

DAM REMOVAL EUROPE

STRATEGY



2020

2030



The last five years marked a breakthrough of a new movement within European nature conservation: Dam Removal Europe. This fast-growing coalition comprised of many experts with a rich diversity of skills from engineering and policy, conservation and field biology, to science, focuses on removing in-stream obstacles; thereby, opening the gates to free-flowing rivers—the arteries of Europe’s nature. Dam removal is one of the most effective measures for nature restoration has now reached the point of decisive up-scaling.

What is the current situation?

Healthy rivers are a crucial habitat for freshwater dwellers and they support the survival of nature and billions of people around the world. While there are existing policies in place such as the EU Water Framework Directive and Biodiversity Strategies, 60% of Europe’s rivers still do not have a ‘good ecological status.’ Water quality has improved over the last decades, but river connectivity remains an issue. An estimated 1 million obstacles – dams, weirs, culverts – disturb the free movement of water, sediments, animals and plants. Most of these obstacles are still in use for functions like hydropower, drinking water, and agricultural infiltration, but a growing number are becoming obsolete.

If you assume the life cycle of a barrier is around 100 years, this means that every year about 10,000 barriers are due for reconstruction or removal. Approximately 20% (2,000) of these barriers lose their function and start to breakdown. They are ticking time bombs and safety hazards for downstream areas in the event of a breakthrough.

However, this urgent situation offers an opportunity to reconnect and recover rivers through dam removal. Based on a recent European study it is estimated that there are more than 100,000 barriers in Europe that are abandoned or obsolete. It is also estimated there is almost one barrier per two kilometres of river length. So there is a huge potential for removing obsolete barriers. Recently the European Commission proposed a target of reopening 25,000 KM before 2030. We believe Europe can be more ambitious!

Dam Removal Europe leading a new (Dam Re)movement

Inspired by pioneering projects in the U.S., WWF and the World Fish Migration Foundation (WFMF) established in 2015 a new action network to tackle the challenge above, Dam Removal Europe. Now the coalition is comprised of seven organizations spanned across Europe: the Rivers Trust, the European Rivers Network (ERN), Rewilding Europe (RE), The Nature Conservancy (TNC) Wetlands International (WI), WWF and the WFMF. Dam Removal Europe (DRE) is open to others that could bring their expertise to make dam removal a mainstream river restoration method. Water managers, environmental organisations, energy companies, local communities, and relevant parties active in dam removal are all invited to join the initiative. It's the explicit wish of the partners in Dam Removal Europe not to create a new institutional body that would centralise the issue. Instead, we want to work together in a way that all involved do what they are good at, and the sum of all relevant activities strengthen each other.

WHY NOW?

Over half of Europe's rivers are not healthy enough to properly function and support biodiversity goals. In fact, across the globe freshwater ecosystems are among the most threatened. Now, as more and more barriers are reaching the end of their life cycle (most of them built in the late 19th-early 20th century) we have the opportunity to revive these freshwater havens and meet environmental strategy goals. Given the importance of dam removal as a cost-effective alternative for climate adaptation and for bringing freshwater ecosystems back into good health, we believe this tool should be mainstreamed in water management alternatives and policies.

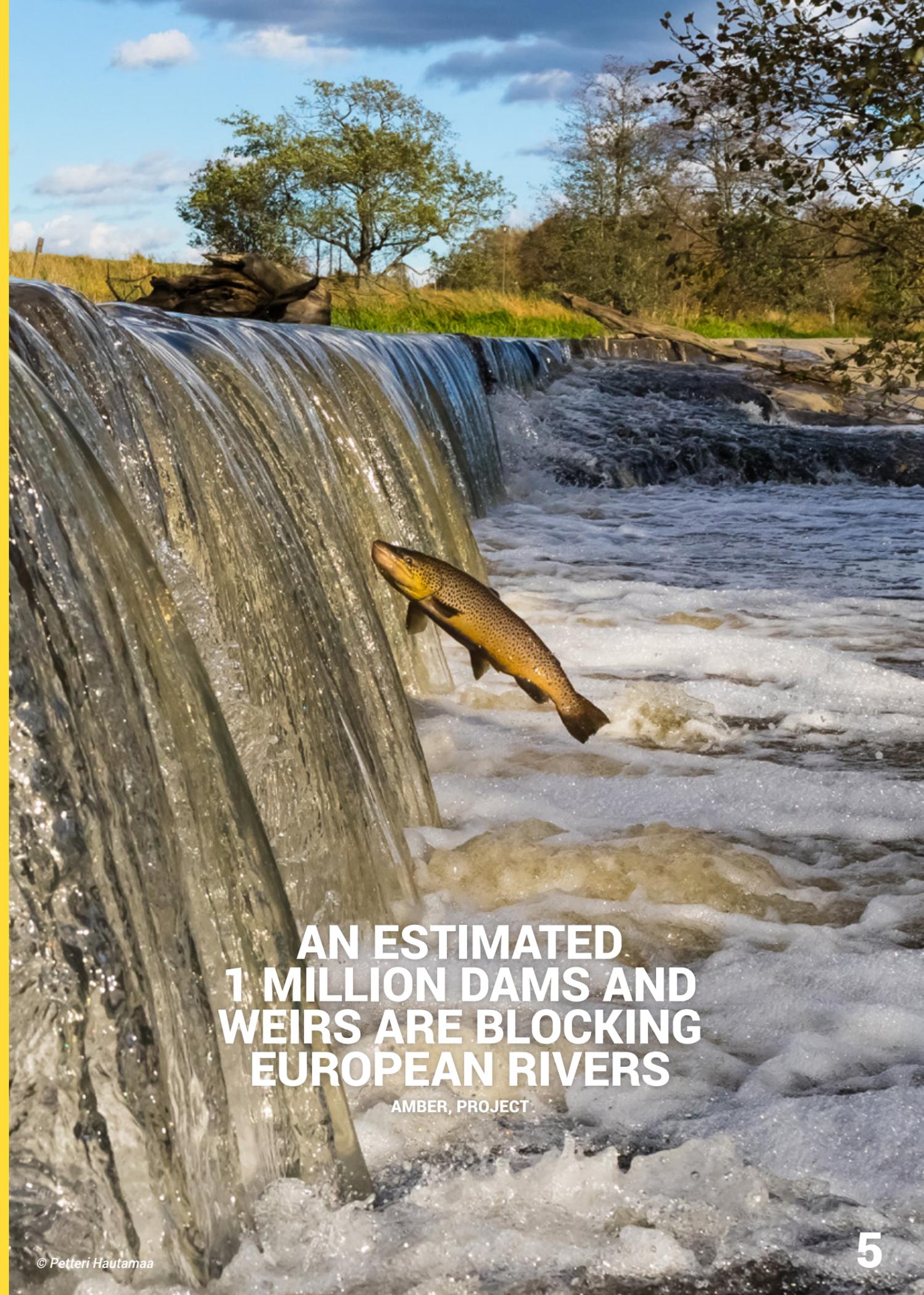
Dam removal is a one-time investment that permanently restores natural stream functions, habitats and increases climate resilience.

Dam removal is a viable solution to restore rivers to a "good ecological status" and is often the best option. Research has shown that by removing obsolete, unsafe or socially and environmentally unacceptable structures, rivers can rapidly return to a more natural and healthier state. This will help achieve the new Biodiversity Strategy goals and the ambitious Green Deal. Additionally, the need for river sediments as a source for maintaining coastlines around river mouths is increasing (with sea-level rise expected), dam removal allows the movement of sediments downstream to form and maintain healthy coastlines.

It's cost-effective. There are also numerous studies indicating that dam removal can be the most cost-effective solution as opposed to retrofitting or upgrading the degraded structure. Specifically, a recent U.S. study found that removal could be 10 to 30 times less expensive than ongoing maintenance and repair.

It supports job creation and a restoration economy.

Dam decommissioning and removal can also lead to new economic benefits. A 2012 study in the USA found that every \$1 million spent on Massachusetts Division of Ecological Restoration projects resulted in 10 to 13 jobs and \$1.5 to \$1.8 million in regional economic output (Industrial Economics Inc. 2012). A 2010 study in Oregon finds that every \$1 million spent on forest and watershed restoration results in 15-23 new jobs and \$2.1-2.3 million in economic activity. Because of the current economic challenges caused by the COVID19 crisis, there is a growing need for new economies that create new jobs as well as benefits for regional communities. We are aware there is still a risk of further fragmentation as the growing demand for renewable energies focuses highly on hydropower. There are also ever-increasing networks of railroads, motorways and forestry roads demanding the necessity of weirs and culverts to cross rivers. Therefore we have to act now. We must reach out to others and raising awareness of the risks of dammed waters and involve them in the movement to bring back free-flowing rivers.



**AN ESTIMATED
1 MILLION DAMS AND
WEIRS ARE BLOCKING
EUROPEAN RIVERS**

AMBER, PROJECT



WHAT HAS BEEN ACHIEVED SO FAR?

In only five years, the Dam Removal Europe consortium has achieved the following results:

A fast-growing network of 7 partner organisations, 27 supporting organisations and **>1200** individuals involved; Seven Fully booked seminars (>100 persons each) with a total of over 100 presentations to raise awareness to this network and increase our outreach (as of spring 2020)

A list of **160+** removable dams due to social media efforts

One resource website, with **33** showcase projects and 100+ reports & articles related to dam removal

The crowdfunding campaign, resulting in nearly **60,000** euros raised for 15 dam removals

DRE Database with over **5,000** removed obstacles during the past years

1 EU Policy report, followed by successful lobbying leading to an EU target of at least **25,000** km of rivers to be restored to a free-flowing state through the removal of barriers and the restoration of floodplains

Proven policy change in favour of dam removal in at least **3** countries (Finland, Lithuania, Sweden)

This achievement was accomplished by a small, enthusiastic group of people, supported by a one-off gift from WWF. It shows the high potential of the movement, and at the same time, its limitations because of the still immature funding structure of the initiative.

SINDI DAM – PÄRNU RIVER - ESTONIA

After years of preparations, in 2019 the Estonian government removed the 4,5 m high and 151 m wide Sindi Dam in the Pärnu River. Together with the removal of 9 smaller obstacles this opened up 3300 km (covering 20% of Estonia) of river habitat for salmon and over 30 other species of fish.

© Ministry of the Environment, Estonia

KLINTARP - KLÖVA CREEK - SWEDEN

Since 2019, sections of the Rönne river have been covered by the EU LIFE project Life Connects. The dam at Klintarp in the Klippan community of Skåne was situated on the Klöva creek. Clearly visible is the not working fishway. The removal was carried out by a small privately-run company Naturentreprenad Syd AB.

© Fredrik Lundblad



TIKKURILA DAM – KERAVA RIVER - FINLAND

The removal of the Tikkurila Dam in the city centre of Vaanta is an exemplary model of a planning process and produced an outcome that is beneficial not only for river connectivity and migratory fish but also for people.

Two days after the removal of the Tikkurila Dam the Government of Finland released a new National Programme that allocates 18 million Euros to barrier removals.

© Iwan Hoving

SAMLESBURY WEIR REMOVAL

In what is believed to be the widest weir removal scheme currently in Britain, excavators moved in at the end of April 2020 to begin removal of the redundant 50-year-old weir to increase biodiversity and ease the movement of migratory fish like salmon, smelt and eels.

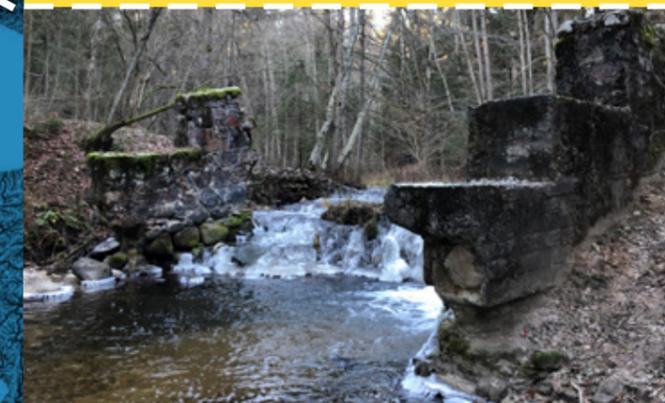
© The Ribble Trust



BRAŽUOLĖ DAM – NERIS RIVER - LITHUANIA

The Bražuolė Dam has been abandoned for decades. The removal of this dam would be the first dam removal in Lithuania ever, opening up 25 km of spawning grounds for Baltic salmon and sea trout and fish species like eel and lamprey. The project is funded by the WWF crowdfunding campaign.

© Karolina Gurjazkaitė



VEZINS DAM – SÉLUNE RIVER - FRANCE

After almost 100 years, two hydropower dams in the Sélune River were at the end of their commission period. In a historic moment for Europe's rivers, the first breach was made June 2019 in the 36-metre high Vezins Dam – kick-starting the biggest dam removal in the continent so far. The other 16m high dam La Roche qui Boit Dam will be demolished in 2021 freeing up the Sélune.

© ERN



DANUBE DELTA DAMS - KAGACH AND KAGILNYK - UKRAINE

The Ukrainian part of the Danube Delta has just become a little wilder, with 10 dams removed on the Kogilnik and Sarata Rivers. The dams were located within the territory of the Danube Biosphere Reserve (DBR).

© Maxim Yakovlev





WHAT IS NEXT?

What is next? DRE has developed a strategy scaling the dam removal movement up to the next level. The consortium will support people and organisations to remove dams, identify areas where this will be most effective for nature and connect with the relevant policymakers. Therefore, the coalition has targeted five types of activities to catalyze new dam removal projects in the future.

1. **Prioritise** river basins and dam removals that maximize ecological and social impact.
2. Kickstart **projects on the ground** that provide a clearer picture for media and policymakers on the benefits of dam removal.
3. Engage in **targeted communications** towards key decision-makers, influencers, key stakeholders and practitioners.
4. **Improve EU and national policies** by including dam removal as a viable river restoration option and offering available funds to support projects.
5. Provide **scalable models** on dam removal that serve both ecological and socio-economic goals.

DRE will develop these activities in partnership with other sectors, like water managers, the energy sector, drinking water companies, fisheries, local authorities, and communities. Each of the activities will be monitored, evaluated, and shared within the growing DRE-network. They will also evolve as necessary.

For all of these activities and to support the network-based programme, we need a pool of **funds**. These funds would also fund showcase projects and other prioritized dam removals.

**ESTIMATED:
MORE THAN 100.000
ABANDONED AND OBSOLETE
DAMS/WEIRS IN EUROPE**

(AMBER PROJECT, EU HORIZON 2020)

What we can achieve in 10 years

For the period 2020-2030, the Dam Removal Europe Coalition has set itself the following targets:

Directly support the removal of **100** dams with proven benefits to nature and people, leading to the opening of 1,000 km of rivers by 2025.

Integrate dam removal into European policies, legislation, finance systems and River Basin Management Plans by **2030**.

Change at least **10** national policies to be in favour of dam removal by 2025

Grow our coalition to involve at least **20** partner-organisations, including key partners in the water management, energy and fisheries sectors.

Provide financial and technical support for at least **10** dam removals to show as exemplary scalable business models.

Grow our network to over **10,000** people.

Grow our dam removal ambitions to a **global** level.

Financing Dam Removal

There are hundreds of kinds of barriers. For these barriers, the DRE-partners are organizing different forms of financial support:

- 1. Crowdfunding:** crowdfunding campaigns started in 2019 and has already led to the removal of a dozen smaller dams in countries like Ukraine, Lithuania and the UK. See: <https://crowdfunding.wnf.nl/>
- 2. Small grants:** grants offered by private funds will be used to remove small but strategic important obstacles in priority basins. These will be used as showcases in our upscaling strategy.
- 3. Pre-financing.** When authorities cover costs of dam removal (i.e. to reduce flood risks), small grants can be used in a Revolving Fund to be proactive in removing obsolete dams knowing that the costs will be covered afterwards and the grant money can be used again.
- 4. Investment Fund.** When there is a business case behind a specific dam removal (because of benefits for the energy-sector, drinking water companies, fisheries, sediment management, etc.) it becomes attractive for investors to get involved. Therefore, we are exploring this structure as well.



**LET'S PROTECT,
RESTORE AND
CELEBRATE THE
FREE-FLOWING
RIVERS OF EUROPE**

– BART GEENEN,
WWF-NETHERLANDS & CO- FOUNDER DAM REMOVAL EUROPE

Rapa River delta, Sarek National Park, Laponia UNESCO World Heritage Site
Greater Laponia rewilding area, Lapland, Norrbotten, Sweden
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Resources and tools

For more information about dam removal showcases, events, tools and resources visit the website www.damremoval.eu

Dam Removal Europe is a partnership and close cooperation among seven different organizations: the World Wildlife Fund, The Rivers Trust, The Nature Conservancy, European Rivers Network, Rewilding Europe, Wetlands International, and the World Fish Migration Foundation.

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