

Not a submarine captain or lost fish!

Nonpoint Education for Municipal Officials, the NEMO Program, in the Great Lakes Basin

Nonpoint Education for Municipal Officials, or NEMO, began at the University of Connecticut over ten years ago as an effort to assist local officials of three coastal communities in addressing nonpoint source pollution, and improving and protecting Long Island Sound water quality. The University of Connecticut Cooperative Extension, the state Department of Natural Resources and Engineering, and Connecticut Sea Grant recognized that a land-cover database generated to estimate nitrogen loading to the Sound could be used for educational purposes. They worked together to develop the initial NEMO educational program, "Linking Land Use to Water Quality," a standardized workshop built around GIS natural resource layers and remote sensing-derived images of land cover.

Successfully implemented in the pilot communities, the NEMO program spread to other Connecticut communities and additional workshops were developed. Soon the Connecticut NEMO program was offering a variety of workshops, including the original "Linking Land Use to Water Quality" and others such as "Roles and Responsibilities of Land Use Commissions," "Natural Resource-based Planning for Watersheds," "Reducing Runoff," and "Focus on the Coast."

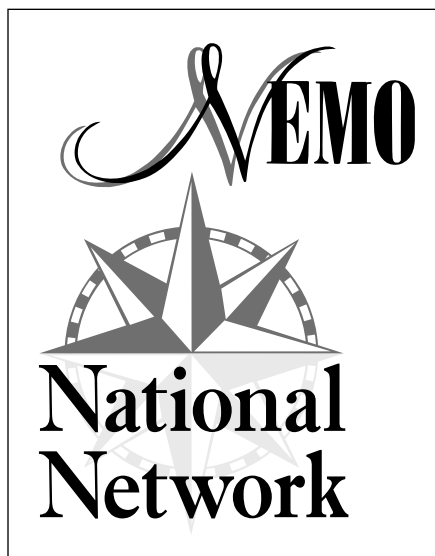
By 1995, word of the NEMO program had spread to other states and natural resource educators began to express interest in adapting NEMO for their own local uses. Shortly thereafter, NEMO professionals in cooperative extension, state and federal land use agencies and sea grant programs joined together to develop a National NEMO Network of state NEMO programs.

In the Great Lakes states, there are NEMO programs in Indiana, Minnesota, New York, Ohio and Pennsylvania. Of these, the Minnesota and Indiana programs are directed to decisionmakers in the Great Lakes basin and offer good examples of activities that are having a real impact on the

water quality of our Great Lakes.

State NEMO programs adhere to the following criteria. First and foremost, natural resource protection is the ultimate goal and land use is the key issue on which the programs focus. "Better land-use decisions are the key to protecting the natural resources, community character and long-term economic health of our communities," says Chet Arnold, Director of the National NEMO Program, located in Connecticut.

NEMO programs are targeted at local land-use officials, such as county and municipal planning commissioners. Decisions made at the local level are



Continued on page 7

Around the Basin

Indiana

On February 13, Indiana Department of Natural Resources (IDNR) Director John Goss announced the **2004 Lake Michigan Coastal Management Program** grants. In all, IDNR recommended that 11 projects receive a total of \$575,000 in federal funds. The grant recipients will provide a total match of \$473,000, for a total project cost of \$1,048,000.

The projects will provide more public access for recreation, restore natural areas, create more habitat for wildlife, stabilize the shoreline and reduce pollution. Pending final federal approval, the IDNR anticipates a project start date of July 1.

The Lake Michigan Coastal Program coordinates efforts between local, state and federal governments as well as local organizations and businesses to finance projects that protect and restore natural resources in Indiana's Lake Michigan coastal region. For more information on the Lake Michigan Coastal Program and additional grant details, go to www.in.gov/dnr/lakemich. Contact: Mike Molnar, IDNR, 317-408-8847.

Michigan

The Michigan Department of Natural Resources is now accepting proposals for the new **Forestland Enhancement Program**.

This program was authorized under the 2002 Farm Bill to promote sustainable forestry management on nonindustrial private forestland through technical assistance, education, outreach and financial incentives. It is administered nationally and grants are funded through the USDA Forest Service, State and Private Forestry Program.

In Michigan, more than 10 million acres of forest lands are owned by nonindustrial private landowners. Forest lands provide many public benefits, including watershed protection, wildlife habitat, aesthetics, timber production and recreation. These grants will offer cost-sharing opportunities to Michigan forest landowners for establishing resource management plans and practices to improve watershed and forest stand quality, wildlife and fish habitat, forest health, and rehabilitate forest lands after catastrophic events.

Grant applications for the 2004 contract award

periods must be received by March 1, May 21, and August 20, respectively. All grants require nonfederal matching funds of 35 percent to 50 percent, depending on the cost-share practice. Contact: Debra Huff, Forest Stewardship Coordinator, 517-335-3355.

Minnesota

The Minnesota Board of Water and Soil Resources (BWSR) has developed an **electronic reporting and tracking system for conservation projects called E-Link**. E-Link will allow local government units to track natural resource conservation accomplishments by logging onto the system through an internet interface. A server at BWSR Central, in St. Paul, stores natural resource data for the entire state of Minnesota.

E-Link tracks and reports on a variety of programs, including shoreland management, wetland conservation, county water management, septic systems and soil conservation cost-share practices. E-Link allows data to be compiled and accessed on a watershed basis. The program can also map projects and offers comparative information on project costs and the natural resource benefit of projects.

Where local governments are required to submit annual reports, E-Link can be updated regularly to make reporting easier. Other state agencies, such as the Minnesota Pollution Control Agency and the Department of Natural Resources, have cooperated in allowing their reports from local government to also be documented in E-Link.

For more E-Link information, see the BWSR web site: www.bwsr.state.mn.us/outreach/eLINK/index.html.

Ohio

There are both positive and negative trends in **Ohio's conservation tillage record** over recent years. The use of conservation tillage has a positive impact on water quality, soil health and the long-term productivity of farmland. While improvements in equipment, herbicides and cultural practices are making conservation tillage easier and more profitable than ever, the use of conservation tillage, especially for corn, is declining in Ohio.

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The use of conservation tillage in Ohio peaked in 2000 at 56 percent of the state's corn, soybean and wheat acreage. More recent figures show use of conservation tillage has fallen to around 50 percent of total crop acreage. Part of that decline may be due to weather conditions that complicated conservation tillage over the last few springs. However, the numbers also point to a discouraging trend away from continuous no-till toward "rotational tillage."

Instead of maintaining no-till or other conservation tillage methods throughout their crop rotations, some farmers have been alternating tillage and no-till. While this strategy can bring soil erosion rates down to acceptable levels on flat fields, it doesn't offer all the soil quality benefits of long-term conservation tillage, such as the increase in soil organic matter, more balanced soil biology, and better water infiltration. Even infrequent tillage can erase these significant production and soil-enhancing benefits. Contact Brad Ross, Ohio DNR, brad.ross@dnr.state.oh.us.

(Adapted from: Ohio DNR, <http://ohiodnr.com/soilandwater/swcds/swcdresources.htm#swcdnews>)

Peter Richards and Garry Grabow's paper, *Detecting Reductions in Sediment Loads Associated With Ohio's Conservation Reserve Enhancement Program*, has been chosen for the All-Ohio Chapter of the Soil and Water Conservation Society's 2003 Outstanding Publication Award.

The authors examined whether the Ohio Lake Erie Conservation Reserve Enhancement Program's (CREP) goal of reducing sediment loads by an average of 6 percent over ten years would be detectable against background loading levels. Small, systematic changes in loads or concentrations of water quality constituents are difficult to detect against the background of short-term fluctuations that are caused by weather or climate effects. Richards and Grabow used a technique called Minimum Detectable Change Analysis (MDCA), which determines how much change in water quality must occur in order for the change to be statistically significant, to assess the Ohio Lake Erie CREP goal.

They concluded that a 6 percent change is unlikely to be detected as statistically significant, even with

the high-frequency sampling program planned for evaluating progress; the minimum detectable change ranges from about 7 percent to 9 percent for the three rivers involved in the Ohio CREP. Contact: R. Peter Richards, 419-448-2240, prichard@heidelberg.edu.

Pennsylvania

The Pennsylvania Dirt and Gravel Road Program is an innovative effort to educate the public about pollution problems associated with unpaved roads and support environmentally sound maintenance for roadways that have been identified as sources of dust and sediment pollution.

The program is codified in state law and based on the principle that informed local control is the most effective way to stop pollution. The law created a dedicated, non-expiring fund that provides money to local communities for education and local road maintenance through conservation districts for use by local road maintenance entities under the environmental guidance of a local quality assurance board (QAB). The QAB is made up of representatives of the conservation district, the USDA-Natural Resources Conservation Service and the Pennsylvania Fish and Boat Commission.

Local municipalities and state agencies that own or have jurisdiction for the identified worksites are the only entities that can receive funds. The training and technical assistance are open to all. Worksite owners are eligible to apply for funds once officials have attended the required two-day "Environmentally Sensitive Road Maintenance" training.

For more information or a grant application, visit the Center for Dirt & Gravel Road Studies web site, www.mri.psu.edu/centers/cdgrs/index.html, or call 814-724-1793.

Wisconsin

The Wisconsin Land and Water Conservation Association (WLWCA) will present a **Water Quality Leadership Award for 2004**. This award promotes and recognizes leadership by individuals in nonpoint source water pollution abate-

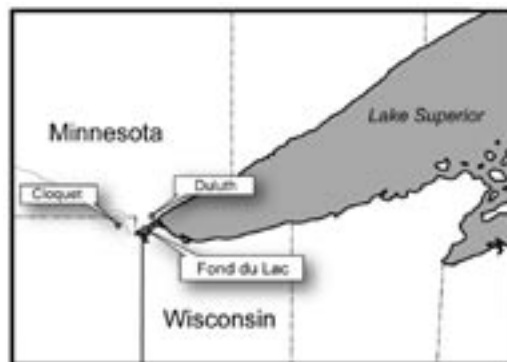
Continued on page 6

Featured Projects

Great Lakes Basin Program for
Soil Erosion and Sediment Control

Western Lake Superior NEMO Project

Grantee: Minnesota Sea Grant
Duration: May 2002 – June 2003
Type: Information/Education



Communities within the western Lake Superior watershed are at a critical juncture. The relatively sparse population, limited agriculture and largely forested landscape of the Lake Superior basin leave the deceptive impression that the region is pristine and not at risk from development impacts. In fact, much of the basin, particularly along the coast, consists of steep grades and highly erodible clay soils. The watersheds draining directly into Lake Superior are highly susceptible to erosion and contain a significant number of trout streams.

Development pressures within the western Lake Superior watershed have been increasing rapidly over the past decade, particularly for coastal communities and townships. Communities historically accustomed to welcoming development, because it increases their tax base, are suddenly experiencing the pressures and impacts to fragile ecosystems and community aesthetics that come with unplanned development.

Many Lake Superior basin communities facing development pressures are resource-challenged. They

struggle to be proactive and provide comprehensive local land-use and stormwater planning and implementation.

In response

to these issues, Minnesota Sea Grant is providing low-cost education for local officials to enable them to make informed decisions to improve and protect water quality, control soil erosion and implement sediment control measures.

Minnesota Sea Grant, along with the Lake Superior Research Institute, organized the Western Lake Superior Basin Nonpoint Education for Municipal Officials (NEMO) Program, a bi-state organization to develop and provide nonpoint and land-use planning guidance for communities in the western Lake Superior watershed. The program is based on the Connecticut NEMO program.

The Fond du Lac Reservation expressed interest in working with the NEMO program and was therefore chosen as a pilot community. The tribal government is in the somewhat unusual position of having some 4,000 tribally-owned acres as well as an additional 17,000 allotted acres. Land management is therefore divided among the City of Cloquet, the tribe, two counties and three townships. Within the Fond du Lac area of influence, the NEMO program identified three problem areas related to urbanization and forestry.

NEMO staff worked with the communities to develop a localized NEMO education package. The package is being used to inform local decisionmakers on commissions, councils, and boards in the Fond du Lac area about their watersheds, land-use decisions, and nonpoint source pollution and its impacts on water quality.

NEMO staff also identified a local educator within the reservation who has both the ability and the interest to continue education efforts and update the material as needed. The NEMO program will continue to work with this educator as necessary.

Other, unanticipated, benefits of the program include contact with communities around the Fond du Lac reservation that have benefited from the initial contact and may, in the future, take advantage of NEMO resources developed specifically for the area.

Contact: Jesse Schomberg, Minnesota Sea Grant, 218-726-6182; jschombe@d.umn.edu.



Featured Projects

Great Lakes Basin Program for
Soil Erosion and Sediment Control



Streamside Landowner Fact Sheets

Grantee: Cuyahoga Soil and Water Conservation District

Project Duration: July 1, 2002 – June 30, 2003

Type: Program and Technical Assistance

Many Great Lakes shoreline or streamside property owners, as well as community officials, do not understand how land-use decisions impact stream dynamics and function. This lack of understanding often leads to excessive sedimentation in watersheds and tributaries due to improper land-use practices. Public perceptions play an important role in how well lands around streams are managed. The public perception that “streams should be straight” and that erosion is a natural process that cannot be slowed or stopped can lead to poor decisionmaking on the part of the landowner. Stream bank erosion often occurs because landowners eliminate trees serving as riparian buffers, dump yard waste in the wrong location, engage in excessive mowing or plant the wrong species of trees or shrubs along stream banks. More severe impacts to streams include straightening stream channels, haphazardly armoring the stream banks, and diverting and culverting headwater streams.

There are significant costs, both in time and money, in restoring streams rather than proactively protecting them. An accurate public understanding of stream function and proper stream management is critical to ensure stable stream banks, reduce non-point source pollution, protect floodplains, preserve storm water capacity and enhance habitat, both aquatic and terrestrial.

Cuyahoga County is one of the most densely populated areas in Ohio. The Cuyahoga Soil and Water Conservation District is providing an efficient and effective method to educate riparian landowners about the importance of good stream bank management. Building upon an existing partnership of local, state and federal agencies and nonprofit organizations that had previously collaborated on the very successful brochure, *Life at the Water's Edge*, project personnel have developed a series of six fact sheets reflecting proper stream management techniques. The fact sheets include information

presented in *Life at the Water's Edge*, as well as advice provided by a technical advisory committee. The six fact sheets address Ohio stream law, stream function, proper planting techniques, the impacts of organic waste and other material dumped in the buffer zone, the impacts of stream channel straightening and a summary sheet.



Volunteers implementing streambank stabilization measures in a residential neighborhood. (Photo: Cuyahoga Soil and Water Conservation District)

In the spring of 2003, the six fact sheets were mailed to 15,000 riparian landowners in Cuyahoga County. The first and the last mailings included a short survey to assess beliefs about streams. The purpose of this survey was to gauge the effectiveness of the outreach program and determine if there were any significant changes in the understanding of stream and watershed management principles as a result of the fact sheets. Unfortunately, with a response rate of 7 percent, there were not enough respondents to provide a statistically relevant result for the survey. Overall, however, the respondents were very positive about the project and found the information useful.

Continued on page 6

Sediment Reduction in the Great Lakes Basin: A Strategic View

On March 2, 2004, the U.S. Army Corps of Engineers, the National Association of Conservation District's Great Lakes Committee and the Great Lakes Commission hosted a basin-wide strategic planning



Industrial pollution at Green Bay, Wis. (Photo: Michigan Sea Grant)

workshop entitled Sediment Reduction in the Great Lakes Basin: A Strategic View in Ann Arbor, Mich.

The workshop offered participants the chance to gain a better understanding

of soil conservation and sediment reduction initiatives within the Great Lakes basin. They identified opportunities for coordination and collaboration among existing initiatives and determined sediment reduction needs. Participants included representatives of local,

state, regional, federal, and academic interests within the basin.

Workshop attendees heard informational presentations and participated in breakout groups that generated a series of questions to be addressed in setting sediment reduction goals for the Great Lakes basin. They also identified data and other information needed to achieve that task, identified existing implementation tools and unmet needs to help reach sediment reduction goals, and suggested the elements for a process that could facilitate strategic goal-setting throughout the basin.

Meeting attendees overwhelmingly agreed that the best way to move the process forward would be to name a multijurisdictional task force, which they assigned two primary activities. First, the task force should build political support for developing sediment reduction goals among relevant agencies and organizations in the basin. The group should also serve as the body that should manage the technical process for setting sediment reduction goals. Contact: Laura Kaminski, 734-971-9135, laurak@glc.org.

Landowner Fact Sheets *(continued from page 5)*

There was another important outcome of the project. Due to established relationships, the National Park Service asked the conservation district to work with them to distribute stream bank stabilization materials to interested landowners. As a result, more

than 70 landowners contacted through the fact sheets were able to use these stream stabilization materials according to methods outlined in the riparian fact sheets. For more information, contact: Janine Rybka at 216-524-6580.

Around the Basin *(continued from page 3)*

ment and watershed management.

Leadership may be exhibited through active involvement in initiating and implementing watershed projects or through the installation of management practices designed to protect and improve water quality. These may include land management in urban and urbanizing areas, animal waste management or soil and water conservation practices undertaken for

a water quality objective.

Nominees may be an individual, organization, business or governmental unit who participates in a county conservation program. Detailed nomination criteria are available at <http://wlwca.org/Pages/watqualaward.html>, or by calling WLWCA at 608-833-1833. County nominations are due August 20, 2004.

The NEMO Program in the Great Lakes Basin *(continued from page 1)*

complex, highly charged politically and vary widely from location to location. Given this complexity, state and federal regulations do not have the necessary influence over land-use policies and practices that is required to implement best planning practices. In this situation, science-based, nonadvocacy professional outreach education is the best way to foster better land-use decisions and is therefore the focus of the state NEMO programs.

In Minnesota, Northland NEMO has been in place for three years. Interest in the NEMO program originated in both the western Lake Superior basin, led by Minnesota Sea Grant, and the rapidly urbanizing Twin Cities, where the Minnesota Erosion Control Association and the Minnesota Department of Natural Resources led a consortium of groups interested in local land-use planning issues.

After developing as separate initiatives in 1999-2000, both efforts are now working together to address land-use issues in Minnesota. In the western Lake Superior basin, Northland NEMO focuses on the “Linking Land Use to Water Quality” program. They have developed current and projected impervious surface maps of local communities to illustrate the impacts of imperviousness on water quality and are using the Impervious Surface Analysis Tool (ISAT) to provide customized and accurate assessments of current imperviousness in watersheds.

Northland NEMO is also interested in the impact of current forest management practices on water quality and staff are working with the timber industry to address this regionally-specific issue. (See page 4 for an overview of a Northland NEMO project supported by the Great Lakes Basin Program.)

In Indiana, the Planning with POWER (Protect our Water and Environmental Resources) program began in 2000. Planning with POWER is led by the Purdue Extension Land Use Team and the Indiana Conservation Partnership, a multiagency organization of federal, state and local conservation organizations, including the state’s conservation districts. Initial efforts included the development of a 25-minute presentation directed to county commissioners, county planning and zoning officials, and other local

officials with land-use decisionmaking roles. The presentation has been delivered to more than 60 professional groups and agencies in most of the state’s counties. Planning with POWER is working with Elkhart County, in the Lake Michigan watershed, to initiate an update to its comprehensive land-use plan and is working with individual watershed projects to develop land-use planning goals for the future.



NEMO programs work with local officials to show them how to minimize the adverse effects that urban land uses can have on water quality. (Photo: Elizabeth LaPorte, Michigan Sea Grant)

NEMO education programs are an important vehicle for reaching land-use decisionmakers, who may not have an understanding of the complexity of the Great Lakes watershed and even less of an awareness of the cumulative impacts of individual land-use development decisions on the Great Lakes ecosystem. For those who do understand the importance of their decisions, the sound scientific information presented in NEMO programs offers fact-based support to their arguments to help persuade others at the local level.

For more information on the National NEMO network and to find a NEMO contact in your area, contact: Chester Arnold, NEMO Project Director, chester.arnold_jr@uconn.edu.

Of Interest ...

Workshops and Conferences

If you have an item for the next quarter, please contact **Jennifer Read**
at 734-971-9135 or jenread@umich.edu

May 17-19

American Water Resources Association 2004
Spring Specialty Conference: Geographic
Information Systems (GIS) and Water Resources III
Location: Nashville, Tennessee
Web: [www.awra.org/meetings/Nashville2004/
index.html](http://www.awra.org/meetings/Nashville2004/index.html)

18-19

Stormwater Program Management and BMPs:
Pollutants, Selection and Maintenance
Location: Myrtle Beach, South Carolina
Contact: Steve Di Giorgi
Phone: 805-682-1300, ext. 129
E-mail: stevedg@forester.net

June 1-3, 2004

EPA Science Forum 2004: Healthy Communities
and Ecosystems
Location: Washington DC
Contact: Alina Martin
Phone: 703-318-4678
Email: tcs-events@saic.com
Web: www.epa.gov/ORD/scienceforum

2-4

Best Education Practices for
Water Outreach Professionals
Location: Madison, Wisconsin
Contact: Kate Reilly
E-mail: klreilly@wisc.edu

09

Lake Michigan Monitoring Coordination Council:
Spring 2004 Meeting
Location: Muskegon, Michigan
Contact: John Hummer
Phone: 734-971-9135
E-mail: jhummer@glc.org

10

Lake Michigan Tributary Monitoring Workshop
Location: Muskegon, Michigan
Contact: John Hummer
Phone: 734-971-9135
E-mail: jhummer@glc.org

21-22

NACD Great Lakes Committee Summer Meeting
Location: Chicago, Illinois
Contact: Jennifer Read
Phone: 734-971-9135
E-mail: jenread@umich.edu
Web: <http://gl.nacdnet.org>

July 11-14

NACD North Central Region Summer Meeting
Location: Springfield, Illinois
Contact: Christa Jones
Phone: 317-738-3849
E-mail: Christa-Jones@nacdnet.org
Web: www.nacdnet.org/meetings/NC



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