

Can Volunteers Climb the Learning Curve to Convert their Data to Information?

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Biographical Sketch of Author

Candie C. Wilderman is a Professor of Environmental Sciences at Dickinson College in Carlisle, PA. She earned a B.S. in Geology from Tufts University, an M.A. in Geology from Harvard University and a Ph.D. in Geography and Environmental Engineering from Johns Hopkins University. She is also Founder and Science Director of ALLARM (Alliance for Aquatic Resource Monitoring), a community-based volunteer stream monitoring network in Pennsylvania, founded in 1986 and staffed by Dickinson College faculty and students. Her teaching and research interests include: operational models for community-based research, watershed assessment and management, aquatic ecology, and Chesapeake Bay restoration and protection issues.

Abstract

The Alliance for Aquatic Resource Monitoring (ALLARM), a community science project of the Environmental Studies Department at Dickinson College, Carlisle, PA, provides technical and programmatic support to Pennsylvania communities and individuals, who are working to evaluate, protect, and restore streams. During our 18-years of operation, we have engaged citizen scientists in a number of different roles; in recent years we have adopted a community-based participatory model where the volunteers perform the research for all phases of the study, with the support and training of our staff. We have found that the most challenging task for volunteers is to “find the story” in their data during the data analysis and interpretation stage.

This presentation will discuss the importance of volunteers engaging in this difficult process in terms of: 1) the sense of ownership, increased understanding, and empowerment for action that comes out of this involvement, and 2) the value of utilizing local knowledge for sound interpretation of cause and effect. A two-phase model for training volunteers will be presented; the first phase is an analysis of a virtual watershed case study to teach statistical and graphical interpretation and to lead volunteers to discover how patterns in water chemistry may reflect geology and land use patterns. The second phase is the analysis and interpretation of their own actual data; during this phase participants’ knowledge of local practices is used to identify the causes of the patterns and to inform action plans. Our own effectiveness and ongoing challenges in training watershed groups to turn their data into information will be assessed.