

## Third annual VSMP River Summit celebrates volunteers' monitoring efforts

The Volunteer Stream Monitoring Partnership (VSMP) celebrated another successful year of monitoring, education, and stewardship at the Third Annual River Summit on November 13.

Each year the River Summit provides volunteer stream monitors the opportunity to share their stories and their data with each other and with natural resource professionals. The River Summit is also an important way to highlight the efforts of teachers, students, and citizens who monitor their local water resources.

This year, U.S. Congresswoman Betty McCollum joined Minnesota Pollution Control Agency (MPCA) Commissioner Sheryl Corrigan and KARE-11 meteorologist Belinda Jensen at the Science Museum of Minnesota to recognize the volunteers' accomplishments.

Representative McCollum's keynote address praised VSMP, calling the partnership "a great asset to our community," and recognizing the important educational and civic opportunities that it offers volunteers. She also applauded the volunteers for their efforts, saying "I commend the donation of your time and talent to such a valuable project. Investment and engagement in our environment is key to the protection of our natural resources."

MPCA Commissioner Sheryl Corrigan echoed McCollum's praise and provided the volunteers with a sense of the importance of their work to state agencies. With financial resources tight, the work performed by volunteer monitors provides state and local decision-makers with essential information on the



Students prepare to present their monitoring data at the Third Annual River Summit.

status of Minnesota's water resources.

Students and teachers from thirteen schools attended the event and presented posters based on their monitoring efforts. At breakout sessions, students were given

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## Minnesota Water 2004 to address planning for future water supply

Minnesota's population is projected to grow to over 6.2 million people by the year 2030, an increase of more than twenty percent. That population will require a safe and adequate water supply, something that many Minnesotans currently take for granted, but which is becoming increasingly difficult to ensure in many parts of the country. The Water Resources Center will address this concern at the 9<sup>th</sup> biennial Minnesota Water conference, *Minnesota Water 2004: Policy and planning to ensure Minnesota's water supplies*. The 2004 conference will be held March 23–24 at

the Radisson Metrodome on the University of Minnesota Twin Cities Campus.

An opening plenary session will include Joan Rose, Michigan State University; Michael Osterholm, Director of the Center for Infectious Disease Research and Policy at the University of Minnesota; Tom Gillaspay, Minnesota State Demographer; Catharine Hayhoe, University of Illinois at Urbana-Champaign; and Harvey Thorleifson, Director of the Minnesota Geological Survey. Governor Tim Pawlenty has been

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## From the Director's Desk

### A whirlwind first three months

It certainly has been busy here in the Land of 10,000 Lakes! I have been Co-Director of the WRC for 3 months now, and in this short time, there has been a flurry of activity at the Center. We have sponsored numerous workshops, submitted several proposals for funding additional activities, hosted the Mekong River Partnership, and conducted our USGS-funded WRC Grants competition.

One of the highlights of the last three months is the River Summit, sponsored by our Volunteer Stream Monitoring Partnership (page 1), which included appearances by MPCA Commissioner Sheryl Corrigan and U.S. Representative Betty McCollum. Another event that stands out is the 10-day visit by the Mekong River Commission (pages 4-5). The Commission sent 12 representatives from the Lao PDR, Thailand, Cambodia, and Viet Nam to meet with folks from the University and members of the Mississippi River Basin Alliance as part of the Mekong-Mississippi Partnership. This program works to foster policy exchange between these two important river basins that have in common a complicated, multi-jurisdictional management structure. We also welcomed the Onsite Sewage Treatment Program into the WRC family. The OSTP conducts approximately 45 workshops each year for professional training in systems options, operations, and regulations.



The WRC has been successful in obtaining funds from the University

Deborah Swackhamer, WRC co-director

Consortium on Law and Values in Health, Environment, and the Life Sciences and the University Graduate School to conduct a series of workshops on the social and economic value of water, with the underlying goal of developing a research and educational consortium on global freshwater issues. The University also selected us to host one of the President's 21<sup>st</sup> Century Interdisciplinary Conference series, entitled "The Power of Water: Integrating the Social, Economic and Environmental Dimensions."



Planning for the MN Water 2004 Conference is well underway (page 1), and we have a top-notch slate of invited plenary speakers to make this conference the best ever. This year the conference will be held on the University's Twin Cities campus, and the 2-day program will feature 12 sessions of selected speakers on topics including urban stormwater, TMDL assessments, and current research on mercury and pharmaceuticals in the environment. We'll also have a reception and poster session (see Call for Posters below!). We hope many of you will be able to join us for this biennial event.

I've enjoyed these last few months, and look forward to all our upcoming activities. The part that brings me the most joy is the WRC's terrific staff – they are fun, hardworking, and care so much about the Center. I also thank my predecessor Pat, and especially thank my co-director Jim, for all of their guidance as I get settled in.

Finally, may the New Year offer peace, health, and happiness to all of you.

## MINNESOTA WATER 2004

The 9<sup>th</sup> biennial conference on Minnesota's critical water issues

*Policy and Planning  
to Ensure Minnesota's Water Supplies*

### CALL FOR POSTERS

Deadline for receipt of abstracts: February 1, 2004

Submit electronically at:

<http://wrc.coafes.umn.edu/water2004/>

*Sponsored by*  
Water Resources Center  
Minnesota Sea Grant Program  
Center for Water and Environment  
of the  
University of Minnesota

**Dates:** March 23-24, 2004  
**Location:** Radisson Metrodome Hotel, on the  
Minneapolis Campus of the  
University of Minnesota

The poster session will focus on research, assessment, and management of Minnesota's waters with an emphasis on planning and policies to protect and ensure safe and adequate water supplies. Preference will be given to posters that address new findings and recent advances in research, education, and outreach activities. Students are strongly encouraged to submit abstracts.

**ABSTRACT REQUIREMENTS.** Please use the online form to submit your abstract (available at <http://wrc.coafes.umn.edu/water2004/>). The text of the abstract should be approximately 200 words long. Posters must fit on a 4-foot by 4-foot posterboard. If you have questions about your proposed poster or about the conference, please contact Deb Swackhamer, conference chair, at [dswack@umn.edu](mailto:dswack@umn.edu). The deadline for abstract submission is: **February 1, 2004.**

# Water festivals connect communities with water

by Ron Struss, Extension Educator, University of Minnesota WRC

Paint a fish and pet a shark. Learn where drinking water comes from and where wastewater goes. Sing about the Mississippi and paddle a canoe. Those activities are just part of what over 16,000 students and adults do at water festivals taking place across Minnesota every year.

Although not as common as environmental field day or conservation day events, the number of water festivals being held state-wide is large and



*Karen Kill, Washington Conservation District, explores groundwater with a student at the Metro Children's Water Festival.*

Minnesota water festivals:

- **Big River Journey** – Twin Cities Metro
- **Children's Water Festival** – Brown, Nicollet, Cottonwood counties
- **Chisago County Make a Splash Festival** – Chisago County
- **Hubbard County Freshwater Festival** – Wilderness Boy Scout Camp
- **Kids' Groundwater Festival** – Douglas County
- **Metro Children's Water Festival** – Twin Cities Metro
- **Middle Sauk Water Festival** – Sauk River Watershed
- **Morrison County Water Festival** – Camp Ripley
- **Northwest MN Water Festival** – Old Mill State Park & Rydell NWR
- **Paynesville Water Festival** – Paynesville
- **Pokegama Lake Association Fresh Water Fair** – Pine County
- **Project WET "Make a Splash" Water Festival** – location varies
- **Red River Water Festival** – Moorhead
- **Rocori Water Festival** – Cold Spring
- **St. Louis River Quest** – Duluth
- **Stearns County "Make a Splash" Water Festival** – Stearns County
- **WaterFest!** – St. Paul

growing. A recent survey tallied 18 Minnesota events dedicated to educating students about water (see insert).

Most festivals focus on students in the 4<sup>th</sup> to 6<sup>th</sup> grades, while a few are community events. Ramsey Washington Metro Watershed uses their annual WaterFest! in St. Paul as a capstone event that ties together year-long school, business, and neighborhood outreach activities.

Pre- and post-festival testing done in conjunction with the Metro Children's Water Festival shows a consistent 25% increase in student knowledge. Evaluations by students, teachers, and presenters show strong support for these events.

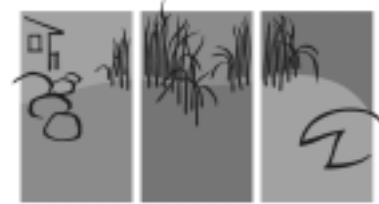
Interested in starting a water festival? April Rust, Project WET Coordinator at the Minnesota Department of Natural Resources (651-297-4951), sponsors a "Make a Splash" festival each year and is taking applications for 2004. Amy Rager, UM Extension Educator (320-589-1711), can provide the publication *Best Practices for Environmental Field Days* and contacts within the University of Minnesota Extension Service who can assist festival organizers.

More information on the festivals listed above is available at [http://wrs.coafes.umn.edu/opportun/water\\_festival\\_list.pdf](http://wrs.coafes.umn.edu/opportun/water_festival_list.pdf).

## Shoreland Education

This coming year the Water Resources Center, Minnesota Sea Grant Program, and University of Minnesota Extension Service will sponsor workshops designed to help property owners improve shoreland management, implement a shoreline revegetation project, and identify aquatic or wetland plants. There will also be three workshops addressing the challenges of curly leaf pondweed management.

For a workshop schedule, registration form, and more information about the shoreland education program, visit [www.extension.umn.edu/water/shore](http://www.extension.umn.edu/water/shore) or contact Tracy Thomas at 612-624-9282.



Shoreland Volunteer Workshops:

- Mora**-March 13
- Brainerd**-April 23-24

Maintenance for Shoreland Revegetation:

- Grand Rapids**-July 23
- Brainerd**-July 9

Shoreland Revegetation Workshops:

- Elk River**-February 28 & March 27
- Chanhassen**-February 7 & March 6
- Fergus Falls**-March 11 & March 25
- Thief River Falls**-March 19 & April 16
- Grand Rapids**-April 23

Wetland Plant Identification:

- Eagan**-July 30-31
- Nisswa**-August 5-6

Aquatic Plant Identification:

- Eden Prairie**-July 15-16
- Alexandria**-July 19-20

Curly Leaf Pondweed Management:

- Big Lake**-January 24
- Nisswa**-January 31
- Richfield**-February 21

# Mekong River delegation hopes to learn from Mississippi

by Steven A. Clarke, International Development Consultant, WRC

What can two major river basins on opposite sides of the earth learn from one another? That was the question asked in October when the WRC and the Mississippi River Basin Alliance (MRBA) planned and hosted a 2-week study-observation tour and partnership-planning meeting for a 12-person delegation from the Mekong River Commission (MRC). The visit was part of the *Mekong-Mississippi partnership: Improving policy decision-making processes*, a project to help countries of the Mekong River Basin make educated development decisions based on experiences from the Mississippi Basin.

The Mekong River Basin is experiencing rapid population growth and expanding development. In order to best manage the ecosystem basin-wide, the MRC is hoping to learn from the successes and challenges experienced by U.S. development of the Mississippi Basin. The areas of concern include physical and environmental resources issues such as wetland and ecosystem productivity, water quality issues, and flood protection strategies; and institutional issues such as strategies for trans-boundary conflict resolution and inter-state planning mechanisms. But this is not to be a one-way information exchange. U.S. agencies have much to learn from the MRC's international efforts as well, including capacity-building, public involvement and engagement, and information transfer and exchange.

The Mekong River Commission was established in April 1995. The MRC member countries are Cambodia, Lao PDR, Thailand and Viet Nam. These countries have agreed



Members of the Mekong delegation hear presentations in Minneapolis.

to co-operate in all fields of sustainable development, utilization, management, and conservation of the water and related resources of the Mekong River Basin, such as navigation, flood control, fisheries, agriculture, hydropower, and environmental protection.

The Mississippi River Basin Alliance is a whose purpose is to protect and restore the recreational resources in the Mississippi River makers and communities, mobilize community quality and environmental health problems, and system as a whole.

The Mekong delegation included two officials from Cambodia and four senior MRC Secretariat staff. They will study the development strategies employed on the Middle and Upper Basin of the Mississippi based out of Memphis and the Lower Basin based out of New Orleans. The first part of the trip review and project planning sessions among the delegation members.

During their visit, the delegation had the opportunity to meet with a wide array of decision-makers, at many different levels. The WRC and MRBA organized two policy-making forums. The first was with Director Timothy Sullivan. One of the forums was with state leaders, including Commissioner Sheryl Corrigan, and Holly Stone of the Mississippi River Basin Association.

The delegation also learned about the Mississippi River Basin they apply to water resource issues. Speakers included the College of Natural Resources Dean Susan Starnes, and Executive Director Gene Allen. During field visits, the delegation met with state officials and farmers in address.

Both in Minnesota and Louisiana the delegation met with the Army Corps of Engineers. In Minnesota the delegation met with the balance navigation needs and ecological integrity of the Upper Mississippi River Fish & Wildlife Service, Audubon Society, and the Louisiana Department of Wildlife and Fisheries. In Louisiana, the Terrebonne Fishermen's Association and the Governor's Office gave presentations on the water resources of the

## The Mekong-Mississippi Partnership

The Mekong-Mississippi Partnership is supported by a 1-year, \$150,000 grant from the Council of State Government's State Environmental Initiative (CSG/SEI). The SEI links American expertise in environmental management, policy and technology with Asian demand for environmental improvements. The WRC and the Mississippi River Basin Alliance are partners in project implementation with the Mekong River Commission.

A fundamental goal of the partnership is to examine the lessons learned from the development of the Mississippi River Basin to help Mekong River Basin countries make informed and balanced development decisions. Another important goal is to bring local, state, and national decision-makers from the Mississippi and Mekong Basins together to discuss stakeholder participation in public policy-making, effective resource management strategies and long-term

partnership opportunities.

Specific objectives of the partnership include:

- Developing and adopting participatory planning processes that will increase the participation of stakeholders in Mekong River Basin policy planning and implementation decisions,
- Establishing training programs and providing educational resources on consensus building and conflict resolution approaches to overcome barriers to cooperative planning and comprehensive resource management,
- Sharing information, technical expertise, resource management strategies, and real-world experiences to help decision-makers in both basins make informed development decisions and avoid costly mistakes, and
- Building long-term partnership relationships between Mekong and Mississippi River Basin agencies, institutions and NGOs to ensure continual exchanges of information, resources and expertise.

# Learn from Mississippi's experience



The Mekong River Basin is outlined in gray.

## The Mekong River Basin

The Mekong River stretches about 2,600 km, starting in the Tibetan Plateau of southwest China and running through Myanmar (Burma), Thailand, Laos, Cambodia, and Vietnam before emptying into the South China Sea (see map). The Mekong River Basin covers an area of nearly 800,000 km<sup>2</sup>. The four countries of the Lower Basin have a population of 55 million comprising 70 ethnic groups, 70% of whom are subsistence farmers. River-dependent rice and fish are enormously important to the food systems and livelihoods of these communities.

One particularly interesting feature of the Mekong is the Great Lake, Tonle Sap, in Cambodia. The largest lake in Southeast Asia, it quadruples in size during the flood season when the Mekong River rises, backing up the Tonle Sap River and causing it to flow into the lake. In the dry season, water levels in the Mekong drop, and the Tonle Sap River reverses direction, flowing back into the Mekong.

The population of the Lower Basin is growing rapidly (estimated 90 million by 2025). As the region grows, Mekong River countries are expanding economic and industrial development, which may have a significant impact on the river system's ecology. The challenge for Mekong River countries is to adopt policies and practices that enable development processes that protect vital ecosystems and promote sustainable prosperity.

coalition of over 150 grassroots organizations ecological, economic, cultural, historical, and Basin. The MRBA's goal is to link decision-making resources to comprehensively engage water and preserve the ecological integrity of the river

officials from each of the four MRC member staff. In order to learn as much as possible about Mississippi, the visit included four days in the Minneapolis-St. Paul followed by five days on the final part of the trip involved two days of in-depth with the three partner groups.

opportunity to have extensive discussions with a ent levels within the U.S. system. In Minnesota, stakeholder forums facilitated by MRBA Executive involved municipal leaders and the other er of Agriculture Gene Hugoson, MPCA eker, the Executive Director of the Upper

ion and programs of the U of M, especially as from the University included VP Robert Jones, afford, and Office of International Programs visits, the delegation observed faculty collabora- sng nutrient runoff issues.

gation was given detailed briefings by the U.S. delegation heard about the Corps' efforts to rity. They also heard presentations from the U.S. d MRBA. At the Corps' District offices in ation, America's Wetland Campaign, and the ways their agencies work with the Corps to

provide input into the policy-making process.

While in Louisiana, the group spent a day with staff from the Barataria-Terrebonne National Estuary program to observe first-hand the impacts of upstream activities on the ecological health of the estuary. They also spent a half-day traveling along the Mississippi from New Orleans to Baton Rouge to observe the flood control (levee) system and the impacts of industrial development on the river's environment and local communities. The group also met with Louisiana State Senator Holden and State Rep Baudoin to talk about stakeholder participation and conflict resolution strategies that have been used with industry and government decision-makers.

At the end of their visit, the Mekong delegation expressed their gratitude for the program. They said that they had received valuable exposure to the approaches used in the Mississippi Basin to involve stakeholders, resolve conflicts, balance competing interests, and manage the ecosystem. Dr. Dao Trong Tu, MRC's Officer in Charge, stated that "the MRC delegation was extremely impressed with the caliber of people they had the opportunity to meet, the strategic approach to the presentation of key river basin management issues . . . and the lengths taken to enable ongoing, open and frank discussion about a wide range of the most complex and critical issues for both basins."

A visit to the Mekong Basin is tentatively planned for early March 2004. WRC's co-director James Anderson and MRBA's Sullivan will lead the U.S. team which will spend 2-3 days in each of the four MRC member countries to observe local river issues, meet with local officials, and participate in a regional workshop organized by the MRC.

If you would like to know more about the Mekong River Commission, please visit their website at [www.mrcmekong.org](http://www.mrcmekong.org). More information on the Mississippi River Basin Alliance can be found at [www.mrba.org](http://www.mrba.org).



## U of M Water Community News

### Swackhamer named to EPA Science Advisory Board

Deborah Swackhamer, Co-Director of the WRC, has been appointed by U.S. EPA Administrator Michael Leavitt to serve on the EPA Science Advisory Board for a three-year term. The Science Advisory Board (formerly the SAB Executive Committee) is charged with advising the Administrator on broad scientific matters in science, technology, social and economic issues, and reviewing the Agency's research programs and the science and technology behind proposed regulations. She attended her first meeting of the SAB in mid-December, 2003.

**Larry Baker** (WRC) Attended the Long-Term Ecological Research Program's All Scientist Meeting in Seattle, September 17-21, where he presented his poster "Urbanization and warming of Phoenix (Arizona, USA): Impacts, feedbacks and mitigation." Baker also will be listed in the 2004 edition of *Who's Who in America*.

**Kenneth Brooks** (Forest Resources) gave the invited keynote speech "Restoring Hydrologic Function and Productivity to Altered Landscapes: An Integrated Watershed Management Approach," at the conference "Integrated Watershed Management – Water Resources for the Future," held in Sardinia, Italy, in October. The conference was sponsored by the Food and Agriculture Organization (FAO) of the United Nations, the European Observatory of Mountain Forests, and the Province of Sardinia.

**Katherine Erdman** (Water Resources Science) won second place in the U of M GIS Student Organization's poster competition. The title of her poster was "High resolution satellite imagery for classification of small scale water resources." Erdman's advisor is **Patrick Brezonik** (Civil Engineering).

**Gyles Randall** (Southern Research and Outreach Center) submitted "Validating N Rates for Corn on Farm Fields in Southern Minnesota" to the American Society of Agronomy Extension Education Division competition for educational materials. It received a "Certificate of Excellence" and was featured at the ASA annual national meetings in Denver in November.

A stormwater educational display designed by **Ron Struss** (UM Extension Service) entitled "Your street connects to lakes and rivers" was distributed to 22 environmental organizations throughout the Twin Cities Metro Area in November. The 22 x 47" display allows viewers to drop "pollution balls" into a storm sewer that flows into a water body. The project was funded by a Metropolitan Council MetroEnvironment Partnership grant, with artwork and production assistance from the University of Wisconsin Eau Claire, and the Science Museum of Minnesota. For a picture and listing of locations from which the display can be borrowed, go to [wrc.coafes.umn.edu/outreach/waterfront.htm](http://wrc.coafes.umn.edu/outreach/waterfront.htm).

### River Summit continued from page 1

the opportunity to collaborate in small groups with natural resources professionals from state and local agencies.

The annual River Summit is a way to show support and to say thank you to everyone involved in the Volunteer Stream Monitoring Partnership. The 2003 Summit was another resounding success. We're already looking forward to River Summit 2004!

### MN Water continued from page 1

invited to give a plenary address on his Clean Water Initiative for Minnesota.

Tuesday afternoon and Wednesday, invited speakers will address potential threats to Minnesota's water supplies and describe policy, regulatory solutions, and current research. Concurrent sessions will focus on urban stormwater, contaminants including mercury and endocrine disruptors, bacterial source tracking, ecological indicators, biodiversity, and emerging technologies.

An expanded poster session and reception at the University's McNamara Center will follow the Tuesday afternoon sessions. Please see page 2 for the call for posters.

Since 1988, Minnesota Water has highlighted critical water issues and research concerning Minnesota's many water resources. The conference also facilitates interactions among resource managers, researchers, and other water professionals.

Co-sponsors for Minnesota Water 2004 are the Minnesota Sea Grant Program, and the Center for Water and Environment of the Natural Resources Research Institute.

For more information on Minnesota Water 2004 or to submit a poster abstract, please visit <http://wrc.coafes.umn.edu/Water2004>.



## Upcoming Events

**Manure Management Series.** A three-part workshop series on the theory and practice of manure application planning will be offered in January, February, and March in three locations around the state. The series has been designed for County Feedlot Officers, SWCD staff, crop consultants, and others involved with manure management planning. The scientific background for manure nitrogen and phosphorus management will be presented by Gyles Randall and Neil Hansen, University of Minnesota soil scientists. The manure management application aspects will be covered by the UM Extension Service, the Minnesota Pollution Control Agency, and the USDA Natural Resources Conservation Service. For a program description, workshop dates and locations, and registration information, see <http://manure.coafes.umn.edu/workshops>.

January 8–9 or January 22–23, 2004. **Minnesota Drainage Management Conference.** University of Minnesota, Crookston Campus or Holiday Inn, Willmar, MN. This conference is for water managers and planners, drainage authorities, conservation planners and their staffs. The schedule includes general and concurrent sessions on administrative, legal, engineering, and environmental issues of drainage. More information, a copy of the conference brochure, and online registration are available at <http://>

[wrc.coafes.umn.edu/MDM](http://wrc.coafes.umn.edu/MDM). You may also contact Gary Sands at (612) 625-4756 or [grsands@umn.edu](mailto:grsands@umn.edu).

January 13, 2004. **Minnesota's Impaired Waters Public Stakeholder Input Group.** St. Cloud Civic Center, St. Cloud, MN. The Public Stakeholder Input Group is the largest in the three-tiered stakeholder input process that the Minnesota Environmental Initiative organized to recommend a design for a state impaired waters program to the Minnesota Pollution Control Agency (MPCA). Informed by the recommendations of the stakeholder process, MPCA will bring a proposal to the 2004 legislative session that lays the groundwork for an impaired waters program. If you would like to participate in this process, please visit <http://www.mn-ei.org/policy/impairedwaters.html> for more information. Or contact Suzy Knuston at (612) 334-3388 ext. 100.

January 29–30, 2004. **The 4th National Conference on Science, Policy and the Environment.** Ronald Reagan Building and International Trade Center, Washington, DC. This year's conference: *Water for a sustainable and secure future*, will explore the role of science in achieving sustainable relationships among water, people, and the environment. Conference themes are: *Sustainable Water Management and Institutions, Water Quality and*

*Sanitation, Water Technologies, and Estuaries and Coastal Resources.* Speakers include Bruce Babbitt, Jared Diamond, and Peter Gleick. To register online, read pre-conference materials, obtain program updates, and view links to travel and lodging options, visit [www.NCSEonline.org](http://www.NCSEonline.org).

February 7, 2004. **The 12<sup>th</sup> Annual Living Green Conference.** First United Methodist Church, Duluth, MN. This conference, sponsored by The Environmental Association for Great Lakes Education and the Lake Superior Greens, features nine eco-workshops, and information and exhibits from over 40 local environmental organizations. For more information, contact Jenny at (218) 726-1828 or visit <http://www.eagle-ecosource.org/livinggreencon.htm>.

February 23–27. **Technology Week.** Maplewood Best Western, Maplewood, MN. This University of Minnesota Onsite Sewage Treatment Program workshop series will provide in-depth information about sewage treatment technologies. Each day will cover a different technology and will cover MPCA regulations, applications, system design, and operations and maintenance. Enroll for single workshops or for the entire week. For more information call (612) 625-9797 or go to <http://septic.umn.edu>.

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# Publications and Resources



*Establishing relationships among in-stream nutrient concentrations, phytoplankton and periphyton abundance and composition, fish and macroinvertebrate indices, and biochemical oxygen demand in Minnesota USA rivers.* Minnesota Pollution Control Agency. 2003. This report explores the relationships among water chemistry and aquatic biota in six medium to large rivers in Minnesota. For copies of the report, contact Steven Heiskary at (651) 296-7217 or [steven.heiskary@pca.state.mn.us](mailto:steven.heiskary@pca.state.mn.us). Copies are also available at [www.pca.state.mn.us/water/biomonitoring/bio-streams-algae.html](http://www.pca.state.mn.us/water/biomonitoring/bio-streams-algae.html).

*EPA Science Inventory.* U.S. Environmental Protection Agency. The EPA Science Inventory is a searchable, Agency-wide catalog of current, recently completed, and archived science activities and products. It was originally designed to help EPA scientists and managers coordinate the planning and development of

science activities and is now available to the public. The Science Inventory contains thousands of records providing information such as project descriptions, contacts for additional information, and electronic links to related work and final reports. To access the inventory, go to [www.epa.gov/si](http://www.epa.gov/si).

*FAME symposium presentations.* PowerPoint presentations from the papers presented at the FAME symposium in Minneapolis last August are now available on the FAME Web site: <http://wrc.coafes.umn.edu/FAME/>. For copy protection, the presentations have been posted as PDF files. The presentations provide a wealth of information on many topics related to environmental research, as well as providing a summary of topics presented at the symposium.

*Producers' compliance guide for concentrated animal feeding operations.* U.S. Environmental Protection

Agency. 2003. EPA has published a guide to help producers comply with the revised Clean Water Act regulations for Concentrated Animal Feeding Operations (CAFOs). The guide describes EPA's CAFO regulations, who they affect, what they require, and what assistance is available. For more information on the guide or to download a copy, go to <http://cfpub.epa.gov/npdes/afo/compliance.cfm>.

*Where land meets water.* Great Lakes Commission and Michigan Sea Grant College Program. 2003. This publication was developed as a teaching aid for agencies and organizations that offer education programs on resource management. It provides basic information on the environmental and economic consequences of soil erosion. Copies are available by contacting Gary Overmier at (734) 971-9135 or [garyo@glc.org](mailto:garyo@glc.org).