Reconnecting Europe's Broken Rivers

Insights from AMBER

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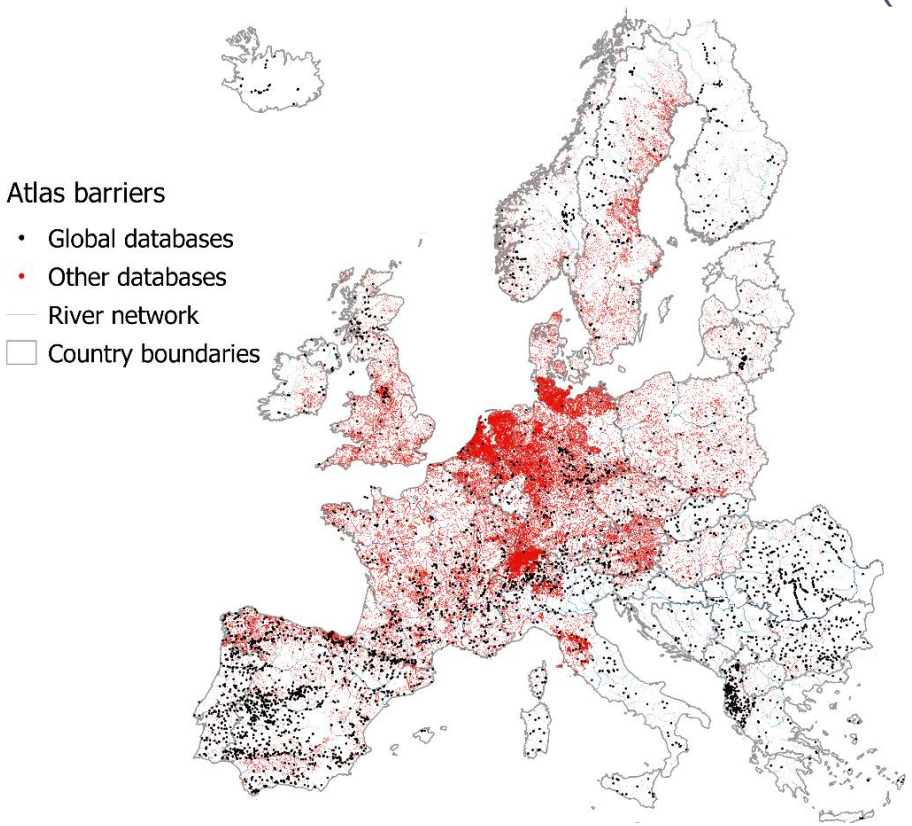
1 World's most fragmented rivers

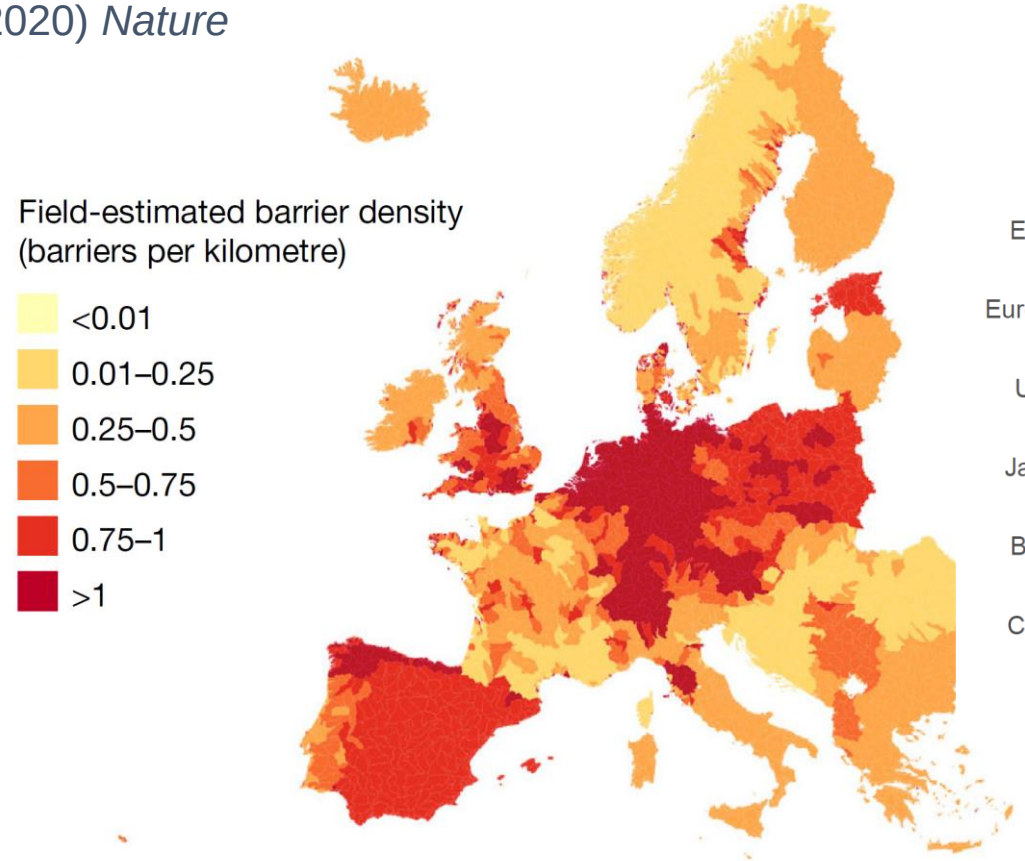
+1.2M barriers

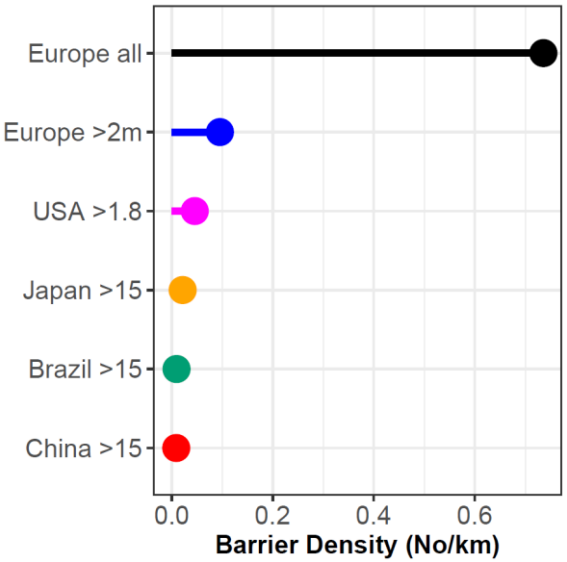
0.74 barriers/km

nature
International weekly journal of science

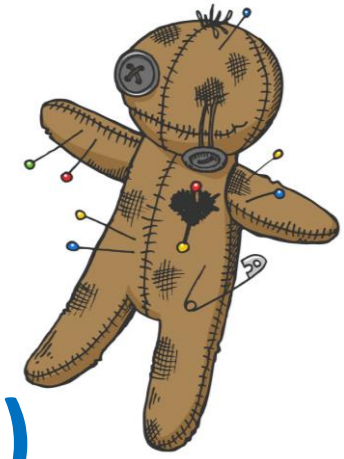
Belletti et al (2020) *Nature*

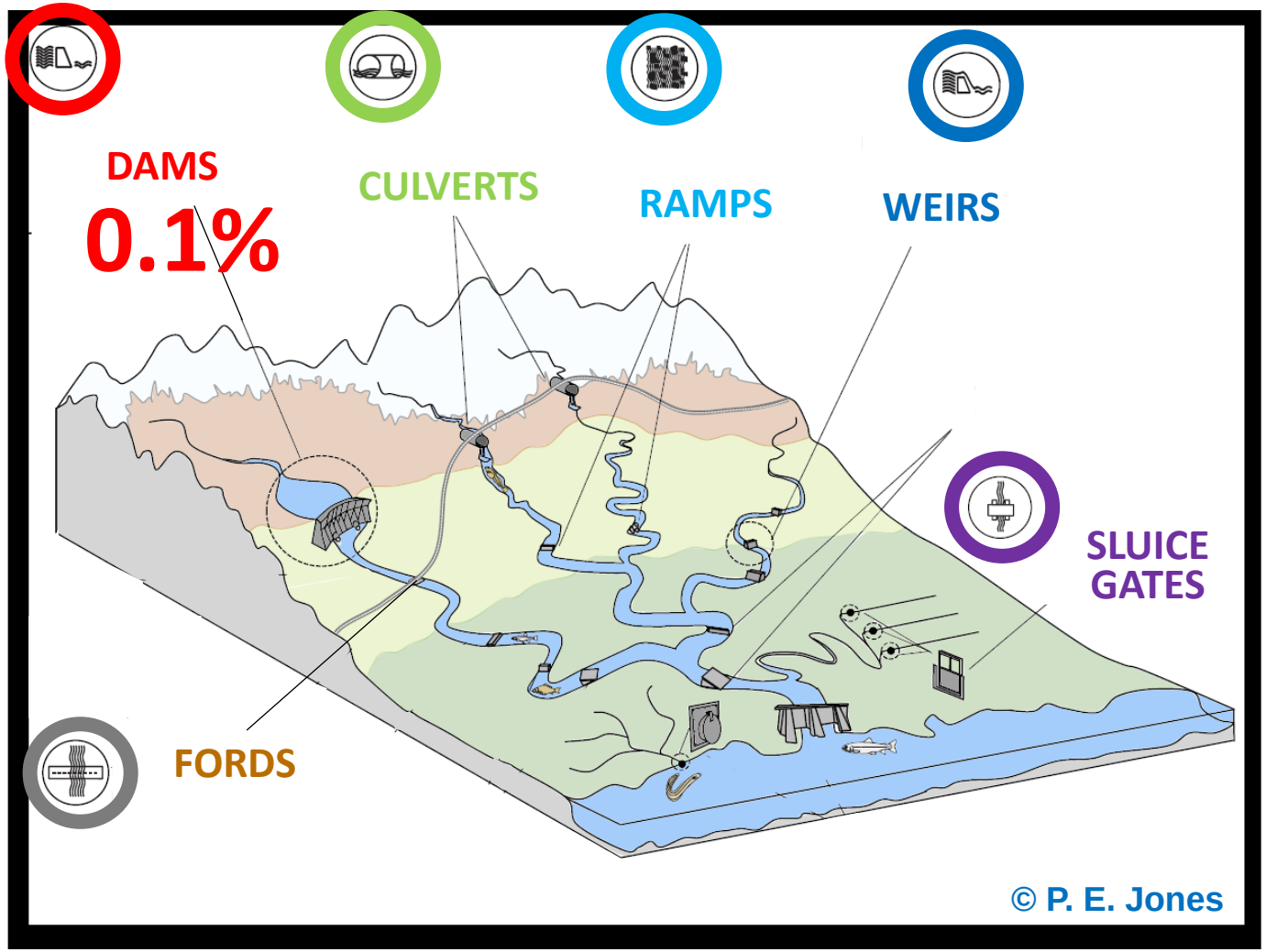






2 Death by a thousand cuts





Large dams (0.1%) get the attention…, small barriers (99.9%) do most of the damage….

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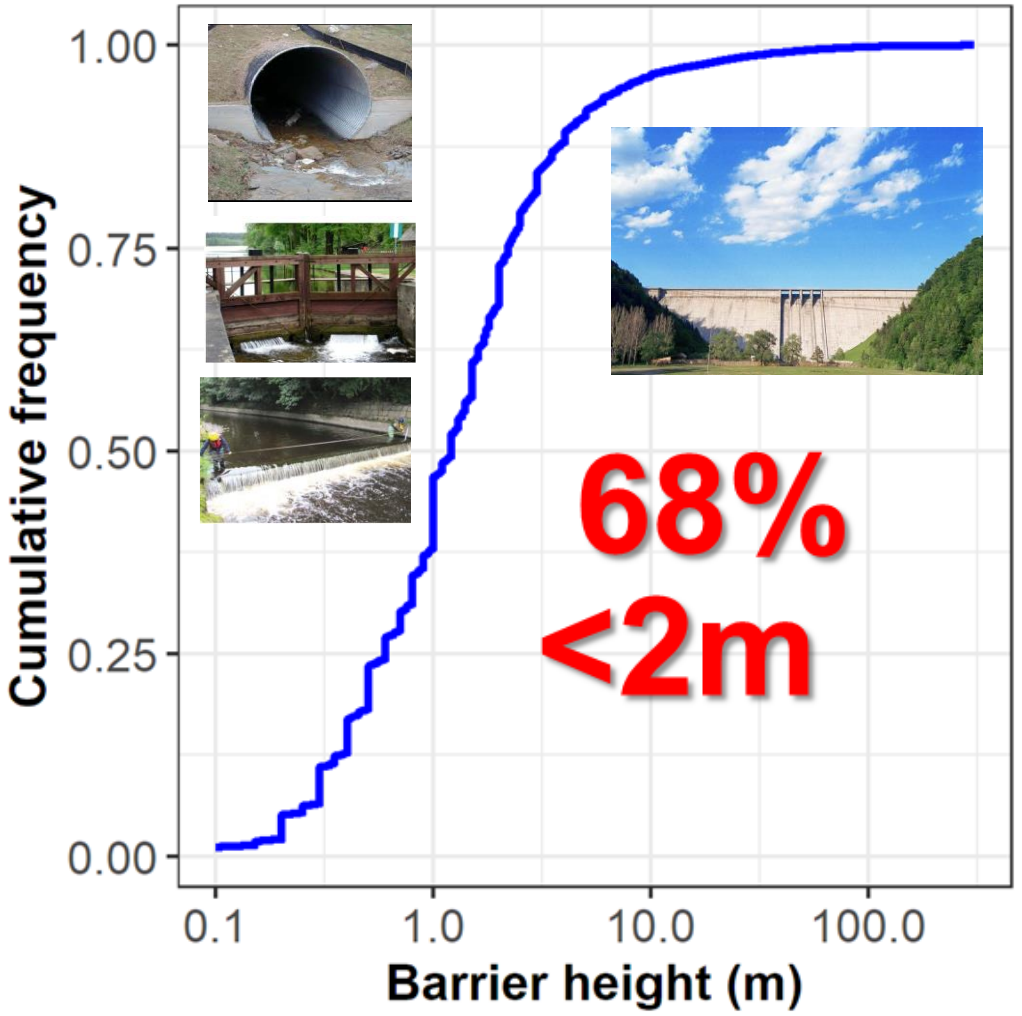
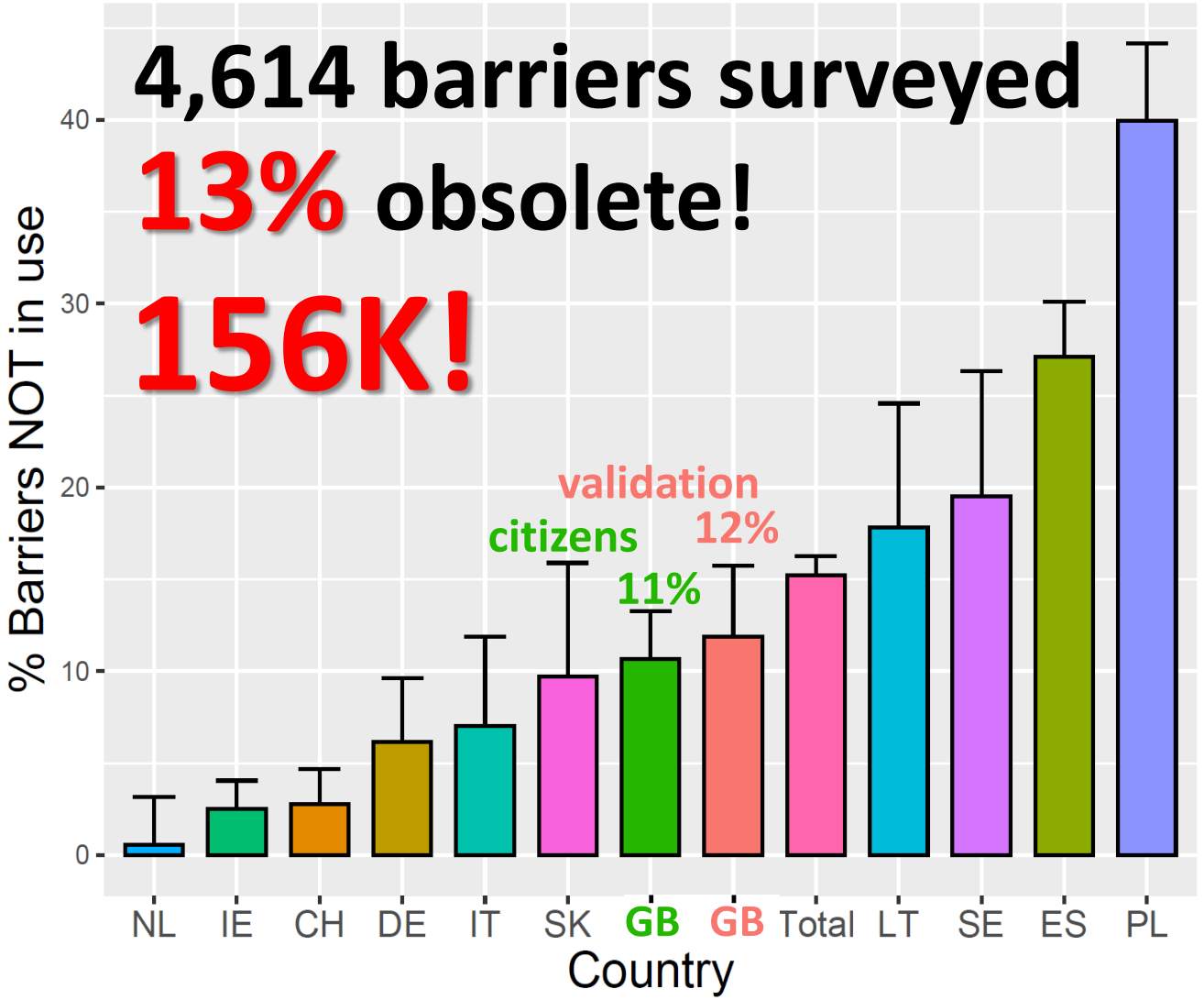
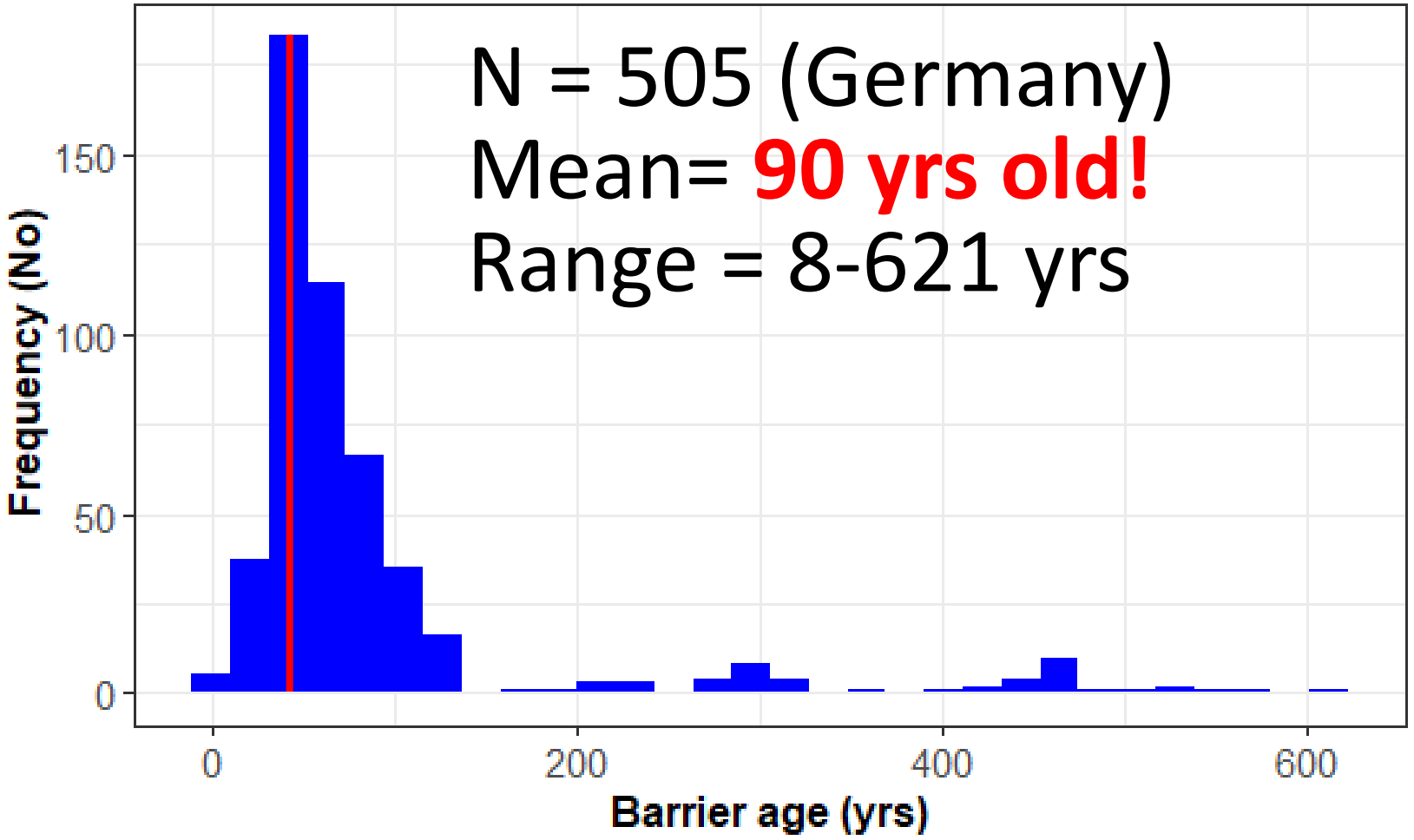
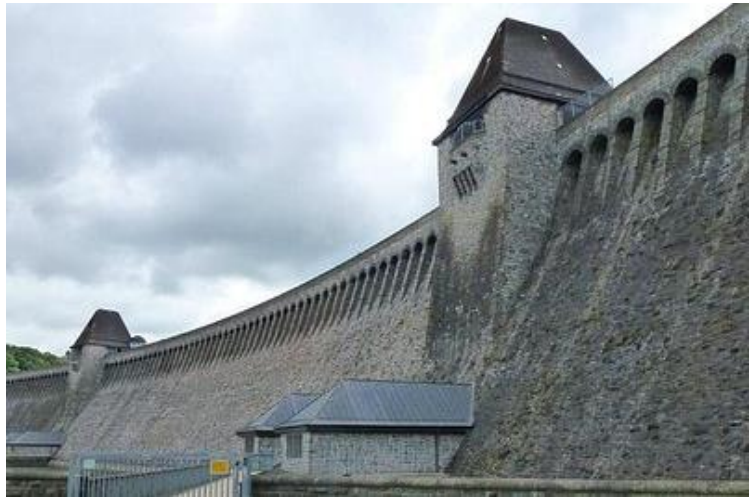
3 The opportunity: most barriers are small, many obsolete



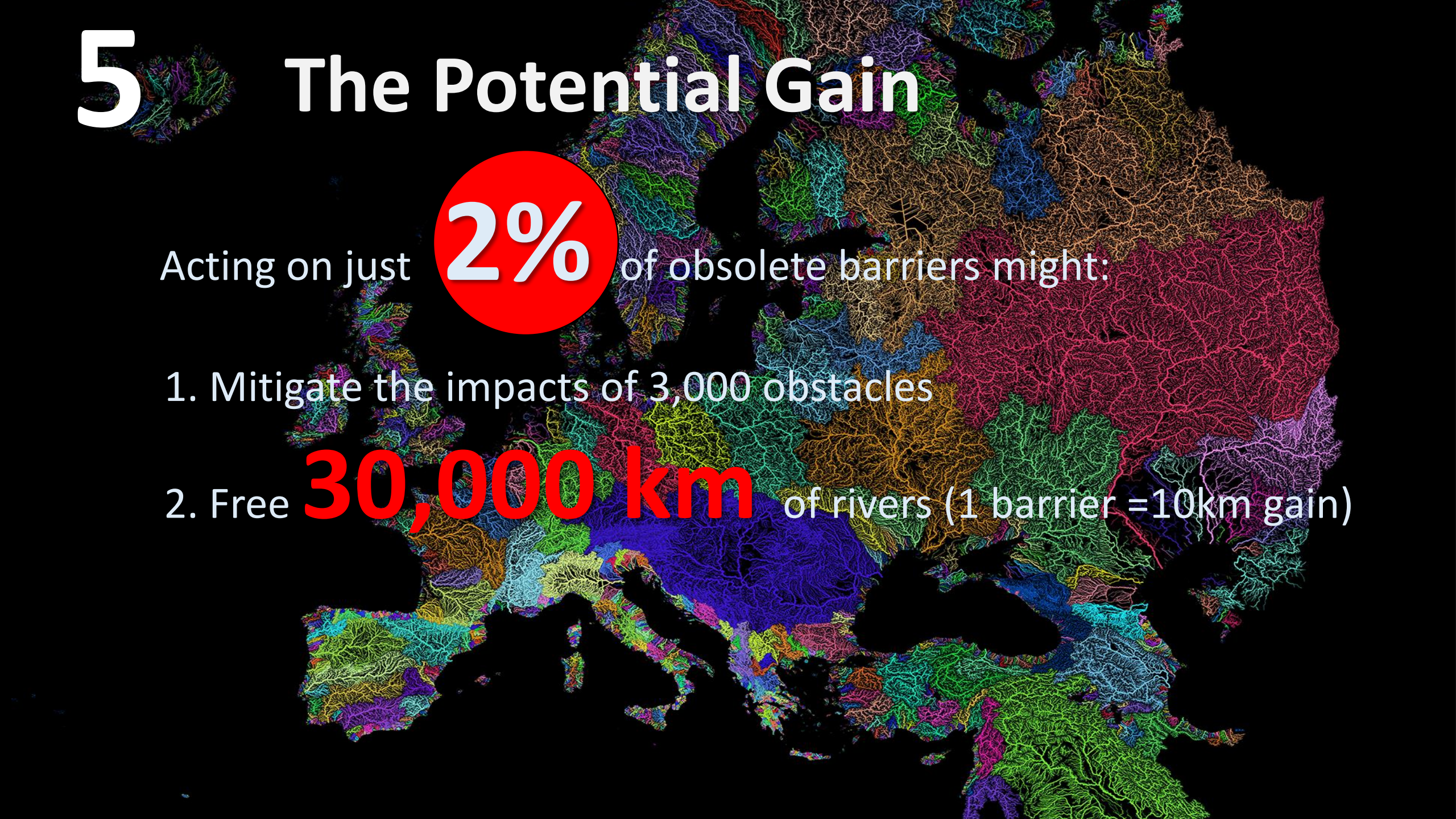


4 …. they also getting dangerously old & unsafe





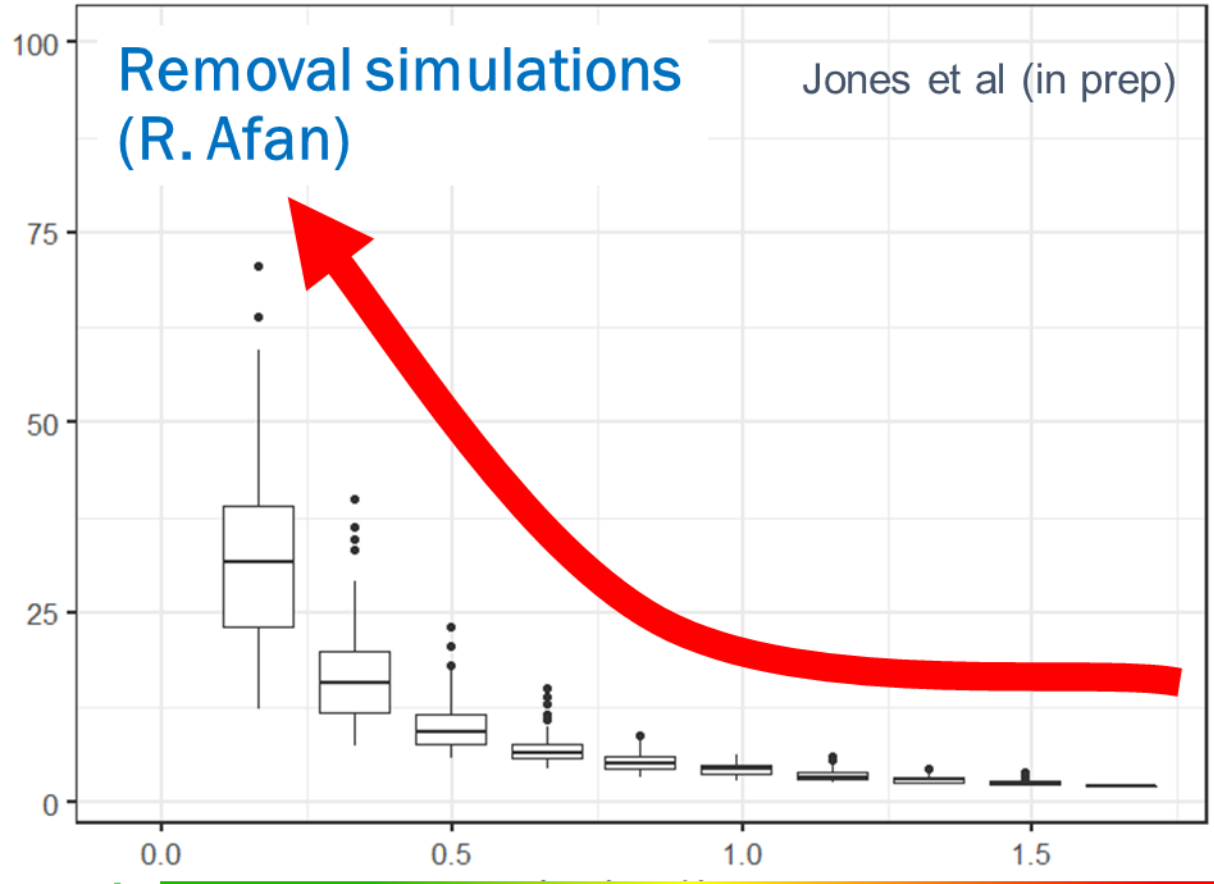
5 The Potential Gain



Acting on just **2%** of obsolete barriers might:

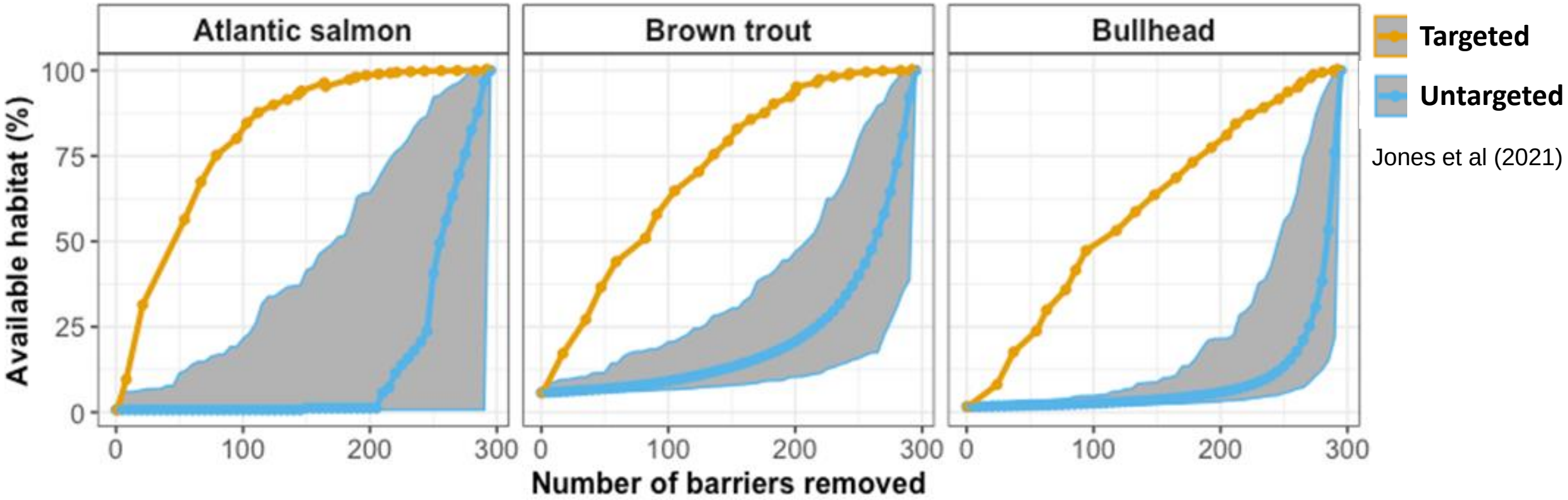
1. Mitigate the impacts of 3,000 obstacles
2. Free **30,000 km** of rivers (1 barrier =10km gain)

6 But how? Prioritization is key



- 5% of barriers cause 50% loss of connectivity
- Need to target weakly fragmented rivers, not heavily fragmented ones

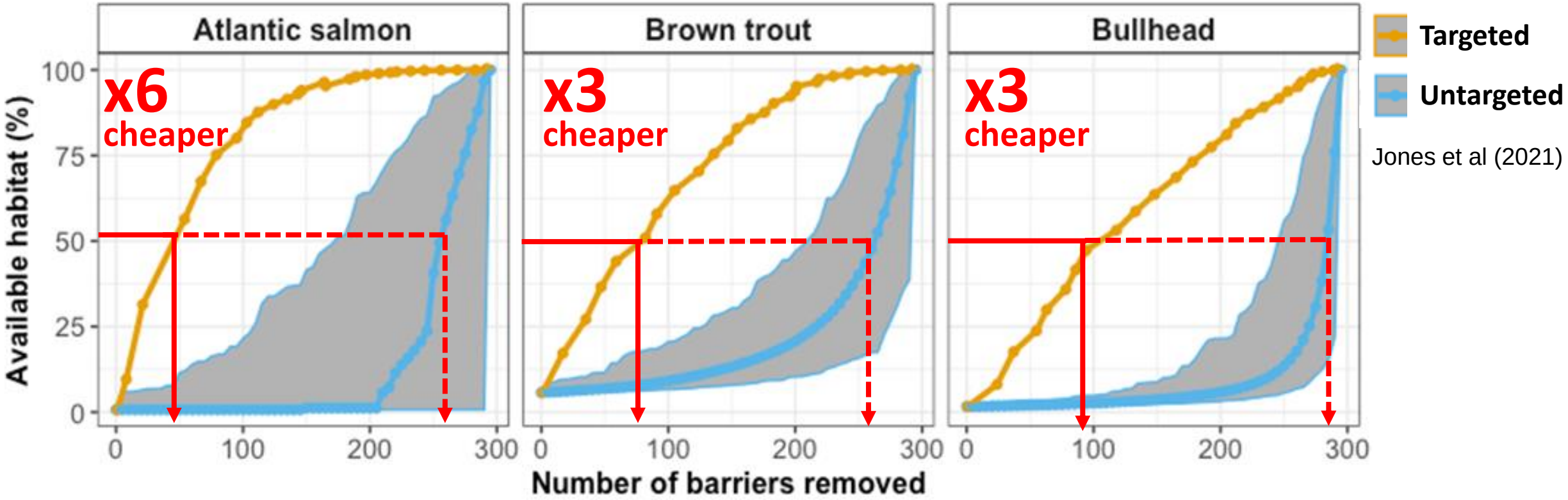
Prioritization is key



Jones et al (2021)

Funds are limited & time is of the essence:
Barriers need to be removed wisely!

Prioritization is key



Jones et al (2021)

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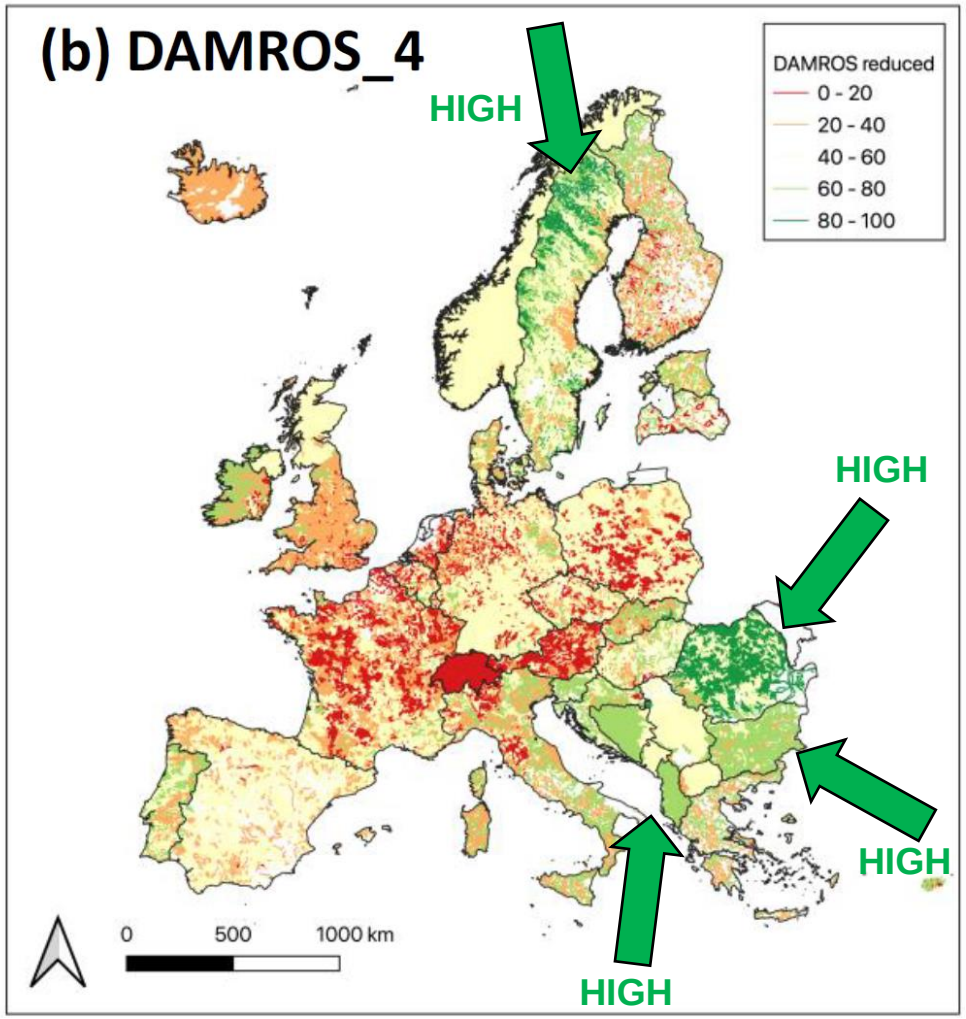
Barriers need to be removed wisely!

8 A Road Map is needed



Garcia de Leaniz et al (2021)

DAMROS:
Dam Removal Opportunity Score

The benefits (and opportunities) for barrier removal differ widely across Europe…

A multi-scale spatial approach is recommended: Long list > Short list

9 A two-pronged approach

1. STOP fragmenting

2. Reconnect

Halt current rates of senseless fragmentation

Removing dams to build them somewhere else is not the solution

Don’t demonize large dams, stop subsidies of small hydro

Promote and incentivize free-flow

Thank You

AMBER
LET IT FLOW

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 689682.

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