



Long-term monitoring program at the constructed catchment "Chicken Creek"

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Ecosystems are characterized by high complexity and are dynamically changing by abiotic and biotic drivers such as climate, vegetation and soil fauna. Due to feedback processes between compartments, ecosystems show an inherent degree of locally heterogeneous properties and structures at multiple spatial and temporal scales.

The constructed catchment "Chicken Creek" represents a unique and outstanding site to study an ecosystem at the initial stage of development. The catchment is located about 20 km south of the city of Cottbus (Germany). The 6-ha catchment area was built in 2005 of coarse-textured quaternary sediments from the adjacent lignite mine and forms a back- and foot-slope that flattens out to a pond. A clay liner of 2-3 m thickness seals the catchment at the bottom, allowing for the formation of a local water body fed by precipitation. After construction the site was left to an unrestricted and unmanaged succession to elucidate the role of structures and processes during the initial establishment of an ecosystem.

To study processes of ecosystem development and newly emerging structures the Chicken Creek catchment is equipped with a comprehensive ecological monitoring network. A network of more than 40 wells and two weirs allow for recording groundwater levels, surface runoff and discharge. Meteorological parameters are recorded at three weather stations. Annual aerial photos and vegetation monitoring reveal the floral colonisation of the area. Here, we present the 12 years of diverse and extensive monitoring program which has been launched to measure hydrological, biological, meteorological, and pedological parameters during the ecological development of the catchment area.