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Editorial ECRR Newsletter.

Dear readers,

This ECRR Newsletter presents an almost unexpected nice number of articles with a large variety of river restoration topics. There is obviously a lot of interest to share river restoration knowledge and experiences with others.

First of all we ask your special attention for the announcement on the rescheduling of the **European River Restoration Symposium, including the European Riverprize gala event to 2,3-4 March, 2016**. Then we have the reports about two recently held international conferences: The Fish Passage Conference 2015, in Groningen and the REFORM conference in Wageningen, both in The Netherlands and both bridging a gap on knowledge and experiences on respectively fish passages and rehabilitation of modified rivers.

Furthermore two articles describe different approaches of river restoration management in different European regions: Germany and Romania. The announcement of the publication of the SEE River Toolkit for facilitating cross sectoral management and the events calendar are the first and last items of this newsletter. At last but not at least we like to draw your attention to the RiverWiki.

We would like to conclude that this busy summer was very productive as to river restoration information dissemination and knowledge exchange.

Enjoy your reading,

Wim Zeeman,
ECRR Newsletter editor.



SEE River Toolkit for facilitating cross sectoral management of river corridors.

The SEE River Project successfully developed the SEE River Toolkit, a generally applicable model and guidance how to reach common agreement on river management for the harmonisation of both - development and conservation interests. It is an innovative tool, based on local and international experience that outlines a new direction and represents a good basis for the future sustainable use of river corridors.

The toolkit promotes techniques for communication, dialogue and facilitation. It was prepared concretely, but worked out on a general level to assure that it could be used on other river corridors too. It was developed through communication and active involvement of local stakeholders and supported by the international exchange of various experience and good practices. For practical applications see www.see-river.net/toolkit.html

Approaches to improve spatial planning for river restoration

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Introduction

River restoration success depends on many factors in addition to local habitat quality enhancement: the proximity of populations of sensitive aquatic species that can recolonise the newly created habitats, connectivity in the water body allowing dispersal and recolonisation, and the absence of impacts (e. g on water quality, sediment input) that work on larger scales and can superimpose positive restoration effects.

Spatial planning at catchment scales is therefore necessary, enabling a more ecologically reasonable approach in restoration prioritization. Within a project funded by the German Environmental Agency (UBA) we developed simple approaches to (1) identify colonisation source of sensitive fish and benthic invertebrate species and to (2) estimate restoration success for planned or already conducted measures using available data from water authorities.

Identification of source sites

From 5,919 benthic invertebrate monitoring sites located in 12 German federal states and 2,584 monitoring sites located in six federal states we identified colonisation sources ("source sites") based on the presence of many sensitive species that are relevant for river quality assessment. We statistically identified thresholds of environmental parameters (land use along the river, habitat quality, elevation indicating potential source sites).

The results are displayed in maps identifying regions of high or low recolonisation potential (Figure 1).

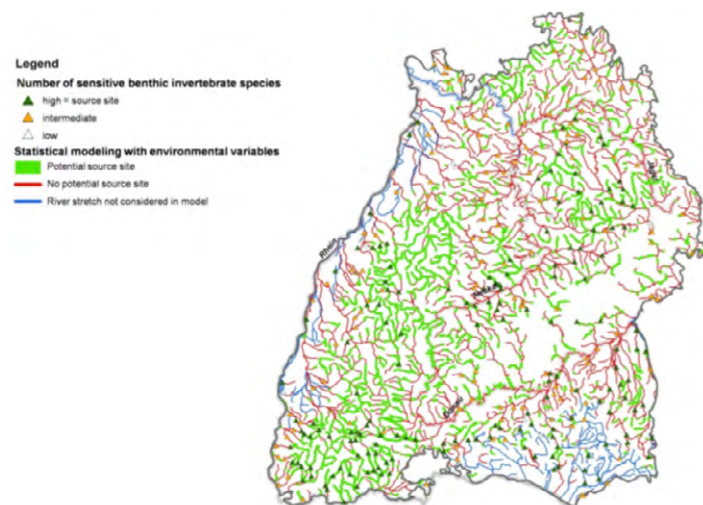


Figure 1: Actual (green triangles) and potential (green lines) source sites of benthic invertebrates in the German federal state Baden-Württemberg.

Estimation of restoration success

The approach can be applied with standard ArcGIS tools (Figure 2). Starting with the source sites the tools calculates which river stretches can be reached by different taxa groups with comparable dispersal capacities. The groups were defined by the dispersal pathway (up/downstream dispersal in the river, aerial dispersal of winged-stages) and the approximate maximum dispersal distance. For each group barriers and land use categories hindering dispersal (e.g. weirs, dams, urban areas) are identified. The results of the taxa groups are combined to derive the total recolonisation potential (Figure 3). Additional information on habitat or water quality can be included into the maps.

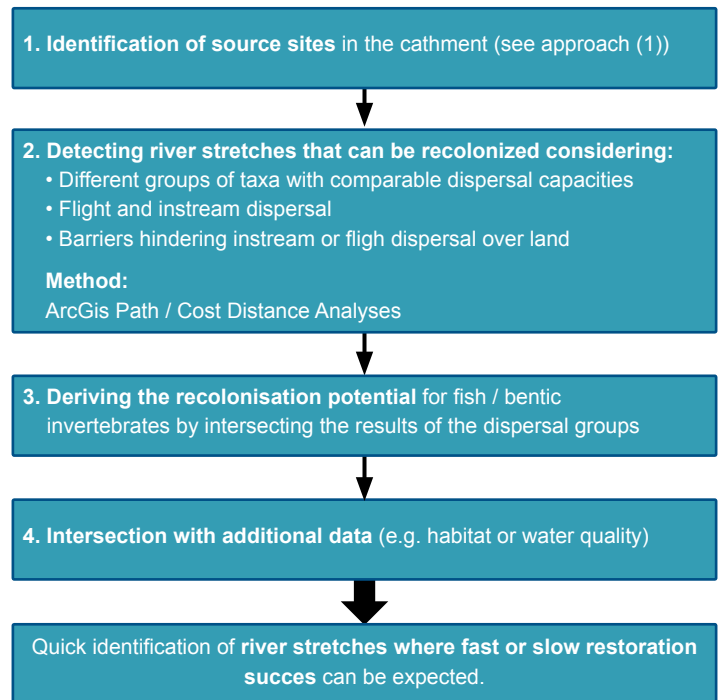


Figure 2: Approach to estimate restoration success.

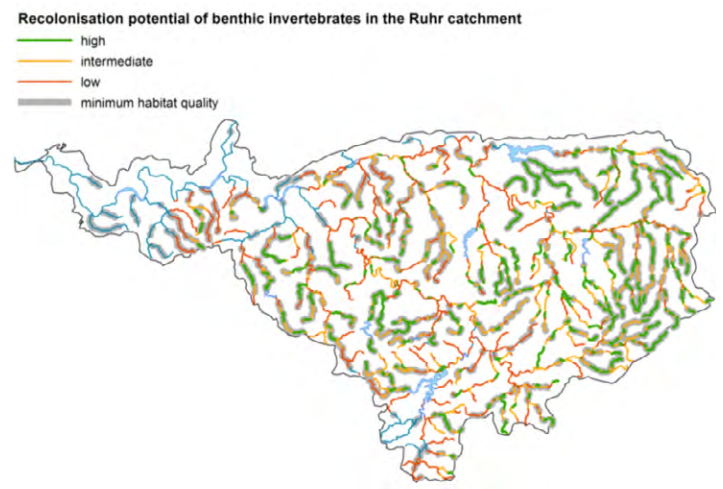


Figure 2: Map for estimation of restoration success in the Ruhr catchment (Germany). Rapid biotic success can be expected for stretches with high recolonisation potential (green).

Application in spatial planning

The resulting maps can assist in spatial restoration planning: More realistic goals can be defined for planned measures based on the recolonisation potential. Factors hindering the success of the measure can be identified and possibly diminished. Restoration measures can be ecologically prioritized, e.g. to connect near-natural reaches. The maps further imply reasons for the lack

of success of restoration measures. Additionally, the knowledge on taxa groups that are expected to reach a restored site first or last improves success evaluation. In the end the approaches aim to move the perspective from local restoration to the catchment and consequently improve the chances to meet the goals of the Water Framework Directive.



European River Symposium 2016; March 2 - 3/4, Vienna.

Rivers in Europe; Best Practices of River Basin Management.

Date Change!

To fix the European River Symposium for the long term in the annual European calendar of river events and coordinate better with IRF's International River Symposium and International Riverprize gala event, which are held in September, the European River Symposium, including the European Riverprize gala event at the Vienna City Hall, has been rescheduled to 2 – 3/4 March 2016.

Partnerships for Rivers

The European River Symposium 2016, organised in partnership by a core group of organisations supporting best practices in river basin management, is an unique opportunity to celebrate rivers, to meet with river stakeholders from many countries and sectors, and to learn about challenges and opportunities on rivers across Europe. The 2016 River Symposium will include the European RiverPrize gala at the Vienna City Hall, at which the 2016 IRF European Riverprize winner will be announced.

Building on successful programs in previous editions, the 2016 River Symposium will include keynote presentations, lecture sessions, panel discussions, videos and optional field excursions. New to this year's symposium is a focus on key sector partners using rivers including navigation, hydropower and tourism. Economics and business of water in combination with supply chain, in company and marketing water issues will be discussed for developing processes and principles for best practices of river basin management.

Designed to attract a diverse audience, the River Symposium addresses issues that are relevant to people working in government, river authorities, NGO's, research institutions and the private sector, offering an unusual opportunity for cross-sectoral discussion and engagement.

Partners



2016 European River Symposium theme and program
Rivers in Europe: Best Practices in River Basin Management

Monday 2 March

Focus: Rivers in Europe
Afternoon: *Best Practices in River Basin Management; Partnerships for rivers Outcomes, trends, opportunities, introduction of RiverPrize finalists*
Evening: *Sector meetings, Danube River Cruise, RiverPrize Alumni Event*

Tuesday 3 March

Focus: **Basin Planning; Partnerships for Rivers.**
Day: *Growing Demand, Competing Uses, Functional Rivers; Navigation, Tourism, Hydropower, Utilities, Restoration, Floodprotection*
Evening: *RiverPrize Gala dinner*
Optional tour of Vienna's historic City Hall, Cocktails, Dinner European RiverPrize awarding, demonstrations of the Viennese Waltz

Wednesday 4 March

Day: *Optional Field Excursion(s)*

[More information ECRR website](#)

The REFORM final conference

From 30th June to 2nd July 2015, the final conference of the REFORM project on 'Novel Approaches to Assess and Rehabilitate Modified Rivers' took place in the Conference Center Hof van Wageningen, in the Netherlands. This scientific conference was organized to highlight the importance of the benefits of river restoration and was opened by Jaap Kwadijk, scientific director of Deltares and Peter Glas, President of the Dutch Association of Regional Water Authorities.

An inspiring scientific programme

170 participants from 26 countries shared experiences, aspirations, challenges, analytical frameworks and new approaches to enhance the success of river restoration and to come to a better understanding of the consequences of hydro-morphological changes to the ecological status of running waters. The conference attracted scientists and practitioners from universities and research institutes, environmental management organisations, NGOs and consulting firms.

15 keynote lectures from Europe, North America and New Zealand, 58 oral presentations in breakout sessions and 38 posters provided the ingredients and inspiration for animated conversations during the breaks.

The conference speakers and participants gave fundamental insights into how rivers work, and presented a wide span of research from global to catchment and all the way down to the species level. It became evident that attention is shifting towards reflecting on the river in its full scope including the role of the riparian zone and the floodplain for ecosystem functioning, or even the context of the catchment. Keynote and oral presentations made a case for the need to develop more process-oriented restoration measures, and to consider hydromorphological changes and their evolution both in terms of space and time.

A lot of inspiration for further work was given by presentations on the application of biotic indices for the assessment of river ecological conditions as well as by a multitude of case studies presented on the achievements by restoration and mitigation practices in Europe and beyond



The conference also provided a platform for exchanging experiences and ongoing work on the challenging issues of socio-economic assessments related to river restoration, tools and strategies for more closely linking science to the practitioner level.

Social programme and field trip highlights

The conference dinner was hosted in the hotel 'De Wageningsche Berg' offering wonderful views of the river Rhine and its floodplains as well as an inspiring speech by Professor Geoff Petts (Vice Chancellor of University of Westminster) on the history of river restoration.



The conference closed with a field excursion, attended by 100 people, to two 'Room for the river' projects:

- 'Waalprong' at Nijmegen where flood protection and urban development are the main objectives (<http://www.ruimtevoordevaal.nl/en/room-for-the-river-waal/>) and
- The floodplain rehabilitation 'Millingerwaard' where in addition to flood protection improving nature is very important (<https://www.ark.eu/kom-kijken/gelderse-poort/millingerwaard:in-Dutch>)

The excursion came with exceptionally high temperatures, so the participants appreciated the farewell refreshing boat trip on the Rhine giving another perspective on the river and its floodplains.

Where to find further information

The conference proceedings can be found on the [REFORM conference website](#).

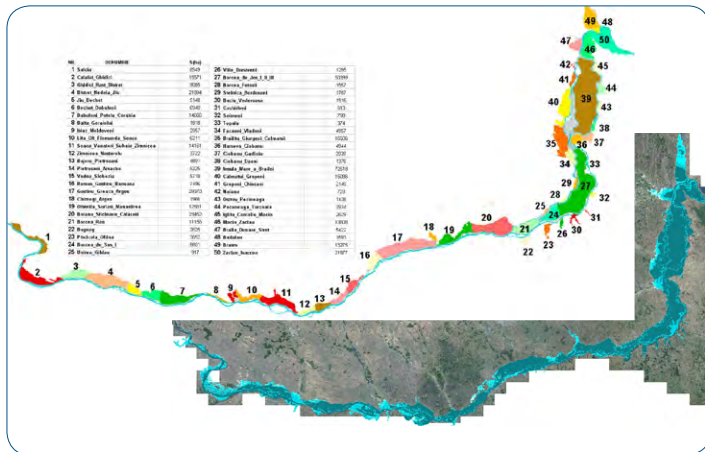
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A win-win scenario for climate and land-use change in Lower Danube Floodplain

The Danube River Basin Management Plan (2009) concluded that 93% of the Danube River is at risk or possibly at risk of failing WFD due to hydro morphological alteration and 80% of the Danube River Basin District's (DRBD) former wetlands/floodplains are disconnected, largely for agricultural uses and river engineering works for flood control, navigation and power generation. In response, in the Lower Danube Floodplain, the Romanian Ministry of Environment proposed an adaptation scenario for climate and land-use change.

Climate and landuse change rapidly

Nowadays, about 80% of the Danube Floodplain in Romania is embanked, and/or altered by all kind of drainage works (Fig1). Because of the increasing human pressures on the natural system especially as a result of landuse change during the last decades the stability and services of ecosystems changed rapidly and the need for better planning tools is getting more clear. Motivated by increased frequency of extreme events, indicating a dramatic climate change, we focused our efforts on developing models and scenarios of climate change, especially those related



to land use change and flooding affecting local communities/ regions. Climate and land use change will alter the boundary conditions that direct and constrain river restoration.

4D reconnection approach

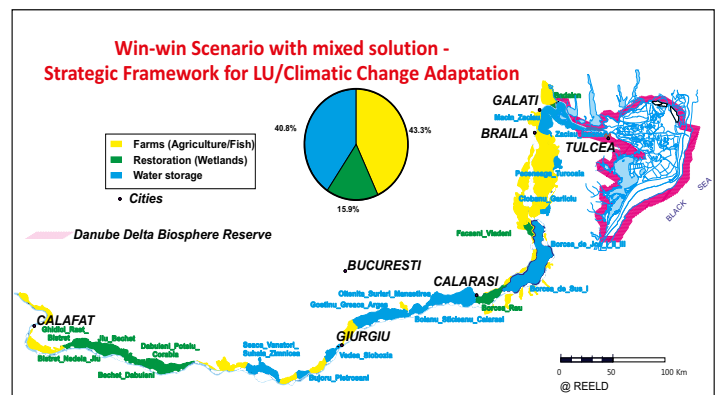
So, in the given circumstances, the best scenario is to foresee a new policy on the Lower Danube riverbed. It will be based on the use of a series of advanced tools for exploring the "4D reconnection" (longitudinal, lateral, vertical and temporal) of the river system as well as a well prepared monitoring alert system to address and detect future threats. The 4D Reconnection exploration of the Lower Danube floodplain will have to provide a spatial planning tool, built to design, analyze and evaluate long-term policies in an ecological, social, economic and cultural context. By transferring river restoration and risk information into spatial planning it is also assured that the vision and strategy for sustainable development in the Lower Danube Valley is defined as a win-win scenario and an instrument for Integrated Water Management (ecosystem oriented and adaptive management). The 4D Reconnection exploring will give a new dimension to how we will manage rivers

by execution of restoration measures to accommodate extreme events rather than seeking severe engineering solutions as was done in the past.

Adaptive management to meet WFD goals

Restoration practices should anticipate and be adaptive or be tuned with changing environmental conditions. Current adaptation strategies will be assessed for their compliance with WFD objectives to identify win-win scenarios.

Based on the flood risk maps, hydrological scenarios made with the hydraulic model of the Danube focused on quantifying of the reduced Danube level during the floods and also on the spatial distribution of possible areas for retention, 3 situations were simulated: 1) full restoration of the Danube floodplain, 2) restoration of former permanent wetlands and 3) mixed solution of water stor-



age (peak floods reduction) in some farm precincts and restoration through natural flooding in other parts. A comparative analysis of the results highlights firstly the substantial effect of reducing the maximum levels of the Danube in the mixed solution scenario (3): incl. natural flooding of economic

precincts areas (15.9%of the floodplain) and water storage at maximum levels (40.8% of the floodplain).(Fig.2) Using agricultural areas for retention during peak flood levels of the Danube, is a realistic solution that can combine flood protection requirement with the restoration, especially to accomodate effects of climate change and land use.

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RiverWiki

[Link to website](#)

Introduction.

The RiverWiki, managed on behalf of the ECRR by the River Restoration Centre in UK, is an excellent tool for practitioners to share experiences on restoration of rivers. The RiverWiki is an online database to share best practice case studies and lessons learnt for policy makers, practitioners and researchers. It provides project data (including objectives, techniques and outcomes) as well

Almost 1000 projects uploaded now, a lot of data collected

It has been a good first half of the year 2015 for the RiverWiki with an increase of nearly 10% in total projects. Now 923 Projects are uploaded: Hopefully 1,000 can be reached before the year is out! There's a large amount of monitoring data and nearly 100 monitoring plans documents from specific projects to download! - 2,312 Images, 192 Projects with monitoring info and 94 monitoring documents can be found - . However, there are still a lot of gaps in the information. It is very important that this is addressed



as information on ecosystem benefits, stakeholder participation and costs. By adding your own projects to the RiverWiki the best ways of carrying out river restoration will quickly emerge and it will also create a central repository for information.



as improving the information on projects will improve the best practice evidence that is available.

RiverWiki Going Global?...

Although the RiverWiki was a European based initiative, it is an open Wiki platform. This means that anyone from anywhere can upload a project for others to see and learn from. Earlier this year 10 projects were uploaded from Oklahoma and San Antonio, USA. Following this, a project was uploaded from Buenos Aires, Argentina.

Add your projects

We encourage you to add your projects too!

[Link](#)

You can find more information also [here](#)

Fish Passage 2015

Connecting not only fish, but also people

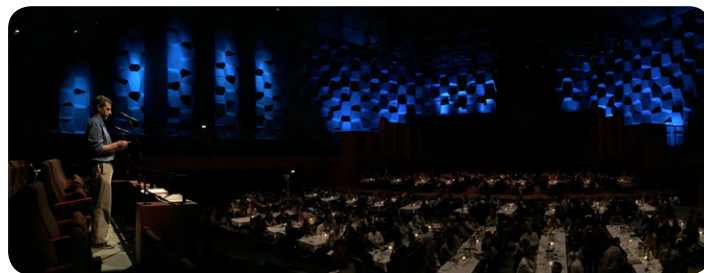
The Fish Passage 2015 conference held in Groningen, The Netherlands, was an important international meeting about fish passage and river connectivity for migratory fish. Practitioners, policy-makers, researchers, engineers and students all came together to exchange experiences, ideas and to network. In past years, the conference was held in the United States, but under the coordination of Herman Wanningen from the World Fish Migration Foundation the conference was brought to Europe for the first time in June 2015. Mr. Wanningen wanted to bridge the gap in knowledge and experience between different areas of the world and to bring the work on fish passage from Europe into the spotlight. Indeed, a large number of people were interested in attending this



conference for just these reasons. At the close of registration, 550 participants from more than 40 countries had registered, with the majority of participants attending from western Europe and the United States.

During the official conference program, the keynote speakers, Beate Adam, Claudio Baigún, Zeb Hogan, Martin Mallen-Cooper, Dmitrii Pavlov and Laura Wildman, and all delivered thought provoking presentations highlighting the various issues, experiences and approaches used from different regions of the world. Claudio Baigún and Zeb Hogan also addressed the challenges that are being faced now in developing areas such as South East Asia and South America and the need for novel fish passage solutions that maximize environmental benefit and minimize cost. Laura Wildman, a fisheries engineer from the US, was a source of inspiration from her work on dam removal. It is hoped by many that future projects in Europe will also consider the removal of redundant dams. During the official conference opening, Herman Wanningen appealed to the Dutch minister to consider dam removal in Western Europe. A list of redundant dams is now being generated for the Netherlands... watch this space.

Whilst the plenary talks focused on general issues, the presenters during the sessions delved into the detail of various fish passage related projects from around the world including projects leading to identification of passage improvements, standardising fish passes, river management and potential policy changes to



improve passage, just to name a few. There was also a workshop on the functionality of fish passes for sturgeon in large European rivers, and a session discussing the fish passage in the Rhine River, hosted by the International Rhine Commission. The majority of presentations were applied and focused at an audience from a wide range of knowledge backgrounds. General feedback from attendees also indicated a need for future presentations on basic passage engineering research and biomechanics. For a closer look at the abstracts, presentations and report please visit the conference [website](#).

Overall, we look back on the conference as being a great success. The true value of the conference was in the networking opportunities on this international level and discussions that took place between the sessions. According to Peter Gough, from Natural Resources Wales, and member of the Organising Committee, some of the most valuable contacts and knowledge exchange were gained after the conference sessions during the many social events. Here delegates were keen to discuss successes, but also the inevitable trials, tribulations and lessons learnt during the design and delivery of projects to improve fish migration. The opportunities for such frank exchanges of experience are recognised as a key component of the conference.

Following this great success, it is anticipated that the Fish Passage conference will come back to Europe in the coming years. The next conference will take place in June 2016 in the United States.



World Fish Migration Day 2016

During the opening of the conference, Dr Zeb Hogan presenter of the National Geographic

Television series "Monster Fish", enthusiastically introduced and opened the World Fish Migration Day 2016. This is the 2nd WFMD, which will be held on May 21, 2016. It is a one day international event that calls attention to the need to safeguard free flowing rivers and to restore the connections in rivers for migratory fish. Last year there were 102 events in Europe and the organizers are aiming to double this number next year. If you would like to join in the celebrations and host an event, visit: www.worldfishmigrationday.com. There you will be able to register an event and find out more you need to know.

REFORM Summer School – Lectures available online

The REFORM summer school was held on 27-29 June 2015 in Wageningen, The Netherlands and was aimed at students and early career researchers, covering the topic “Restoring regulated streams linking theory and practise”. The 3 day programme was interactive, it encouraged group discussions and participants applied theory to practise by drafting a restoration strategy. The summer school was attended by 12 participants. The complete PowerPoint presentations and the video-recorded lectures are available online (see [Summer Course | REFORM Rivers | 2015](#)) and can be used for teaching and training purposes.

degradation, identifying suitable restoration measures and other stages of the planning process was taught and discussed. Tools and guidelines for best practise, to measure performance and determine appropriate targets for river restoration were discussed through a sequence of lectures.

Lectures were recorded and are available for viewing on the video channel of [STOWA](#) (Netherlands Foundation for Applied Water Research) under the title: [Summer Course | REFORM Rivers | 2015](#).

DAY 3 – PLANNING RESTORATION SCHEMES

In groups, participants planned restoration schemes using the knowledge they acquired from the previous two days. They were also encouraged to use the [REFORM WIKI](#), a knowledge and



DAY 1- FIELD VISIT

Participants were taken to two restoration projects, Hierdense Beek and Lunterse Beek, where experts overviewed the reasons for river degradation and the restoration options applied at each of the sites. Participants held discussions to solve problems and produce strategies to meet specific environmental and societal objectives.

DAY 2 - LECTURES

During day 2 participants were taught how to plan restoration schemes, considering two main planning stages 1) catchment scale and 2) project specific scale. The theory for assessing

information web-based tool developed to guide practitioners through the planning stages of river restoration..



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- Ian Cowx*; University of Hull
- Christian Wolter*; Leibniz-Institute of Freshwater Ecology and Inland Fisheries
- Tom Buijse*; Deltares

ECRR Events calendar 2015-02

Date/periode	Titel/issue	Location	Links
24st september	RRC Training course	Colne UK	http://www.therrc.co.uk/rrc-courses-and-workshops
2d October	CaBA Workshop Citizen Science & Volunteer Monitoring	London UK	http://www.catchmentbasedapproach.org/discussions/citizen-science-workshop-2nd-october,-london
23rd - 30th Oct	3d Italian RRconference	Reggio Italy	http://www.cirf.org/italian/menu1/attivita/news/RF2015-savethedate.html
21st October	3d INBO conference	Salonika Greece	http://www.emwis.net/documents/meetings/events/13eme-conference-internationale-euro-riob-2015-21-24-octobre-2015-thessalonique/
10th February 2016	EIP Water Conference 2016	Leeuwarden The Netherlands	www.eip-water.eu
Netherlands	www.eip-water.eu	Vienna Austria	http://www.ecrr.org/
21 March 2016	World fish migration day	Global-local	www.worldfishmigrationday.com
26th - 27th of April 2016	17th RRC Annual conference	Blackpool UK	http://www.therrc.co.uk/rrc-annual-conference-2016

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

Free ECRR Network Subscribent

All who are interested in river restoration and sustainable water management are encouraged to join the ECRR. Subscribents receive the ECRR Newsletter about four times a 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

