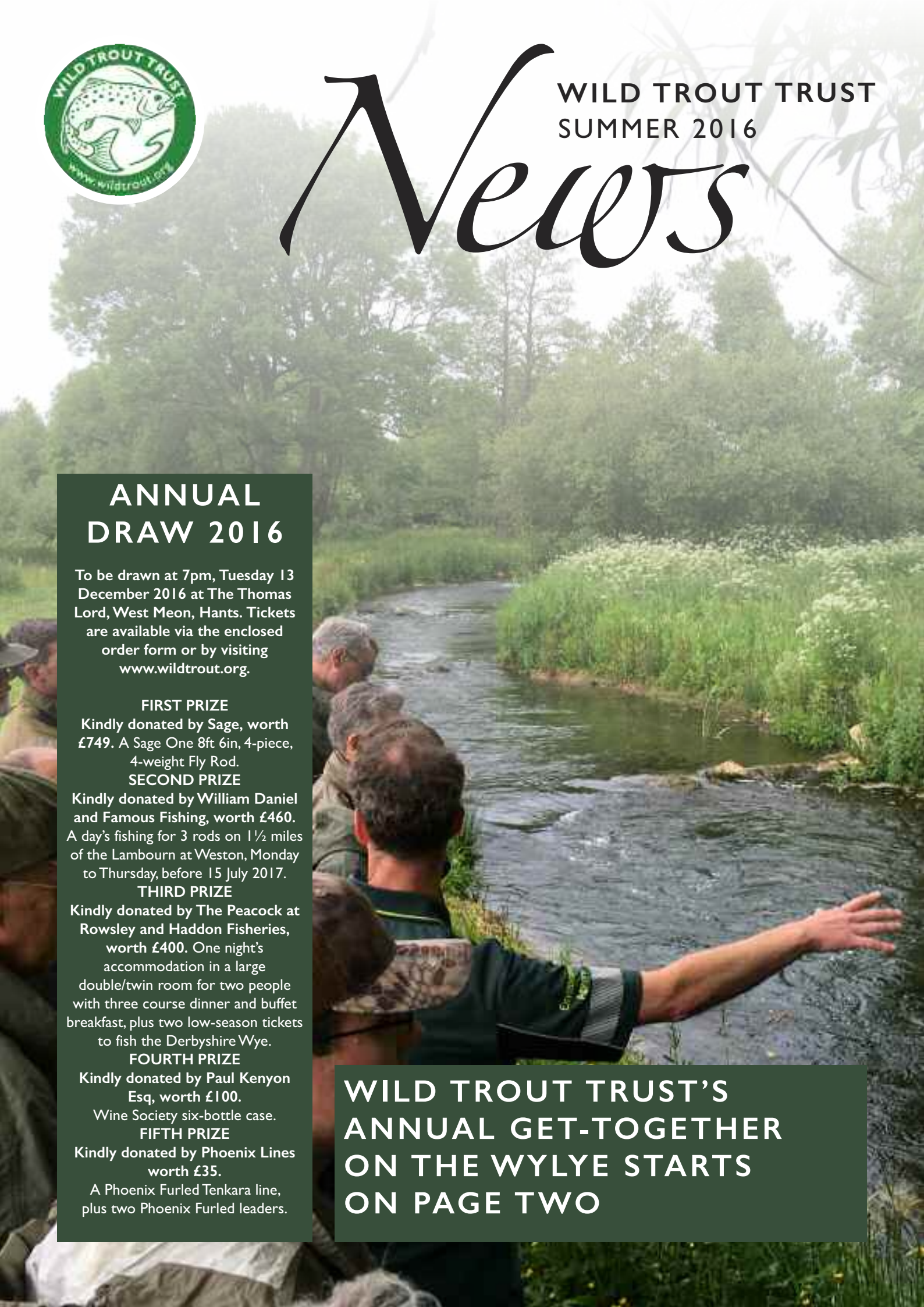
WILD TROUT TRUST
SUMMER 2016

News



ANNUAL DRAW 2016

To be drawn at 7pm, Tuesday 13 December 2016 at The Thomas Lord, West Meon, Hants. Tickets are available via the enclosed order form or by visiting www.wildtrout.org.

FIRST PRIZE
Kindly donated by Sage, worth £749. A Sage One 8ft 6in, 4-piece, 4-weight Fly Rod.

SECOND PRIZE
Kindly donated by William Daniel and Famous Fishing, worth £460. A day's fishing for 3 rods on 1½ miles of the Lambourn at Weston, Monday to Thursday, before 15 July 2017.

THIRD PRIZE
Kindly donated by The Peacock at Rowsley and Haddon Fisheries, worth £400. One night's accommodation in a large double/twin room for two people with three course dinner and buffet breakfast, plus two low-season tickets to fish the Derbyshire Wye.

FOURTH PRIZE
Kindly donated by Paul Kenyon Esq, worth £100.
Wine Society six-bottle case.

FIFTH PRIZE
Kindly donated by Phoenix Lines worth £35.
A Phoenix Furled Tenkara line, plus two Phoenix Furled leaders.

WILD TROUT TRUST'S ANNUAL GET-TOGETHER ON THE WYLYE STARTS ON PAGE TWO

AUCTION – £72,000!

Denise Ashton reports on another successful WTT annual auction.

The annual fundraising auction, held in March 2016, was again a tremendous success, raising just over £72,000. Our thanks go to the donors and purchasers as well as the small army of volunteers who make it such a success. We are constantly amazed by the positive 'vibe' around the auction, perhaps now more apparent with the growth of social media. The auction is not only a very successful way of raising funds for the Trust, it also helps us to reach out to the wider trout fishing community and build awareness of the work that we do for wild trout and their habitat. It is intended to be very inclusive (even though some of the fishing is very exclusive!) and involve as many people as possible as buyers, donors or publicists. The catalogue of lots reflects the huge range of trout fishing available, as well as the breadth of our support-base across the UK and Ireland.

We are delighted that it is such a successful event but we appreciate that we need to constantly improve what we do – in particular to make it easy to find and bid for lots. We made some changes this year, including separating the 'England' fishing lots into regions in the catalogue and closing the auction on a Sunday rather than a Thursday evening. Do let us know what you think of these changes and the auction in general. Any suggestions for improvement would be very much appreciated. Please contact Denise Ashton on 07802 454157 or dashton@wildtrout.org.

THREE FLY CHALLENGE

More than £3,500 was raised in June for WTT following our annual, popular fly fishing competition at Meon Springs, near Petersfield.

Now in its seventh year, the Three Fly Challenge – which is run in support of WTT and Fishing for Forces – has now raised over £20,000.

More than two dozen anglers took part in the competition, the aim of which is to earn as many points as possible by catching rainbow trout using just three flies.

Normally, anglers can choose any fly pattern they want from thousands of different imitations, but by restricting the number and type used, it makes the competition more challenging.

The angler with the most points this year was Neil Mundy, but for Neil, who has organised the event since its inception, the most important part of the day was to see so many anglers come together to raise money for charity.

The Three Fly Challenge is held each year in memory of Pasco James, an avid fisherman, whose life ended tragically early in 2010 at the age of 22. Since then, the Wild Trout Trust and Meon Springs Fly Fishery has run the Three Fly Challenge in his honour. The money raised is used by WTT and local partners to improve the wildlife and habitat on the River Meon.

Shaun Leonard, Director of the Wild Trout Trust, said, "We decided some years ago to commemorate the Three Fly Challenge fundraiser to Pasco James, a young man who adored, worked on and fished the Meon. He started a degree in fishery management at Sparsholt College, near Winchester, but died tragically young in 2010. The money raised at Meon Springs is used on habitat improvement projects for the Meon and has thus far funded work by Wild Trout Trust, the Environment Agency and local people at East Meon, Meonstoke and Midlington. We also share some of the proceeds with another charity, Fishing for Forces, that does a brilliant job in offering fishing as restorative time to ex-Services personnel coming back from operational duty."

LOST MEMBERS

We have lost touch with the following members as they have moved and we do not have a current address. If anyone can help, please contact Christina via: office@wildtrout.org. Thank you.

- Nicholas Ferguson, Cirencester
- Thomas Goddard, Dorchester
- James Gout, Madrid
- John Griffiths, Chepstow
- Mark Hancox, London
- Richard Hunter, Perth
- D S W Lee, Sheffield
- Douglas MacAdam, Glasgow
- Thomas de la Mare, London
- Ian Morris, Oswestry
- Roger Pierce, Chinnor
- Jon Pratt, Melbourne
- Robert Shakespeare, London
- R J Smith, Camberley
- J Vater, Oxford
- J Walton, Newcastle upon Tyne
- Philip Wilkinson, London
- M R D Yates, Wallingford

KEEP IN TOUCH!

Please remember to let Christina in the WTT Office know if you move house, change your phone number or email address.

Please also 'whitelist' our email address (office@wildtrout.org) to ensure you receive emails from us instead of being caught by a spam filter – we won't bombard you with emails but we do send a few each year concerning events or news items.

Now that the Republic of Ireland has introduced postcodes, we would be very grateful if members living there could advise us of their new postcode.

Thank you.

DIARY DATES

29 July 2016 – closing date for WTT Conservation Awards entries.
25 September 2016 – World Rivers Day – www.worldriversday.com.
4 & 5 October 2016 – IFM Conference, Norwich – www.ifm.org.uk.
18 October 2016 – WTT/Thames Water Conservation Awards, London.
13 December 2016 – WTT Annual Draw, Thomas Lord pub, West Meon.

WTT'S ANNUAL GET-TOGETHER ON THE WYLYE, JUNE 2016

This year, we Wildies decided to invade the Wylye valley in Wiltshire for our Annual Get-Together.

What an extraordinarily warm welcome we received, returning to the patch where WTT was born (or the Wild Trout Society, as it was), back in the late 90s. The Friday evening traditionally sees a few early arrivers share supper, a few drinks and catch-up on the past year and early new-season victories; no different this year, with some good laughs in the Swan at Stoford.

Our venue for the Saturday morning was the excellent lodge at Wiltshire Wildlife Trust's Langford Nature Reserve, home for the day to over 80 of our guests. This ideal spot overlooks a large lake, formerly a stillwater trout fishery managed by Paul Knight, now CEO of S&TCUK.

Shaun Leonard, WTT's Director, opened proceedings, highlighting some of the Trust's achievements through the past twelve months:

- 123 Advisory Visits, 4 out of 5 resulting in practical work on the ground.
- 50 practical demonstration events, 1 day to 2 weeks in length, undertaken across England.
- Over 300km of river improved.
- 2,500 volunteers across 12,500 hours of work for the river.
- Conservation messages spread to an audience exceeding 10,000 people.
- Contribution to seven research projects from Malham Tarn's trout population, to sea trout along the East Anglian coast.
- Some serious cash raising, including over £72,000 in the annual auction.

Shaun thanked the extraordinary team of staff, trustees and volunteers within WTT but also its many, many partners; he highlighted especially the productivity of the relationship with excellent Environment Agency teams.

Our first presentation came from Dr Kevin Wood of the Wildfowl & Wetlands Trust, on the gnarly topic of swan grazing in chalk streams. Since the late 1970s, concerns have been raised that groups of mute swans feeding on aquatic plants can damage chalk stream habitat. These plants supports abundant wildlife, an ecosystem of high conservation value, and economically important game fisheries. Kevin summarised what we know (and just as importantly what we don't yet know) about swan grazing in chalk streams, based on his own PhD research, together with other available research. The British mute swan population, based on BTO census information, has dramatically increased since the mid-80s, coinciding with the withdrawal of lead shot for fishing and shooting. The evidence shows that grazing by flocks of swans can reduce aquatic plant abundance during summer and autumn, and can prevent their flowering. Much less is known about the knock-on impacts from that grazing on invertebrates and fish though the importance of aquatic plants for invertebrates is clearly known. The problem is worst where non-breeding flocks, numbering dozens of birds in some of the larger chalk streams, can graze beds of plants like *Ranunculus* down to bed level. Many of the attempts to manage the effects of swan grazing, for example through egg oiling, translocations, and habitat management have been disappointing, and we currently have no effective means of preventing grazing damage. Some of the local fishing clubs in the audience felt that, through licensed egg oiling and removal, they were managing to keep local swan populations stable rather than increasing. Knowledge of the effects of swans on the chalk stream ecosystem has been growing rapidly, which gives hope for future solutions. In particular, combining strategies which improve river habitat condition and move swans away from sensitive areas could offer a way of managing grazing effects.

Our second speaker, Nick Measham of S&TCUK, described the recently published report on the Riverfly Census 2015, presenting some headlines from the results of spring and autumn invertebrate samples taken from 12 rivers across England, analysed by Dr Nick Everall, to produce a number of biometric indicators. An article on the report appears elsewhere in this newsletter. Nick especially highlighted the apparent plight of the chalk streams, where the richness of mayfly species and *Gammarus* numbers seem to be being seriously impacted, especially by a combination of elevated sediment and phosphorous levels. S&TCUK intend now to repeat the invertebrate sample collection and analysis in 2017 and to target water quality monitoring to gather more detail on what is happening in these rivers. Nick Measham also

Shaun Leonard runs through the housekeeping.

described how similar work on the Itchen has contributed significantly to a review of abstraction and discharge on the river that may well see cress and fish farms dramatically change their practice or even cease to operate.

Andy Thomas gave the first of three presentations by WTT Conservation Officers, focusing on three projects on which he'd worked in the last year. An interesting project on the Monk's Brook, an Itchen tributary, with the Environment Agency and Highways Agency, saw several hundred metres of the Brook broken from its concrete bed, with pools and gravel runs created. This Brook is believed important for the Itchen's sea trout, so it was hoped to give some adult holding pools and maybe even spawning areas in this once uniform and featureless reach. Andy's second project was a superb collaboration with the Environment Agency, local landowners, the catchment partnership for the River Hamble in Hampshire and the consultancy firm, Fishtek. An 8-m long Larinier fish pass was installed, without machinery but using just volunteer muscle, on an old sluice structure around a mill. The job was completed for a total of £18,000 – extraordinarily cost-effective. Andy's third stop-off was on the Lark in Suffolk, where a project with an excellent EA team and the local fishing clubs has greatly improved habitat on 5km of river, with 'dig-and-dump' pool creation, gravel put in and the river narrowed.

Andy Thomas's Conservation Cameo.

Andreas Topintzis, fishery manager with Salisbury & District Angling Club, outlined the journey his club are taking in creating fisheries less reliant on stocking and more on wild fish. His hugely humorous and inspirational talk described the philosophical change SADAC are going through, led by a team of professional keepers and informed by management information on how the various beats are performing, for example with catch return statistics. In one case, the stocking of one beat has been reduced from 3,000 fish per season to 800, with no reduction in the number of fish recorded as caught. Overall, the club has reduced its annual stocking by two thirds, yet membership is buoyant; the game fishing waiting list stands at 3-3.5 years. But, SADAC's success is about a great deal more than just fish stock management – it's about creating sustainable, accessible fishing in beautiful and as far as possible, natural surroundings.

Jon Grey, WTT's Research & Conservation Officer, then gave a great presentation on the interaction between non-native crayfish and fish, based in part on the work of a former student of his, Kevin Wood, our earlier speaker on swans! As an MSc student, Kevin had looked at the interaction between chub and crayfish and found an interesting reciprocal predation relationship where young chub appear to be prey for the crayfish but, from the age of 2 to 4 years, the growth rate of chub is significantly faster in rivers containing signal crayfish compared to those with no crayfish. This suggests that juvenile and adult chub grow faster on a diet supplemented by crayfish, an observation consistent with anglers' anecdote. Jon also described other work to which he'd contributed showing how crayfish can be very important in the diet of barbel. As an aside, Jon's work with stable isotope analysis suggests that in heavily fished barbel rivers with no crayfish, pellet baits put in by anglers can contribute to 70% of the barbel's diet! Little has been done in the UK looking at the interaction of crayfish and trout. Work on the impact of crayfish on trout eggs in gravels is equivocal, although large crayfish do disrupt trout redds. There is plenty of anecdotal evidence of trout growing quickly and to a large size in rivers with signals, but no science as yet. Jon finished with a word of warning: in the UK, we are 'signal-centric' but there may be worse that's here but not yet escaped and widely distributed, so beware of other invaders, such as the red swamp crayfish or the white river

crayfish. Anyone wanting further information on the papers Jon summarised can contact him on jgrey@wildtrout.org.

Our next speaker was Bob Wellard, fishery manager with the Piscatorial Society, reflecting on catch and release in chalk stream trout fisheries. Bob considered the ethics and practicalities of catch and release and whether fisheries can withstand some degree of exploitation from rod fishermen. He presented some intriguing data derived from Itchen electric fishing surveys by the Society showing just how few wild trout above 9-inch there are in such an apparently healthy population, around 20%, indicating that even 'light' exploitation could create a big hole in a population. If, for example, each of the Society's 180 members took one 'breakfast trout' (10-inch fish) per season, the breeding population in subsequent years would likely to be decimated. This was another really well-structured and presented talk that gave us a great deal of food for thought.

Tim Jacklin completed the triumvirate of presenting WTT Conservation Officers, outlining the principles used in his work with Prof Richard Hey to create new river channels in areas of East Anglia impacted by past river engineering. Tim described three projects where seven variables were applied to design rivers that were then created on the ground, working with local Environment Agency teams, landowners and fishing clubs. Tim's work, together with Andy Thomas's earlier presentation, demonstrated that WTT is about more than just lobbing woody material in the river. On the River Glaven in Norfolk, Tim project-managed work to put the river back into its former channel through a drained millpond and then through a fish pass (intended for sea trout and eels) under a mill house – no mean engineering feat. Tim also described the construction of a 1.2km, meandering bypass channel around the formerly on-line lake at Bayfield House in Norfolk. Three months after this project was finished, including the importation of gravels for riffles, trout were spawning on those gravels, producing lots of baby fish, as revealed by Norfolk Rivers Trust's electric fishing survey work the following summer.

After lunch, our assembled group decamped to the Rivers Wylye and Nadder to look at work carried out by Wiltshire Wildlife Trust, the Wylye Fishing Club, WTT, the Environment Agency and SADAC. One project, at the confluence of the Wylye and Nadder, demonstrated big scale woody debris in the river: whole trees, big logs, the full works. The rivers here have enough energy to really make these techniques work and the outcomes are impressive. As two club members commented after this visit, "I wish all my club mates had been here to see this stuff, so we could do the same." The second site visited was on the Wylye where the Environment Agency and SADAC have created a bypass around an old sluice structure, creating great habitat and easing the movement of fish along the river. Again, a fabulous visit, elegantly guided by EA and SADAC chaps.

In the evening, WTT's Mike Blackmore donned his chef's pinny to help his wife, Lotte, create a barbeque of enormous meatiness, the salad thankfully confined to a few iceberg lettuces.

This was one of WTT's very best get-togethers, made so by the array of guests, great speakers, a fantastic venue and the hard work of many people, most especially Martijn, Lev and Phoebe at Wiltshire Wildlife Trust.

Thank you all.

Martijn Antheunisse on the Nadder.

Attendees looking at the Nadder.

SOUTH WEST – MIKE BLACKMORE, WTT CONSERVATION OFFICER

After a stuttering false start, spring has finally sprung.

March consisted of the usual mad dash to get money spent before the end of the financial year and get trees pollarded/coppiced/hinged before the start of the bird nesting season. My very understanding wife allowed me to work through three weekend days and a bank holiday to fit in projects on the River Biss just outside Trowbridge and the Somerset Frome in the town of Frome. Some delicate chainsawing and back-wrenching rope-pulling was undertaken to demonstrate different ways of managing fallen trees without removing them from the river – the largest of these was tackled by Land Rover and winch but the rest was done on volunteer-power alone.

Eight days were spent in the Somerset Frome using live willow to protect eroding banks, hinging trees for marginal cover and transforming a straightened, silty backwater into a sinuous and flowing fish nursery. The 16 volunteers that gave up their time to help out, plus the ever-helpful Frome Council Rangers worked extremely hard and should be rightly proud of themselves. The project has kick-started more improvements and provided a platform for further fundraising by the Bristol Avon Rivers Trust. Both projects were funded by rod licence money out of the Environment Agency team at Bridgewater.

In April, I was in Hertfordshire, Pembrokeshire, Hampshire, Somerset, and Blackpool. The trip to Pembrokeshire was particularly interesting and I'm now in the process of designing a river restoration project on a tributary of the Western Cleddau (pronounced Clad-eye for all you non-Welsh speakers) downstream of Lys-y-fran reservoir, with Natural Resources Wales. Since the dam was built to form the reservoir, a broodstocking scheme has been ongoing to mitigate for the loss of spawning habitat upstream. However, since the implementation of the Trout & Grayling Strategy, and the cessation of stocking with fertile fish, the decision has been taken to attempt to boost the wild trout population by improving the abundance and quality of spawning habitat below the dam. This project will involve re-energising the stream immediately below the dam which has been locked in a kind of geomorphological stasis since the reservoir was constructed (the bed just doesn't move much anymore). Cleaning and remobilizing the gravel bed and introducing a greater abundance of flow-deflecting woody habitat features will hopefully improve spawning success. Additional gravel, removed from National Resources Wales' assets downstream will also be annually re-seeded into the river to help bring the tributary back to life. It is hoped that such a project will lead toward further collaboration with NRW and more WTT work in Wales.

I'm also working on a river restoration project on the River Dever in Hampshire scheduled for the end of the fishing season, together with the landowner, Fishing Breaks and the Environment Agency. This will involve the usual woody stuff but with a bit of 'dig and dump' bed re-profiling, some squishing down of the banks and the introduction of some extra gravel.

It looks like a busy summer ahead with some big challenges. By the time you read this, we'll have had our great Annual Get-Together at Langford Lakes in Wiltshire and we'll have been able to showcase some of the fantastic river restoration projects that have been going on in the county.

Live willow weaved in to protect banks of the River Frome, Somerset.

RIVERFLY CENSUS 2015

Salmon & Trout Conservation UK publishes its report on the status of invertebrate communities in 12 of England's best-known rivers: not good news.

A recent report, published in Spring 2016, highlights the work of S&TCUK and Dr Nick Everall of Aquascience Consultancy Ltd, looking at the diversity and abundance of aquatic invertebrates in 12 English rivers. WTT members, especially those familiar with the Anglers Riverfly Monitoring Initiative, will know that aquatic invertebrates are key indicators of water quality. This latest research takes these principles further, to use a methodology developed by Dr Everall to identify invertebrate samples to species-level and assess impacts on the river from organic enrichment, nutrient enrichment, sediment and lack of flow. 120 sites were sampled in spring and autumn, with 14 of them being reported as pristine. The number of species and their abundance were

apparently especially impacted where phosphate enrichment and sedimentation act in combination. Some, iconic rivers such as the Itchen, Lambourn, Test and Wensum, rank 'poorly' in the census. Shrimp (*Gammarus*) numbers were described as very low across many of the sampled rivers relative to historic records. S&TCUK plan further research, including water quality testing to zero-in on the causes of water quality problems. S&TCUK stress that the '…message is that action, not talk, is now urgently needed'. The full report, Riverfly Census 2015, is available through the S&TCUK website: http://www.salmon-trout.org/.

RETURN FROM THE WILDERNESS

Howard Sullivan returns from a wilderness of no fishing, courtesy of a fantastic day through the Wild Trout Trust Auction 2016.

After a long break, I decided I wanted to start fishing again. Searching on line for ideas, I discovered the 2016 WTT auction and bid on eBay for lot number WTT294, 1 day for 1 rod, River Colne near Huddersfield, Yorkshire. I was thrilled to win the day.

I must say the whole process was seamless. I got an instant communication from Christina in the WTT office and after making my payment, my guide for the day, Michael Pogson, promptly got in touch and we arranged a date in April 2016.

Looking forward to the day, I prepared my tackle although Michael would provide what I did not have. (*Ed: how did Howard find any tackle at all after a long break from fishing? A single winter sees me having to start again from scratch with most of my gear for the following season.*) Having seen the weather a few days before with snow and a cold arctic blast, I was rather dubious and worried that the day would be miserable. I could not have been more wrong: the sun was shining and it was a glorious day.

We met in Slaithwaite and then went the short distance to the location which I would never have found without Michael. The water belongs to Slaithwaite & District Angling Club, but you would have thought you were somewhere else completely. To say you were in an industrial area and yet have a location as beautiful as that is fantastic.

On entering the river, I sensed it was going to be a good day. Michael had already gone through a number of different methods and we fished a mixture of these, including Czech nymphing and dry fly fishing. Both methods produced fish, mainly super wild brown trout and an odd grayling.

We fished from 9:00 to 17:00, with only a short break for a late lunch as the fishing was great. Michael even took time out afterwards to go through some tips to improve my casting.

He was really helpful and a terrific host and guide for the day, providing help with different setups, knots, providing flies, fly choices, casting tips and so on. I even caught some fish!

In summary, I enjoyed a fantastic day, all went as agreed and Michael could not have been more helpful; the only improvement would have been my rusty casting (*Ed: we're with you there.*)

Hopefully, I will be able to support WTT in next year's auction – the bug is back to go fishing again.

JONNY AND THE GIANT CHAINSAW

We are always hugely indebted for donations of useful kit and cash that we can use – leaving more money for our practical, in-river work. In recent times, members' very kind donations have brought us trailers, work boats, protective gear and various power tools.

WTT members will know of Kris Kent, a great friend and contributor to our cause, not least as our social media eager-beaver. Now, Kris has donated to WTT some invaluable kit, including this mahoosive chainsaw, fit to make rich river habitat in the north, courtesy of our Research & Conservation Officer, Jon Grey.

Our doors are always open for useful kit or, better still, cash donations that we can use for much-needed kit. Our current shopping 'needs' list includes a small trailer and work boat for our northern pair of Conservation Officers, buoyancy aids and new work waders. If you can help, please contact WTT Director, Shaun Leonard on 07974 861908 or director@wildtrout.org. Thank you, just in case.

MONITORING WATER QUALITY – INVERTEBRATE BENCHMARKS

Dr Cyril Bennett MBE reports on the methodology for the River Invertebrate Identification & Monitoring initiative.

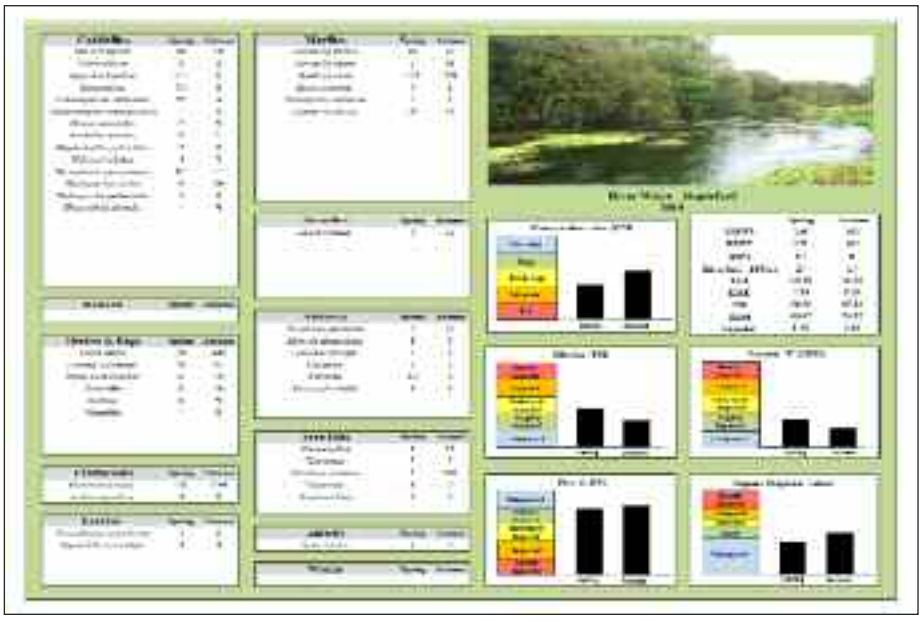
Water quality is fundamental to the health of a river and the standard method to measure this is by monitoring the freshwater invertebrates present at each site. This requires a full invertebrate survey and whilst this is normally the responsibility of the Environment Agency, Government funding over recent years has been cut to such an extent that we now have serious concerns that this function will continue on a regular basis.

The Angler's Riverfly Monitoring Initiative (ARMI) is essential to give an early warning of a serious pollution incident, but in some cases this can divert us away from the underlying (and often increasing) problems we are seeing with the water quality of our rivers. Benchmark surveys provide a full invertebrate record of the species present; this can then be passed through biometric software to calculate siltation, phosphate and organic levels, flow rates and conservation values. All of this is displayed on a single page.

With the ever-increasing pressures on our rivers, benchmark surveys are becoming essential if we are to even stand a chance of protecting them; these give a record which can be referred back to if there is a problem. We now have benchmark records in place at numerous sites on the upper Wiltshire Avon which have already aided us in dealing with two serious water quality problems. Salmon & Trout Conservation UK and Aquascience Consultancy are carrying out increasing numbers of benchmark surveys on rivers throughout the country which have also highlighted some significant problems (Riverfly Census 2015 – see the piece on page 6 of this newsletter). But to allow local monitoring groups to make use of this initiative, we now have in place:

1. App for identification:

To aid identification, high quality digital images have been produced and (with funding from both S&DAC and S&TC UK) developed into a downloadable App – 'River Invertebrate Larvae'. This shows easily identifiable features for each species, plus its pollution fingerprint and conservation value.



Above: Benchmark Survey for River Wylye. Below: The River Invertebrate Larvae App.

The App will be continually updated (under our own control) to modify and add new species, which will automatically update purchased Apps; all proceeds from the App will be used to fund the conservation of our rivers.

2. Customised training course:

After a professional benchmark survey has been carried out, an optional one-day course will use the preserved sample from this survey to train the monitoring team to recognise the invertebrates at their site. Matching each species with the high resolution images in the App should then allow them to regularly monitor the populations at their site and compare this with the original benchmark. This will maintain an on-going check on water quality and (if required) the data can be forwarded to Aquascience Consultancy Ltd. for a further biometric analysis.

This course (Riverfly Invertebrate Identification & Monitoring) is being run at the John Spedan Lewis Trust's field centre at Leckford in Hampshire, Aquascience Consultancy Ltd. in Derbyshire and possibly by The Riverfly Partnership.

If we are going to look after our rivers then we need to do it ourselves, and to do that we have to know our bit of river better than anyone else. After many thousands of hours of work by Salmon & Trout Conservation UK, John Spedan Lewis Trust, Salisbury & District Angling Club and Aquascience Consultancy Ltd. we are progressing this initiative.

Riverfly Invertebrate Identification & Monitoring (RIIM)

YOUNG SEA TROUT UP STICKS IN AUTUMN

A fascinating study from researchers in England and Denmark.

Research on salmon (for example, on the Dorset Frome) has shown that a proportion of the young fish migrate down river in the autumn, ahead of the 'normal' spring smolt run. These young fish, it seems, displace down river and await their fellows before heading to sea en masse in the spring.

Now, work on the River Deerness in Co. Durham and Denmark's River Villestrup has shown sea trout are up to something similar. Researchers at the University of Durham and the Technical University of Denmark, using PIT tags (microchips, like you might have in your dog) and monitoring stations, were able to track the movement of juvenile trout tagged during earlier electric fishing surveys. The team estimated that up to 46% of the Deerness trout population headed downstream in the autumn, though whether they stayed in freshwater in the Wear system or went into the estuary is unknown. In the Villestrup, up to 25% of the migrating juvenile trout population migrated in autumn, probably entering a brackish fjord at the bottom of the river. It seems the cue to migrate is a combination of water discharge (the greater the discharge, the more likely the fish were to move), temperature and day length.

The authors consider why the fish might move in autumn, including it being simply a downstream re-distribution in response to floods (rather than a targeted migration) or a response to adversity, maybe a lack of food driven by competition from other, more dominant young trout. This study adds to the intrigue and fascination of trout and underlines the need for young trout to be able to migrate freely in rivers, without being held up above a weir, possibly at a time (in the autumn) when many bird predators are moving onto the river. The lead author of this study, Emily Winter, can be contacted at ewinter64@yahoo.co.uk.

Sea trout smolt heading sea.

Sea trout smolt (top) and parr (bottom).

SOUTH AND SOUTH EAST – ANDY THOMAS, WTT CONSERVATION OFFICER

It's always exciting when a new request for a WTT Advisory Visit pops into the 'inbox'. In the vast majority of cases, I will have a pretty good idea of what to expect, not because I'm psychic but because I have had the good fortune to tread the banks of virtually every river in the South East. Or so I thought...

This last spring saw me making two visits to what appeared to be very unlikely venues for *S. trutta*. The first visit manifested itself following a conversation I had with a gentleman by the name of Charles Bates. Charles was requesting some management advice to help protect and improve his wild brown trout population that inhabited his West Sussex pond. Yes, I thought the same! Wild browns in a lake up in a Cumbrian tarn, or perhaps high up in a Snowdonia valley lake but in a West Sussex pond? Had Charles been catching roach with a serious black spot infection, I wondered?

All that said, I have come across a handful of on-line lakes in the south that regularly produce wild browns but these have invariably been because the lakes have intercepted a sizeable length of trout stream and which were therefore constantly being supplied with a drizzle of wild fish on a redistribution migration – invariably downstream. Having looked at Charles's pond on the map, this was not the case, as the pond itself was virtually at the source of a spring system.

Wrong again. This cool, clear, one-acre pool did indeed support its own wild trout population. On inspection, any access for fish migrating upstream was impossible, so the entire population was sustained by a very short, and I mean short, length of inlet stream which probably supported less than 4 square metres of spawning habitat. Incredible: the whole population supported by an area of spawning habitat the size of average kitchen table. Trout are extraordinary survivors and although we will always be advocates for more and better-quality habitat, it sometimes shocks me how a trout population can adapt to what would appear to be an unimaginably difficult environment.

A trout redd on the Pagham Rife. Whatever next? Perhaps beaver in Surrey!

Another call, this time from a gentleman called Stephen Sharpe who had just purchased a property down on the Chichester Plain adjacent to a water-course called the Pagham Rife. For those unfamiliar with the term Rife, it is a local Sussex name given to a network of streams that drain the coastal flat-lands between Emsworth and Worthing. 'Stream' is a rather generous word to describe a Rife as 'tidal ditch' would seem like a more accurate description. Being a keen exponent of the gentle art of fly fishing for the 'grey ghosts' or 'Solent bone fish' otherwise know as thick-lipped grey mullet, I was well aware of the existence of the Rifes but never in my wildest dreams considered them to be remotely capable of supporting a trout population. That is until I had spoken to Stephen and made a visit to his property near Runcton.

Stephen had reported finding a small dead trout just below his property and he was looking for ideas and support for improving habitat quality on his reach. Sure enough, in this flattest of flat-lands there was 100m metres of babbling, gravel-bottomed stream bypassing an old mill house. On inspection, I was shocked and incredibly excited to find at least three dead-cert redds dug into the gravels. But how on earth could a wild population hang on in such an unlikely stream? There is no trout habitat above this site and there is nothing below except Pagham Harbour two miles downstream. No, surely not sea trout? Even more unlikely when you consider that all of the Rifes have tidal sluice gates. Again, I have just been taught the lesson to never say never when it comes to a trout's ability to exploit even the smallest opportunity to spread his or her genes. They are amazing fish and it makes me love and admire them even more.

MURKY CHALKSTREAMS

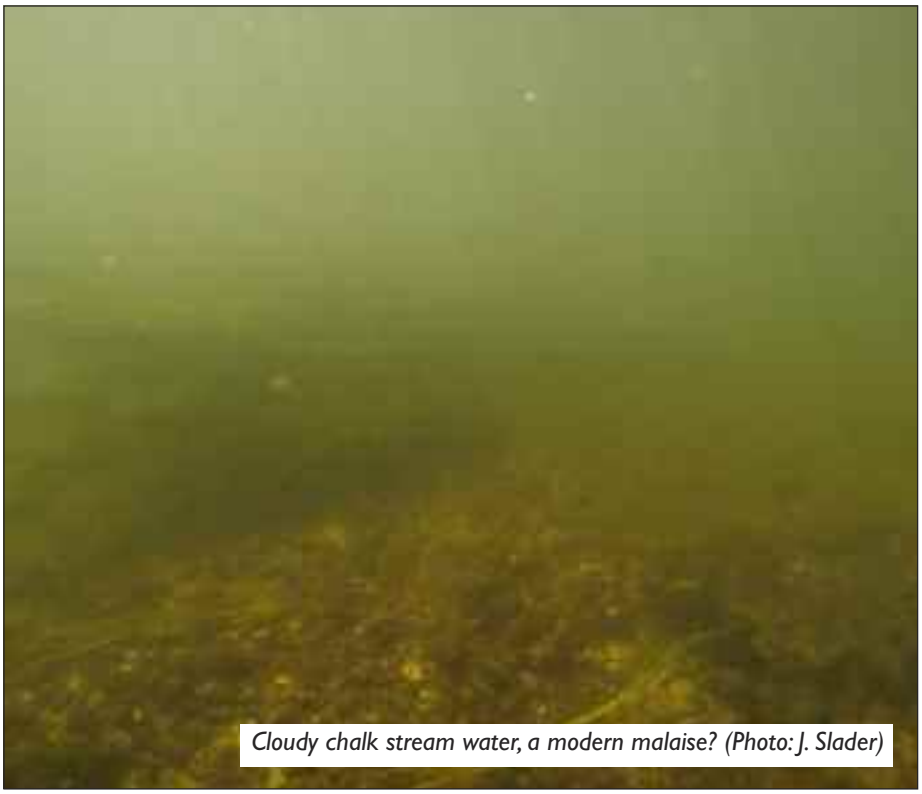
Andy Thomas tries to see through them for reasons why…

The first sunny weather of the spring usually elicits a call or two from anglers enquiring as to why the river is so 'filthy' this year. There is a huge range of factors that can impact on the clarity of any river, with some of the reasons being extremely complex and difficult to mitigate against. Milky-coloured Cotswold limestone-based rivers immediately spring to mind. But for the Southern chalkstreams, the most common reason for coloured water is the annual spring time diatom bloom, which varies from year to year in intensity and is based on a complex cocktail of nutrient, sun light, weed growth, flow velocity and channel shape.

This article is not an attempt to solve the issue of coloured water in our chalk rivers but will hopefully provide some of our members with a better understanding of just some of the factors and drivers that affect water clarity, particularly in the spring when we're itching to get out on the bank with our fly rods and are disappointed to find the river in poor condition.

Any of you that have spent any time on the banks of lowland lakes and ponds in the spring will recognise the brown 'scuds' that rise from the bed of the pond to float on the surface, usually following a spell of bright sunny weather. This phenomenon is generally at its peak in April but can start as early as February and will still be occurring on some waters into high summer. The material itself is made up of tiny single-celled diatoms that clump together on the pond bed before rising up the water column following exposure to bright sunlight. These algal scuds are not bound together like colonial algae such as blanket weed – they will separate at the very slightest disturbance, on a pond usually by wind action. The net result is a brown-coloured pond.

The very same process occurs on the bed of many of our rivers, it's just that on many systems, the physical nature of the river doesn't lend itself to a slow build-up of material on the stream bed. Unfortunately, this is not so for many other rivers, including some of the famous chalkstreams, particularly in those long, low gradient reaches upstream of mills, hatches and weirs. Here is the perfect environment for the growth of diatom algae, often made worse following exposure to high nutrient loadings and bright sunlight. Following exposure to the first long, sunny days of the spring, the mats of algae rise up and then get mixed into the water column once the flow becomes more turbulent. It's not always obvious that the algae are being generated in the impounded reaches but it only takes one or two structures and impounded reaches to impact on long sections below. This is why you can whizz up to the headwaters or small tributaries and find very clear water, only to find it becomes coloured a couple of miles downstream.



Cloudy chalk stream water, a modern malaise? (Photo: J. Slader)

Exactly why some years are worse than others will depend on a mind-boggling range of factors, many out of our control. But it is fair to say that we can influence algal production through a number of key management options. The first and most obvious is dam, weir and hatch removal. There are enough other reasons to justify weir removal but spring time water clarity rarely comes up as a driver. The next is channel shape. The faster the flow velocity then the less likely it is that unicellular algae can form and multiply. The flow is what you have but the flow-velocity will be influenced by channel width, depth and bed gradient.

Shading is another important factor. We have to be very careful when planning shade for a chalk stream. We don't want to create an environment where weed struggles to grow, particularly water crowfoot, but if you are responsible for deep, impounded reaches where crowfoot struggles and it's impossible to run the water faster and lower then consider the benefits of tree-shading.

At a catchment scale, excessive nutrients in our rivers, from agriculture, other industry and sewage, feed algal growth, so sensible land management to control those inputs is vital.

Submerged water plants, like crowfoot, provide the most fantastic environment for huge quantities of filter-feeding invertebrates. The reed smuts or black gnats, *Simulium*, are incredibly important for helping to catch and process microscopic algae as they drift past in suspension. In a nutshell, the bugs catch the algal (and other) drifting particles and process them into fertilizer pellets which in turn helps to feed the roots of the plants that they happen to be sitting on. A perfect symbiotic relationship that helps to keep

Continued from page 11

sparkling chalk stream sparkly!

The message here then is to be very careful when cutting weed in the early spring. More weed equals more filter feeders which should mean less algae. More algae equals more colour which equals less weed! A good spring for weed growth invariably means clearer water but it is often an arms race as to which gets going first, the weed or algae.

No silver bullets here but we can all make a difference. By the way, if your river is grey rather than brown then I would be phoning the EA hotline number. Nature can make brown water but it is usually humans (or their animals) that are responsible for generating grey water.

NEW BLOOD

Previous newsletters have reported on Andy Thomas's semi-retirement to a 3-day week as a WTT Conservation Officer. We've assembled a strong subs bench and introduce here Luke Kozak and Nick Lawrence, new blood to the WTT Conservation Officers' team.

Luke Kozak

My fascination with all things watery and piscatorial started when I was a nipper, chasing grayling and trout with a 'Woolworths' set-up, along the River Avon in Salisbury. Since those childhood days, I have become an exceptionally keen fly fisherman and a passionate fly tyer who enjoys fishing for wild trout anywhere and everywhere. I originally trained as a river keeper on the Test at the Leckford Estate and attended Lackham College of Agriculture, studying Countryside Management in the late 1990s. Since then I have developed a small business offering contract river-keeping and river restoration design and consultancy services. I am employed by several well-known fly fishing organisations to carry out keepering and habitat enhancement work and have a portfolio of successful projects, varying from small scale sustainable bank repairs to larger urban river restoration. I was very pleased when my company won the professional category of the WTT award for the Midsomer Norton Channel Enhancement Project in 2011.

I was excited and honoured when I was contacted by the WTT and asked to work alongside them in delivering Practical and Advisory Visits. I share the same values and vision of my contemporaries in the Trust and enjoy seeing rivers that are healthy and able to support a range of different species, particularly our beloved wild brown trout. I hope to be able to apply the knowledge gained over many years to make a lasting and real difference to the UK's rivers and I am proud to be part of the WTT team. *Ed: Well said, Luke.*

Nick Lawrence

I have been an avid fly fisher since the age of 7, introduced to fishing by my grandfather who lived on the banks of the river Avon at Amesbury. My first fish was a wild trout, caught on a mayfly and all of 4 inches long.

I was a pupil at Canford school in Dorset, with fishing on the Stour; it held a good head of all types of fish. I even caught a salmon whilst at school there and I remember fondly a fishing trip to the river Lyn in 1995 with Charles Rangeley-Wilson, then art teacher at Canford. I was once caught fishing by my housemaster while supposedly studying for my GCSEs, prompting a letter to my parents suggesting that if I spent as much time studying as I did fishing, I might actually get somewhere in life. If only they knew!

After a degree at Sparsholt in fishery management and aquaculture, I worked at Orvis for a year before realising that life was really to be lived outside.

I have been a self-employed fishing guide/ river keeper and river restorer for 10 years. Most of this time is spent either caring for the Bourne Rivulet and Lambourn or guiding clients for Famous Fishing; I've more recently been working with Wiltshire Wildlife Trust and the Piscatorial Society in the Avon valley and now in a part-time capacity with WTT. I pride myself in river-keeping in making the very best possible use of naturally-fallen woody debris, truly valuable for habitat and making the river work.

PASSION FOR SMALL, WILD STREAMS?

A club with a difference in Kent seeks new members. You will need to be keen on contributing to ongoing restoration of the river, to have a passion for a small, wild stream and its wild fish and be a WTT member. Experience of river work would be useful and residents of East Kent preferred. If this is you, please contact WTT's Director, Shaun Leonard, who will pass on your details to the club: director@wildtrout.org

FISH HANDLING

The finest gift you can give to any fisherman is to put a good fish back, and who knows if the fish that you caught isn't someone else's gift to you?

The Wild Trout Trust is a great advocate of catch-and-release for wild fish because it conserves valuable fish stocks, gives trout the chance to grow to specimen sizes and makes a huge difference to the quality of fishing on wild waters. Careful handling of fish maximises their chance of survival when released:

- Use tackle of appropriate strength for the size of fish you expect to catch to avoid playing fish for a long time.
- Use barbless hooks and have pliers to hand in case of difficulty.
- Release fish in the water wherever possible. Use a knotless landing net for larger fish and keep them in the water once landed.
- Always use wet hands to handle fish, and handle as little as possible. Avoid squeezing the fish.
- Release the fish by pointing its nose into the current so that water is flowing over its gills, supporting the fish gently until it swims away.

If you want to record the capture of a good fish, measuring the fork length (tip of nose to fork of tail) can be done in the water just prior to release. Stick-on rod measures and weight estimation charts are available from the WTT shop on our website.

If photographing the fish, keep it in the water until the camera is ready to go. Landing nets with a floating frame, or held between the knees can facilitate this. Ideally have a companion take the pictures, or work out a quick and easy way for self-timed shots that prioritises fish welfare. Hold the fish close above the water as briefly as possible. Do not lay fish on the ground to take pictures!

CHALK STREAM WATERMEADOWS

Chalk stream anglers spend a lot of their time amongst watermeadows, but maybe few are aware of their purpose and historical significance. Now, with a grant from the Heritage Lottery Fund and funding from Wiltshire Council, the historically and ecologically unique watermeadow systems of the Wylye Valley in Wiltshire are the subject of an historical research and public awareness project, led by archaeologist, historian, angler and WTT adviser, Mike Heaton.

The watermeadows of the Wylye were created in the 17th century as the first of an extensive system of precisely engineered water channels and meadows that eventually extended throughout the river valleys of southern England. They increased agricultural yields by a factor of five and provided the food and hard cash that underpinned the Industrial Revolution of the 18th century. They are unique to England and form one of the largest works of civil engineering of the pre-Modern world. Their significance today could be for temporary water storage and the removal of nutrients. As Mike Heaton says "Watermeadows, operated properly, remove about 85% of water-borne nitrogen and phosphorus, so it's in our interests to preserve and – hopefully – restore some of them."

The project will collate existing historical research into the watermeadows of the River Wylye, including transcription of interviews with the last generation of 'floaters'; engage the public in the identification of watermeadow systems and their distinctive features; and identify the best sites for future archaeological investigation of how the watermeadows were created and operated.

Anyone who would like to know more about the project please contact Mike via email: watermeadows@hotmail.com.

EAST ANGLIA – TIM JACKLIN, WTT CONSERVATION OFFICER

I've been busy with a varied and widespread series of projects across the Midlands and East Anglia in recent months.

Advisory Visits have been provided on the Rea Brook in Shropshire, the River Glaven in Norfolk, the River Lymn in Lincolnshire, the River Tean and the Gayton Brook in Staffordshire. Building upon past Advisory Visits, project proposals have been produced for the Rivers Noe, Dove and Brailsford Brook in Derbyshire; at all three of these sites, the removal of weirs has been a significant part of the proposals and this summer will see 20 such structures dismantled. The removals will restore natural river processes and habitats which will benefit wild trout populations. The proposed works on the River Dove have been facilitated under Trent Rivers Trust's 'Letting the Dove Flow' project, which has brought together the many interested parties that need to be on board before works can take place.

On the River Noe in Derbyshire, a weir was notched to improve fish passage along with the introduction of several woody habitat structures to improve holding and refuge areas for wild trout. The work was carried out with funding from the Environment Agency and carried out by club volunteers and EA staff led by the Wild Trout Trust.

Coventry isn't the first place that springs to mind when you think of trout streams, but a previous Advisory Visit on the Guphill Brook in a suburb of this city revealed a small tributary of the Warkwickshire Avon system with the potential for trout spawning and juvenile habitat. Tim Precious of Warwickshire Wildlife Trust has managed a habitat restoration project here which has re-profiled banks and created backwater areas. In April, a Wild Trout Trust demonstration day was held to give volunteers the chance to get hands-on experience of introducing woody debris. The day was well attended by wildlife trust volunteers and grounds maintenance staff from the local council, the latter interested in using the techniques on other sites.

February saw 14 brave souls turn out with me in cold conditions at Hudds Mill on the banks of the River Welland in Stamford to take part in a demonstration day of practical river habitat improvement techniques. Despite the 'lazy wind' (it went right through you rather than around!), all kept warm by constructing brushwood bundles, knocking in chestnut stakes and learning how to lay bankside trees to create cover and habitat for fish. The day formed part of the wider, ongoing 'Sea Trout to Stamford' project which is addressing barriers to fish migration and improving habitat throughout the Welland catchment and involves a wide range of partners led by the Environment Agency. Under the project, fish passage projects have been completed at the tidal gates at Fulney Lock, various small weirs along the Maxey Cut and at Tallington and Belmesthorpe gauging weirs. A major fish pass project has been completed at Newstead Mill, which will open up a substantial length of the River Gwash, a Welland tributary, to migratory fish. Habitat improvements have been carried out along the Maxey Cut and plans are in place for upstream and downstream of Stamford. Many thanks to the volunteers who turned out on the day and to Dominic Cawley of Woodland & Water Management for preparation of materials in advance of the day.

At work on the Guphill Brook, Coventry (Picture: Warwickshire Wildlife Trust).

A similar demonstration day was carried out on the upper River Witham with Grantham Angling Association, volunteers from other angling clubs and representatives from the Internal Drainage Board, Lincolnshire Wildlife Trust, Lincolnshire Chalk Streams Project and the Environment Agency. The upper Witham is a focus for river improvements, being led by the Environment Agency and involving a range of partners including WTT. A detailed plan for potential improvements has been produced through the urban area of Grantham, to maximise opportunities associated with increased development in the area. In March, the Grantham Urban Plan was launched at South Kesteven District Council Chambers; Wild Trout Trust was in attendance.

The River Slea in Sleaford, Lincolnshire has seen a major boost to habitat quality this winter. Lincolnshire Rivers Trust have led a project funded through DEFRA's Catchment Based Approach initiative, resulting in the improvement of a significant reach of river. Wild Trout Trust provided the initial advice and proposals for the project and assisted in the delivery. The

Braving the cold on the River Welland at Stamford.

Channel narrowing and cover installation on the River Cam.

river was extremely uniform in depth and width and lacking any form of cover. The river bed has been re-shaped using an excavator and around 200 brushwood bundles introduced to vary the channel dimensions and provide fish cover. There is a well-used path alongside the river and the project generated a lot of local interest and provided opportunities to volunteer. Many thanks are due to Ada Trethewey for access to the river and to volunteers from the Sleaford Rivercare group.

The River Cam near Cambridge was the location for a WTT Practical Visit in early May, on the section of water fished by Cambridge Trout Club (CTC). The Cam is a chalk stream, but has been historically engineered, so lacks the variety of habitat found in more natural watercourses. Following an Advisory Visit in 2015, proposals were prepared by the WTT which were used by the club to liaise with the landowners, the Wellcome Trust, and to seek Flood Defence Consent from the Environment Agency. James Hooker of the Fisheries Department of the EA at Brampton provided invaluable assistance, advice and funding which enabled the project to proceed. Volunteers from the staff of the Wellcome Trust, the CTC and the Wildlife Trust for Bedfordshire, Cambridgeshire & Northamptonshire spent two days with me installing brushwood bundles to pinch the channel and laying bankside trees into the margins to improve cover and holding areas for trout. Many thanks to Tim Leech of CTC for organising and facilitating the visit.

THE IMPORTANCE OF BEING A WANDERING GIRL

A study recently published in the journal, Freshwater Biology (Goodwin et al., 2016), has highlighted the importance of female sea trout in driving reproduction of the trout population in Dorset's Tadnoll Brook.

Using a combination of stable isotope analysis and genetic 'fingerprinting', the researchers suggest that a very few sea trout females (6 out of 96 fish analysed) drove the vast bulk of the Brook's trout reproduction; less than 3% of the sampled Brook's offspring were born of stay-at-home mums. The sea trout hens also produced larger and earlier emerging fry than those trout that had stayed in the Brook. It seems too that the sea trout cocks held their end up, fathering 63% of the sampled juvenile trout.

These results will not have relevance everywhere but they do underline the importance of ensuring that where sea trout do exist, they can effectively get to the spawning grounds because they may be really important to the overall trout stock in the river.

A more detailed summary of this paper will appear on the WTT website. The full citation of the paper is Goodwin, J.C.A., King, R.A., Jones, J.I., Ibbotson, A, and Stevens, J.R. (2016). A small number of anadromous trout females drive reproduction in a brown trout (*Salmo trutta*) population in an English chalk stream. Freshwater Biology 61, 1075–1089.

BROWN TROUT IN THE WILLOW BROOK

Barrie Harbott of the Willow Brook Flyfishers reflects on how far the club has come.

In the mid-1950s, the late Peter Tombleson, Editor of the *Angling Times*, started a number of projects to turn coarse-fish streams into trout waters. These were termed 'experimental waters'. One of these was a length of the Willow Brook near to his home at Woodnewton, Northamptonshire, which he called 'The May Brook' in the *Angling Times*. Over a period of years, coarse fish were removed and trout were introduced. The *Angling Times* ran a series of articles on the progress of these waters, which concluded that 'The best way to discover if this part of the brook is suitable for trout is to stock it and see what happens!'

The Willow Brook rises in three main arms on Northampton Sand Ironstone, through and below the town of Corby – famous for its heavy industries. However for most of its 27km to the river Nene at Elton, it runs through arable farmland. Over the years, the industries at the top of the catchment have put substantial pressure on the brook, through periodic pollutions from heavy metals and organic substances.

Peter Tombleson was the first secretary of the Willow Brook Flyfishers club, which was set up in 1958. With the help and support of riparian owners, the club still survives, improving and fishing about 5.2km of brook, from Apethorpe Lake to Fotheringhay.

Over the following 40 years, tens of thousands of coarse fish were removed and over 40,000 adult brown and rainbow trout were stocked. Subsequently, about 2,000 adult brown trout were introduced until adult stocking ceased in 2011.

In 2005, the club set up a hatchery for brown trout. Eyed-ova were bought in and raised to 'swim-up' stage before release. We estimate that around 100,000 fry were introduced in this way during the eight years 2006 to 2014. The club now carries out no stocking of any kind.

Periodically, pollution incidents have wiped out fish along the whole length of the brook, culminating with major incidents in the 1970s, although water quality has steadily improved since then. There are no viable trout populations above or below the club's stretch. With a history of poor over-winter survival, stocking was the only way of maintaining a trout community.

Stocking with brown trout (2010).

Chris Avery at the hatchery (2014).

Much of the brook had been greatly modified by dredging activity in the past. The channel is heavily incised, with raised banks of spoil in places showing evidence of the extent of this drainage work. The line of the channel had been moved across the floodplain and straightened along two stretches, although the contemporaneous channel had a good pool and riffle sequence with extensive gravel substrate present.

So, over the last 12 years, and following advice through Wild Trout Trust visits and demonstrations, club members have carried out much habitat improvement work, using LWD, groynes and faggot bundles. Additionally, we have introduced new gravels, and seasonally clean existing areas to encourage the formation of redds. This work complements local Countryside Stewardship schemes, and has delivered improved invertebrate communities, more over-wintered brown trout and above-average growth rates. However, with the ever-present threat of pollution, plus substantial obstacles to migration in the stretch, the population remains vulnerable.

In addition to continuing help from the WTT, we have secured generous support from the Environment Agency this season. Plans include reducing silt-laden run-off from cattle-watering sites by improving the hard-standing, and introducing several new areas of spawning gravels. In the long-term however, our primary challenge is to remove the main obstacle to flow variation and fish migration – the culvert bridge – top of page 17, right, which creates a ponded stretch of about 800m, and prevents any upstream movement of fish from the more-productive lower reaches.

Willow Brook club members work to stabilise eroded banks in 2014.

The main obstacle – the culvert bridge.

NEWS FROM IRELAND

Gareth Pedley's northern Conservation Officer's patch includes Ireland. Here, he focuses on some of his recent work in the Auld Sod.

This year has seen a notable increase in interest from clubs and associations in Ireland wishing to improve their river habitats and fish stocks and develop sustainable wild trout and sea trout fisheries. This is something that WTT is very keen to support in our general remit to promote wild trout populations across Britain and Ireland.

The first Irish visit of 2016 was to Ballinderry Rivers Trust in Northern Ireland, following on from an Advisory Visit by Tim Jacklin in April 2015. The focus of the visit was a practical demonstration of quick, cheap and easy techniques to increase juvenile fish cover using locally-won, natural materials. The photo (above right) demonstrates the value of a simple technique like hinging-in (or 'pleaching' as it's also called) of tree species like hazel to create nooks and crannies along the river margins in which small trout can shelter. The day was a great success and should give pointers to Ballinderry RT as they roughen up their river margins to optimise carrying capacity and juvenile survival on numerous spawning tributaries.

To keep things as cost-efficient as possible, on the same trip, I popped down to see a dynamic angling club on

the River Vartry in County Wicklow who were looking for advice on how to manage and improve habitats on their fishery in general, but also to help boost the wild fish populations following a history of pollution incidents. It is all too common for angling interests to resort immediately to re-stocking following pollution incidents, but this is seldom the appropriate course of action; far better to optimise habitats in the river and assist the natural recovery of the wild fish that will have greater survival rates and provide more robust (wild) fish populations in the long-term. There is little point in stocking fish that will compete with the recovering wild fish when, left alone, the life strategy of salmonids (over-production and density dependent survival) allows naturally-produced fish rapidly to repopulate following an incident, providing some wild fish and adequate habitat remain. This is especially true on rivers like the Vartry where there's a strong sea-run component to the trout populations.

The Vartry is impounded by a series of weirs and the club sought advice on how best to deal with them, particularly the largest that recently part-collapsed during a winter spate. In terms of the ecology and natural functioning of the river, the answer here is simple, as with anywhere – remove those weirs, wherever possible. Weirs unnaturally chop-up what should be inter-

connected habitats in rivers and they stop the natural movement of gravel and finer material (what is technically usually called sediment) along the river. The latter not only creates ecological issues but it also very often leads to physical problems for the river, like excessive bed and bank erosion downstream of the weir. There's lots more on issues around obstructions in rivers, like weirs, on the WTT website. In the case of the Vartry, hopefully the follow-up Advisory Visit report will help the angling club to ensure that the collapsed weir is not rebuilt!

An Advisory Visit was also undertaken on the River Inler (or Enler), Newtownards, County Down to offer general advice on the management of the fishery now that the Inler Angling Club are moving to a no-stocking policy. This is again great to see, with many fisheries around Britain and Ireland reducing or stopping stocking, in favour of developing sustainable wild trout fisheries. I'm hopeful that the visit and accompanying report will assist the club in dealing with the main impacts affecting the river and help create the fishery to which this excellent and inspirational club aspires.

A part-collapsed weir on the Vartry.

CREATING A WILD TROUT FISHERY

Dave Martin of Ilkley Angling Association reports on their journey on the Wharfe to a wild trout fishery.

The River Wharfe at Ilkley has been home to an angling club for many years and in the past, fish have been routinely stocked.

In 2011, Ilkley Angling Association took a decision to cease stocking brown trout (they never stocked rainbows), based partly on financial reasons and partly because some of its members felt strongly that their stretch of the river should be managed in as ecologically-sensitive a way as possible. Previously, £500 to £1000 was spent annually on stocking and numbers of fish depended on size, which would normally be between 1-2½lbs in weight.

The club also introduced a rule that all trout over inches had to be returned to the river, protecting the breeding stock for the future. Some years previously, a rule had been introduced that no grayling could be taken at any time of the year.

Work was undertaken to improve the river banks, with willows being planted to provide cover for fish and Himalayan Balsam cleared to minimise bank erosion.

Club President Steve Fairbourn says, "The changes that have happened since then have been very dramatic. Our wild trout – which never seemed to get much bigger than three to four ounces – are now being caught at eight to ten ounces. And the population of trout overall seems to have increased at the same time.

"Our grayling population is also very good. A recent club match on the river at the end of November saw five anglers catch over 50 grayling between them and numerous out-of-season trout to over two pounds. All the trout were released immediately."

This increase in fish is despite at least one family of otters living on the club's length and a considerable number of goosanders being present on the river.

The club has an active Riverfly Partnership sampling team, monitoring the invertebrates which form an essential part of the food chain for fish – and also providing an indicator of water quality. This has been the case for the past three years.

"When there is a good hatch, the river seems to come alive with rising fish throughout the whole length," Steve continues. "When we surveyed one of the streams with the Wild Trout Trust, we found good numbers of wild trout to about twelve ounces. We are also looking to make improvements to another stream to boost the trout population."

"Any money that we can spend on the river in the future will be used to improve the habitat and not on stocking. Going forward, our next task is to look at why there has been such a dramatic decline in the coarse fish that have always been a natural part of the ecosystem at Ilkley."

Club membership has increased over the past year and day ticket receipts have been the best on record. If you are interested in joining, then please visit our website at: http://ilkleyanglingassociation.co.uk/membership.html, or contact Dave Martin, the Association Secretary on: davidmartin@ilkleyanglingassociation.co.uk.

JON GREY – WTT RESEARCH & CONSERVATION OFFICER

Almost six months since the unprecedented flooding at Christmas and we are still taking stock and discovering some of the dramatic changes that have occurred in and around river channels in my patch.

In the last newsletter and in the blog on the WTT web-pages, I reported on planned habitat work in partnership with Pete Turner of the EA and Don Vine at Yorkshire Wildlife Trust for Eastburn Beck, a tributary of the Aire. The project involves notching weirs and riparian zone rehabilitation to increase plant diversity and low cover. It is a real pity we could not instigate some of that notching work in particular prior to the flooding which caused one Eastburn gauge to register a level approximately 50% higher than ever previously achieved. The power of that water could really have done some good to kick start the hydromorphological processes which have stagnated for decades behind a series of seven-step weirs. As it is, at least two of them have seen greater erosion around weakened areas that I had hoped to exploit, so there has been some focusing of flow energy in the right areas. While the low flows sustained for the best part of a month now are not great for fishing, at least they will allow me to make a last assessment of the beck channel form and tweak any plans for the habitat improvements to come. I did manage a cast or two, purely for research of course... to inform my strategy for guiding on my first WTT auction lot which I am looking forward to immensely.

Many of the main rivers have experienced extensive reworking because of the flooding. I recently undertook an Advisory Visit for Wyresdale Anglers in conjunction with the Wyre Rivers Trust, and the winter storms had given their river the power to break free from some historical shackles with spectacular results. It really brought home how even seemingly small sections of hard bank revetment can have ramifications further downstream as energy is essentially transferred elsewhere, often to more susceptible banks that then suffer erosion as a consequence. And that is ignoring the tendency for eddies to form at the ends of hard structures such as gabion baskets and concrete blocks, generally leading to bank erosion and destabilising of the structure itself. One weir had been damaged to such an extent that a fish pass to the side was left high, dry, and full of gravel; a perfect opportunity (hopefully) for complete removal and reinstatement of natural passage for both fish and bed substrate! Word quickly spread about my visit and I was delighted to be invited to meet the land agent of the estate immediately upstream and arrange a series of visits on their extensive headwaters. Having the scope to potentially influence habitat rehabilitation across the whole of the upper catchment contiguous with over 50% of the main river is a very exciting prospect indeed.

Almost all of the data are now in from a study of the monsters of Malham Tarn! To briefly recap, a previous study of the trout and perch populations inhabiting the tarn had shown that they had a prolific growth rate. To gain an insight into the diet that might lead to such growth, I was contacted by a research team based at University College London, to lend my expertise in using stable isotopes (natural chemical tracers) to characterise the food web of the tarn and how those particular fish species relate to each other. By analyzing the isotopes in the scales, we could assess long-term diet without killing any fish. In brief then, I will let slip a few choice facts so as not to steal the thunder of the MSc student who will write up a thesis using these data. Unlike in many other lakes where perch progress from feeding on zooplankton to macroinvertebrates to small fish (as they grow and get bigger mouths), there was little differentiation in diet with perch size until they attained approximately 350mm; they appeared to be feeding on everything up until that

size. These largest perch (around 3lbs) were between 10-13 years old and were top of the food web, the stable isotope values indicating that they were feeding upon a distinct diet of fish, and most likely small trout and their own progeny, rather than the abundant stickleback and bullhead. Trout diet overlapped with perch diet almost completely with the only difference being that most trout were not so heavily reliant upon fish. So, despite their large size and mouth-gape meaning that they are entirely capable of ingesting small fish, a considerable proportion of the trout biomass (body weight) was comprised of relatively small things like caddis and shrimp. Not surprising then that a good number were taken on elk hair caddis from the surface – exciting sampling! Only one trout exhibited as high a trophic position as those perch, a 9 year old fish of over 7lbs. Some of the 5lbers were only around 5-6 years old; rich pickings indeed in Malham Tarn! Having worked with stable isotopes for approximately 20 years now, it is generally the 'odd' results that get me excited. One thing that became immediately clear was that small trout sampled by electrofishing from the inflow and outflow, were isotopically distinct from the trout in the tarn and from each stream (meaning that they were feeding on a food source from a different place). If more small trout (approximately 100mm) could be caught from the tarn itself, it might be possible to assign a contribution from each spawning stream based upon their isotope values. Indeed, if those small trout did not bear any isotopic resemblance to either stream, it could indicate that there is a contribution from lake spawners too. All this information from a few scales!

Malham Tarn perch and below, one of its big trout.

As the deadline for the summer newsletter loomed, I was invited to two meetings on consecutive days. First, to set the scene and present on land management issues that the WTT Conservation Officers encounter on a day-to-day basis, at the Institute of Fisheries Management specialist conference on Farming & Fisheries. I had some stiff competition for 'most gruesome field border/river edge' photo from some of the other presenters, especially those working in catchments dominated by maize or potato production! Then I attended the Annual Scientific Meeting of the Freshwater Biological Association as compère and judge of the poster contributions; the theme of the latter was Catchments, Connectivity, and avoiding Catastrophes.

It would have been interesting and undoubtedly beneficial for the audiences of those independent meetings to have combined (and preferably with a greater number of individuals representing the farming community) as there were many common problems aired, especially from environmental and communication perspectives. I'm finding it fascinating now to contribute at such meetings from both the academic and practitioner standpoint and really enjoying this aspect of my role for WTT.

PAUL GASKELL – TROUT IN THE TOWN

Word from WTT's urban trout man, Paul Gaskell.

My involvement with several key Catchment Based Approach (CaBA) groups – starting from one of the original pilot catchments (South Yorkshire Don), through to ever-evolving activities on the Douglas (North West) and the Trent (the West Midlands part of that catchment) continues to generate a lot of exciting prospects. I am delighted that the Douglas Catchment plan has now been created and agreed by the local CaBA partnership – with a strong commitment from this excellent group to making direct impacts through a series of practical projects. The tagline for CaBA is 'Partnerships for Action', so I am looking forward to contributing to all the good works that these partnerships will undertake. Added to that, there are ambitious plans to which we hope to contribute with the Mersey Basin Rivers Trust (e.g. River Irk habitat works) and also our growing involvement with Calder & Colne Rivers Trust on the Clifton Beck and Hebden Water. All of these, as you would expect from Trout in the Town, are associated with rivers and streams with a strong urban relevance.

Following a spell of interesting and often challenging Advisory Visits on the Causely Brook, Lyme Brook (multiple),

Ford Green Brook, Clifton Beck, Porter Brook (multiple) and project planning work associated with each of these, there are now "primed and ready" proposals for weir removals and habitat improvement works. These "ready-made" projects are in a perfect position to take advantage of funding opportunities that often arise at short notice (so it is a nice strategy to have a few of these "in your pocket"!). A short video showing the first phase of works that were completed on the Lyme Brook can be viewed on YouTube here: https://youtu.be/xzZI6Ocjf-k.

As well as the actual in-stream habitat works that were completed on the Porter Brook in Sheffield City Centre on a deculverted section of stream (see 2016 edition of the WTT journal, *Salmo trutta*, for the story), I've now put together a series of additional proposals that aim to use that existing blueprint to expand habitat works upstream and downstream. To complement this, I am working on some video content to tell the story of what's been done so far; it is quite a dramatic change to the Brook. The great thing about this project is the capacity and willingness for SPRITE (the Sheffield "Trout in the Town-affiliated" group) to provide ongoing monitoring (invertebrate and fish populations) as well as care (invasive plant and litter removal plus future habitat work, if required). This is a vital adjunct to the substantial financial and civil engineering input that Sheffield City Council and the Environment Agency made in order to deliver the deculverting, park creation and in-channel works in the first place, through a complex funding and project design/management partnership with multiple stakeholders. Consequently, the announcement that ARM (manufacturer of electronics/processors and other digital wizardry with premises in Sheffield) will be supporting SPRITE as one of a small number of worthy causes is great news for the rivers and streams of Sheffield - including the Porter Brook.

Another welcome development is the apparent shift in conversation and awareness with regard to the management of flood risk. It is now a little less unusual to find options such as upland woodland creation at least mentioned in flood mitigation proposals. It's worth watching Karen Potter's excellent presentation at the 2015 Annual Get Together of the WTT, showing why this is highly significant – as well as just how old these conversations are! See https://youtu.be/13XI-7c83wI. Recent Advisory Visit work on the Hebden Water comes at a time when managing water that arrives in such a steep, confined catchment (see photo top) feeding into the bottleneck in the town of Hebden Bridge (see photo above) is uppermost in many peoples' minds. The existence of documents like the 'Treesponsibility' report associated with Hebden Water: http://www.treesponsibility.com/wp-content/uploads/2014/01/Hebden-Water-Catchment-Booklet.pdf (as well as the recent datasets associated with the flood protection provided by the 'Slowing the Flow' project above Pickering in North Yorkshire) are excellent developments within a vital and emotive subject. It will be good to contribute to the works that aim to improve habitat and habitat-connectivity on the Calder system with Calder & Colne Rivers Trust at a time when public and regulatory-authorities are beginning to embrace the multiple benefits associated with a range of natural flood-water and diffuse pollution control measures (e.g. https://www.gov.uk/government/news/yorkshire-environment-project-wins-national-award). Natural flood management (NFM) is not the single-stroke, ultimate panacea and it will not solve disastrous storm events like Storm Desmond in northern England, but it does have a place in a battery of defences against flooding and some of the methods in NFM bring huge, collateral gains for our natural world.

Paul can be reached on pgaskell@wildtrout.org or 07919157267 for advice and support on urban trout stream issues.

Hebden Water: a steep confined catchment.

Hebden Bridge.

SEA TROUT IN WEST SUTHERLAND

Here are two interesting snippets on sea trout work by the West Sutherland Fisheries Trust, extracted from their Annual Report 2015, courtesy of Shona Marshall, the Trust's biologist.

A project started in 1977 to give an indication of the migrations and growth of sea trout smolts and adults within the area. Estuary sweep netting is used to catch trout samples and collect data; some fish are tagged before return. In addition to these data, the number of sea lice on the fish is also assessed.

In 2015, three estuaries, Laxford Bay, Kyle of Durness and the Polla estuary, were sampled monthly where possible from April to September. A total of 407 fish were individually measured and scale samples taken, of which 185 were tagged using a visible implant tag, inserted in clear skin tissue behind the eye. The fish were also examined for the presence of sea lice, recording numbers and stage in the life cycle.

Post-smolts were caught at all sites throughout the year, indicating extensive usage of estuaries by this group, presumably for feeding and shelter. That the sea trout populations are relatively static can be inferred from the information on recaptures, where all bar one of the tagged fish recaptured during 2015 were taken in the same location as originally tagged. One exceptional fish was originally tagged in the Laxford and recaptured in the Polla.

In 2015, estuary netting recaptured 55 trout: 1 originally tagged in 2010, 3 in 2013, 21 in 2014, with the rest earlier in 2015, a pattern common to the sampling programme over the past 18 years, suggesting that the majority of sea trout do not stray far from their home rivers in this area.

Average growth rates within the Laxford were 5.81mm, and 12.38g per month and 10.40mm and 39.07g for the Polla. Both growth rates are lower than those seen in 2014, but still good within the Laxford and within the range seen in the Polla. This is encouraging and was apparent in the appearance of the fish caught in the netting: plump and well-conditioned.

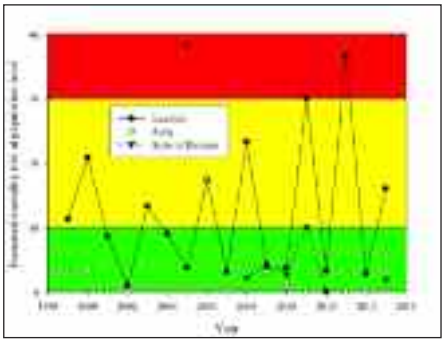
Netting in Laxford Bay.

It is now very widely accepted (except apparently by some state governmental departments), based on scientific evidence, that salmon farms pose a risk to wild salmon and sea trout populations, for example by acting as a 'reservoir' for parasitic sea lice that affect young, wild fish. Some recently published work in Norway has demonstrated a method to assess the increased mortality risk to salmonids using the number of lice present per gram of fish, based on physiological effects determined from laboratory experiments and the use of sentinel cages in fjords. Individual parasite loads are then extrapolated to a possible population-level effect. The graph below (bottome right) gives the results by year for each studied estuary in West Sutherland, with the banding indicating whether the risk to sea trout from sea lice is low (<10%), moderate (10-30%) or high (>30%). Within the low zone, there is probably a minimal risk to the population from sea lice infestation, while the other zones show potentially population-altering impacts.

From this, it appears that the potential risks within the Polla estuary are low throughout the study period, with the exception of 2006, when increased lice levels were observed. This is a positive reflection on the situation within the estuary, not perhaps seen in previous analyses, based solely on lice abundance.

In contrast, the Laxford analysis would indicate that sea lice populations are creating on a regular basis a potential sea trout population-changing effect. While there is an apparent biennial effect, primarily giving a moderate effect, in 2 years, 2011 and 2013, this was identified as high.

Sea lice on a sea trout post-smolt.



DOWN TO THE WYRE

On the back of a recent visit to the middle reaches of the River Wyre for the Wyresdale Anglers, Jon Grey has been asked to conduct a series of Advisory Visits for the Abbeystead Estate which encompasses the entire upper Wyre catchment, some 23,500 acres. The survey will help support the estate's long term stewardship of the land and environment to the highest standards. To date, Jon has spent three days on site; one being given an overview tour, one on the main-stem Wyre below Abbeystead Reservoir and various short tributaries, and one on the Marshaw Wyre, a major tributary, up to the very headwaters.

Jon is clearly impressed so far and has shared some photos. "It's been a real privilege to have been given unfettered access to the entire upper catchment of a river. While there are clearly some issues to address, there are many positives. I have been in large woody material (formerly known as debris) heaven! These natural structures diversify flow and keep gravels clean, create scour and deeper pools for larger fish lies, and provide refuge from predators. Rudimentary kick-samples have revealed ample fly life in the majority of becks, and the number of wild salmonids dimpling on the surface and darting from my shadow has been extremely encouraging. Huge potential."

MERCHANDISE

WTT memberships and merchandise can be ordered via the Shop on our website at http://www.wildtrout.org/; by sending your order and cheque to the WTT Office; or by debit/credit card over the phone – call the WTT Office on 023 9257 0985. All postage prices are for the UK, please enquire for overseas.

Snowbee Fishing Shirt
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£15 + £3.45 p&p one size

T-shirts from Eat, Sleep, Fish
Direct from http://eat-sleep-fish.co.uk/content/2014/09/eat-sleep-fish-t-shirts
£19.99 plus £3.45 p&p

Fulling Mill Evening Rise Fly Selection
£9 + £3.45 p&p

Rod measures and length/ weight cards
£3.50 per set

Trout cushions
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Car stickers and mugs
Car stickers – £1.50
Pin badges – £3.75
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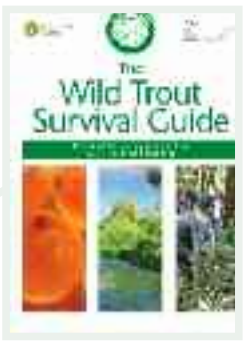
- The Chalkstream Habitat Manual £10 + £1.50 p&p
- Urban Rivers Restoration Guidelines £10 + £1.50 p&p
- Rivers – Working for Wild Trout£10 + £1.50 p&p

Paperbacks

- The Wild Trout Survival Guide – £10 + £2 p&p



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