

## **Feedback of the Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) on the EU Nature Restoration Plan and the binding EU nature restoration targets**

The Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) is Germany's largest and one of the leading international research centres for inland waters. The feedback of the IGB is science-based and focuses on aspects of the biodiversity of inland waters – rivers and their adjacent floodplains, lakes, springs and other freshwater ecosystems often classified as inland wetlands.

The IGB strongly supports the plan to develop binding EU nature restoration targets, because inland water ecosystems are of high ecological, economic and societal value, and also hotspots of biological diversity. At the same time, they are among the most threatened ecosystems on earth, while climate change and water scarcity are worsening the situation. Nonetheless, inland waters receive much less attention than terrestrial and marine ecosystems, and existing legislative and other measures to preserve and promote freshwater biodiversity are insufficient.

Several high-profile agreements designed to advance ecosystem health and species protection in European inland waters, such as the Water Framework Directive (WFD), the Environment Action Plan and the Habitats Directive, have failed to stop or reverse the freshwater biodiversity decline. In order to comprehensively protect the biodiversity of inland waters, novel approaches must be developed and implemented. Binding EU nature restoration targets can be a reasonable and suitable tool to better protect inland waters and their ecosystem services they provide to mankind.

Nevertheless, care should be taken that inland water bodies, particularly rivers, should not only delineate protected areas. Achieving fixed area coverage (e.g. a certain percentage) is not necessarily meaningful for inland waters because of their small spatial extent; rather catchments are central units – but these are independent of national and administrative borders. Additionally, freshwater restoration success will largely depend on the pertaining external and internal processes in inland waters. Aquatic ecosystems do not exist in isolation but are closely linked to their terrestrial surroundings and vice versa. For example, many species cross from one ecosystem type to another during their life cycle. Hence, the strength and mechanisms of aquatic-terrestrial coupling have to be taken into account.

Overall, freshwater biodiversity conservation needs an integrative, horizontal and vertical approach in policymaking. Holistic and ecosystem-based management approaches must be applied to be effective and efficient. The restoration targets should be clearly defined and practical indicators for assessing progress towards the conservation and sustainable management of inland waters and their biodiversity must be developed.

From a scientific point of view, the restoration of connectivity (in all dimensions but in rivers particularly considering instream barriers) and disturbances (e.g. through natural flow regimes) is key. Identifying and focusing restoration efforts on needs of flagship umbrella species would support prioritization of actions as well as increasing recognition of freshwater biodiversity. As an unconditional basis it is necessary to manage and provide hydrological and biological freshwater data according to the FAIR principles to support data mobilization and access.

Finally, the IGB researchers would like to underline that, beside this restoration initiative, links should be made to already existing EU legislation to allow coherent policymaking. Especially the effective implementation of the WFD in the EU Member States is of crucial importance to safeguard freshwater ecosystems, their biodiversity and provided ecosystem services. Synergies should be developed where possible, e.g. with the EU Floods Directive implementation.

#### **Recommended additional sources for information:**

- Recommendations for the new Global Biodiversity Framework from the European Experience <https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/conl.12771>
- Inland Water in relation to the post 2020 Global Biodiversity Framework <http://bit.ly/Inlandwaters-CBD>
- Living Waters: A Research Agenda for the Biodiversity of Inland and Coastal Waters <http://bit.ly/FreshwaterBiodiversity-ResearchAgenda2019>
- Bending the Curve of Global Freshwater Biodiversity Loss – An Emergency Recovery Plan <https://academic.oup.com/bioscience/article/70/4/330/5732594>
- ALTER-Net/EKLIPSE key messages for the new EU Biodiversity Strategy; registered feedback #F502307: [http://bit.ly/ALTER-Net\\_EKLIPSE\\_keymessages\\_FeedbackEU](http://bit.ly/ALTER-Net_EKLIPSE_keymessages_FeedbackEU)
- IGB Policy Brief: Strengths and weaknesses of the Water Framework Directive <https://bit.ly/IGB-PolicyBriefWFD>
- Science Policy Forum: Set ambitious goals for biodiversity and sustainability <https://science.sciencemag.org/content/370/6515/411>

#### **Contact and further inquiries:**

The IGB researchers are ready to support the further process of evidence-based EU biodiversity and restoration policymaking and can be directly contacted [via the central IGB address](#).