MITCHELL, M.[1], S. MONHEIM[2], [3]D.C. HANEY, [3]W.B. WORTHEN, C.B. ANDERSEN[4], AND S. WHEELER[5]. [1]North Georgia College and State University, Dahlonega, GA 30597, [2]Mount Holyoke College, South Hadley, MA 01075, [3]Biology Dept., [4]Earth and Environmental Sciences Dept., and [5]Chemistry Dept., Furman University, Greenville, SC 29613 -Biological and chemical description of Enoree River (SC) tributaries: Effects of land use patterns on Rocky Creek, Gilder Creek, and Mountain Creek.

We sampled water, fish, and aquatic insects from three tributary watersheds of the Enoree River near Greenville, SC. These watersheds represent three different land use patterns: Rocky Creek is affected the most by industrial and residential development, farming is practiced along much of Gilder Creek, and Mountain Creek runs through a state park and residential areas. In comparison to Mountain Creek, the pastoral land use along Gilder Creek was associated with significantly higher conductivity, dissolved oxygen, turbidity, alkalinity, and most measured ion levels (Na^+, K^+, Ca^{2+}, Cl^-, HCO_3^-). Rocky Creek had intermediate levels of all chemical parameters, except for dissolved oxygen (it was lowest) and magnesium (it was highest). These measurements relate to differences in the abundance of stream invertebrates between these streams. Sites in Gilder Creek had significantly higher odonate abundance, total invertebrate abundance, and invertebrate species richness than Rocky Creek. Thus, differences in land use patterns may change water chemistry and affect the abundance of aquatic organisms.