Dec 11th, 3:40 PM - 5:20 PM

Dam removal Europe: refuting myths and supporting professionals

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WORLD FISH MIGRATION FOUNDATION

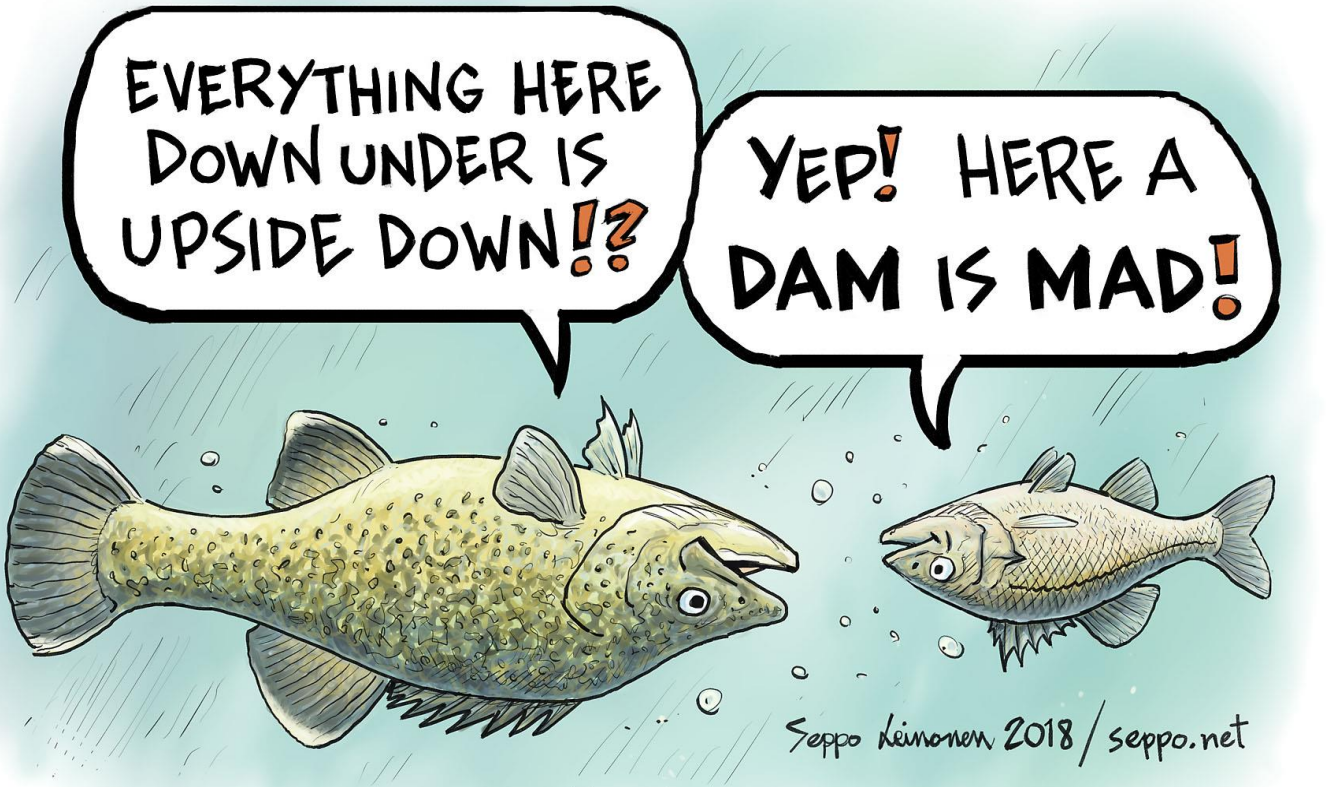
WWF

ERN EUROPEAN RIVERS NETWORK

The Rivers Trust

Rewilding Europe

DAM REMOVAL EUROPE



Herman Wanningen
Creative Director

WORLD FISH MIGRATION FOUNDATION

CONNECTING FISH, RIVERS & PEOPLE

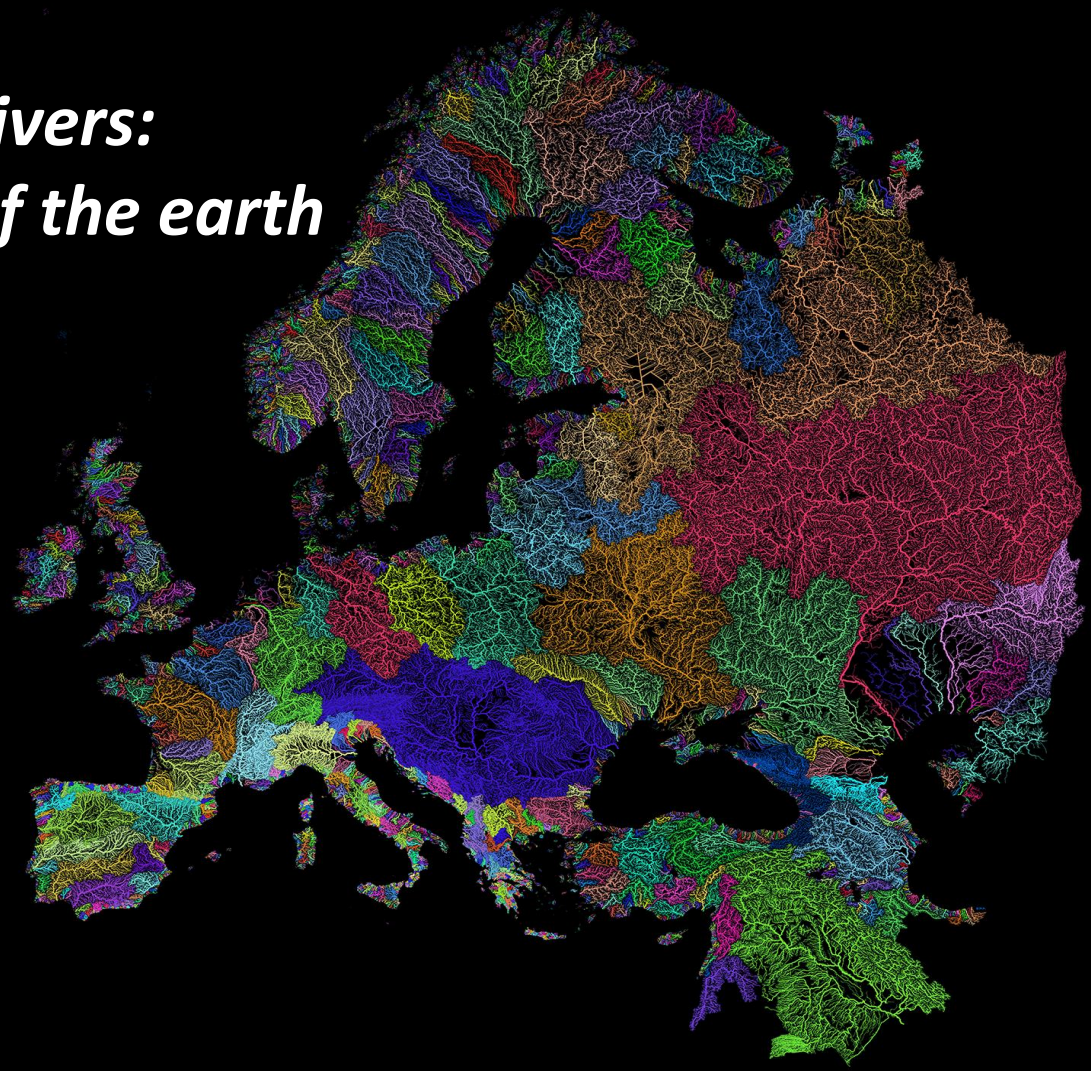
OPEN RIVERS

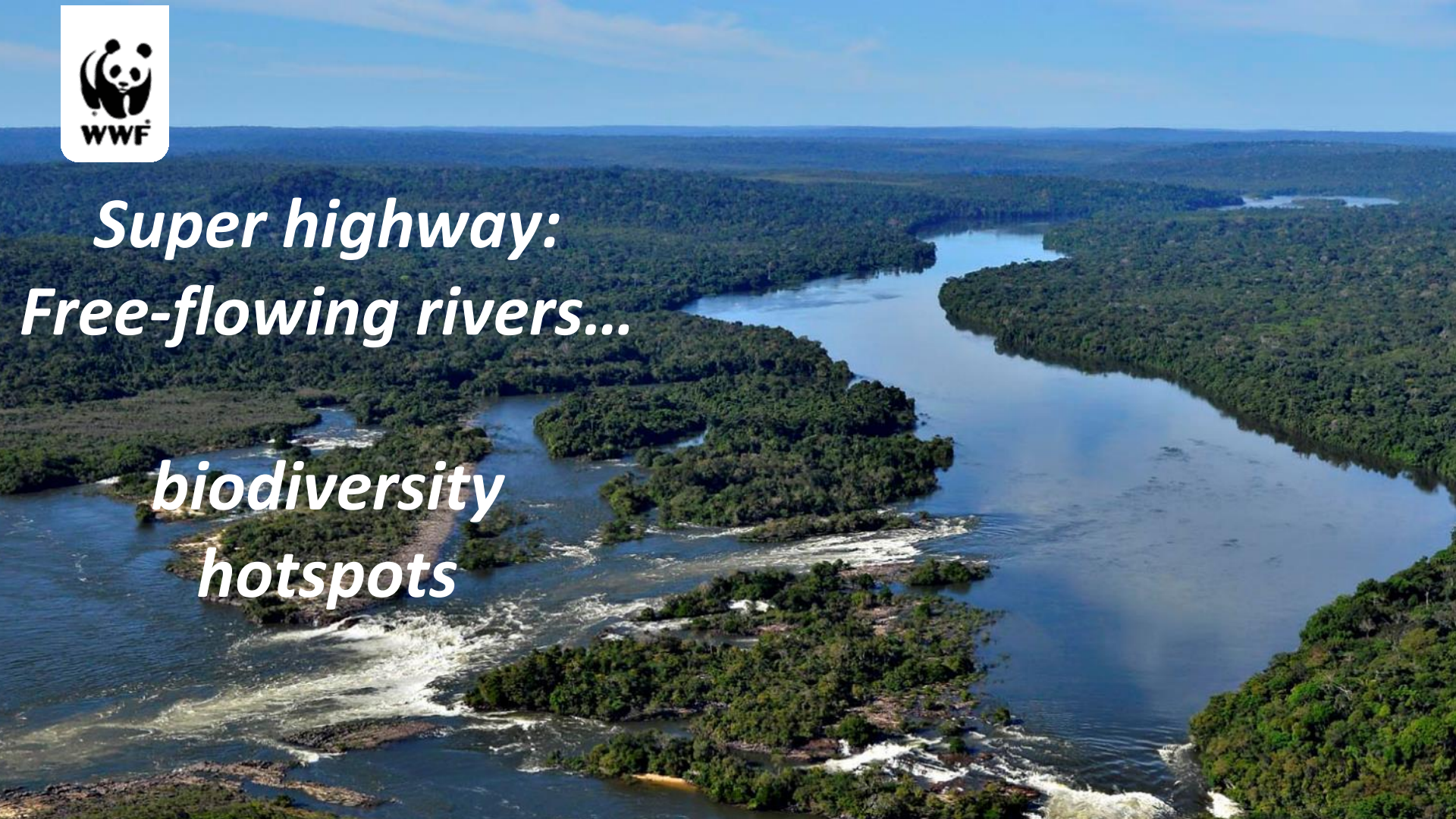
HAPPY FISH

HAPPY PEOPLE

@fishmigration

Rivers:
Veins of the earth




Super highway:
Free-flowing rivers…
biodiversity
hotspots

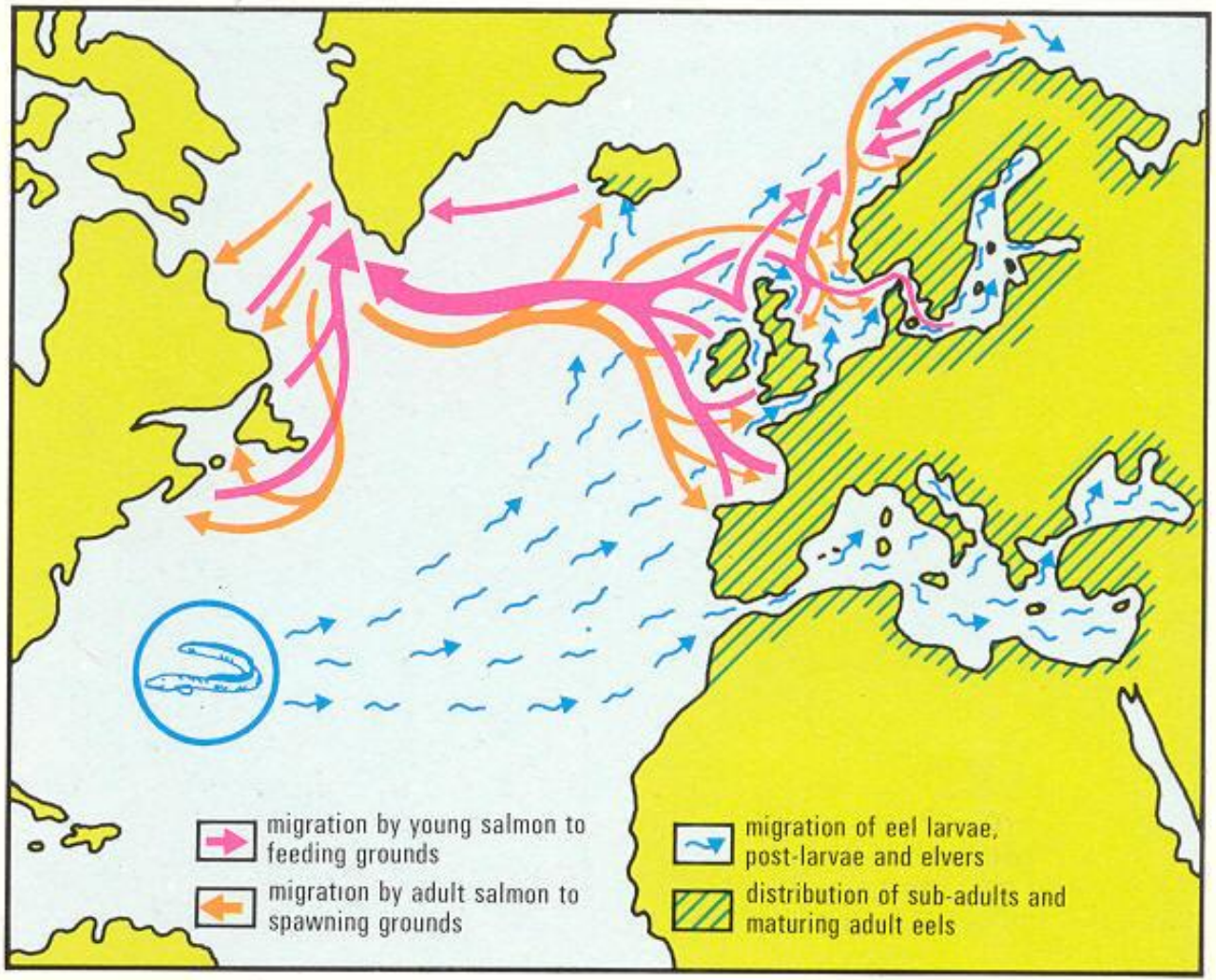
Swimways of the World

WORLD FISH MIGRATION FOUNDATION

www.swimway.org

Making love

We want to mate, 'mate'



Spawning is fun

WORLD FISH MIGRATION FOUNDATION

The roadblocks in swimways

>800.000 HP dams

>50.000 large (>15m)

Thousands planned or under construction

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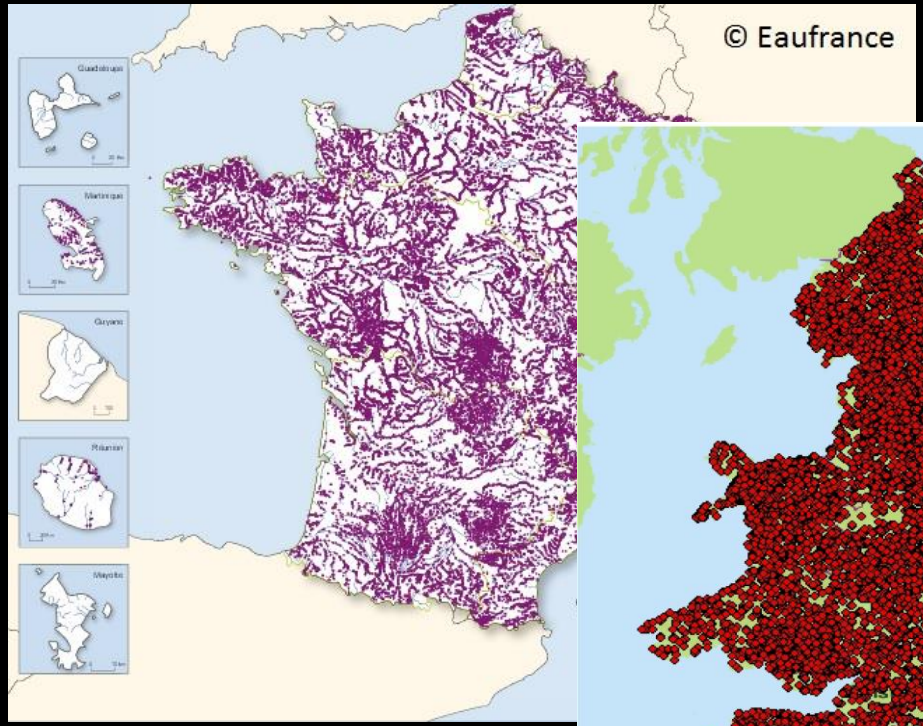
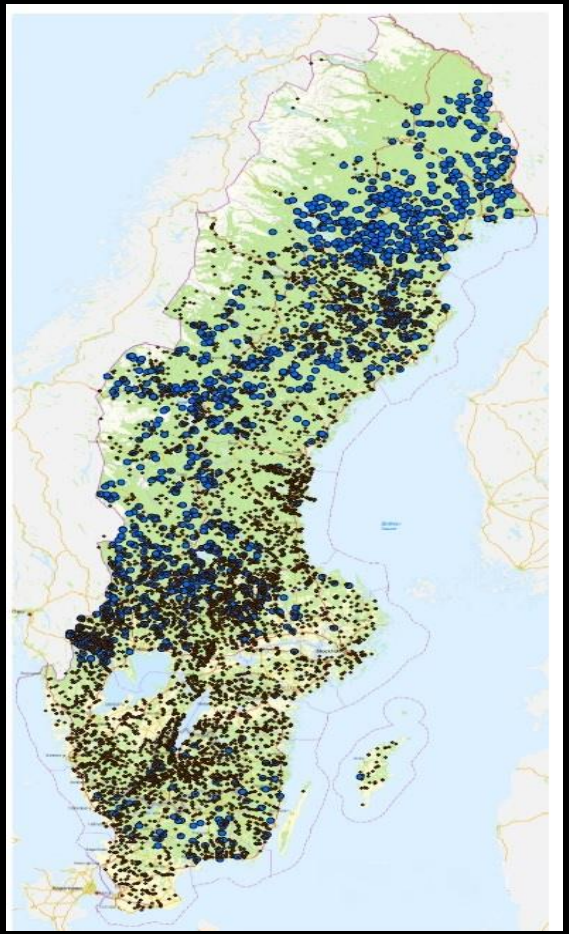
Europe > 1mln. Barriers (AMBER EU project)


I think we are going to die, thank you!



France: 83,795 man-ma

UK: 22,000 man-made obstacles



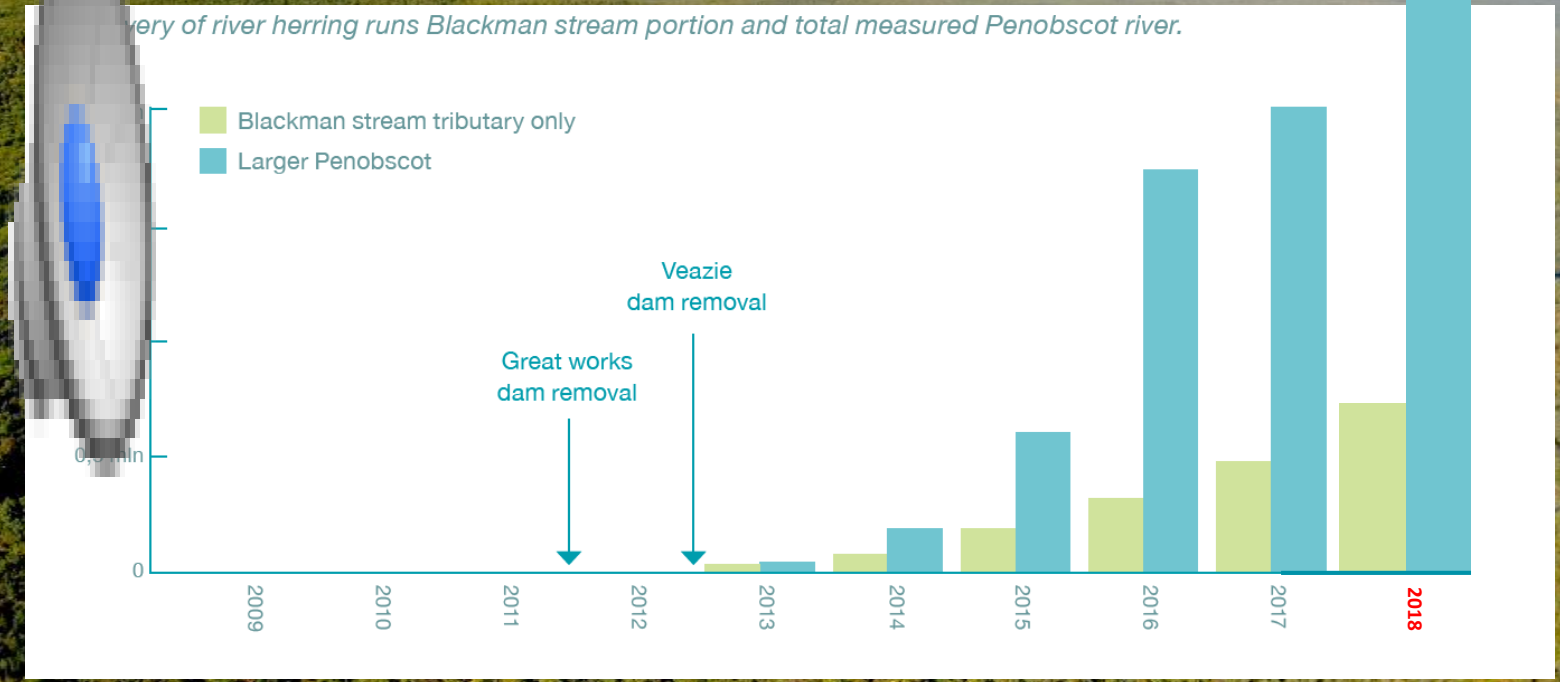
SWEDEN: 9,298 barriers

If we want our rivers full of fish it will mean that we should protect and restore the energy input and nutrient flows.

GLINES CANYON DAM REMOVAL © USGS

Assessing Ecological Impacts

3220 km river opened up

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RIVERS
NETWORK
The
Rivers
Trust
Rewilding
Europe


DAM REMOVAL EUROPE
Supported by
ERN EUROPEAN RIVERS NETWORK
RiverWatch
IGC Instituto de investigación para la gestión integrada de zonas costeras
NORMANDIE Grands Migrateurs
ÄLVRÄDDARNA
NORMANDIE Grands Migrateurs
Environment Agency
WILD TROUT TRUST
SUSTAIN EUROPE
Wetlands INTERNATIONAL
The Rivers Trust
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trent rivers trust
aqua viva
INSTITUTE OF FISHERIES MANAGEMENT
Rewilding Europe
sibic Sociedad Ibérica de Ictiología
RIOS LIVRES GEOTA
Aphanius Investigación en peces
USC UNIVERSIDADE DE SANTIAGO DE COMPOSTELA
ESTACIÓN DE HIDROBIOLOXÍA "ENCORO DO CON"
Severn Rivers Trust
KARLSTADS UNIVERSITET
KESKKONNAAGENTUUR

Ambition

Free flowing rivers full of life
for people and nature

By removing dams
Starting with old and obsolete dams

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 dam removal on the EU agenda

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

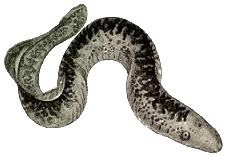
→ Decision makers and Politicians

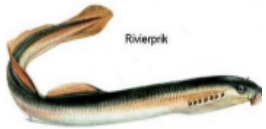
Policy report (June 2018)

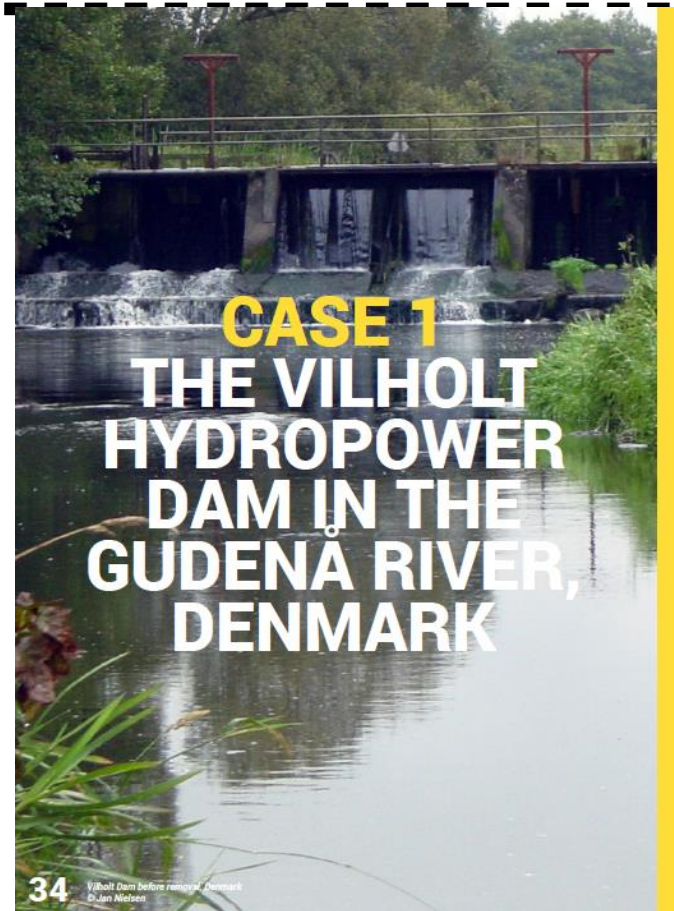
www.damremoval.eu

1. >30.000 old and obsolete dams
2. Removal is not part of European policies yet
3. Great showcase projects already in place
4. Mapping obsolete & removed barriers
5. Focus on new research programs needed
6. Funding mechanism needed

Policy report (case examples)







Vilholt Dam before removal, Denmark © Jan Nielsen

Name	Vilholt dam
Location	Jutland, north Denmark
Type of dam	Hydropower station
Measurements	4 m high
Aim	Improvement of fish populations
Year of removal	2008

INTRODUCTION

Denmark is a relatively lowland country with several small river systems flowing to the Wadden Sea (North Sea) on the west side of the country, or the Baltic Sea on the east side of the country. Historically, there has always been an abundance of fish populations in Danish waters, with healthy salmon and sea trout populations.

Over the past few decades, however, the migratory fish populations have declined significantly. Specifically in the Gudenå river, the development of dams led to a significant decrease in the migrating fish populations and extinction of the salmon population in the river (Birnie-Gauvin et al., 2017).

The Gudenå river is one of the longest rivers in Jutland, Denmark, with a total length of approximately 149km from its source to Randers Fjord. The Vilholt hydropower dam (Vilholt Mølle) was established in 1866.

To restore natural conditions and fauna passage in the river, the removal of the hydropower station was proposed and has been debated since 1987. The project promoters were 2 local authorities and the Danish Nature Agency. In 2008, the dam was finally removed, which created a free-flowing river system all the way to Mossø lake.

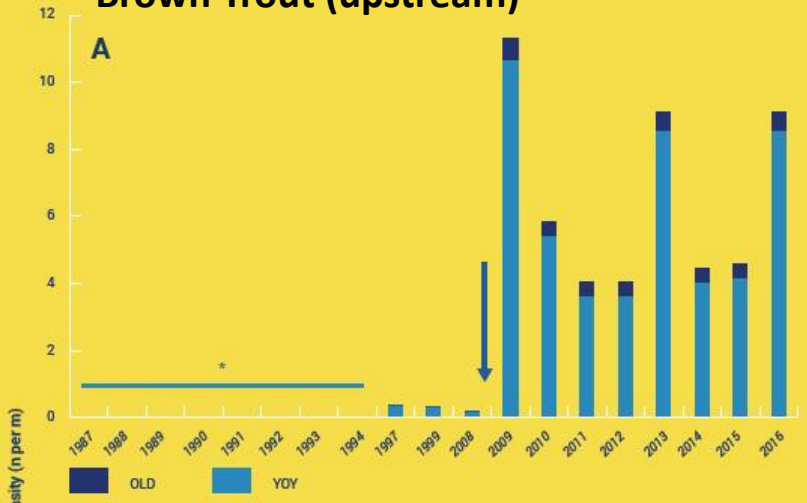
The dam had an impoundment a few kilometres long, within which water flows and velocities were very low and sand and silt had accumulated, resulting in a depth of approximately 0.7 m. After the dam was removed, the impounded zone disappeared and the natural shallow water habitat (10 – 30 cm deep), a higher flow velocity and the water riffles were restored. This is the natural spawning and nursery habitat of brown and sea trout.

RESULTS

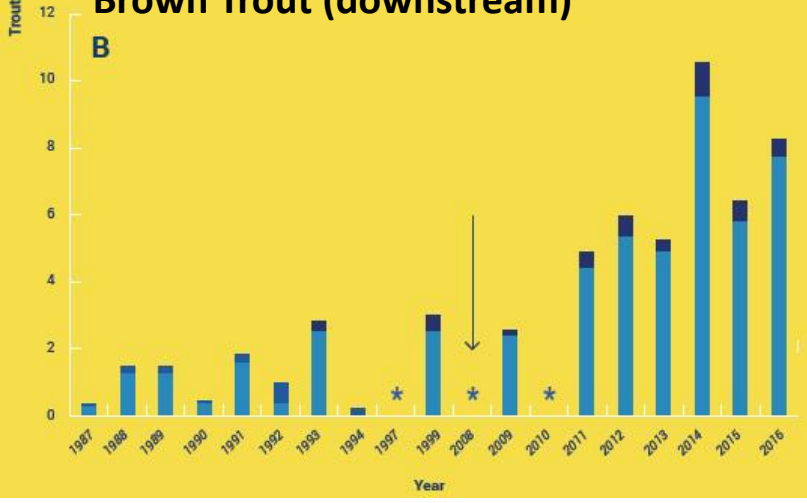
The situation before and after removal, up and downstream of the dam, was subject to a thorough scientifically-based monitoring programme. The Technical University of Denmark (DTU) carried out electrofishing surveys, and this resulted in good data on fish migration and fish populations over a period of 30 years.

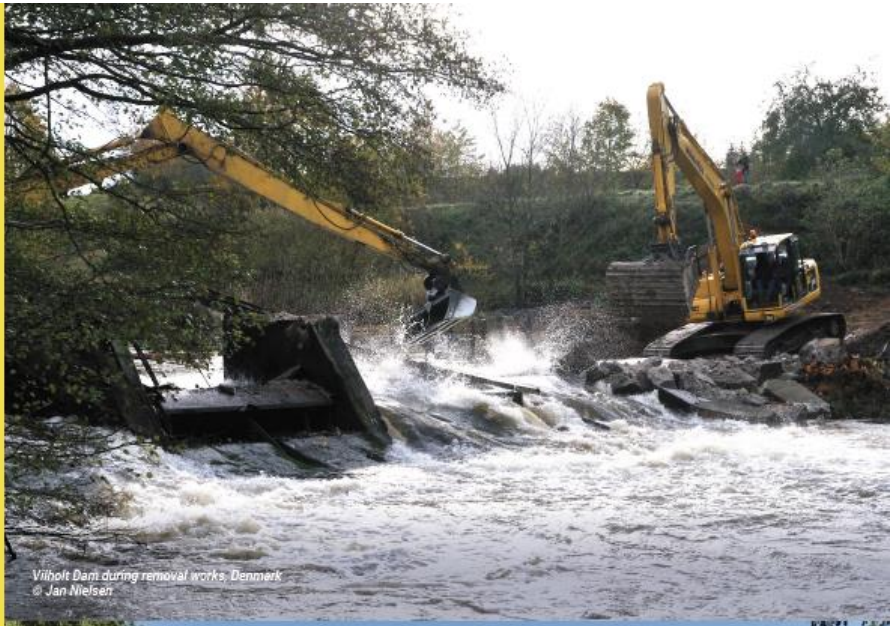
The results have been spectacular. Removal of the dam led to a spectacular increase in the trout population upstream of the removed dam, the number of fish increasing from zero to approximately 4 – 5 fish per square metre). After a few years from 2011 onwards, the numbers of fish downstream of the removed dams also improved significantly as individuals returned to spawn and their young dispersed downstream from the upper river (Figure 7: Birnie-Gauvin, 2017).

Brown Trout (upstream)



Brown Trout (downstream)





Vilholt Dam during removal works, Denmark
© Jan Nielsen

Yecla de Yeltes dam (Spain)
Removed april 2018

DAM REMOVAL EUROPE

Happy FISH

REMOVED BARRIERS

FRANCE:	>2.400
SWEDEN:	>1.600
FINLAND:	>450
SPAIN:	>200
UK:	>130
NETHERLANDS:	>50
ESTONIA:	>5
SWITZERLAND:	1
BELGIUM:	tbd
GERMANY:	tbd

Dam Removal database

Skärjån-Västbyån-dammen i lång..

Dam name
Skärjån-Västbyån-dammen i långbo

Year of removal
2008

province
Gävleborgs län

River
Ronnebyån

Municipality
Söderhamn

Lat
61.09539

Long
16.70557

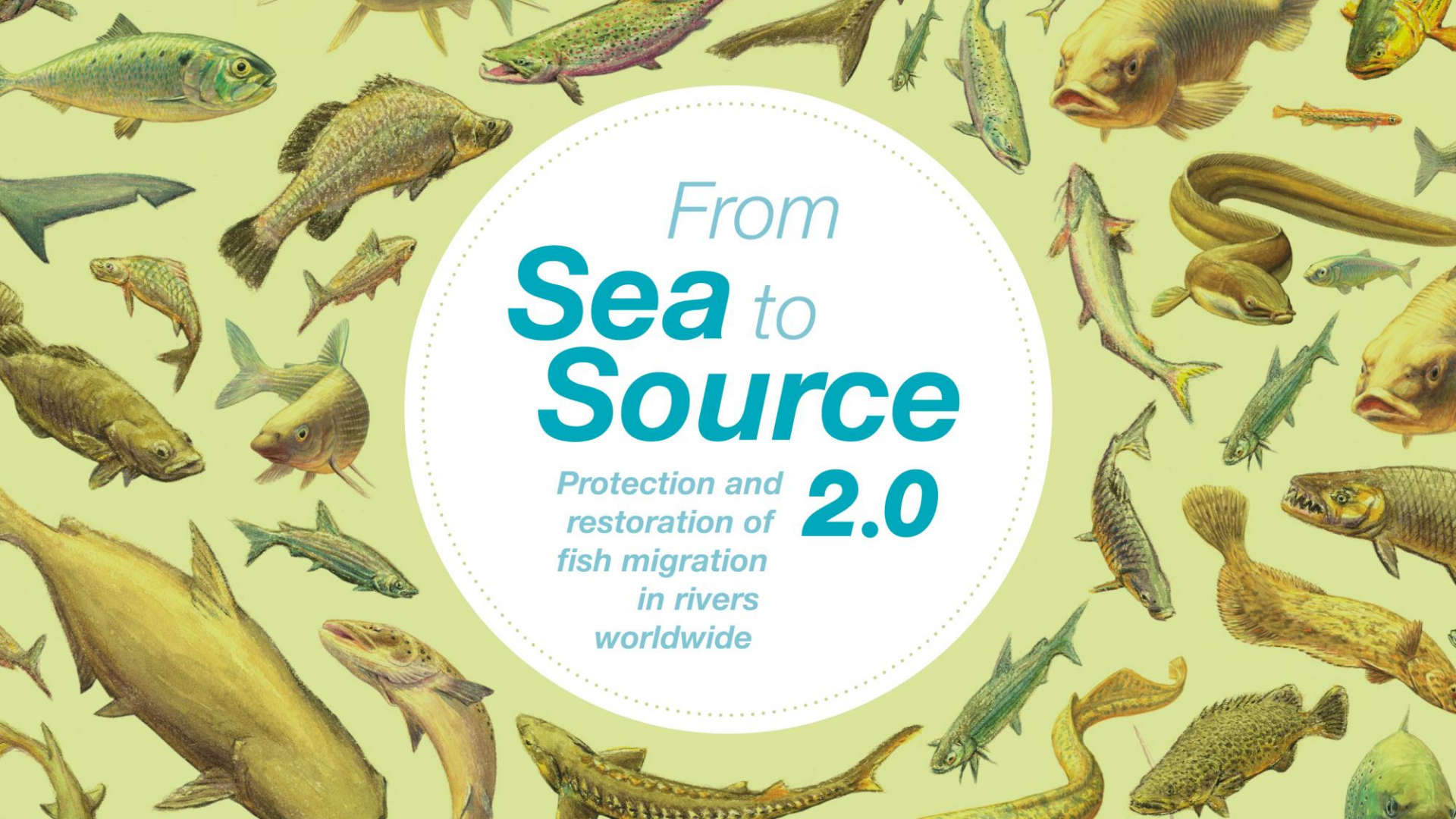
"It's time to think seriously what we should leave for the future, either a free-flowing river that gives good and sustainable blessings forever, or a concrete dam that does not": **Shoku Tsuru (Japan)**


Une journée de détente
un week-end en famille
ou entre amis...
www.lamazure.com
Base de Loisirs
La Mazuré
En Pays de la Baie du Mont Saint Michel
www.lamazure.com

PARNU RIVER (ESTONIA)

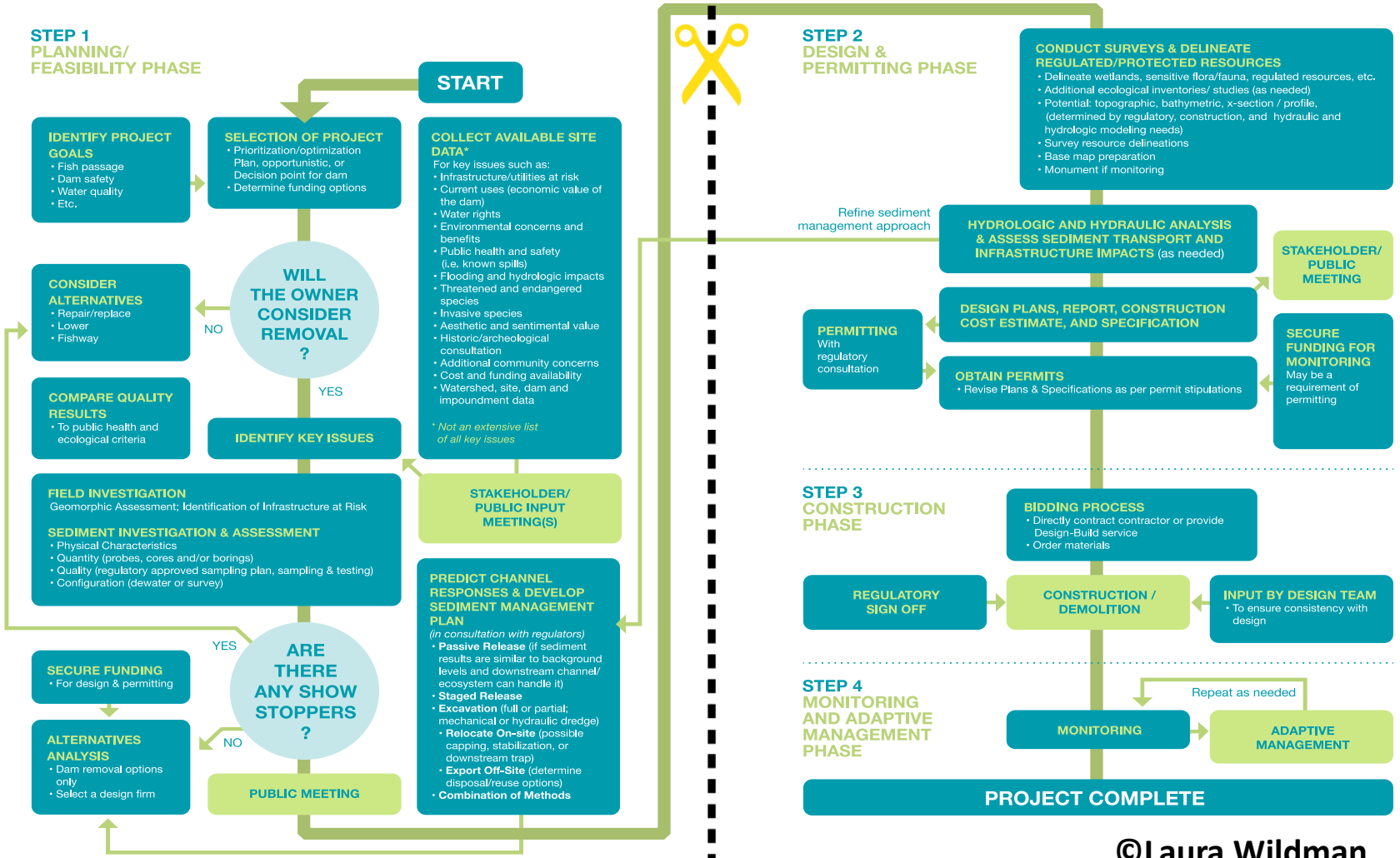
started in 2018

8 dam removals (15 mln. Euro)
3300 km free-flowing river
Salmon, eel, trout, lampreys, etc
11 people died at the Sindi dam
Ministry of Environment Estonia



From Sea to Source 2.0

Protection and restoration of fish migration in rivers worldwide



TO BE OR NOT TO BE... REMOVED

International Seminar on Dam Removal (24-26 Sep 2018, Hudiksvall)

UPCOMING SEMINARS:

ESTONIA: 21-23 MAY 2019

FRANCE: AUTUMN 2019

Länsstyrelsen Gävleborg

Hudiksvalls kommun

Karlstads Universitet

Dam Removal Europe

Crowd funding campaign

List of inspiring case examples for the rest of Europe

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.

DAM REMOVAL format

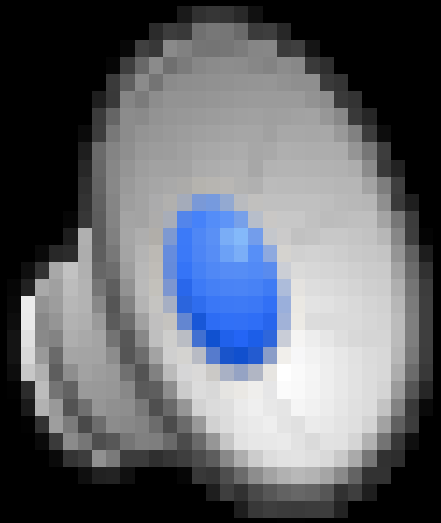
1. BACKGROUND DETAILS

LOCATION	
Name organization	
Contact person, email and tel	
Name water management authority	
Type of operation	Total/partial removal
Type of structure	Dam/weir/culvert
Fishway present?	Yes/no
Start of operation	Month/year
End of operation	Month/year
Length of river reconnected (km)	
Meaning how far away is the next dam/obstacle?	
NAME AND LOCATION	
Name of watershed	
Name of river	
Name of structure	
Municipality	
Province	
Country	
Coordinates X	
Coordinates Y	
Distance to source	
Distance to sea	
STRUCTURE	
Height (m)	
Width (m)	
Reservoir (m²)	
Use	Irrigation, water supply, hydropower, flood control,...
Start of use	Month/year
End of use	Month/year
Owner	
BEFORE ACTION: MOTIVATIONS FOR REMOVAL	
1. River restoration	Yes/no
2. Improve water quality	Yes/no
3. Avoid downstream channel degradation	Yes/no
4. Increase fish populations	Yes/no
5. Increase bird/mammals populations	Yes/no
6. To improve social – economic/ recreational benefits	Yes/no

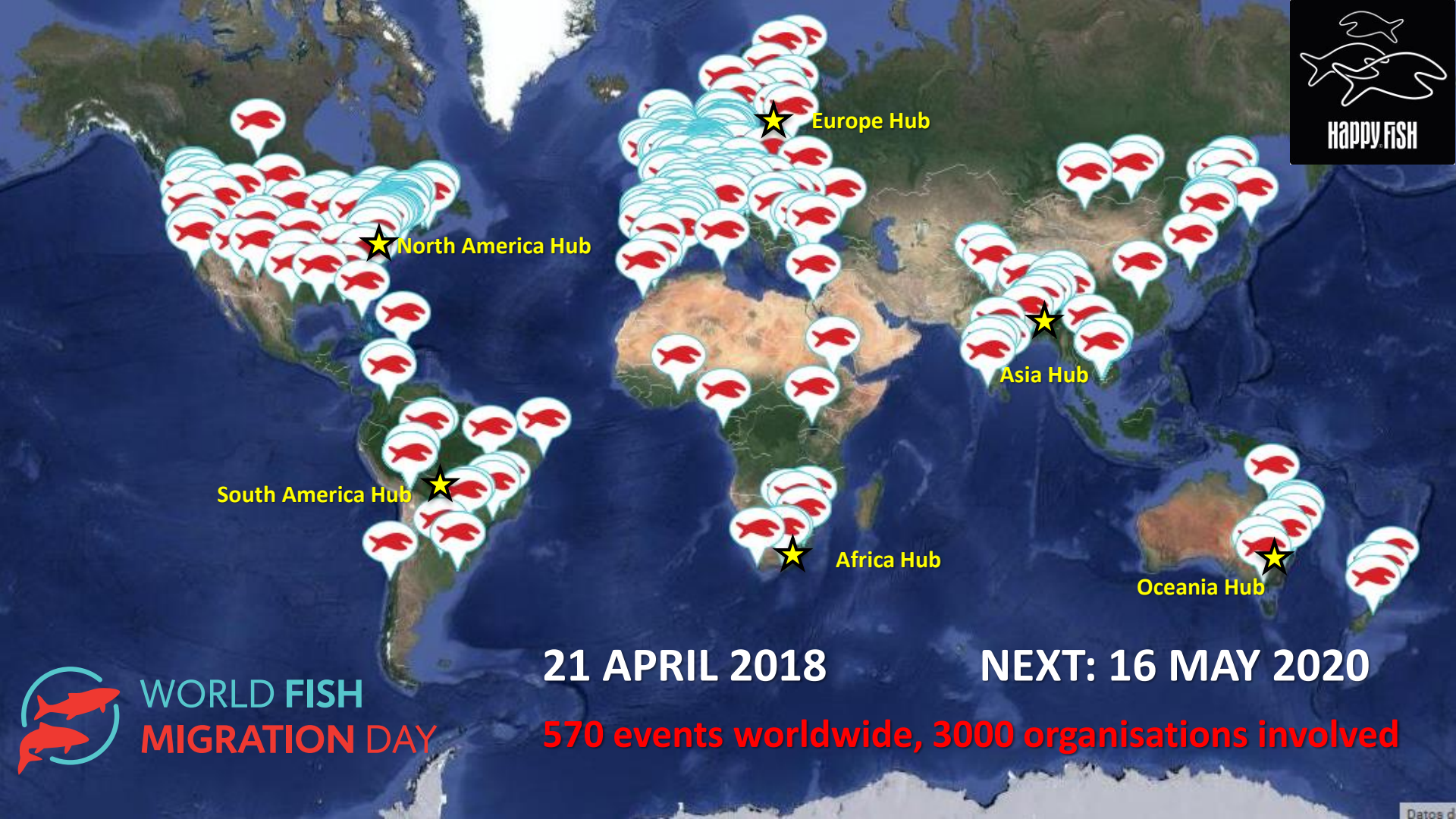
WEBSHOP


WE LOVE OUR RIVERS WILD
DAM REMOVAL EUROPE
DAM REMOVAL EUROPE


MAVIC
DAM REMOVAL EUROPE
WE LOVE OUR RIVERS WILD
PIRELLI




CLICK HERE


Happy Fish
Europe Hub
North America Hub
Asia Hub
South America Hub
Africa Hub
Oceania Hub
WORLD FISH MIGRATION DAY
21 APRIL 2018
NEXT: 16 MAY 2020
570 events worldwide, 3000 organisations involved

Join the celebrations!

LOVE
FLOWS

#worldfishmigrationday | 16 May 2020 | #happyfish

WORLD FISH
MIGRATION DAY

www.worldfishmigrationday.com

WORLD FISH MIGRATION FOUNDATION

CONNECTING FISH, RIVERS & PEOPLE

- **Raise awareness** on the protection and development of migratory fish populations in river systems worldwide
- **Facilitate communication** between the worldwide fish migration expert community and key-decision makers & policy makers
- **Organize and stimulate** the dissemination of knowledge around free-flowing rivers and fish passage concepts.