



IGB

Leibniz Institute of Freshwater Ecology
and Inland Fisheries

EU CONSULTATION

**Protecting waters from
pollution caused by nitrates
from agricultural sources**

IGB Feedback

07 March 2023

Introduction, background and focus

The Leibniz Institute of Freshwater Ecology and Inland Fisheries (IGB) is Germany's largest research centre for freshwaters. Our research findings help to tackle environmental changes and to develop strategies for sustainable water management – true to our guiding principle “Research for the future of our freshwaters”. Based on our research and expertise, we comment on the EU Consultation “Protecting waters from pollution caused by nitrates from agricultural sources”.

The IGB researchers underline that, from a scientific point of view, the adoption of the Nitrate Directive (ND) was a step in the right direction. The still existing problems lie mainly in its practical implementation deficit in the Member States – a parallel shared with other EU legislation such as the Water Framework Directive (WFD).

Further, the high spatial variability in hydrological and soil conditions and the resulting differences in denitrification capacities of soils should be considered more explicitly for both, the definition of nitrate balance thresholds and the effect assessment for receiving water bodies. Beconed that, vulnerability of the receiving water bodies depends on flushing rate, water depth, climate and other characteristics. Therefore, regional approaches are needed for efficient nitrate management. However, a potential opening and revision of the ND should *not* lead to a further weakening of the limits and rules, but should strengthen them, and foster the concrete implementation.

Overall, the nitrogen emissions from agriculture into Europe's aquatic ecosystems are still far too high, and have already severely impaired the majority of inland water bodies. There is still an urgent need to reduce nutrient emissions, which pose a major threat to aquatic ecosystems, their biodiversity, their functions and thus, also their ecosystem services. The latter are an indispensable basis for our own lives, such as the provision of clean drinking water and self-purification, stable landscape water balance, natural flood protection, cooling effect, fishery resources or recreational spaces.

High emissions are also one of the reasons why a lot of European water bodies still fail to meet binding environmental targets for European biodiversity and water protection, such as those set out in the Flora-Fauna-Habitat Directive and the WFD. In general, EU policy-making tackling nutrient emissions needs more coherence and harmonisation across different legislation.

Freshwater ecosystems play a major role in climate change adaptation and mitigation. At the same time, high nitrate loads of inland waters become particularly dangerous in combination with the rapidly progressing climate change. Often there is less water available in the landscape due to decreasing precipitation and higher evaporation. Smaller water bodies warm up more quickly and nutrient concentrations potentially increase, as point source dilution is reduced at lower river discharge. The risk of harmful algal blooms or mass-

developments of aquatic plants increases. In warmer water bodies, ecosystem metabolic processes run faster, which can lead to oxygen depletion and the production of toxic nitrite or ammonia threatening aquatic fauna.

A more sustainable nitrate management must be seen as a central public service by European politics as well as in the Member States. The ecological damage – e.g. to aquatic biodiversity – is already serious in itself, but also generates immense direct economic costs. Technological nitrate removal is expensive and occupies a lot of space for the denitrification process. Therefore, the precautionary principle and polluter-pays-approaches should be considered instead of costly end-of-pipe solutions.

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