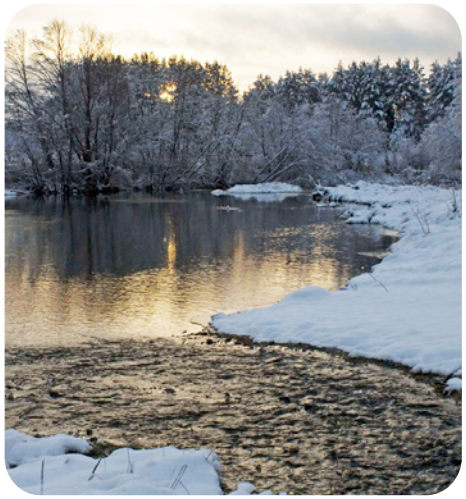
The network for best practices of river restoration in Greater Europe
ECRR
European Centre for River Restoration

DECEMBER

In this newsletter



Editorial ECRR Newsletter

With this issue of the ECRR Newsletter it appears that there is an increasing interest to publish about ecological river restoration. Moreover, there is a certain development in the type of articles about this item. The content of the articles on river restoration shows nowadays more diversity than in the past. This proves to our opinion, that river restoration is becoming more and more a well known and even cross cutting activity, not only related to nature conservation and protection of specific flora and fauna species. Ecological (river) restoration, defined as the process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed, is more and more recognized as an activity being key to delivering essential ecosystem services (Aichi Biodiversity Target 14).

This increasing interest is not only the result of a growing political interest, but also the results achieved by river restoration implementation, providing the evidence of its positive impacts. However, the mid-term review of the EU's progress towards meeting this target reported that there had been 'Progress but at an insufficient rate', with some restoration activities having occurred, but without a halt in the degradation of ecosystems and services (European Commission 2015). The impending deadline for these targets has created impetus for moving forward with large-scale restoration programs across Europe, but their success will depend on our capacity to effectively implement them.

This means also that there is certainly still a need for exchanging river restoration information and thus for this type of newsletter. This issue reports first of all about the ECRR General Members Meeting held in November in France, showing a big institutional step forward or the ECRR

and a budding substantive collaboration between Wetlands International and the ECRR.

The reports of the results of the European River Restoration Learning Hub Event demonstrate the mentioned interest in the achievements and impacts of river restoration. While the articles from the UK River Restoration Centre, Wetlands International - European Association and Ramsar underline this as well, by showing a broad perspective in this field.

The announcement of the World Fishmigration Day 2018, the report of the European Dam Removal workshop and the EIFAAC Symposium report on Adaptation of Inland Fisheries & Aquaculture to Climate Change show the great importance of ecological river restoration for fish, fish migration and fisheries in particular in relation to climate change adaptation.

We wish you a good reading of this newsletter and are looking forward to supporting you in 2018 providing again new river restoration information.

Bart Fokkens, ECRR and Wetlands International,
Francisco Martinez Capel, CIREF,
Timur Pavlyuk, RosNIIVH.

ECRR General Members Meeting November 2017

The first **ECRR Association** General Members Meeting was held 8-9th November 2017 in Massy, near Paris and was hosted by the French Agency for Biodiversity. The 13 member and partner organisations were represented by 15 delegates from 10 countries. This means that from now on the **ECRR Association**, with organisations as members, supports the development of best practices in ecological river restoration and exchanges information on ecological river restoration through the **ECRR Network**, with almost 1000 subscribers. The meeting approved ECRR Association's member, partners and funding structure. Information on this will soon be made available on www.ecrr.org.

Participants of the ECRR General Members Meeting 2017

Moreover, the following Board was appointed:
Chair: Martin Janes, England
Secretary: Giancarlo Gusmaroli, Italy
Treasurer: Jukka Jormola, Finland
The meeting stressed the call for at least two more Board Members for respectively members affairs and operations coordinator.

ECRR's Strategic Intend 2018 – 2020 and work plan and budget were discussed and in principal approved. Wetlands International – European Association made an important statement to this workplan, that in terms of capacity building, they will strengthen cooperation with the ECRR network as a mean to widen our network and to share technical and policy expertise with European organisations working on river restoration. This will enable them to tap into additional expertise on river restoration, to monitor emerging issues and to identify funding opportunities for collaborative projects.

Bart Fokkens awarded with the title Patron of the ECRR

ECRR member Wetland International had submitted an EU LIFE NGO application for 2018/2019, which was approved, enabling an active involvement of WI providing the ECRR Association and wider network with support. An collaborative workplan in addition to each other's own plans is presently being prepared by both associations. The activities should collect structured evidence valuable to the REFIT proces and help reinforce the ECRR as a competent knowledge platform and catalyst for river restoration implementation, through recognition at EC level.

The second day of the meeting a mini-symposium and field excursion were held around best practices of river connectivity restoration with the Mérantaise river as a case study, organised by the river syndicate SIAVHY and the regional nature park of Haute Vallée de Chevreuse.

At the occasion of the meeting, previous Board Member and Chair, Bart Fokkens was awarded with the honorary title, "Patron of the ECRR", in recognition of his outstanding commitment with the ECRR during it's 20 years existence. For the time being he will remain with the ECRR in the function of Operations Coordinator.

It is foreseen that the next ECRR GMM2018 will be held in the Netherlands.

The Mérantaise river connectivity case

With river syndicate SIAVHY

EUROPEAN RIVER RESTORATION LEARNING HUB EVENT AUGUST 2017

On last 28th-29th August 2017 has been hosted in Lyon (France) by the French Water Agency "Rhône, Mediterranean and Corsica", with the cooperation of the UK Environment Agency and the participation of the Italian Centre for River Restoration (CIRF) and the Slovenian Institute for Ichthyological and Ecological Research (REVIVO). The event aimed to share know-how and experiences amongst river experts from different European countries, focussing on a wide range of benefits that are connected with ecological river restoration, mainly in terms of natural flood risk management and socio-economic value for local communities.

During the two-day workshop a selection of real schemes has been visited and discussed with the involvement of local key actors, highlighting opportunities and risks embedded in the respective decision making and implementation processes:

- Hydromorphological restoration of the **Ouveze** (Ardèche Department, France)
- Urban river restoration of the **Yzeron** (Lyon, France)
- Longitudinal and lateral connectivity restoration of the **Brevenne** (Lyon, France)

Lesson learnt from these case studies ranges amongst the importance of inclusive governance and environmental monitoring as key issues for an effective application of river restoration paradigm, as well as openly dealing with uncertainty through both integrated assessment and incremental empirical approaches.

In three interrelating articles some selected information and figures about the case studies are presented.

Urban river restoration works (channel widening and riverbed diversification) on the Yzeron river © Sagyrc

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Hydromorphological restoration of the Ouveze (Ardeche Departement, France)

The Ouveze is a right bank tributary of the Rhone river, located in Ardèche. It is 26 km long between its spring located at 782 m AMSL and its confluence at 84 m AMSL. The river has incised because of the decrease in sediment supply from hillslopes reforestation, the extensive gravel mining that took place in the past and the channelization. The deficit in sediment is such that the river flows on bedrock over a large part of its journey to the Rhone confluence. This has led to very poor habitat quality and it has brought negative consequences in terms of physio-chemistry.

River restoration works (gravel matress recovery and lateral continuity enhancement) on the Ouveze river © Communauté d'Agglomération Privas Centre Ardèche

Ouveze river: state of art (2017) after restoration works (2011) © Communauté d'Agglomération Privas Centre Ardèche

The towns and villages of the Ouveze catchment came together in 2008 to create a local organisation (a "syndicat de rivière") and initiate a large project whose aim was to restore the river, to improve its natural functioning and make it more attractive. The Ouveze river contract had over 66, including important restoration actions for a total budget of 34 M€, mainly coming from the Water Agency and the local Administrations over the period 2009-2015.

The river contract is a tool to plan and organise the financing of actions that add value to the rivers, reduce the risk of flooding, improve water quality and the management of water resources. One particular action planned was to experiment an innovative hydro-morphological river restoration technique. In 2009, a study was carried out in a large concertation with a wide group of stakeholders, to design a first river restoration project.

In the design process 17 scenarios were investigated. The steering committee agreed on the river restoration of a 900m reach located downstream of the river, in an area where the stakes were more limited because of the experimental aspect of the project. The principle was to use 30 000m3 of sediment that were on the immediate vicinity of the main channel, in the river bank, to re-create a gravel bed with a 1,4m thick mattress of gravels. Four bottom weirs, buried in the river bed, were designed to preserve the gravel bed mattress. They were designed in such a way that ecological continuity is warranted even though the restored river incised as the restored morphology is adjusting. The project also had to take into account the crossing under the river bed by drinking water supply pipes, sewage pipes and electric network cable.

The total cost of all the above mentioned work was 800 000€, between June and September 2011. A wide communication campaign was made to the local population to explain the benefits of the project, as the site is located in a highly visible area.

Today, six years after the work was carried out, the evolution is positive: from a morphological point of view, the river has kept its mattress of gravels which has adjusted following several flood events. Riparian vegetation has naturally developed and is expanding. The monitoring shows that macroinvertebrates have the same characteristics as those observed on a natural river reach also monitored further upstream for comparison. A comprehensive monitoring is still under way (fish, invertebrates, macrophytes, morphology, physico-chemistry). It is planned to last for 6 to 9 years after work has been completed. As sediment supply from upstream is rather limited, attention will be paid to the way the site reacts, particularly to large flood events.

This project, at the time considered as experimental, is regarded as a success by decision makers and local population. This is why two other reaches are being investigated for such river restoration. In parallel, studies are still under way to manage sediment dynamics at a catchment scale.

Hydromorphological restoration of the Yzeron (Lyon, France)

The Yzeron river is a left bank tributary to the Rhone river which flows a peri-urban environment near Lyon. The downstream part of the river is completely channelized and flows in a very heavily urbanized part of the catchment. It is a heavily modified water body in the sense of the WFD.

Following the 1989 flood event, a local organization (a syndicate, the SEAGYRC) was created in 1991. It brought together twelve towns located on the Yzeron catchment. The main aim of the syndicate was flood risk mitigation and several technical studies were carried out to address the flooding issue. In 2001, the syndicate became the SAGYRC. It gathered 20 towns, so that river management could take place at the catchment scale. A river contract was set up in 2002.

Lyon, France, source electatravels.com

The first technical studies suggested to use hard engineering techniques to address the flooding issue and a larger concrete canal was first proposed in 2008. However, following a large concertation, the project became much more integrated, taking into account the environmental dimension (with ecological river restoration), the social dimension (amenity, lifestyle, access to the river) and urban drainage. Over 1000 people participated in the public consultation that was organized by SAGYRC thus the project tried to integrate, as far as possible, the expectations from local people.

It is difficult to really give a natural functioning back to the river in such a constrained environment. However, the project is exemplary in that it tried to give space back to the river wherever possible. Some infrastructures built too close to the river were removed, such as a car park for example.

The concrete channel, that had been part of the landscape for over a century downstream of the river Yzeron, was replaced by a gravel bed; then riparian vegetation quickly developed along the river banks as cuttings of some local salix species were introduced.

Amenity greatly improved and 1,1km of footpaths were created while taking into account the objectives relative to flood risk. The restored river reach, located close to city center, has become a very popular place in the town of Oullins.

The cost benefits analysis has demonstrated that, for one in 100 year flood event, the project brings benefits of 2.74€ for every 1 Euro invested without taking into account the environmental benefits.

The spectacular change of the river Yzeron in Oullins before (left) and after river restoration (right) © SAGYRC

Hydromorphological restoration of the Brevenne River (Lyon "La Rochette", France)

The Brevenne river is located in France to the North-West of Lyon. Near the town of Chevinay, in the area of "La Rochette", two river restoration projects were carried out. The projects aimed to restore ecological continuity by removing a 1.5m weir and to restore river morphology over 600m.

The Brevenne river is a stream with a bed slope gradient close to 1%. Due to the geology of the catchment, groundwater storage is very limited. The catchment is very flashy with a short response time to rainfall events and it is also very sensitive to low flows.

The two main obstacles to achieve the good ecological status of the river are:
– Channelization, with a river morphology that has been modified with river straightening, bank protections and gravel mining that took place until the year 1980s. As a result, the Brevenne suffers from a chronic shortage of coarse sediment.
– The thermal regime for the river is altered due to the morphological alteration, the mediocre quality of the riparian vegetation as well as the high density of ponds built on the river tributaries used for irrigation. This alteration has led to a shift in fish communities, from salmonids to cyprinids.

The first river restoration project took place in 2009, over 200m. It consisted of removing a 1.5m high weir and of restoring channel morphology in the area formerly influenced by the weir. Embankments, walls, bank protections that had been built with sediment mined from the river were also removed. The bank slopes were reshaped (less steep) so that native vegetation can compete more efficiently with Japanese knotweed. Tree stumps and large woody debris were anchored at the toe of the bank slope with stakes and steel chains.

The sediment deposited upstream of the weir was used to reshape the channel morphology with a low flow channel. The Brevenne river is a river that is suited for passive river restoration, with a high stream power and some coarse sediment transport. It is able to reshape its morphology by itself with morphogenic floods. Taking this principle into account, the restoration of the morphology undertaken in a meander loop allowed for the fact that native vegetation would take time to settle. The work took place between the 15/09/2009 and the 30/10/2009 and the total costs were 89,000 € excluding VAT.

A second river restoration project took place in 2013 over a channel length of 400m. It consisted of removing old bank protections and creating a low-flow channel by forming berms. The low flow channel capacity was designed for flows near 1.5 times the module, which is the natural reference for the Brevenne river.

Some hydraulics sections were designed so that overbank flow can occur for flows with of-return periods of about one in two years, which is also the natural reference for this river. The work occurred between the 20/06/2013 and the 30/07/2013. Total costs were of 48,000 € excluding VAT.

The restoration of a natural bed slope, of bank slopes with less steep slopes (30 to 50% gradient) and of a low flow channel has greatly improved fish habitat.

Only fish monitoring was carried out on those projects. It consisted of fish sampling carried out before work and 3 years after the restoration work was completed (N+1, N+3 and N+5). For brown trout, the density and biomass multiplied by 8 and 3 respectively. For minnow, the density and biomass have been multiplied by 8 and 15 respectively. With the exception of over 35cm specimen, all size classes improved, particularly the alevins.

The berms formed to create the low flow channel were made of a mixture of pebbles and soil material taken from former bank protection, material mined from the river and top soil. Japanese knotweed has not been able to establish on those berms since the project finished. Four types of Salix spp. were used to make cuttings on the berms formed with material taken from the river banks. It seems that the height of the berms is crucial to limit the settlement of Japanese knotweed, as the two higher berms had the highest rates of Japanese knotweed regrowth. However, this is only observation that has been confirmed by scientific monitoring.

Brevenne river at «La Rochette»: state of art before river restora tion works © Syribt

Brevenne river at «La Rochette: state of art after river restoration works (removal of old bank protections and morphology diversification) © Syribt

The (UK) River Restoration Centre

The River Restoration Centre (RRC) is the UK's 'expert information and advice' centre for all aspects of best-practice river restoration and catchment management. Originally founded in 1994 as the River Restoration Project (RRP) by members drawn from the UK public, private and NGO sectors, RRC has been actively raising the profile of river restoration since 1997.

RRC is a membership organisation. Our members help fund our ongoing work and include government agencies, consultants, contractors and local partnerships, as well as interested individuals. We regularly review our activities to ensure that they meet members' needs. Only then can information be efficiently collected, assimilated and disseminated to support future delivery, research and policy.

Our stated purpose is:
to actively promote the re-establishment of natural processes, features, habitats and biodiversity of a river system, to support others to achieve this by collating knowledge, information and evidence to share best practice throughout the river and catchment management community.

RRC's activities are set around three core areas:
- **Evidence, innovation and cost-effectiveness**
- **Expert technical advice & evaluation**
- **Dissemination, events, guidance and training**

We manage a unique evidence base of river restoration and management information, with data collected from over 4,800 specific cases in England, Scotland, Wales and Northern Ireland. This collated information (the NRRI), together with a wealth of in-house expertise and knowledge, enables us to provide a focal point for expert technical advice and evaluation, dissemination, events, guidance and training.

With the significant costs associated with river restoration, it is important to give funders and managers confidence in the cost effectiveness of river restoration. To help with this, RRC collates information to ensure that all available science, best practice and evidence are used in the planning of cost-effective river restoration and catchment management.

RRC has provided independent technical advice and evaluation for over 20 years. Our ambition is to ensure that all new river restoration projects reach their full potential and deliver multiple benefits. We advise river managers, local delivery staff and policy makers together with their consultants and contractors to better, and more confidently, define and deliver local programmes and interventions for restoration or management of rivers and watercourses.

Cheriton Stream, a tributary of the river Itchen. Location for a restoration project

Through our established contacts we have a highly regarded role as an independent and impartial expert voice between uncertain and sometimes conflicting groups. Having both practical and scientific competence means that we can help build stronger links between research and on-the-ground application to restore and manage rivers, watercourses, and their associated floodplains. We can also apply our practical experience proactively to develop research ideas in response to the observed need in order to deliver river-related environmental improvements.

We have developed comprehensive river-related expertise through our work on over 320 restoration projects, and the experience of our staff and associated advisers.

The final core area of RRC's work is around dissemination, events, guidance and training. We provide the statutory agencies, NGOs, managers and supporting practitioners access to a wealth of guidance, training and on-site demonstrations of best practice, innovation, evidence and experience. We help to develop their capacity to deliver effective restoration and management of rivers and watercourses.

Sharing good practice in Scotland at Rottal Burn restoration project

Our largest event is our Annual Network Conference which attracts over 300 river restoration practitioners. The two day event is a chance for people to present their work, learn from each other and gain new contacts. Alongside this, since 2014, we also run the UK River Prize which is held on the first

night of the Conference. This celebrates best practice in river restoration and catchment management, and awards those that have worked hard to improve their river.

We also build on a collective commitment from our members to exchange experiences, information and data which enables us to carry out our UK dissemination role and to make sure that our outputs meet the needs of our members. In this role we can efficiently collect, assimilate and disseminate evidence to support future delivery. Our monthly Bulletin summaries this information for our contacts, of which there are 3,000.

RRC will continue to support its network of strategic partners, members and associates to meet the challenges and needs of the coming years.

For more information www.thrrc.co.uk

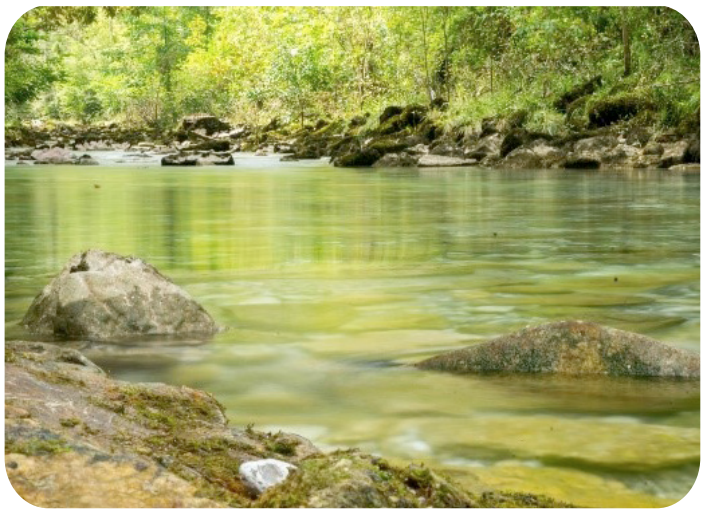
The RRC conference attracts 300 delegates annually.

Conservation and restoration of European rivers: the role of the Wetlands International – European Association

About the Wetlands International – European Association

Wetlands International – European Association is part of the global Wetlands International network, the only global not-for-profit network organization dedicated to the conservation and restoration of wetlands such as lakes, marshes and rivers. Wetlands International works through its network of offices, partners and experts to achieve its goals. We have eighteen offices around the world, working independently but sharing the same Global Strategy.

Wetlands International – European Association was founded in 2013 and brings together 8 European NGOs working together to raise awareness about wetland ecosystems and to advocate the sustainable use of wetlands for people and nature, in particular by linking science, policy and practice. Current NGO members include the Iberian Centre for River Restoration, the Italian Centre for River Restoration, EuroNatur, the Centre for Wetland Conservation (Cmok, Poland), the Tour du Valat, the Sustainable Eel Group, the Wildfowl & Wetlands Trust, and the Zoological Society of London.



Our overall goal is to improve the conservation and restoration of rivers across Europe

Focus in Europe for a global impact

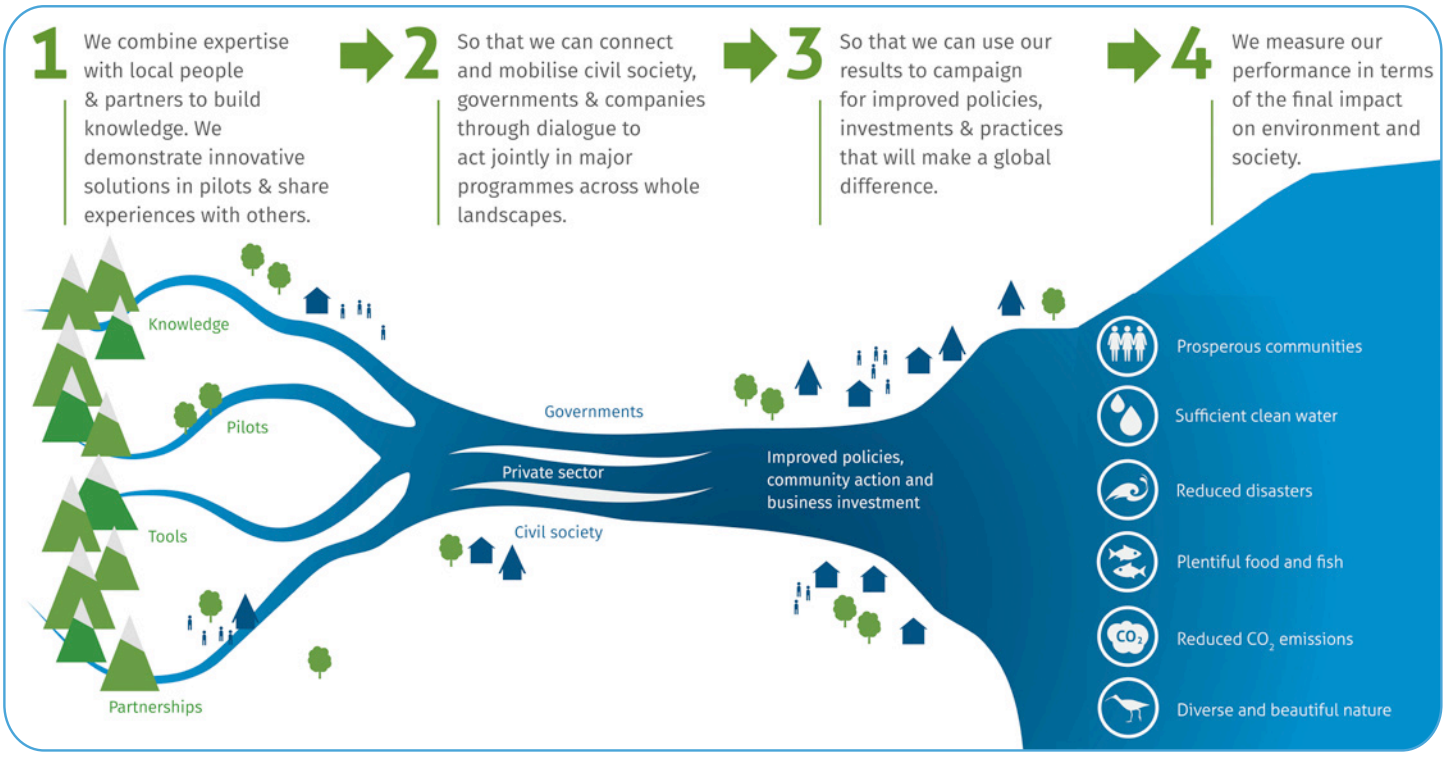
Wetlands International – European Association focuses on the development and implementation of EU policy, and on its effects and impacts on global wetlands. We use the expertise of our members and our global network to inform EU policy- and decision-makers, and we in turn inform our members and global partners on the implications for them of EU policy developments. In recognition of our contribution to EU environment policy the European Association has been awarded operational grants from the European Commission to support its activities.

Conservation and restoration of European rivers

Our overall goal in relation to European rivers, is to improve the conservation of wild rivers and the restoration of degraded ones across Europe, both as a means to enhance biodiversity and mitigate water-related hazards such as floods and droughts.

While it may be assumed that wetlands are well covered by existing EU legislation, their cross-cutting nature means they are sometimes overlooked. For instance, the Water Framework Directive includes rivers and water bodies that can be counted as wetlands, but functionally linked ecosystems such as floodplains, peatlands and swamp marshes are often not so strongly addressed as would be desirable. Therefore, we place great emphasis on the adoption and implementation of river restoration measures and Natural Water Retention Measures at river basin scale (including estuaries) to maintain and restore wetland ecosystems.

We engage in a joint lobby with our members at EU level using key EU legislation such as the Water Framework Directive, Flood Risk Management Directive, Habitats Directive, and the Eel Regulation to build support to conserve free flowing rivers and unblock barriers to species migration. This area of work spans three governance levels: European, national and basin-level. Using specific cases such as the Sava, the Rhine, the Vistula and the Douro, we use our knowledge on the situation on the ground to influence the EU and national level, e.g. by pinpointing instances when EU legislation is being breached.

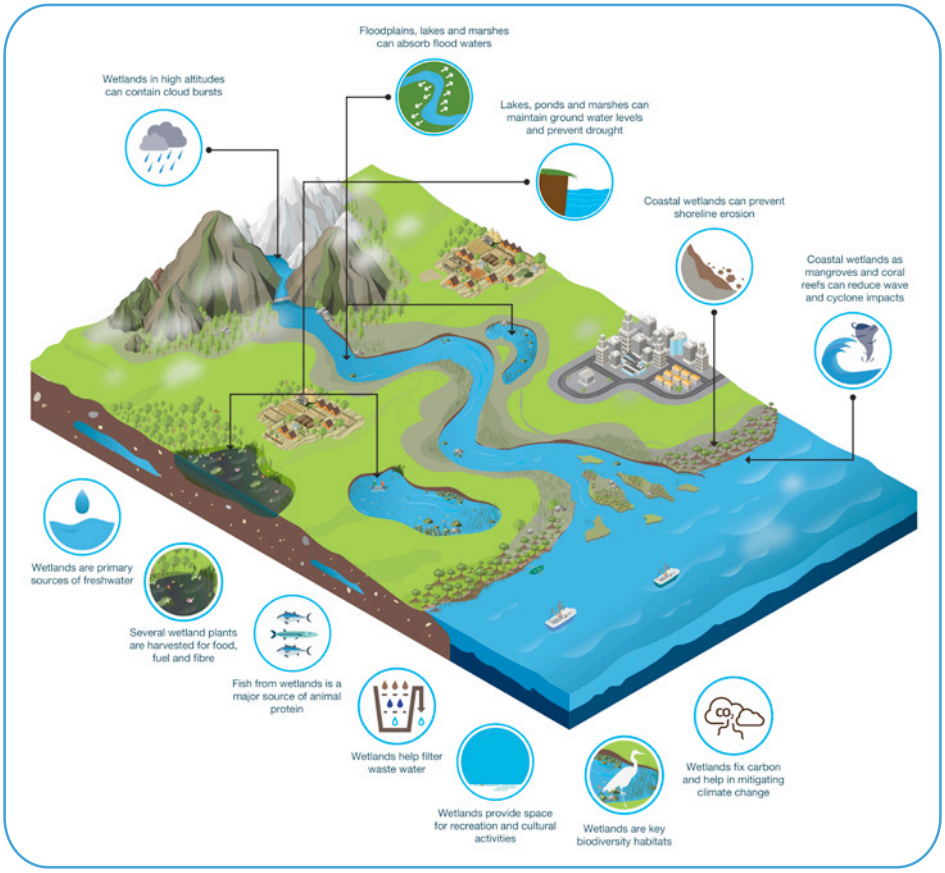


The ways in which we work to achieve our ultimate goals reflect the nature of wetlands as ecosystems and the wider biophysical and social context in which they sit.

Review of the EU Water Directives

The biennium 2018-2019 will signify a decisive time for EU water legislation, as the European Commission will launch the announced REFIT (Regulatory Fitness and Performance) process.

The objective of the REFIT process is to review the relevance, effectiveness, efficiency, coherence and EU added value of the WFD and its "daughter directives", including the Flood Risk Management Directive. This review will potentially result in proposed amendments to the legal requirements of the WFD.



Wetlands are essential systems

The process will encompass a public consultation and discussions at EU level. The Commission will be asking for evidence from implementation on the ground to feed into the REFIT process, including input from NGOs and citizens. Wetlands International – European Association and its members will make use of this opportunity to ensure EU water policies are strengthened to achieve their objectives, including the conservation of wetlands and healthy river ecosystems.

Wetlands International – European Association invites the ECRR network to engage in the consultation process, e.g. by providing structured implementation evidence and making suggestions for improvements. We are looking forward to cooperating with the ECRR members and their wider network for the benefit of rivers in Europe.

For more info have a look at https://europe.wetlands.org/ or contact: Eef.Silver@wetlands.org and Cy.Griffin@wetlands.org.

Ramsar and River Restoration

The Ramsar Convention on Wetlands focuses on the essential ecosystems that make the water cycle work. Mountain torrents, dynamic rivers and free-flowing lowland streams are the main arteries that allow the hydrological cycle to function, harbour a rich biodiversity and provide good quality freshwater to our human societies, our crops, livestock and industries. However, in Europe, we have drained, degraded, destroyed and channelized most of the naturally-flowing rivers, mainly since the second half of the 19th century.

Recent 'river restoration' in Livno town, Bosnia-Herzegovina, as it should no longer be done. © Tobias Salathe, Ramsar.

But fortunately, finally the tide is turning, and the European Union has established powerful legal and financial instruments to stop and revert this disastrous trend. And for those countries who are not members of the EU, we have the Ramsar Convention that provides a legal framework for action. The Parties to this global environmental convention have adopted extensive guidance for national implementation, summarized for practitioners in the Ramsar Handbook 9 on "River basin management", and additionally in Handbooks 8, 10 on and 11 focusing on related themes such as "Water-related guidance", "Water allocation and management" and "Managing groundwater". They deal for example with water management in the context of the hydrological cycle, maintaining wetland ecosystem functions: processes, strategies and tools and understanding groundwater related wetlands. They can all be downloaded from www.ramsar.org in English, French and Spanish.

During the latest European Ramsar Meeting in 2014, synergies that need to be developed further between national Ramsar and EU planning processes were discussed in detail. The participants focused on the elaboration of Prioritised Action Frameworks in the environment and water sectors, how new LIFE projects can contribute to river and floodplain restoration and integrated river basin planning, and they concluded that working at river basin level, and at transboundary level in international river basins - of which there are many in Europe -, is essential to succeed and to be respected by others, notably water managers and experts on hydro-energy, river navigation and tourism. The Ramsar Convention provides a framework to transpose EU policies, such as the Water Framework, Groundwater and Flood Directives, in combination with the Birds and Habitats Directives, to the non-member states in Eastern Europe.

The disastrous summer floods of 2014 in the Western Balkans reminded the participants of the need to plan for and prepare natural water retention measures. Spatial and land-use plans need to integrate "natural solutions", i.e. maintaining, rehabilitating and restoring degraded and drained wetlands, notably river floodplains, riverine forests, fens and wet grasslands as temporary water retention areas. Those areas can also be used for grazing, recreation and other services during low water flow periods. Restoration of these wetland ecosystems contributes to the EU Biodiversity Strategy target 2 of restoring 15% of all degraded ecosystems.

Karst resurgence of Livno river in the Livanjsko Polje Ramsar Site, Bosnia-Herzegovina © Tobias Salathe, Ramsar.

More water is now released from the Upper Rhine navigation channel into the "Old Rhine" natural river arm, weir at Märkt (Germany), Upper Rhine Transboundary Ramsar Site (France-Germany). © Tobias Salathe, Ramsar.

The Ramsar Convention currently operates under its Strategic Plan 2016-2024. Target 12 of this Plan calls for the restoration of degraded wetlands, with a priority focus on those that are relevant for biodiversity conservation, disaster risk reduction, local economies and climate change mitigation and adaptation. In Europe, river floodplain biodiversity was particularly diminished and is currently at risk. Sustainable agricultural and forestry land uses in non-drained floodplains have largely disappeared from Western Europe and come increasingly under pressure in Eastern Europe. These are areas where we need to re-think current land-use policies, and where the sectors such as water resources provision and management, hydro-energy, mining, agriculture, forestry, tourism, urban and infrastructure development need to switch to sustainable development policies, as required by target 13 of Ramsar's Strategic Goal to use all wetlands wisely.

Practitioners, policy developers, administrators and decision-makers interested in these challenges are invited to the next European Ramsar Meeting that will take place on the 19-23th March, 2018, in Olomouc in the Czech Republic. Besides three days of exchanges, presentations of solutions and debates about new policy decisions are needed. A set of solutions should be adopted globally by the next Ramsar meeting of the Conference of the Parties (COP13) in Dubai, United Arab Emirates, on the 21-29th. October, 2018. In March 2018 the participants in the European Ramsar Meeting will also have an opportunity to visit nearby natural and restored river forests along the Morava and wet meadows in the upper Odra floodplains.

Cows crossing the Danube in the Belene Island Ramsar Site in Bulgaria. © Tobias Salathe, Ramsar.

We welcome you all to Olomouc and look forward to meet you in the Czech Republic!

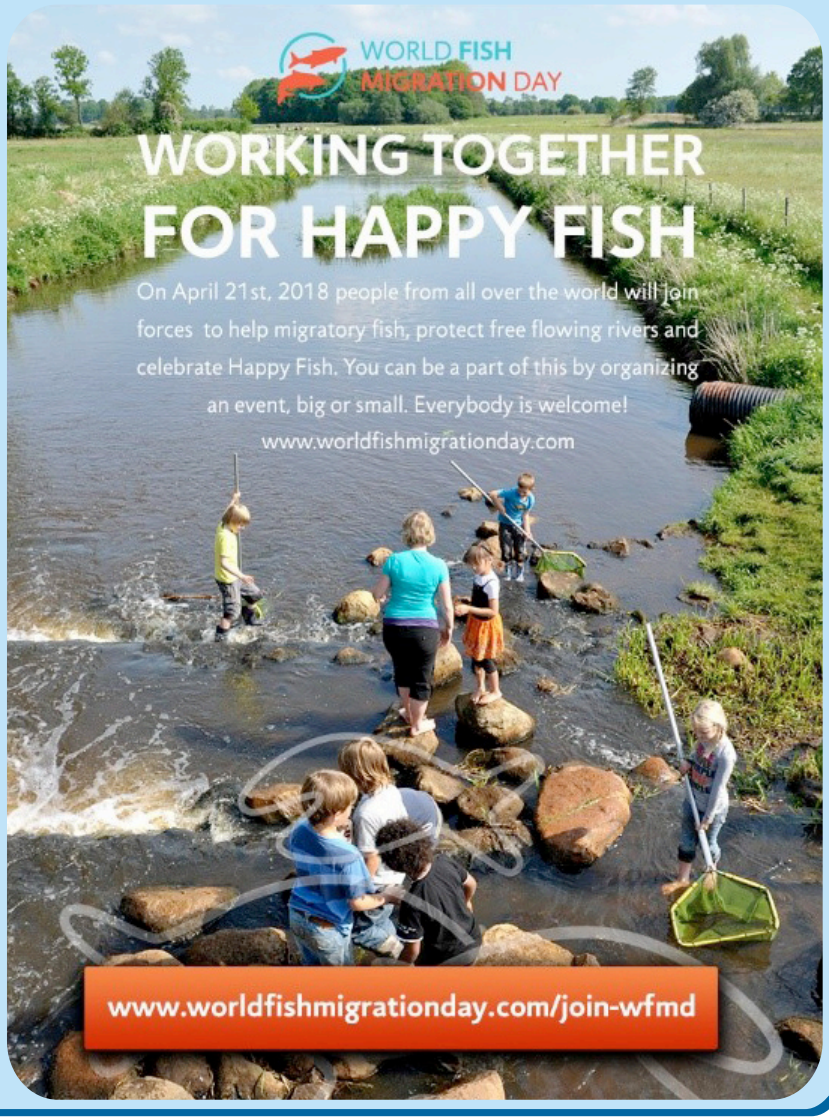
WORLD FISH MIGRATION DAY 21 APRIL, 2018

Let's connect Fish, Rivers and People in Europe together!

This is an international event to raise the awareness on fish migration and river issues around the world. In 2016 around 300 inspiring events took place in Europe and we aim to increase the numbers this time. We hope that all ECRR members will join and host events. You can take a school class out into the field, host a local workshop, launch a report, get a group out on a river paddling or fishing, or announce a dam removal/fish passage facility. It's a wonderful opportunity to work on citizen science as well. All events are great and welcome. ECRR is one of the 60 supporters of the World Fish Migration Day. Events can be registered on http://www.worldfishmigrationday.com/join-wfmd.

Proud partners of World Fish Migration Day:

The Nature Conservancy · WWF · World Fish Migration Foundation · LINKIT CONSULT · Waterschap Amstel, Gooi en Vecht · FFSG



World Fish Migration Day 2018 Flyer

Dam removal takes a leap forward in Europe!

Dam Removal Europe (DRE)

Dam Removal Europe (DRE) is a movement and platform that started in 2016 thanks to six organizations: World Fish Migration Foundation, World Wildlife Fund, Karlstad University, European Rivers Network and The Rivers Trust. This partnership wants to improve 'citizens' awareness about free flowing rivers and the need to remove old and obsolete dams and weirs. The movement promotes ideas and will create a reference community of European experts. It's a fact that thousands of small dams and weirs have been removed the past decades in Europe, but no one was really sharing this information within their network, with policy makers and river managers. Until now it seemed quite hard to talk about these removals because it is seen as a sensitive subject. Dam Removal Europe wants to change this and get people inspired and proud on their achievements and stimulate new dam removals and even the bigger ones. In April and June 2018 regional partners of DRE will remove +25m dams in the Douro river (Spain) and the Selune river (France). A big leap forward!

The impact of dams

Dams impact aspect of healthy rivers. Dams impede the migrations of fish and other aquatic fauna and this leads directly to the decline and even local extinction of many species. They cause the loss of river habitat, many times favoring exotics and/or invasive species. They change the natural flow of rivers, reducing the flow downstream the obstacle and decreasing the natural river floods frequency. This reduces the channel connection with the floodplain, which decreases the soil fertility and even the aquifers recharge. Dams block nutrients and sediments upstream the dam, in greater or lesser degree depending on the dam dimension and the water storage amount, causing downstream incision problems in the river channel and bank erosion, deltas shrinking due to the lack of sediment deposition and sometimes costal erosion due to sand decrement.

Inspiring and well visited Dam Removal Europe seminar in Birmingham, UK

Cooperation agreement between the Environment Agency (UK), the Severn Rivers Trust and Dam Removal Europe

Workshops by and for experts

One of the activities of Dam Removal Europe is to host annual knowledge exchange workshops for European experts. In September 2017 the second workshop was held in Birmingham (UK), jointly hosted by the Dam Removal Europe, the Environment Agency and the Severn Rivers Trust. The workshop focussed on dam and weir removal in the urban environment. The event gathered more than one hundred European experts and dam removal enthusiasts, who are actively working to remove dams from rivers and allow them to flow free again.

The first day of the workshop involved talks and interactive sessions with expert speakers from across Europe, with contributions from American Rivers (USA), the World Wildlife Fund (NL), the Environment Agency (UK), River Watch (AT), Inland Fisheries (EI), Normandie Grands Migrateurs (FR) and different Rivers Trusts from across the UK. As well the official supporting agreement between the Environment Agency of England, the Severn Rivers Trust and Dam Removal Europe was signed.

Field visit to the weir at Powick, Worcester, UK which is due to be removed in 2018

The running theme of the workshop was how dam removal was necessary and could be achieved in an urban environment, where there are more specific reasons for the weirs and dams that have been constructed. Attendees were encouraged to think outside of the box as to how it can be achieved with minimal impact to local infrastructure and deal with opposition from those who wish to keep the dam or weir in situ. A recurrent issue of many of the presentations was the need for community engagement and communication with local people. By entering discussions as to why people felt as they did about the dams that needed to be removed, it becomes more apparent how you can approach the need for removal.

The second day of the workshop enabled attendees to visit some sites to see where weirs had been removed, and see how the natural river has re-established itself now. As well as visiting some sites where weirs are due to be removed in the coming 12 months. One of the sites visited was the weir at Powick in Worcester, which is part of the large Unlocking the Severn Project which is opening the rivers Severn and Teme for twaite shad and all other migratory fish.

More Dam removal

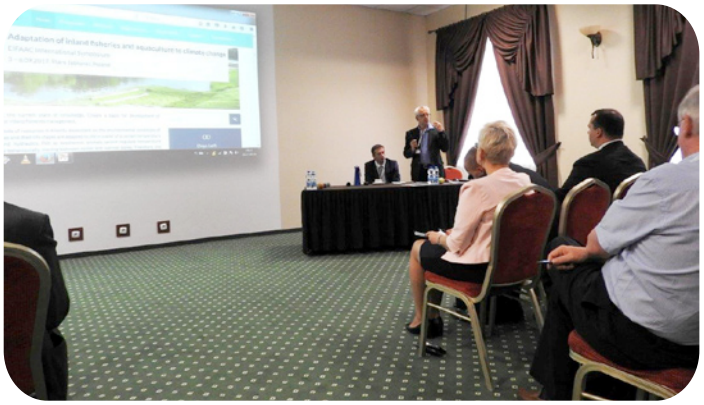
If you are interested in case examples from Europe and want to become part of this exciting network visit the website: www.damremoval.eu and subscribe yourself for the newsletter. The next dam removal Europe workshop is planned for September 2018 in Sweden, which will be inspiring because dam removal is taking a leap forward in Sweden too.

EIFAAC Symposium on Adaptation of Inland Fisheries & Aquaculture to Climate Change

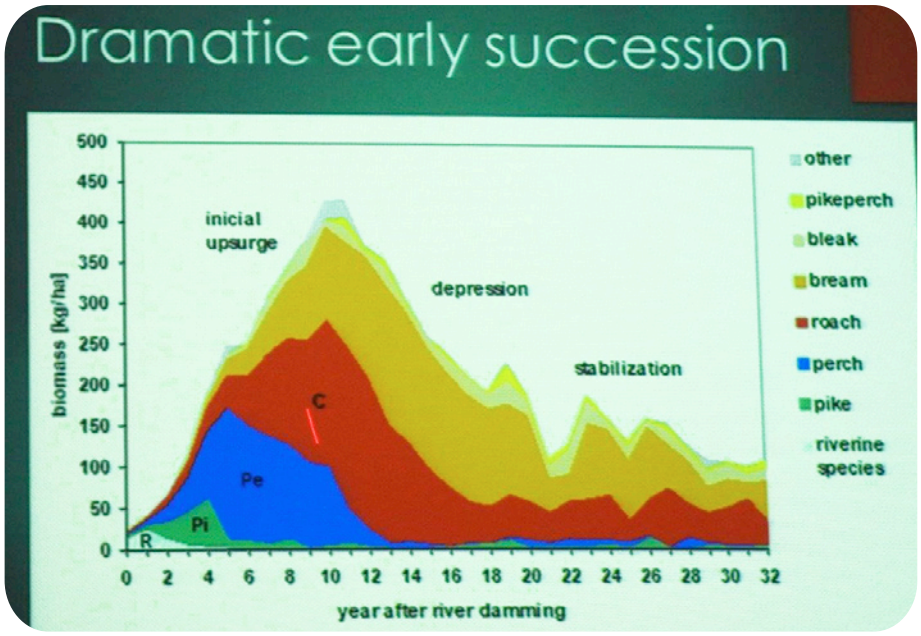
Piotr Parasiewicz, Inland Fisheries Institute, Warsaw, Poland

Introduction

The Symposium was organized together with the 29th session of the European Inland Fisheries & Aquaculture Advisory Commission (EIFAAC), Poland, 3 - 6 September 2017. The Symposium, sponsored by Polish Ministry of Maritime Economy and Inland Navigation was convened by the S. Sakowicz Inland Fisheries Institute. It was attended by 64 participants from 20 countries and 3 continents. The opening statement was given by Deputy Minister Ms. Monika Moskwa, who underlined the importance of the meeting for Polish Government and resources management.



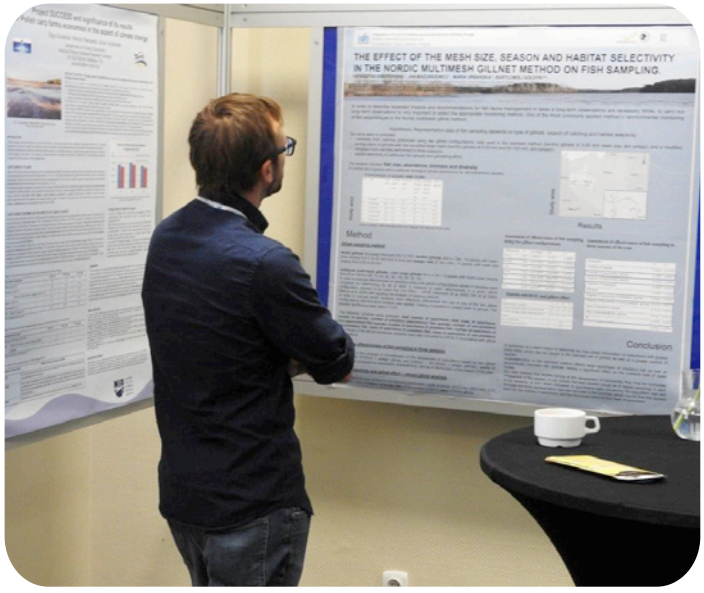
The symposium held in Stare Jablonki, Poland included 4 sessions.



The impact of river damming on the fish population succession

Global impacts

Recent research indicated the thermal, hydrological, and chemical impacts of climate change on fish, which have had far-reaching impacts on local economies, food security, and ecosystem services. Complex interactions among climate variables affect fish growth and migratory behaviours. Those changes have favored invasive and tolerant species. Floods and droughts were also reported as key fishery drivers globally, particularly changes in their frequency, magnitude, duration, and timing. For example, Finland's climate is changing more in winter than in summer, with expected changes in fish population composition. Similarly in Ireland and England, warming favours mixed fish populations and predation and competition risks for Arctic Charr *Salvelinus alpinus*. The majority of Polish fishery managers have already noticed climate change affects on the fishing economy.



The symposium included also several poster presentations

Climate change assessment tools

Improved habitat, hydrological, and index-based predictive models are needed for investigating the multiple covariates of climate change impacts. Because modified aquatic ecosystems are more vulnerable to climate change impacts, more reliable models of aquatic organism status and trends, fish habitat requirements, and ecosystem function are needed. Such tools also must capture changes in habitat extremes (versus mean conditions) to adequately assess biological responses to climate changes. Large-scale and long-term research and monitoring programs provide the necessary evidence base for improving predictive and explanatory models. Two international research projects CERES and CLIMFISH currently gather such evidence for impacts on lake and marine fisheries. Such models will facilitate more robust predictions and adaptive management.

Climate change adaptation

It is particularly important to consider interactions between climate change effects and fishery management actions, because potentially positive effects can be neutralised by unsuitable management. Similarly, focusing investments on cold water fish in increasingly warming waters becomes increasingly unwise economically. Developing nations and the USA desperately need capacity building in adaptive fisheries management, which is hindered in the former by ignorance of climate change and in the latter by widespread climate change denial. Globally, the most vulnerable fisheries are in tropical nations, where inland fisheries are most important, where expected fishery changes are the most dramatic, and where societies are least resilient because of socioeconomic limitations. Several actions can mitigate the effects of climate change, including habitat rehabilitation, maintaining and restoring natural vegetation in riparian zones, removing dams, placing effective fish passes at dams, more strategic dam placement, and not building dams. Targeted communications help policy makers, decision makers, and the public better understand the key issues.

Conclusions and recommendations

Symposium participants recognized the importance of the biological, environmental, and socio-economic aspects of climate change impacts on inland fisheries and aquaculture. And that those impacts will be substantial, and that the need for effective actions are immediate. Research and management priorities include demonstration studies, increasing synergies between different sectors and a better coordination of research and management programs. Moreover, including inland fisheries in sustainable development goals, developing key messages for public consumption and using simulation and demonstration tools should make the fishery science more understandable to the public.

ECRR Events calendar 2018

Date / period	Title / issue	Location	Links
16-17 February, 2018	20th International Conference on Sustainable Water Resources Management	London, UK	https://www.waset.org/conference/2018/02/london/ICSWRM
1-3 March, 2018	IWE Istanbul Water Expo	Istanbul, Turkey	http://www.istanbulwaterexpo.com/
7-9 March, 2018	SMAGUA, International Water and Irrigation Exhibition	Zaragosa, Spain	http://freshexpo.ru/en/exhibition/19102/
18-23 March, 2018	World Water Forum	Brazilia, Brasil	www.worldwaterforum8.org
21 April, 2018	World Fish Migration Day		www.worldfishmigrationday.com
22-24 May, 2018	Water Pollution	A Coruna, Spain	http://www.wessex.ac.uk/conferences/2018/water-pollution-2018
4-8 June, 2018	I.S.Rivers2018 3e International Conference Integrative sciences and sustainable development rivers	Lyon, France	http://isrivers.org
19-24 August, 2018	12th International Symposium on Ecohydraulics (ISE 2018)	Tokyo, Japan	http://ise2018.com/
25-27 September, 2018	Ecwatech	Moscow, Russia	http://www.ecwatech.ru/en/News1/ECWATECH-2018/

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 onecological 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.

If you want to unsubscribe for the newsletter, please send an email to info@ecrr.org.

The network for best practices of river restoration in Greater Europe
ECRR
European Centre for River Restoration

This news letter is a co-production by the Iberian River Restoration Centre (CIREF) and the Russian Research Institute for Integrated Water Management and Protection (RosNIIVHk) as National River Restoration Centres and members of the European Centre for River Restoration (ECRR).