

HANEY, D.C.¹, A. MITCHUM¹, W.B. WORTHEN¹, C.B. ANDERSEN², AND J. WHEELER³. ¹Biology Dept., ²Earth and Environmental Sciences Dept., and ³Chemistry Dept., Furman University, Greenville, SC 29613-Effects of land use on fish diversity and abundance in the Enoree River, SC.

We compared the chemistry and biology of four tributaries of the Enoree River in upstate South Carolina: Brushy Creek, Durbin Creek, Kings Creek, and Indian Creek. Kings and Indian Creek are relatively undisturbed and flow through rural areas in Sumter National Forest. Brushy Creek flows through a highly disturbed residential area while Durbin Creek is a mix of urban and rural landscape. With respect to water chemistry parameters, Kings Creek and Indian Creek differed most from the more urbanized Brushy Creek, with Durbin Creek intermediate in most cases. Turbidity, dissolved organic carbon, calcium, magnesium, bicarbonate, and silica were high in Kings and Indian Creeks, while low in Brushy Creek. Durbin Creek, although intermediate for most parameters, had the highest chloride, nitrate, and phosphate levels. These chemical patterns correlate with several biological descriptors. Durbin and Indian Creek had the greatest fish abundance and diversity, with Brushy and Kings Creek the lowest. Interestingly, benthic fishes in the genus *Etheostoma* were virtually absent from Brushy Creek, but high in Kings Creek. The results of this research suggest that varying land use can have a significant impact on the water chemistry and biota of freshwater streams.