

# STATE CITIZEN SCIENCE BIOMONITORING PROTOCOLS AND THEIR COMPARABILITY TO NATIONAL INVERTEBRATE METRICS

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Citizen Science biomonitoring programs are an effective tool for assessing the condition of local and regional streams, rivers, and lakes. Macroinvertebrate indices within assessments provided by Georgia Adopt-A-Stream and Alabama Water Watch are designed to inform landowners and government agencies on potential problems in streams and rivers. We applied both Georgia Adopt-A-Stream and Alabama Water Watch macroinvertebrate metrics to assemblages collected seasonally in wadeable stream reaches within the lower Flint River basin quarterly between September 2013 and May 2014 to determine applicability to metrics used under EPA stream monitoring (Hilsenhoff Biotic Index (HBI), taxon richness, %EPT, and % clingers). Overall water quality ratings from state indices were consistently ranked between 'fair' (11-16) to 'excellent' (>22) condition. Published literature was used to obtain available species tolerance values for HBI determination, revealing rankings of 'fair' to 'fairly poor' over the sampling period, which is consistent with previous published national findings categorizing streams in the coastal plain based on macroinvertebrate assemblages. While taxon richness and %EPT varied seasonally within these streams, # of clingers remained low in all but one stream. Because these streams lie within the coastal plain, # clingers is likely not a good indicator as most streams lack riffles that would support the importance of such taxa. Additionally, lack of known tolerance values within the southeast for certain species likely skewed HBI determinations as many of the more sensitive taxa that occur lacked values. Understanding the applicability of volunteer-state indices to nationally used metrics can help strengthen the contribution of these volunteer programs to a larger network of data.

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