Geophysical Research Abstracts
Vol. 19, EGU2017-17851, 2017
EGU General Assembly 2017

Blue-Green solutions for improving water quality in an urbanizing catchment

Zahra Kalantari (1), Bo Sha (2), Carla Sofia Ferreira (3), and Carin Sjöstedt (2)

(1) Stockholm University, Department of Physical Geography, Stockholm, Sweden (zahrak@kth.se), (2) Swedish University of Agricultural Sciences (SLU), Department of Soil and Environment, (3) CERNAS, Agrarian School of Coimbra, Polytechnic Institute of Coimbra, Coimbra, Portugal

With increasing urban population and expanding urban areas, cities have demonstrated great influences on natural resources and the surrounding environment. Urbanization process is generally accompanied by noticeable land use/cover change, such as turning permeable forest area and agricultural land into impervious landscapes like roads, parking lots, commercial and residential areas, leading to major environmental impacts on both the hydrological processes and water quality of the local catchment. Urban areas usually act as major diffuse pollution sources in a catchment. On the one hand, human activities increase the generation and accumulation of pollutants on urban surface; on the other hand, large impervious urban landscape improves the mobilization and transport of pollutants to receiving water body by increasing surface runoff and hydraulic efficiency. This study focuses on how different urbanization patterns would affect surface water quality, in order to examine whether the heterogeneity of urban areas would be an important factor that influencing surface water quality and what impacts it would induce. Furthermore, using coupled hydrological and water quality models, the effect of different blue green solutions including nature remnants and parks, gardens, small forests, wetlands and ponds; on improving the water quality will be investigated.