James McNamara

Recent advances in defining, characterizing, and simulating catchment water storage and it role in regulating hydrologic fluxes.

The storage of water within a catchment, and its partitioning among groundwater, soil moisture, snowpack, vegetation, and surface water ultimately characterizes the state of the hydrologic system. Storage moderates fluxes and exerts critical controls on a wide range of hydrologic and biologic functions of a catchment. Therefore, efforts to understand how catchments release water are improved by understanding how catchments retain water. Unfortunately, measuring and predicting the amount of water present in a catchment is seldom done; tracking the dynamics of these stores is even rarer. In recent years, increased attention has been paid to characterizing the heterogeneity of storage in catchments in a collective effort to improve our understanding of catchment processes and to develop improved simulation tools. Here, I present an overview of some of those advances in order to address the question: What has increased attention to storage taught us?