**Abstract**

Trace element bioaccumulation in benthic organisms is important part of aquatic environment pollution research, since water and sediment analysis itselfs do not provide significant information about bioavailability of contaminants and the results mostly shows just current pollution at the time of sampling.

This study focuses on urban streams contamination which are currently significant source of trace elements. Botic stream was chosen as exemplary, because it is affected by many combined sewer system overflows which are sources of contamination in times of heavy rain and flood. Load several sampling took place on 10 stream sites during the year of 2012. This thesis deals with 11 trace elements concretelly Cd, Co, Cr, Cu, Hg, Ni, Zn, As, Fe, Pb and Al.

Trace elements were assessed in both benthic organisms and sediment. As well taxons were selected from benthic organisms, which are widely found at any time of the reference year: caddisflies of family Hydropsychidae, leeches *Erpobdella* sp. and mayflies of Baetidae family.

Sediment analysis included sequential extraction which divided trace elements into 4 fractions according to mobility. Based on the results, bioavailability was assessed on observed elements and correlation between concentration in bethos and sediment was tested. Finally, impact of individual local sources on the level of contamination in longitudinal profile of stream was identified and assessed.

**Key words:** macrozoobenthos, sediment, sequential extraction, urban stream, trace metals, combined sewer overflows