AMBER

Citizen Science Programme

WORLD FISH MIGRATION FOUNDATION

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& AMBER Consortium

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Connecting fish, rivers and people

Adaptive Management of Barriers in European Rivers
amber.international

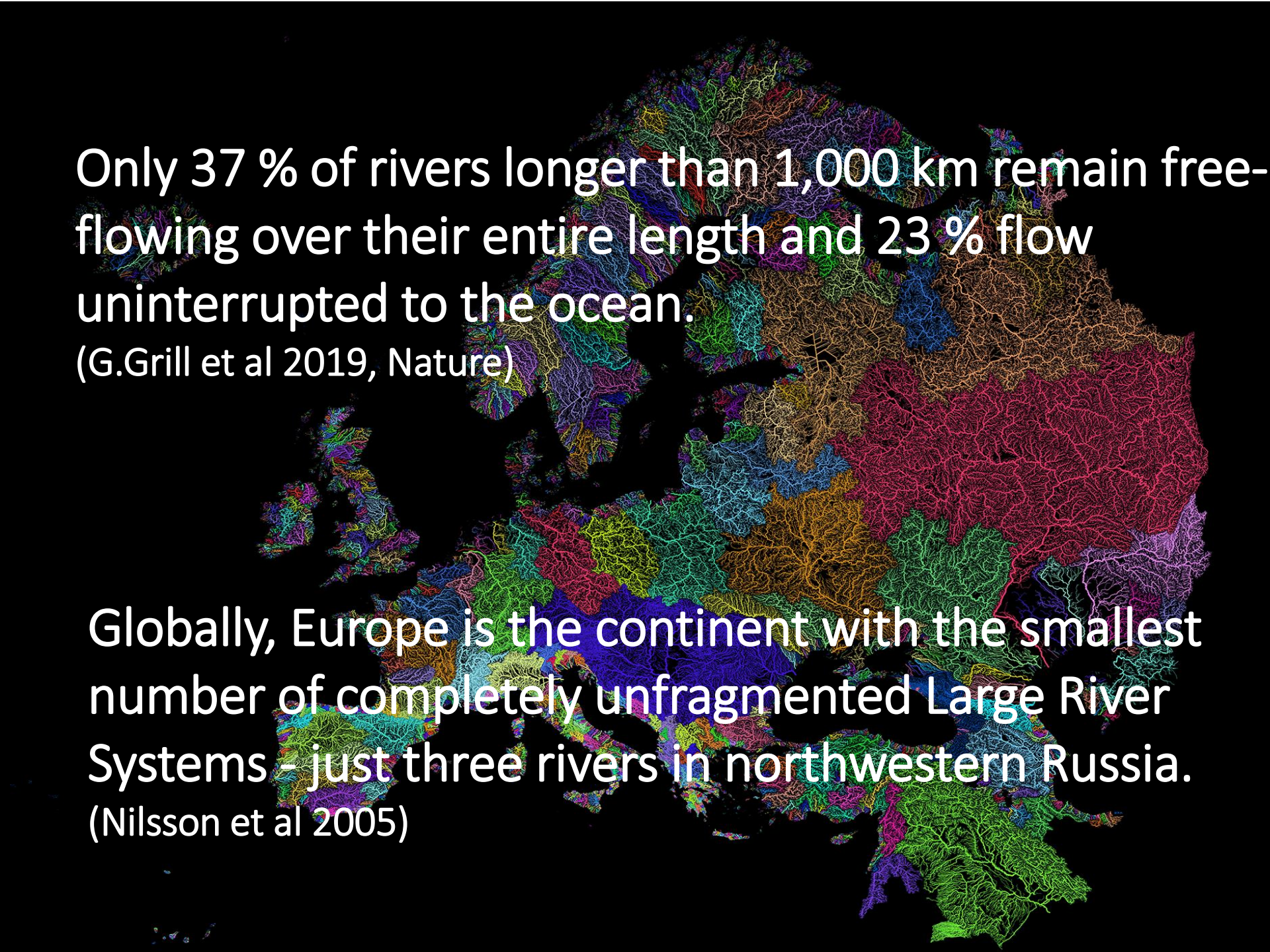
World Fish Migration Day
www.worldfishmigrationday.com

JOIN US NEXT 16th MAY 2020!!

Dam Removal Europe
www.damremoval.eu

From Sea to Source 2.0
www.fromseatosource.com

LOVE FLOWS Documentary
www.youtube.com/watch?v=7tBtz2uv8fI



Only 37 % of rivers longer than 1,000 km remain free-flowing over their entire length and 23 % flow uninterrupted to the ocean.
(G.Grill et al 2019, Nature)

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)

AMBER

Funded by the Horizon 2020 Framework Programme of the European Union

Adaptive Management of Barriers in European Rivers

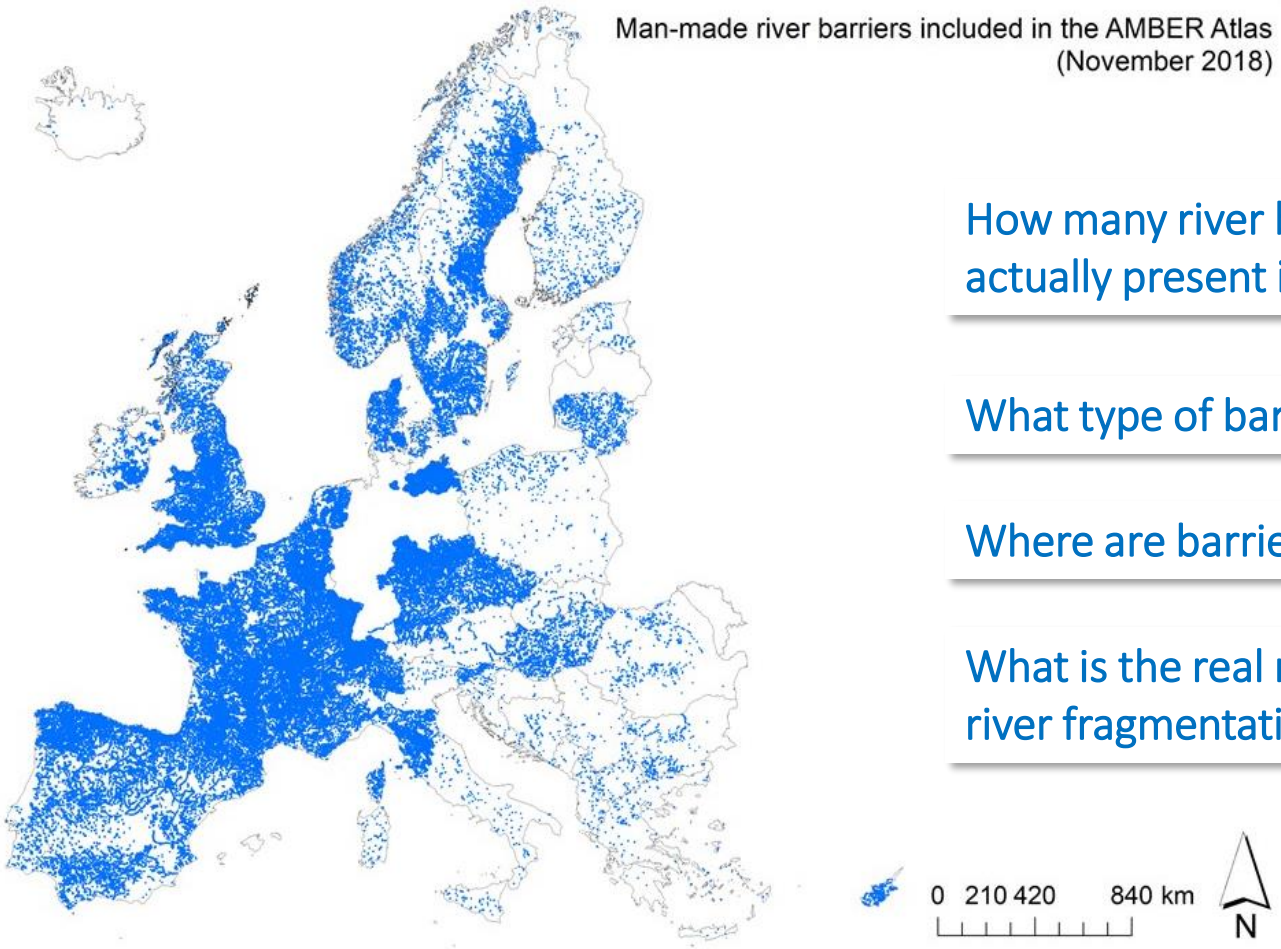
- ✓ More effective methods to restore river connectivity
- ✓ Solutions that maximize socio economic benefits and minimize environmental impacts.

KEY OUTCOMES:

- ➢ The **first** European Atlas of stream barriers, accessible by all citizens via an online web portal.

- ➢ **European Citizen Science Program** to contribute to the barrier Atlas, using the Barrier Tracker phone app.

The real magnitude of river fragmentation is largely unknown at the European scale



How many river barriers are actually present in our rivers?

What type of barriers are they?

Where are barriers located?

What is the real magnitude of river fragmentation in Europe?

1 barrier almost every kilometer
1 Millon barriers in Europe

Preliminary results after:

- river barrier inventories collated through 33 European countries
- 1,000 km of rivers surveyed

Denmark: 3,037 barriers
Finland: 792 barriers
Iceland: 10 barriers
Norway: 3,871 barriers
Sweden: 19,327 barriers

Preliminary analysis on existing databases in Europe are likely to represent less than 3% of the total existing barriers (Belletti et al, 2018).

DATA

Need of data for the Atlas of Barriers in European Rivers

AWARENESS

Understanding and consciousness of fragmentation

DISSEMINATION

Involvement of general public by contributing to the project helps to spread the message

Barrier Tracker

Barrier Tracker 4+
Natural Apptitude
Free

GET IT ON Google Play

Download on the App Store

- **10 languages:** Dutch, English, French, German, Italian, Polish, Portuguese, Spanish, Slovenian and Ukranian.
- **Your data is downloadable**… but remember to register!
- View all **App recorded barriers** and the **Atlas data**

- **Beginner users**
  - Nº submitted records **<**5
  - Tier 1

- **Explorer users**
  - Nº submitted records >5>20
  - Tier 2

- **Expert users**
  - Nº submitted records **>**20
  - Tier 2

River name?

Aditional barrier characteristics

Flow conditions?

River width

Fish pass present?

AMBER, Adaptive Manag ×

https://amber.international

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Adaptive Management of Barriers in European Rivers

AMBER will apply adaptive barrier management to help reconnect European rivers, the smart way.

Tracked Barrier Map

The Barrier Atlas

The real magnitude of river fragmentation at the pan-European scale is almost unknown. In many regions throughout Europe there is only a limited overview of existing barriers and complicating the situation is the fact that barriers are managed by many different organisations. This lack of information is an obstacle to well informed decisions. It is therefore important to create an inventory of barriers in European rivers, a European Barrier Atlas. Your contribution helps to supplement existing databases with new data.

Barrier Atlas

Barrier ID-Guide

There are many different types of barriers and even barriers within one type come in many different shapes and sizes. Therefore identifying the right type of barrier isn't always easy. Do you want to know more about the different barrier types you can encounter? We have compiled the most common barriers with their characteristics and photo examples into a page what we call the Barrier ID-Guide. You can use this page to learn more about barriers and to be able to identify them yourself.

View Barrier Guide

The Barrier Atlas

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Table 1. Key parameters that we propose to be compiled for the ATLAS.

Key parameters	Definition
ATLAS_ID	New ID defined within AMBER
Source_ID	ID of the source (national, regional) database
URL	Link to data source. It can be, e.g.: the web address of the owner institution, the available web address of the national/regional DB
Country	EU country or EU area, e.g. Balkans, Danube...
X_coord	Latitude
Y_coord	Longitude
River	Name of the river
Basin	Name of river basin
Height	Barrier height (m), i.e. the vertical distance between the lowest point on the crest of the barrier and the lowest point in the original streambed
Type	Dam, weir, spillway, etc.
Year	Date of building (end)

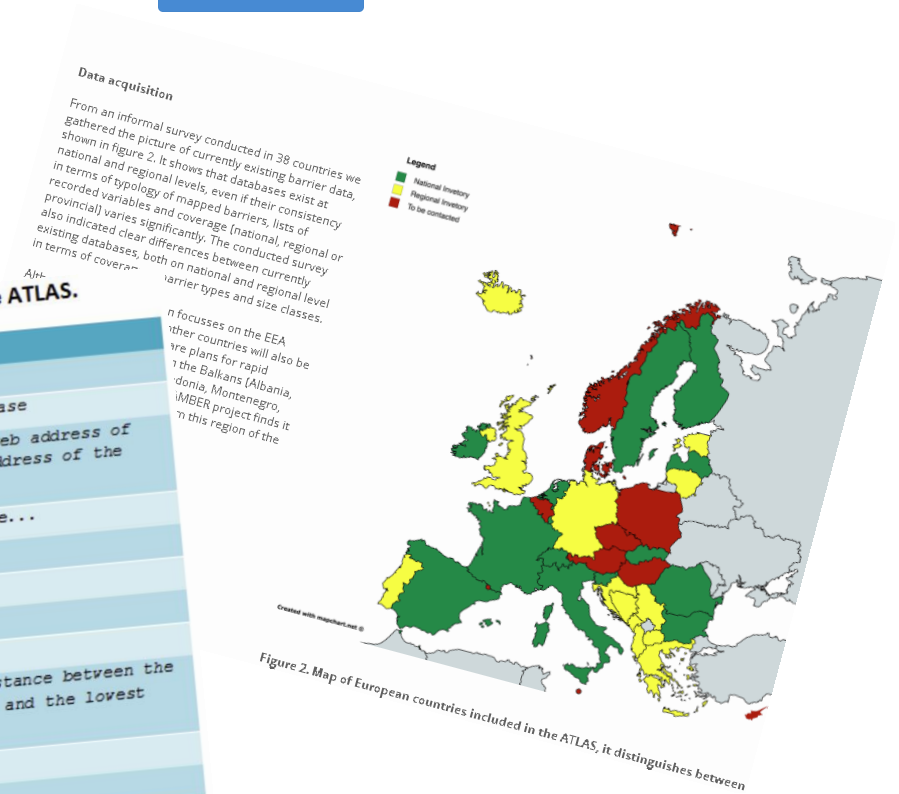

Figure 2. Map of European countries included in the ATLAS, it distinguishes between

The Barrier Atlas

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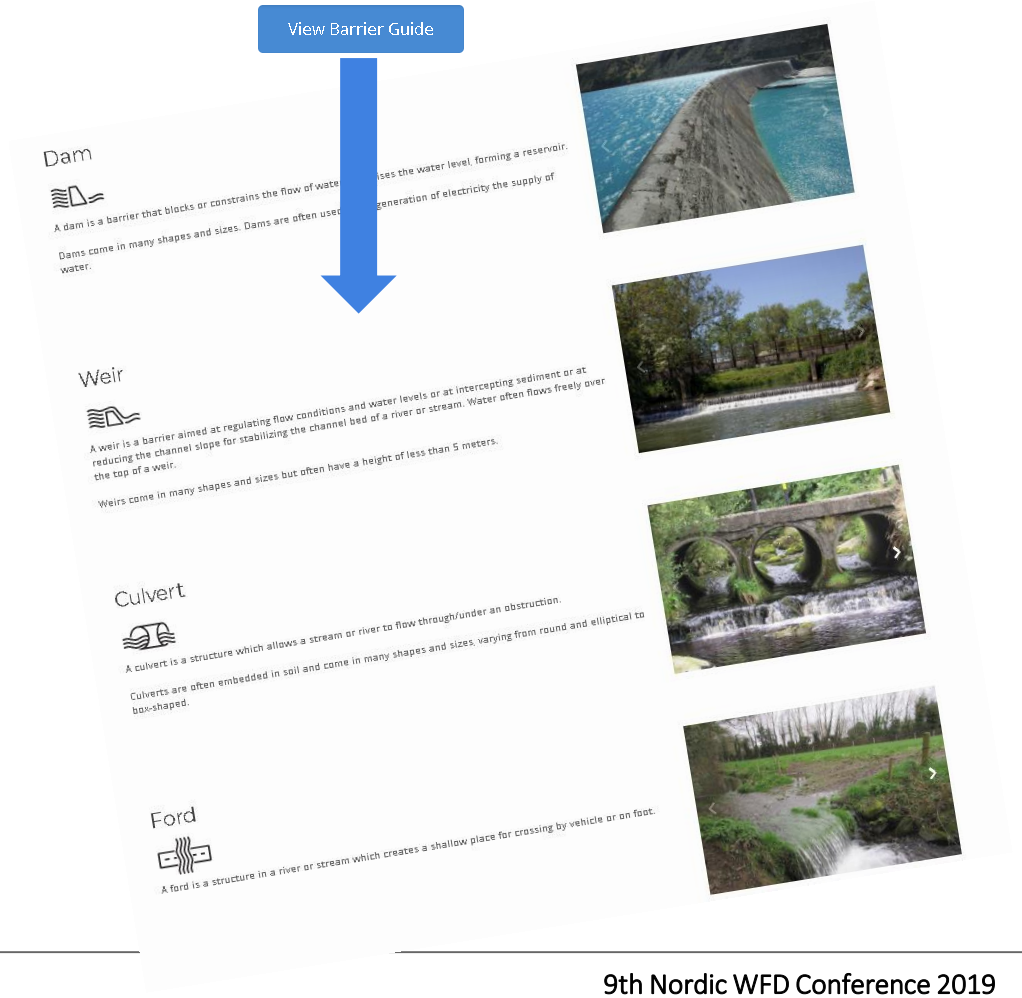


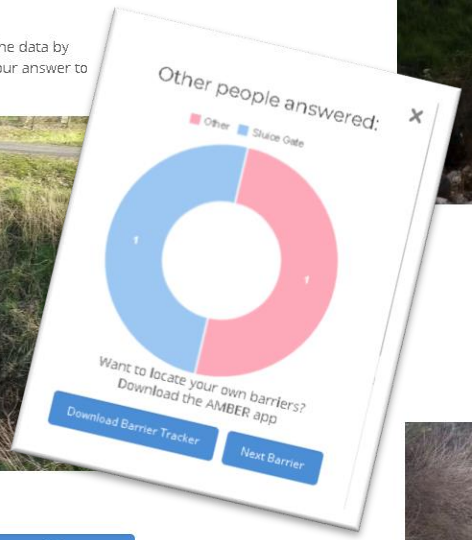
Photo Classification Tool

965 classifications submitted

Want to see what others have recorded? Help us increase the reliability of the data by answering a few questions about some recorded barriers. You can compare your answer to that of others.

What type of barrier is this?

Dam	Weir	Culvert	Ford
Sluice	Ramp	Other	Not a barrier



Is there a fish pass present?

Yes | No | Unsure

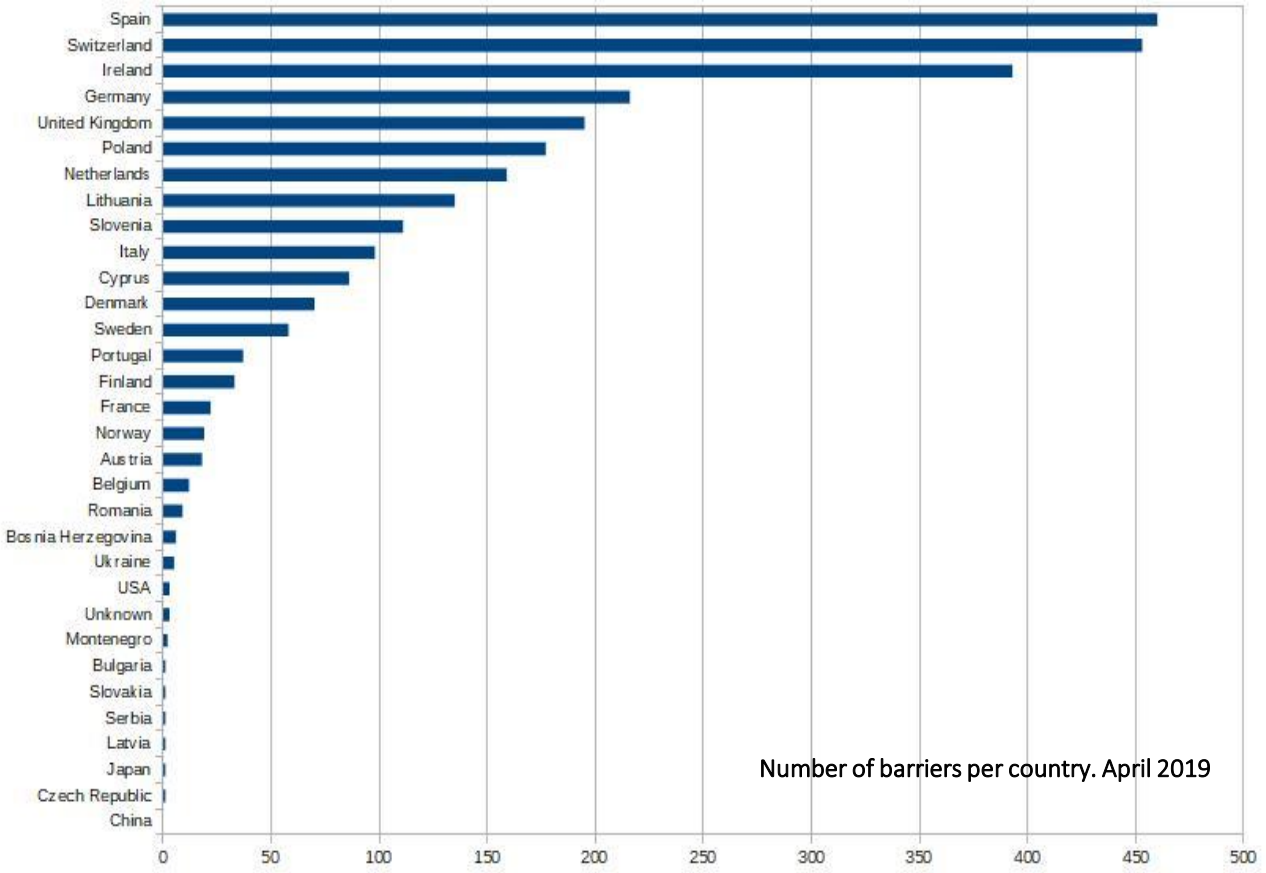
Does the barrier extend across the entire watercourse?

Yes | No

AMBER Citizen Science Program launched April 2018

April 2019:

220 registered users
2786 barriers recorded



Number of barriers per country. April 2019

AMBER Citizen Science program CHALLENGES

- Ensure that the data collected by the citizens can be used for the AMBER Atlas
  - Keep it simple
  - Educate users
  - Keep citizen science data separate from other data sources
  - Encourage targeted campaigns in specific regions

- Legacy (continuity after the project is finished)

Reconnecting European rivers together

You can now become a citizen scientist and help us map all the barriers in European rivers

Join the Citizen Science program

amber.international

@AMBERtools

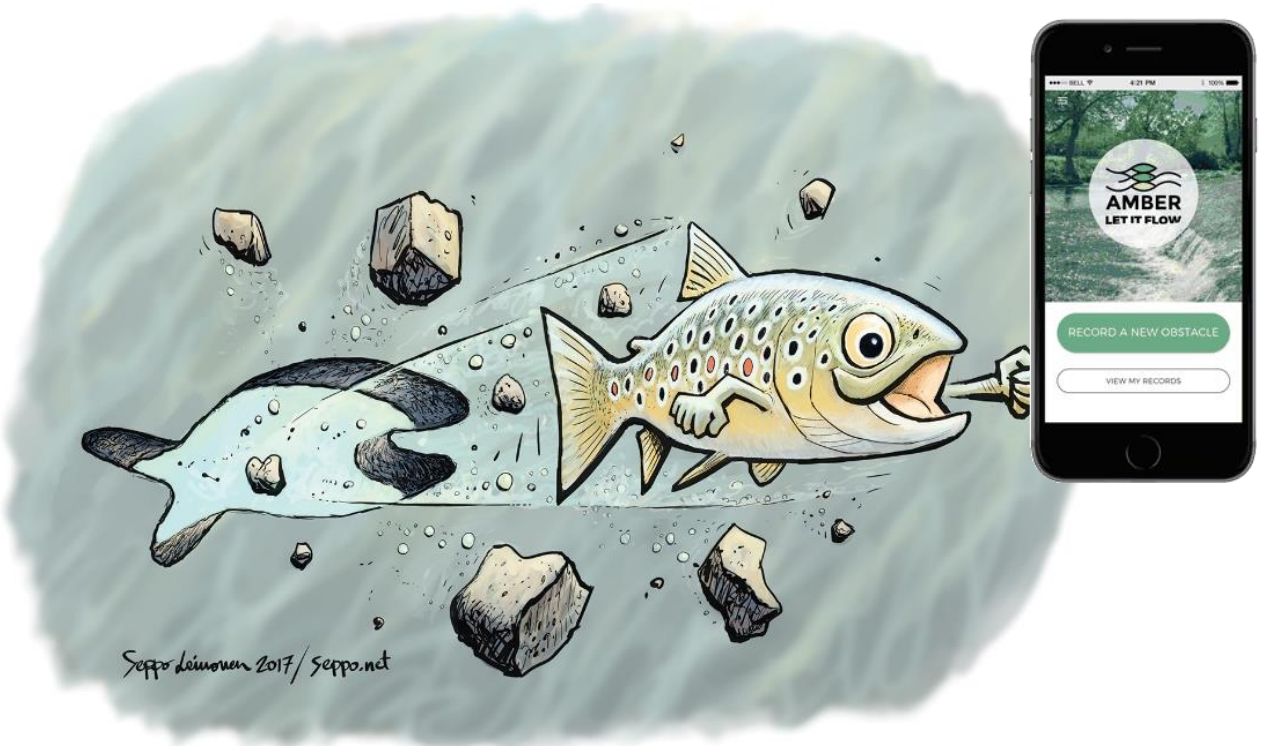
River Connectivity Network

2.608 miembros

AMBER

amber.international

Kiitos paljon huomiota!



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