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Assessing global regionalized impacts of eutrophication on freshwater fish biodiversity

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Propositions

Accompanying the thesis

“Assessing global regionalized impacts of eutrophication on freshwater fish biodiversity”

1. On a global level, advection is the dominant process controlling the fate factors, followed by retention and water consumption (this thesis).
2. Introducing the fate of soil-freshwater nitrogen that complements existing phosphorus-related fates allows for improving global assessments of eutrophication (this thesis).
3. The species sensitivity distributions of freshwater ecoregions highlight strong effects on species richness due to high nitrogen concentrations in the tropical zone and the vulnerability of cold regions (this thesis).
4. The characterization factors for phosphorus and nitrogen impacts on freshwater fish are higher in densely populated regions that encompass either large lakes or the headwater of large rivers (this thesis).
5. Eutrophication is a leading cause of impairment of many freshwater and coastal marine ecosystems in the world (Chislock et al. 2013).
6. Natural sources of nutrients have been declining in the past and will continue to decline due to massive land transformations and increasing anthropogenic sources (agriculture, sewage, aquaculture) (Beusen et al. 2022).
7. There is a need to provide global guidance to practitioners on aquatic eutrophication (GLAM volume 2, 2019).
8. The risk that regional species loss may result in global species extinctions significantly differs per region (Kuipers et al. 2019).
9. Life goes on endlessly generation after generation, old and new; the river moon looks alike year after year, ebbs and flows.

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Leiden, 30 January, 2024