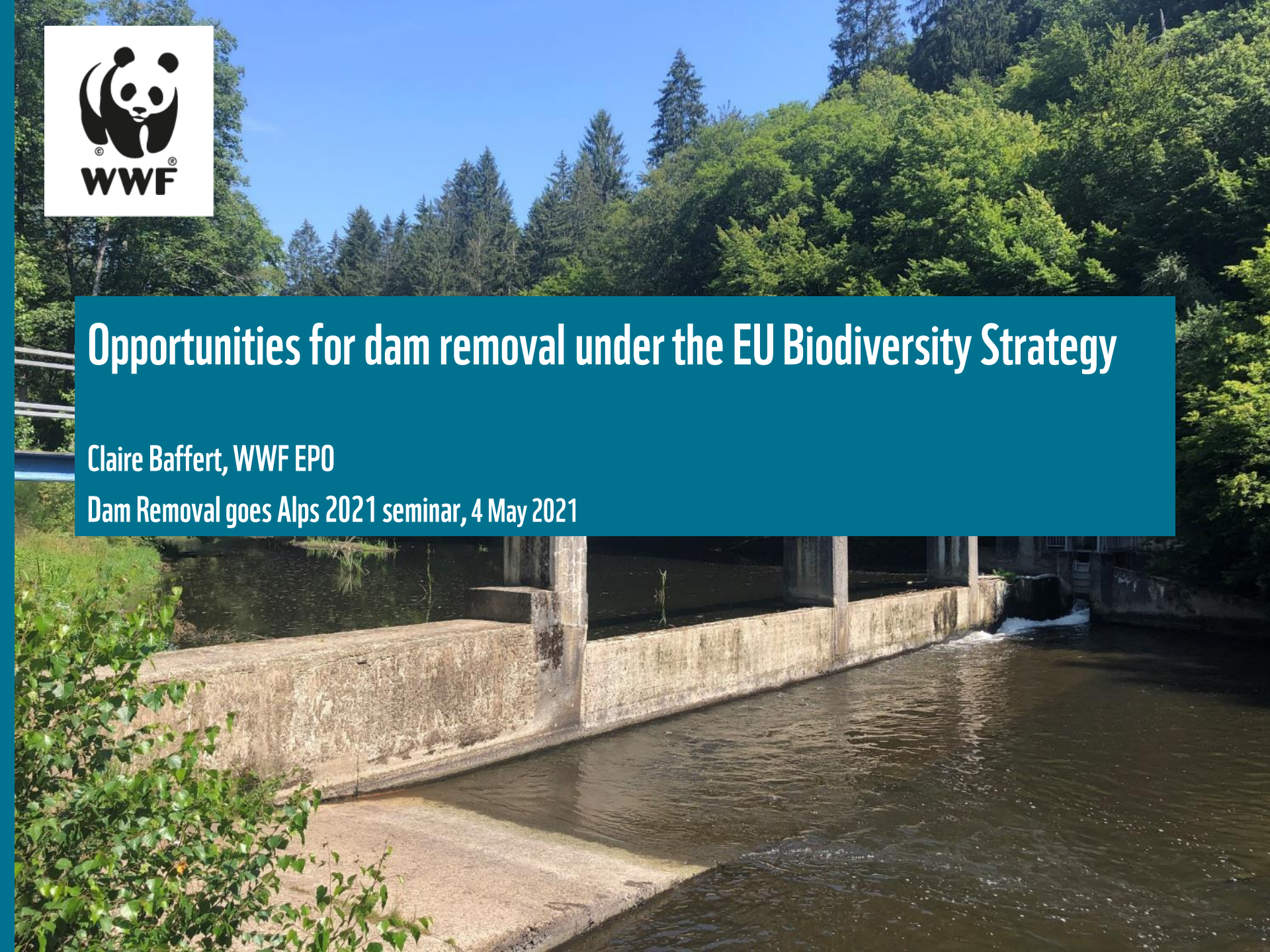




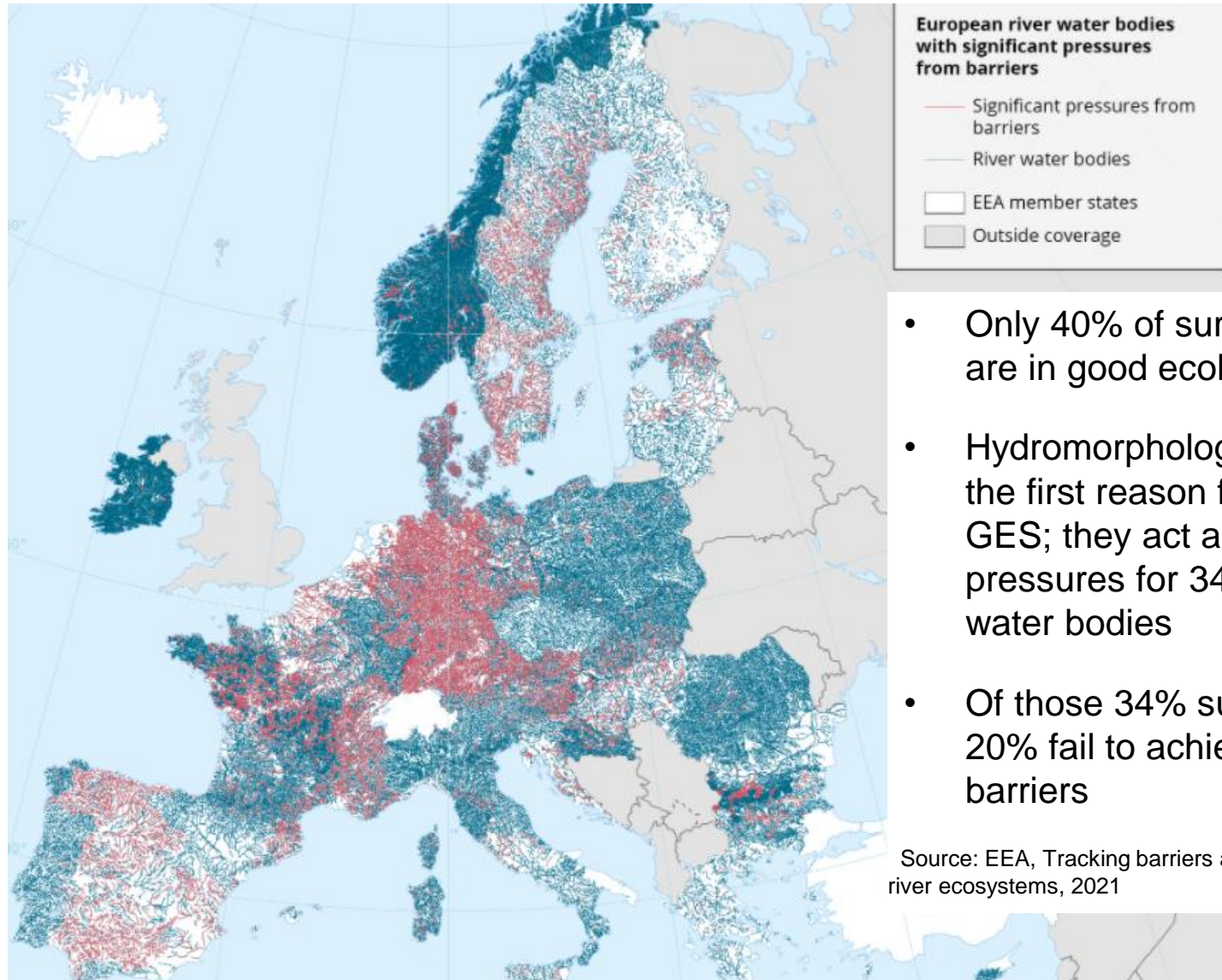
Opportunities for dam removal under the EU Biodiversity Strategy

Claire Baffert, WWF EPO

Dam Removal goes Alps 2021 seminar, 4 May 2021



Barriers are a strong cause of failure in WFD targets



- Only 40% of surface water bodies are in good ecological status (GES)
- Hydromorphological pressures are the first reason for failing to achieve GES; they act as significant pressures for 34% of the surface water bodies
- Of those 34% surface water bodies, 20% fail to achieve GES because of barriers

Source: EEA, Tracking barriers and their impacts on European river ecosystems, 2021

Map 1. European river water bodies under significant pressure from barriers

Barriers for hydropower and flood protection are the most common

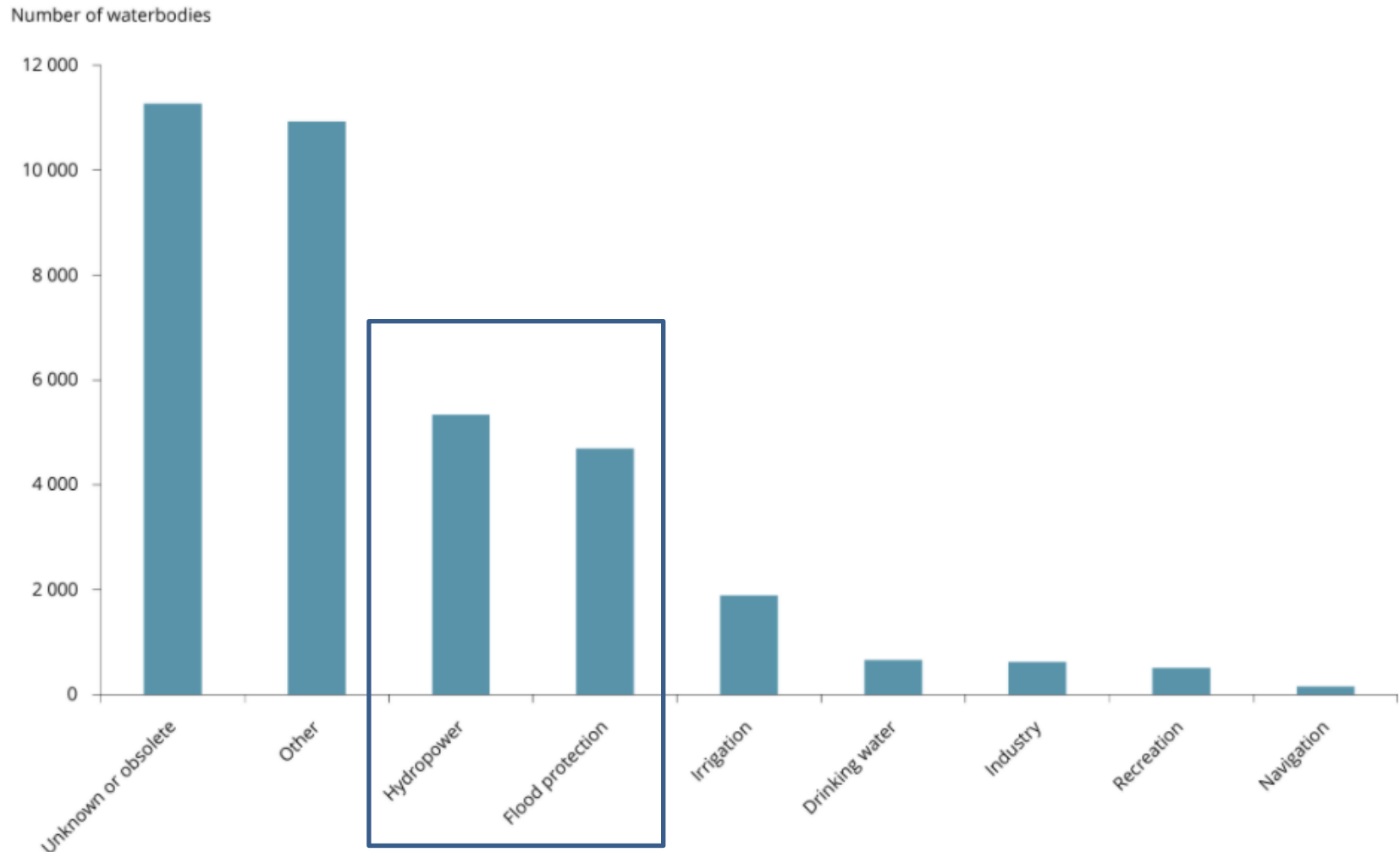


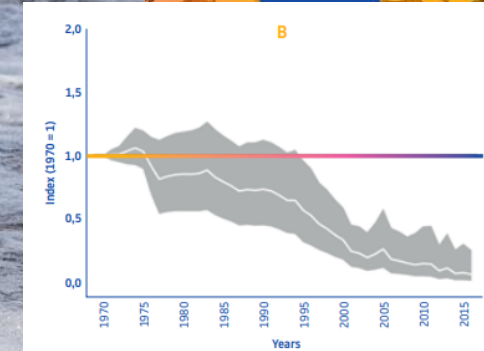
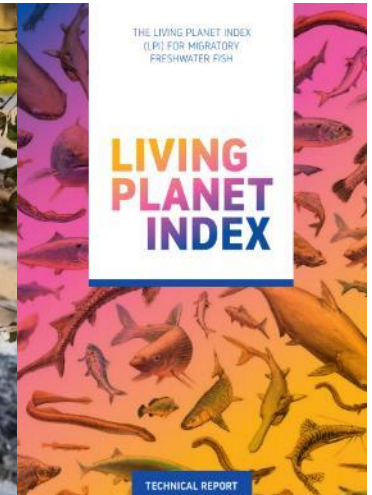
Figure 1. Number of water bodies affected by barriers for different purposes

Source: EEA, Tracking barriers and their impacts on European river ecosystems, 2021

Migratory freshwater fish populations have dramatically collapsed in Europe

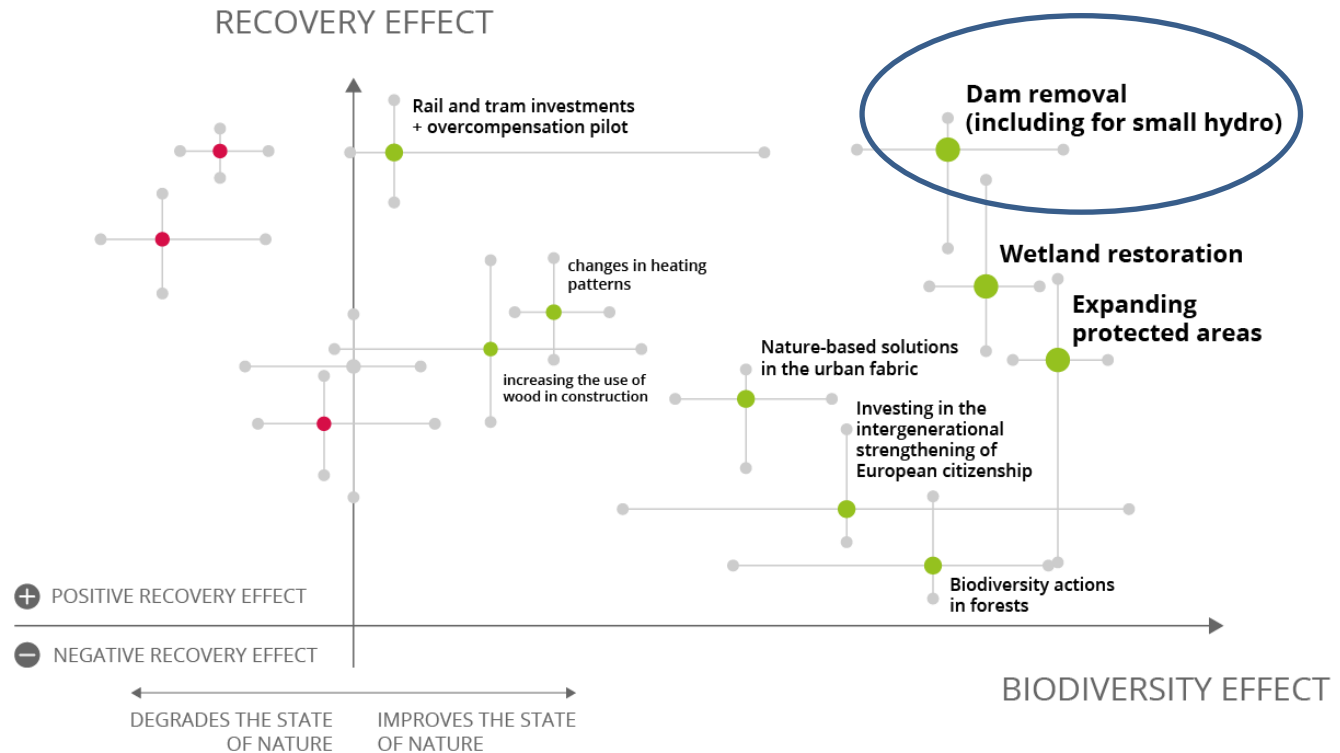
-93%
since 1970

© Petteri Hautamaa WWF Finland



Barrier removal is the “green” measure with the highest impact on biodiversity and recovery

Recovery and habitats effects of different measures



Recovery and habitat effects of different measures. The higher up in the figure the measure is located, the greater its employment impact, and the further to the right the measure is located, the more positive its impact on biodiversity. The measures with the highest employment and nature effects are in the top right-hand corner of the graph, while the measures with the lowest employment and nature effects are in the bottom left-hand corner. The measures are numbered in order of the highest nature impact. The whiskers represent the estimated ranges of impacts. The position of a measure between the extremes of the range depends on how the measure is implemented.

Source: Suomen Luontopaneeli. 2021. Luonnon monimuotoisuus ja vihreä elvytys. Suomen Luontopaneelin julkaisu 1/2021.

The need to foster barrier removal is acknowledged at EU level

EU Biodiversity Strategy



“Greater efforts are needed to restore freshwater ecosystems and the natural functions of rivers in order to achieve the objectives of the Water Framework Directive. This can be done by removing or adjusting barriers that prevent the passage of migrating fish and improving the flow of water and sediments. To help make this a reality, **at least 25,000 km of rivers will be restored into free-flowing rivers by 2030 through the removal of primarily obsolete barriers and the restoration of floodplains and wetlands.**”



European Parliament resolution on the implementation of the water legislation

“Welcomes the Commission’s commitment in the context of its Biodiversity Strategy for 2030 to restore 25 000 km of free-flowing rivers in the EU through the removal of barriers and the restoration of flood-plains;”

“Calls 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;”

Is the current EU target for barrier removal enough?

25,000 km = only 2% of EU rivers



- 1,2 million barriers in Europe
- 100,000 are obsolete
- By removing 2,5% (2,500), the 25,000 km target could be achieved



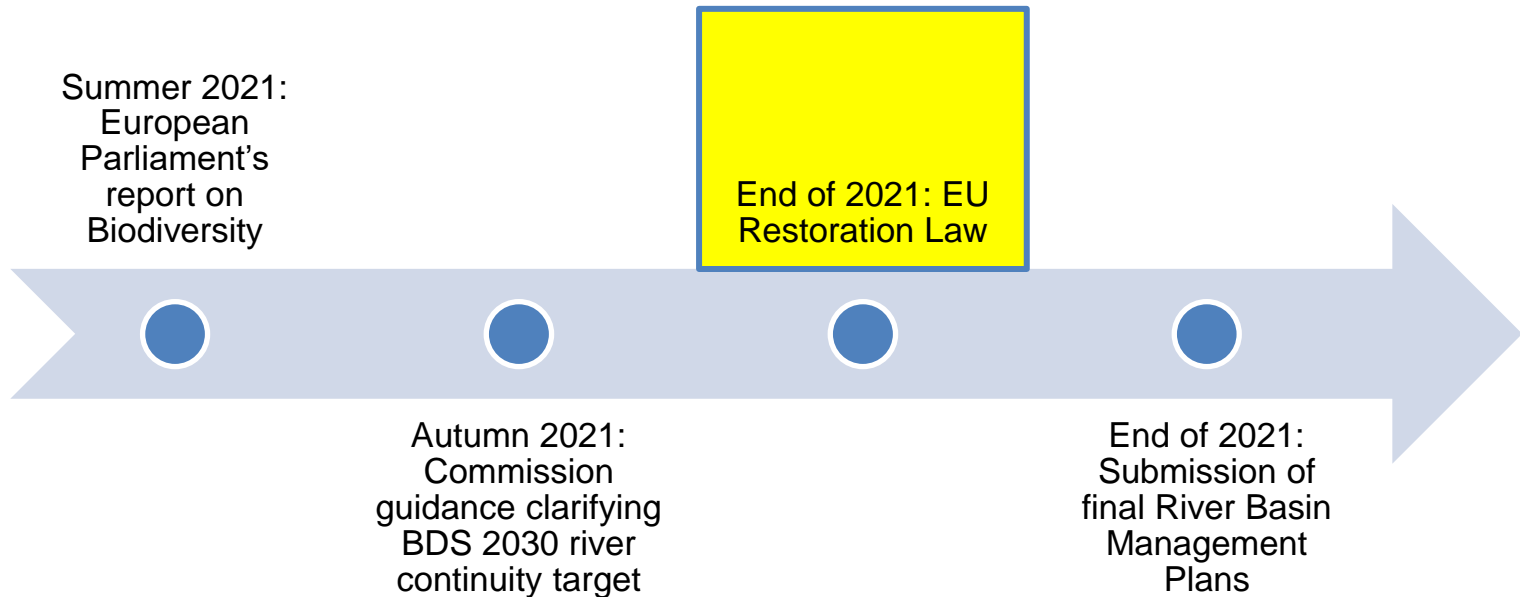
- National Biodiversity Plan sets the objective of restoring 50,000 km of free-flowing rivers by 2030



- NGOs recommend raising the EU target to 15% of rivers (178,000 km) restored to a free flowing state by 2030

See [advocacy paper](#)

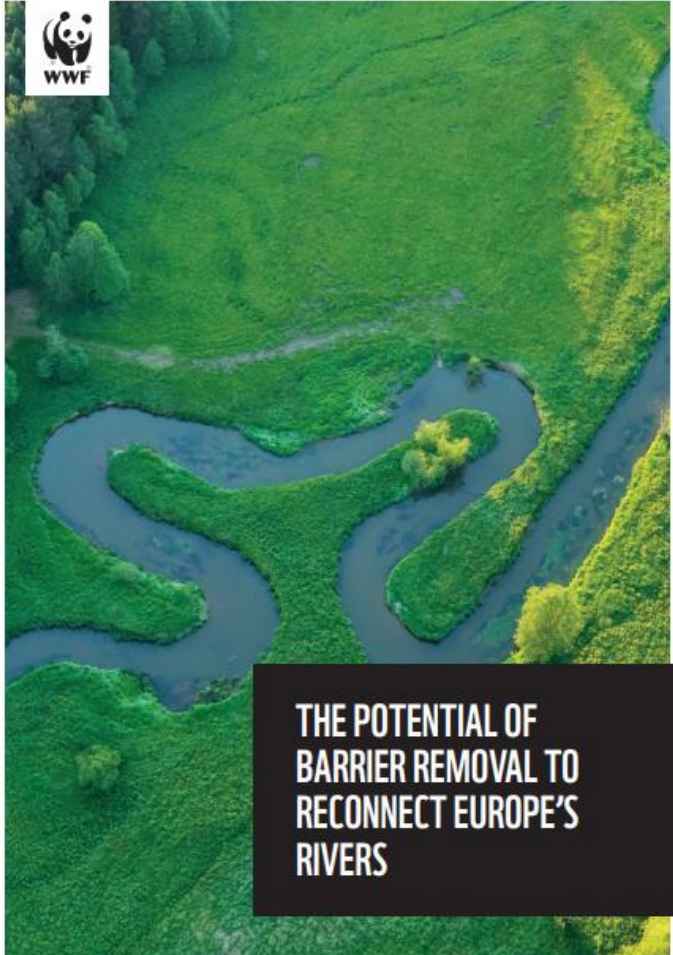
Next EU policy steps



Main questions at stake concerning river continuity:

- **Presence** of the free-flowing river target
- **Legally-binding** or not
- Level of ambition: 25,000 km or **more**?
- Legal framework: **in the Restoration Law** or in the Action Plan?

WWF analysis on barrier removal: scope



Sample: 30,000 barriers analysed in large and medium-size rivers in Europe

Table 1: Type of barriers included in the analysis

THE STUDY INCLUDES	THE STUDY DOES NOT INCLUDE
<ul style="list-style-type: none"> Longitudinal barriers, built for various purposes, namely ramps, weirs and dams Barriers > 0,5 meters in height ¹⁰ Some barriers equipped with fish passes 	<ul style="list-style-type: none"> Hydropower plants above 10MW Drinking water reservoirs Culverts and fords (mostly bridges and road crossings) Lateral barriers such as flood dykes Barriers < 0,5 meters height

Read the report [here](#)

WWF analysis on barrier removal: criteria for prioritisation

Table 1: Main criteria used for the prioritisation of barriers in this study

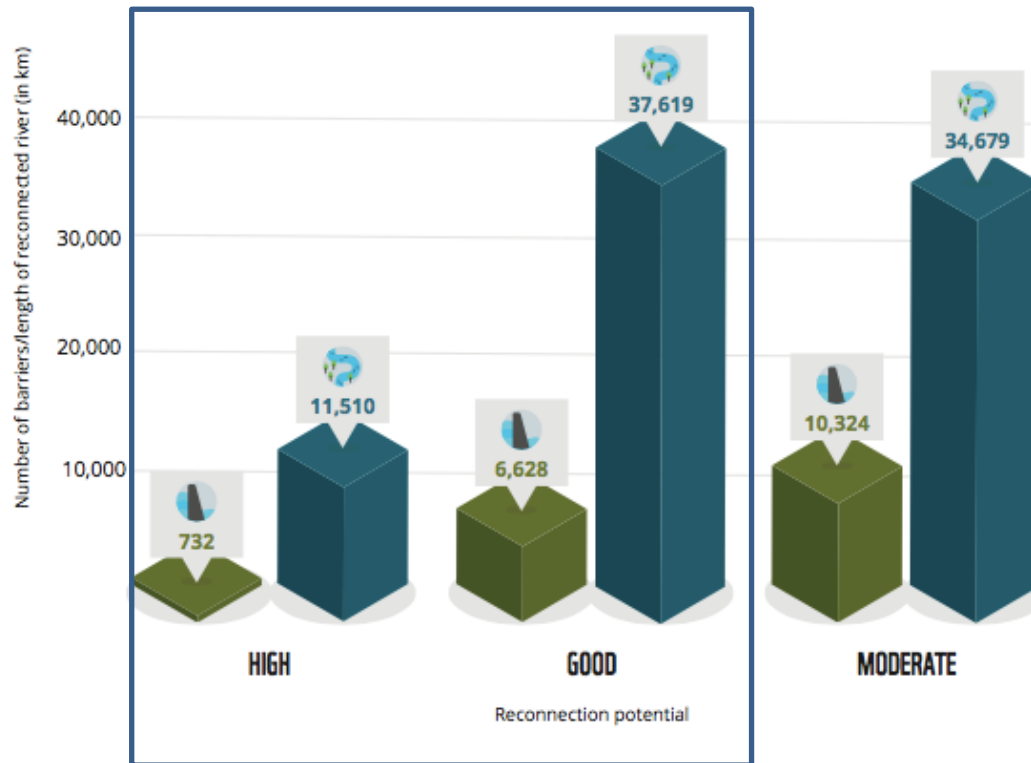
PRIORITISATION CRITERIA	DESCRIPTION AND REASONS FOR SELECTION
Length of reconnected river	Gives the measured length of continuously free flowing river stretch upstream ⁶ , important for fish migration and sediment transport.
Share of natural habitat coverage in the reconnected river stretch	Measured within a buffer around the reconnected river stretch, provides an indicator for hydromorphology or in general the intactness of the river.
Share of riparian zone (floodplain ⁷) in the reconnected river stretch	Additional indicator for the importance of upstream river stretch regarding floodplain reconnection (which is vital for fish spawning, habitat restoration, and sediment retention/remobilisation). Also measured within a buffer around the reconnected river stretch.
Share of the reconnected stretch included in a protected area	Another indicator for the intactness and ecological importance of the upstream river stretch to be reconnected, also measured within a buffer around the reconnected river stretch.
Position of the barrier in a protected area	Prioritises barrier removal within a protected area.

⁶ Considering only the length of the river section upstream of the removed barrier seemed to provide the most accurate estimate of the effects of barrier removal, especially in the case of removal of several successive barriers.

⁷ Floodplain and riparian zones are used here as synonymous.

WWF analysis on barrier removal: results

Figure 4: Distribution of barriers with removal potential in the EU27.



Nearly 50,000 km of rivers have a high and good potential to be made free-flowing again, in the sample studied alone (requiring the removal of 7360 barriers)

Different approaches across Member States to prioritise barriers for removal...

But a necessity to uphold common principles:

- Definitions of free-flowing rivers: include longitudinal, but also vertical and lateral barriers
- Removal of barriers vs. adaptation of barriers
- Inclusion in River Basin Management Plans
- Collaboration with multiple stakeholders

Thank you for your attention

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