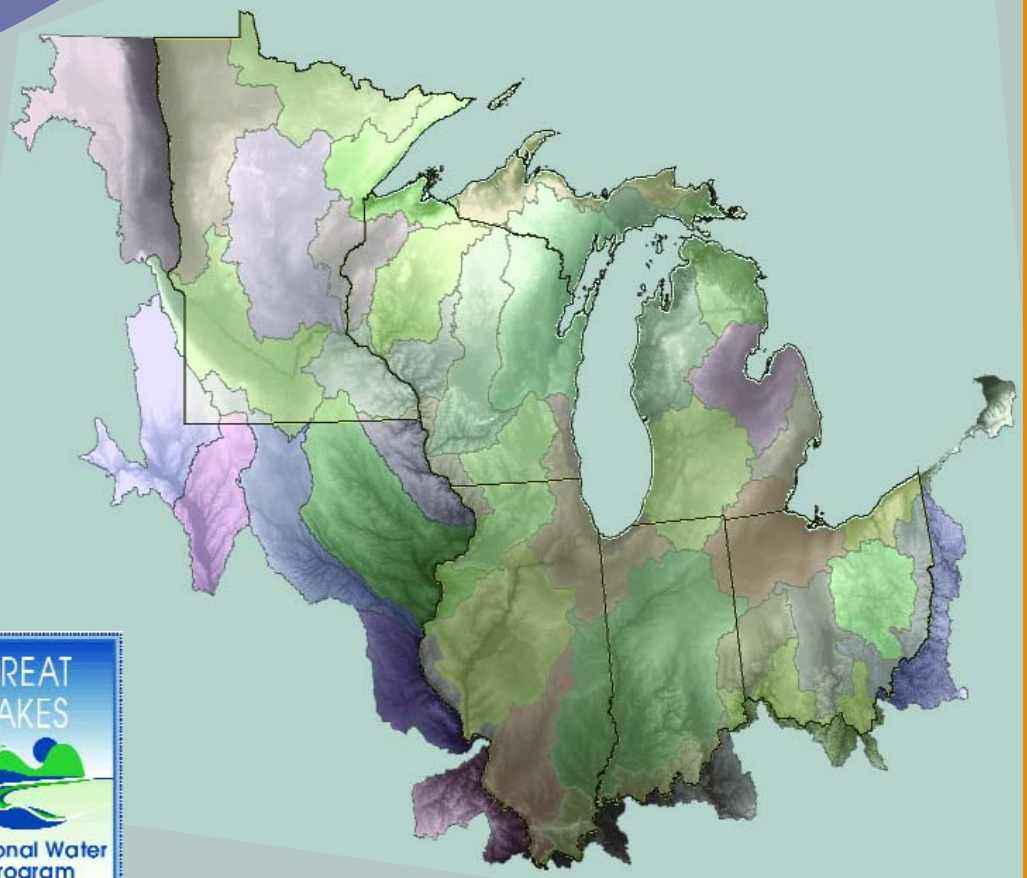
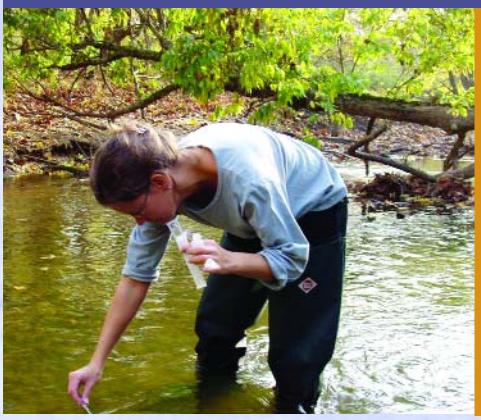
Great Lakes Regional Water Program

Progress & Impact Report

Applying Knowledge to Improve Water Quality

www.uwex.edu/ces/regionalwaterquality





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For a list of Regional Program Coordinators, Regional Liaisons, National Facilitation Project Coordinators, and CSREES State Water Quality Coordinators, please visit the National Water website and the National Water Directory at:

www.usawaterquality.org/directory/WQCDirectory_Aug05.pdf.

Introduction

People use water – and lots of it. According to the US Environmental Protection Agency, the average American individual uses over 150 gallons of water a day, and can only survive five to seven days without it (in comparison to being able to survive about a month without food). Without water, many industries would cease to function. Approximately 62,600 gallons of water are needed to produce one ton of steel, 9.3 gallons to process one can of fruit or vegetables, and that favorite beer takes approximately 1,500 gallons to process (per barrel).

The biggest threats to the nation's water supply and quality are water consumption that outstrips supply for prolonged time periods and contamination by excess sediments, nitrogen, and phosphorous. Significant sources of contaminants include animal waste from livestock and pets, commercial fertilizers from farm fields and lawns, and sediments from farm fields, construction site erosion, and rivers and streams with altered hydrology.

The Cooperative State Research, Education, and Extension Service (CSREES), the Land Grant Universities, and many important partners have been instrumental in cleaning up our nation's waters for more than 30 years. Through national and regional collaborations on water quality programs and projects, these organizations are working to improve the effectiveness and efficiency of water quality programming nationwide. This report describes the CSREES National Water Program, the structure and goals of the Great Lakes Regional Water Program, and specific programming successes in the Great Lakes Region. Please see the National Water Program website **www.usawaterquality.org** and the Regional Program website **www.uwex.edu/ces/regionalwaterquality** for more information about what each program is doing to make sure that an abundant supply of clean, usable water is available for future generations.

The National Water Program

The goal of the National Water Program, partnership of USDA CSREES and the Land Grant Colleges and Universities, is to protect or improve the quality of water resources throughout the United States and its territories, particularly in agriculturally managed watersheds. The program seeks to address this goal at the national, regional, state, and local levels.

The CSREES National Water Program brings university scientists, instructors, and Extension educators into more effective and efficient partnerships with federal interagency priority programs to address water quality issues in agriculture. A key emphasis of the program is integration of extension, research, and education resources to solve water problems at the local level.

This funding enabled the formation and linkage of 10 Regional Water Programs, which serve as the foundation of the National Water Program. The program is guided by a unique model for shared leadership, which includes representatives from each of 10 regional programs (corresponding to US Environmental Protection Agency regions), representatives from the traditional black and tribal Land Grant institutions, and the CSREES National Program Leader for Water.

The National Water Program is supported by the 406 Integrated Research, Education, and Extension Competitive Grants Program. This program is often referred to as the "406" Program because of its legislative roots in Section 406 of the Agricultural, Research, Education, and Extension Reform Act of 1998 (AREERA)(7 U.S.C. 7626), the legislation that authorized the Secretary of Agriculture to establish this competitive grants program.

The National Water Program has identified eight priority themes for research, education, and extension projects. An associated team of experts will address each theme on the national scale, helping to focus the efforts of CSREES on water quality issues. These themes are listed below:

- Animal Waste Management
- Drinking Water and Human Health
- Environmental Restoration
- Nutrient and Pesticide Management
- Pollution Assessment and Prevention
- Water Conservation and Agricultural Water Management
- Watershed Management
- Water Policy and Economics

The Great Lakes Regional Water Program

The Great Lakes Regional Water Program (GLRWP), corresponding to USEPA's Region 5, supports water-related research, education and outreach initiatives in Minnesota, Wisconsin, Michigan, Illinois, Indiana, and Ohio. Regional coordination projects within the National Water Program enhance the sharing and delivery of successful programs and encourage multi-state and multi-region efforts to protect and restore water resources. The Program has made significant strides in elevating multi-state, trans-boundary thinking in the region, an important change considering the truly boundless (but not limitless) nature of water. The stories that follow are a sample of regional activities in four of the six national priority themes adopted by the Great Lakes Regional Program: Animal Waste Management, Drinking Water and Human Health, Environmental Restoration, Nutrient and Pesticide Management, Water Policy and Economics, and Watershed Management (two Themes – Environmental Restoration and Water Policy and Economics are new). For more information, please contact any one of the Regional Team members listed on page 1 of this document, or visit the Program website at:

www.uwex.edu/ces/regionalwaterquality

Program Goals

- Provide regional coordination of research, education, and extension/outreach efforts addressing water quality problems related to agricultural activities within Extension's North Central Region and USEPA Region 5.
- Work cooperatively to share responsibilities and resources in the interest of resolving water quality problems that are complex in nature and regional in scope.
- Build continuing education and professional develop ment programs based on currently available information for agricultural and nonagricultural audiences.
- Offer an entry point for state and federal agencies, commodity organizations, and other non-governmental organizations to access the resources within the Land Grant universities and collectively address water issues of mutual interest.

Framework and Organization

- A Regional Water Leadership Team of (CSREES) State Water Quality Coordinators from Great Lakes states, CSREES Regional Water Liaison, and a liaison from USEPA Region 5.
- Regional Theme Teams of experts in six regional priority themes derived from the eight CSREES national priority themes.
- Multi-state Flagship projects that bring together the research, education, extension/outreach, and environmental professionals to address water management issues.

Regional Coordination Impacts

Overall, the GLRWP has:

- Increased communication and networking among CSREES State Water Quality Coordinators, Land and Sea Grant institutions, 1994 Tribal Colleges, Water Resource Research Institutes (WRRIs), and federal and state agencies within the North Central Region and USEPA's Region 5.

- Increased awareness of the Great Lakes Regional Program among Land and Sea Grant Institutions, 1994 Tribal Colleges, WRRIs, and federal and state agencies within the North Central Region and USEPA's Region 5.

- Elevated the visibility of collaborative multi-state approaches to addressing water quality issues, paving the way for others to consider similar efforts. Within Extension's North Central Region, The Great Lakes Regional Water Program is often cited as an example of how to implement a multi-state land grant program.

- Increased documentation of Regional and National Water Program projects and success stories through development, utilization and maintenance of a national reporting system.

The Great Lakes Regional program has leveraged over $8 million (more than a 3:1 ratio) since its inception in 2000, benefiting water quality research and outreach efforts and participating agencies and organizations, as well as building the visibility and reputation of CSREES as a productive and contributing partner.

Selected Coordination Activities:

- With USEPA, the GLRWP designed and facilitated a regional working session titled, "Multi-State Collaborative Approaches to Water Quality Improvement: Creating Mass and Momentum in the Midwest." The purpose of this working session was to bring professionals together around each of the GLRWP's six priority Themes to agree upon priority issues within each and action items to address these issues. More than 80 people from Land and Sea Grant universities and colleges, state environmental agencies, federal agencies, non-profit organizations, and other water quality-related organizations attended, and approaches (in the form of logic models) were developed for most of the identified priority issues in each Theme. Please see the Collaboration Success Story on page 7 for more details.

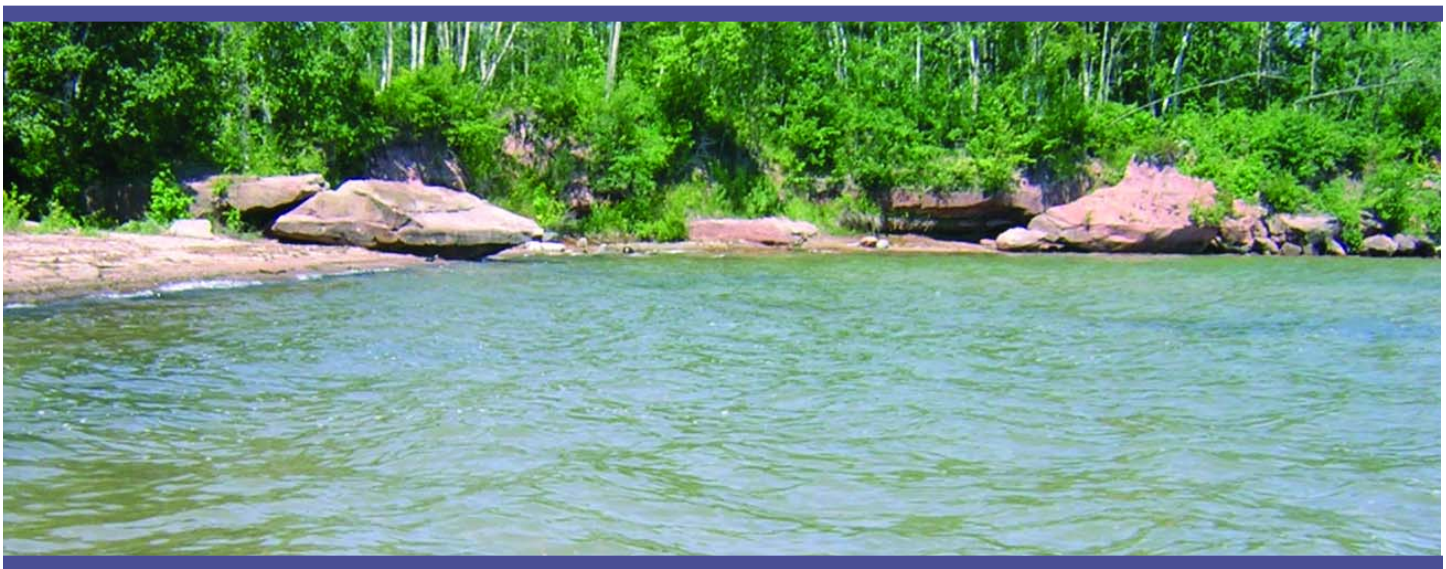
- The Regional Program continues to coordinate with the Agriculture Drainage Management Task Force. The Task Force is a partnership of ARS, NRCS, CSREES and Land Grant University researchers that focuses attention on new management practices that can mitigate the negative impact of drainage. The Task Force serves the function of an advisory group to the Regional Team.

- The Great Lakes Regional Leadership Team, coordinated participation of the Land Grant Universities in a USEPA regional training: Technical Fundamentals of Concentrated Animal Feeding Operations (CAFOs) for Permit Writers and Inspectors. The Team has also been working with USEPA Region 5 on determining needs for follow-up trainings for each state related to CAFOs.

- The Regional Program hosted stormwater listening sessions and worked with state advisory groups in Region 5 states to bring state agency, municipal, and Land Grant expertise together to discuss research and outreach needs and Land Grant capacity and roles in meeting those needs. This information will be used to help communities comply with USEPA Phase II requirements by supporting regional prioritization of stormwater research and outreach activities both within and outside the Land Grant Universities.

- The Regional Program has funded three students from the Lac Courte Oreilles Ojibwa Community College (a 1994, or tribal institution) to attend a summer session on Conservation Design and "Green" Housing. This class is one component of a trans-disciplinary partnership between the Community College and UW-Madison founded to enhance educational opportunities, job training, and small business development for Native Americans, while implementing conservation development and new home construction practices that meet community needs and preserve/improve the water quality necessary to sustain the traditional wild rice food culture. This project is part of regional efforts to increase faculty, staff, and student collaborations among 1862 and 1994 institutions.

- The Region has initiated planning efforts for a wild rice conservation and management conference in 2006. A coordination session with Tribal Colleges in the region (at a minimum this will include Lac Courte Oreilles Ojibwa Community College and the Fond du Lac Community College) will be held in conjunction with the conference. This session will identify regional extension, research and educational priorities where greater collaboration between the 1994 and 1890 Land Grant institutions can occur.



Regional Collaboration Success Story

Multi-State Collaborative Approaches to Water Quality Improvement: Creating Mass and Momentum in the Midwest

The Great Lakes Regional Water Program (GLRWP) and USEPA Region 5 co-sponsored a multi-state working session to foster regional collaboration on six national themes and help plan priorities and activities for the next four years. Over 80 people from Land and Sea Grant Universities and Colleges, state environmental agencies, federal agencies, non-profit organizations, and other water quality related organizations attended. Participants in the working session organized into six groups according to USDA CSREES National Integrated Water Quality Program Themes important in the Great Lakes Region, including Animal Waste Management, Drinking Water and Human Health, Environmental Restoration, Nutrients and Water Quality, Water Policy and Economics, and Watershed Management. The groups completed all or part of five key tasks during the course of the meeting, including:

- Prioritizing water quality issues and programs that lend themselves to multi-state research, outreach, and management.
- Participating in the development of six regional coordination teams that will move theme priorities forward.
- Proposing and ranking project ideas, coordination needs, and/or other action items for the teams to implement.
- Establishing basic team practices and agreeing upon tasks and timelines for selected projects or coordination efforts.
- Identifying key administrative and operational support items that will help ensure successful multi-state water quality programming.

Both the GLRWP and USEPA Region 5 have committed staff and financial resources to support the growth and development of this regional network. The Land Grant Universities have each created a Theme Coordinator position, and USEPA has designated at least one staff person to work with each Team. Others are expected to begin participating in the Theme Team development process based on their areas of expertise and interest as outcomes and action items for each priority program area are refined. In addition, this structure was included in USEPA Region 5's Watershed Game Plan, a document designed to integrate numerous water program elements at the watershed level, employ multi-scale water qualty data, apply innovative ideas, and engage diverse federal, state, tribal and local stakeholders in problem solving for the purpose of watershed protection, improvement, and restoration. This effort builds upon the work of the four Theme Teams initiated in the first four-year Great Lakes Regional Water Quality Coordination Grant, and the strategic planning session hosted by the Regional Team in 2002.

Regional Programming Impacts

In addition to building long-term relationships among agencies, universities, commodity groups, non-profit organizations and others, the GLRWP has fostered specific projects related to each of the national priority Themes. The following summaries describe a water quality issue in each Theme, the action taken by Great Lakes partners to address the issue, and the impact the action had on the affected community. Key project personnel identified for each project can provide additional information about the project and related efforts. There are many other issues being addressed by Extension and its partners in each state and regionally. Please contact the Regional Water Liaison or any member of the Regional Leadership Team (see page 1 for contact information) for more information about water-related programs within the Great Lakes Region.

National Theme Animal Waste Management

Animal waste from farms and livestock/poultry and dairy production operations can severely threaten water quality if not managed properly. Animal waste from the 1.3 million farms with livestock and poultry (USEPA estimate) across the nation has the potential to contribute excess nutrients, pathogens, organic matter, solids, and odorous compounds to the environment. This pollution can cause eutrophication of surface waters, degradation of ground water, and can threaten human health. The following stories highlight efforts in the Great Lakes Region to protect and improve water quality by appropriately managing animal waste.

Regional Programming Success Story

Professional Development for Manure Haulers

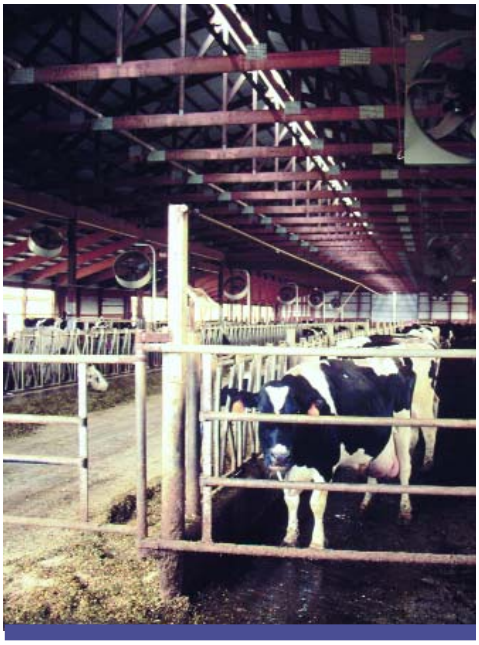
SITUATION:

A series of unrelated manure runoff events in Wisconsin in 2002 (80% of which involved for-hire manure applicators with less than two years experience) convinced the industry that something needed to be done to improve professionalism in the industry. Through their association (Professional Nutrient Applicators of Wisconsin), they approached UW-Extension about developing a training and certification program. A subcommittee of the Extension Nutrient Management Team responded to their request by first looking at existing training programs across the country. During this process, it was discovered that Michigan's for-hire applicators had made the same request of Extension in their state.

ACTION:

Using Regional Section 406 funding, the two states, along with Illinois, created a training and education program that met the needs of applicators in all three states. A three-stage program was created that combines existing educational materials (Livestock and Poultry Environmental Stewardship curriculum), adapted for this audience's needs, with new material that meets the educational needs of the field-level employee. Project goals are to insure that:

- Every applicator knows how to prevent manure spills, and the steps to take in the event one does occur
- Every applicator is knowledgeable of their state's regulations
- Basic, common sense can be demonstrated as it relates to manure application
- Advanced training and testing in odor control, ethics, and equipment calibration is provided for crew supervisors and business owners
- An opportunity exists for the most advanced firms to demonstrate their commitment to proper application and environmental protection



OUTCOMES/IMPACTS:

The original project objective was to reduce manure spills and increase nutrient management plan implementation. Spill numbers have increased in each of the three states, but regulatory staff attribute this to the fact that both for-hire applicators and farmers are now more willing to report spills than they were in the past. The telling fact is that in Wisconsin, more than 10% of the reported spills from July 2004 to March 2005 involved a for-hire applicator. Of those, two involved a trained individual – one was a runoff event (rain after application), the other was an unpreventable mechanical failure.

Market-based incentives created by the insurance industry have been the key to the program's adoption. The opportunity to save $500-$8,000 per year gives small businesses a powerful incentive for implementation. The insurance underwriters and agents have also taken responsibility for the annual audits of Level 3 Certification, saving an average of $500 in agency expense each year for each firm in the program. In Wisconsin, the program has prevented the state from implementing a regulatory program for the industry. Taxpayer savings are estimated at $80,000 annually based on the cost of similar programs in Iowa and Minnesota. In addition, within-industry partnerships multiplied as a result of this project, increasing learning and resource sharing, which is particularly beneficial to smaller businesses.

A recently funded Ohio component of this project has led to the formation of a new Ohio nutrient applicator's association. About 100 nutrient applicators have been trained in Best Management Practices for Liquid Manure Application there.

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Wisconsin Department of Natural Resources

Wisconsin Department of Agriculture, Trade and Consumer Protection

Illinois Environmental Protection Agency

University of Illinois Extension

Michigan Department of Environmental Quality

Michigan State University Extension

Michigan Agriculture Environmental Assurance Program

The Ohio State University Extension

Vincent Urban Walker and Associates Insurance, Green Bay

National Theme Drinking Water & Human Health

The health and livelihood of Americans depends on the availability of a safe drinking water supply. In some areas of the country, drinking water is a scarce resource, while in other areas abundant water supplies are available. Community water systems now supply drinking water to over 80 percent of the U.S. population. Other citizens drink water from private sources, mostly wells. Increasing water demands from a growing population, economic expansion and increasing use per capita have led to a need to emphasize the wise use, proper management and protection of this resource. Both community and private sources of drinking water are susceptible to a myriad of chemical contaminants, biological pollutants and nuisance water problems that may vary depending on site conditions and other factors. Many U.S. citizens are becoming more concerned about potential health risks and nuisance problems associated with their drinking water. The following stories highlight efforts in the Great Lakes Region to promote healthy drinking water through sound science and effective regional partnerships.

Regional Programming Success Story

Building the Capacity of *E. coli* Monitoring by Volunteer Networks: A Multi-State Effort

SITUATION:

The public is demanding increased water quality monitoring to ensure that waters are protected from agricultural and urban runoff that may lead to elevated pathogen levels. At the same time, citizens and volunteers often gather and distribute water quality sample data without an understanding of pollutant sources or proper sampling techniques. A comprehensive training program on bacteria sampling for volunteer monitors was needed to address these concerns. Furthermore, an evaluation of the best test kit methods (based on usability, accuracy and preference) for volunteer monitors to use was needed. This project builds upon the strengths of Cooperative Extension Volunteer Monitoring Programs in six states in the Upper Midwest (Minnesota, Wisconsin, Michigan, Iowa, Indiana and Ohio) to train citizen volunteers specifically in the collection of water samples for bacterial testing. A multi-state steering team is working to evaluate results, build in-state support, and create training materials in order to build the capacity of volunteer monitoring networks to properly collect bacteria water quality data. Nationally, only 8 of the 26 volunteer monitoring programs sponsored or co-sponsored by Cooperative Extension currently test for bacteria (National Volunteer Monitoring Facilitation Project, 2003).

ACTION: The goals of the project are to:

- Build the capacity of volunteer monitoring programs to understand and use the most appropriate *E. coli* testing protocols (test kits) and watershed-based sampling strategies with their volunteers.
- Develop a comprehensive training program for volunteers on *E. coli* testing in targeted watersheds in a six-state area.
- Develop and disseminate educational materials about *E. coli* and its associated health risks, sources and reasons for monitoring.
- Increase awareness and acceptance of the use of volunteer-collected water quality data in various watershed programs, including watershed assessments and TMDL development.
- Share results of the work with other states across the country, primarily via the National Volunteer Monitoring Facilitation Project efforts.
- Demonstrate how to set up an appropriate watershed-based *E. coli* sampling strategy utilizing volunteer networks and begin collecting usable data.

The Project Team was launched with leveraged funds from the Great Lakes Water Program. In 2004, trained volunteers in Indiana and Iowa collected grab samples to evaluate the accuracy, reliability, and usability of several commercially available *E. coli* test kits. Test kits chosen for this project included Coliscan Easy Gel (incubated and not incubated), 3M "Petrifilm", Coliscan, MF Method, and IDEXX COLISURE™. Samples analyzed by the volunteers were compared to split samples sent to a laboratory certified in *E. coli* analysis. Following the sampling season, volunteers were surveyed to determine the usability of the various test kits. Based on statistical comparison of the test kits results with lab analysis, the project team will identify and recommend the test kit method that best combines accuracy and user-friendliness.

In 2005 and 2006, volunteers in Minnesota, Wisconsin, Michigan, and Ohio will use the recommended kit and split samples for *E. coli* analysis at a certified lab. Volunteers will be trained with methods consistent across the six states. A pre-training questionnaire will establish the basis of their knowledge with respect to water quality and bacterial contamination issues. Volunteer knowledge and proficiency in the use of the test kits will be tracked over time. Training methods will be assessed and revised as necessary to produce proficient volunteers. The project will produce test kit recommendations, a training curriculum, and educational materials that will be transferable to other regions.

OUTCOMES/IMPACTS:

This project benefits existing bacteria monitoring efforts nationally, and provides a wealth of data that can be transferred to the other programs that wish to expand their volunteer monitoring programs. The strong link between this project and the National Volunteer Monitoring Facilitation Project will enable this sharing and capacity building to occur.

Each project staff person has established informal partnerships with state agencies involved with bacteria monitoring. The project has provided a strong link between the research and outreach functions at the Land Grant Universities in each of the six participating states.

This project would not have been possible without Section 406 Extension Education funding and initial start-up funds received through the Great Lakes Regional Water Program. These funds are helping, in this time of extreme budget cuts, to build the credibility of volunteer monitoring by creating a strong research foundation on which programs function.

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National Theme Nutrient & Pesticide Management

Nutrients and pesticides are potential pollutants of both surface and ground water. Pesticide and nutrient (fertilizer) use is almost ubiquitous across our developed and agricultural landscapes. Nutrients originate from a variety of sources including organic and inorganic fertilizers, plant parts, animal manures and human wastes. Likewise, pesticides are used for a wide range of purposes from disease, weed, and insect control in agricultural production systems to control of pests in urban lawns and landscapes. Proper handling, use, and disposal of these important and beneficial products are critical for preventing adverse impacts on water resources and aquatic habitats. The following story highlights efforts in the Great Lakes Region to protect and improve water quality though research, education, and outreach efforts related to agricultural nutrient management

Regional Programming Success Story

Integrating Phosphorus Indexes with National Nutrient Management Planning Software

SITUATION:

The USEPA final Concentrated Animal Feeding Operations (CAFO) rule released in 2003 requires the development of nutrient management plans (NMPs) for approximately 18,000 large CAFOs by 2006. The USDA-Natural Resources Conservation Service generally requires livestock producers to develop and implement nutrient management planning as part of their cost-sharing programs, and recommends that all livestock producers (approximately 250,000) develop NMPs. As part of the nutrient management planning process in both the USEPA and NRCS programs, phosphorus (P) must be specifically addressed in NMPs, using either agronomic soil test P, soil P threshold values, or the P index (PI). All states in USEPA Region 5 have chosen some version of the phosphorus index as their tool of choice for developing P-based nutrient management plans. However, in USEPA Region 5, most PIs are either not fully developed or have not been released for use by the public. Illinois, Wisconsin and Minnesota do not currently have recommended PIs. Michigan and Ohio have spread-sheet versions of their PIs that must be used interactively, and the results of the PI are not linked to any other software used for writing and implementing NMPs. Indiana does have a preliminary risk assessment tool that is already linked to Manure Management Planner (MMP) software, but the final version is still under development. The target audiences for this effort include producers, technical service providers and NRCS. Land Grant Extension and regulatory agency personnel can all use MMP and MMPs risk assessment tools to streamline the nutrient management planning development and review process.

ACTION:

This project has developed an approach to implement all state-developed phosphorus indexes or other risk assessment tools as state-specific reports produced entirely in MMP. To date, it has implemented the following state-specific risk assessment tools as custom reports in MMP: Ohio's phosphorus index, Indiana's offsite risk index, Illinois' phosphorus loss assessment and Minnesota's phosphorus risk assessment. All of these custom reports are in accordance with each state's 590 specifications. Michigan's manure application risk index (MARI) and Wisconsin's phosphorus index have yet to be completed. The MARI custom report will be developed next; Wisconsin's phosphorus index will follow. Neither Illinois nor Minnesota have developed more comprehensive phosphorus indexes yet. Michigan will not have their full phosphorus index developed for at least six months. However, the MARI index is included in the Michigan CAFO rule, so that is the current state regulatory tool for phosphorus risk assessment. In addition to implementing the Michigan MARI tool and the Wisconsin phosphorus index, the project will likely make further improvements to Indiana's offsite risk index as it transitions to the nutrient and sediment transport risk assessment tool (NASTRAT).

OUTCOMES/IMPACTS:

This project has leveraged nearly $800,000 of federal support over the past five years. MMP software developers and the project leader have established closer working relationships with state NRCS, Land Grant, and regulatory agency personnel through the PI/risk assessment tool development and implementation project funded by this grant. This project not only speeds the nutrient management planning process, but also allows plan reviewers to verify that all risk assessment outputs were generated properly.

Without Section 406 Coordination Quality funding, this project would not have been able to implement phosphorus indexes or other risk assessment tools as part of the Manure Management Planner (MMP) software. While these tools were actually developed by the states, they were only implemented as paper worksheets or Excel spreadsheets, neither of which is verifiable by plan reviewers. This project has allowed us to speed the implementation of state-developed phosphorus indexes and other risk assessment tools and also has provided a way for plan reviewers to verify that all calculations were completed correctly.

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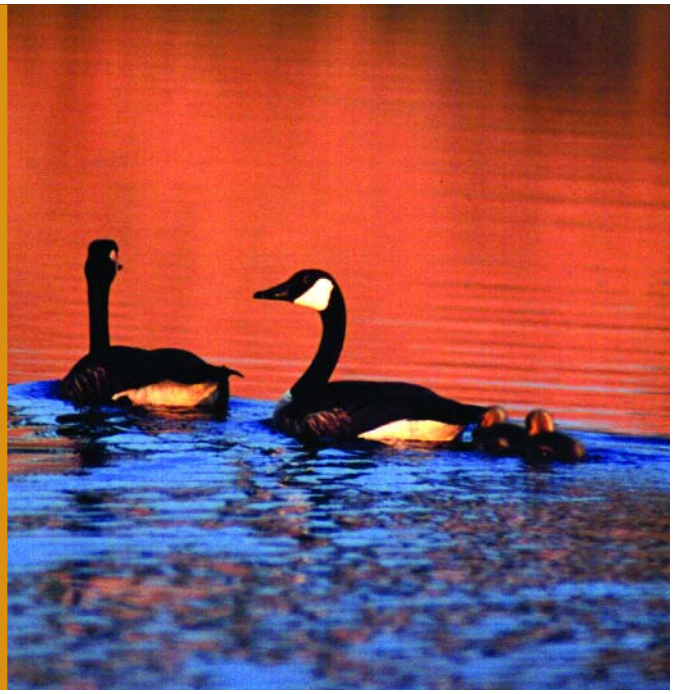

National Theme Watershed Management

Watershed management recognizes that the water quality of our streams, lakes, and estuaries results from the interaction of upstream features. Watershed management programs unite social, economic, and environmental concerns with research devoted to "scaling-up" the cumulative effects of site-specific actions on rangelands, forests, agricultural lands, and rural communities.

Effective planning and long-term change in impaired watersheds requires citizen participation in many stages of the process. CSREES and the Land Grant Universities, with their system of community-based educators carrying out public outreach education, are uniquely poised to direct programming to increase community involvement in watershed management. CSREES Extension programs educate agricultural producers, residents, and community decision makers on water quality and watershed management issues using a wide array of programming, including workshops on the Total Maximum Daily Load (TMDL) process, model and geographical information system (GIS) demonstrations, hands-on training of watershed-scale tools available to reduce pollution risks within watersheds, and media publications. Extension supports numerous volunteer water quality monitoring programs that educate and empower volunteers while collecting valuable data to assess water quality before and after watershed restoration. The CSREES network is engaging stakeholders in the watershed management process, resulting in changing attitudes and behaviors that reduce contamination throughout watersheds and consequently improve water quality.

Regional Programming Success Story

Developing a Social Component for the USEPA Region 5 Nonpoint Source Evaluation Framework

SITUATION:

State Nonpoint Source (NPS) management programs are implemented to improve and protect water resources in a variety of ways. Environmental management and stakeholder education and outreach are both important to achieving and maintaining long-term water quality goals. Most state environmental agencies have the necessary expertise to address the environmental dimension of water quality management, but lack expertise in the human dimensions of water quality, such as fostering behavior change. In addition, because the effectiveness of public funding is being closely scrutinized in every agency, the need for outcome-based program evaluations is high. Evaluation expertise exists at the regional and state program levels, but is constrained by high workloads and limited funding.

USEPA Region 5, state environmental agencies, and the Great Lakes Regional Water Program have recognized the need to understand and include human dimension indicators to help evaluate progress toward water quality goals in the region. Of particular interest are indicators associated with behavioral changes that reduce threats to water resources but do not immediately translate into measurable water quality differences, as well as contextual information about watersheds that will provide insight into the system in which NPS management is taking place.

ACTION:

The Great Lakes Regional Water Program and the Land Grant Universities in the region are assisting USEPA and Region 5 states with the development of a system for incorporating social indicators in the evaluation of 319 non-point source reduction efforts. A core work team has been formed, information about existing indicators is being gathered and workshops are being held in each state for agency, staff, grant recipients and others involved in NPS management efforts. The core planning team has developed a project outline and plan of work for activities through July 2007. The two overarching objectives of this project are:

- Develop a system for collecting and using social data to evaluate NPS water quality management efforts at regional, state, and project levels.

- Provide support for USEPA Region 5, states, and project-level personnel to plan and perform effective program and project evaluations, with a focus on human dimensions, including the social component of the NPS evaluation framework.

OUTCOMES/IMPACTS

This project is early in its development, but has already expanded relationships among state environmental agencies and Land Grant Universities in the region. Because the project takes a collaborative approach across the region, it is expected to help programs and projects share information and help regional, state, and local NPS programs and projects effectively navigate program planning and evaluation challenges. It is also anticipated to enhance mechanisms for gathering evaluation information and feeding it back into regional, state, and local project decision-making, thus assuring ongoing improvement of program and project approaches to managing nonpoint source pollution.

This project is a strong collaborative effort with USEPA Region 5 and the state environmental agencies, and is the result of over three years of preliminary collaboration and relationship development. The leadership and commitment of USEPA Region 5 staff was essential to the development of this important component of NPS program planning and evaluation. The project is funded primarily by Section 319, with additional funding from the Great Lakes Regional Water Program and Land Grant Universities in the region. This project has significant potential as a national pilot for other NPS program evaluation strategies.

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Purdue University
Michigan State University
University of Minnesota
The Ohio State University
University of Wisconsin

NATIONAL CITIZENSHIP

The Great Lakes Region has strengthened the capacity of the CSREES Water Program by continuing development, maintenance and ongoing support for a national-scale reporting system for Section 406 activities. The Regional Program has provided technical support for the electronic reporting system and the data it generates, and has fostered regional and state capacity in conducting program evaluations to improve future extension programming. The University of Wisconsin is assisting the Sub-Committee for Program Support on Reporting/Evaluation that was designated by the CSREES Committee for Shared Leadership for Water (CSL). This element of the Great Lakes Regional program receives guidance from and offers support to that CSL sub-committee.

The reporting and evaluation systems supported by the Great Lakes Region are essential for improving program design and delivery, demonstrating accountability for use of Section 406 funds, and documenting the many successes of Land Grant water quality research, education, and extension efforts in this region and nationwide.

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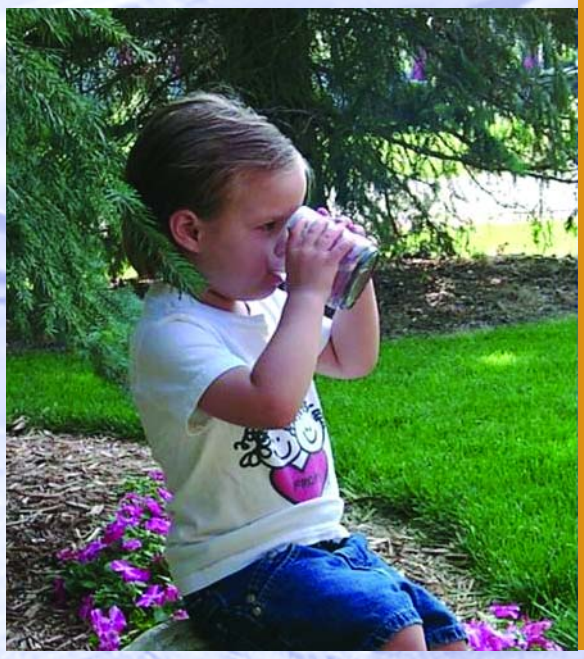

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