make further recommendations for habitat improvements. This report should be read in conjunction with the previous advisory visit report.

2.0 Fishery Overview

The River Swift is a small, clay-based tributary of the River Avon, flowing in a roughly southerly direction from near Gilmorton before joining the Avon at Rugby. The downstream limit of the fishery is near to the village of Churchover and the upper limit is the A5 at Bransford Bridge, approximately 4 km of river.

The river contains stocks of mixed coarse fish including chub, roach, pike and perch as well as large numbers of stone loach. In the past the EA have undertaken coarse fish removals in exchange for trout (this is no longer carried out because of a change in EA fish removal policy), and the club remove pike by rod and line (approximately 20 per annum). Signal crayfish were reported to be present by the club based upon the observation of burrows by Lewis (2005); it is not known whether their presence has been confirmed.

There is little evidence of recruitment of brown trout spawned in the river, although a few redds have been observed towards the upstream of the fishery. The club stock annually with 200 diploid brown trout of 250g each and 5000 eyed diploid brown trout ova introduced via three deep-substrate incubation boxes.

The club operates a booking-in and catch return system for members visiting the fishery. Trout catches are relatively low with around 15 fish reported caught from 70 visits in 2007, although this included some exceptional fish approaching 3 kg in weight. A brown trout of similar size and one of around 1.5 kg were observed during the visit.

3.0 Habitat Assessment

The main issues affecting the river were detailed by Lewis (2005) as follows:

- Over-wide and deeply incised channel with evidence of past dredging activity, resulting in...
- Heavy growth of emergent vegetation including common club-rush *Schoenoplectus lacustris*, reed canary grass *Phalaris arundinacea*, sedge *Carex* spp., and yellow water lily *Nuphar lutea*.
- A river bed dominated by clay substrate with a paucity of gravel.
- The presence of a large automated sluice gate and gauging station at the downstream limit of the fishery (SP 5068 8073), to divert water along a LB channel to feed the Oxford Canal. This structure impounds water for over 1 km upstream and causes rapid fluctuations in level.
- A flashy run-off regime caused by the clay catchment and the presence upstream of large areas of impermeable surfaces: the M1 motorway and Magna distribution centre (at 500 acres, the largest in Europe). The former is reported to now have balancing lakes.



Photo 1 Typical section of the Swift – overwide channel with abundant emergent vegetation

The club has contact with Warwickshire Wildlife Trust and undertakes mink trapping using rafts and cage traps; one mink *Mustela vison* has been caught and destroyed. Water vole *Arvicola terrestris* are present on the river, and there have been reported otter sightings and otter spraint found under the A5 bridge by Warwickshire Wildlife Trust.

The lower part of the fishery is dominated by the sluice and its impact upon upstream water levels. In contrast to the visit in winter 2005, the sluice was closed impounding a considerable length of river. It was reported by the club that fluctuating water levels made it futile to introduce any instream structures in this section, and that waterfowl nests were often adversely affected. The club suggested the construction of a weir in this section to stabilise water levels and prevent the rapid water level fluctuations.

This section was dominated by aquatic vegetation characteristic of still or slow-flowing water, including common club-rush *Schoenoplectus lacustris*, reed sweet-grass *Glyceria maxima*, reed canary grass *Phalaris arundinacea*, lilies *Nuphar lutea*, and pond weed *Potamogeton natans*. Progressing

upstream the first evidence of a lessening of the effect of the impoundment was a bed of water crowfoot *Ranunculus* sp. at SP 50556 81137.

There are few trees on the lower part of the fishery. Only the occasional hawthorn or willow is present.

The club reported that dredging had been carried out by the farmer on a section of river close to SP 50341 81391 and it had ceased when the machine had broken down. The machine was still present on the bank and looked as though it had not been used for some time.

Progressing upstream from the small copse into the middle section of the fishery it is evident the river has more energy and is above the impounding effect of the sluice. This section has a meandering planform and more riparian trees and bushes than the lower section.

The upper part of the fishery is more open and treeless; the club are talking to the farmer about tree planting in this area. The RB has a single-strand barbed wire fence and was being grazed by sheep; these could get under the fence which is there to prevent encroachment of cattle across the river from the LB.

The LB had a double-strand barbed wire fence and was being grazed by cattle. The LB had a drinking area for cattle at a low section of bank which was very trampled and a probable source of soil erosion to the river during wet weather. In addition, the water was not readily accessible to stock at low water levels at this point. In other places the LB fence had failed and stock had trampled areas of bank leaving them devoid of vegetation. The club reported that the LB was owned by an absentee landlord who rented out the grazing.



Photo 2 Trampled cattle drink area



Photo 3 Livestock damage to left bank, upper part of fishery

3.1 Works completed since 2005

Since the advisory visit in 2005 the club has carried out work on the middle and upper sections of the river. This includes

- the installation of three deep-substrate incubation boxes
- the cutting of channels through emergent vegetation
- the introduction of flow deflectors and groynes constructed from recycled materials including pallets and bricks
- the introduction of gravel downstream of the flow deflectors / groynes and downstream of the incubation boxes.

The incubation boxes have been used to introduce 5000 eyed brown trout ova each year, and were modified to include a pre-filter after the first year of operation to reduce the amount of sediment infiltrating the gravel and eggs. The boxes utilise the head of water above small weir-riffles constructed by the club. The head of water has been a problem at the upstream incubation box (SP 51866 82028) which has not been operating satisfactorily.

The downstream incubation box is located at SP 51002 81250 and the area immediately downstream was cleared of emergent vegetation and 10 tonnes of gravel introduced. This has created a riffle area with a good growth of *Ranunculus* sp. and the faster flows have prevented the regrowth of emergent vegetation.

At SP 51161 81357 an island of emergent vegetation has been created at the tail of a pool by cutting a channel down either side, and groynes at the head of the pool have increased flow variability.

At SP 51159 81492 a section of river has been manually cleared of emergent vegetation, and four sets of paired deflectors have been introduced in combination with 8 tonnes of gravel. This area has remained free of emergent vegetation. Similarly at the middle incubation box (SP 51664 81686) 15 tonnes of gravel have been introduced below the low weir / riffle created to feed the box, producing an area of faster flows supporting growth of *Ranunculus* sp. and creating a good area of habitat for juvenile trout.

The club have put in a huge effort (all the work has been completed by hand, including moving gravel in sacks on a tractor & trailer) and operated on a very tight budget. Funding of £1500 was provided by the Environment Agency (Fisheries) in 2005 for fencing, and the Wild Trout Trust provided bursaries of £1500 in 2005 and £500 in 2006.



Photo 4 Area below the downstream incubation box



Photo 5 Island of emergent vegetation created by cutting channels



Photo 6 Flow variation created by paired deflectors and bricks, promoting growth of *Ranunculus* sp. and deterring emergent vegetation



Photo 7 Area cleared of emergent vegetation where eight tonnes of gravel was introduced along with four sets of flow deflectors



Photo 8 Low weir constructed to supply head for running incubation box

4.0 Recommendations

- The combination of channel narrowing and raising river bed levels should be continued in appropriate areas. 'Pinching' the over-wide channel and the introduction of gravel will improve instream habitat quality, reduce deposition of fine sediment and provide suitable habitat for a range of gravel-loving species as well as creating areas of trout spawning and juvenile habitat. Guidance on the techniques for riffle creation and channel narrowing can be found in the *Wild Trout Survival Guide* provided with the Advisory Visit. Professional advice should be obtained regarding the placement of the riffles, including a bed level survey.



Photo 9 Reintroducing gravel riffles

- Large Woody Debris (LWD) should be introduced to create flow variability and increase the diversity of physical habitat. Careful placement of LWD would do the same job as the brick / pallet deflectors being used by the club and have additional benefits in terms of aesthetics and nutrient cycling. LWD can be introduced by 'hinging' bankside trees into the river channel; trees to be felled should be only cut through for 75% of their diameter and then pushed into the river. This 'laying' technique maintains a firm fixing to the tree stump and in many cases, allows the tree to continue growing. Alternatively trees can be pollarded and the

arisings fixed in the river channel in the form of trunks or brushwood bundles using wooden stakes or metal rebar and wire.

- As recommended in the 2005 Advisory Visit, riparian tree planting would be of great long term benefit to the general ecology of the river and in providing increased shade to restrict the growth of emergent vegetation. Tree planting would be of particular benefit on the upstream and downstream sections of the fishery; the middle section has a number of willows and sallows that could provide a cheap source of whips for transplanting. It is understood the club may be able to source trees from the Magna Park distribution centre; it is important to check the provenance of these to ensure they are native species suitable for riparian planting. Any trees planted would need to be protected from grazing stock, rabbits and hares.
- The riparian fencing should be improved to exclude livestock from the river banks. On the upstream section of the fishery the RB fence should be upgraded to keep the sheep off the bank, and on the LB the fence should be repaired to exclude the cattle and a formalised drinking area created to reduce soil erosion. All fine material should be scraped back and replaced with layer of aggregate approximately 20cm deep. This will allow cattle access to safe clean drinking water, whilst not allowing the ingress of silt into the river.



Photo 10 Example of restored cattle drink with fencing to allow safe, clean access for cattle.

- The use of the deep-substrate egg boxes should continue at least in the interim until trout spawning habitat is considerably improved. The recent review of the Environment Agency's National Trout and Grayling Strategy has made a number of changes to the policy on stocking of brown trout. In recognition of the potential damage to wild brown trout stocks caused by interbreeding with domesticated farmed fish, it will not be permitted to introduce fertile (diploid) trout to rivers in the future and only infertile (triploid) trout will be permitted. This is being phased in on a voluntary basis, becoming mandatory in 2015. This policy also includes ova for use in incubation boxes which will also have to be triploid. Further information can be found at http://www.environment-agency.gov.uk/subjects/fish/165773/1791055/1800027/?version=1&lang=_e

It is recommended that a suitable supplier of triploid brown trout is found to supply ova for the incubation boxes, and the larger fish stocked annually. The club should continue to maintain catch and fishing effort records to monitor the performance of the fishery.

- The club should seek to work with others and build partnerships to improve sections of river upstream of the WFF stretch. Improved trout recruitment in these areas will benefit the fishery downstream. Barriers to migration should be identified and improved to assist with this. It is understood there is a golf club upstream with a $\frac{3}{4}$ -mile stretch, and a section controlled by a shooting syndicate, then a section flowing through the town of Lutterworth.
- It is important that angling clubs understand what is happening to populations of riverflies in their streams and rivers. To this end WTT recommends that fisheries register their interest in taking part in the Riverfly Partnership monitoring and training initiative. The initiative aims to support fishing clubs to monitor and help conserve the environment. More details can be found on www.riverflies.org
- The dredging previously carried out by the farmer is undesirable and requires Land Drainage consent from the Environment Agency (EA). If this activity restarts the club should check with EA that the appropriate consent is in place. If the farmer's concern is the choking of the channel with emergent plants, the clubs efforts to improve in-channel habitat could win his support if it is explained it will be breaking the cycle of over-widening and plant encroachment.
- It is recommended any works are limited to the upper and middle sections of the fishery above the influence of the British Waterways sluice gate. The idea of a weir structure on the lower fishery to maintain a minimum water level should be discussed with the Environment Agency as part of the wider project to see if it is feasible.

It is a legal requirement that all the works to the river require written Environment Agency (EA) consent prior to undertaking any works, either in-channel or within 8 metres of the bank. This consent will require an Environmental Impact Assessment to be undertaken and it is important that species of conservation interest at this site are considered, including water voles and otters. The EA Biodiversity department can provide advice on this and incorporating biodiversity enhancements into the project. Contact Andy Crawford / Chris Farmer / Kathryn Edwards on 01543 404906.

5.0 Making it Happen

5.1 Wild Trout Trust assistance

This report makes a series of recommendations that will improve both the biodiversity and status of the wild trout in this reach of the Swift. The AV represents phase 1 of a potential 4 phase package of WTT assistance. At this point it is worth discussing restoration plans with a suitably qualified contractor to get approximate project costs, before requesting Phase 2, a worked-up WTT project proposal. Before this happens it is strongly recommended that contact is made with the Fisheries/ Biodiversity and Development Control functions of the local Environment Agency to arrange a 'pre-application meeting'. Pre-application meetings are extremely useful to help scope out design work and to take into consideration any issues that could affect proposed works. Local Natural England staff should also be invited to any pre-application meetings to cover any protected species and habitats issues.

The worked-up proposal should provide all the necessary information for the completion of a land drainage consent application. This legal consent from the Environment Agency must be obtained in writing before works can commence. Consents can take up to six weeks to process. It is proposed that the WTT attends the pre-application meeting before commencing a detailed project specification / proposal.

On successful completion of phase two of the project, an application can be made to WTT (Phase 3) for seed-corn funding to kick-start the project. Typically this is between £1000-2000.

Further funding should be sought from the Environment Agency Fisheries Project budget, emphasising the club's concurrence with the National Trout and Grayling Strategy's aims of habitat improvement and protection of wild brown trout stocks.

Physical works could be yet further kick-started with the assistance of a WTT 'Practical Visit' (PV) (Phase 4). The WTT will fund the cost of labour (two-man team) and materials. Recipient clubs will be expected to cover travel

and accommodation expenses of the advisers. The use of specialist plant will be by separate negotiation.

Wet-work advisers will demonstrate one or more of the following techniques that are appropriate to the site.

- Tree management (coppice, pollard, sky-lighting)
- Tree Planting
- Fencing (Installation & Repair)
- Stream Narrowing (Faggots, Coir Rolls, Spiling, Islands)
- Flow Deflectors
- Introduction of spawning substrate
- Gravel Jetting
- Introduction / Management of Woody Debris

Note: Recipients of the programme must have received a WTT AV and have obtained the appropriate consents from the Environment Agency, Natural England, etc, prior to arrangements being made to undertake the PV.

Applications for all the above should be made via projects@wildtrout.org

5.2 Widening the project and finding funding

There are a number of possibilities for extending this project to a wider area, building partnerships with other local organisations and involving the local community in looking after the river.

- Lutterworth Improvement Partnership (LIP) is made up of approximately twenty members representing a wide range of local interests and committed to working with others to deliver the community's vision for a better Lutterworth. The Partnership has a full time Project Officer who is responsible for the co-ordination and delivery of agreed projects. Further details are found on their website at <http://www.onestopshop.org.uk/Organisations/LIP.htm>

- Gazeley, the owners of Magna Park (the large distribution centre near the M1), have a comprehensive social & corporate responsibility programme and may be interested in supporting a well-planned project. Further details at <http://www.gazeley.co.uk/corporate-res-overview.asp>
- The Wild Trout Trust has a full-time officer (Paul Gaskell) starting work on 1st July 2008 on the Trout in the Town Project (funded by Esmée Fairbairn Foundation). There may be scope for involving the community in Lutterworth in a river improvement project. John Burton (Warwickshire Fly Fishers secretary) is an ex-teacher at the High School, and there are a number of other schools in the area, so there could be potential for a Trout in Classroom project.
- Denise Ashton is the Wild Trout Trust's Sponsorship and Communications officer and should be involved in exploring the possibilities associated with this project. Denise is happy to help the club to develop these ideas and can be contacted at denise.ashton@yahoo.co.uk . Both Denise and Paul will receive a copy of this report.
- The Environment Agency has an officer dedicated to building partnerships and seeking external funding in Midlands Central Area (Will Groves – Lichfield Office). It would be useful to involve him in any partnership building initiative.

6.0 Disclaimer

This report is produced for guidance only and should not be used as a substitute for full professional advice. 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.