

Dynamics of highly contaminated sediments in an urban river system

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The use of urban surface water bodies for manufacturing purposes has been common in Germany since the beginning of industrialization, and this has led to a high accumulation of different chemical contaminants in the sediments of aquatic ecosystems. In particular, water bodies with very low flow conditions like the "Rummelsburger See", a lake formed by a branch of the Spree River located in the centre of Berlin, have been highly affected. Given that sediments are of major relevance for the cycling of nutrients and pollutants in the aquatic environment through physical and chemical remobilization, it has become necessary to obtain improved knowledge concerning the current sediment dynamics, the rate of sedimentation and the current level of contamination compared to earlier conditions. Moreover, there is a lack of information about the hydraulic conditions and resuspension of contaminated sediments in the lake, as well as about the potential of remobilization and toxicity of different pollutants. Against this background, the research project "RuBuS" was set up in 2013, consisting of an integrated monitoring approach that focuses on hydraulics, sediment dynamics and contamination, including boundary conditions, such as weather and motorboat activities to find information, which would help design appropriate treatment in the future.