

## **Summer hydrologic influence on invertebrate assemblages in intermittent Alabama streams**

Compared to perennial systems, intermittent and ephemeral streams have received less focus in terms of ecological significance, research and management. Hydrologic influences on stream communities can be demonstrated by flow-related relationships with biota. Feminella (1996) developed an index of stream permanence to rank the relative intermittency of streams in the Talladega National Forest, but no continuous hydrologic measures were made. In addition, study streams were not sampled repeatedly over the summer period of intermittence to assess temporal variation in benthic response to drying. We sought to quantify benthic faunal assemblages in the same streams during early and late summer while additional hydrologic data was collected with continuous monitoring equipment. Benthic assemblage descriptors, such as functional feeding group and density, were significantly related to hydrologic permanence. Higher discharge and permanence appear to provide flow conditions favorable for filtering taxa, and may benefit scraping taxa with conditions supporting higher stream biofilms on the substrate. However, assemblage density was not lower in the least permanent streams. Summer drawdown of riffles may concentrate biotic communities and increase densities in some streams, reinforcing their ecological importance as refugia in dry periods.