

Communication Activity Report

To measure and keep track of important AMBER communications, complete this report add the following documents and send them along with the report to: rosa@fishmigration.org

- For presentations: **Presentation, programme, attendance list, picture**
- For other dissemination (website, newsletter, magazine, press, tv, radio etc.) **Article/ Podcast/Video or/and link**

Action

Type of activity	<i>Organisation of a Workshop</i> (select)
Name of activity	<i>Restoring river connectivity: challenges and current developments</i>
Link to activity	<i>https://sere2018.org/</i>
Location	<i>Reykjavic, Iceland</i>
Date	<i>17/9/2018</i>
Presenter / host	<i>Josh Jones / SER Europe conference 2018</i>

Audience

Number of attending people	<i>10</i>
Type of audience	<i>Give an aproximate number or % for each type of audience</i>
Scientific Community (Higher Education , Research)	<i>90%</i>
Industry	<i>20%</i>
Civil Society	
General Public	
Policy Makers	
Media	
Investors	
Customers	
Others	

Results

Results from action	<p><i>Increased awareness of AMBER project in field of habitat restoration</i></p> <p>Rivers are some of the most threatened ecosystems in the world, and are a major focus of restoration programmes in Europe and elsewhere. A major challenge to achieving good ecological status is the fragmentation of stream habitats caused by many thousands of barriers, especially as many are not properly documented. Second, the biological impacts of barriers are largely unknown, as most research has focussed on particular taxa, mainly migratory fish, hindering the design of efficient restoration initiatives. Third, barriers often provide multiple, contrasting positive and negative impacts on different stakeholders, thereby river restoration initiatives must face challenging problems of minimising multiple trade-offs.</p> <p>The purpose of this workshop is to share novel developments currently brought forward by ongoing EU-wide H2020 research projects, AMBER</p>
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and FITHydro, and the Dam Removal Europe initiative, in order to (a) identify the main challenges for restoring river connectivity, (b) discuss current research initiatives and how they are addressing these challenges and (c) identify potential synergies and avenues for collaboration among current projects.

This will be achieved by bringing together ecologists, engineers, river scientists and conservationists working on river connectivity. Following presentations of current developments, participants will have the opportunity to share ideas and discuss key requirements and challenges for achieving the restoration of longitudinal river connectivity including barrier identification, barrier removal, impact mitigation methods, and monitoring adaptive management. This will allow sharing of perspectives; strengthen the global network of those working to improve river connectivity; and advance collaborative efforts to improve the success of river connectivity restoration efforts worldwide.

9:00 Welcome and introduction to the workshop

9:10 Presentation: The AMBER atlas of barriers and obstacles in Europe

9:25 Presentation: FITHydro adaptive management of barrier design

9:40 Presentation: Dam removal Europe

9:55 Questions and discussion on morning presentations; identification of main challenges

10:30 Coffee break

10:45 Working groups on challenges identified in the morning session (3-4 max)

11:45 Lunch

12:45 Presentation of conclusions by working groups

13:30 General discussion and conclusions

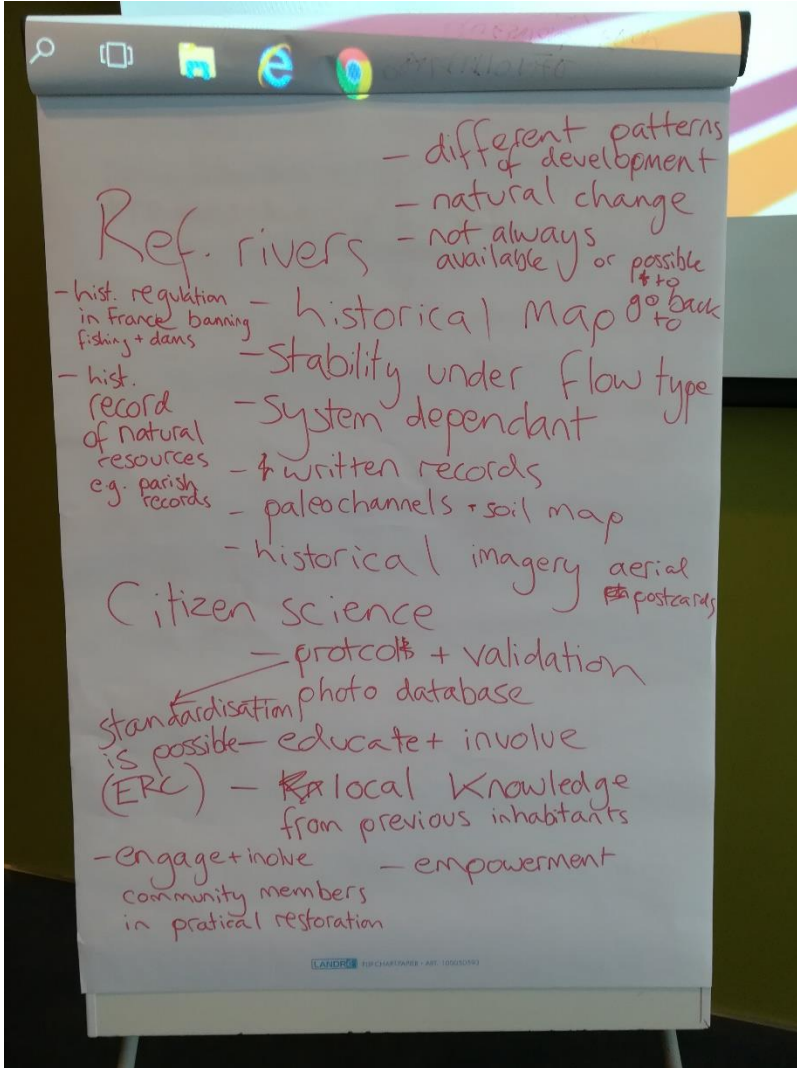
14:00 End of the workshop

This document has been filled in truthfully and to the best of my abilities:

Date: 17/10/2018

Name: Josh Jones

Signature: 



Fragmentation of Europe's rivers: a pan-European atlas of minor and major river barriers

Jones J., Belletti B., Bizzi S., Tummers J., Segura C., Olivio R., Börger L., van de Bund W., Garcia de Leaniz C. & the AMBER consortium
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#1 Background

- Rivers are some of the most threatened ecosystems in the world (Dudgeon *et al.*, 2006) and a major focus of restoration programmes in Europe (Boize *et al.*, 2003) and elsewhere (Bernhardt *et al.*, 2006).
- Good ecological status can only be reached if fragmentation of river habitats caused by many thousands of barriers is reduced (EJA 2010, 2013).
- Distribution of coarsum to very large sized dams known globally (WCID, 2002; Lehner *et al.*, 2011; ICLEDS).
- Distribution of small barriers is unknown in Europe (Belletti *et al.*, 2018).

#2 Methods

- Available national datasets condensed to seven barrier types
- National datasets filtered to barriers 500 m from river network
- Compared to 1098 km of river surveyed in nine countries

#3 Results



Fig. 1. Seven barrier types with a coarse and regional scale, their density in Europe.



Fig. 2. Barrier types in national datasets.

- >360,000 barriers identified in 48 national and regional barrier databases
- Data largely fragmentary and incomplete (Fig. 1) and differs in quality and coverage amongst countries (Fig. 2).
- Barrier density observed in the field higher than barrier density calculated from national datasets (Wilcoxon $p < 0.005$).
- >90% barrier recorded in national and regional datasets are dams and weirs
- 88% barriers recorded in field <2m high, predominantly bed stabilizing structures (rump and bed-sills and weirs).

#4 Conclusion

- Large barriers are most widespread in national datasets.
- Existing inventories underestimate barrier density by up to four times.
- Road map required to harmonize data collection of river barriers in Europe to aid river restoration efforts at regional and national scales in Europe.

References: Bernhardt R, Borner A, Brandt S, Dudgeon J, Fausch KD, Leber P, Lehner B, Luchessa M, Naiman D, Olden D, Petts P, Prentice I, Rinaldi M, Sanderson S, Schwaenzer A, Stoll P, Thaler G, Turner I, Valocchi L, Ward R, Whitehead P, Winemiller K, Wolanski E, Zedler J (2015) Global river fragmentation and the loss of connectivity. *PLoS ONE* 10: e0141865. doi:10.1371/journal.pone.0141865