

## Periphyton as bioindicator and community model – critical review, work in progress, future perspectives

**CHAIRS:** Alexandra Kroll, Marianne Matzke, Thomas Backhaus



Monday 12<sup>th</sup> May 2014, 13:55 – 16:00, room: Boston 1

Natural biofilms also known as periphyton colonize submerged surfaces in freshwater and marine ecosystems. They are taxonomically diverse and dynamic communities of bacteria, algae, and fungi that provide essential ecosystem services such as primary production, nutrient cycling and filtration of particles and pollutants. The sensitivity of periphyton to environmental conditions including anthropogenic stressors makes it an important bioindicator. However, the complexity and dynamics of these microbial communities poses a challenge to identifying appropriate descriptors, a useful level of detail and linking observed changes to understand underlying mechanisms. Furthermore, the availability of “omic” techniques has increased the potential amount of information which needs to be managed and applied in a sustainable manner. By means of this session, we would like to critically review the state of the art in periphyton characterization and monitoring to summarize known strengths and gaps. To this end, we encourage the submission of studies covering three (overlapping) areas: method establishment, effect studies, and model development. Regarding method establishment and effect studies we intend to cover integrative parameters such as biomass, pigmentation, enzymatic activity, oxygen production, respiration, or metabolomics profiles as well as genetic or species diversity and biofilm morphology. Both the presentation of advancements in existing methods and new approaches to understand community dynamics are encouraged. Regarding model development we seek studies looking at the sensitivity and predictive power of changes in periphyton traits. Thus we intend to produce a constructive feedback between research in periphyton characterization and effects of stressors on the one hand and research in modeling community responses on the other hand.

**SESSION TYPE:** Platform, Poster Spotlight and Poster