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### River Restoration News

Issue 44 June 2014

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Click on the titles to go to the articles.

### A chance to comment

We would like to hear your views on these articles and similar schemes.

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## Restoring Coastal Marshes at Lower Raypits

Restoring chalk stream habitats

**Dorset Wild Rivers** 

Keep up to date with important news and events through our monthly bulletin. Join the debate on LinkedIn, Twitter or Facebook, or contact the Centre directly.

### Don't forget

The RRC is able to provide an independent source of advice and information.



A report on the 15th annual RRC Conference

River twinning

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**Ganges programme** 

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Celebrating twenty years of working to restore and enhance rivers



The inaugural

**England River Prize** 

# Restoring a dry coastal grazing marsh at Lower Raypits, Mark Iley EWT South Essex Aerial view of the Wet Grassland site at Lower Raypits after land forming completed and ditch network partially full - November 2012

A similar view of site prior to project starting

The Essex Wildlife Trust reserve of Lower Raypits is located on the south bank of the Crouch estuary and covers 143ha in total, including intertidal mudflats, saltmarsh and seawall habitats within the Crouch & Roach Estuaries Site of Special Scientific Interest, Ramsar and Special Protection Area.

A key habitat within the site is **coastal grazing marsh** (38ha), however this was much degraded. The fields at Lower Raypits were, prior to restoration, agriculturally improved grassland. They were much too dry to support breeding waders or appropriate plant and invertebrate assemblages, and the corresponding nature conservation value was low.

### Improving summer breeding habitats

During winter the Crouch estuary is used by internationally important numbers of **redshank** *Tringa totanus*, **dunlin** *Calidris alpina*, **lapwing** *Vanellus vanellus*, **golden plover** *Pluvialis apricaria* and **brent goose** *Branta bernicla*. Whilst there is substantial wintering habitat for these wading birds in the Crouch estuary there is very little summer breeding habitat or significant areas of freshwater.

The Lower Raypits restoration project was developed to improve this situation. The key aim was to raise the water table and retain levels on site into the spring and early summer, allowing wading birds sufficient time to breed. This would also provide optimum habitat for **water voles** Arvicola amphibius and assemblages of characteristic grazing marsh invertebrates and plants.

This is a challenge as South Essex has an average annual rainfall of less than 500mm (average rainfall from November to March is 233mm). It is actually drier than Jerusalem and could be classified as semi desert or steppe!





Plan of the site showing the works

To re-wet the site two issues were dealt with. Firstly, Lower Raypits was too dry because it still had a very effective clay pipe and clinker drainage system which has continued to drain the site, the very opposite of what was desired. If all the rainfall was to be retained on the site it was vital to remove this sub surface drainage system and 'seal 'the site with low clay bunds around the perimeter. Secondly, a major land drain passes through the site carrying significant volumes of winter rainfall from a large area of neighbouring arable land and discharging into the estuary through a sluice in the seawall. This was seen to be a wasted resource which we could use.

### Installing compressed air driven pumps to harvest fresh water

We wanted to harvest and store the fresh water which would otherwise flow into the estuary and be lost. To do this a pumping system was needed that would meet a number of exacting conditions.

Pumping should only take place when fresh water was available in sufficient quantities (1st Nov – 31st March) and it should also not pump if the water was too saline (at times there is some tidal inflow). Wind and diesel powered pumps were considered and rejected. Compressed air driven pumps were the only feasible solution for this site and they allowed the option of salinity control.

Airwell Pumps Ltd of Malaga, Western Australia manufactured the pumps to our specification for this project. This company manufactures compressed air driven pumps in a range of sizes for numerous applications. This technology is proven and is commonly used in Australia and other arid regions for agricultural irrigation, dewatering of mines etc., where sites are remote and away from sources of electricity. The source of compressed air can be up to 6km from the pumps.



Three matching pumps were manufactured in 316L grade stainless steel, the construction is simple, very rugged and virtually maintenance free with a five year guarantee.

The pumps are suspended vertically in a 9.14 metre deep concrete ring pump chamber which is full of water drawn by gravity from the central ditch abstraction point. This head of water above the pumps mean they fill quickly with water. Each pump cycle lasts around 30 seconds and the three pumps together move 0.135m³ (29.69 gallons) of water per cycle into the storage lagoon (388m³ (74,525 gallons) per 24 hours). To fill the 23,000m³ storage lagoon takes approximately 59 days (1416 hours) of continuous pumping within the five month (151 day) window of the abstraction licence.

Compressed air (45psi at well head) is supplied via a buried MDPE polyethylene pipe from a compressor (model – Hydrovane HV04) housed at a farm – the nearest electricity supply – c. 2km distant from the site.

The electricity required to operate the pump solenoid valves is generated from small solar panels and stored in 12v batteries at the well head.

The pumps operate via an adjustable salinity sensor located in the ditch at the abstraction point which stops the pumps operating when salinity reaches a pre-set threshold.

The pumps are virtually silent (inaudible c. 50m away) and the well head is unobtrusive with the only visible features being the small solar powered control box and pipework. This is protected from grazing livestock within a palisade fenced compound.



Completed well head showing pipework connected to three pumps with control box and access cover (locked)

Air-line pipe being 'moled' into ground





Pump being lowered into pump chamber to be suspended underwater from a plate at the top of riser pipe







### **Re-colonisation of birds**

The addition of the water storage lagoon is a major benefit to the site for breeding species as well as attracting waterfowl to roost in safety. It gives the flexibility needed to extend the period of moisture for breeding birds, most beneficial to species such as **redshank** and **avocet** *Recurvirostra avosetta*. The banks are profiled at 1 in 4 to maximize the drawdown areas and expose invertebrate rich mud. The lagoon is constructed on the existing land surface rather than excavated. This is the highest point on the site and the lagoon can be emptied using gravity to selectively direct water into the site's three compartments.

Storage lagoon partially full showing the four gravel topped islands – November 2012

To further enhance the lagoon there are four islands with 530m<sup>2</sup> of gravel topping creating a protected breeding location as well as providing additional feeding areas for chicks hatched elsewhere on site. This will reduce impact from ground predators and also encourages safe winter and migration roosting.

The groundworks and pump installation were completed in October 2012. An extremely wet winter gave us maximum water levels and abundant water to pump so the lagoon was full by mid-January.







In March 2013 twenty pairs of avocet moved onto the gravel topped lagoon islands and reared at least 13 chicks. We also recorded four breeding pairs of **oystercatcher** Haematopus ostralegus and four pairs of **redshank** with one possible pair of breeding **lapwing** though we expect more breeding lapwing in future years. Good numbers of **skylark** Alauda arvensis, **meadow pipit** Anthus pratensis and **reed bunting** Embiriza schoeniclus are also present on site. **Brown hare** Lepus capensis numbers remain high and appear unaffected by the changes to the site.

In excess of 4km of ditches and pools have been created with shallow profiles creating extensive areas of drawdown during the spring and summer providing feeding opportunities for fledgling waders. Following the ditching and ground forming there were large areas of bare ground which needed reseeding. This was undertaken in March 2013 (too wet in autumn 2012) with a conservation grass mix with added herb species appropriate to the site. A cold late spring slowed germination but by autumn a sward had established across the disturbed soils leaving less than 5% bare ground.

No aquatic or marginal plants have been introduced as we would prefer to see what appears from the existing seed bank. Plant colonisation will be monitored and some marginal plant species may in time be introduced. **Common reed** *Phragmites australis* has shown to be an initial coloniser.

The site continues to be cattle grazed with low stock densities and achieving the ideal sward height is a key management objective. The interaction of grazing and marginal vegetation establishment will be monitored and may need intervention to provide an optimum balance.

The scheme was designed by

Roger Wardle (Featherwood Ltd.)

and funded through

Natural England HLS,

The SITA Trust

and Essex Wildlife Trust.

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### Dorset Wild Rivers

Sarah Williams Dorset Wildlife Trust

Dorchester Mill Stream after works



Dorchester Mill Stream before works

The **Dorset Wild Rivers** (DWR) is a major river and wetland restoration project that takes a collaborative catchment based approach to delivery. It is led by **Dorset Wildlife Trust** and focuses on the **Frome and Piddle Valleys** and the chalk stream tributaries of the Dorset Stour Valley, Allen, Tarrant and North Winterbournes. The DWR partnership works with the **Farming and Wildlife Advisory Group South West** (FWAGSW), land owners, fishing groups and the **Wild Trout Trust**, to restore rivers and their associated wetland habitats on a landscape scale for the benefit of a range of priority wildlife.

The project is now in its fourth year and so far it has resulted in a total of 11km of river restoration projects, over 7ha of wet woodland has been planted with nearly 8000 trees and 130 trees have been felled into rivers to create Large Woody Debris (LWD) and log jams. More than ten islands have been created; over 1km of willow berms installed and the river length has increased by over 1km due to re-meandering. Plans for this summer total a further 4km of river restoration. The project has also restored 13ha of floodplain wet grassland and many hectares of floodplain have been reconnected to the river.

Much of the River Frome is a Site of Special Scientific Interest (SSSI) and the DWR works with the **Environment Agency** (EA) and **Natural England** to bring the SSSI into favourable condition. Our project mainly works outside of the SSSI to bring wider benefits to the un-designated or 'Cinderella' chalk streams. This article gives examples of the work carried out on the Frome catchment.

### **South Winterbourne**

The DWR project has been working on the **South Winterbourne** which is a tributary of the River Frome just south of Dorchester. Winterbournes are rare chalk streams which are groundwater fed and only flow certain times of the year as groundwater levels in the aquifer fluctuate (usually in the winter). They can support a range of specialist invertebrates that are rare and adapted to this unusual flow regime.





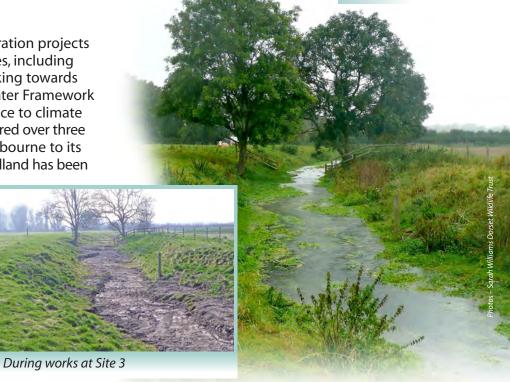
The South Winterbourne has been degraded over the centuries, resulting in a very straight, steep sided and over-deepened channel with little resemblance to a winterbourne. This degraded channel has also in several places been disconnected from the surrounding floodplain.

Three successful winterbourne restoration projects have delivered a number of outcomes, including Biodiversity Action Plan targets, working towards Good Ecological Status under the Water Framework Directive (WFD) and building resilience to climate change. The three projects were delivered over three years reconnecting the South Winterbourne to its floodplain. Three hectares of wet woodland has been

planted, two meandering stretches of new channel created, three ponds adjacent to the stream installed and a range of geomorphological features within the channel have been recreated including LWD.

The rare **mayfly** larva *Paraleptophlebia werneri*, and the notable **blackfly** larva Metacnephia amphora, were found in the stream only six months after the initial work was completed. The conservation value of the new channel was assessed using the scientific Community Conservation Index (CCI). While the old channel before restoration had a moderate conservation value, the new channel has a very high value.

Post works at Site 3





### **Work on the Frome Valley**

DWR has carried out five projects on the River Frome and a further six on its upper tributaries. These projects range from narrowing the channel with willow berms and willow islands, putting in debris dams, opening up tunnels of trees over the river and incorporating LWD, to tree planting and reprofiling river bed and banks. Most of the projects are on private land away from publically accessible areas, whereas one project is on a stretch of the Frome that runs through Dorchester - the Mill Stream.

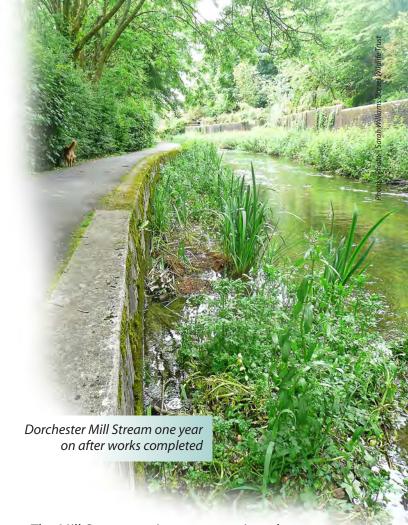
### **Dorchester Mill Stream**

The River Frome is often braided and there are three channels entering the town, all called the Frome. However, the **Dorchester Mill Stream** is a man-made leat, but this purpose is now redundant. Under WFD this channel had poor ecological quality and poor hydro-morphological quality, but good chemical quality. The channel was very wide with straight sides and the flow velocities prior to the restoration were fairly low resulting in silt accumulation on the gravels. The proposed Dorchester Mill Stream Enhancement Scheme was a 500m length project that addressed both the ecological and hydro-morphological quality of this channel.



River Frome before narrowing (above) and after (below)





The Mill Stream project construction phase was carried out over three weeks in August 2011. However, extensive modelling for flood risk, planning applications and consultation with residents and the councils started eight years prior to construction. The enhancement work involved the creation of soft low level shelves or berms up to 2m wide which were planted with emergent native vegetation. The berms narrowed the channel and increased velocities, which in turn reduced silt build up on the gravels. The berms also improved the aesthetics of the channel and provided habitats for other wildlife.





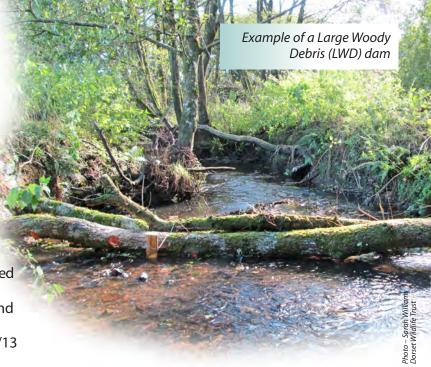
Much of the brashwood needed for the project came from DWT's woodlands; while the rest came from coppice worked woodlands around the county. Volunteers helped coppice hazel and bundle the wood together to create faggots. Local residents also helped to plant the berms.

In 2013 DWT carried out post project monitoring. Electro-fishing surveys were carried out pre and post works, and results showed an increase in all age ranges of fish. The site had a total density estimate of 12.4 fish/100m<sup>2</sup> for brown trout Salmo trutta, grayling Thymallus thymallus, salmon Salmo salar and eels Anguilla anguilla in 2011 (pre works) and in 2013 the density had increased to 28.9 fish/100m<sup>2</sup>. The biggest increase was in the numbers of juvenile brown trout, with strong 0+ and 1+ year classes present, which were almost absent previously. A salmon redd from the winter of 2012/13 was still clearly visible in an area that had been so heavily silted in 2011 that it was difficult to wade through. In 2012, a salmon redd survey was carried out and eight salmon redds and numerous trout redds where seen. Previous surveys only found three salmon redds.

The site showed great change in habitat and flow regimes, with the creation of alternating low level berms that have resulted in the formation of a meandering channel. The velocity has increased slightly and this has flushed away the heavy silt deposits. Clean gravels have increased from 25% to 75%, creating new spawning areas for salmon and trout. The filamentous algae that were present before works started has now all but disappeared being replaced by **Water Crowfoot** Ranunculus spp, **Starworts** Callitrichethe and **Curled Pondweed** Potomogeton crispus, and the channel now has good diverse chalk stream habitats.

There has been an increase in the numbers and range of river invertebrates found throughout this section of the Mill Stream. In 2011 there were no records of any dragonfly larvae, but in 2013 both **beautiful damselfly** *Calopteryx virgo* and **banded damselfly** *Calopteryx splendens* larvae and adults were found. This is likely to be due to the increase in emergent vegetation growing on the berms. Local residents have reported seeing water voles on the Mill Stream through this stretch in 2013.

The Dorchester Mill Stream Enhancement scheme was a Dorset Wild Rivers partnership project supported by the EA, SITA Trust's Enriching Nature Programme through the landfill Communities Fund, the Big Lottery Fund, the Wild Trout Trust and many other charitable trusts.



### **Debris Dams**

Over the last three years the project has been working with farmers at the top of the Frome catchment to reduce run-off by increasing wet woodland habitat and water retention of these woodlands. The **Rivers Hooke**, **Frome Headwaters** and the **Wraxall** are all tributarties of the Frome and all flow through parts of the West Dorset Alder Woods Special Area of Conservation (SAC).

The SAC interest comprises rivers with debris dams which creates in-stream features such as scour pools and backwaters, and help to holdup peak floods and allow water to spill into the adjacent wet woodlands. There were a number of natural log jams in the Hooke, Wraxall and Frome Headwaters, but over the years several have been removed by landowners. The project has re-instated log jams in many of the headwater streams. In total 21 new log jams were introduced on ten farms and 5ha of new wet woodland has been planted. This helps with diffuse pollution issues on the farms as well as creating habitats.

**Dorset Wild Rivers** is a partnership project led by **Dorset Wildlife Trust** and **FWAGSW** and is funded by **Wessex Water**, **Dorset Wildlife Trust** and **Dorset AONB**. It also includes the **EA**, **Natural England** and the **Wild Trout Trust**. Many of the delivery projects are funded by the EA.

For more information about Dorset Wild Rivers please contact

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## Thames and Ganges River Twinning Programme

**Robert Oates** 

**Thames Rivers Trust** 

Ganges River Dolphin Centre on the River Yamuna created by a local Friends of the River group as part of the Twinning Programme



Imagine that you are standing outside the glorious Taj Mahal, India's most famous treasure. Now imagine the smell from the grossly polluted **River Yamuna** running alongside it. That is the state of many rivers in the Ganges basin, and many rivers in India. But in 2010 we had the opportunity to help do something about it.

In that year the Thames was awarded the **Thiess**International Riverprize by the International
RiverFoundation (IRF) in recognition of the clean-up
of the river over the past fifty years and the commitment
by stakeholders to improve it even further. The Thames'
winning entry was submitted by the Environment
Agency South East (EA) and the Thames Rivers Trust
(TRT) as representatives of the many organisations
helping to improve the river. Under the rules of the
IRF, the prize money of £210,000 was used by TRT to
help the Ganges via a Rivers Twinning Programme.
That Programme is currently focused on the River
Yamuna tributary and the upper River Ganges,
with hopes to extend it further over coming years.

Along 1,376 km of the River Yamuna from the Himalayas to the plains the twinning programme funded the **PEACE Institute Charitable Trust** to build capacity in local 'Friends of the River' volunteer groups or

'Nadi Mitra Mandali' (NMM). Organised in ten stretches or 'GRIDs' of about 140 km in length each, all NMMs are volunteer run and operate much like UK rivers trusts. Fifty-five rural villages have so far been helped by PEACE to set up NMMs and undertake actions to improve their part of the river. Those actions include the planting of riverbanks to prevent erosion, the reduction of waste water pollution, promotion of natural farming and alternative livelihoods and the restoration of

fish populations and other biodiversity.

The NMMs have been enabled to continue their work long-term and to engage better with other organisations, including government agencies such as the **State Forestry Administration**. In a first for the Ganges basin, a community **Catchment Action Plan** has been produced for the Somb and Thapana tributaries of the Yamuna. This plan will be used to drive further action locally and as a model for other tributaries.

### Benefits for the people

The number of people who have benefitted from the project directly in different ways is 4,300. Over 1,800 volunteers have given their time to activities including planting 11,700 trees to reduce erosion on riverbanks, hillsides and on floodplains. Nine hundred and forty people participated in nine capacity enhancement and training workshops. Over six hundred school students have participated in **Yamuna Eco Scholar** (YES) activities in thirty one schools. Over one hundred growing as better techniques for agriculture and new alternative livelihood opportunities that the Programme has promoted are spreading.

Systems have also been set up for long-term monitoring of the health of people and their animals, to assess the reduction in water borne diseases as water supply and sanitation are improved.





Long-term monitoring of wildlife has also been established by training the NMM members to conduct counts of birds, freshwater turtles, **Ganges River Dolphin**, *Platanista gangetica* of which only 2,000 remain in India, and **Gharial**, *Gavialis gangeticus* the world's largest and rarest freshwater crocodile of which barely two hundred breeding pairs remain, mostly in the Ganges basin.

In the Upper Ganges, along 200 km of the Hastinapur **National Freshwater Reserve**, the twinning programme funded **WWF India** to reintroduce a breeding population of Gharial. The project there has also developed more efficient agriculture to improve the livelihoods of poor villagers and to reduce cultivation on the seasonal sand islands in the river where Gharial and freshwater turtles nest. A system to protect freshwater turtle nests and to rear young hatchlings for safe release has been set up. Illegal fishing has been deterred to increase fish populations and to provide food for Ganges River Dolphin, Gharial, freshwater turtles, birds and other species. WWF India has also built up the capacity of local villagers to continue the work long-term themselves and in partnership with government agencies.

WWF India was also funded to transfer to the lower Yamuna the wildlife monitoring and livelihoods improvement techniques developed on the Upper Ganges. That has helped to reduce illegal fishing in the lower Yamuna, which will encourage further colonisation by Ganges River Dolphin, Gharial and other fish eating animals and birds. Importantly, they found a remnant population of Gharial in the lower Yamuna.

The surveys conducted by the partners in the twinning programme have shown that the River Yamuna is not all biologically dead as is widely assumed. In places there are significant pockets of biodiversity especially in the tributary rivers, including some Ganges River Dolphin and Gharial. However, this biodiversity is under continual pressure from human activities and needs urgent assistance. But if the Ganges and its tributaries can be restored to ecological health before it is too late, then its wildlife will be able to re-colonise from the remaining pockets.

The many outputs from the Thames and Ganges programme provide a wealth of evidence about the benefits, value for money and lasting impact that rivers twinning can bring. That evidence is now captured in the 'Report of the Thames and Ganges Twinning Programme 2010-2014' available from the RRC website. The International RiverFoundation is using that report and other outputs from our Programme to encourage more river twinning around the world. A report on 'Lessons learned from the Thames and Ganges Twinning Programme' will be published by September.

The programme partners will continue to work together, for example through "India Rivers Week" in New Delhi in the last four days of November 2014.

This will be the first of an annual or biennial conclave to share experiences and promote river restoration skills and actions.

To find out more on Indian Rivers Week visit the websites:

<u>www.peaceinst.org, www.wwfindia.org</u>, or <u>www.riverfoundation.org.au</u>.

Why not consider attending India Rivers Week for a day or two, and visit the Taj Mahal. If you do, please look over the wall at whether the river is improving.

Robert Oates, Manager
Thames and Ganges Twinning Programme
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Captive bred Gharial released by WWF India into the Upper Ganges as part of a reintroduction project funded by the Twinning Programme





Following the very luxurious and corporate atmosphere generated by the Whittlebury Hall Hotel complex, the 15th annual RRC conference saw a return to the more familiar territory of a good old University campus. The Sheffield Hallam complex was perhaps more comfortable territory for the near 300 delegates, speakers and organisers who converged from all corners of the country and beyond to take part in this year's bash.

I say "take part" because that is exactly what the RRC staff achieves in the way that they skilfully pull the programme together. It really was all about exchanging information and ideas, listening, talking and for me, coming away truly inspired with new contacts and knowledge in the bank. This is exactly why the RRC conference resonates for many of us who spend long hours dressed in rubber gear, paddling about in rivers. It's an un-missable event for those with a passion for rivers and wetlands and is always a date in the diary to look forward to. This year's event lived up to the high bench mark that is always set by the previous conference. A daunting prospect for the team in 2015!

So what were the themes and tone that resonated out of the 50 plus presentations, five workshops and two site visits, not forgetting the plethora of poster-projects? How is it possible to pack that much into a two day conference? Well for those of us working in what is sometimes referred to as the "third sector", or something that rhymes with it perhaps, it was interesting and very topical to hear lots more about flood defence in the context of river restoration and especially natural flood defences. We haven't heard too many positive messages about river restoration from the Government following last winter's terrible flooding incidents but it was heartening for us all to hear this topic given a thorough airing by many speakers and delegates, particularly with regard to the synergies between flood risk mitigation, development and climate change.







Some of the many posters showing various projects

Moans and groans – well, very few from me. One or two of the breakout rooms had poor acoustics, which for a deaf old buzzard like me was a little challenging, also the wine on my table at dinner disappeared at an alarming rate – it wasn't my fault but it's thirsty work repairing rivers!

And what about next year? I personally would like to see a few more presentations on how we can win hearts and minds in the battle for restoring rivers. Any case studies that describe how changes in agricultural practices were driven through, perhaps highlighting catchments where real change has been shown to help rivers recover would be top of my wish list. Perhaps a slightly more political agenda, as well as a technical one will help some of us to drive through difficult projects.

Well done Martin and the rest of your excellent team. Can't wait for next year's bonanza.



Dr Mark Everard presenting the keynote address

### **Highlights and foresights**

A particular highlight for me was the excellent keynote address given by Dr Mark Everard which explored the perceptions that people have of how our rivers should look and perform, and the role that ecosystem services can have in trying to put a value on the benefits of delivering healthy, functioning catchments. I also always enjoy the nuts and bolts presentations where people turn up and describe a particular problem and how they succeeded in delivering a solution – always thought provoking and inspiring for restoration practitioners.

Avid listeners!



RRC Conference June 2014 River Restoration NEWS

## The imaugural England River Prize

European Riverprize to reward best practice in river management, the Environment Agency, the River Restoration Centre, WWF UK and the International River Foundation have launched a prize to celebrate the best of English river restoration. The England River Prize gives credence to organisations delivering ecosystem health and celebrating local involvement in river, estuary, wetland and catchment projects. The winner of the England River Prize will be encouraged to apply for the European Riverprize.

Winners were announced in four categories (large projects, value for money projects, multi partnership projects and multi benefits projects), and thereby also identified as finalists for the overall England River Prize.

The award ceremony was held at the **RRC** conference gala dinner in the prestigious surroundings of Sheffield's City Hall, where 250 delegates eagerly awaited the announcement of the first England River prize. The prize, a £10,000 grant, was presented by Alastair Driver, National Biodiversity Manager at the Environment Agency and Fiona Bowles, RRC vice chairman and Environmental Project Manager at Wessex Water.



Martin Janes with Rob Dryden from the River Wensum partnership, winner of the inaugural England River Prize

### Winner of the European River Prize River Wensum -

also winner of the large catchment project category

The **River Wensum Restoration Strategy** is an ambitious, long-term project to restore the River Wensum SSSI/SAC in Norfolk. So far over 12km of river have been restored using a combination of techniques including meander and floodplain reconnection, bed raising, channel narrowing, insertion of large wood and construction of gravel glides and pools.

The Wensum partnership will use the prize money to further the aims of river restoration, develop links with universities to monitor success; provide interpretation boards at sites accessible to the public; host a competition for local communities and share lessons learned.





### **Bow Brook -**

winner of the value for money project category
The Bow Brook Living Landscape project is a
catchment based approach by Worcestershire
Wildlife Trust in partnership with the Environment
Agency, which aims to build resilience through
habitat connectivity. The project has worked with
private landowners to reduce diffuse rural pollution
on a catchment scale and created 14,725m² of
wetland habitat, working on approximately 20%
of the main channel's length.

### **Haltwhistle Burn -**

winner of the multi partnership project category

The **Haltwhistle Burn** project; a total catchment approach, which has been delivered by the **Tyne Rivers Trust**, aims to address the reasons for WFD failure (specifically relating to fish), whilst also dealing with issues including flood management and diffuse pollution control, control of forest run-off in the headwaters, sediment management, road runoff and the blockage at the South Tyne confluence.

**River Wye -**

winner of the multi benefit project category

The **Wye and Usk Foundation** and partners have delivered a range of actions across the Wye catchment, including upland wetland, habitat and fish access restoration. In all, 59 fish passes /easements plus 19 weir removals have restored access to 702km of stream. The project has also worked extensively with farms to develop successful methods of working and delivering water quality improvements

Apart from the winning project, the judging panel also commended two other river restoration projects: the **River Nar partnership** and the **River Irwell Good Ecological Potential programme**. Videos from all of the finalists are available to view on the RRC <u>YouTube channel</u>.

Alastair Driver and Fiona Bowles with Helen Mandley from the commended River Nar Partnership

