USDA-CSREES 2007 National Water Quality Conference

Validity and Usefulness of Citizen Volunteer Water Data in River Basin Management

The Tallapoosa Watershed Project (TWP) is a 3-year, CSREES-funded, Integrated Water Quality Initiative that is evaluating a variety of technologies for estimating nutrient and sediment loading within a large river system in east-central Alabama. A major goal of the project is to provide greater access to local watershed data for educators, planners and regulators, and to develop a model of stakeholder action for other watersheds in the southeastern United States. The project evaluated the comparability and usefulness of citizen volunteer data as part of an optimal mix of cost-effective basin management strategies. During the 2004 and 2005 growing seasons (April-October), two citizen volunteer monitoring groups monitored on two large lakes coincident with professional monitoring by university and state agency personnel. The volunteer monitors had received training and certification in water chemistry testing from the Alabama Water Watch Program. Results of 6 parameters measured from 56 samples taken at 8 sites (4 sites per lake) were compared for accuracy, and also compared from a watershed management perspective. The majority (55% of measurements) of volunteer monitoring results did not differ significantly ($p>0.05$) from professional results. Even when significant differences occurred, results based on volunteer monitoring data and professional data would lead to similar watershed evaluations and management decisions. Education/outreach value of the volunteer monitoring was not quantified, but is evident by the predominance of volunteer monitoring data and volunteer monitor involvement in many of Alabama's evolving watershed management plans. This study indicated that, with proper training and technical backstopping, citizen volunteers can contribute valid data and creative, cost-effective approaches to watershed management.

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