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Translating Science to the Community through Volunteer Monitoring

Kristine Stepenuck, Linda Green, Elizabeth Herron

Abstract Text:

Cooperative Extension plays a unique role in extending University research and knowledge to local communities and can play a valuable role in water quality education and environmental stewardship through volunteer monitoring programming. These programs provide a conduit for translation of scientific principles about environmental issues to the community. They can lead to increased local awareness of water quality issues and to implementation of locally driven water quality improvement projects involving a full spectrum of the community from students, to farmers, to inner city residents.

We are part of a USDA-CSREES National Facilitation Project designed to build a comprehensive support system for Extension volunteer water quality monitoring efforts across the country. Our goals include helping to foster collaboration, cooperation and communication among existing and developing volunteer monitoring programs, and providing resources to help new programs develop within the Extension system and beyond.

One program which has been highlighted within our network, and through which scientific principles are translated to the community for increased understanding of methods and results, is a multi-state *E. coli* bacteria monitoring project in six upper Midwestern states. Since bacterial contamination of surface waters is a common public health concern, monitoring is important to ensure safe recreational opportunities. However, laboratory analyses can be expensive, and not all natural swimming areas are monitored by state or municipal agencies, thus local citizens may be at risk. In addition, the general public is not well versed in the sources, modes of transport, or means of disinfection of bacteria and pathogens in surface waters, which can result in panic in communities where there is a supposed risk of such contamination in waterways. To address these issues, the project initially evaluated five test methods for monitoring *E. coli* bacteria which are suitable for home use by citizen monitors. The methods were evaluated both by comparing results to laboratory analyses of *E. coli*, and by assessing volunteer preferences in using the methods. The outcome of this research will enable citizens across the Great Lakes region to utilize methods that are scientifically valid and also citizen-friendly. Additionally, citizens participating in the project were educated about *E. coli* bacteria and associated pathogens, and health concerns related to these. Common myths about *E. coli* were addressed, and citizens were provided an overview of how such bacteria move through the environment and what that means to community and individuals' health. To assess success in educating people about *E. coli* bacteria and its sources and pathways of travel, volunteers were provided a knowledge survey before and after trainings. Project findings are included in the poster.

This is only one example of Extension-connected volunteer monitoring programs offering an opportunity for public education of scientific principles, for valuable water quality data to be collected, and bringing university science to the community and community science to the university. A website resource for further reference is: (<http://www.usawaterquality.org/volunteer/>).

Impact Statement:

- Enhanced communication among Extension volunteer monitoring programs nationwide,
- Reduced effort to start new volunteer monitoring programs or to expand existing ones,
- Lent support and credibility to previously isolated programs,
- Expanded volunteer opportunities due to enhanced local and state acceptance,
- Strengthened partnerships within and between CSREES programs and other agencies, and
- Enhanced recognition volunteer monitoring efforts as a viable component of the water monitoring community.