

HORNER, A.¹, A. MITCHUM², D.C. HANEY², W.B. WORTHEN², C.B. ANDERSEN³, AND A. AIKEN⁴. ¹Centre College, Danville, KY 40422, ²Biology Dept., ³ Earth and Environmental Sciences Dept., and ⁴Chemistry Dept., Furman University, Greenville, SC 29613 -Biological and chemical description of Enoree River (SC) tributaries: Effects of land use patterns on the Upper Enoree, Beaverdam Creek, and Mountain Creek.

We compared the chemistry and biology of three major tributaries of the Enoree River in upstate South Carolina: the Upper Enoree, Mountain Creek, and Beaverdam Creek. The Upper Enoree is affected by industrial point source pollution at its headwaters, while Mountain Creek and Beaverdam Creek are relatively undisturbed and flow through residential areas. The Upper Enoree had higher salt concentrations (Na^+ , Ca^{2+} , K^+ , Mg^{2+}), conductivity, and alkalinity than the other streams. It also contained higher metal concentrations (zinc, aluminum, manganese) at its headwaters. These chemical patterns correlate with several biological descriptors. The Upper Enoree had significantly lower fish abundance and fish species richness than the other streams. However, this stream also had more species of mayflies, stoneflies, and caddisflies than the other streams, possibly in response to lower predatory fish abundance. The results of this research suggest that point-source pollution can have a significant impact on the water chemistry and biota of freshwater streams.