

Rhode Island Department of Environmental Management Statewide Biomonitoring of Rhode Island's Wadeable Streams

ESS Group, Inc. is currently conducting a multi-year biomonitoring program for wadeable streams of Rhode Island. The purpose of the program is to provide the Rhode Island Department of Environmental Management (RIDEM) with benthic macroinvertebrate and stream habitat data from selected streams within the state's two main eco-regions. The biological data collected is being used to fulfill the state's 305(b) reporting requirements, and more importantly, to provide a greater understanding of the relationship between the macroinvertebrate community and stream habitat.

ESS collects and analyzes macroinvertebrate data according to the U.S. Environmental Protection Agency's (USEPA) Rapid Bioassessment Protocol, which allows for predictions and/or inferences to be made on aquatic ecosystem quality from a relatively "rapid" assessment of the prevailing macroinvertebrate community composition. Each year, 50 sampling locations are chosen, using a rotating basin approach in which sampling is focused on selected basins for any given year. Once samples have been collected, ESS processes them and identifies sampled macroinvertebrates to the lowest practical taxonomic level, typically genus or species level, and performs a comprehensive statistical analysis of the results.

ESS summarizes statewide biomonitoring results in annual data reports, including an analysis of the stream habitat and biological condition at each location and recommendations for future monitoring and restoration. In addition, ESS has conducted multi-year statistical analyses of the biomonitoring data for RIDEM.

In 2009, ESS provided additional taxonomic identification and sorting services for RIDEM and USEPA's Atlantic Ecology Division to support research on anthropogenic disturbance of streams using stable isotopes.

Currently, ESS is assisting RIDEM with a study to characterize the biological impairment of Buckeye Brook, in Warwick, Rhode Island.



Relevant Services Include:

- Quality Assurance Project Plan (QAPP)
- Benthic Macroinvertebrate Surveys
- Taxonomic Identification of Benthic Macroinvertebrates
- Water Quality Monitoring
- Stream Habitat Assessments
- Statistical Analysis Of Data
- Stream Restoration Recommendations
- Biological Impairment Assessments
- Annual Reporting