

Best Education Practices (BEPs) for Water Outreach Professionals
Defining BEPs, Refining New Resources and Recommending Future Actions

RESEARCH PAPER PRESENTATION

Presenter(s): Patrick Edwards, Portland State University

Title: Improving The Quality Of Aquatic Macroinvertebrate Data Collected By Students and Volunteers

Abstract: Educators and volunteer groups are increasingly using aquatic macroinvertebrate biomonitoring, not only as a way to engage the community in environmental stewardship, but also as a strategy for generating valuable water quality data. While the efforts of these groups have certainly increased understanding and concern for the health of our streams and rivers, the quality of the data collected through these programs has not been well documented. To be useful in both the research and policy arenas, biomonitoring data must be accurate and at a level of precision that can be used to determine water quality within an appropriate level of certainty. Research recently conducted at several Portland, Oregon high schools and a university shows that student-collected data is not of sufficient quality. In response to this finding, a data collection procedure and a new identification guide have been developed to improve the accuracy and precision of biomonitoring data collected by students. The findings of this study have implications nation-wide for how related resource materials are designed and how these types of education projects should be conducted. This paper reviews the literature on student and volunteer collected biomonitoring data, outlines a strategy for collecting and identifying insects, and presents results from a research project on the accuracy and precision of biomonitoring collected by students. Our findings indicate that the new procedures and guide are effective in increasing both the accuracy and precision of student-collected biomonitoring data.

Target Audience(s): Local decision and policy makers, Neighborhood Organizations

Educational Purpose: Education
(formalized process with a goal), Capacity
Building

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