Freshwater Key Biodiversity Areas: application to strengthen the Natura 2000 network

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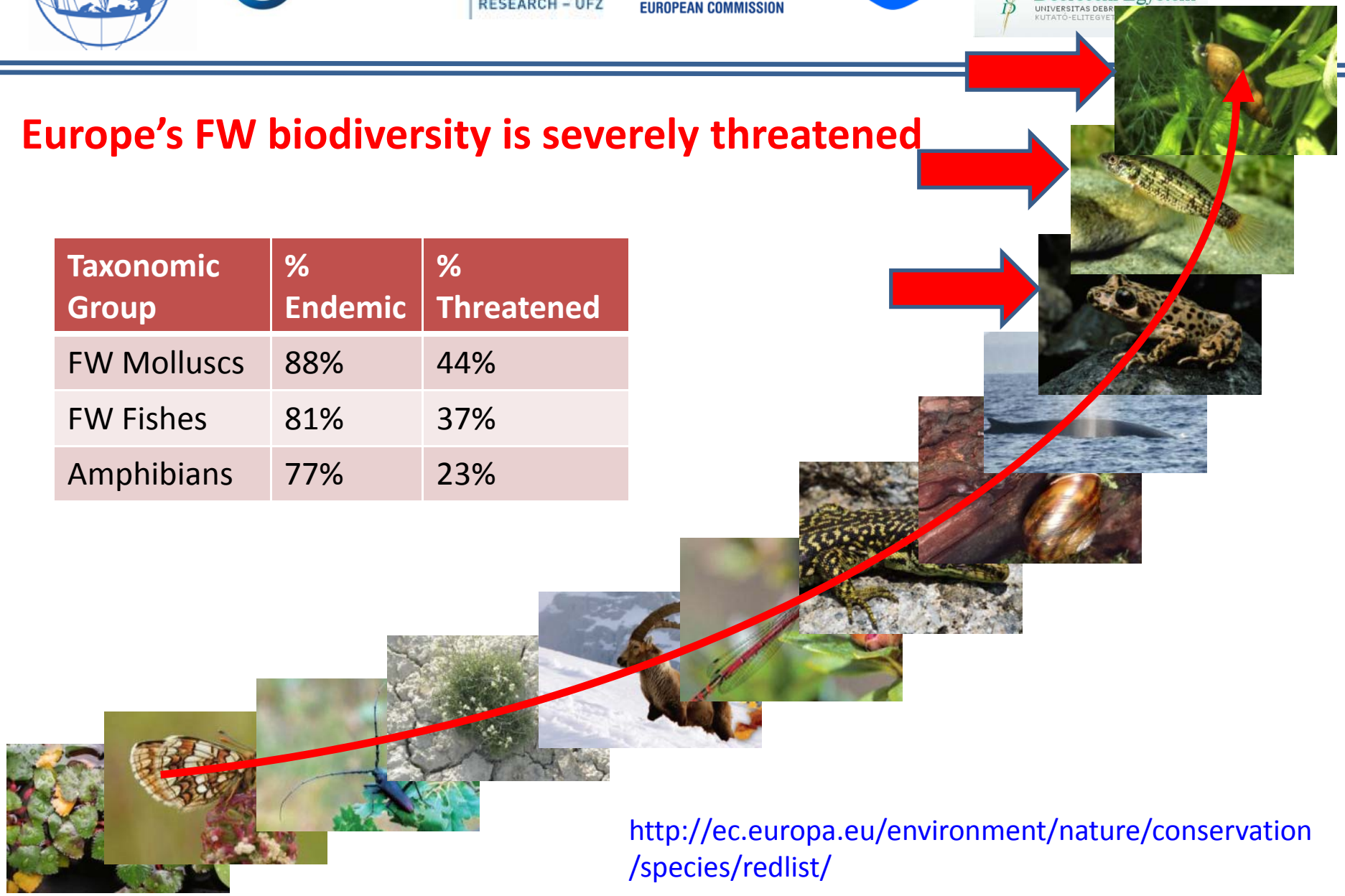
Biofresh Work Package 7 Team

"Informing Policy for Conservation Planning"

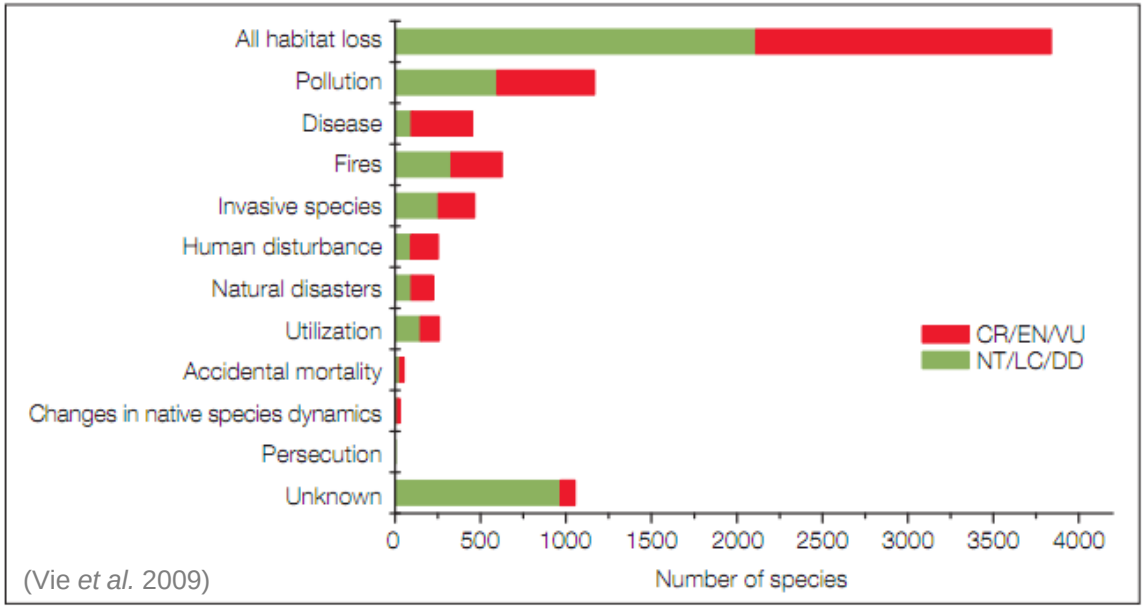
Europe's FW biodiversity is severely threatened

Taxonomic Group	% Endemic	% Threatened
FW Molluscs	88%	44%
FW Fishes	81%	37%
Amphibians	77%	23%



http://ec.europa.eu/environment/nature/conservation/species/redlist/

The main threat to biodiversity is loss and degradation of habitat

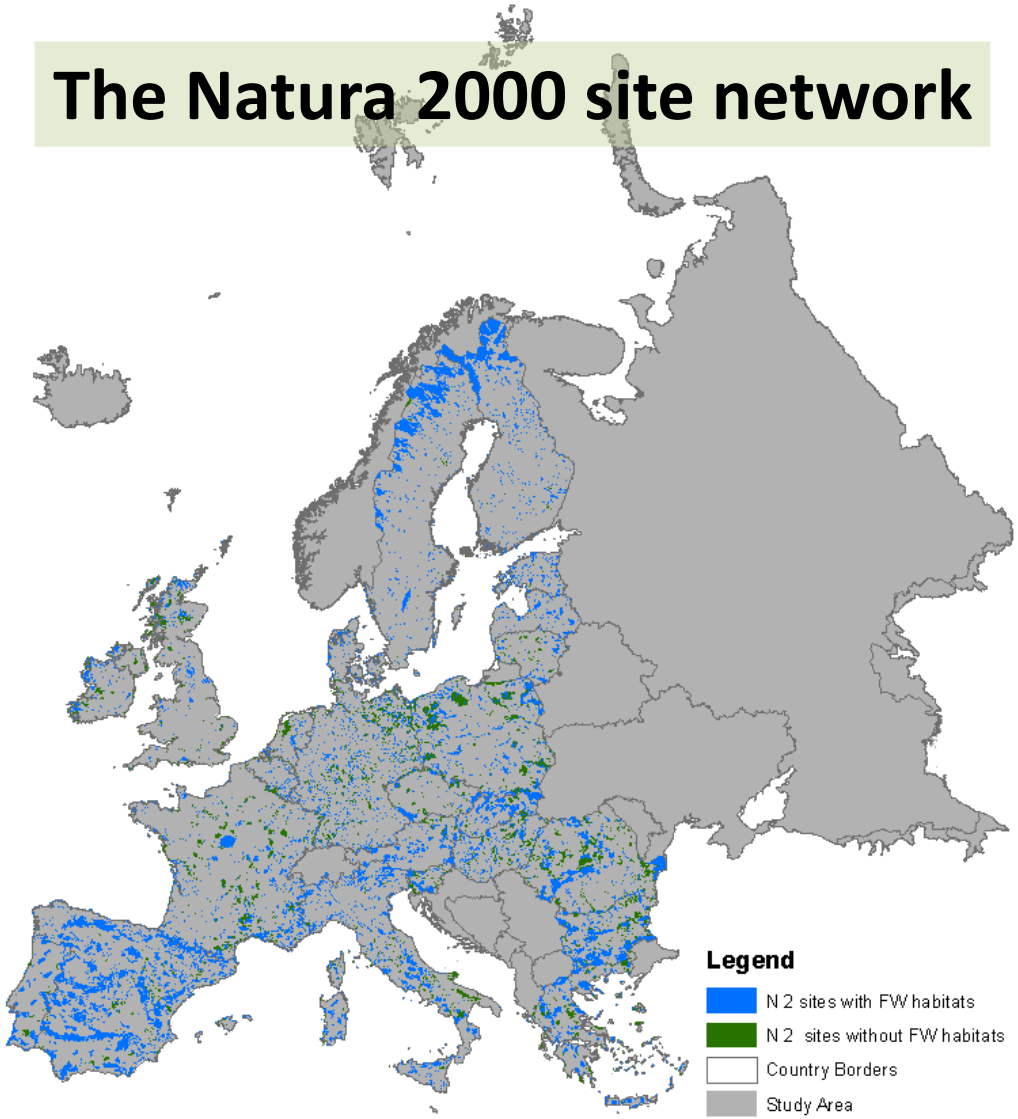


(Vie *et al.* 2009)

Site conservation (Protected Areas) is one of the most effective means to mitigate this threat

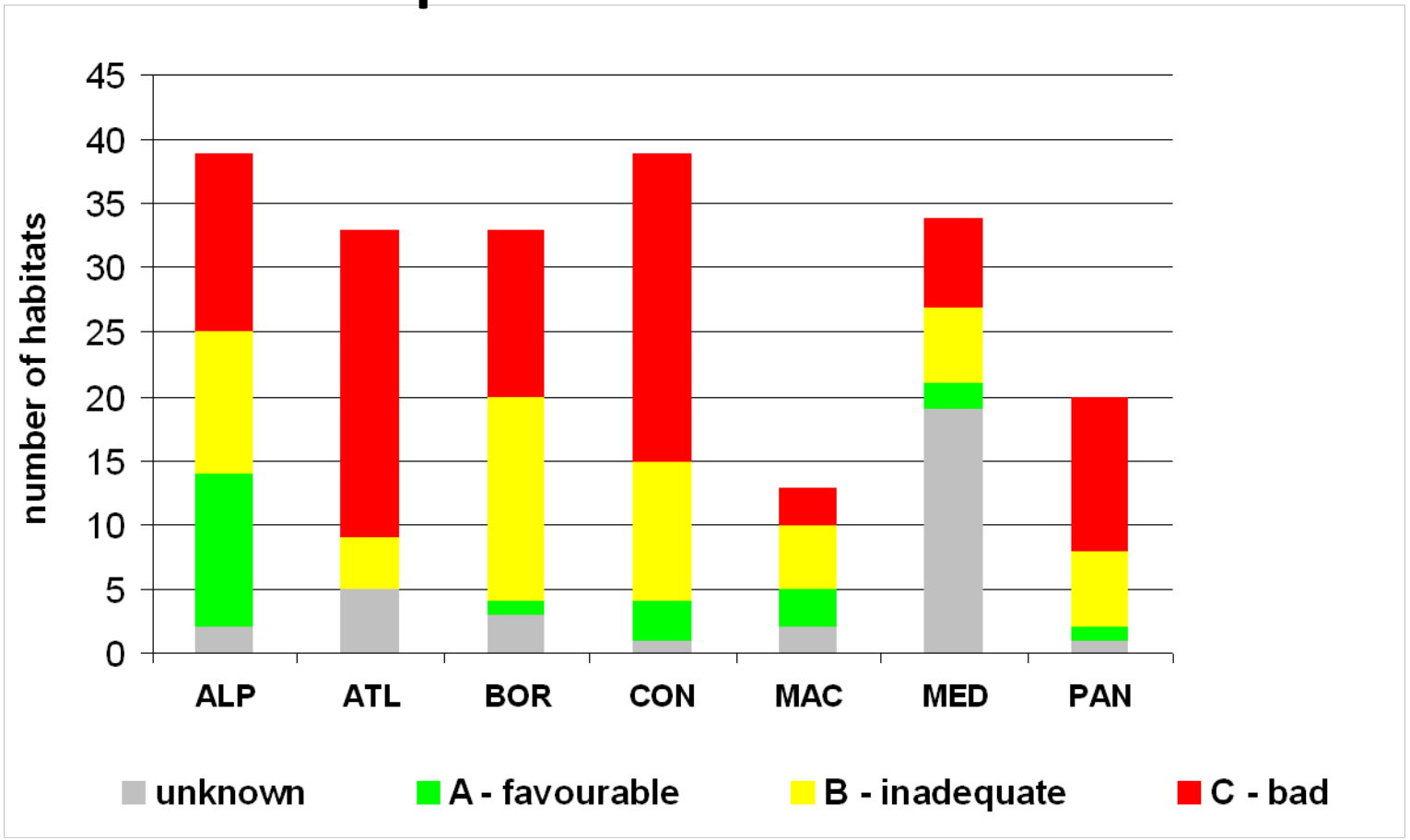
The Natura 2000 site network

- Protected Areas are a powerful conservation tool, but...
- Many critical sites for freshwater species are not included
- Where freshwater habitats are within Natura 2000 sites their status if often “Bad”



Data source EEA, 2013

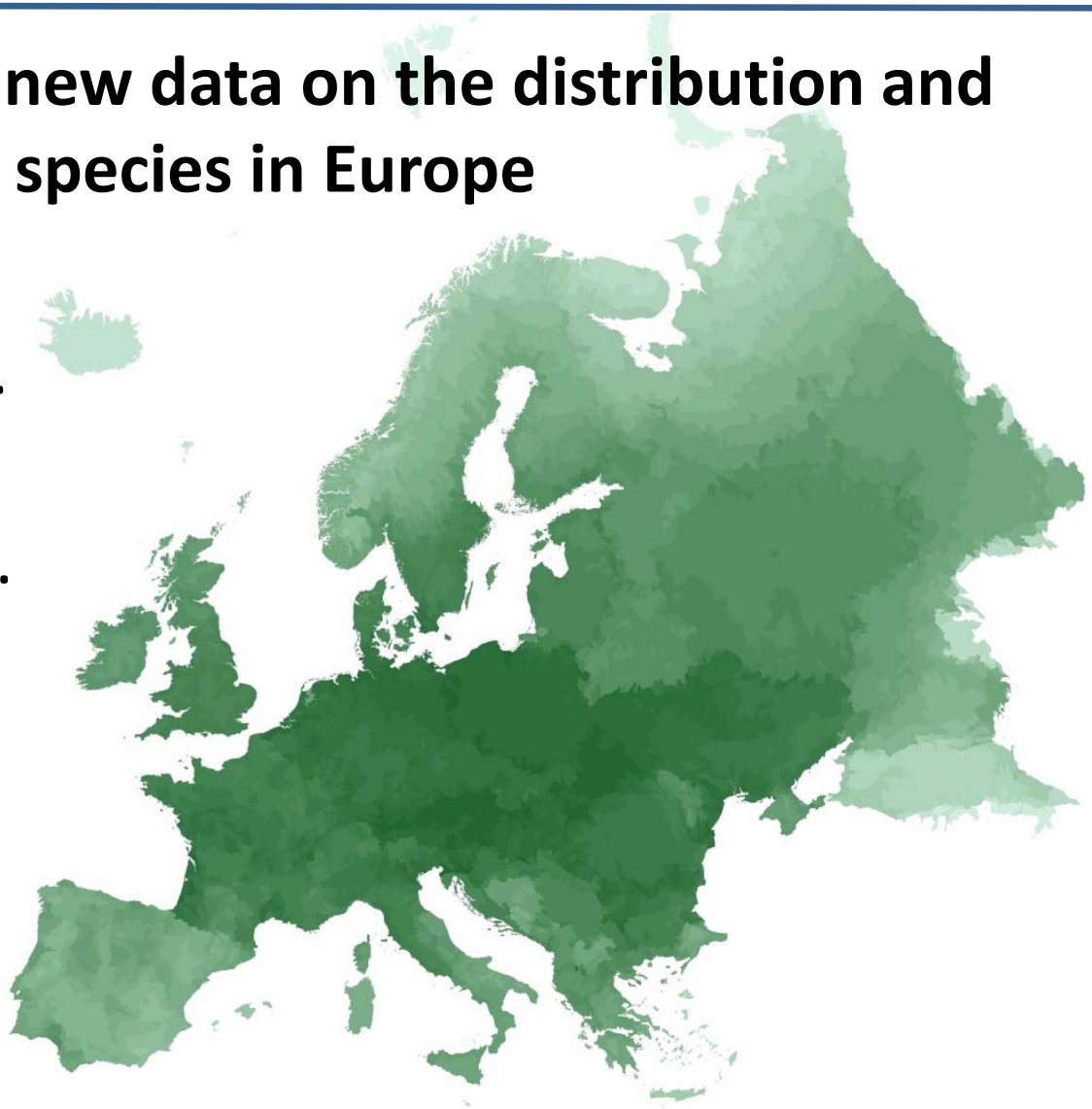
Many Freshwater Habitats in Natura 2000 (EU25) remain in “bad” or “inadequate” condition



Data aggregated from Eionet - ETC on Biological diversity 2009: Online report on Article 17 of the Habitats Directive (2001-2006)

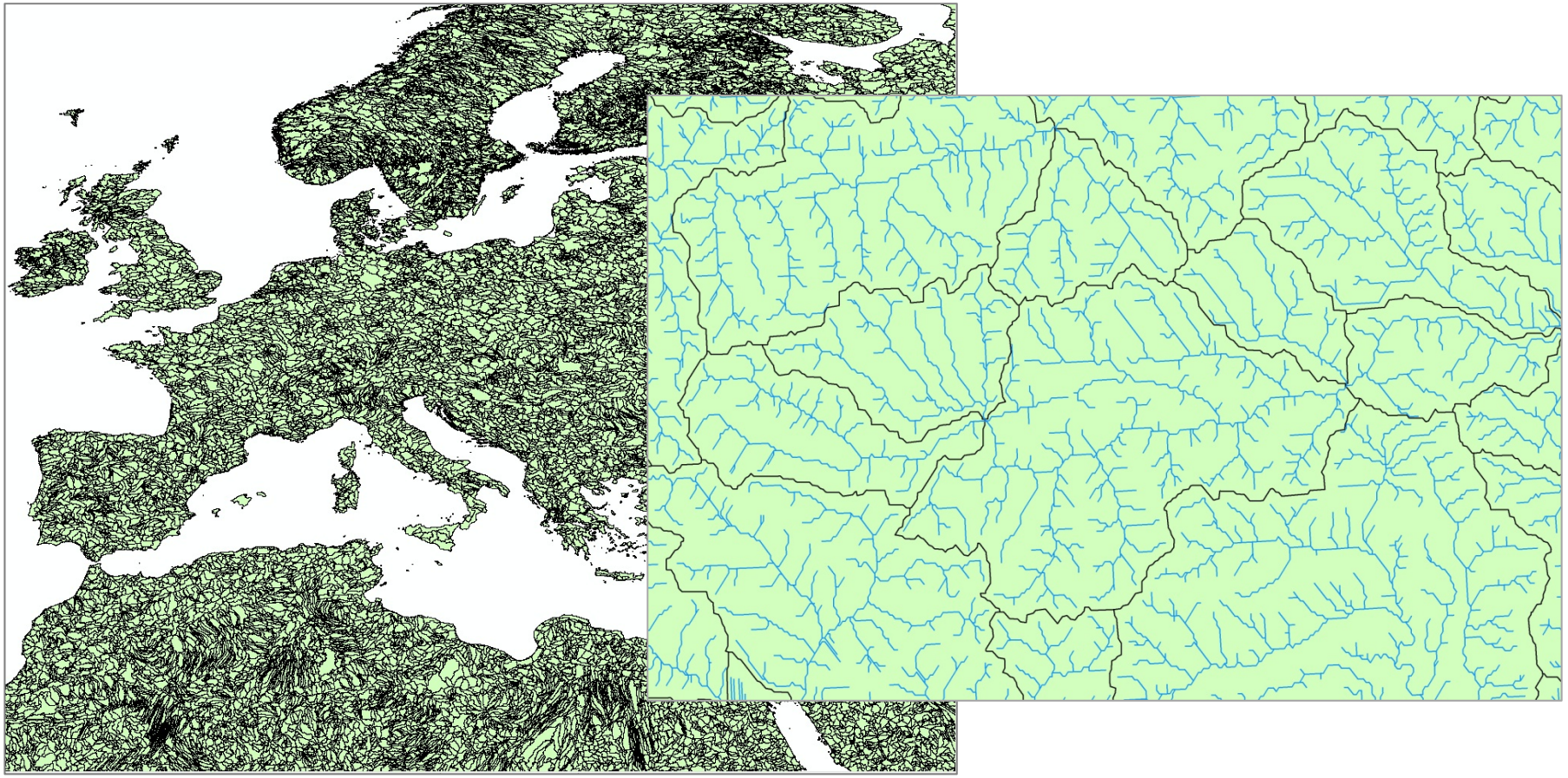
We now have much new data on the distribution and status of freshwater species in Europe

- ✓ Odonata 139 spp.
- ✓ Fishes 530 spp.
- ✓ Molluscs 680 spp.
- ✓ Plants 368 spp.



Map of species richness for fishes, molluscs, dragonflies & damselflies, and aquatic plants: numbers range from 6 – 395 spp. per catchment

Species are now mapped to sub-catchments in the new HydroBASINS global catchment layer



Key Biodiversity Areas (KBAs) are identified to guide selection of sub-catchments as protected areas

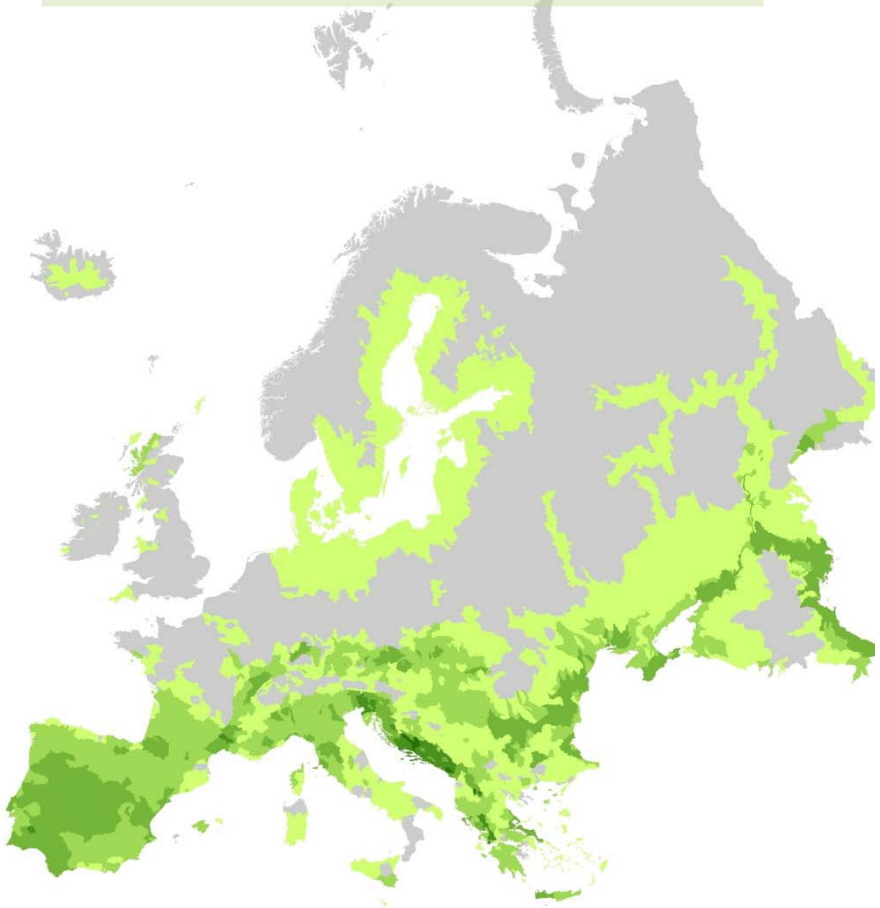
- Sites of global significance for biodiversity conservation
- Identified using globally standard criteria and thresholds
- Criteria relate to the vulnerability and irreplaceability of species

Cernica polje, Bosnia-Herzegovinia. © Joerg Freyhof

BioFresh Outputs for Policy:

We are providing new information to guide policy for the protection of freshwater biodiversity in Europe …

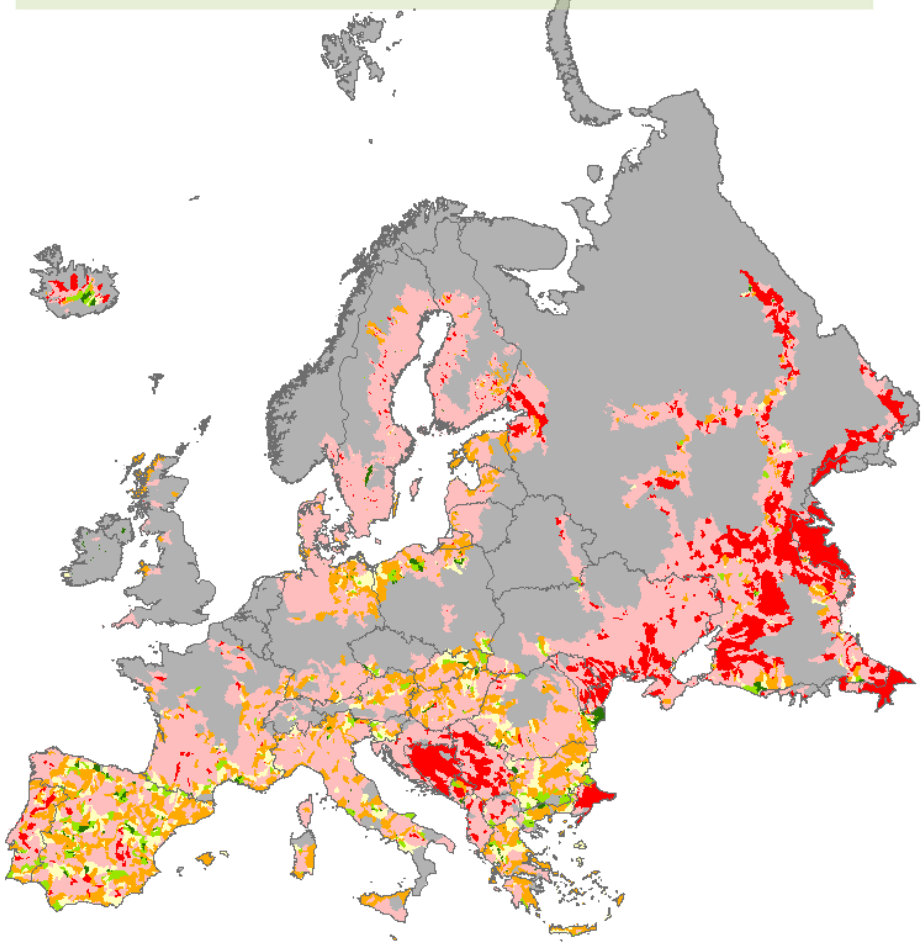
Locations of FW KBAs



No. trigger species (fishes, odonata, molluscs, plants)

0 | 1 - 2 | 3 - 5 | 6 - 12 | 13 - 21 | 22 - 69

Gaps in current protection



KBAs with Protected Areas in Perc.

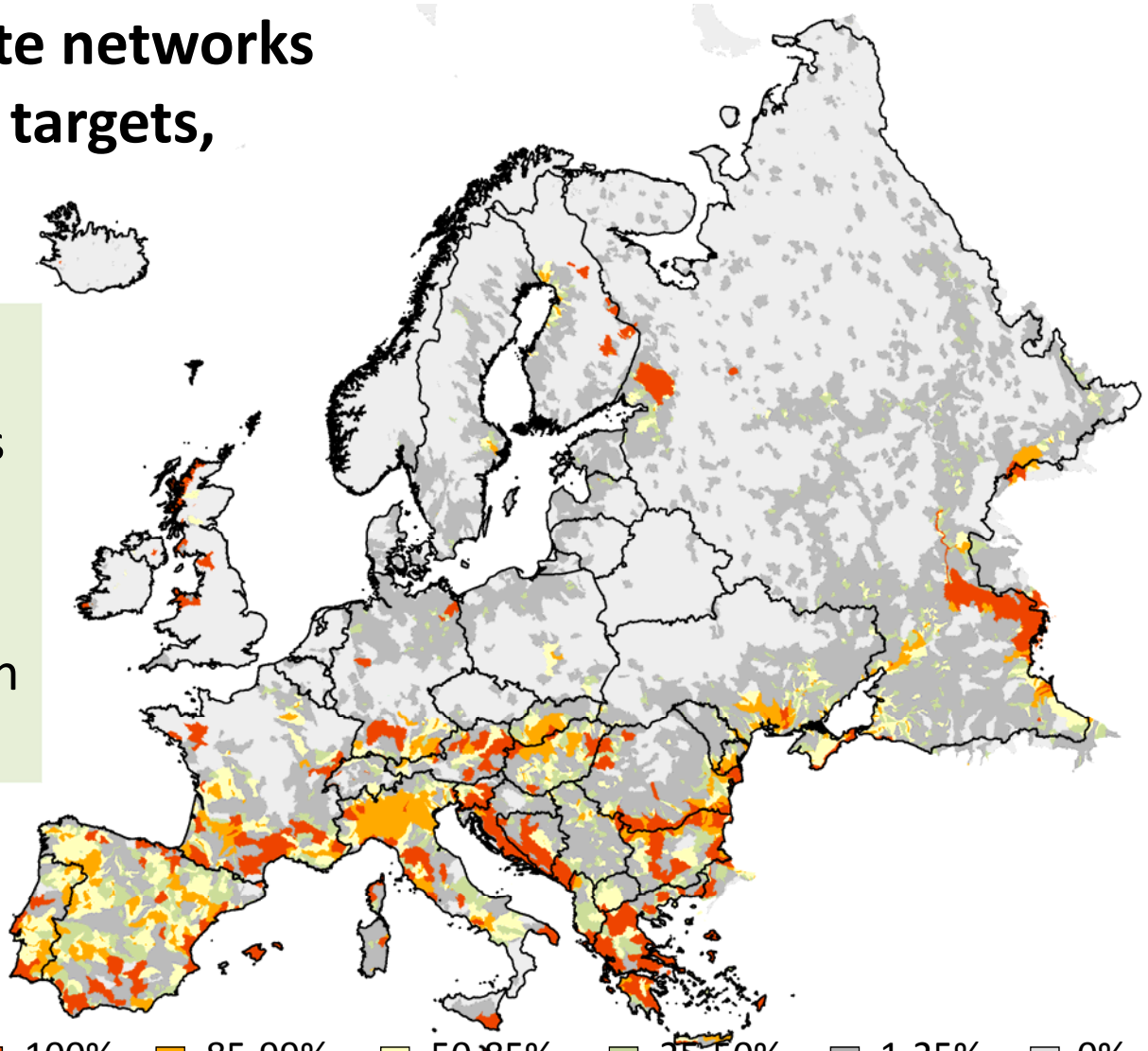
Completely Unprotected | > 0 and ≤ 20 | > 20 and ≤ 40 | > 40 and ≤ 60 | > 60 and ≤ 80 | > 80

Create optimal KBA site networks meeting conservation targets, such as to:

a) Minimise total area

b) Include all occurrences for CR species, 75% for EN, 50% for VU species

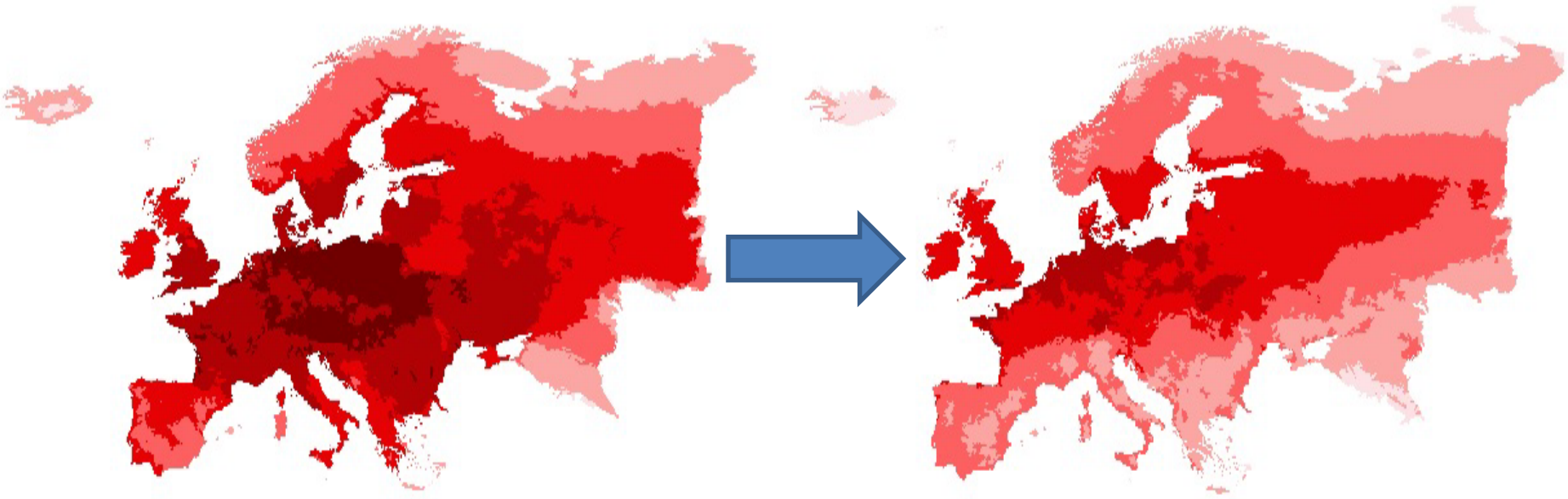
c) Include catchments rich in endemic species



We can also predict how climate change may impact future KBA locations as species disperse

Current species richness

Projection (no dispersal)



Projections are to the 2050s climate

Where do we go from here?

Discussion: ***What are the next steps to ensure freshwater KBAs are better accounted for within the Natura 2000 network?***

Thank you for your ideas

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