

## **PhD Topic „*Organic carbon cycling in streams: Effects of agricultural land use*“**

**Background and aims:** Agricultural land use delivers significant amounts of dissolved organic matter (DOM) to streams, thereby changing basic processes at the water-sediment interface and affecting the ecological state of the stream ecosystem. The aim of the project is to investigate the influence of agricultural land use on the quantity and quality of DOM inputs to streams and to clarify the effects of this DOM on the aquatic carbon cycling in stream ecosystems at different global warming scenarios.

Our research will be based on both in-situ determinations of DOM quality and stream processes in an experimental study area (HOAL, Petzenkirchen) and on laboratory experiments at the WasserCluster Lunz. We will measure the quantity and quality of DOM from different sources and investigate the effects of these different DOM sources on the growth and activity of benthic microorganisms, the oxygen consumption in the stream, and the aquatic emission of greenhouse gases via incubation experiments. The results will be analyzed with respect to consequences of DOM inputs from agricultural areas for the health and the ecological state of stream ecosystems and will be incorporated into recommendations for a sustainable management of agricultural streams.

### **Preconditions:**

The work will be carried out at WasserCluster Lunz (working place) in cooperation with the University of Natural Resources and Life Sciences in Vienna (BOKU). The candidate should be born after 1980, needs to be enrolled for a PhD at the Boku at project start, and should be entitled to working in Austria. The candidate should possess basic knowledge about biogeochemical cycles (in aquatic systems) and basic skills in the chemistry lab. Working language is English or German.

**Start:** Jan 2016

**Contact:** Dr. Gabriele Weigelhofer [gabriele.weigelhofer@boku.ac.at](mailto:gabriele.weigelhofer@boku.ac.at)