



# River Restoration NEWS

NEWSLETTER of the RIVER RESTORATION CENTRE

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## Italian Government Drainage Authority Directors visit the UK

In June, CIRF, the Italian Centre for River Restoration, together with Kevin Skinner (Haycock Associates) and RRC organised a study tour to Eastern England and Scotland to visit river management and restoration projects. The aim of the week was to generate enthusiasm and discussion amongst the 40+ participants and consolidate the work of CIRF in promoting new ways of managing rivers.

The tour took in the Ouse Washes (EA), the Gaywood River Restoration Project (King's Lynn Consortium IDB), the Skerne River Restoration Project (RRC) and the River Tweed (Tweed Foundation) together with presentations and talks held along the way.

The use of an interpreter ensured that discussion was always 'lively', although at one point the possibility of visiting Harry Potter at Alnwick Castle threatened to overthrow the itinerary!



### 2005 6 th Annual RRC Network Conference 13–14 April University of Hertfordshire, Hatfield

It's time to don your thinking caps for the next one! Feedback from the previous five RRC Conferences suggest that many delegates would like our next conference to be held in the South of England. So we have booked the new conference centre on the de Havilland Campus, Hatfield for April 2005.

The conference will focus around four main areas:

- Restoring the ecology of urban rivers, not just the landscape!
- Finding, using and developing techniques for river restoration
- Socio-economic justification of enhancing river environments

- Combining sustainable flood management and river restoration

If you are interested in giving a short paper we would like to hear from you.

***At this point we ask you only to provide a suggested title.*** As always we wish to attract a wide range of participants from across the UK and abroad, thereby continuing our commitment to promote the exchange of ideas and experiences.

Details will follow.

If you require further information at this point contact either Jenny Mant or Laura de Smith.

01525 863341 or email:  
[rrc@therrc.co.uk](mailto:rrc@therrc.co.uk)

## RRC New Initiatives

### *Tours to the Skerne and Cole*

As part of our services to members we are planning to arrange tours to these demonstration sites. If you would be interested in attending such an event please contact us.

### *Seminar series*

Following our first successful seminar when Amos Brandies talked about the Alexander River Restoration Project, Israel, we are pleased to announce that our next event will be at the beginning of January 2005.

This will feature Prof Steve Ormerod from Cardiff University talking about using macro-invertebrates as a monitoring tool.

Details to follow.

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# The 3rd ECRR Conference on River Restoration in Europe, Zagreb, Croatia, May 2004

*An overview from Mark Diamond (EA and ECRR Management Board Member)*

The purpose of The European Centre for River Restoration (ECRR) is to bring people involved in this field together so that they can share their ideas and experience. This purpose was well served by the conference “River Restoration 2004: Principles, processes, practices” organised by Croatian Water with the support of ECRR. The presentations were of a high standard and gave an excellent overview of river rehabilitation across Europe and elsewhere.

The conference concentrated on four topic areas:

- Integrated water management
- Conflict resolution
- Public participation
- Countries in transition to membership of EU

Two main themes emerged during the conference; firstly, public safety and flood risk management appeared to be the most important driver for river rehabilitation across Europe; secondly, inspiring public participation was always a key factor in the successful implementation and maintenance of river restoration projects. While the Water Framework Directive (WFD) was discussed on a number of occasions both within the conference and informally, there still seemed to be great uncertainty about its consequences for river restoration.

The conference summary, proceedings and draft conclusions are available at [www.ecrr.org](http://www.ecrr.org). so, as you can find a report of the conference there, I have just picked out three things that impressed me.

Philip Weller (Executive Secretary of the International Commission for the Protection of the Danube River ([www.icpdr.org](http://www.icpdr.org))) described a whole river basin rehabilitation of daunting scale and complexity and outlined the successful actions being taken to restore this major European river

*Lonjko Polje Nature Park Ramsar wetland site.*



*An example of one of the best preserved river ecosystems in Central Europe.*

with the participation of the Governments and the local people of more than a dozen countries. Walter Binder provided a fascinating account of the rehabilitation of rivers in Bavaria at the river basin scale including the creation of a bathing beach on the River Isar in Munich! In contrast, Katsuhide Yoshikawa from the Foundation for Riverfront Improvement and Restoration, Japan, gave an insight into urban river restoration Asian style which included the removal of a major urban highway!

Closer to home, Chris Robinson and Simon Whitton from the Environment Agency introduced Fisheries Action Plans while RRC's Jenny Mant gave an overview of River Restoration in the UK. Both papers were well received. Bart Fokken's also gave the RRC conference a very positive mention in the closing remarks noting that it had attracted around 200 people; in his view this reflected an established network valued by its members. ECRR would like to see similar river restoration networks set up in all European countries.

A field trip in the middle of the conference to Lonjko Polje Nature Park a 51,000 hectare Ramsar wetland was awe-inspiring. This site, which is home to a myriad of rare species (e.g. white-tailed eagle, black stork, spoonbill, etc,) is actually a man-made flood retention basin; the success of the nature conservation actions relied on the willing participation of the local people. Thus, this site demonstrated and exemplified the main themes of the conference as well as the excellent work of our hosts Hrvatske Vode (Croatian Water).

At the end of the conference there was a fascinating visit to the Drava and Mura Rivers to discuss how best to preserve them. Despite representing some of the best preserved river ecosystems in Central Europe they are nevertheless impacted by gravel extraction and river canalisation schemes. Their future conservation will be a benchmark for the effective implementation of EU environmental legislation in this region especially the Habitat and Birds Directives and the Water Framework Directive.

# The Upper Thames Enhancement Strategy

**Simon Whitton and Chris Robinson from EA Thames Region provide a short article on how their Initiative for Fisheries Improvement could lead to more strategically informed restoration projects within the Upper Thames Catchment**



*1970s style river management Cutters Brook (a tributary of the River Thame).*

Fish have evolved to survive in physically diverse systems and their habitat requirements vary with seasonality and life-cycle development. Human activities along rivers have had major negative effects on fish, invertebrate and macrophyte habitat for many decades. Those located in the upper Thames catchment are no exception. Channelisation has often resulted in the removal or reduction of sinuosity, pool-riffle sequences, substrate, backwaters, riparian vegetation and floodplain connectivity, as well as the variation in channel velocity, depth and river bank. In addition, channel-length is shortened by the removal of meanders, thereby further reducing available habitat. Together these impacts affect the community stability and limit diversity, abundance and biomass not only of fish but other fauna and flora associated with the riverine environment. Indeed, recent fisheries surveys have shown that there is a marked absence of juvenile fish in the upper Thames catchment.

Whilst some reaches are now re-narrowing to form their own sustainable width, evidence to date suggests that full “natural” recovery is likely to take centuries rather than

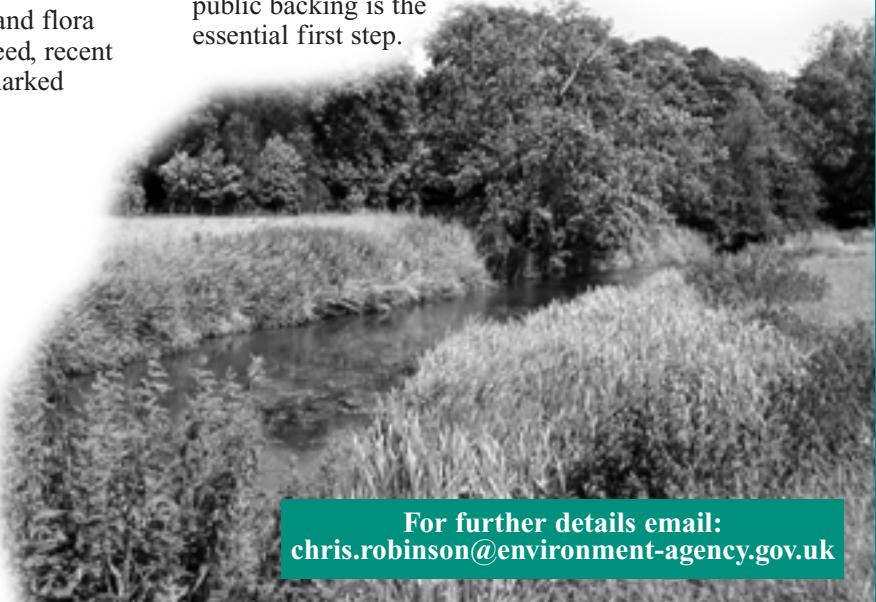
*A typical section of the River Evenlode near Woodstock, Oxfordshire. The river is straight and the banks deeply incised. An enhancement project is planned for later this year in which gravel will be used to create riffles to increase habitat and flow diversity.*

decades within this catchment – in other words too late for the fish or those interested in restoring the rivers.

Fisheries interest groups for the rivers Kennet and Cherwell independently asked the Environment Agency (EA) to perform a strategic review of habitat enhancement opportunities in their catchments. The EA subsequently decided to apply this approach to the whole of the upper Thames catchment and in doing so initiated the Upper Thames Habitat Enhancement Strategy. A list of potential sites was drawn up and feasibility studies were undertaken. The cost of each of these schemes ranges from £10k to £250k, only a small proportion of which can be provided by the EA, so a key part of the Strategy will be to develop a funding programme.

Publicity material will be used to attract investment from a variety of sources, including both national (Aggregates Levy, National Lottery Fund) and local (angling clubs, landowners and businesses) sources. It is anticipated that funding should be easier to acquire if all enhancement projects are tied together in the form of such a Strategy. The project as a whole will be open to investment from more funding streams because delivery will be broader and local investors, who might be encouraged to invest in nearby reaches, will be more inclined to contribute to a larger, higher profile scheme.

The final success of the Strategy will be as dependent on the quality of the marketing, promotional and sales material as on the ecology underpinning the need for the work. However, the results of the consultation exercise suggest that society wants riverine improvements and public backing is the essential first step.



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# 5<sup>th</sup> River Restoration Centre

**Kiri Walker SNH's Senior Environmental Quality Officer kindly offered to provide a summary of the RRC Annual Network Conference 2004, Durham**

The sunshine added to the excitement as 200 delegates met at Trevelyan College, Durham, for the 5<sup>th</sup> RRC conference but it didn't deter anyone from entering the darkened conference hall! In fact, it was such a full house that a few extra chairs had to be squeezed in at the back. The messages delivered in presentations this year gave delegates plenty of food for thought and were, in light of the Water Framework Directive (WFD), particularly relevant.



*Networking opportunities at this year's conference.*

## Keynote

The importance of the catchment scale approach to river restoration was strongly emphasised by the keynote speaker, Bart Fokkens, Director of Wetland Development and Restoration, RIZA, Netherlands and board member of the ECRR. The opportunities for river restoration were clearly highlighted by the achievements of the Netherlands. However, Bart drew attention to the need to influence policy and raise public awareness as co-operation at a catchment scale often requires political decisions to be made. This highlighted the need to take into account agricultural, historical, cultural and infrastructural values, as well as the environmental values with which we are all familiar. The Netherlands are currently developing tools and policy that seek to combine flood prevention, river restoration and the requirements of the WFD – a valuable example to all practitioners and policy makers.

There was strong agreement within the audience and throughout presentations that the catchment scale approach is key to successful river restoration, but it also became

clear that river restoration in the UK has the potential to play a fundamental part in flood prevention (and often flood management) schemes. Catchment approaches to flood prevention and management were described as being 'in vogue', but there was much discussion, particularly in workshop sessions on day two, about what is really meant by natural flood storage and sustainable schemes.

## A New Project

David Collins, Defra, introduced a new pilot project on the Rivers Laver and Skell that will hopefully deliver not only innovative flood defence options but also real environmental and social benefits. The intention is that this can be achieved through more sustainable land management using funding from existing sources, including agri-environment schemes. RRC, through its involvement, hopes that the results of monitoring the impact of this approach, particularly the reduction of flooding in Ripon will be an important source of information for future schemes in the UK.

In light of the discussions and the general agreement that sustainable land use should play a significant role in river restoration and flood management it was suggested that a 'Land and Water Framework Directive' may in fact have been more appropriate! (Maybe one day Common Agricultural Policy (CAP) and the WFD will go hand in hand?!).

The concept of adaptive management was illustrated in presentations by Andrew Brookes and Malcolm Newson *et al.* River restoration practitioners need to draw attention to the possibilities of changing details as a project progresses - and acknowledge that some degree of risk may be involved. As this approach becomes more widely accepted the need for project managers with a true understanding of the river system becomes more apparent. It was pleasing to see geomorphologists increasingly being involved in river restoration projects across the UK (although perhaps a little worrying when a certain geomorphologist admitted to not having a conscience!!).



River Skerne site visit  
21st April 2004.  
(photo by Fiona Lang,  
Environment Agency).

# Annual Network Conference

## Day Two

The second day began with a thought-provoking address from Chris Spray, Northumbrian Water. Despite the success of many restoration schemes and general agreement for the need for sustainable catchment management there is still no clear leader in the UK for taking forward this holistic approach. Major decisions are made within planning that affect river restoration opportunities yet how much of our time is spent influencing senior policy makers within the planning authorities? Although restoration projects are increasingly engaging with a wider range of stakeholders, without 'joined-up thinking' at policy level as well as the practical level the difficulties of implementing catchment scale projects will continue.

The application of new techniques for assessing river restoration options was discussed in subsequent presentations with significant emphasis on the use of geomorphology. The data provided by techniques such as a Fluvial Geomorphological Audit or a River Habitat Survey aid the decision-making process by providing objective information. However, presentations highlighted the fact that 'expert judgement' is (and will continue to be) an important part of assessment.

Presentations were followed in the afternoon by a choice of workshops or a site visit to the River Skerne at Darlington. The workshops covered issues such as European projects, river restoration and flood management and the use of fluvial audits. These workshops tied in well with presentations and gave delegates the opportunity for some serious discussion.

## A Summary

There is no doubt that the WFD will provide practitioners with more opportunities to promote river restoration and more sustainable options for river management. However, we should not rely on this new piece of legislation to deliver all the answers. There is still a need for us

*Poster session  
20th April 2004.*



to be pro-active both at the practical and policy level and to continue to promote the work of the RRC to the wider community. The RRC conference provides us all with a fantastic chance to find out about new projects and practices and to exchange ideas. It is also an excellent forum for promoting river restoration and sustainable approaches to river management to engineers, consultants, planners and policy makers.

The success of the 2004 conference was due not only to the quality of the presentations but also to the concerted efforts of the RRC team. I would like to take this opportunity to congratulate the RRC on their success and on behalf of all of us to thank the team for their ongoing support and advice.

*Backwater on River Skerne site visit 21st April 2004.  
(photo by Nigel Holmes).*

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# River Restoration in an Urban Environment and Sustainable Flood Defence

*This article provides a short insight into River Restoration in the Netherlands and initiatives for tackling flood defence issues, using methods more sympathetic to the environment. Tiny Arts from the Municipality of Breda, Environmental Affairs, outlines the recent projects completed on the River Mark and highlights the need to consider public participation from the start*

## Introduction

Breda (literally meaning broad river) is one of the five major towns of North-Brabant, which is one of the southern provinces of the Netherlands with 164,500 inhabitants. As the River Mark reaches the town its gradient and underlying geology change dramatically. Upstream between the Belgium border and the town sand dominates with a relatively high gradient for this area. The geology then changes to clay and the gradient becomes negligible as the river flows towards the coast. The main River Mark is also joined by the Aa of Weerijns.

Matters have been made worse, as is the case in many lowland Northern European countries, by human interference from both agricultural and urban development. Traditionally the rivers have been transformed into moat canals in combination with city walls to defend the old town. As a result the River Mark has lost much of its meandering course, its length has been reduced by 10% and sedimentation has increased. The town of Breda now acts as a bottleneck for flood water and on New Year's Eve 2002, the citizens of the town hardly managed to keep their feet dry. The local water board has managed to reduce the flood risk to 1:50 years but with today's increased urbanisation (in one case even a hospital has operating rooms below water level) and climate change scenarios suggesting an increase in sea level rise of up to 60cm in the next 100 years this is no longer seen as an acceptable level of protection especially where an inland town is only 1m above sea-level. The ambition of this project is to reduce flood risk



Floodplain restoration in the vicinity of the town of Breda.

to 1:100 years using sustainable catchment approach methods which also take account of the needs of wildlife and local inhabitants.

## The Dutch Government Strategy

The Dutch government now has a publicity slogan 'Nederland leeft met water', which, when translated, means 'water takes part in the lives of the Dutch people'. The government has appealed to the notion that in the Netherlands water is in everyone's vicinity, be it sea, river or ground water. Until now the Netherlands has relied on technocratic solutions. In response to higher water levels ever higher dikes have been built. Sometimes this may still be a necessary solution, but at the same time it is now accepted that we, as a nation, are living at the border of the sea where rivers form deltas or estuaries. We cannot continue putting rivers between dikes. Instead we have to create opportunities for the rivers to expand and provide room for water!

## Retention

Small tributaries of the River Mark have now been re-meandered through both rural and urban environments reaching as far as the city centre and in 2003 the Mark floodplain project just upstream to the town of Breda, was completed. This project, called 'Bieberg', has enabled the river to be re-connected to its flood plain and has also improved fish passage (which was not possible before because of a series of barrages). In addition an oxbow lake has been reconstructed to increase habitat biodiversity.

In the same year the restoration of another part of the river Mark commenced within the centre of Breda. Here the aim was to restore natural

Climate changing;  
public awareness.



riverbanks to create more room for the river. Whilst within the communal park areas this was relatively easy to achieve, persuading private landowners of the benefits was far more difficult even though much of this area frequently floods during high flow events. Constant dialogue and flow of information was key.

Much of the River Mark and its banks have a designated ecological status (in Dutch EHS) which comprises a network of linked nature reserves, connected by ecological corridors, stepping stones and nature development areas. Mammals like polecats, martens and hopefully, in the future, badgers should be able to migrate from the south to the north, passing the town of Breda.

There are now further plans to restore the floodplain of the River Aa of Weerijs with a view of not only finding room for water but also to enhance nature development and recreational facilities.

### ***Storage***

In many cases it would be logical to aim to store water where possible in upstream areas. In the case of the River Mark, however, there is a steep gradient upstream compared to its minimal slope closer to the town of Breda and a narrow floodplain with little room. In the Bieberg area, as discussed above, there is more scope to allow the river more space as part of flood control measures.

Already there are three storage areas (polders), which flood naturally at certain flood stages. Nevertheless, they have only been designed to mitigate against flood hazard of up to a 1 in 50 year event.

A project team, consisting of policy makers of the town of Breda, the province of North Brabant, nature conservancies and water managers are now working together to create a fourth overflow basin; part of the overall catchment plan to reduce inundation risk of the town of Breda to 1:100 years. This area consists of 300 hectares of agricultural land, directly neighbouring



*Restored upper tributary.*

the town. Designation of this land as a storage area excludes future urban expansions and hence potential economic loss yet, it has been successfully argued that the quality of life can be greatly improved through the presence of parks and a nature reserve in the immediate vicinity, especially if a sustainable solution to flood risk can be achieved. The aim is that this fourth overflow basin therefore should be as important in its function as a recreational area through the inclusion of walking, biking and skating areas, and for enhancing the natural environment, including for example the plantation of a more natural wet woodland and open areas suited for a range of birdlife, as it is for its flood prevention purpose.

### ***Conclusions***

There is now a growing realisation that more innovative solutions to the prevention of flood inundation of urban areas are the way forward. Furthermore it is critical that local residents and other stakeholders are included in any discussions aimed at achieving the best technical solutions. This means inclusion from the moment the 'charcoal drawings' are being sketched and not when the solutions are already in the minds of the policy makers. Only then will the local community have a real commitment to achieving the goals of a project.

Furthermore, both the rivers and their banks constitute part of a country-wide ecological network of nature reserves and natural development areas. A catchment based approach that takes account of these aspects from the smallest tributary to the major rivers is one step towards providing sustainable solutions with a durable commitment to deliver the interests of local people and national government. Rivers must not only be seen as a threat but acknowledged as an integral part of the character of any town which should not be lost.



*Water retention in the smallest tributaries using a simple technique.*

**For further information email Tiny Arts at  
[mjcm.arts@breda.nl](mailto:mjcm.arts@breda.nl)**

# News and Events

## Publications

### *The Flooded Forest: Guidance for policy makers and river managers in Europe on the restoration of floodplain forests FLOBAR2*

This is a document that summarises many of the outcomes of the FLOBAR2 project. It is well illustrated with photographs and figures and explains how floodplain forests work, what the principle threats are to these ecosystems, ways of restoring them and the policy and institutional contexts within which their restoration might take place.

This publication is available at:

<http://www-flobar.geog.cam.ac.uk/reports/final/>

Hard copies of the document can be obtained from either Dr. Francine Hughes or Professor Keith Richards, Department of Geography, Downing Place, Cambridge, UK CB2 3EN at a cost of £10 sterling incl P&P; cheques payable to 'The University of Cambridge'.

## Courses

### *Introduction to Freshwater Conservation, Kendal, Cumbria, UK*

**4-6 October 2004**

Contact: The Freshwater Biological Association at [info@fba.org.uk](mailto:info@fba.org.uk) or Tel: +44 (0) 15394 42468

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RRC is most grateful to all those who have contributed text or photos for this Newsletter

**The following statutory organisations provide Core Funding for the River Restoration Centre and their Representatives form the Advisory Board who together with RRC's Directors make up the RRC Council.**



*Back copies of RR News are available from the RRC website. • For regular updates on what is happening check the RRC website news and events page.*

## Conferences

### *Institute of Fisheries Management (IFM) Conference – 'Sustainable Fisheries'*

**7-9 September 2004, Cardiff, Wales UK**

Visit: [www.ifm.org.uk](http://www.ifm.org.uk)

### *5th Symposium on Ecohydraulics*

**12-17 September 2004, Madrid, Spain**

Email: [ecohydraulics@tilesa.es](mailto:ecohydraulics@tilesa.es)  
or visit [www.tilesa.es/ecohydraulics/](http://www.tilesa.es/ecohydraulics/)

### *The Third International Conference on Natural Channel Systems*

**27-30 September 2004, Ottawa, Ontario, Canada**

Contact: Brenda Koenig at [brenda.koenig@sympatico.ca](mailto:brenda.koenig@sympatico.ca) or visit [www.rideauvalley.on.ca](http://www.rideauvalley.on.ca)

### *International Water Management Course (IWMC) - Special Focus 2004: River Management*

**28 September -1 October 2004, Switzerland**

Contact Dr. Jürg Bloesch at [iwmc@eawag.ch](mailto:iwmc@eawag.ch)

### *Rivers of Life Conference*

**1-2 October 2004, Newburgh, Aberdeenshire, Scotland**

Email: [info@ythan.org.uk](mailto:info@ythan.org.uk)

### *Ribble Catchment Conservation Trust Conference*

**9-10 November 2004 Chipping, Lancs**

Contact: Phillip Lord at [coward619@aol.com](mailto:coward619@aol.com)

## Announcements

### *International River Restoration Survey Results*

Results and further information related to the International River Restoration Survey originally launched in November, 2003 are now available in a variety of formats on the survey web site: [http://www.geog.soton.ac.uk/users/WheatonJ/RiverRestorationSurvey\\_Cover.asp](http://www.geog.soton.ac.uk/users/WheatonJ/RiverRestorationSurvey_Cover.asp)

The survey will continue to run indefinitely and the results are automatically updated to the web site. Thank you to the 480 respondents from 36 countries who have already responded! If you have not already taken the survey why not share your views and experience with the international river restoration community?

Contact: Joseph Wheaton at [Joe.Wheaton@soton.ac.uk](mailto:Joe.Wheaton@soton.ac.uk)

### *River Avon /Avon Valley Initiative LIFE bid update*

As reported in the previous newsletter the River Avon/Avon Valley Initiative (RAAVI), a partnership of Government and non-governmental bodies submitted a LIFE-Nature bid to the EU in 2003. Unfortunately the bid has been unsuccessful in gaining funding in this round of LIFE. However RAAVI will be resubmitting a revised bid this year which will be stronger and more focused, using the feedback we have received from DEFRA and the EU.

The Heritage Lottery bid, which will complement any LIFE bid, is progressing rapidly and is planned to be submitted in June 2005.

Contact: RAAVI Project Officer  
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