

## **WORKSHOP N. 11**

**Title:**

Integrating science with practice:  
a toolkit of good practice advice and a database of river restoration projects

**Organized by:**

European Centre for River Restoration (ECRR)  
River Restoration Centre (RRC – UK)

**Time:**

2 x 2 hours

**Number of participants:**

Maximum 50

**Leader:** Francesco Pra Levis ([info@ecrr.org](mailto:info@ecrr.org))

**Co-leaders:** Bruna Gumiero-Martin Janes

**Useful documentation:**

Synthesizing U.S. River Restoration Efforts (Bernhardt *et al.* 2005)

Standards for ecologically successful river restoration (Palmer *et al.*, 2005)

### **Description of Workshop**

**Background**

River restoration has been described as both a science and an art. It is a process whereby we utilise the science and research and the practical understanding from previous experience. It requires integration of the range of disciplines (engineering, hydrology, geomorphology, ecology, biology, landscape, water quality..., both scientific and applied. It is complex.

With more hopes being placed on river restoration as a tool, or mitigation measure to undo past damage to natural riverine systems, it is no longer sufficient to state “it is complex”. We need to demonstrate the complex links and back up the general assumption that river restoration is a ‘good thing’ with scientific analysis and applied success.

The Water Framework Directive requires assessments of cost effectiveness of mitigation measures, based on levels of confidence in the ability of the measure to off-set the pressures. Funders of stand alone river restoration projects need similar justification for investment. As a river restoration community, we need to access this information and be able to use it to allay fears and old prejudices, and to promote new ways of river management.

***Workshop aim***

- How can we as a ‘river restoration community’ build science and practice to inform and justify the large sums of money required to restore our rivers
- Setting up a common European database methodology and format for gathering river restoration project data.

### **Scientific evidence for river restoration**

River restoration appears in papers in many countries, but the degree to which its application or implementation has been monitored and evaluated (Workshop 7) and scientifically appraised remains low. A recent study in the UK to produce a compendium of information relating to river restoration mitigation measures (related to Land Drainage and Flood Risk Management) has provided interim results. This suggests that there is a 'reasonable' body of evidence, in most cases enough to support many of the applicable techniques or measures that river restoration proposes. Much of this is not simply a question of does the restoration measure work, but also questioning the converse "what does the science tell us is the impact of river degradation?".

There is also assumed to be a large body of information in written reports from non-academics, together with expert judgement, that has yet to be compiled. Is there a 'simple' way to access this information, and the expertise that is available?

This UK based study looked at European papers and targeted members of the river restoration community, but do we as a group agree and was valuable information missed.

In Europe, how do different countries currently, and plan in the future, to justify expenditure on river restoration?

*The workshop will split into small groups to discuss these issues.*

### **Digital Good Practice Manual**

An overview will be presented of the concept being developed for the UK, and how this might apply more widely to Europe and river restoration. The basis for this Manual is a decision making tool that allows users to access information on methods/techniques that are commonly applied to restore/enhance/mitigate waterbodies. This information is comprised of the latest 'good practice' and contains a critical evaluation of the science (as discussed just previously), the expert opinion (especially where the science base is poor) and the applicability of the method to different rivers and different climates. Could such a model offer opportunities for a wider European river restoration good practice manual?

*The workshop will split into small groups to discuss this.*

### **River restoration projects - a database of successes and failures**

Linked to the need for good science is the need for reliable, accessible and plentiful information on completed river restoration projects. We need to learn from what WE have done to apply it in the future. Better still, we need to learn from what EVERYONE has done.

In some countries this information is being collated within various databases or inventories, in others it is simply sourced by individuals or organisations for a single study. The ECRR has recently begun to populate a web based database of river restoration projects. The UK RRC has a similar inventory of 1500 projects and the Danish NERI has over 1000 projects from across the different counties. In the US, a recent synthesis of river restoration science (NRRSS) collated over 30000 projects involving river enhancement and rehabilitation. Such resources are key to help to deliver WFD targets

What is the focus of these different approaches, what information is held and how can it be accessed? Should ECRR house a Europe wide database, or should each National Centre be tasked with this time consuming role? What information is necessary for the questions we need to address

now (WFD, etc) and what might be needed in the future (future proofing). What and who would fund such a database (or set of databases)? LIFE projects, or the ESF Research Networking Programme?

### **Workshop outline**

Short presentations from the panel will provide the background and current understanding in relation to:

First session:

- A review of the scientific literature
- The necessity of accessing information and evidence to support River Restoration;

Second session:

- The current need (WFD, etc);
- An overview of the existing inventories and databases;

Small groups will address the two main themes of:

First session:

Scientific evidence base

- Does work undertaken so far cover the majority of scientific evidence
- What else is out there?
- What is the need for better reporting in the scientific press and how can this be achieved?

Un-published reports and results

- What is the volume of 'grey' literature available?
- Have studies been undertaken to evaluate this?
- What is the perceived 'value' of this information?
- What should be the ratio of reliance upon scientific analysis and expert judgement?

UK Digital Good Practice Manual

- What are the benefits of a Europe-wide manual of good practice measures?
- Who would support expanding the manual from UK to EU?

Second session:

Project databases

- What data exists within different countries
- How easy is it to access and how reliable is it
- Value of such information
- How can ECRR promote better inventories of projects
- How can national centres better inventories of projects
- Critical and positive aspects
- Can learning from old successes and failures improve our planning of new projects?

New database for Europe

- What data fields are required for river restoration, WFD, floods directive, etc..
- What is the best format and location for storage?
- What are the additional benefits for such a data set?
- Funding

**Workshop structure**

Short (10 mins) introductory presentations from a number of speakers (see above), followed by a discussion of the scientific evidence base for river restoration and whether it is necessary. Small groups to facilitate discussion, with key points fed back to main group.

Second introduction to ECRR database and others from around the world. Benefits, shortcomings, etc. Discussion in small groups related to key questions of usefulness, need, cost, benefit, etc. Feedback to the main group.

Final discussion of workshop findings and identify progress to be made in the next 12 months. Identify interested parties and possible sources of funding.

**Outputs**

Summary of introductory presentations, key questions and feedback from the groups. Major discussion items and general consensus. Suggested way forward for ECRR and the workshop attendees, interested parties (i.e. with EU, NRRSS, etc.) and possible levels of involvement. The information will be available from the ECRR and RRC websites.