Let it flow
Remove barriers, restore river ecosystems!

Our rivers are in a bad state.

According to the EEA's latest State of the Water (https://www.eea.europa.eu/publications/state-of-water), only 44 % are in a good or high ecological state. The Water Framework Directive sets the objective of bringing a vast majority of water bodies into at least good status by 2027. Together with chemical pollution (airborne, from wastewater or through nutrient deposition from agriculture), built alterations are one of the heaviest pressures for these important ecosystems. In its resolution on the implementation of the Water Framework Directive in December 2020, the European Parliament “call[ed] on the Member States and the Commission to take all necessary action to minimise pressures on bodies of surface water in order to restore natural functions of rivers and protect ecosystems.”

Longitudinal, lateral and vertical continuity are important features of river hydromorphology. Longitudinal river continuity is critical for migratory species and natural processes such as the transport of sediment downstream. Lateral river continuity is critical for healthy rivers, but another EEA report (https://www.eea.europa.eu/publications/floodplains-a-natural-system-to-preserve-and-restore) found that up to 90% of floodplains have been environmentally degraded due to disconnection from their rivers. Lateral continuity is vital for the conservation of many endangered riparian habitats, as well as for important ecosystem services such as carbon sequestration, nutrient retention, and disaster risk reduction. Vertical river continuity is critical for aquifer recharge.

Water surfaces that are artificially created by dams are not natural lakes and do not necessarily bring ecological benefits. On the contrary, they may stop the formation of natural lakes, disrupt ecological flows, raise water temperatures and degrade water quality, contributing to the ongoing collapse of freshwater biodiversity.

European rivers are thought to be the most fragmented freshwater ecosystems in the world. As a result, fish populations have collapsed by 93% since 1970. Iconic species such as salmon, sturgeon, and eel need free-flowing rivers to thrive and reproduce. Dam removal is much more effective and often cheaper than the construction of fish passages, which are useful only for some species and decline in effectiveness as fragmentation increases.

Decades of experience from around the world demonstrate that by removing obsolete, unsafe or socially and environmentally damaging structures, rivers can rapidly return to a healthier, more natural state. Last year, the EU Horizon 2020 project Adaptive Management of Barriers in European Rivers (AMBER) found (after volunteers walked along 2,700 km of streams in 28 countries) that one third of longitudinal barriers in our brooks and rivers do not appear on any map. Judging from this result, there are not 630,000, but more than one million barriers in our European rivers, with at least 100,000 of them being obsolete. Although not mapped, lateral barriers are considered equally widespread.

Shortfalls in awareness, knowledge, political support, and funding all present bottlenecks in removing these barriers, which is why a holistic approach is necessary.

We have to act!

Given the state of our river ecosystems, we have to use the unique chance of the upcoming Nature Restoration Law to enhance the restoration and protection of rivers as well as their surrounding ecosystems. While we are currently racing against time to reduce our emissions and fight the climate crisis, we should not turn a blind eye towards the biodiversity crisis. That's why we should also pay detailed attention to the ongoing legislative process around the RED II directive, when it comes to the role of hydropower and any trade-offs with biodiversity.

Therefore, we propose the following actions:

1. STOP fragmentation

We must halt the current rates of senseless fragmentation. We should stop building new barriers in European rivers. From the information reported by Member States under their second River Basin Management Plans, barriers used for hydropower production and flood protection are the most common barriers on European rivers.[1] Small hydropower plants in particular contribute only marginally to clean energy production, but have massive adverse effects on biodiversity.

Therefore, only existing large hydropower plants should continue to operate, and subsidies for small and large hydropower plants should be phased out, while public support should be re-directed towards their reconversion in accordance with the EU Biodiversity Strategy's mandate for restoring freshwater ecosystems and free-flowing rivers, and new hydropower plants should not be built in protected areas.

Improve Protection and Knowledge

Goals:

- Stop destruction, ecological deterioration and habitat conversion.
- Improve protected status, ecological functioning that promotes nature-based solutions to floods and droughts, and contributes to climate change adaptation and mitigation.
- Increase knowledge on fragmentation, status and ecology.

Let Nature do the Work

Prioritise nature-based solutions for floodplains, e.g. ecosystem engineering by reintroducing species like beavers, slowing flows and creating natural water retention measures to prevent flooding, and create wetland habitats benefitting many species.
Rehabilitation / restoration of natural floodplains with the aim of flood prevention has the additional benefits of slowing flows, reducing impact of fertilisation, and enhancing biodiversity.

Provide information about nature-based alternatives to dams, e.g.:
https://www.eea.europa.eu/publications/nature-based-solutions-in-europe/
https://www.eea.europa.eu/publications/floodplains-a-natural-system-to-preserve-and-restore

[1] EEA briefing, Tracking barriers and their impacts on European river ecosystems, February 2021
https://www.eea.europa.eu/themes/water/european-waters/water-use-and-environmental-pressures/tracking-barriers-and-their-impacts

2. Reconnect

Barrier removal must accelerate, and barriers should not just be moved along the river. Only 5 % of the barriers in our rivers cause 50 % of the loss in connectivity. Let's start with the low hanging fruit! We need to first target lightly fragmented rivers, as this will bring the most benefits with modest deployment of resources.
Acting on just 2 % of obsolete barriers might mitigate the impacts of 3,000 obstacles and free up to 30,000 km of rivers (1 barrier = 10 km gain).
We also should be opportunistic. With over 100,000 obsolete barriers damaging our river, we need to remove these wherever we can to generate momentum and enthusiasm among stakeholders, particularly with smaller, local projects.

Reach out

River barriers are often forgotten and overlooked, especially where the water mill, fishpond or power plant has long ceased to operate and no one feels responsible for removing the corresponding weir. As a result, derelict barriers threaten not only healthy rivers and all the services they provide, but also public safety.
We need a campaign to get in contact with communities, local authorities, NGOs, user groups and individuals, via an accessible platform where people can find more information about the importance of free-flowing rivers, as well as best practice projects/success stories for dam removals as well as funding opportunities.

Remove Barriers - Restore Rivers

Goals

- Adopt ambitious legislation
- Secure EU funding

Instruments

New EU Nature Restoration law

- Set specific legally binding targets for the restoration of free-flowing rivers in the EU, related to the individual situation in each member state.
- Ensure commitment of member states to fulfil these targets.
- Add a "no deterioration" clause and set up additional provisions for environmental impact assessments when it comes to building barriers in rivers.

Implementation of existing EU legislation

The Commission has to

- diligently implement and enforce existing directives; follow up on the breach of the Water Framework Directive and EU nature legislation (Birds Directive, Habitats Directive)
- provide corresponding monitoring mechanisms to measure the progress on the minimum ambition of 25,000 km of free-flowing rivers restored
- ensure rivers are represented under the target of protecting 30% of land and waters, with 10% strict protection, by 2030.

Provide funding through LIFE and ESIF Programmes

- Set aside sufficient funding in LIFE and ESIF for the removal of barriers in rivers.
- Set up a low threshold small grant scheme together with a platform where local authorities, NGOs and individuals can flag problematic barriers and ask for a grant to finance feasibility studies for the removal of barriers and/or to finance the removal itself when a plan/study already exists.

- Set up exchanges between communities and knowledge sharing platforms for public authorities at all levels to share best practice for removals.
- Find synergies between re-wilding initiatives and the reintroduction of keystone species (e.g. beavers as hydrological system engineers).
- Invest EU/public funds in community initiatives including conflict mediation (wildlife vs forestry); find synergies for tourism to benefit local communities.
- Rehabilitate/restore natural floodplains and wetlands, with an emphasis on re-wetting high-carbon peatlands, and re-wilding to enhance good ecological status, contribute to climate mitigation and achieve biodiversity benefits.
- Relocate dikes and make 'room for rivers' to create climate-resilient floodplains and liberate them from artificial flood controls that harm ecological functions and lack adaptive capacity.

3. Let's flow together -People's Part

Awareness and actions of an engaged public are critical to restoring and protecting rivers.

Goals

- Inspire people to connect to their rivers
- Raise awareness of the importance of healthy rivers
- Enact national and local protection measures to preserve the free-flowing character of rivers and promote their benefits
- Generate support for local barrier removals
- Support bottom-up community initiatives to engage with decision makers on sustainable river management
- Celebrate the beauty and cultural significance of these ecosystems

Instruments

PR Campaign

Create public attention through videos on social media, photo competitions, advertising, events etc. Focus on the role of healthy rivers for a better quality of life, protecting nature and resilience in a changing climate, creating sustainable livelihoods and preserving as well as celebrating cultural heritage. This must be a long-term exercise to inform people on the value of natural rivers in order to build a broad base of support.

Adopt a river

Support and stimulate partnerships of businesses/user groups/families/communities to engage in river protection and restoration. Organise and promote joint events to celebrate World Fish Migration Day and The Big Jump. Create projects for hands-on experience with youth programmes such as aiding fish migration.

Green Tourism

Healthy rivers are a destination for nature-based tourism. Support initiatives for the sustainable use, exploration and appreciation of local rivers. For example, hiking and biking trails with information boards can combine nature experience with knowledge acquisition. Recreational uses such as fishing, paddling and rafting can support robust local economies.

Bottom-up community initiatives

Use existing EU/MS co-funded approaches such as the EU Structural funds (European Maritime and Fisheries Fund and the Cohesion fund) and the LIFE programme to bring communities together to protect their rivers and preserve their history, while creating sustainable income streams.