

BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

Summer 2018



UNIVERSITÄT
BAYREUTH

Thursday

05.07.2018

12:00 in H6, GEO

Prof. Carolyn Oldham

School of Engineering,

The University of Western Australia

Groundwater flooding in a drying city: urban hydrology, nutrient management and the intersection of science, policy and regulation

High groundwater impacts urban areas in many parts of the world, and has historically been managed by surface and sub-surface drainage. However, increased need to protect the waters into which drains discharge, has created momentum to transition from a drainage dominated city to one that is "water sensitive". Integrated water cycle management in high groundwater areas is complex, where the water table itself can be significantly perturbed by urbanization, with minimal soil depth for storm water infiltration. The Cooperative Research Centre (CRC) for Water Sensitive Cities is an Australian partnership between universities, government and private industry established to address key knowledge gaps for improved urban water management. Under the CRC project on urbanization in high groundwater areas, we have shown that infiltration rates significantly increase and groundwater rises after urbanization, surface and sub-surface drainage mobilizes groundwater low in oxygen and high in nutrients to the detriment of receiving waters, and storm water treatment systems intercepted by groundwater no longer reach design objectives. This scenario presents challenges for urban planners and designers, drainage engineers, environmental regulators, and government agencies.