

Tagungsnummer

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Thema

Kommission II: Bodenchemie

Schicksal, Wechselwirkungen und Wirkung von bodenfremden Stoffen im Boden

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Titel

Retention of contaminants and its controlling factors in constructed and semi-natural floodplain soils in urban river systems

Abstract

The retention of floods is one of the most relevant ecosystem function of urban floodplains, which is often improved by the construction of retention ponds and other water management measures. Retention ponds are connected to the river in a direct or a parallel arrangement and can be constructed as dry or wet retention pond under normal run-off conditions. Carbon sequestration, nutrient and contaminant regulation and recreation are further important ecosystem functions provided by the floodplain soils. However, with ongoing urbanization these ecosystem functions are significantly endangered. In our study we analyze the soil-based ecosystem functions of two river catchments in the City of Hamburg.

The presentation will focus on the retention of contaminants in sediments and soils of eleven retention ponds and ten flooded areas within one catchment. The amount and concentrations of contaminants will be analyzed and compared between the retention ponds and flooded areas. Furthermore, controlling factors on the contaminant amount and concentration like grain size distribution, land-use within the headwaters and others will be investigated. Finally, we will give an assessment on the current contaminant retention in this specific urban catchment area.