



UFZ-Seminar „Water and Environment“



16. October 2017, 3 p.m.

Seminar Room 1, Brückstr. 3a, Magdeburg

Sarian Kosten

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will give a talk on:

Global change impacts on greenhouse gas emissions from aquatic ecosystems

Warming enhances greenhouse gas emissions from aquatic systems, especially in the form of the methane which is a potent greenhouse gas. But there is more to global change than 'just' warming. Drought, salinization, eutrophication and coinciding changes in primary producer dominance and fish community structure also impact greenhouse gas emissions, often in contrasting ways. Drought for instance may lead to short term peak emissions upon rewetting whereas the salinization caused by, for instance, sea level rise strongly decreases methane emissions. I will briefly show our most recent findings on the effect of physical and chemical effects on greenhouse gas emissions and then zoom in on the effect of primary producer dominance (phytoplankton, submerged macrophytes and floating plants). These primary producers strongly determine sedimentation rates of organic matter and the oxygen conditions in the water and sediment and thereby, in turn, have profound effects on CO₂ and CH₄ emissions. Our results suggest that systems dominated by submerged macrophytes are most favourable from a mitigation perspective. For many waterbodies submerged macrophytes also reflect a Good Ecological Status (based on the European Framework Directive) possibly creating a win-win situation.