Removal of pollutants during storm and non-storm events by two wetlands

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\textbf{ABSTRACT}

This research investigated the pollutant removal efficiency by two constructed wetlands located on the north shore of the Fuxian Lake, Yunnan Province, China. We conducted continuous monitoring for a storm to examine residence time variations in pollutants (nitrogen and phosphorus) under local hydrologic conditions. During storm events, water samples with an interval of a few hours from the beginning of the rain at the inlet and outlet of the wetland were collected and analyzed for nitrogen (total nitrogen, ammonium, nitrate, and nitrite) and phosphorus (total phosphorus (TP)). The results have implications for stormwater management. While concentrations of nitrogen species are variable, they are not strongly related to flow conditions, so treatment systems must be designed to cope with stochastic inflow concentrations at all times. Principal components analysis of water quality parameters using data collected during non-storm periods at the Yaonigou wetland (Phase I) and the Yaonigou wetland (Phase II) was conducted. The greatest loadings of the first principal component, the second, and the third principal component of inflow in Yaonigou wetland (Phase I) are ammonia, TP, and nitrate, respectively.

\textit{Keywords:} Nitrogen; Phosphorus; Stormwater; Wetland

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