



UFZ-Seminar

Research Unit



Water Resources and Environment

16 January 2020, 3 p.m.

Seminar Room 1, Brückstr. 3a, Magdeburg

Andreas Bruder

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will give a talk on:

The food-web perspective in multiple-stressor research and management

Multiple stressors are increasingly affecting organisms and communities, with the potential to drastically modify ecosystems state and functioning. Freshwater ecosystems are particularly vulnerable to various stressor types and have experienced high rates of species loss during the last decades. Most studies estimate direct stressors effects and their interactions on biological endpoints such as abundance, biomass or diversity of target organism groups. While this approach yields valuable information for impact assessments, it may be limited in providing mechanistic understanding required for management and restoration of stressed ecosystems. A major limitation is its exclusive focus on direct stressor effects, whereby it ignores that organism groups are interlinked by trophic and non-trophic interactions in ecological networks. Such biotic interactions are themselves crucial elements of ecosystem structure and thus worth protecting and restoring, but they also underlie many ecosystem processes such as organic matter decomposition and secondary production. In my seminar, I will address these limitations by introducing a food-web perspective for multiple-stressor studies. I will provide examples from field experiments in an agricultural context, where we specifically tested indirect and food-web mediated effects. These examples also suggest that changes in biotic interactions can have effects of similar or greater magnitude than direct stressor effects on some responses. After the seminar, there will be time to discuss multiple-stressor concepts and how they link with network theory, but also to discuss examples and experiences from members of the audience.