Patrick Leitner

Mr. Patrick Leitner (37 yrs) is a hydrobiologist from the University of Natural Resources and Life Sciences, Institute of Hydrobiology and Aquatic Ecosystem Management (Working Group Benthic Ecology and Ecological Status Assessment) in Vienna, Austria.

What did you study, when, where and most importantly: why?

I studied Landscape Planning and Environmental Studies with a focus on Hydrobiology at the University of Natural Resources and Life Sciences in the late 1990ies. In my younger years, rivers and ponds always played a major role in my free time and I showed great interest in organisms living there.

That's why I focused on this topic. I specialised on ecology and taxonomy of benthic macroinvertebrates (river bottom-dwelling organisms, such as larvae of insects, crustaceans or mussels) as they are good indicators of environmental conditions in freshwater ecosystems.

What will your role be on board of the JDS3 ships?

I am a member of the macroinvertebrates sampling team. Sampling of benthic macroinvertebrates during the JDS3 mission has two approaches carried out by two separate sampling groups: habitat specific sampling in the actual littoral zone and dredging in the deep water area.

I will be responsible for sampling different habitats with a Multi-Habitat-Sampling net in the wadeable zone near the shoreline. We are interested to ascertain the habitat- & stressor-related distribution of macroinvertebrate taxa and abundances. Additionally, specimens of selected species from all sampling sites will be sampled for genetics.

Why is this important? What can we learn?

Ecosystem functioning of big streams is very complex and detailed basic studies are needed to disentangle various factors like hydrology, morphology, nutrients, pollution and organismic reactions. A detailed sampling of different habitat types such as gravel/sand banks, muddy areas, rip-rap zones, woody debris and so on will lead to a better understanding of habitat preferences of different macroinvertebrate taxa regarding biodiversity issues.

What is an important gain from JDS3 specifically for your country of origin?

For Austria, the central question concerns the biological assessment of the Danube according to the WFD. The development of an assessment system for large rivers like the Danube is difficult, because of the impact of multiple stressors and problems with representative sampling methods. With the high number of habitat related samples provided by JDS, a better understanding of stressor-biotic interactions can be accomplished for assessment-development and may additionally support

recommendations for prospective river restorations.

What are you looking forward to regarding the JDS3?

As I was a core team member during JDS2 in 2007, I remember the good atmosphere on board with a lot of interesting exchanges of experiences and that's why I'm looking forward to meet old and new international colleagues.