



Master thesis 2018/2019

The use of benthic algae as indicators for hydrological stress (hydropeaking)

Background

The majority of rivers around the world are regulated to some extent and hydromorphological alterations and flow regulation occur frequently. In the alpine region hydropeaking is one of the major human impacts on discharge and flow velocity in riverine ecosystems. Biota need to be adapted to a wide range of discharge conditions from low flow conditions to peak flow events within the span of 24 h or less. Flow velocities above 10–15 cm s⁻¹ enhance hydrodynamic shear stress and influence biofilm architecture, taxonomic composition, and nutrient cycling (Biggs et al, 1998; Hondzo and Wang, 2002). It reduces colonization potential (Stevenson, 1983; Peterson and Stevenson, 1989) and increases sloughing and abrasion of newly grown cells (Biggs and Thomsen, 1995).

Main aim

To assess the use of benthic algae as indicators for hydrological stress (hydropeaking) and how this stress will affect the composition (e.g. pigments) of these communities.

We offer

- Highly relevant and applied topic
- Multidisciplinarity (working together with MIV ecologists and hydrologists)

Requirements:

- Interest for limnochemistry and benthic (algal) ecology
- Interdisciplinary working skills
- Communication skills

Start: Spring 2018

Location: Vienna and Lunz, field work in Salzburg

Contact: elisabeth.bondar@boku.ac.at

thomas.hein@boku.ac.at



University of Natural Resources and
Life Sciences
Institut of Hydrobiology and Aquatic
Ecosystem Management (IHG)
Gregor-Mendel-Straße 33/DG
1180 Wien
www.wau.boku.ac.at/ihg



Green circle: algal cover visible – no substrate movement

Yellow circle: no algal cover – substrate was moved due to higher flow velocity

