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ÖKOLOGISCHES KOLLOQUIUM

of the Institute of Zoology

In person at the Ecological Research Station Rees and per Zoom in room 0.024

Wednesday, July 09, 2025, 01:15 pm



Sofia Baliña, Ilenia Marquina Luévano and Sarian Kosten

Department of Ecology, Radboud University, Nijmegen, The Netherlands

Host: Dr. Kristin Scharnweber

Anthropogenic greenhouse gas emissions from inland waters: drivers and potential mitigation measures

Inland waters emit globally significant amounts of greenhouse gasses (GHGs) into the atmosphere. Human actions have led to a considerable increase in these emissions both through the construction of waterbodies and through the alterations of the conditions in natural waterbodies. Anthropogenic aquatic GHG emissions can be mitigated in different ways. In our talk we review and discuss physical, chemical, and biological measures applied in a wide range of inland waters to reduce emissions. We will zoom in on the role of macrophytes and how macrophyte management may help reducing GHG emissions.

Prolonged warming and changed nutrient-regimes drive methane-oxidizing community shifts in freshwater sediments

Since methane (CH_4), a potent GHG, is particularly influenced by biological processes, we will zoom in on how methane-oxidising bacteria (MOB) communities respond to eutrophication and re-oligotrophication. To assess these effects, we analyzed sediment from a long-term lake-warming mesocosm experiment.

Floating algal beds and aquatic methane emissions: a potential positive ecosystem-climate feedback loop

Moreover, floating primary producers might affect CH_4 dynamics as well. In particular, floating algal beds (FLAB) usually develop in the surface of ditches during spring and summer. However, rising temperatures and drier conditions have made FLAB blooms frequent. To assess their impact on methane emissions, field experiments were conducted using enclosure with and without FLAB. In the presence of FLAB, CH_4 diffusive emissions increased tenfold on average, highlighting their significant role on methane dynamics.

Gäste sind herzlich willkommen!
Die Mitarbeiter/innen der Ökologie

→ bei Rückfragen: 470-8269 (Ilić)