



Master thesis

„Effects of long-term pollution and/or increasing water temperatures on benthic structures and processes in streams (flume experiments)“

Background and aim: Multiple pressures affect fundamental benthic processes in streams, thus altering the functioning of stream ecosystems. Increased concentrations of inorganic nutrients and dissolved organic carbon may increase the abundances of benthic algae and bacteria and change the activity of these organisms. Increased water temperature may additionally affect processes such as e.g. primary and secondary production, release of extracellular enzymes, nutrient uptake, etc.. The aim of the project PowerStreams is to analyze the effects of long-term additions of bioavailable organic carbon and dissolved inorganic nutrients on the benthic metabolism, the in-stream nutrient uptake and the activity of extracellular enzymes in experimental flumes in Lunz/See.

Tasks:

Conduct long-term addition experiments with nitrate, phosphate, and acetate in experimental flumes; Analyze water and sediment chemistry (e.g. C and N concentrations in water and sediments, activity of extracellular enzymes, microbial abundances, ...); statistical analyses.

Preconditions:

- Experience in lab work (chemistry lab)
- Mobility and enough time to conduct the experiments in Lunz

Location: WasserCluster Lunz, Lunz/See

Start: Nov 2015 - spring 2016

Contact: Dr. Gabriele Weigelhofer gabriele.weigelhofer@boku.ac.at
Dr. Thomas Hein thomas.hein@boku.ac.at

AG Bioframes -Biogeochemical Functions: Research And Management in Ecosystems at multiple Scales