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Wessex Chalk Stream & Rivers Trust

AUTUMN 2016

NEWSLETTER

Science & Research

Catchment Management

Habitat Improvement & Restoration

Education

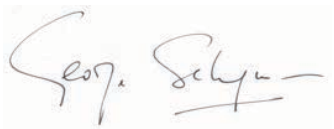
CHAIRMAN'S INTRODUCTION

Dear Supporters

The recent summer and autumn have been busy and successful for Wessex Chalk Stream and Rivers Trust. Our tangible activities in the rivers and catchments of the Wessex region are described in this newsletter – and these are our key deliverables, making real improvements to our rivers and streams. But almost as important are our behind-the-scenes activities to raise funds and in this sphere we have been equally busy and successful. No money, no progress! So I am delighted to report on three extremely generous grants which we have received this year from the Esmee Fairbairn Foundation, the John Ellerman Foundation and the Ernest Cook Trust, to each of which WCSRT is extremely grateful.

You will see from this newsletter that the in-river and catchment management work of WCSRT continues quite satisfactorily. Whether it is small scale projects like fry bays on the Avon, medium sized projects such as the installation of eel passes or a reduction of sediment pathways or large projects such as opening up the River Dun to migratory fish, we are constantly looking for new ideas which can be achieved. So if you are a landowner or farmer, a member of a fishing club, a local councillor, a water company employee or anyone else with an interest in our rivers and an idea for an improvement project which you would like WCSRT to consider, please get in touch with our administrator, Lee Bush, at admin@wcsrt.org.uk.

Finally, I would like to say a really big thank you to our many kind supporters who donated fishing days to WCSRT in 2016, or bought them. We sold almost everything and raised over £7,000 for WCSRT, which will be more than enough to help us fund, for example, several new fry bays or to make a substantial contribution to the salary of our part-time Education Officer. We intend to run a similar sale in 2017 so please keep up your support for it!



George Seligman, Chair of Trustees

The Wessex Chalk Stream and Rivers Trust is a charity dedicated to the guardianship, protection, enhancement and maintenance of healthy, functioning ecosystems within the river catchments and corridors of the Wessex region. Our vision is of healthy rivers which are valued and nurtured by the community.

www.wcsrt.org.uk

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SCIENCE & RESEARCH

HABITAT & FISHERIES MANAGEMENT

CATCHMENT MANAGEMENT

EDUCATION

Director, Paul Jose, shares his thoughts on the importance of:

SHARING EXPERIENCE

Pooling and sharing best practice and experience with partners involved in chalk stream conservation is central to what we do as a Rivers Trust and our Catchment Partnership hosting role.

In October as the Hampshire Avon Catchment Partnership hosts we held a locally based event in Salisbury, which provided us with the latest science and practical advisory measures to improve Catchment Management. A full house of delegates heard how five years of research by the Avon Demonstration Test Catchment (DTC) scientists has identified the key water quality problems facing the Avon system, but most importantly provided us with the solutions available. The real challenge though is to translate this into making a genuine difference on the ground and overcoming the barriers to improving the health of our rivers. We are planning to work to upscale knowledge from this project to deliver improvements at the catchment scale.

Sharing experience extends across several key areas of Rivers Trust activity. For example, in September the WCSRT came together with the Wild Trout Trust and Test & Itchen Association to run a habitat workshop on the River Test, showcasing natural habitat improvement techniques that are being used to restore chalk stream systems here in Wessex and beyond. We are also linking up with other Rivers Trusts, Environment Agency fish specialists and WildlifeTrusts, as well as working closely with landowners and local industry to improve our rivers. We are currently completing a project with the Environment Agency, to install eel passes in the Test, Itchen and Meon catchments with funding from Veolia, the Waste Management company based at Marchwood on the Solent.

Over the Winter and into next year we will be expanding our educational activities as a result of a successful grant application to the Ernest Cook Trust for a part time education officer. This will help us share experience with schools and local communities. Building on our invertebrate monitoring programme we will be producing a document looking at the health of the River Avon along the lines of that kindly funded by the Test and Itchen Association. We are also hoping to work with the South Downs National Park Authority and their network of Riverfly Monitoring volunteers to expand out Catchment Invertebrate Fingerprinting Study into the River Meon catchment.

Working together engenders trust, which is essential when working to solve a complex range of river and catchment management challenges. This role as a trusted intermediary has been the key to us gaining our grants from the Esmee Fairbairn Foundation and John Ellerman Foundation, which support our activities. We look forward to ongoing success in 2017 and thank you, our members and supporters, our grant giving bodies, statutory agencies and local Water Companies, for your ongoing support.

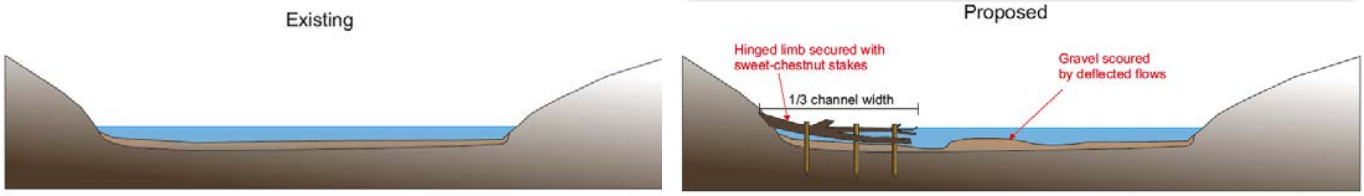
The WCSRT recently teamed-up with the Wild Trout Trust and Test & Itchen Association to hold a habitat workshop near Whitchurch on the River Test. Mike Blackmore and Shaun Leonard of the Wild Trout Trust helped share their expertise through a series of practical demonstrations which were part of a wider programme of works being carried out by riparian owner and host for the day, Richard Maitland.

The workshop, attended by seventeen people including many full-time Test keepers, demonstrated a range of simple, natural habitat improvement techniques. The mighty band of volunteers ate through the work, putting eleven large habitat features into a 200m river reach, including hinged-in trees, brushwood berms and a number of big log deflectors, created from huge sycamores and alders. Mike withstood the pressure of an audience of professional riverkeepers as he dropped both trees right onto the necessary (and pretty tight) spots!

Example Technique : Log Deflectors

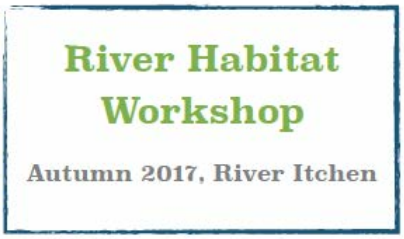
One of the techniques showcased during the workshop was the use of large log deflectors. This particular technique is a means of introducing woody material (often whole trees) to create diversity of morphology and flow in areas where there may be a lack of physical habitat diversity in the river.

The photo below, on the left hand side, shows WTT's Mike Blackmore felling a large Sycamore into the river during the workshop. Notice the uniformity of both channel and flow, as well as the heavy shading from the bankside trees. Felling the Sycamore allows a pool of light to punch through into an otherwise over shaded reach and, of course, it also provides material for the log deflector.



The Sycamore was de-limbed and the brash removed to be used elsewhere in brushwood mattresses. The main trunk of the tree was then keyed into the bank and angled upstream at between forty-five and sixty degrees from the bank. A series of sweet-chesnut stakes, either side of the trunk, were then driven into the river bed and wired to the deflector to secure it into place.

The installation of woody material has created greater flow variability. There are now areas of marginal dead water and faster flowing water creating more varied habitat. Sediment accumulations will now be concentrated at the channel margins rather than on the channel bed along the main flow path. This is keeping the gravel bed clean for spawning habitat and provides silty marginal habitat.



2017 HABITAT WORKSHOP

The Wild Trout Trust, Test & Itchen Association and the WCSRT are planning to team up again in 2017 to hold a habitat workshop on the Upper Itchen.

If you are interested and would like to be kept informed of further details, please email:

admin@wcsrt.org.uk

Eel Pass Project

In 2015 the Wessex Chalk Stream and Rivers Trust was commissioned by waste management company, Veolia, to help them offset the impact of their Marchwood abstraction on eels. The project aims to help local eel populations by delivering works to improve eel passage on the rivers Test, Itchen and Meon.

The first phase of the project was focussed on identifying structures and inspecting them for potential difficulties in limiting free passage up and down stream. During this phase the Trust visited forty three structures across the three river systems, assessing the passibility of each structure for eels and elvers.

Over the spring and summer this year, the Trust has started to undertake phase two of the project, to install eel passes or, where possible, remove barriers at fifteen shortlisted structures. During the past couple of months the Trust has been working alongside the Environment Agency and Elver Engineering Limited to design, permit and install eel passes at a variety of different structures on all three rivers, with fourteen out of fifteen sites now completed. Work has included the removal of two structures on the River Dun which you can read about on page twelve of the newsletter.

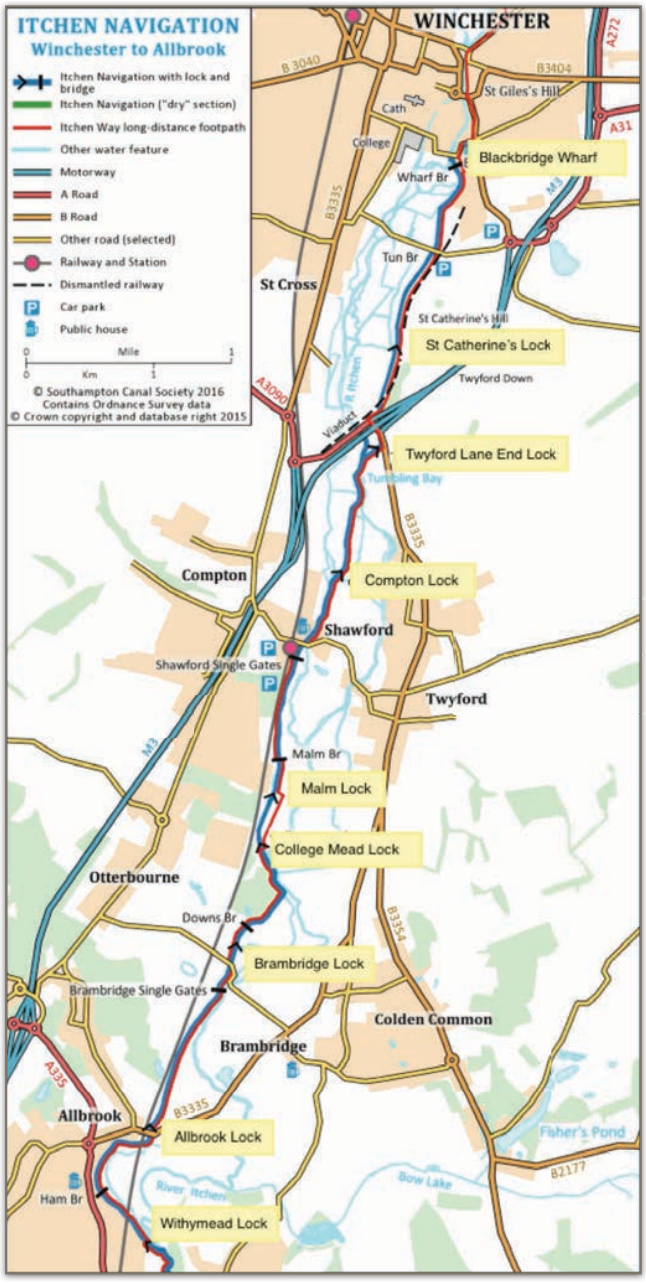
Case Study: Itchen Navigation

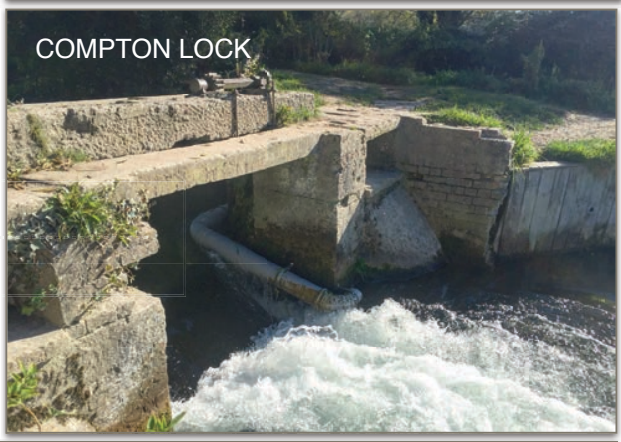
One of the areas identified during phase one of the project, for having a number of problem structures was the Itchen Navigation.

The old navigation boasts excellent habitat for eels but there is a series of structures, typically found at points where the old lock systems for the waterway were historically located. In most cases these structures were causing major obstructions to the free passage of eels and, particularly, elvers on their upstream migration.

In total the Trust looked at nine such structures between Winchester and Eastleigh.

BRAMBRIDGE LOCK





Several of the structures on the Itchen Navigation are Environment Agency owned and so in a combined effort to improve eel passage for the entire course of the Itchen Navigation, the Environment Agency are seeking to address the eel passage issues at the structures in their ownership, enabling this project to focus on delivering improvements at the remaining, privately owned, structures.

The photos above show some examples of eel passes that have been installed on the Itchen Navigation. All of the passes are gravity fed and are typically comprised of bristle brush material housed in prefabricated aluminium casing or plastic piping. The passes allow elvers, in particular, to navigate their way past structures where high current speeds, barriers or the absence of mossy, vegetated edges would otherwise make it difficult for clear passage up or down stream.

The WCSRT would like to thank all the riparian owners involved with the project, as well as the organisations below for their help and support.

Environment Agency VEOLIA elver engineering

Education Officer

Thanks to the generous support of the Ernest Cook Trust the WCSRT will soon be recruiting for a part time 'Education Officer' to help expand the coverage of our Trout in Schools Project, support our work with Winchester College's 'primary schools outreach programme' and develop new and exciting outdoor-focused education activities.

If you would like to find out more details about the forthcoming post then please get in touch with us at: admin@wcsrt.org.uk

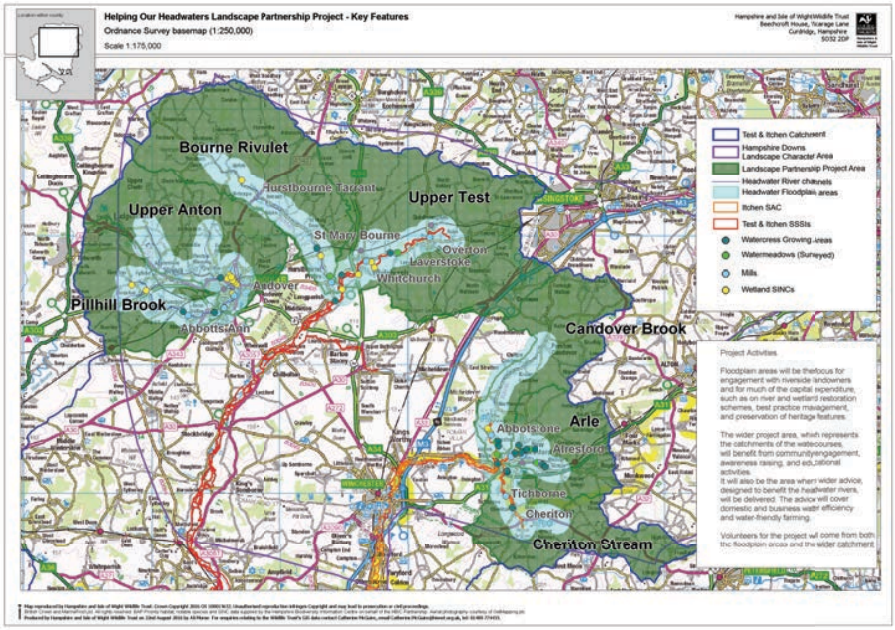
Dun Sub-Catchment Project

The Trust has recently received confirmation from the Environment Agency that funding will be available to contribute towards the proposed improvements for fish and eel passage at Lockerley Mill and Holbury Mill on the River Dun.

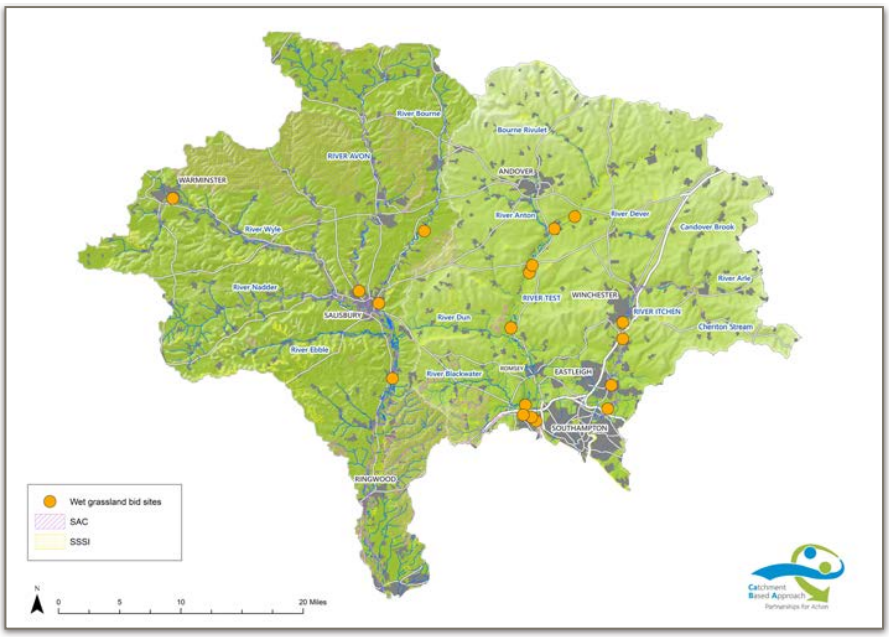
This is a really positive step towards creating free passage along the whole River Dun system and the Trust is now in discussion with riparian owners, statutory agencies and contractors to formulate a plan to progress the works.

Project Development: Heritage Lottery Fund

Over the past few months the Trust has been helping develop two funding proposals for the Heritage Lottery Fund. The first is a Landscape Partnership bid being led by the Hampshire & Isle of Wight Wildlife Trust on behalf of the Test & Itchen catchment Partnership. The proposed project is a catchment based approach to improving the natural and cultural heritage of the headwaters of these two iconic rivers.



The second bid is being led by Natural England and is focused on enhancing areas of wet grassland. The proposed project would feature a number of wet grassland sites across the Test, Itchen and Avon catchments.



Sediment Pathways: River Avon

Further to the 'Sediment Pathways' work piloted by the Test & Itchen Catchment Partnership last winter, the WCSRT has joined up with the Hampshire Avon Catchment Partners to establish a similar project to identify local issues which impact river water quality through the classification of diffuse inputs within the Upper Avon, including the Nadder Headwaters, Swan/Weir, Deane Water, Woodborough stream and Upper Wylye. The evidence obtained through the project's investigations is now enabling the delivery of local intervention measures and support actions to develop strategic solutions to mitigate future aquatic pollution. The project is working towards the aims of the catchment approach to reduce diffuse pollution, which in its many forms, including runoff of excessive fine sediment, fertilisers, farm slurry, septic tanks and spoil heaps, is a major reason for failure to meet Water Framework Directive (WFD) targets.

While point sources of pollution are often relatively well known, identifying the sources of diffuse inputs of these pollutants to rivers is more challenging. As a result, the evidence base for diffuse pollution required to underpin catchment delivery has been lacking. Until recently there was no standardised or tested methodology for undertaking walkover surveys of rivers to identify and classify sources of diffuse pollution. Since 2009, APEM has been working in partnership with the Environment Agency and Natural England to develop methods and deliver walkover surveys of rivers across England and Wales. The purpose of these surveys is to identify key sources of diffuse pollution in water bodies that are failing to achieve good status under the WFD and to provide a robust evidence base to support catchment delivery.

The project incorporated two reports that describe the findings of the diffuse pollution walkover surveys and the track crossing visits carried out on the upper Avon catchments, along with summarised recommendations for interventions at priority sites. These can be viewed on the website;

www.hampshireavoncatchmentpartnership.org.uk/projects

There were 25 high risk sources identified during the walkover survey of the upper Avon catchments. In order of frequency of occurrence, pollution source categories were as follows: conduits; livestock; arable; other and anthropogenic. Overall, the preceding analysis demonstrates the potential impact of livestock farming on diffuse pollution of the upper catchments. Furthermore, the analysis emphasises that recorded incidences of conduits and livestock pollution and potential pollution were dominated by direct overland runoff, poaching, pipes and road runoff. Arable fields were also identified as a potential source of diffuse pollution; most often via overland runoff and arable drainage pipes.

The project will continue this winter, thanks to Environment Agency and Natural England funding, with mitigation works being implemented and further wet weather walkover surveys on the lower risk areas of the catchment.

A Helping Hand for Coarse Fish on the Hampshire Avon

Fry Bay Surveys: Overview & Detailed Results

With support from Defra funding via the Environment Agency, Wessex Chalk Stream & Rivers Trust created an area of shelter for young fish in autumn 2015. Relatively low survival rates of small fish (aside from minnows!) has long been a feature of the fast-flowing River Avon. A fry bay was constructed near the Avon Causeway upstream of Sopley. Fast-forward nine months and the fry bay was re-visited in July 2016. Leanne Sargeant (WCSRT) and Jon Bass (WCSRT) teamed up with Pete Reading (Barbel Society) to assess 2 other fry bays which had been created previously in partnership with the Barbel Society and with funding support from the Environment Agency. Guided by Adrian Pinder (Bournemouth University), the national specialist on juvenile fish, the project partners were keen to see what was present in the fry bays. Fry samples were collected and examined using both a pondnet and micromesh seinenet. Catches demonstrated variable distributions of young-of-the-year fish within each fry bay and the adjacent main river margins. In total, eight species were recorded, although roach was a notable absentee among more than 850 young fish closely examined. Not all species are attracted to static or slow-flowing areas, but because of the limited swimming ability of fry these areas become very important for young fish during flood events. Many floodplain ditches connected to the river have silted up in recent decades reducing the extent of fry refuges during bank-full floods. Therefore these monitoring results will inform future fry bay design that can compensate for the loss of accessible ditch habitat.

Fry bay (1) is a small shallow pool (5m x 10m) connected to the river about 500m upstream of Avon Causeway bridge. Mats of fine algae and Canadian Pondweed gave good shelter for fry and difficult netting conditions. Quick stabs with a pondnet in open water produced very small minnows, tiny chub and barbel. Encouraged by this the seinenet was carefully set and retrieved to minimise weed in the net. Around 375 fry (half the seinenet catch) were closely examined and included 44 chub, 9 barbel, 5 dace and 9 stone loach. The remainder being minnows and sticklebacks. Sizes ranged from 18-23mm (chub), 38-43mm (dace) and 17-23mm barbel. Additional pondnet samples yielded a higher proportion of barbel fry close to where the fry bay joins the main river.

Fry bays (2) & (3) are enlarged ditch mouths about 150m downstream of Avon Causeway bridge. These areas had cattle-poached mud margins and the bottom had settled mud overgrown with Canadian Pondweed and some algae. The pondnet catches in open water were again dominated by tiny minnows and stickleback. The seinenet was set and retrieved in (2), half the catch was processed and produced 25 chub, 16 dace, 24 barbel, 4 gudgeon, 7 stone loach and 4 bullhead. A further 260 fry consisted of stickleback and minnow. In addition, there were five slightly larger one-year-old fish (4 chub and 1 dace). The seinenet was also used to encircle small areas of shallow water close to the bank. Catches here, over muddy sand with some finer gravel were dominated by fry of dace, chub, minnow and barbel.

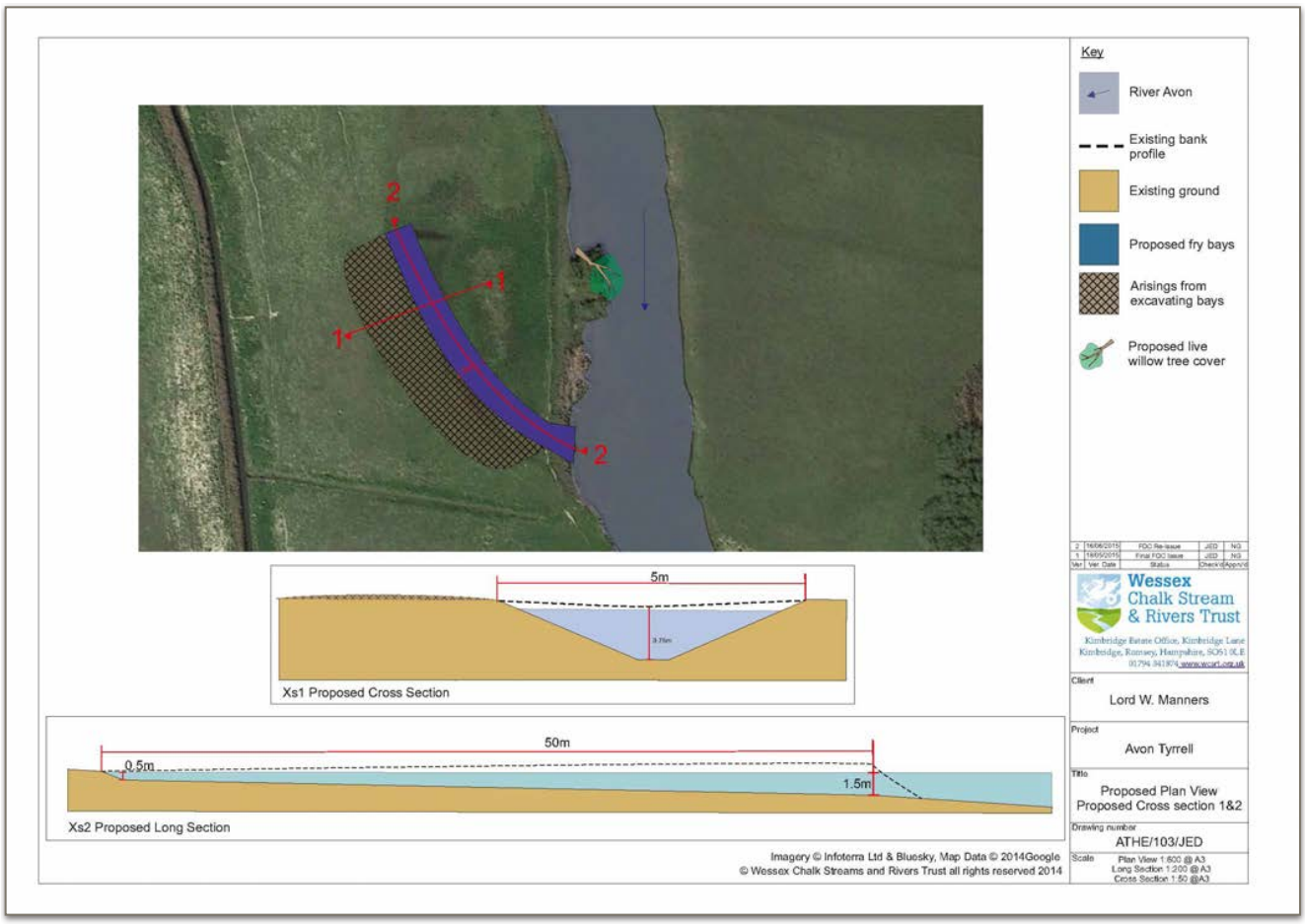
Principles and Benefits of Creating Fry Bays:

Environment Agency surveys and angler catches show 'a paucity of coarse fish throughout the middle section of the lower Avon' and the current WFD classification does not represent accurately the true status of the Avon's coarse fish stocks (Andy Martin EA Fisheries Technical Specialist, Blandford Office).

Fry bays like the one on the Avon Tyrell Estate, shown in the picture above and drawing below, provide vital refuge for a range of juvenile fish species and are crucial for ensuring a better success rate of coarse fish, which in turn enables more diverse and abundant fisheries.

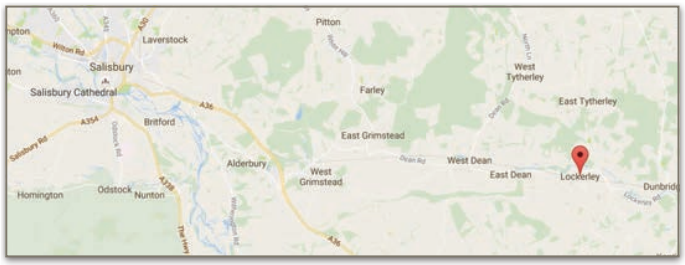
There can also be a number of additional benefits to creating fry bays, which can be designed to provide suitable edge habitat for wading birds, such as lapwing and redshank, as well as creating suitable sheltered feeding areas for amphibians, reptiles such as grass snakes and a wide range of invertebrates.

If you would like further information or a site visit to discuss the potential for establishing fry bays or delivering other fisheries improvements then please contact Leanne Sargeant at:
leanne.sargeant@wcsrt.org.uk



Case Study:

NatWest Syndicate Project



Location: Lockerley, River Dun, Hampshire

Completion Date: Autumn 2016

Partners: Wessex Chalk Stream & Rivers Trust, NatWest Fly-fishing Syndicate, Woodland Water & Gardens Ltd, Veolia, Environment Agency and Natural England.

Project Objectives

- Remove impoundments and improve flow conditions
- Improve fish and eel passage
- Improve habitat diversity and habitat structure for wild and stocked fish
- Improve bank conditions and accessibility for angling.

The Natwest Fly Fishing Association (NFFA) are undertaking a multi-year river restoration programme on the River Dun, near Lockerley in Hampshire. The project has begun this autumn with the removal of two weirs and has been supported by the Wessex Chalk Stream & Rivers Trust through our 'eel passage project' which is being funded by Veolia.

Following work undertaken downstream at Kimbridge earlier in the year, the removal of the two weirs on the NFFA water is another step towards free passage of eels and migratory fish along the River Dun and paves the way for proposed works up-stream in 2017 at Lockerley Mill and Holbury Mill.

The NFFA's initial motivation for the restoration project was driven by concerns over the effects of increasing levels of siltation and excessive growth of water parsnip *Berula erecta* and ribbon weed *Sparganium emersum,* on the health of the fishery. The NFFA were also interested in improving access for fishing from some of the steeper banks, as well as being more generally inspired by other river restoration work being carried out elsewhere in the catchment and wanting to explore options to improve both their fishery and the wider chalk stream environment.

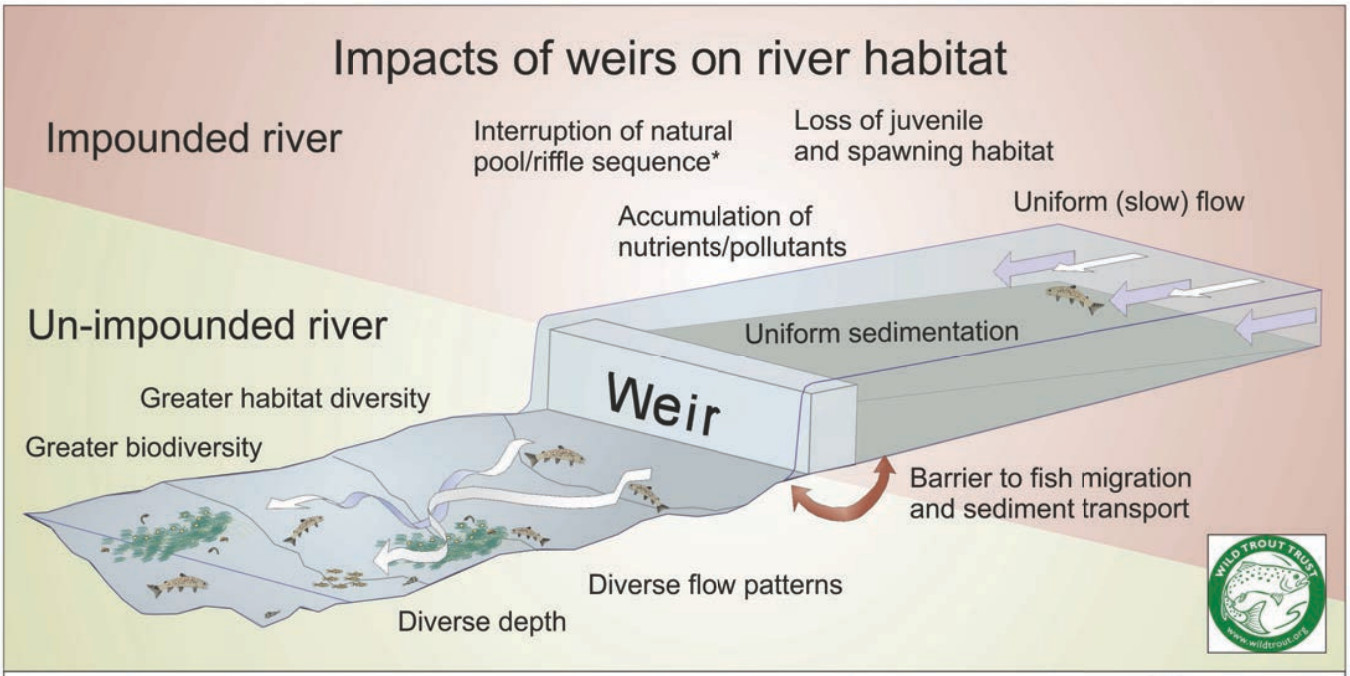
There is evidence that parts of the channel have been historically dredged and re-aligned, causing increased channel width and depth and, in turn, reducing water velocity and promoting the deposition of fine silt

Clearing-up, after removal of one of the main weir structures

and organic sand material (twigs and leaf litter), which has resulted in an ideal growing substrate for the problematic submerged plant species that dominate the fishery. The impounding effect of the two weirs had further reduced water velocity and increased deposition; consolidating the sluggish, canal-like flow pattern and vegetation community.

The restoration work is being carried out by Luke Kozak of Woodland Water & Gardens Limited. Having removed the weirs, Luke now intends to allow natural process to play out over the winter months before resuming with phase two of the project in spring 2017. During the next phase of work, Luke will seek to strategically narrow and re-energise the river with site-appropriate techniques, including the reintroduction of flint gravels, riffle creation, instillation of log berms and woody material deflectors.

The benefits of the works are nicely illustrated in the Wild Trout Trust drawing below. The weir removal and channel rehabilitation works will help restore the natural gradient, optimise water velocity and flow patterns, increase habitat diversity and allow free passage of eels and all fish species.



*Weirs often create 'weir pools' which can provide good holding habitat but at the expense of overall pool/riffle abundance

Frontier are the UK's leading crop inputs and grain marketing business and as part of their new 'Responsible Choice Program', have been in discussion with WCSRT about working in partnership to help tackle diffuse pollution, through the 'Sediment Pathways Project'. Frontier have a team of in-house agronomists and precision farming specialists with a wealth of expertise. They are also well placed to disseminate best practice to clients and the wider farming community. WCSRT are looking forward to building a partnership with Frontier, beginning with plans for a joint event on the Upper Avon in 2017.

Sale of Fishing Days

We would like to thank all the riparian owners who generously donated lots to our third sale of fishing this year, which raised in excess of £7,000. Also, a big 'thank you' goes to all those that bid, both successfully and unsuccessfully.

The contributions raised from the auction provide vital funding for the Trust. If you would like to donate a lot for 2017, please get in touch with Lee Bush at admin@wcsrt.org.uk - thank you!

Summer Concert

We would also like to give a special thank you to Rod Parker, Winchester College and all the sponsors for organising a wonderful evening at Winchester College this summer in support of the Wessex Chalk Stream & Rivers Trust. It was a thoroughly enjoyable evening and brilliant to see so many members and supporters.

Avon Demonstration Test Catchment (DTC) Event

WCSRT recently hosted a joint event with the DTC group, who have been undertaking research for the last five years to provide robust evidence on how diffuse pollution from agriculture can be cost effectively controlled to improve water quality in rural river catchments. The event took us through the research to establish a baseline characterisation for the Avon catchment, showing us what and where are the problems. Sediment was identified as a key issue as it is a carrier of nutrients into water courses. Tackling sediment will continue to be a primary focus for WCSRT and we look forward to working alongside the DTC group to do so.

THIS NEWSLETTER IS KINDLY SPONSORED BY THE WINCHESTER OFFICE OF SAVILLS:

Eastgate House, Eastgate Street, Winchester SO23 8DZ | Tel: 01962 857400

Contact William Sleeman BSc FRICS FAAV