Applying knowledge to improve water quality

National Water Program

A Partnership of USDA CSREES & Land Grant Colleges and Universities

Using Social Indicators to Protect Water Quality in the Upper Scioto Watershed

GREAT LAKES REGION

National Themes:
Watershed Management

Introduction

Watershed groups, coordinators, and research teams often spend a great deal of time collecting and analyzing information about environmental conditions such as soil type, topography, hydrology, and land use in their watersheds. However, relatively little time is spent collecting and analyzing information about the social conditions in their watershed. Many watershed management efforts require changes in the ***behavior*** of individuals that affect environmental conditions that, in turn, impact water quality. Social indicators can help watershed groups better understand and address social conditions, such as the knowledge, attitudes, capacity, and behaviors of those individuals who effect water quality in the watershed.

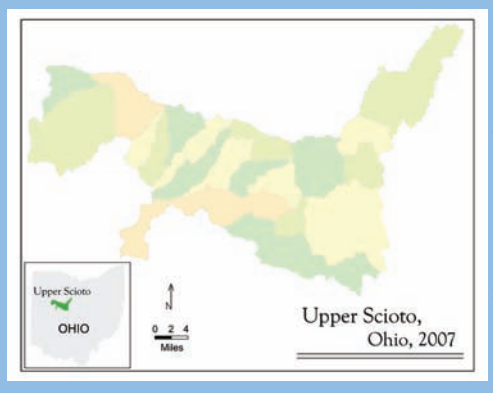
Project Description

This three-year project will test a framework of social indicators that have been developed to improve the capacity of watershed managers to address the social conditions that lead to water quality impacts. Using the social indicator framework, we will work with local watershed managers to design more effective education, outreach, and incentive programs. We will also use the social indicators framework to determine which programs are most effective and why.

Watersheds were selected based on having the following five criteria:

- predominantly agricultural,
- significant water quality impairment,
- sufficient resources available to implement best practices to address water quality impairments,
- a strong history of stakeholder involvement and participatory watershed plan development, and
- groups or project leaders willing to work with the project team in a collaborative manner to develop education, outreach, and incentive programs.

The Upper Scioto Watershed



Map created by Jing Gao, University of Wisconsin 2007

The watershed at a glance:

- Size: 718 square miles
- Location: Central Ohio
- Percentage of agriculture land: 72%

** Shaded areas indicate subwatersheds*

Your group will play a vital role throughout every phase of our project. We will be working with the groups in each watershed to gather background information, connect with the agricultural community, and assist in administering best education practices to one of the subwatersheds within each watershed. During the project watershed groups, coordinators and project research teams will work together in four phases: (1) identify social factors that impede and enable behavior change; (2) develop interventions

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that address these social factors; (3) implement interventions in one subwatershed in each watershed; (4) evaluate the impact and effectiveness of interventions.

Timeline

These phases will be implemented according to the following timeline:

Spring 2007 – Gather background data and identify subwatersheds to be included in study.

Early 2008– Conduct survey of farmers focusing on past adoption of BMPs.

Spring 2008 – Analyze data and develop or revise intervention strategies to improve adoption of appropriate practices.

2008 – Work with project partners in each watershed, the identified interventions will be implemented in one subwatershed.

2009 – Through interviews and focus groups with project leaders, determine if the proposed interventions were effective, and how the use of social indicators impacted effectiveness. Post-treatment surveys will be conducted in both the treatment and control subwatersheds to determine whether the interventions have made the expected impact on the target audience.

Photo by Ed Miller

Fulton Confluence

Project Goals

Ultimately, this project aims to help improve water quality in all of our study watersheds. At the end of the project, we will have a better understanding of how to use social information to design interventions (education and incentive programs) that lead to desirable behavior change. You will be provided with detailed baseline social data on the subwatersheds studied within your watershed. Finally, your input will contribute to the ongoing development of the social indicator framework that will be used by your state and by EPA Region 5 in the future.

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