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An experimental catchment setup to investigate opportunities to strength multifunctionality of small urban rivers – an interdisciplinary approach

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Central Europe landscapes with precipitation rates between 700 to 1200 mm are, except for some karstic areas, well drained and outfitted with a network of small and medium size brooks. Urban areas make no exception of that rule. Within settlement areas small water courses can play a multifunctional role as drainage network, ecological corridors, as mediators between urban and rural landscapes, as linear structures for transport, in segmentation of urban landscapes, as identification structures of local inhabitants or for the revaluation of urban districts. But in most European cities reality is unlikely this ideal case. Often small urban waters are particularly ignored, sometimes seen as problems to be covered over or fenced off, being not more than a part of the urban sewerage. To change these circumstances beside a clear political intention, more information on properties and patterns of different surfaces in urban to suburban catchments are needed. Additional the control mechanisms for quantity and quality of urban runoff and especial on the interaction between different water retention measures in settlement areas have to be investigated.

Unfortunately most efforts on experimental basins are focused on rural regions or mixed but large catchments. Therefore there is a lack of experiences about the implementation of different measures in typical medium size urban catchments. There are missing information about interactions and data gathering chains suitable for patchy and heterogeneous basins. The design for the Olewig test catchment tries to face these

challenges. Quantitative and qualitative measurements of runoff are combined with evaluation of decentralised water retention measures and recent methods for purification of street runoff. Type and pattern of surfaces will be detected employing recent remote sensing techniques like LIDAR, very high resolution optical and radar data. Additional methods for stimulation of participation and acceptance will be investigated. Over all aim is to provide suitable information and methods to restore and strength the multifunctional role of small urban rivers to municipal planning authorities. The contribution will emphasise the challenges of sustainable and integrated planning for urban water courses and give an overview of the planed investigation concept.