


Wessex Chalk Stream & Rivers Trust

SPRING 2016

# NEWSLETTER


Science & Research

Catchment Management

Habitat Improvement & Restoration

Education

# CHAIRMAN'S INTRODUCTION

Dear Supporters

Wessex Chalk Stream and Rivers Trust has made solid progress since I last updated you in 2015. As you will read in this newsletter, during the autumn and winter we delivered some important in-river projects across our catchments thereby continuing to make good on our promise to deliver real habitat enhancement, not just paper plans. A number of other projects have been fully funded and are in progress this spring, while still more are at the planning stage.

Our Catchment Partnership work, which our director Paul Jose describes below, is at the heart of what we do. Nationally, DEFRA set up Catchment Partnerships in 2013/14 and has provided core funding for them although on a decreasing basis. Even though we are now in the new financial year, funding for 2016/17 has yet to be confirmed by the government – although there are hopeful indications that something will be forthcoming soon for this year.

While still on funding, we are extremely grateful to the Esmee Fairbairn Foundation which funded the start-up costs of our Catchment Invertebrate Fingerprinting project (see more below) and has now given us a most generous grant for three years to help fund the salaries of our senior staff. This gives a tremendously important element of stability to WCSRT. We have also had generous contributions from riparian owners, regular supporters, several other grant making trusts and our local water companies – for all of which we remain deeply grateful.

We have had a wet winter and our Wessex rivers have come out of it at a good level, with the aquifers satisfactorily replenished this year. WCSRT, like the rivers, is going into the summer season full of hope and promise – thanks in large measure to all of you and your continuing support for us.

George Seligman | Chair of Trustees

SCIENCE & RESEARCH

HABITAT & FISHERIES MANAGEMENT

CATCHMENT MANAGEMENT

EDUCATION

Director, Paul Jose, asks the question:

# Who cares for our rivers?

We have achieved real progress over the last year. We have developed and helped deliver a range of projects and initiatives across both the Test and Itchen and Hampshire Avon catchments, several of which you can read about in this newsletter. They include an exciting river restoration project at Wilsford, where we helped successfully balance the needs of local stakeholders and the natural environment.

However, sadly, I cannot report that our Chalk Streams are all clean and sparkling and our fisheries, along with the habitats and species that support them, are in the rudest of health. The results of our Catchment Invertebrate Fingerprinting study show that sediment and phosphate, in particular, are having a catchment wide impact on species richness and abundance of fly-life.

Whilst we are starting to use this and other information to address local issues, the national and international drivers for cheap food and demand for water continue to impact on our rivers and it is perhaps not surprising that only 1 in 5 rivers in the UK achieve the Government's good ecological status. With increasing pressure on public finances and the threat of Brexit, which could according to many environmentalists be a catalyst for the loss of future legislative protection, one could ask: Who cares for our rivers ?

Whilst still in their infancy the Catchment Partnerships can play a critical role in caring for our rivers. They consist of organisations and people who live and work on our rivers and they are a valuable way for us to engage local communities and garner support for our work.

As joint host of the Test and Itchen Catchment Partnership with the Hampshire and Isle of Wight Wildlife Trust and host of the Hampshire Avon Catchment Partnership, we have developed new ways of working, bringing together key players to target key issues, such as sediment and phosphate, which continue to degrade our once pristine Chalk Stream habitats. This newsletter features an update on this work, through the Catchment Partnership's 'Sediment Pathways Project' and 'Septic Tanks Project' on the Test and Itchen. Ongoing work on the River Avon by WCSRT and partners is also using the 'Sediment Pathways' approach and has identified a range of sediment inputs that threaten the Upper Avon, Wylye and Nadder. We hope to bring you more on how these are being tackled in our Autumn newsletter.

The Catchment Partnerships provide the framework for action and have recently brought together both leading academics and local stakeholders to look at how better to address problems facing Wessex rivers. The development and success of both the Test and Itchen and Avon Catchment Partnerships over the last year are testament to showing that despite funding cuts and ongoing threats to our rivers there are organisations and individuals like yourselves who do care. Whether it is restoring, farming, regulating, advising or managing fisheries, we must work together to bring our rivers to life.

# Catchment Invertebrate Fingerprinting Study

One of the great challenges of chalk river catchment quality assessment and improvement is gaining an understanding of how good the water and physical habitat quality is throughout the network of springs, winterbournes, streams, rivers and estuary which constitute a catchment. Pollution takes many forms and may be present only fleetingly, but can, nevertheless, cause significant and lasting damage. Examples of common pollutants include poorly-treated sewage effluent, farm yard washings, fertilisers, pesticides, fine sediment from farmland and roads and industrial effluents. The differing pollutants interact with each other to form noxious cocktails which resident wildlife has to endure.

The invertebrate animals which live on and within stream beds form characteristic communities, depending upon both habitat types and quality and prevailing water quality: these communities of aquatic flies, crustaceans, molluscs, etc are effectively moulded by the environment around them; delicate species become rare or disappear from polluted sites. Furthermore, differing pollutants have differing effects on the many species which may potentially be present.

This allows expert ecologists, such as Dr Nick Everall of Aquascience Consulting Ltd to analyse samples of invertebrates, identifying them to species level and then counting the numbers of each species present and subjecting the data to computer analysis. The sample data can be fresh or historic and the computer programme runs the numbers through a series of Index calculations designed to assess impacts from organic pollution, low-flows, fine sediment and soluble phosphate. These index values (the 'invertebrate fingerprints') are then mapped by WCSRT to produce catchment quality maps, with a 'traffic light' system of blue (clean) through to red (seriously impacted) .

A first year of funding from The Esmee Fairbairn Foundation allowed WCSRT to obtain the past 30 years of suitable aquatic invertebrate data collected by the Environment Agency and previous organisations from the Rivers Hampshire Avon, Test and Itchen, an analysis and report on each river catchment by Nick Everall and then interpretation of results and mapping by WCSRT.

The results show, for all three rivers catchments, substantial widespread pollution impacts from both fine sediment and soluble phosphate; these effects tend to worsen towards the lower end of catchments. The consequence for the rivers is an impoverished fauna, with fewer aquatic flies and fish, especially salmonid fish, poor weed growth, especially water crowfoot and a preponderance of sediment-clogged river beds and prolific blanketing algal growth.

As a consequence of this scientific research, much of our work is now directed towards finding solutions to these pollution problems, often by working in collaboration through the catchment partnerships, to achieve better quality aquatic environments.

## Tackling the problem; a partnership approach

The clean or slightly impacted reaches of our rivers can hold the answers to improving less good stretches and we can generate the best results by working together under a catchment management umbrella.

In-stream habitat management to enhance habitat quality, targeted agricultural investment, regulation of discharges and abstraction control, planning permissions and litigation may all be required.

There is no time for complacency, since the findings in this study and that of other workers show direct links between raised biological signatures of, for example, sediment and phosphate stress, with loss of riverflies, both in rivers and in matching controlled laboratory studies.

Anglers have long recognised the plight of riverflies in some UK rivers and we are now seeing scientific data to support these concerns. The move towards species-level invertebrate fingerprinting of river samples is key to this understanding.

We must all work together to control and reduce pollution, low flows, sediment inputs, organic and phosphate enrichment and pesticide levels in reaches of the Rivers Test, Itchen and Hampshire Avon exhibiting impacted invertebrate fingerprints.

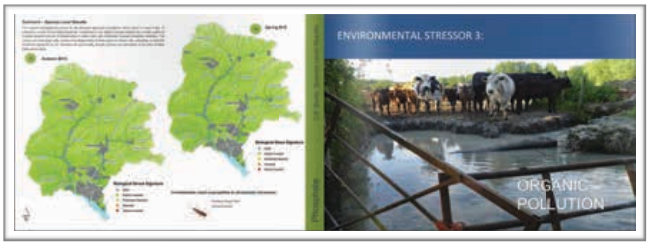
Experience shows that substantial improvements can be achieved, sometimes at surprisingly little cost, to increase water quality, habitat quality for flylife, fish and other species and the overall recreational values of chalk streams via collaborative, well-targeted project work.

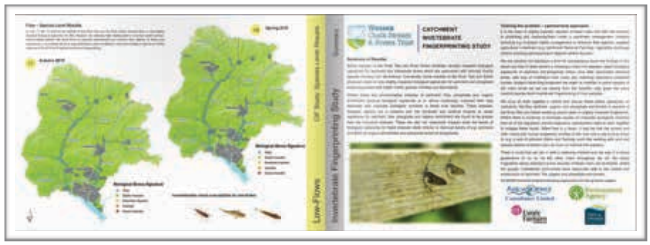
There is much that we can do with a collective mindset and we owe it to future generations to do so. As with other rivers throughout the UK, the invertebrate stress fingerprints being detected in some reaches of our rivers are reversible: aquatic invertebrate communities have responded well to the control of excess sediment, artificial low-flows, organic and phosphate enrichment and pesticide pollution.

## Test & Itchen Map Booklet

The Catchment Invertebrate Fingerprinting Study results for the Test & Itchen catchment have been compiled into a map booklet which provides a brief background to invertebrate fingerprinting and the WCSRT study. It also gives a more detailed view of each of the four environmental stressors and includes a series of maps showing the results of the family and species level analysis.

We have a limited number of hard copies available on request from admin@wcsrt.org.uk. The booklet is also free to view and download at: https://issuu.com/ticp/docs/t_i_cif_results

# Sediment Pathways Project

Over the past few months the Test & Itchen Catchment Partnership (TICP) have been busy delivering a program of works, at 14 key sites across the catchment, through their Sediment Pathways Project. The aim of the project is to reduce the high levels of fine sediment entering watercourses in the catchment via roads, tracks and pathways.

Historically, excessive fine sediment input to rivers has been perceived as a diffuse pollution problem that is too difficult to solve in river catchments. However, in many cases land run-off is channeled and actually enters rivers at discrete points. The TICP have focused on this as an opportunity to prevent excessive fine sediment entering the river channels by targeting those discrete points, complementing work taking place in the wider catchment to reduce the loss of fine sediment from land (such as through Catchment Sensitive Farming activity), and 'plugging the gaps' that cannot be tackled within the structure of such funding schemes.

The project has concentrated on two sub catchments, the Bourne Rivulet and the Cheriton Stream, in order to pilot an approach and assess whether it can be effectively replicated through the rest of the Test & Itchen Catchment. The case study below provides a flavour for some of the work that has been undertaken and the simple but effective measures that can be used to address the problem of excessive sediment inputs.

## Case Study: Valley Farm, Bourne Rivulet

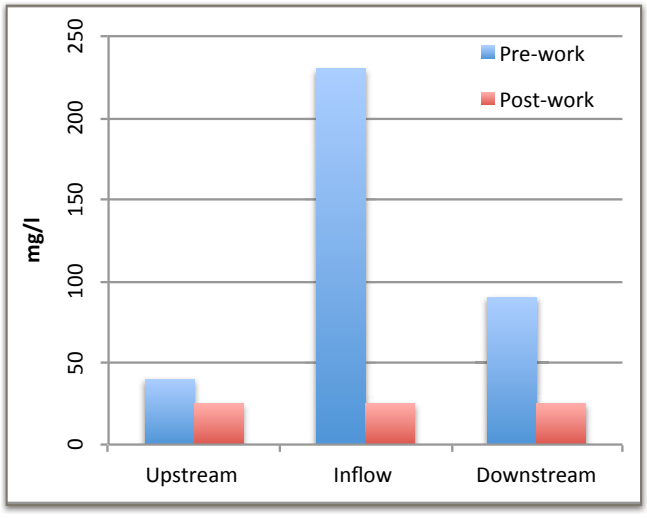
The track at Valley Farm, on the Bourne Rivulet, is typical of a number of similar roads, tracks and pathways in the catchment that run directly down steep valley sides towards the river in the valley bottom.

The aerial image overleaf and the photo opposite illustrate how this track and others like it act as pathways for the rapid transportation of fine sediment from surrounding land.

In this case the track itself and the adjacent field, which was being cropped for maize, were the primary sources of the sediment load.




**Results: pre & post works suspended solid loads**




In order to prevent silty water being transported directly into the Bourne, two cross drains have been installed on the track. The drains have been constructed with concrete bull-nosed kerbs and connect to settlement ponds which allow the track run-off to drain away whilst fine sediment is retained. Also, the farm has agreed to alter the cropping on the adjacent field, replacing maize with a long term grass ley, reducing erosion risk.

The results of the suspended solid analysis, opposite, show the effectiveness of these simple measures at a single site and demonstrate how targeted delivery of similar works at a catchment scale could make a significant contribution to mitigating sediment inputs into river systems.

## Hampshire Avon Catchment Officer

The Trust is delighted to welcome Leanne Sargeant who has taken over from Jacob Dew as Catchment Officer for the Hampshire Avon.

Leanne previously worked in the New Forest where she was employed by the Verderers to manage their Higher Level Stewardship Scheme, working closely with partners including Forestry Commission and the New Forest National Park Authority.

Prior to this Leanne worked for the Environment Agency on their Keeping Rivers Cool project and was based on the Hampshire Avon, linking with angling clubs and landowners to get their support for better management of riparian shade. Leanne has many years experience of managing her own nature reserves, including water meadows, reedbeds and lowland raised bogs from her years employed by the local wildlife trust. Leanne is looking forward to her new role with WCSRT and hoping it will lead into new areas of discovery as well as drawing on her knowledge and skills.

## Dun Sub-Catchment Project

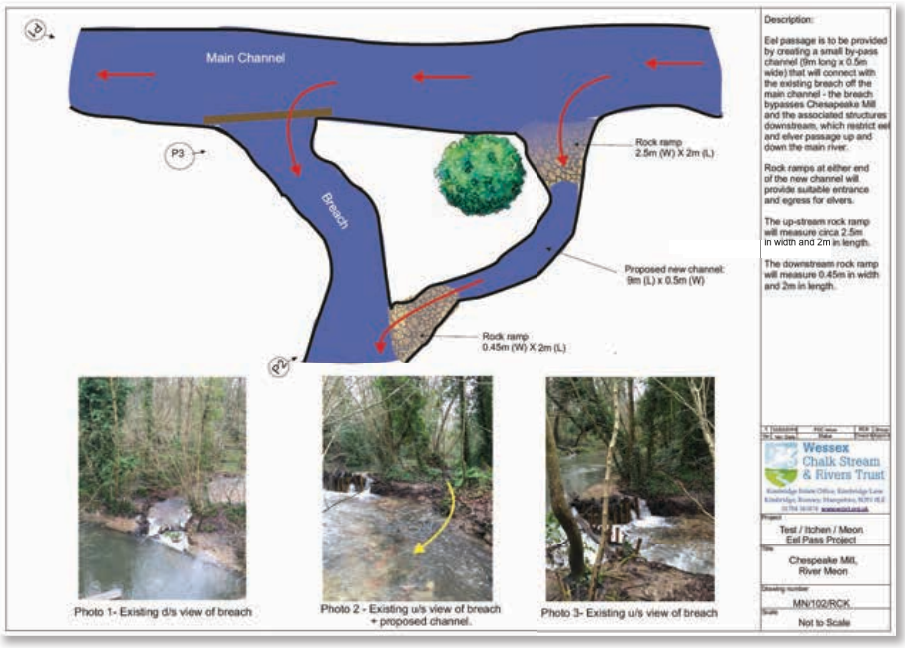
The WCSRT is continuing to progress work alongside the Environment Agency and riparian owners to improve fish passage on the River Dun.

The Kimbridge Estate have independently undertaken works this winter which now enables passage past the most downstream structures.

Further improvements are being planned upstream at Lockerley and Holbury with detailed designs being completed by Black & Veatch.

Subject to funding, we look forward to progressing work on the Dun in 2016/17.

## Veolia Eel Passage Project




During the first phase of the the project WCSRT have inspected 43 structures across the Test, Itchen and Meon catchments and have drawn up a shortlist of 15 of the highest priority for helping to improve eel passage.

We are now in the process of securing flood defence consents and beginning the instillation of passes. We look forward to brining you more news this autumn.

# Winchester Primary Schools Project

WCSRT is keen to promote education and awareness of our natural environment, centred on aspects of river catchment ecology and so we were delighted to be working with Winchester College, for a second consecutive year, helping with their Winchester Primary Schools outreach project.

The project has been collaborating with a number of primary schools in Winchester and giving 9-10 year old children an opportunity to learn about chalk streams. Each year over 100 youngsters have benefited from the programme which includes a preliminary lecture by Mrs Clare Talks of Winchester College, followed by both laboratory and field visits to the River Itchen in the College grounds to collect and identify small fish and invertebrates from the river.

The enthusiasm and interest shown by the children is boundless and often this had to be sustained during cold and wet early springtime weather: the field visits lasted around 2 hours and the pupils sometimes had strong winds, rain and hail to contend with, but all were impeccably behaved and eager to learn despite the conditions.

Highlights included the temporary capture and inspection in plastic trays/glass tubes/jam jars of sticklebacks, minnows, bullheads, stone loach, mayfly and damsel fly nymphs, shrimps, snails, leeches and caddis larvae: much to inspire young minds! This year we were also fortunate to have the help of TV wildlife presenter, Nick Baker.

The Trust is looking forward to helping the College develop the programme further and planning some additional field visits towards the end of the summer. This programme is generously supported by the Fishmongers Company.

# Cleaning Up Our Act

The waste water from our homes and businesses contains the nutrient Phosphorus. In various formats, it comes from the food we eat, and the products we use to clean our homes. Travelling either through the wastewater treatment network or via private sewerage systems like septic tanks, this waste water ultimately ends up in the environment, where the nutrients it contains can upset the balance of plants and animals that live in our rivers and streams. In some cases, this can be catastrophic. But by being careful about the products that we use, and by managing our waste water systems well, we can reduce the damaging impact that Phosphorus can have on the water environment.

The Test & Itchen and Hampshire Avon Catchment Partnerships have joined forces with a number of other neighbouring Catchment Partnerships to develop and deliver a project which aims to raise awareness about the impacts of Phosphates (Phosphorus-containing compounds), and to encourage householders to reduce their use and to manage their waste water to reduce impacts.

Reducing our phosphate use is something simple we can all do to help, whether we are on mains drainage or have private sewerage. A clean home should not mean a dirty river!

## What are septic tanks & small sewage treatment plants ?

If your home or business is not connected to the mains sewage system, the waste water from your toilets, baths, showers, sinks and washing machines will drain into one of the following systems:

**SEPTIC TANKS**

These are underground chambers where bacteria safely break down the waste. Solids sink to the bottom forming sludge and the liquid flows into a soakaway ('drainage field') where more bacteria treat it as it soaks into the ground. These systems must not discharge to watercourses.

**SMALL SEWAGE TREATMENT PLANTS**

These work in a similar way to septic tanks but use powered mechanical parts to aerate the bacteria. This makes them more effective at treating waste water and means they can discharge treated sewage into a soakaway or directly into flowing water.

No matter how well private sewerage systems are maintained, they will not remove phosphate, as they do not have the capability to do so, meaning that reducing the use of phosphate-containing products in the home is the only way that owners of properties with these systems can reduce their P-inputs to the environment.

However, if systems are not functioning well, they can have even more severe impacts upon the environment. A tank which is full or which is not working properly can discharge household chemicals and raw sewage directly to groundwater or rivers and streams.

Following best practice guidelines and complying with new regulations, all of which are shown in our simple step-by-step guide overleaf, will mean that tanks are more cost-effective to run, don't become a health risk, and harm the local environment as little as possible.

# Best Practice Guidelines

## 1 Get to know your system

Where is your tank? A metal or concrete lid should be visible, usually in the ground downhill from your property.

Is it shared? Ask your neighbours.

Where does it discharge to? Locate your soakaway. This gravel or grassed area cleans and filters the liquid effluent from your tank.

## 2 Check your system

Check that the soakaway isn't waterlogged, and that there are no pools of water running in to ditches or watercourses. Effluent inside the inspection chamber should be clear or pale, and odour-free.

## 6 Don't upset the balance

Using products marked as 'suitable for septic tanks' or 'environmentally friendly' will keep the bacteria in your tank healthy. The bacteria break down your waste, so the tank could cause health risks and environmental problems without them. Avoid harsh chemicals like bleach, caustic soda, disinfectants and anti-bacterials, and use cleaning products and detergents sparingly.

Domestic sewage systems can't remove phosphates from the effluent, so using phosphate-free products will help to protect your local rivers and streams.

## 7 Bin your waste

Household waste can block or damage your system and should be binned instead of flushed. Kitchen towels, 'flushable' wipes, tissues, cotton buds, nappies and sanitary items will all block your tank or pipes leading to expensive repair bills. Oils, fat and grease will solidify and block pipes and soakaways. Use a kitchen sink strainer to prevent food waste filling up your tank, or it will need to be emptied more frequently. Paints, solvents and chemicals can kill your tank bacteria and should be disposed of at a civic amenity site. Medicines can also kill your bacteria.

## 8 Don't over-water!

Large volumes of water can overwhelm your tank, flushing out untreated sewage. Ensure that roof gutters carrying rainwater aren't connected to your system, and avoid running dishwashers and washing machines several times in one day.

## 9 Keep good records

Keeping a record of maintenance, emptying and servicing will help contractors to fix any problems that arise, and will be useful if you want to sell your home.

# General Binding Rules

**These rules must be complied with by law**

## 3 Follow the law

Calculate how much your system is discharging at **www.gov.uk/small-sewage-rules** - if you discharge more than 2,000 litres of treated sewage / day into the ground or 5,000 litres to flowing water, you will need a permit.

If replacing or installing a new system, choose equipment that meets British Standard BS EN 12566 and speak to your local council to check that it will meet planning requirements and building regulations. You will also need to contact the Environment Agency to find out whether your new system will need a permit.

Environment Agency

## 4 Fix Faults

Gurgling pipes, discoloured effluent, odours, foam, a swampy soakaway, lush grass growth, and sewage fungus (that looks like grey cotton wool) in local waterways can all indicate that your system isn't working properly. The most common problems are that tanks are full and need to be emptied, or that pipes are blocked – these can be cleared with boiling water or drain rods. Problems must be fixed immediately, preventing pollution, health risk, and escalating repair bills. Accredited engineers can fix more serious faults and carry out servicing.

## 5 Get it emptied regularly

All systems need to be emptied of sludge on a regular basis. Frequency will depend on levels of use, and on how well you treat your system, but having it emptied annually by a registered waste carrier will help to ensure that it functions properly and doesn't cause pollution.

## 10 Buyer beware

If you sell your property, you must inform the buyer in writing that it has a septic tank or small sewage treatment plant. Being able to provide them with records and a maintenance guide will reassure them that the system isn't a liability.

FOR SALE

There are many thousands of private sewerage systems in the rural parts of southern England and their collective impact on local waters can be substantial. But following the 10 steps above can ensure that you're minimising the nitrogen, phosphorus and other pollutants invisibly entering our waters from your home. **Take care of your tank,** and avoid contributing to our rivers' 'dirty secret'.

# Case Study:

# Wilsford Cum Lake Leat Project


**Location:** Wilsford Cum Lake, River Avon, Wiltshire

**Installation Date:** Autumn 2015

**Partners:** Environment Agency, Wessex Chalk Stream & Rivers Trust, Black & Veatch, Natural England, Piscatorial Society, riparian owners and local residents.

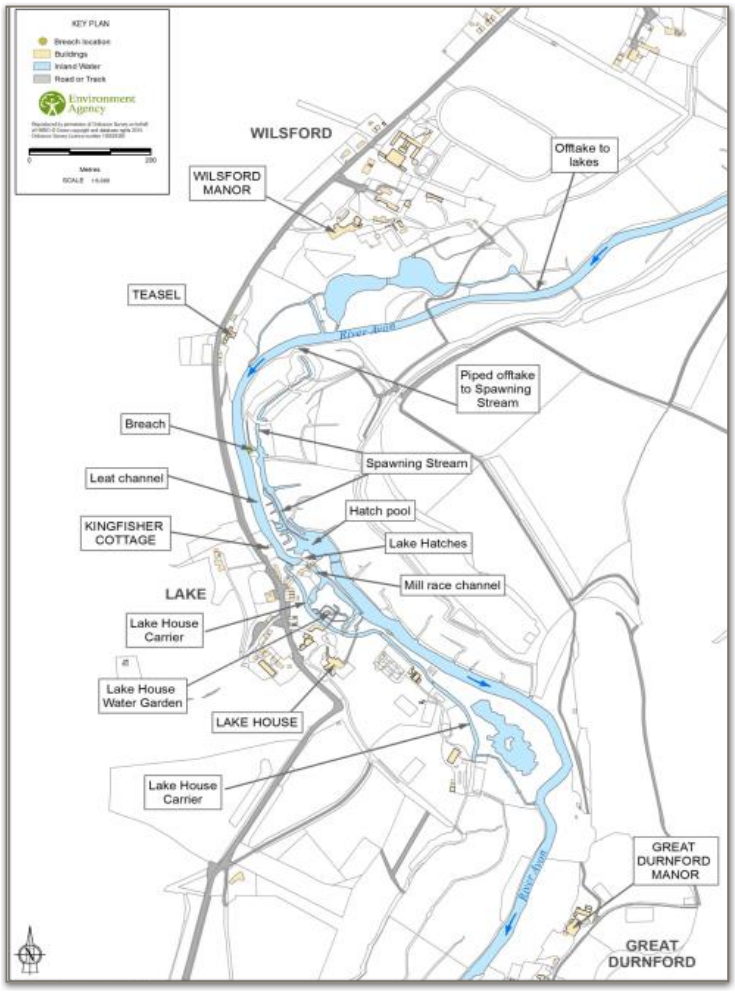
## Project Objectives

- Resolve breach of main channel
- Restore flow to Lake House carrier channel
- Maintain amenity value of leat channel (for fisheries interest and residents)
- Deliver Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI) objectives

During the 2014 winter floods the true left bank of the River Avon (now a man made high level carrier or leat) breached upstream of Lake Hatches at Wilsford cum Lake, near Salisbury in Wiltshire. The breach resulted in a dramatic change in flow conditions causing the majority of flow to bypass the hatches and run laterally to an adjacent lower level side stream.

The changes caused a significant loss of amenity to the local residents living along the leat and they were keen to see the breach repaired and the previous flow regime reinstated. However, Natural England and the Environment Agency also saw the apparent environmental benefits of the breach and were keen that it should be retained.

With the situation apparently irreconcilable the Wessex Chalk Streams and Rivers Trust were asked whether they could determine and broker a shared way forward that was acceptable to all parties. Conflicting views were resolved after discussion through a series of face to face meetings to reach consensus, leading to construction of the scheme in Autumn 2015. The group chaired by the Rivers Trust director, Dr Paul Jose, worked with engineering and environmental consultants Black and Veatch led by their chief geomorphologist Jane Moon and lead engineer Alex Hughes to design a scheme.




Several options were considered to meet the objectives of the project. After careful consideration and discussion an appropriate approach was agreed. This both improved the aethetics of the leat for landowners, continued to maintain flows to an important downstream water garden; and importantly improved fish passage. The design met the requirements of statutory agencies in terms of achieving and enhancing the internationally designated environmental interest of the River Avon . The group worked closely with the local stakeholders group ably led by local resident Brian Jakins and together agreed with the statutory agencies a project which would provide a cross cutting solution to the issues faced. Local contactors Five Rivers of Lower Woodford worked with AMCO to deliver the project. The contractors were also engaged by the Environment Agency to deliver environmental improvements downstream of the hatches making this the largest single project undertaken on the River Avon in 2015.

All parties agreed to review and monitor the project for a fixed period to ensure that it meets it's longer term objectives.The first review meeting was held in March 2016 and continues to engage local stakeholders.

*"All in all an excellent job…. I know the Stakeholder Group and the Agencies have sometimes found themselves at loggerheads in the past but the improvements we have seen to date are a tribute to the Agencies' ability to compromise and appreciate the concerns of our group and for that I sincerely thank you."*

Brian Jakins, Landowner and Stakeholder Coordinator

# Sale of Fishing Days

Kind friends and supporters of Wessex Chalk Stream and Rivers Trust have very generously donated some exciting and rarely available fishing days for the Trust to sell in order to raise much needed funds.

Many of these fabulous fishing days are on private or club waters which cannot normally be accessed by the general public – so a real opportunity for keen fishermen and women in 2016.

| River Test | |
|---|---|
| **SOLD** | A day for 2 rods after the June weed-cut to end of September on Lower Mill at Longparish. |
| **£260** | Two rods at Kimsbridge Meadow Fishery on a date to be agreed in 2016. |
| **£400** | One rod fishing as the guest of the owner on the river Test at Kimbridge Estate on a date to be agreed. |
| **SOLD** | One rod on the Govett Estate, date to be confirmed. Upstream dry fly fishing only, nymphs - only after August 1st. Preferably no dogs. Good facilities for picnicking and possible to BBQ on the central beats |
| **£260** | Beat 4 at Wherwell on the Test on a date tbc for 2 rods. Catch limit 6 fish. |
| **£260** | Two rods at Broadlands fishing for trout on a date to be arranged. |
| **SOLD** | Two rods on the Test at Bossington Estate. A date after the June weed cut to be mutually agreed. |

| River Itchen | |
|---|---|
| **SOLD** | Four rods on the Itchen on a date to be confirmed on Beats 1 & 2 of the Grange Estate, Main River and Shallows beats which includes the very wild Lovington Carrier.Fishing is upstream dry fly or unweighted nymph only. |
| **SOLD** | Two rods on the Fulling Mill Fishery on the Itchen near Easton, Hampshire, on a date to be confirmed. |

| River Avon | |
|---|---|
| **SOLD** | A day's guided fishing for two rods at Bisterne on the Hampshire Avon on a Thursday – date to be arranged from March – July. Breakfast and lunch will be provided. |
| **£260** | A day for 2 rods on the Longford Estate fishery (game or coarse) on a date to be agreed with the river keeper. |
| **SOLD** | A day's guided fishing for one rod at Bisterne on the Hampshire Avon on a Thursday - by mutual arrangement from March through to July |
| **£260** | A days fishing on the Avon Tyrell for 2 rods on a date to be agreed between the 1st March and the 31st July. |

| River Wyle | |
|---|---|
| **SOLD** | One day's guided fishing on a date to be arranged for one rod on the noted Wilton Club waters of the lower Wylye. |

| Still Water | |
|---|---|
| **£100** | Something completely different. One days guided fishing with Jon Bass (WCSRT Scientific Officer) in deepest Dorset to catch your first carp. All tackle and bait can be provided. Mutually convenient mid week date in July. |

For **bookings** and **further details** please contact Lee Bush at: admin@wcsrt.org.uk **N.B.** the listings above are just a guide and not definitive.