In this newsletter

Dear readers,

Herewith you receive the first ECRR newsletter of this year 2012.
Again the newsletter offers you interesting knowledge, information, an overview of activities and coming events.

In this newsletter you will find an interesting article about the RESTORE project and a case study repository. A summary of a report on ecological improvement of the Orbigo River is presented by colleagues of the Duero River Basin Authority, Spain.

Liesbeth Vernaeve, of DeltaNet, east Flanders, informs us about the progress of the Interreg project DeltaNet, a network of eight European deltas and estuaries.

Tom Buijse of Deltares introduces us about the EU-funded project REFORM; REstoring rivers FOR effective catchment Management. During the coming years, this project will be a valuable source of developing of knowledge in the field of river restoration.

Also an article about the WWF6 in Marseille, where the ECRR will host a session is incorporated in this edition. We are planning to prepare a special Newsletter edition about the main findings and results of this session later this year.
For more information I refer to the ECRR website or the website of the World water Forum.

At last you will find a very relevant article by Envirinmental Agency about “keeping rivers cool”.

We are also preparing a special edition about National Centres for River Restoration for this springtime and therefore expect several contributions from all over Europe.

As usual a list of new events coming up is also incorporated.
I wish you pleasant and fruitful readings..

Hil R. Kuypers
Secretary ECRR

Free Membership ECRR!

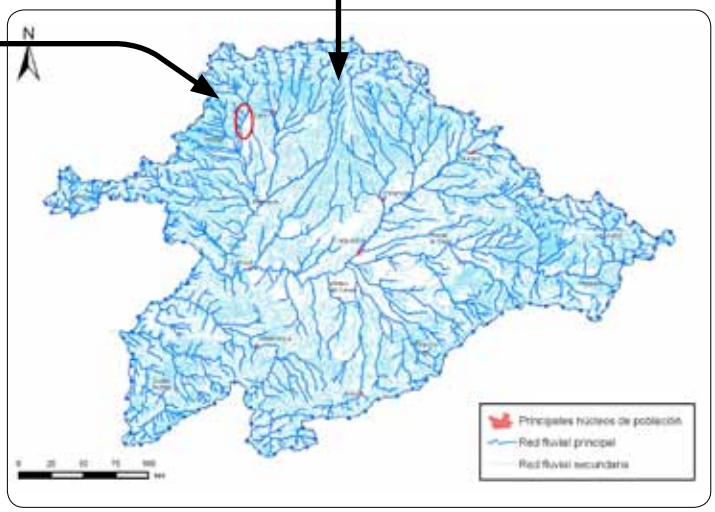
All who are interested in river restoration and sustainable water management are encouraged to join.
Members receive the ECRR newsletter approximately four times per year, and are the first to be informed about activities by the ECRR, its members and partner organisations.
To register, go to www.ecrr.org, and click contact.

Ecological Improvement Project in the Órbigo River (Stretch I)

Ignacio Rodríguez Muñoz, José Ignacio Santillán Ibáñez and Rosa Huertas González, Office of the "Comisaría de Aguas", Duero River Basin Authority. Luis Ortega Regato, Infraestructura y Ecología, S.L.

Maps showing the location of the Duero International River Basin District and the Spanish portion of it

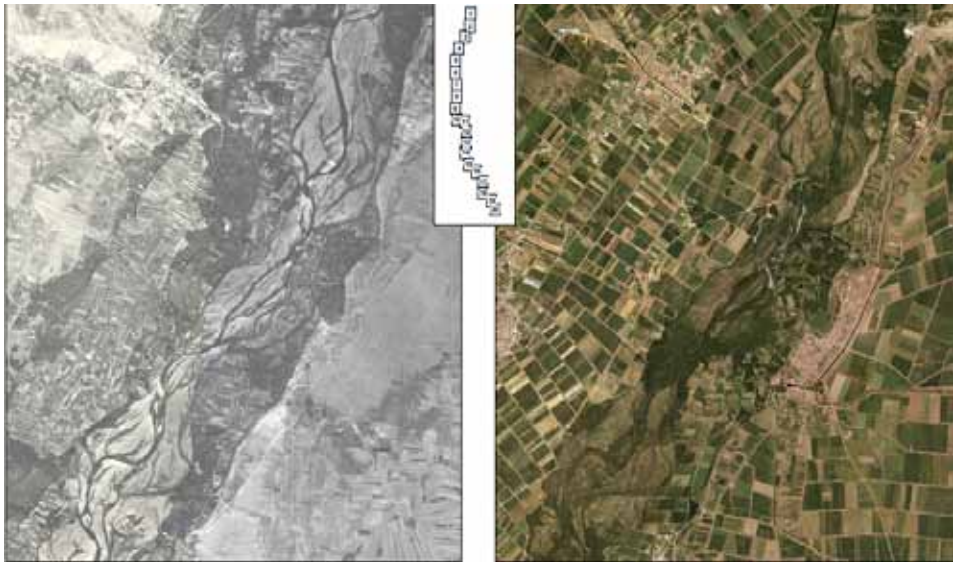
Works on stretch I Órbigo River



Hydrographical and hydrological characteristics of the Órbigo River:

- *Basin surface: 4,990 km2*
- *Maximum altitude: 2,411 m.a.s.l.*
- *Minimum altitude: 827 m.a.s.l.*
- *Altitude range: 1,584 m*
- *Regime: rainfall-snowfall*
- *Average discharge under the natural regime: 40 m3/s*
- *Base discharge under the natural regime: 15 m3/s*
- *Peak discharge registered: 600 m3/s*

The ecological improvement of the Órbigo River is one of the most ambitious projects within the National Strategy for River Restoration in Spain. It involves recovering and improving the lateral connection and dynamics and the longitudinal connectivity of the approximately 108 km of river length, from its source in the province of León as a result of the confluence of the Luna and Omañas Rivers, to the point where it flows into the Esla River on its right margin, in the province of Zamora. In order to undertake the project with greater ease, the river has been divided into three stretches, with work currently underway in the upper stretch or stretch I, measuring about 23.5 km in length and with a budget of 3.1 million euros. The project is integrated within the Sub-programme 3 (improvement of the longitudinal continuity of the rivers within the Duero basin) and 4 (improvement of the lateral continuity of the rivers within the Duero basin).



Comparison between orthophotos of a 5 km stretch of the Órbigo River taken in 1956 and 2006. They show perfectly the encroachment on the original channels, the channelization and the drastic morphological changes occurred in 50 years.

The reference image for the river has been conceived from the aerial photo of the American flight of 1956-57, although with a certain degree of caution, since the special conditions of overexploitation of riparian vegetation by livestock and for wood gathering, as well as the fact that the basin was very much affected by deforestation, lead to think that the morphological structure with a braided and wandering pattern observed, may be partially due to an increase in runoff and sediment flows in the catchment basin and the lack of stabilization of sediment bars as a consequence of the intense exploitation of riparian vegetation. These circumstances, together with the fact that in 1956 the reservoir of Barrios de Luna became operative, regulating one of the main tributaries to the Órbigo River, imply that in reality it would be impossible to recover entirely that appearance.

Description of the project:

Once the project was drafted and the public participation and information phase and the environmental assessment phase were completed, construction work has started in October 2011.

In summary, it involves a series of actions underway in stretch I or upper stretch involving the elimination and movement away from the channel of lateral obstacles, mainly earth embankments and rock armour; the recovery of secondary arms and the braided structure with the purpose of enhancing the hydraulic capacity and the diversity of habitats; the connectivity with the flood plain, which will result in better capacity to attenuate high waters and the recovery of alluvial wetlands; and finally the improvement of the longitudinal continuity through the elimination of transversal obstacles and the construction of fish passage structures. The general approach to the works and actions makes inseparable the improvement of stream hydraulic conditions and ecological conditions.

The following is a summary of the main actions undertaken along the length of stretch I:

Length of the stretch under improvement: 23,500 m

Works to improve lateral connectivity and dynamics:

- Elimination of rock armour: **4,720 m**
- Elimination of earth embankments: **8,710 m**
- Movement of earth embankments away from the channel: **5,220 m**
- Recovery of secondary arms: **10,063 m**
- Recovery of flood prone areas: **480 ha**

Works to improve longitudinal continuity:

- Modification of transversal obstacles to allow the passage of fauna and sediment flow: **1 unit**

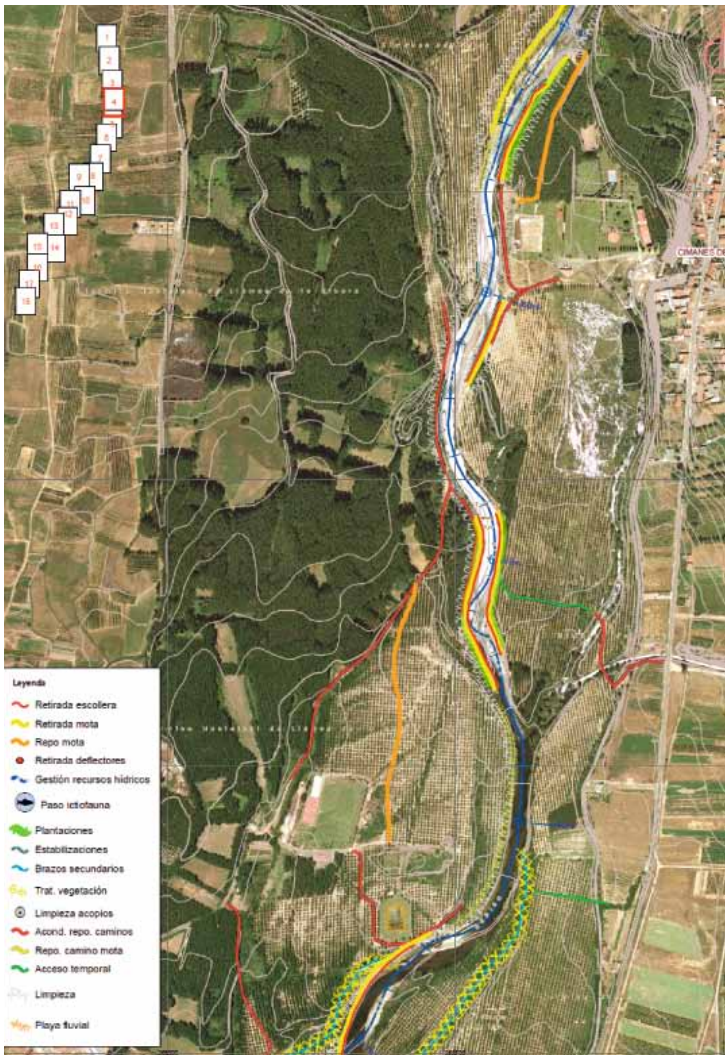
Forest actions:

- Revegetation with riparian vegetation: **7.2 ha**

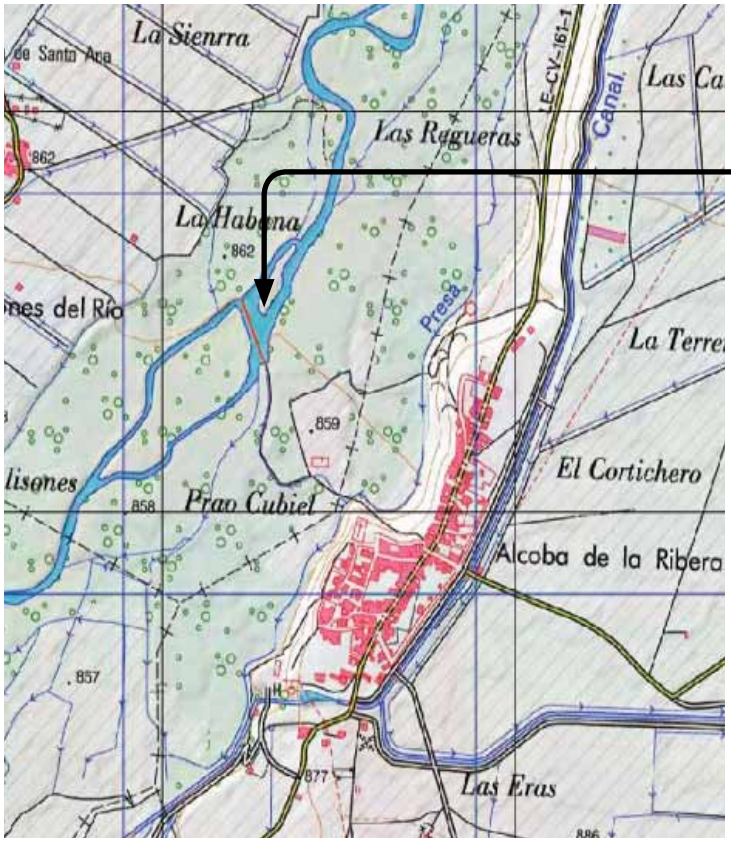
During the field trip of the **1st Iberian Congress on River Restoration** held in León (Spain) from the 18th to the 20th of October of 2011, three working locations were visited, the two first ones dealing with the elimination and movement away from the channel of earth embankments and the third one dealing with the works to allow the passage of fish, and the flow of nutrients and sediment through the Alcoba weir, a small dam about 2.5 m in height and 165 m in length, which is an obstacle for the passage of fauna and makes difficult the flow of bottom sediment and nutrients. It is essential to keep it because it is the point of abstraction of the Páramo general canal which supplies irrigation water to a surface of about 17,000 ha as well as part of the supply to the city of León; therefore, it is impossible to remove it.

Work on the weir consists of lowering the height of three concrete blocks in the central part of the weir, allowing for an opening about 15 m in length and 2 m in height, where a gate system will be installed during the irrigation season, and removing for the rest of the year. There will be as well a ramp to facilitate the migratory passage of aquatic fauna, particularly fish. In this way, a stretch about 25 km in length will be reconnected.

The occurrence of earth embankments and rock armour is a constant feature along both margins of the Órbigo River.



Works to eliminate earth embankments in stretch I of the ecological improvement project in the Órbigo River and orthophoto of a portion of the stretch showing the earth embankments that are eliminated and/or moved away from the channel



Alcoba weir before and during the works to allow the passage of fauna and sediment flows

The Interregional Cooperation Programme INTERREG IVC, financed by the European Union›s Regional Development Fund, helps Regions of Europe work together to share experience and good practice in the areas of innovation, the knowledge economy, the environment and risk prevention.

In March 2010 a new INTERREG IVC project ‹DeltaNet ‹ was born. DeltaNet is a network of eight European deltas and estuaries; Rhine-Scheldt Delta, Ebro Delta, Minho Delta, Vistula Delta, Danube Delta, Severn Estuary, Elbe Estuary and Tagus Estuary. The European delta regions are geographically sensitive areas sharing many similar characteristics, problems and challenges. The delta and estuarine regions are faced with a dynamic development and are often characterized by both high density of population and economic activities, and natural and cultural heritage values. The many spatial and economic demands often threaten sustainable development. Delta regions are becoming a laboratory where different stakeholders, regions and countries are working together to achieve a sustainable spatial, economic and social development.

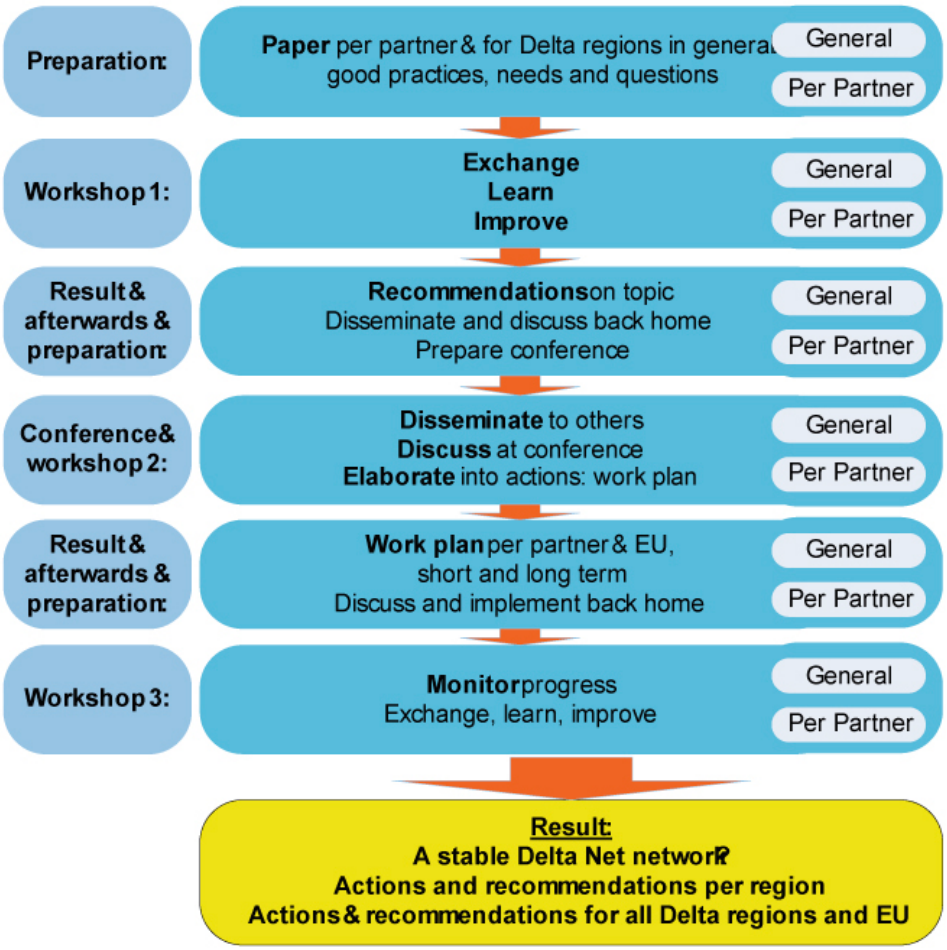
Partners are interested in best practices needed to convince people/politicians to implement a more integrated approach on deltas and offering ideas for better solutions in sustainable development. Through this project - implementation period from 1 March 2010 until 1 March 2013 - the different partners want to improve their Delta regional development policies through the exchange of best practices resulting in the description and implementation of policy recommendations.
The overall objective of DeltaNet is to improve the effectiveness of regional development policies in Delta Regions through interregional cooperation in the areas of environmental risk prevention, specifically through the development of appropriate coordinated spatial planning measures in geographically sensitive areas.

Within DeltaNet 5 themes will be discussed. The main goal is a sustainable network of Delta regions.

1 Integrated delta approach;
2 Flood risk and sediment management;
3 Healthy delta environment;
4 Delta awareness;
5 Coordinated delta policy

For each of the above mentioned five themes a partner takes the lead while other partners are theme partners. There will be an expert workshop, a conference and a follow-up workshop. This will result in an overview of good practices, policy recommendations for EU, Delta regions in general and the specific involved Delta Regions.

Overview of the process: getting to results.



Conferences:

1. First international conference
Subject: Integrated delta approach, to find the balance between economical and ecological development in a delta/estuary.
Date: 15 – 17 November 2010
Location: Tagus Estuary – Portugal, Lisbon

2. Second international conference
Subject: Impacts of global change on deltas, estuaries and coastal lagoons. Research, observation and management.
Date: 6 – 10 June 2011
Location: Ebro Delta - Catalonia, Sant Carles de la Rapita

3. Third international conference
Subject: Deltas and wetlands.
Date: 12 -17 September 2011
Location: Danube Delta – Romania, Tulcea

4. Fourth international conference (COMING)
Subject: Delta awareness.
Date: 7 – 10 May 2012
Location: Vistula Delta – Poland, Gdansk

5. Fifth international conference (COMING)
Subject: Coordinated Delta approach.
Data: September 2012
Location: Rhine-Scheldt Delta – Belgium/the Netherlands

Within the DeltaNet project several documents will be established (workshop reports, conference reports, individual work plans, good practices and recommendations reports,…). The documents can be downloaded from the DeltaNet website.

More information:
www.deltanet-project.eu
Lead partner DeltaNet: Province of East Flanders, Belgium
Project manager DeltaNet:
Liesbeth Vernaeve
(Liesbeth.vernaeve@oost-vlaanderen.be)

ECRR organises a session at the WWF6 Marseille

During the next World Water Forum in Marseille, to be held from march 12-16th, ECRR will organise a session on the specific European target 9, Water ecosystems protection & restoration with specific focus on River Restoration and Integrated River Basin Management Planning. Main target is to reach, by 2015, evidence based developed best practices of ecological river restoration measures and land use planning and -tools adopted by at least 3 (pilot) integrated river basin management plans. An other target is to disseminate the newly gained knowledge and know – how by field visits, study tours, seminars, conferences etc.

Throughout the preparatory process towards this session (the seminar in Ljubljana in particular) and the preparatory process of the World Water Forum itself, many recommendations and/or commitments were made on the different solutions that have been addressed under target 9. These are:

- Land use planning,
- River restoration best practices,
- Public education,
- Tourism development
- Integrated River Basin Management

Already some recommended solutions are prepared, they will be presented during the session. These include:

- Promote strategic regional land / land use planning and land banking as a solution for river protection/restoration measures implementation,
- Disseminate best practices of river restoration through a innovative web based knowledge management tool,
- Include other proposed relevant identified river restoration solutions in the web based river restoration information system,
- Develop sustainable tourism through integrated local planning approaches including land and water management,
- Conduct education/awareness campaigns on the ecological functioning of rivers based on needs assessments and on studies to select the most effective types of actions and programs.

The ECRR secretariat will edit a special Newsletter in which some interesting findings and main results of the preparatory process and the session lead by the ECRR will be published. For more information, like the timing and programme of the session, link to our website: www.ecrr.org
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Hil Kuypers

RESTORE – the case study repository is coming

What is this about?

– This article intends to provide readers with an update on the RESTORE river restoration case study repository. Our aim is to create something like a Wikipedia for river restoration projects. By sharing and being able to comment on information about the experiences of river restoration in Europe, ideas for best practice will quickly emerge. This will be achieved by the creation of public website hosting restoration shared knowledge in the form of reference documents, best practice guidance and a repository of case studies.

Background –

My personal involvement began last year in my role as a consultant for UK based IT Services Company SFW that is working closely with the RESTORE partnership to develop the case study aspects of the website. With my knowledge of riverine environments limited to canoeing it was with some trepidation that I attended the Ljubljana seminar to meet RESTORE stakeholders and potential end users. Much to my relief everyone was friendly, the sessions were interesting and webbed feet were not mandatory. Hopefully I will get to meet some of you again at the RRC event in Nottingham. Subsequently we have refined the system requirements to take into account findings, feedback and ideas from the conference and are currently proceeding with design.

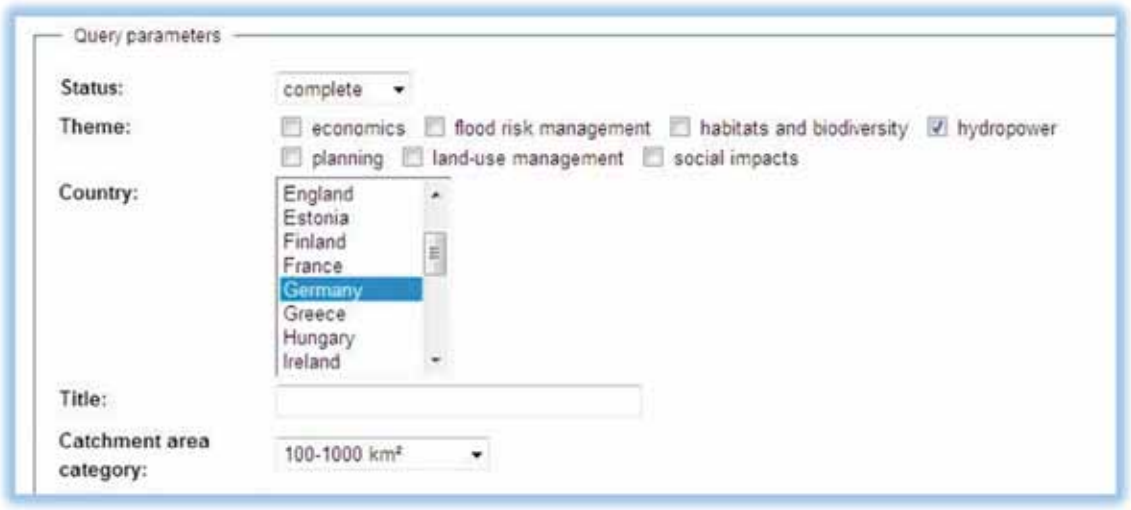
Why is this of interest? –

We are hoping to create a focal point for pooling information and sharing experience within the European river restoration community. Specifically the case studies will be presented in the form of interactive web pages that include thematic and geographic information. You will therefore be able to:

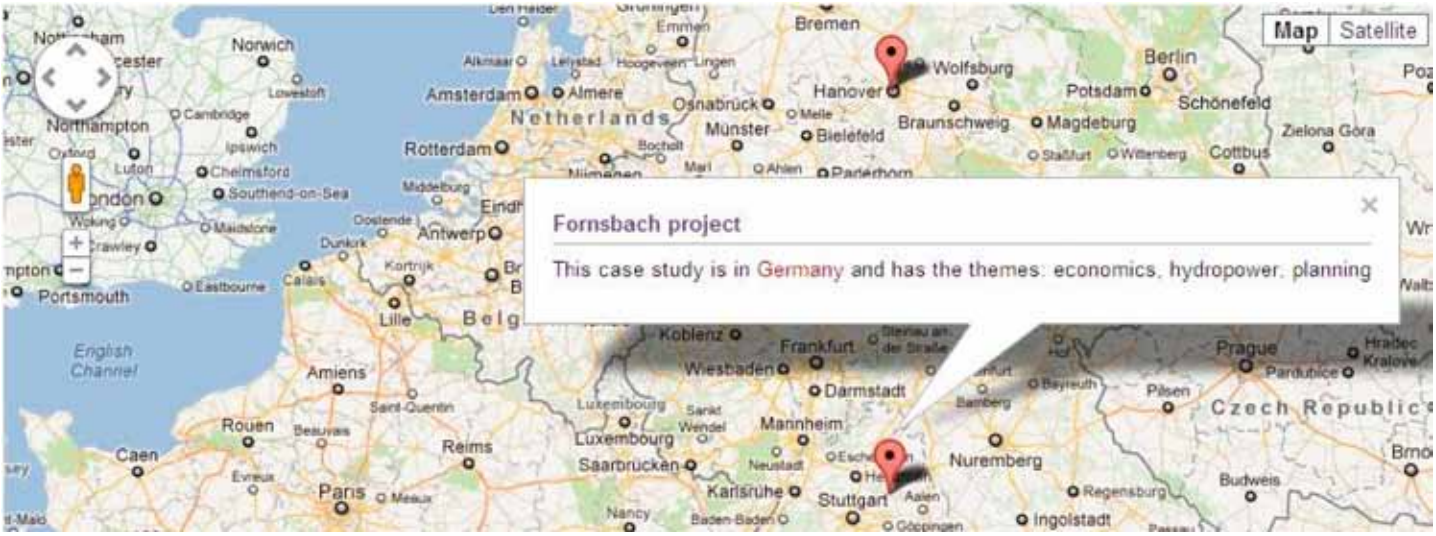
- Search case studies by theme, location or other attributes
- Visualise cases on integrated Google Maps
- Contribute by adding new cases
- Edit cases with supplemental information
- Discuss cases with community members
- Contact other contributors

Do I have to be an IT expert? –

No, we are designing the system to be as friendly as possible with the inclusion of simple pages and forms to allow all users to participate. A partial screen extract for a draft sample query page is illustrated below:



Results may be displayed either in a tabular form or visualised on an interactive map:



What is happening next? –

A working prototype has been produced by SFW and work will progress to fully define the data model and user interface aspects. Some key milestones include:

- 20th April 2012 – demonstration of the case study repository at the River Restoration Centre Network conference in Nottingham.
- June 2012 – system deployment complete

Keep up to date with news and events at the RESTORE website
www.restorerivers.eu

Restoring Europe's Rivers

How can I get involved? –

We are encouraging as many people as possible to become involved and contribute to building an online community. We would love to see people and receive comments at the Nottingham demonstration and during subsequent usage. Once the system is operational, please help by including your existing and planned restoration works within the repository. Feedback is always welcome at restore@environment-agency.gov.uk

Pete Jeans, SFW

www.sfwltd.co.uk

REFORM - REstoring rivers FOR effective catchment Management -started:

The REFORM project will provide tools to support cost-effective implementation of restoration measures and monitoring. REFORM is a 4-year large integrated research project that will address the challenges to reach the hydromorphology and ecological objectives for rivers as required by the European Water Framework Directive. This project is coordinated by Deltares and has 24 partners from 14 European countries. Many European rivers are regulated to support flood protection, navigation, freshwater supply or hydropower production. It is insufficiently known what the ecological side effects of these modifications in hydrology and morphology are and to which extend the side effects can be effectively reversed or mitigated. REFORM aims to develop and improve instruments and guidelines that enlarge the success and cost-effectiveness of restoration and mitigation measures and to provide this information through a web based toolkit for river restoration. In addition, protocols and procedures to monitor the biological responses to hydromorphological changes with greater precision and sensitivity will be improved or developed. The first set of results will be timely available early 2013 to support the draw up the programmes of measures for the second round of river basin management plans.

The website of the project with further information will be ready around April 2012.

Contact person: *Tom Buijse* (tom.buijse@deltares.nl)

Keeping rivers cool - creating riparian shade

Keeping Rivers Cool is a four year (2012-2016) Environment Agency led climate change adaptation project focused on using trees to keep rivers cool. Three pilot catchments have been targeted for the first two years of this project, namely: Wye, Hampshire Avon, Tyne. The secondary catchments that we will use if there is additional financial capacity in the project are: Ribble, Frome (Dorset), and Tywi (Wales). Funding has been confirmed for 2012-2013 and we will be encouraging partners to apply for Heritage Lottery match funding.

Why are we undertaking this work? Because some trout and salmon populations in England and Wales are already under stress from climate change with some rivers reaching temperatures above the lethal limit for salmonids in recent hot, dry summers. It has been shown that riparian trees can help reduce local stream temperatures on hot summer days. Summer mean and maximum water temperatures are on average 2-3ºC lower in shaded versus open rivers. In certain circumstances other interventions for cooling rivers e.g. river restoration, heated effluent control, modified abstraction regimes and water meadow management may also be beneficial and we will be exploring these in the future.
In the mean time we will provide riparian shade where we think it will have the greatest benefits for river ecology.

Environment Agency

The Environment Agency will be working with charitable trusts such as the Woodland Trust and the Rivers Trusts to plant trees and put up fencing in the right areas. We are aiming for a mosaic of tree cover, rather than blanket cover which could have a negative impact on other aspects of river ecology. We will also be looking to plant trees in areas where there will be no adverse impact on the management of flood risk, water resources and other aspects of conservation at the catchment scale. All

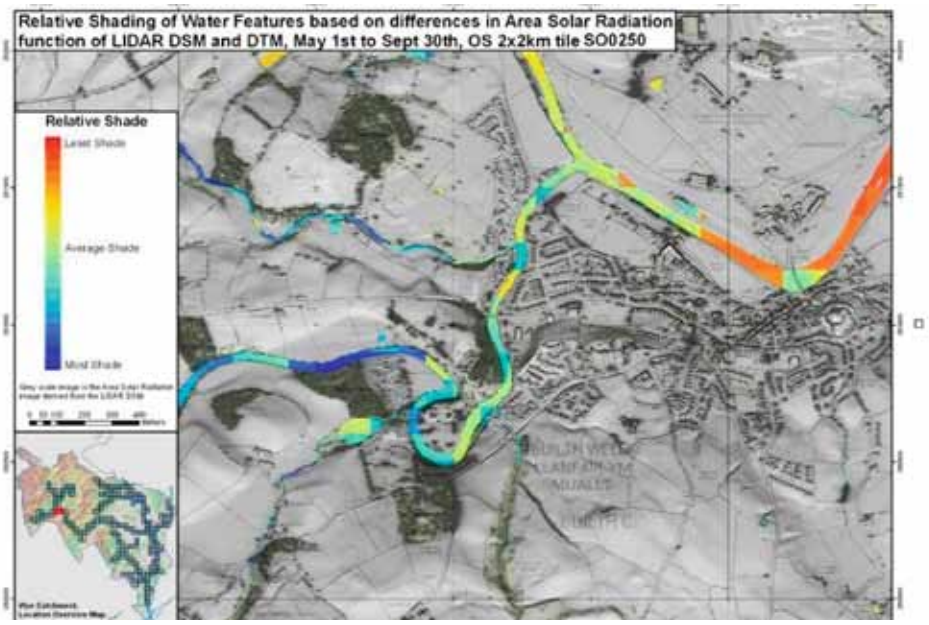
decisions about planting will be made using expert local knowledge of the area.

We have been creating guidance and tools to support on the ground work. Interim guidance on riparian shading will be available from May 2012 which will enable riparian managers and owners to follow a consistent approach to creating shade on rivers with a mixture of tree planting and fencing to promote riparian vegetation growth.

To support the identification of key areas to target to increase riparian shade we have collected LiDAR (Light Detection And Ranging) data for England and Wales and used these to produce accurate maps of riparian tree distribution, indicating where the gaps are.

Part of JPEG image of vegetation objects derived from LiDAR

Where the LiDAR data are available we are also developing 'shade maps' using models showing average incoming solar radiation within catchments. The measure of incoming solar radiation indicates the likely amount of shade created by the landscape as well as shading caused by existing vegetation. Both the tree maps and shade maps are intended as guidelines only and decisions made using these will be supported by local site information



Example of a 'shade' map produced showing average incoming solar radiation presented here as relative shade within this catchment

Although there are still some knowledge gaps about the cooling effects of introducing more bank side trees we can't ignore the risks of climate change to river conservation. We recognise that riparian shading is not a stand alone measure to managing warming in rivers, but it is a low-risk reversible action and a good start to keeping rivers cool.

For queries about any of the information here please contact Rachel Lenane: Rachel.lenane@environment-agency.gov.uk

European Events 2012; relevant for ECRR For events in other continents please consult the website

Date / periode	Titel/issue	Location	Links
8th-9 th March 2012	**RESTORE: engagement event**	Arnhem	http://www.restorerivers.eu
12th-17th March 2012	**WWF-6**	Marseille	http://www.worldwaterforum6.org
19th April-2012	**RRC conference**	Nottingham	http://www.therrc.co.uk/rrc_conferences.php
20th April 2012	**RESTORE workshop**	Nottingham	http://www.restorerivers.eu
April 2012	**Defra: Catchment based approach**	London	http://www.coastms.co.uk/conferences/457
7th-10th May 2012	**Deltanet: Subject: Delta awareness.**	Gdansk	www.deltanet-project.eu
26th-28th June	**Integrative sciences and sustainable development of RIVERS**	Lyon	admin.ise2012@boku.ac.at
Sept 2012	**REFORM: General Assembly**	Polen	www.reformrivers.eu
Sept 2012	**Deltanet: Coordinated Delta approach**	Belgium/ Netherlands	www.deltanet-project.eu
17th-21st Sept 2012	**9th int. symp. on ecohydraulics**	Vienna	http://www.ise2012.boku.ac.at
Feb 2013	**REFORM stakeholder workshop**	Brussels	www.reformrivers.eu

Call for articles

The newsletter of the ECRR should also be a way to share with one another what interesting work is being done, information about seminars or literature.
One way of doing this is by writing an article of any project, event or literature you may be acquainted with. Send this article ***(maximum of 500 words)*** to the secretariat of the ECRR at info@ecrr.org.

We will take a close look to the content and if it is coherent with the philosophy of ECRR (ecological river restoration and sharing knowledge) your article will be published with pleasure in the next edition (s) of the ECRR Newsletter.
The secretariat of the ECRR hopes to receive any article on ecological river restoration from any of its members.

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European Centre for River Restoration
ECRR

Government Service for Land and Water Management
Ministry of Economic Affairs, Agriculture and Innovation

Secretariat: DLG Government Service for Land and Water Management, P.O.Box 20021, 3502 LA Utrecht, The Netherlands | www.ecrr.org. Executive secretary Mr. Hil R. Kuypers.
If you do not wish to receive the ECRR newsletter in the future, please send an email to info@ecrr.org with the subject "unsuscribe". This will also terminate your ECRR membership.