

Dam removal and dam management in Europe

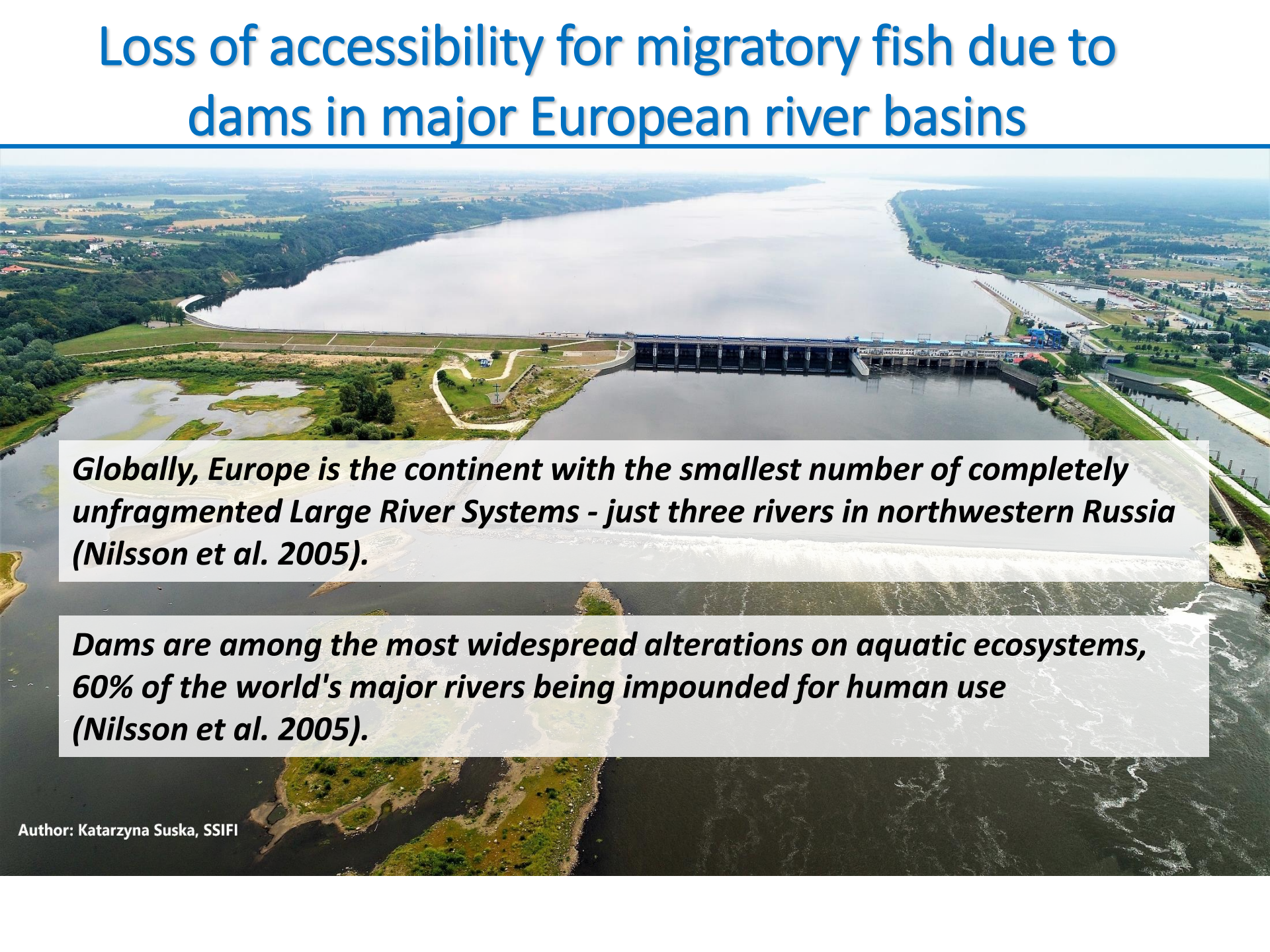
*Policy and cases examples
barrier database AMBER and
background of Dam Removal Europe*

Pao Fernández Garrido

World Fish Migration Foundation

www.worldfishmigrationfoundation.com

Loss of accessibility for migratory fish due to dams in major European river basins



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).

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).



AMBER

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€



Funded by the Horizon 2020
Framework Programme of the
European Union

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)

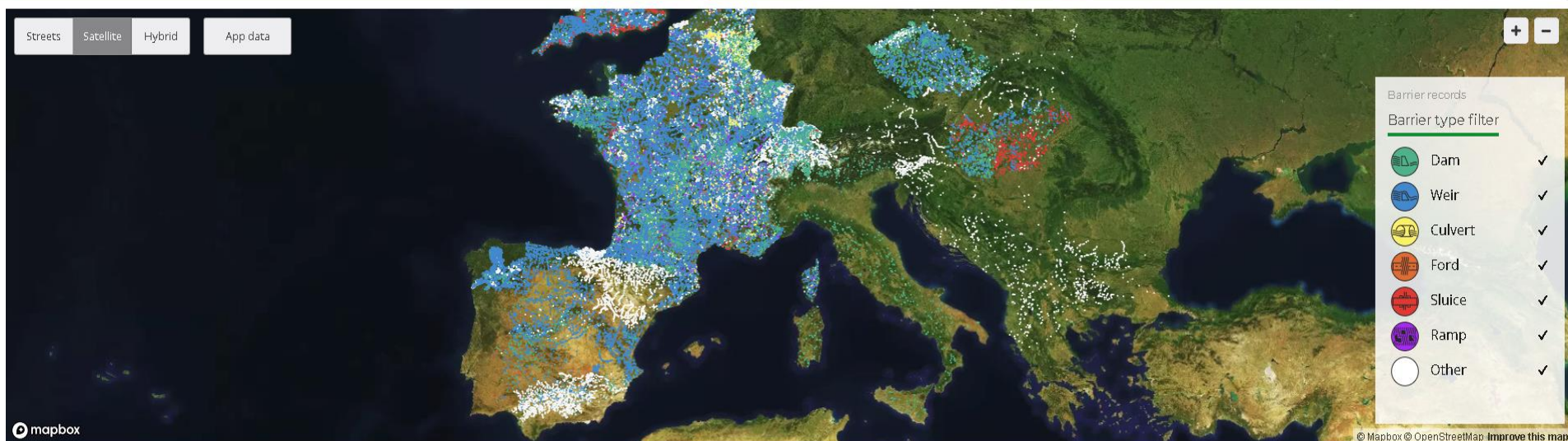
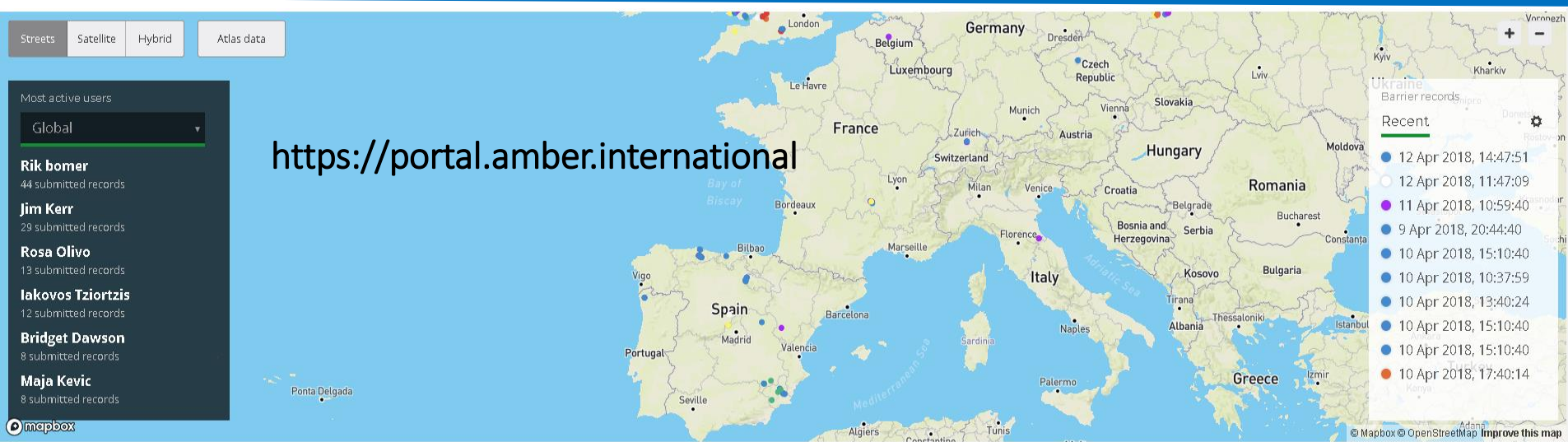
4 Government organizations IFI (Ireland), ERCE (Poland), SSIFI (Poland), Joint Research Centre (Italy)



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

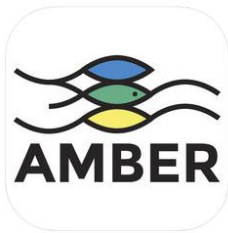


WP5: Citizen Science



App Store Preview

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



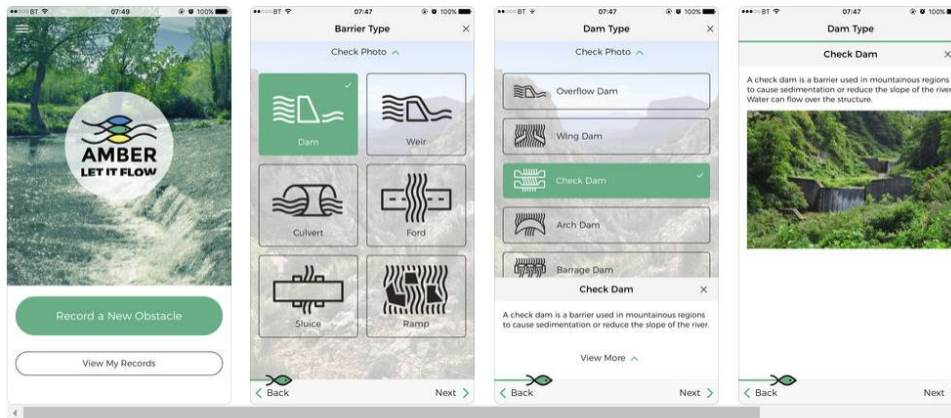
Barrier Tracker 4+

Natural Aptitude

Free

Barrier Tracker

Screenshots iPhone iPad



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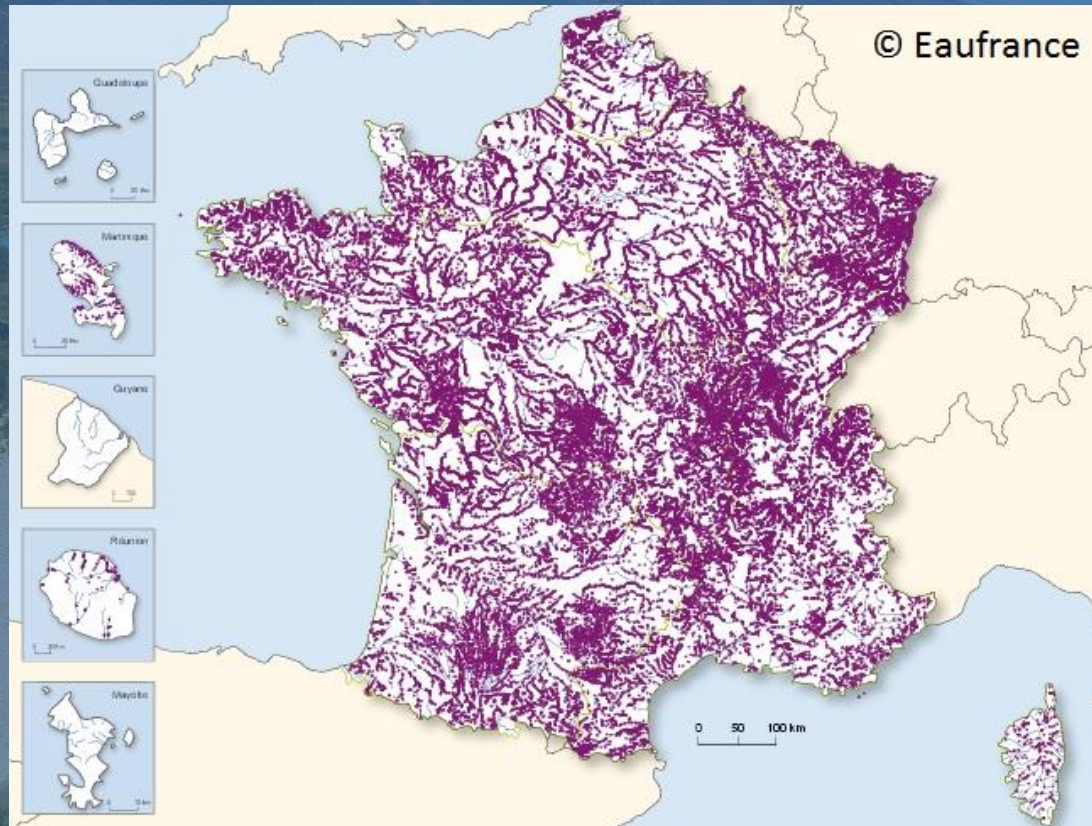


River Connectivity Network

2.608 miembros

France

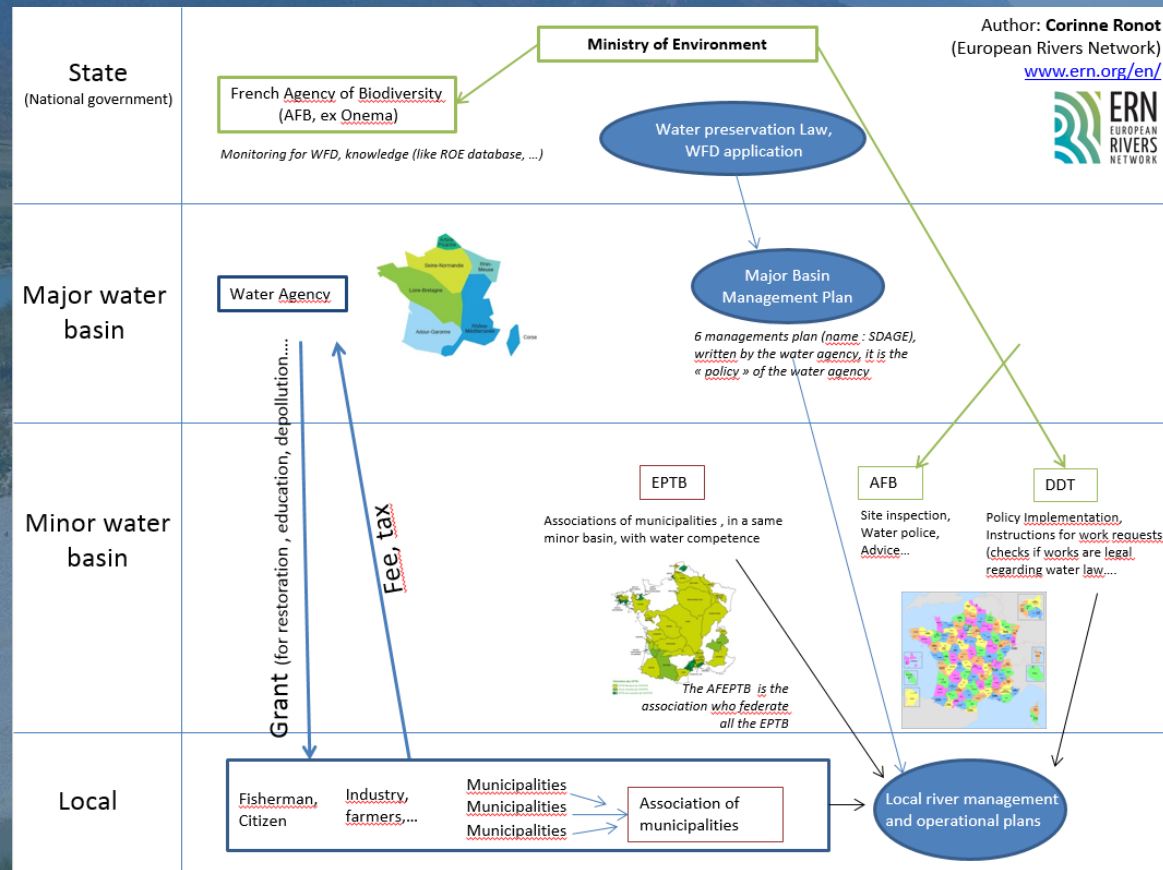
Over 95,000 man-made obstacles in French rivers, more than 70,000 are weirs and dams (French Agency of Biodiversity, AFB)

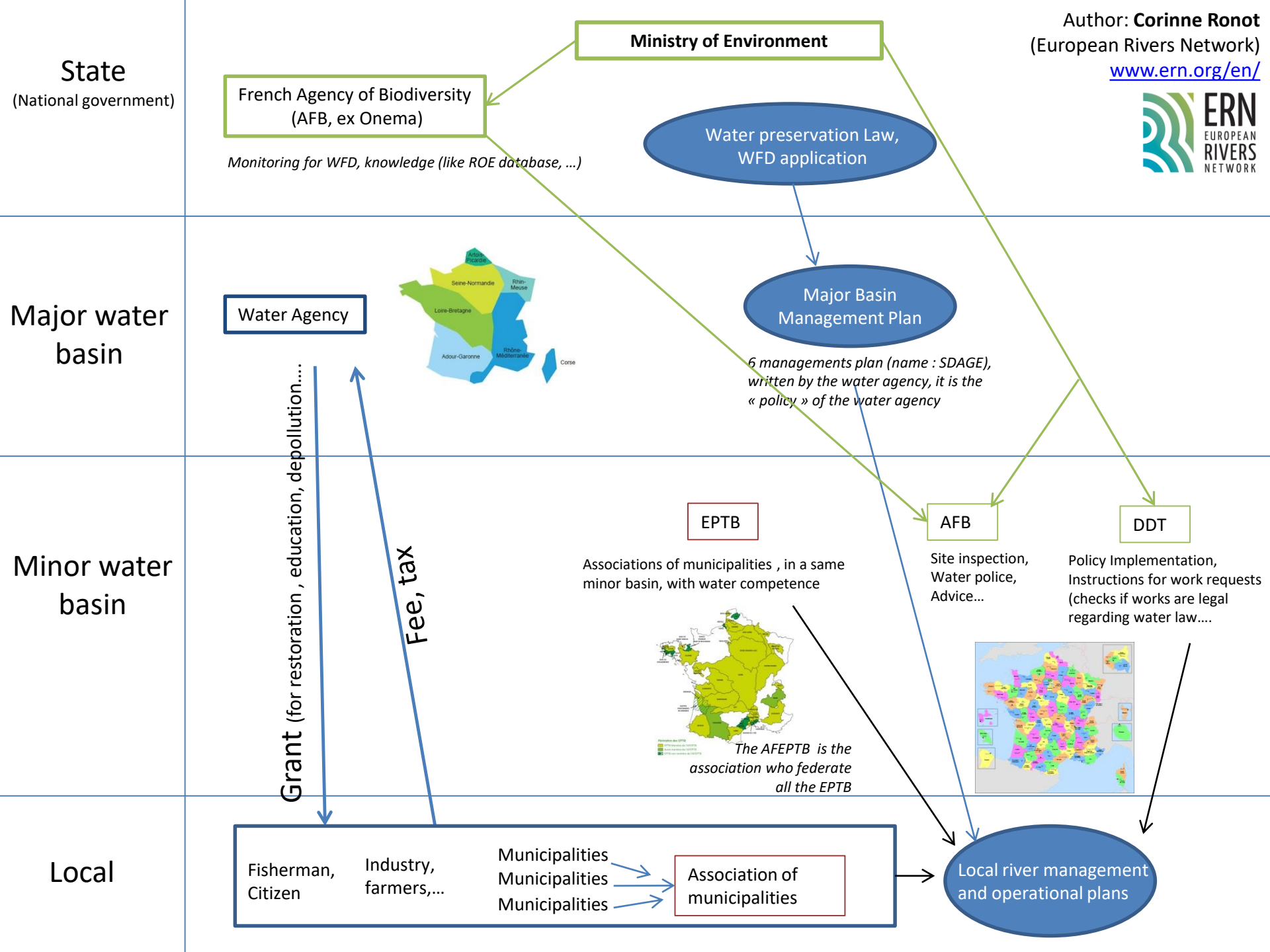


Source: http://www.eaufrance.fr/IMG/pdf/obstacles_201405_A4_EF.pdf

France

Who manages rivers?



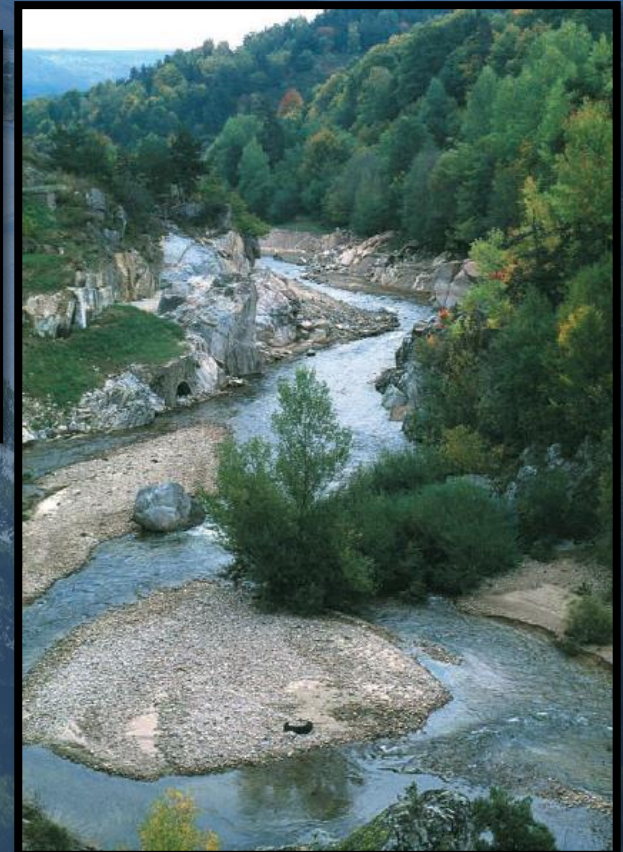
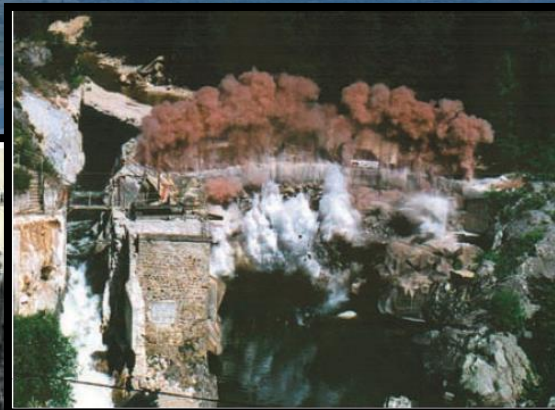


France

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

Partially removed obstacles: 5,728

Source: L'Atlas-Catalogue du Sandre

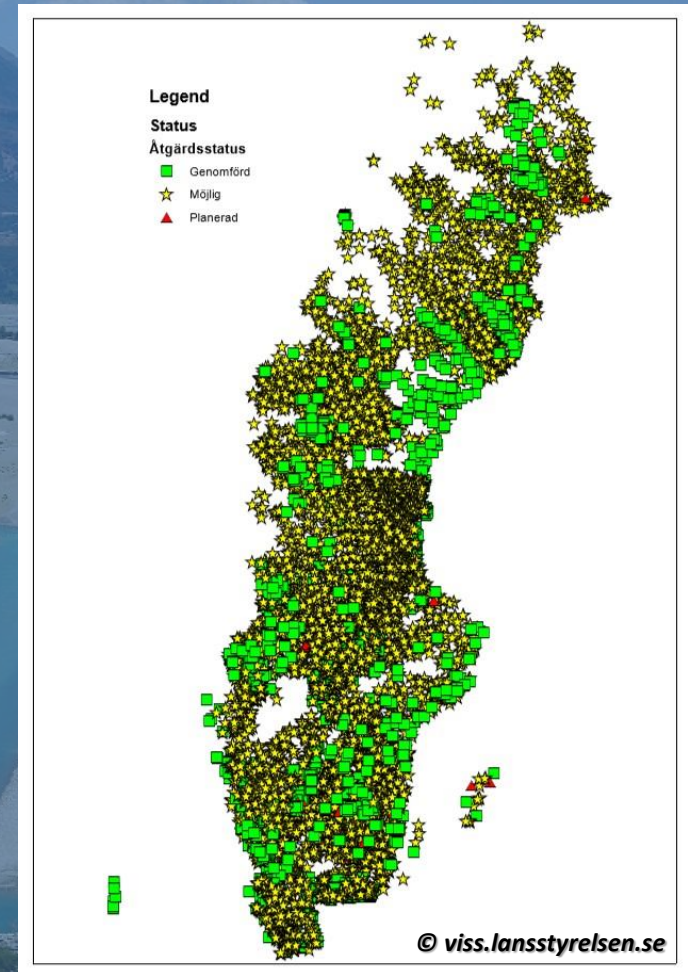


Sweden

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)*



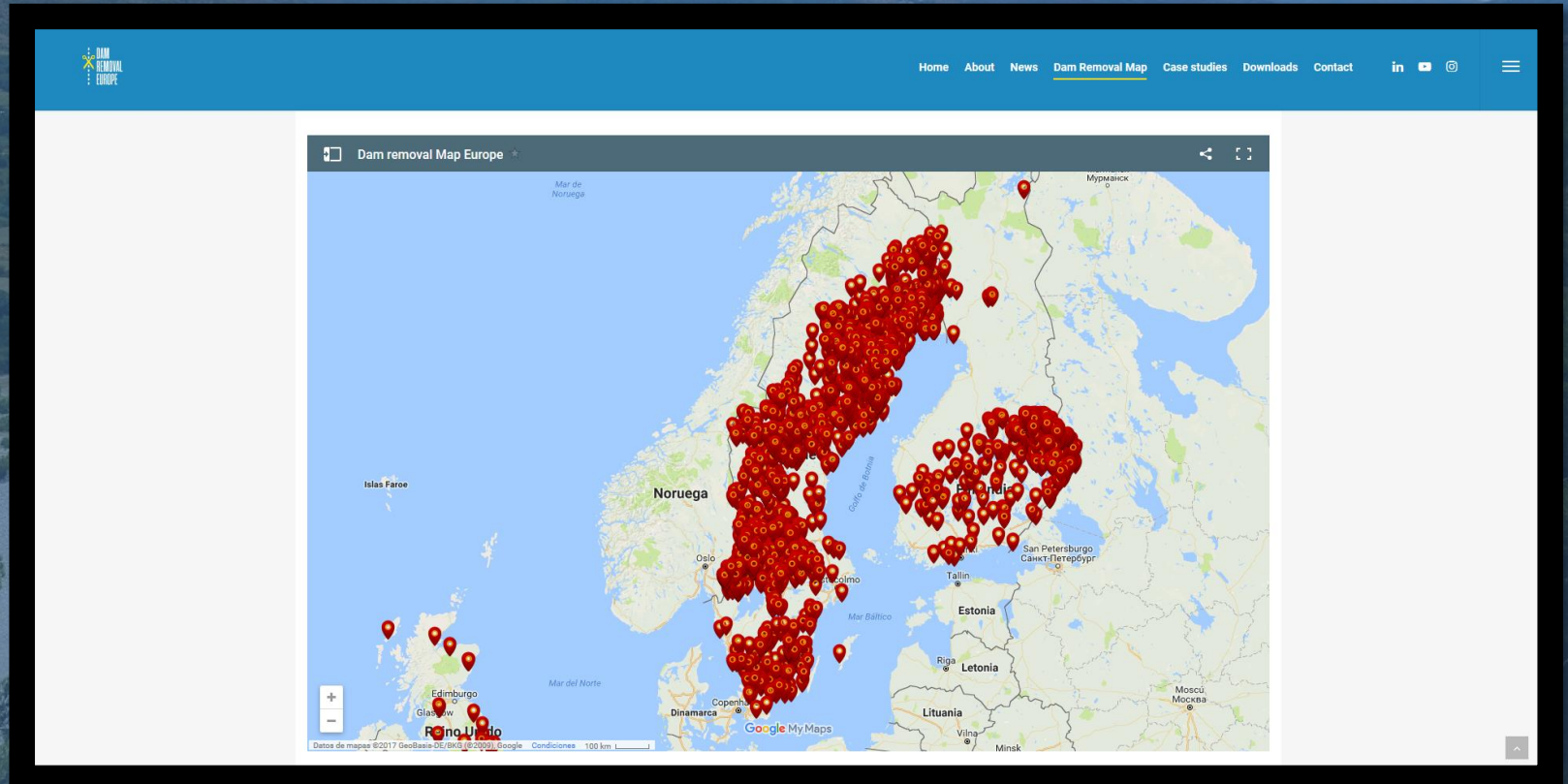
Sweden

- 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)



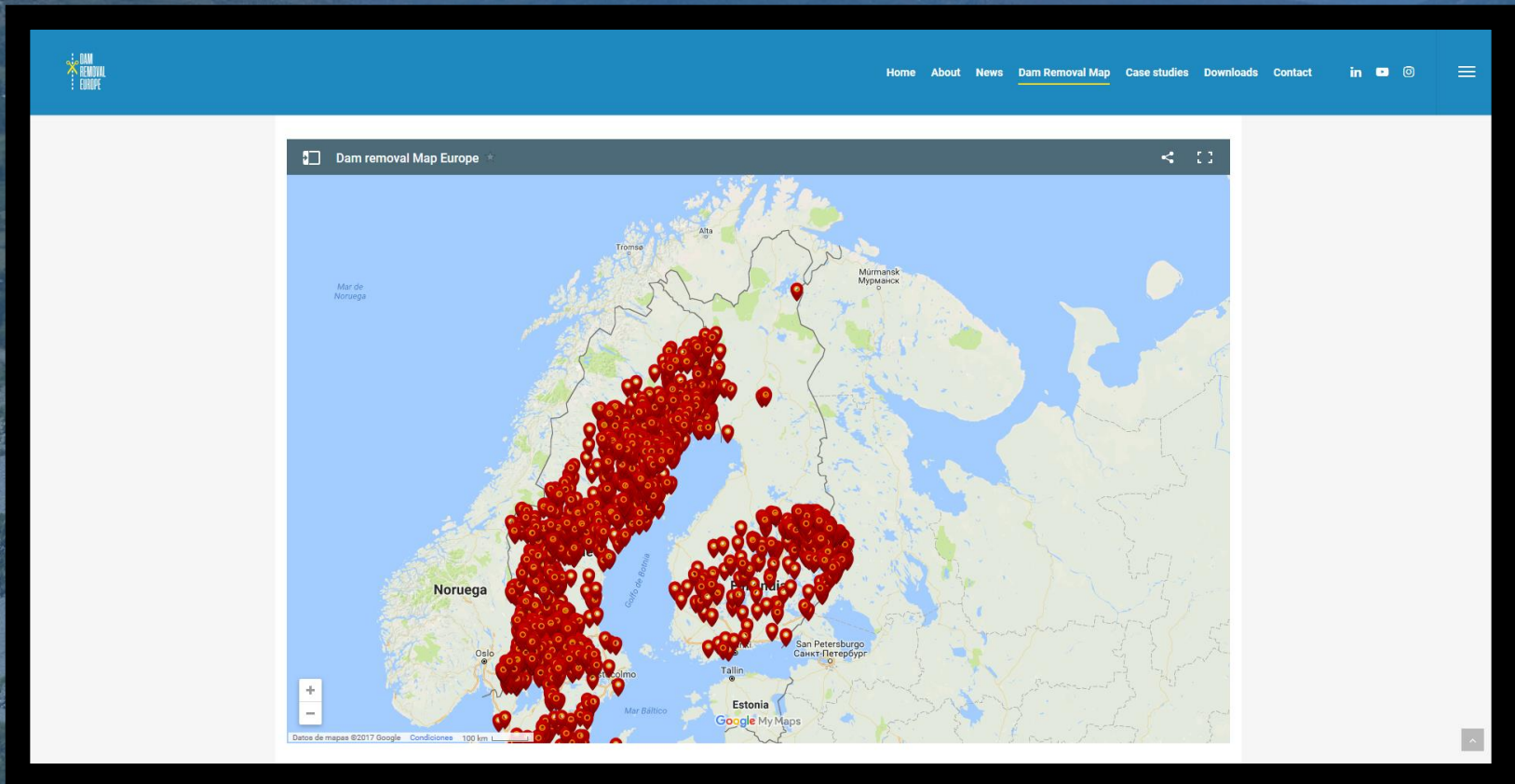
Finland

- 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:

<ul style="list-style-type: none"> ○ ELY-centers ○ AVI (State Regional Administrative Agency) 	}	<p>Consultation is free of cost</p> <p>The permit/s have cost</p>
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- 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€



Pictures source: Jukka Jormola (SYKE) presentation for ECRR, (Paris, 2017)

UK

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



Source: Enviroment Agency

UK

England

Wales

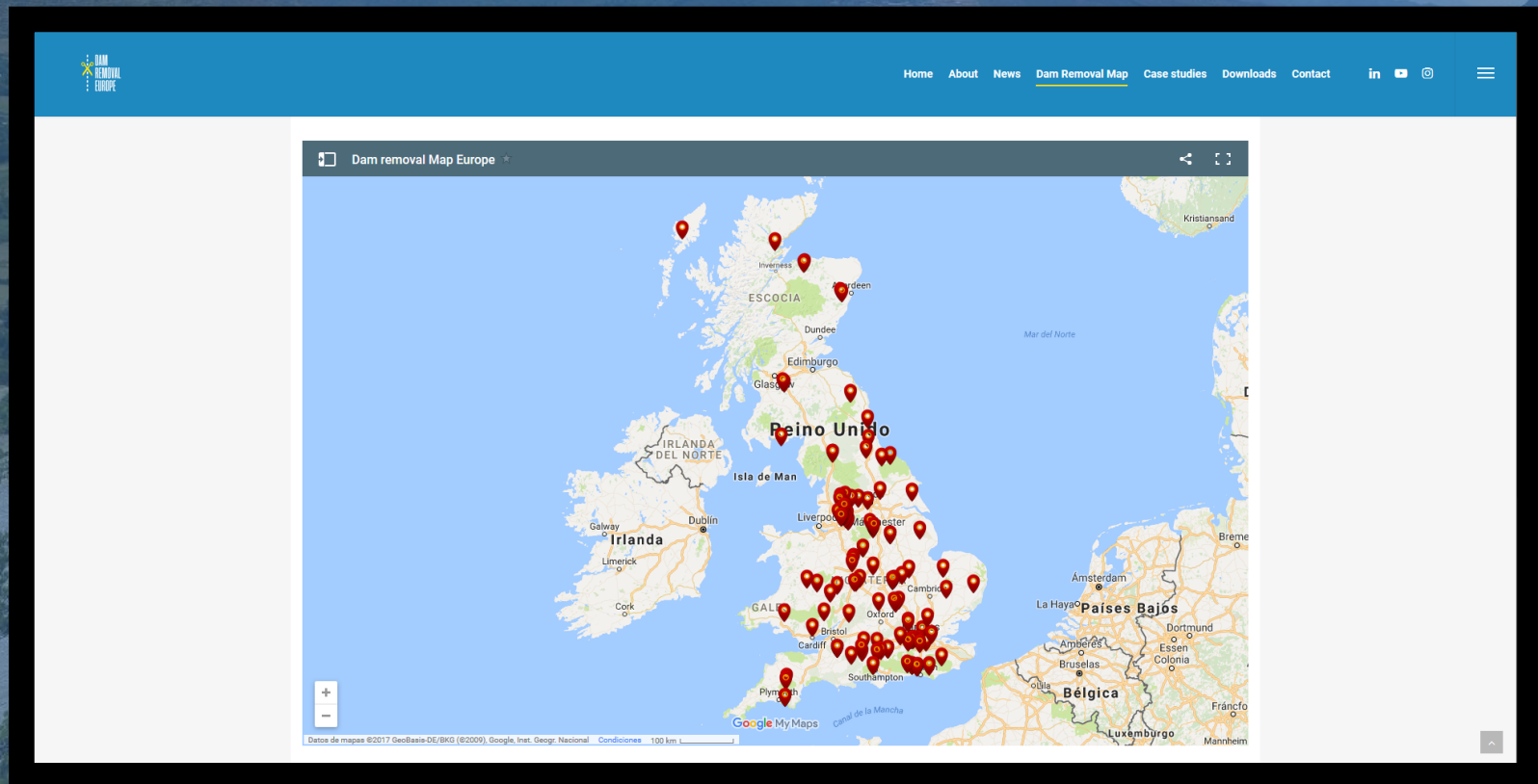
Scotland

Northern Ireland

■ <u>Ownership:</u>	Private	Private	Private	Private
■ <u>Drivers:</u>	Fish passage WFD	Fish passage WFD	Fishing interest	Fish passage WFD
■ <u>Management:</u>	Environment Agency (EA)	Natural Resources Wales	Scotland Environment Protection Agency (SEPA)	Northern Ireland Environmental Agency (NIEA)
■ <u>Permits:</u>	Environment Permit	Flood Risk Activity Permit...	SEPA Permit...	Local Planning DAERA Dfl...
■ <u>Who pays?</u>	Almost never the owner	Almost never the owner	Company, Grant	Angling assoc., charities...
■ <u>Funding:</u>	Environmental grants, charities funds....	Environmental grants, charities funds....	Water Environment Fund (WEF)	Environmental grants
■ <u>Costs:</u>	< £10,000 (majority of removals)	-----	> £50,000	-----

UK

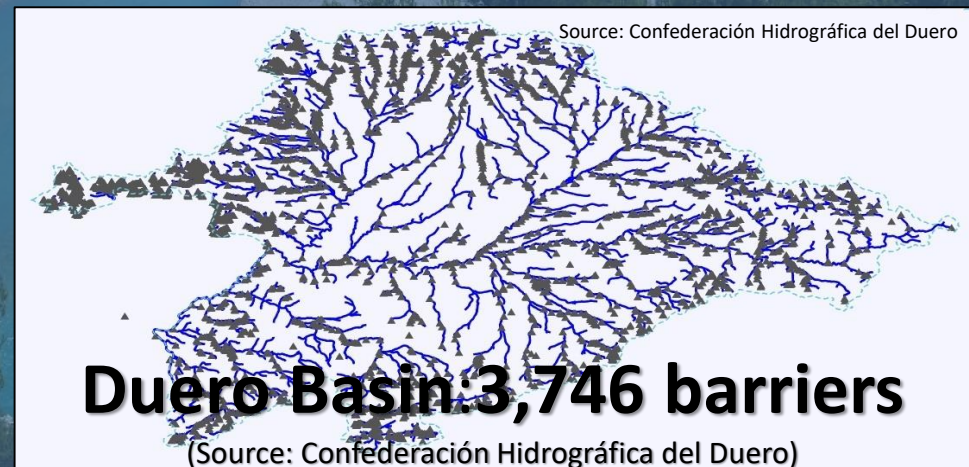
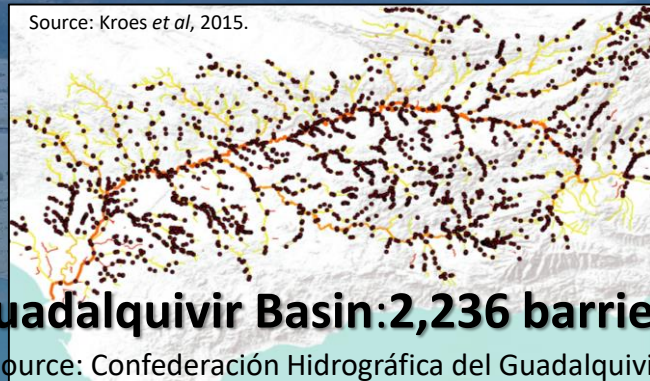
England & Wales: > 129 obstacles removed
Scotland: 9 obstacles removed



Spain



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



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)
- } Free of cost
- 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





Presa de Riaño, León (Spain). 1987.



WORLD FISH MIGRATION
FOUNDATION



ERN
EUROPEAN
RIVERS
NETWORK



The
Rivers
Trust

Rewilding
Europe

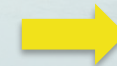


Dam Removal Europe: Objectives



1. Increase awareness

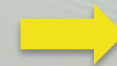
- Value of free flowing rivers
- Dam Removal as best option for river restoration



General public

2. Solid Network

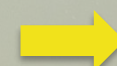
- Share knowledge & experience
- Inspire future dam removal projects
- Improve cooperation Europe – USA



Professionals: policy makers, water managers, scientists, technicians at NGO's and knowledge institutes...

3. Put DRE on the Brussels agenda

- Dam Removal as WFD policy option
- European funding for dam removal projects



Decision makers and Politicians



Dam Removal Europe: How?

Atlas of dams removed and to be removed

International and National Seminars

Website

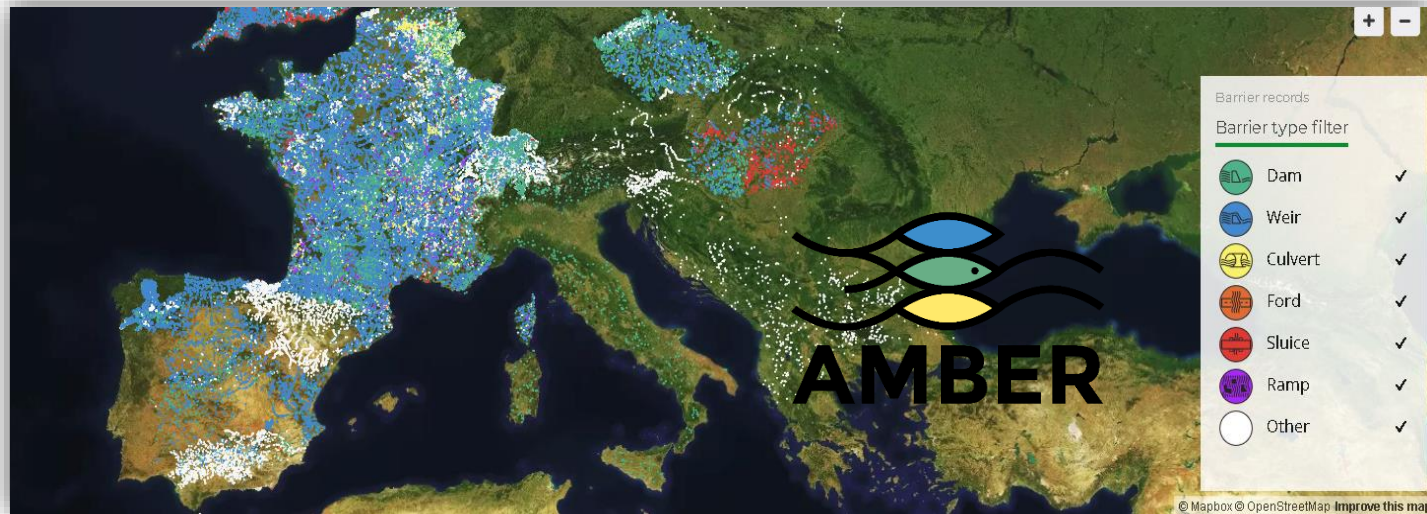
Dam Removal Europe Guide

Dam Removal Europe Film

Finance for DRE and for 10 dam removals



Atlas



International and National Seminars

- Leon, Spain. November 2016.
- Birmingham, UK. September 2017.
- Madrid, Spain. April 2018.
- Vilnius, Lithuania. July 2018.
- Hudiksvall, Sweden. September 2018



Website



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DAM REMOVAL EUROPE

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.

[Read more](#)

www.damremoval.eu



Website: News & newsletters

News



May 9, 2018

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...



Scientific papers

May 9, 2018

Sustainability – Open Access Journal

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



Funding

For grant-seekers

May 9, 2018

MAVA foundation's grants

MAVA foundation's grants The MAVA foundationsupports conservation that benefits people and nature through four formal programs in the Mediterranean, Coastal West Africa, and Switzerland. Thanks to

NEWSLETTERS



Newsletter #2

[Read newsletter](#)

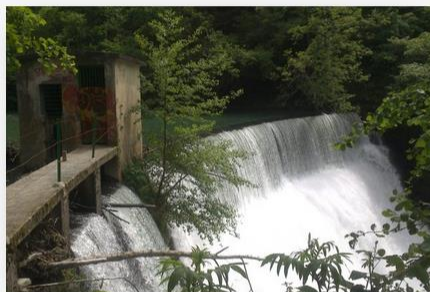


Newsletter #1

[Read the newsletter](#)



Website: Case studies



Website: References

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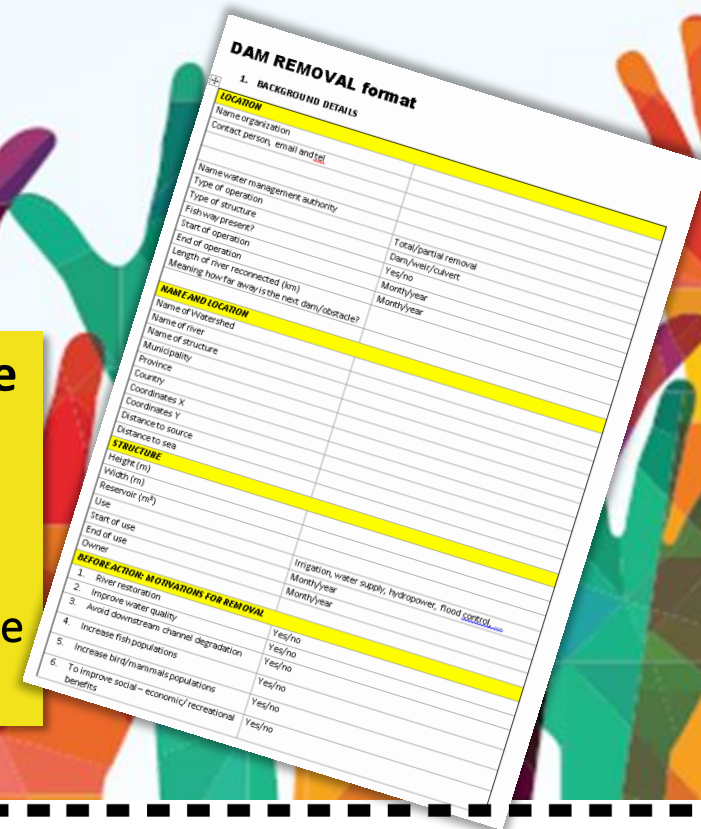
Crowdfunding Campaign

List of inspiring case examples for the rest of Europe

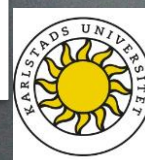
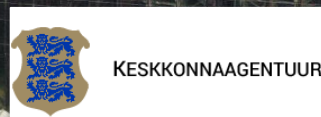
WWF and DRE: Crowdfunding campaign (50.000 euro per dam)

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.

A tilted image of a "DAM REMOVAL format" form. The form is divided into several sections: 1. BACKGROUND DETAILS (LOCATION, NAME AND LOCATION, STRUCTURE), 2. BEFORE ACTION: MOTIVATIONS FOR REMOVAL, and 3. AFTER ACTION: BENEFITS. The form includes fields for organization details, dam characteristics, and a checklist of motivations for removal. A yellow scissors icon is visible in the bottom left corner of the form.

Are you joining?



Please contact:
Pao Fernández Garrido
pao@fishmigration.org





Labai ačiū!
¡Muchas gracias!
Thank you very much!

pao@fishmigrtion.org

www.worldfishmigrationfoundation.com

