Universität Münster

ILÖK Institut für Landschaftsökologie

Kolloquium des Institutes für Landschaftsökologie
WiSe 23/24

19. Dezember 2023

18 Uhr c.t.

Hörsaal Geo1, Universität Münster

Dr. Daniel Graeber

UFZ Magdeburg

Through The Stoichiometric Lens: Decoding Freshwater Ecosystem Responses to Anthropogenic Macronutrient Shifts

Modern human practices, especially those in agriculture and urban development, have significantly altered the planet's macronutrient profile. This transformation is most evident in the shift of Carbon:Nitrogen:Phosphorus (C:N:P) ratios, carrying significant consequences for the health and functionality of freshwater ecosystems. Through the use of ecological stoichiometry and innovative statistical methods, my research explores the effects of these macronutrient ratio changes on freshwater ecological dynamics, centering on biologically relevant C:N:P and N:P ratios. In my talk, I will demonstrate that stoichiometric N saturation is a defining feature of German stream catchments, paired with a concurrent limitation of organic C and inorganic P in stream biofilm structure and function. Furthermore, I will present studies highlighting, on a global scale, that macronutrient levels hold greater significance than biological controls in shaping shallow lake eutrophication, indicating a trend towards P limitation or co-limitation with N. Drawing from these studies, the stoichiometric perspective elucidates critical ecosystem dynamics and responses to human-induced changes, underscoring the utility of ecological stoichiometry as both a diagnostic tool and a guiding framework for ecosystem management strategies.

Die Vorträge sind öffentlich. Um rege Teilnahme, insbesondere auch durch Studierende, wird gebeten. Die Veranstaltungen sind im Studiengang MSc Lök, Modul M1 anrechenbar.
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