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Macroinvertebrate community changes in streams of three watersheds of north Alabama

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Abstract:

Benthic macroinvertebrate communities are commonly used as biological indicators for long term water quality studies. Biological assessments in the Wheeler Lake Basin in north Alabama have been conducted since 2006. The Flint River, Indian Creek, and Flint Creek watersheds were sampled seasonally in 2007 and 2008 along 3 reaches. Sampling methods were modified from the EPA (1996) Rapid Bioassessment Protocols using leaf packs, kick, surber, and dip nets to collect benthic macroinvertebrates from multiple habitats. Biological indices used to determine the community composition and structure included % EPT abundance and richness, total taxa richness, and community diversity. Taxa presence and absence data was analyzed for all three years to find any changes have occurred. Comparisons of community abundance and richness were also analyzed for all three years. Preliminary results indicated that stream water quality parameters such as dissolved oxygen, turbidity, water temperature, and pH did not significantly change over time. Other habitat characteristics, pebble counts, and land use data were also examined for each watershed. More detail results will be presented.

Impact Statement:

Our biological assessments and monitoring is a part of a larger, collaborative water quality assessment program at Alabama A&M. Our biological monitoring is an important tool for watershed managers and developing specific TMDL parameters for our watersheds. Our findings assist watershed coordinators for the Flint River and Indian Creek with up to date information about the conditions of these streams. This work provides educational outreach opportunities and collaborations with local and state environmental agencies, educational centers, and non-profit conservation organizations. Local students of all age groups have benefitted from our outreach activities and training opportunities. Alabama A&M undergraduate students have actively participated in our research and gained hands-on training in the fields of Ecology and Water Quality. Our research group has learned how to work collaboratively together to reach common goals and to communicate clearly with one another. We have learned a lot from our outreach and teaching experiences, enabling us to engage our audience better.

Category: Watershed Assessment and Restoration
Type of Presentation: Poster Presentation