

D.C. HANEY<sup>1</sup>, HORNER, A.<sup>4</sup>, W.B. WORTHEN<sup>1</sup>, A. MITCHUM<sup>1</sup>, MITCHELL, M.<sup>5</sup>, C.B. ANDERSEN<sup>2</sup>, AND J. WHEELER<sup>3</sup>. <sup>1</sup>Biology Dept., <sup>2</sup> Earth and Environmental Sciences Dept., <sup>3</sup>Chemistry Dept., Furman University, Greenville, SC 29613, <sup>4</sup>Centre College, Danville, KY 40422, and <sup>5</sup>North Georgia College and State University, Dahlonega, GA 30597 - A Biological study of Enoree River (SC) tributaries: Effects of land use patterns and physicochemical measures on fish diversity and abundance.

We compared the chemistry and biology of five major tributaries of the Enoree River in upstate South Carolina that represent varied land cover from forested to industrial. The Upper Enoree is affected by industrial point source pollution, and has high concentrations of chloride and trace metals. This stream had lower species richness and fish abundance than all other streams sampled. Beaverdam Creek is least developed. Rocky and Mountain Creeks are affected the most by industrial and residential development, and farming is practiced along Gilder Creek. Mountain and Rocky Creek exhibited intermediate ion concentrations in most instances, although the lowest calcium, magnesium, chloride, and nitrate levels were seen in Mountain Creek. Collections within Mountain and Rocky Creek revealed intermediate fish diversity and abundance. Beaverdam Creek had the highest levels of dissolved oxygen, and the lowest alkalinity, sodium, potassium, sulfate, and bicarbonate levels. The greatest number of cyprinids, and lowest numbers of centrarchids were collected in Beaverdam Creek, resulting in intermediate species richness. Finally, Gilder Creek exhibited the highest levels of total organic carbon, sodium, potassium, bicarbonate, and nitrate, along with the greatest fish abundance and species richness. Human activity appears to significantly impact the chemistry and biology of this watershed.