

Runoff from agriculture and urban development impacts streams, and one way to measure this impact is by examining benthic macroinvertebrate assemblages. Samples were taken from riffles in streams in accordance with EPA Rapid Bioassessment Protocols. Ecosim was used to quantify taxonomic richness and probability of interspecific encounter; all other metrics were analyzed using a "proc glm" statement in SAS 9.2. Land use for each site's catchment was determined by using analysis of GIS layers. As hypothesized, forested sites had significantly higher PIE, proportion of EPT, overall richness, and EPT richness, which indicates that their diversity is much higher than that of agricultural or urban-impacted streams. Moreover, forested sites had a significantly lower proportion of Diptera and *Chironomidae* than urban sites. Community metrics from streams draining agricultural and urban areas did not differ statistically from each other. Lack of significant differences in proportion of Diptera and *Chironomidae* among stream types could be due to small sample sizes of urban sites and the similar effects that urban and agricultural areas exert on streams. Further study will be required to discover precisely how macroinvertebrate community metrics differ from one another, especially in agriculturally and urban impaired streams.