

**THE USE OF BENTHIC MACROINVERTEBRATE ASSESSMENTS IN THE
STRESSOR IDENTIFICATION PROCESS TO REDUCE CHEMICAL
ANALYTICAL COSTS**

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ABSTRACT

The New Jersey Department of Environmental Protection (NJDEP) has currently identified 329 sites located on the state's nontidal rivers and streams as impaired for aquatic life support, based upon the status of benthic macroinvertebrate communities. These sites have subsequently been placed on New Jersey's [303 (d)] List of Impaired Waters. To identify the principal stressors responsible for these degraded biological conditions, the NJDEP has begun utilizing a hybrid of the USEPA's Stressor Identification process. Included in that process is a combination of site-specific, biological and chemical sampling. Chemical sampling, however, unlike the biological sampling of benthic macroinvertebrates can be costly. To reduce the costs of chemical sampling, the NJDEP has instead, on a site-specific basis, expanded the number of benthic macroinvertebrate sampling sites to narrow the scope of the stream reaches to be investigated.

In this presentation, we will look at one case study on a stream (Beaver Brook) in Hunterdon County, New Jersey where supplemental benthic macroinvertebrate sampling helped reduce the chemical monitoring costs rather significantly, while at the same time narrowing down the number of suspected stressors.

KEYWORDS

Stressor identification, biologically impaired waters, benthic macroinvertebrate sampling, chemical monitoring, reduced investigative costs.