A Complex Urban Ecological Investigation in a small-sized Hungarian city – Monitoring of Water, Soil and Microbiological activities

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University of Sopron initiated a complex urban ecology project in 2010 which focused on the effects of urbanization. Based on the results of 2011, monitoring measurements carried out on selected sampling points in Székesfehérvár city in 2018. The main purpose of this current study was to determinate the actual contamination level of soil, water and sediment properties. In addition, the monitoring measurements are able to evaluate a 7 years long period in liveable city. These new results were completed and supplemented with mesofauna and BISEL investigations. In our investigation, the chemical and physical characteristics of 42 soil surface samples was analysed. Heavy metal contents of Cd, Co, Cu, Ni, Pb and Zn was measured as well. The city has got several busy traffic roads and the M7 motorway passes through the township from south side. Near to M7, extremely high trace metal appearance were typical. To complete, water and sediment samples were also tested on 7 sites. The sediment showed severe or moderate enrichment (EF) in case of Cd and Pb. For bioindication analyses, the main groups of soil mesofauna was examined. The biological quality of the soil will be evaluated using the QBS index, which is based on the microarthropod groups present in the soil samples. In selected plots, the impact of any pollution will also be evaluated using Collembola community data as a bioindicator. Based on our previous findings, we expected a sharp increase between the samples of 2011 and the new monitoring samples of 2018. However, the results showed that the changes are not so significant than we expected. Local government efforts are trying to prevent the deterioration.