Dam removal and dam management in Europe

Policy and cases examples

barrier database AMBER and

background of Dam Removal Europe

Pao Fernández Garrido

World Fish Migration Foundation

www.worldfishmigrationfoundation.com
Dams are among the most widespread alterations on aquatic ecosystems, 60% of the world's major rivers being impounded for human use (Nilsson et al. 2005).

Globally, Europe is the continent with the smallest number of completely unfragmented Large River Systems - just three rivers in northwestern Russia (Nilsson et al. 2005).

Author: Katarzyna Suska, SSiFi
Adaptive Management of Barriers in European Rivers

A COLLABORATIVE PROJECT FOR GUIDANCE ON BARRIER LOCATION, REMOVAL AND MITIGATION IN EUROPE

www.amber.international
The AMBER project

PERIOD  1 June 2016 - 31 May 2020

BUDGET  6,238,103,75€

8 Universities  Swansea (UK), Durham (UK), Highlands & Islands (UK), Southampton (UK), Cork (Ireland), Oviedo (Spain), Milan (Italy), DTU (Denmark).

4 Industrial partners  Hydropower – EDF (France), IBK (Germany), Innogy (Germany), Sydkraft (Sweden)

4 NGOs  WFMF (Netherlands), WWF (Switzerland), CNSS (France), AEMS (Spain)

4 Government organizations  IFI (Ireland), ERCE (Poland), SSIFI (Poland), Joint Research Centre (Italy)
AMBER Work Packages

- WP1: European Atlas of Stream Barriers
- WP2: Impacts of Barriers
- WP3: Decision and Prioritization Tools
- WP4: Demonstrative Projects
- WP5: Communication, Citizen Science
WP1: European Atlas of Stream Barriers

https://portal.amber.international
WP5: Citizen Science

Barrier Tracker

This app is only available on the App Store for iOS devices.

Barrier Tracker
Natural Appitude
Free

Screenshots

Record a New Obstacle

Check Dam

Overflow Dam

Filling Dam

Check Dam

Dam Type

Check Photo

Overflow Dam

Filling Dam

Check Dam

Dam Type

Check Photo

Overflow Dam

Filling Dam

Check Dam

AMBER
LET IT FLOW

RECORD A NEW OBSTACLE

VIEW MY RECORDS

AMBER
EU
Follow the AMBER project

http://www.amber.international

https://www.facebook.com/AMBERtools

https://twitter.com/ambertools

River Connectivity Network
2,608 miembros
Over 95,000 man-made obstacles in French rivers, more than 70,000 are weirs and dams (French Agency of Biodiversity, AFB)

Source: http://www.eaufrance.fr/IMG/pdf/obstacles_201405_A4_EF.pdf
France

Who manages rivers?

State (National government)

- French Agency of Biodiversity (AFB, ex Onema)
  - Monitoring for WFD, knowledge (like ROE database, ...)
  - Water preservation Law, WFD application

Major water basin

- Water Agency

Minor water basin

- EPTB
  - Associations of municipalities, in a same minor basin, with water competence

Local

- Fishermen, Citizen
- Industry, farmers...
- Municipalities
- Association of municipalities

Major Basin Management Plan

6 management plans (e.g., SDA2010), written by the water agency, it is the « policy » of the water agency.

AFB

DDT

Grant (for restoration, education, depollution, ...)

Fee, Tax

Site inspection, Water police, Advice...

Policy implementation, Instructions for work requests, Checks if works are legal regarding water law...

Local river management and operational plans
State (National government)

French Agency of Biodiversity (AFB, ex Onema)

Ministry of Environment

Water preservation Law, WFD application

Major water basin

Water Agency

Major Basin Management Plan

6 managements plan (name: SDAGE), written by the water agency, it is the « policy » of the water agency

Minor water basin

Grant (for restoration, education, depollution,...)

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Association of municipalities, in a same minor basin, with water competence

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DDT

Site inspection, Water police, Advice...

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Local

Fisherman, Citizen

Industry, farmers,....

Municipalities

Municipalities

Municipalities

Association of municipalities

Local river management and operational plans

Author: Corinne Ronot (European Rivers Network)

www.ern.org/en/
France

Fully removed obstacles (naturally/artificially): 2,425
Partially removed obstacles: 5,728

Source: L’Atlas-Catalogue du Sandre
Sweden

Over 10,000 man-made obstacles.

Different managers of obstacles inventories:

- Swedish Meteorological and Hydrological Institute (SMHI)
- The biotope Inventory Database (The Swedish County Administrative Board)
- The restoration measures in waters (Åtgärder I vatten) - (The Swedish County Administrative Board)
Ownership: Rivers are private
Drivers: Environmental Restoration
Legislation: Swedish Environmental Code and WFD
Management: River owner (however, any activity in the river that might have impact on private or common interest must receive permission from the Environmental Court*)
Authorization: The Swedish County Administrative Board (*)
Applications forms, court process and environmental assessment: all of them have a cost
Who pays for dam removal? Usually the owner
Funding: There are some grants that can come from government, municipalities, NGO’s, EU
Proposition of a grant funded by hydropower companies
Cost: ?
Sweden

Over 1,600 removed, mostly small barriers
(Source: Länsstyrelsen i Jönköpings lä, County Administrative Board Jönköping)
Finland

- **Ownership:** Rivers are private
- **Drivers:** Fishery interest to recover migratory fish stocks, recreation and tourism
- **Legislation:** There isn’t any national law which stimulates dam removal, but there is a national fish passage strategy (2012) to improve migratory fish stocks
- **Management:**
  - ELY-centers (Centers of Economic Development, Transport and the Environment)
  - Hydropower companies: manage the river reach they impact according to their license
- **Authorization:**
  - ELY-centers
  - AVI (State Regional Administrative Agency)
  - Consultation is free of cost
  - The permit/s have cost
- **Who pays for dam removal?** Until now ELY-Centers (with State money). Now also stakeholders
- **Funding:** No grants
- **Costs:** From 10,000 € ...
Finland

At least 450 obstacles removed
(Source: the Finnish Environment Institute, SYKE)
Finland

Upcoming important dam removal in the city center of Vantaa (planned for 2019) will cost 800,000€

England & Wales: Over 22,000 man-made obstacles

Source: Environment Agency
<table>
<thead>
<tr>
<th></th>
<th>England</th>
<th>Wales</th>
<th>Scotland</th>
<th>Northern Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ownership:</strong></td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
<td>Private</td>
</tr>
<tr>
<td><strong>Drivers:</strong></td>
<td>Fish passage</td>
<td>Fish passage</td>
<td>Fishing interest</td>
<td>Fish passage</td>
</tr>
<tr>
<td></td>
<td>WFD</td>
<td>WFD</td>
<td>WFD</td>
<td>WFD</td>
</tr>
<tr>
<td><strong>Management:</strong></td>
<td>Environment Agency (EA)</td>
<td>Natural Resources Wales</td>
<td>Scotland Environmental Protection Agency (SEPA)</td>
<td>Northern Ireland Environmental Agency (NIEA)</td>
</tr>
<tr>
<td><strong>Permits:</strong></td>
<td>Environment Permit</td>
<td>Flood Risk Activity Permit...</td>
<td>SEPA Permit...</td>
<td>Local Planning DAERA DfI...</td>
</tr>
<tr>
<td><strong>Who pays?</strong></td>
<td>Almost never the owner</td>
<td>Almost never the owner</td>
<td>Company, Grant</td>
<td>Angling assoc., charities...</td>
</tr>
<tr>
<td><strong>Funding:</strong></td>
<td>Environmental grants, charities funds...</td>
<td>Environmental grants, charities funds...</td>
<td>Water Environment Fund (WEF)</td>
<td>Environmental grants</td>
</tr>
<tr>
<td><strong>Costs:</strong></td>
<td>&lt; £10,000 (majority of removals)</td>
<td>-----</td>
<td>&gt; £50,000</td>
<td>-----</td>
</tr>
</tbody>
</table>
UK

England & Wales: > 129 obstacles removed
Scotland: 9 obstacles removed
Spain

More than 21,000 obstacles collected from different River Basin Authorities inventories

Ebro Basin: 2,828 barriers
(Source: Confederación Hidrográfica del Ebro)

Guadalquivir Basin: 2,236 barriers
(Source: Confederación Hidrográfica del Guadalquivir)

Duero Basin: 3,746 barriers
(Source: Confederación Hidrográfica del Duero)

Spain

More than 21,000 obstacles collected from different River Basin Authorities inventories

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Duero Basin: 3,746 barriers
(Source: Confederación Hidrográfica del Duero)
Spain

- **Ownership**: Rivers are public owned
- **Drivers**: River connectivity for WFD
- **Legislation**: WFD & National law (Public Water Decree and the Public Property Lay 2003)
- **Management**: River Basin Authorities (National government or Regional Government)
- **Authorization**:
  - River managers (River Basin Authority)
  - Protected Area manager (Autonomous Region)
  - Flora and Fauna managers (Autonomous Region)
  - Construction Permit (City Hall)

Who pays for dam removal? The Promoting Body or interested agency.

Even though Law obliges water permit holders to pay for the removal after the permit is over.

- **Funding**: No specific grants for river restoration
- **Cost**: 3,000 € - 1,5 millions €
Spain

> 200 obstacles removed
Spain

Source: Confederación Hidrográfica del Tajo

Source: iAgua

Source: Confederación Hidrográfica del Duero

Source: Confederación Hidrográfica del Duero
Dam Removal Europe: Objectives

1. Increase awareness
- Value of free flowing rivers
- Dam Removal as best option for river restoration

2. Solid Network
- Share knowledge & experience
- Inspire future dam removal projects
- Improve cooperation Europe – USA

3. Put DRE on the Brussels agenda
- Dam Removal as WFD policy option
- European funding for dam removal projects

- General public
- Professionals: policy makers, water managers, scientists, technicians at NGO’s and knowledge institutes...
- Decision makers and Politicians
Dam Removal Europe: How?

Atlas of dams removed and to be removed
International and National Seminars
Website
Dam Removal Europe Guide
Dam Removal Europe Film
Finance for DRE and for 10 dam removals
Finland: 450
Sweden: 1600
2400 in France
200 Spain

Atlas

2400 in France
200 Spain

AMBER
International and National Seminars

- Hudiksvall, Sweden. September 2018
Many dams in European Rivers are old, abandoned and out of use. Together we can locate and remove them. Let's open the rivers for wildlife and people.

www.damremoval.eu
Website: News & newsletters

News

You kill the dam, you are killing a part of me

You kill the dam, you are killing a part of me. This study done by Fox et al at Dartmouth College (New Hampshire, USA) "reveal how complex cultural dynamics competing...

Sustainability – Open Access Journal

Sustainability - Open Access Journal Special Issue in open-access journal Sustainability (ISSN 2071-1050, IF 1.789) entitled "Integrating Ecodynamics in River Restoration: Advances in...

MAVA foundation's grants

MAVA foundation's grants The MAVA foundations supports conservation that benefits people and nature through four formal programs in the Mediterranean, Coastal West Africa, and Switzerland. Thanks to...
Website: Case studies
Website: References

Crowdfunding Campaign

List of inspiring case examples for the rest of Europe

WWF and DRE: Crowdfunding campaign (50,000 euro per dam)

If you have a dam removal project in mind please don't hesitate to contact us for questions and clarifications.

Projects that are almost ready to start, but still need some co-funding have a bigger chance of being excepted.
Are you joining?

Please contact:
Pao Fernández Garrido
pao@fishmigration.org
Labai ačiū!
¡Muchas gracias!
Thank you very much!

pao@fishmigration.org
www.worldfishmigrationfoundation.com