

IWR

Interstate Water Report

THE NEWSLETTER OF NEIWPCC – THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION

PROGRESS IN FIGHT AGAINST GROWING THREAT

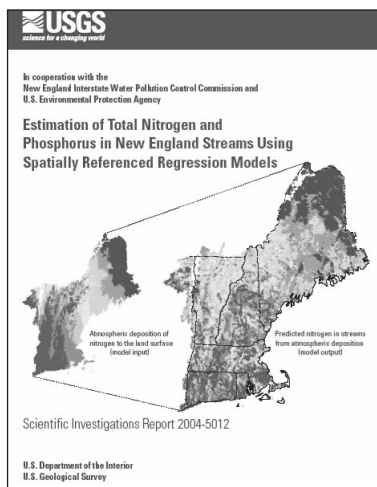
New Model Yields Critical Insights Into Nutrients In Region's Waters

by Stephen Hochbrunn

A new study is providing much-needed information about the presence in New England's waterways of excess nutrients, which can stimulate damaging algal blooms downstream. The study, conducted by the U.S. Geological Survey (USGS) in collaboration with NEIWPCC and U.S. EPA, reveals that fully half of the nitrogen found in New England streams, or more than 42,000 metric tons per year, comes from the atmosphere. Much of this nitrogen in the atmosphere comes from the burning of fossil fuels, both inside and outside the region. According to the study, deposition from the atmosphere contributes more than twice the nitrogen derived from the second largest source, municipal wastewater treatment plants.

Using a new computer model designed to map nitrogen and phosphorus transport and how these natural elements change stream quality, the USGS scientists made other unexpected discoveries. "We were surprised to find that contrary to previous theories, nitrogen, once it enters the water, stays dissolved in the larger streams and rivers in New England all the way to the coast where the river discharges into the ocean," said Richard Moore,

The complete report on the nutrient modeling study can be downloaded from NEIWPCC's SPARROW Model Web page (<http://www.neiwpcc.org/sparrow.htm>).




USGS Hydrologist and chief investigator of the study. "The new computer model we developed allows us to better identify the major sources of nutrients to New England's rivers, where they come from, and how the quality of the rivers is affected."

NEIWPCC collaborated in the study as part of our effort to better understand and manage nutrient contamination and to improve the water quality in New England's rivers.

"The information generated by this study is enormously valuable, and we're already using it to help us develop a long-term plan to reduce the amount of nitrogen that enters Long Island Sound," said Ronald Poltak, NEIWPCC's Executive Director.

INSIDE

A Site to See: NEIWPCC's New Home on the Internet	3
What Happens When Workgroups Work Together	4
Special Section: The New England SPARROW Water Quality Model	6
Legal Battle Over Power Plant Cooling Systems Heats Up	8
Revealing the Reality of the Hudson's Wetlands	9
The Great Debate Over Clean Water Act Jurisdiction	10
Know Your Acronyms!	11

The new model can be used to determine what level of nitrogen and phosphorus adversely affects the health of streams and to define acceptable levels of these contaminants in rivers and streams. "With this new tool, state and local agencies interested in protecting their local water bodies have access to important data to achieve their goals," said Robert W. Varney, Regional Administrator of EPA's New England Office. 

Turn to page 6 for a special two-page section on this groundbreaking study, including an interview with the USGS developers and an introduction to nutrients in water—why they can be harmful, how they're measured, and what can be done about them.

NOWHERE TO HIDE

MADEP Flies the Skies to Find Wetlands Law Violators

by Rebekah Lacey

To get a more accurate picture of how Massachusetts's wetlands protection programs are working "on the ground", the state's Department of Environmental Protection is using an innovative approach—and a bird's-eye view.

Since 2001, wetland scientists at MA DEP have used aerial photography to map wetlands in the state. But recently they have begun using a special computer program to compare photos taken years apart to detect changes in those wetlands—such as a change from a wetland to a parking lot.

Here's how it works: A plane flies over an area with wetlands and a photographer takes photos using a special infrared film, on which wet areas show up as dark spots. A few years later, a plane flies the same route and pictures are taken at exactly the same intervals. Using a computer, MA DEP wetland scientists overlay their wetland delineation maps on these photos and ask the computer to identify areas within wetland boundaries that are significantly lighter in the newer photos. An image processing software program evaluates the photos one pixel at a time and highlights areas in red that have gotten lighter. MA DEP scientists closely exam-

ine the results, and visit a site if necessary to further determine whether a wetland has been filled. If so, staff check to see if the fill was legitimate (done with the proper permits) or is illegal.

The photographs to the right are proof that the process works. The images show an area in Amesbury, before and after an illegal wetlands fill. The state used this "smoking gun" evidence to slap the violator, New England Concrete Products, Inc., with a \$100,000 penalty.

Charles Costello, the MA DEP scientist who has led the wetland loss analysis effort, spoke recently to NEIWPCC's Wetlands Workgroup. According to Costello, the effort was intended to allow MA DEP to evaluate the effectiveness of the Massachusetts wetlands regulatory program and beef up enforcement. But he noted an additional benefit: Anyone thinking of illegally filling a wetland may think twice, knowing that the crime can now be detected from above. MA DEP can also more accurately evaluate permitted fills and their cumulative effect on the landscape. And the

continued on page 3



Worth a Thousand Words: In the photo on top, the highlighted area is wetlands; in the photo below, taken at a later date, the same area has clearly been developed. MA DEP used these aerial photographs to identify the lost wetland in Amesbury, Mass., and to press the case against the landowner, who was fined \$100,000 for illegally filling in the area.

COURTESY OF MA DEP



New England Interstate Water Pollution Control Commission

Executive Director
Ronald Poltak

Deputy Director
Susan Sullivan

Established by an Act of Congress in 1947, the New England Interstate Water Pollution Control Commission is a not-for-profit interstate agency that utilizes a variety of strategies to meet the water-related needs of its member states—Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont. NEIWPCC coordinates activities and forums that encourage cooperation among the states, educates the public about key water issues, supports scientific research projects, trains environmental professionals, and provides overall leadership in water management and protection. While NEIWPCC's initial emphasis was on surface water protection, the Commission now also devotes substantial attention and resources to such matters as wetlands restoration, nonpoint source pollution, water allocation, and underground storage tanks.

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Interstate Water Report

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FROM THE EXECUTIVE DIRECTOR

MEETING THE CHALLENGE OF PROTECTING WETLANDS



We in the Northeast have for a long time realized the vital economic and ecological role performed by wetlands. They protect and improve water quality, provide fish and wildlife habitats, store floodwaters, and maintain surface water flow during dry periods. Wetlands are home to more than 30 percent of our nation's plant species, and over half of North American bird species nest or feed in them. State administrators are also well aware that when wetlands are lost, replacing the functions they've performed is often prohibitively costly or downright impossible.

Awareness of the importance of wetlands, however, hasn't always translated into adequate protections. It is universally recognized that far too many of our nation's wetland resources have been filled, destroyed, or otherwise rendered incapable of performing their functions. There remains an urgent need to protect wetlands from human disturbances and destruction.

I am pleased that this need is recognized in our member states, and, in truth, it has been ingrained in their regulatory and non-regulatory programs since the inception of state environmental service agencies. But no state program is perfect, and critics—if they search hard enough—can always find problems. On May 22, a headline on the front page of the *Boston Globe* blared "State seen weakening on wetlands: Lack of enforcement, funds among concerns." Written by *Globe* reporter Beth Daley, the article sharply criticized the Massachusetts Department of Environmental Protection's wetlands regulatory program. Daley wrote that "the state's wetlands protection system has been deeply compromised by shoddy recordkeeping, lack of enforcement, and, more recently, severe budget cuts," despite a 1990 campaign promise by former governor William Weld to achieve "no net loss" of wetlands.

It was an unfair beating. Many of the criticisms leveled by Daley simply highlight the challenges faced by state and federal wetlands programs throughout the country, as well as the specific challenges faced in Massachusetts due to the "bottom-up" wetlands regulatory structure set up by the state's Wetlands Protection Act. The real story, the story that Daley missed, is that the agency is coming up with innovative approaches to address these challenges, and has been hailed as a national leader for some of its efforts.



Why worry about wetlands? They provide animals such as frogs with food, shelter, and a place to breed. They purify water by sifting out sediments and pollutants. They help control flooding and reduce coastal storm damage by absorbing stormwater and releasing it gradually.

The aerial photography analysis described on the front page of this issue of *IWR* ("Nowhere to Hide") is the most notable of MA DEP's wetland program innovations. Other states have praised this effort at NEIWPCC workgroup meetings and at a national Association of State Wetland Managers meeting. There was a consensus at these meetings that illegal wetland filling is probably occurring across the country at a level similar to what's been found in Massachusetts. But it's impossible to know for certain, since Massachusetts is alone in conducting such a comprehensive evaluation.

The article does accurately point out that budget cuts have led to reductions in MA DEP's wetlands program staff and some of its programs, but there is no mention of the agency's responses to the situation. MA DEP has proposed new regulations that would increase fees for wetlands permits and permit appeals. The agency is working with the state legislature to have these fees directed to a dedicated fund and used to support the wetlands regulatory program.

MA DEP has also proposed regulations aimed at making the best use of staff time: Under these proposed regulations, projects that stay out of a 50-foot buffer zone around the wetlands, comply with stormwater management rules, and meet other criteria are eligible for a streamlined review process. This change would allow DEP staff to focus their efforts on projects with more significant impacts, and on enforcement. Such one-sided articles are unfortunate, given the growing importance of states in wetlands management. Consider, for example, the 2001 U.S. Supreme Court decision—*Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers*. The precedent set by that decision has the potential to seriously weaken the ability of more than 30 states to rely upon the Clean Water Act as their primary mechanism for reviewing and conditioning permits affecting wetlands. These states must now reconsider their approach to wetlands protection and decide what policy solutions should be implemented. Thankfully, the six New England states and New York State are not among them, as well established state and local wetlands protection programs have been in place and effectively working in these states for years. But even established programs face challenges, and Massachusetts should be commended rather than attacked for its efforts.

While wetlands are the focus of several articles in this issue of *IWR*, we also report on many other developments, including a new water quality model that has already added so much to our knowledge about nutrients in New England's waterbodies. This effort is the focus of a special section on pages 6-7. In future issues of *IWR*, we intend to continue to devote extra space to exploring single issues or events in considerable depth. We believe it's one more way to make this newsletter a consistently rewarding read.

Sincerely,

Ronald Poltak
NEIWPCC Executive Director

INFORMATION STREAM

New Resources from NEIWPCC—Online and In Print

by Stephen Hochbrunn

On the Chinese calendar, 2004 is the Year of the Monkey. But it's been a year of *serious* business at NEIWPCC. In recent months, Commission staff produced a number of critical new resources. The output represents a continuation of the organization's long-standing commitment to create materials and resources that educate, inform, and provide guidance on increasingly complex water matters.

INTERNET DEBUT

On March 26, after months of preparation, NEIWPCC launched a new Web site that, aside from the domain name (www.neiwpcc.org), bears little resemblance to its predecessor. In addition to major improvements to the design and navigation, the site now contains a greater wealth of information on NEIWPCC, our activities, and water issues in general.

were available online.) Bear in mind the site is continuously evolving, and new pages are added virtually every day. Please visit often and contact us at mail@neiwpcc.org if you have suggestions for improvement.

GUIDE TO PEAK PERFORMANCE

NEIWPCC also recently developed and published a guidance document entitled *Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems*. That name says it all; with more than 220 pages of information, the document is a vast and comprehensive guide designed to help those who oversee the operation of collection systems, which frequently suffer from inadequate maintenance and repair. In March, the Massachusetts Department of Environmental Protection formally adopted the guide as part of the state's effort to promote better management of wastewater systems. It can be downloaded for free from our Web site at www.neiwpcc.org/omrmanual.htm or a hard copy may be purchased for a modest fee.

NEW AND IMPROVED

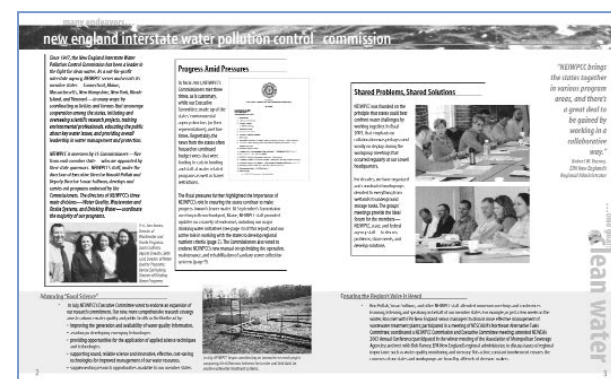
In late April, NEIWPCC published Version 3 of *Field Indicators for Identifying Hydric Soils in New England*, a 91-page guide that helps those who work in wetlands determine whether any given soil is in fact a hydric soil. A soil is considered *hydric* if it was formed under conditions of saturation, flooding, or ponding during the growing season long enough to develop anaerobic conditions in its upper region.

Observable soil characteristics such as color, texture, and structure provide field indicators of anaerobic conditions. Identifying the location of hydric soils is one of the requirements for figuring out the boundaries of a wetland.

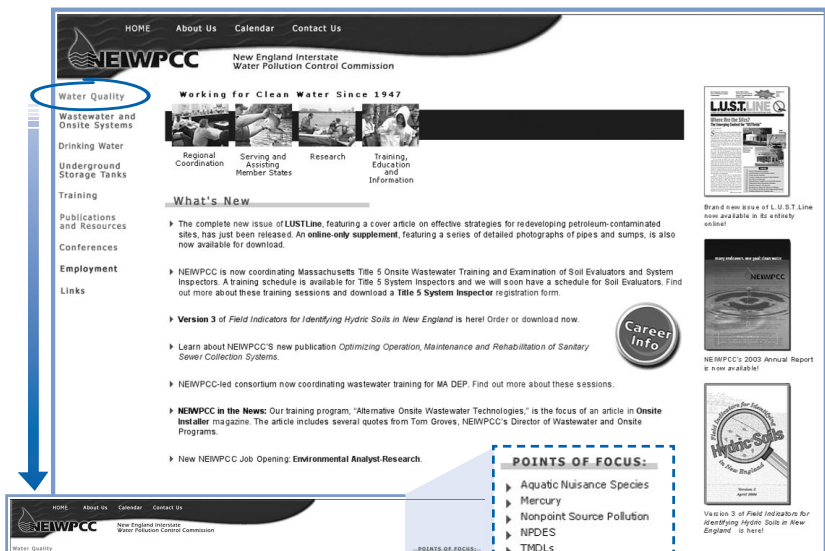
YEAR IN REVIEW

Published in May, NEIWPCC's fiscal year 2003 Annual Report looks back on a year in which NEIWPCC engaged in a typically wide array of endeavors, all aimed at bringing us closer to our ultimate goal: clean water throughout our member states.

An electronic version of the report is available at www.neiwpcc.org/annualreport.htm. Free hard copies can also be obtained by calling 978-323-7929.



A Look Inside: NEIWPCC Annual Report 2003



The home page features a frequently updated list of new developments; click on any item, and you go directly to the details. The top menu provides quick routes to general information about NEIWPCC, including our history, mission, vision, and values. Via the menu on the left, you can quickly access sections devoted to NEIWPCC's primary areas of focus—water quality, wastewater and online systems, drinking water, underground storage tanks, training, and publications and resources.

On each section's main page, a menu on the right provides access to specific points of focus, a list of "What's New" items related to the section, and other "Extra Points," as we call them, such as a calendar of events and links to other sites with pertinent information.

Virtually all of NEIWPCC's manuals, technical reports, and other publications can be downloaded from the site. This includes entire issues of our widely praised national bulletin on underground storage tanks, *LUSTLine*. (Previously, only *LUSTLine's* cover articles

POINTS OF FOCUS:

- ▶ Aquatic Nuisance Species
- ▶ Mercury
- ▶ Nonpoint Source Pollution
- ▶ NPDES
- ▶ TMDLs
- ▶ Water Quality Monitoring
- ▶ Water Quality Standards
- ▶ Wetlands

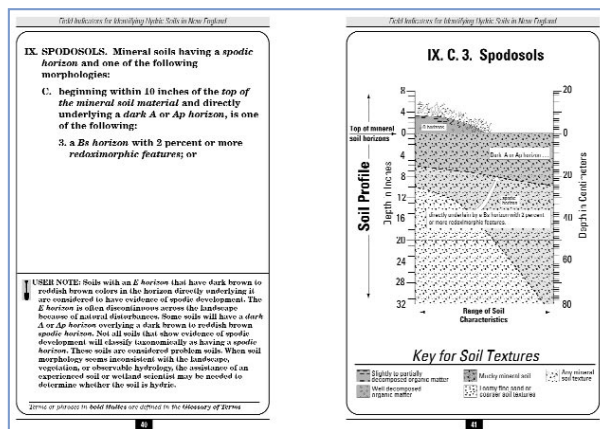
WHAT'S NEW:

▶ NEIWPCC, in cooperation with New Hampshire Department of Environmental Services is planning the 16th Annual NPS Pollution Conference, May 24-26, 2005, at the Mt. Washington Hotel in Bretton Woods, New Hampshire. For more conference details, including coverage of this year's conference, visit our annual meeting page.

▶ Version 3 of *Field Indicators for Identifying Hydric Soils in New England* is here! Order or download now.

EXTRA POINTS:

- ▶ Water Quality Calendar
- ▶ NEIWPCC Partnerships
- ▶ Special Projects
- ▶ Connecticut River Nitrogen Project
- ▶ Water Quality Publications
- ▶ Quality Management
- ▶ Water Quality Links



A Look Inside: *Field Indicators for Identifying Hydric Soils in New England, Version 3*

The guide, which first appeared in 1995, is written by the New England Hydric Soils Technical Committee, and is updated periodically to reflect new information and refine the indicators. Version 3 also includes a new supplement providing background information on making a hydric soil determination. To download a free copy of the guide or to order a hard copy, go to the Hydric Soils page on our new Web site (www.neiwpcc.org/hydricsoils.htm).

EPA NATIONAL QUALITY ASSURANCE TRAINING TO BE OFFERED IN MERRIMACK, N.H.

Organizations in New England and New York State that collect environmental information for decision-making will have an opportunity this fall to receive low- or no-cost quality assurance training. EPA Headquarters Quality Staff will present their annual Environmental Quality Systems Training Conference at the Radisson Hotel and Conference Center in Merrimack, N.H., on September 28-30. Specific details concerning the exact content of the conference are still in development. Once these details are finalized, information will be available at www.epa.gov/quality/train.html.

Wetlands Violators continued from page 1

agency can easily share the aerial information with towns, which are responsible for implementing the Massachusetts wetlands laws, and with EPA and the Army Corps of Engineers—agencies that can take action against violations of federal law.

Wetland managers from other NEIWPCC member states who attended the workgroup meeting applauded MA DEP's effort, and some expressed interest in undertaking the same kind of analysis in their states.

For more information on MA DEP's wetland loss analysis project, a press release and related materials are available on the MA DEP website at <http://www.state.ma.us/dep/pao/news/itenfr.htm>.

Rebekah Lacey (rlacey@neiwpcc.org) is a NEIWPCC Environmental Analyst and coordinator of the Wetlands Workgroup.

JOINT SESSIONS

NEIWPCC Fosters Communication and Collaboration by Bringing Workgroups Together

By Laura Blake, Stephen Hochbrunn, Rebekah Lacey, and Kara Sergeant

Consider the following sentence: According to the NOI, the BMPs in the MS4's SWMP appear to meet MEP. Make sense? If so, you probably work in stormwater permitting. If not, you could be in for trouble if your expertise lies elsewhere and stormwater is a growing issue in your domain. The need for managers and regulators from different program areas to understand and appreciate common issues has led NEIWPCC to periodically take a different approach to one of our long-standing practices.

For decades, NEIWPCC has coordinated workgroups devoted to specific areas, such as wetlands, drinking water, and onsite systems. Workgroup members are drawn from state and federal regulatory agencies and NEIWPCC staff, and the workgroups typically meet several times a year—independent of each other. But in recent months, several workgroups have convened at the same time and place, with encouraging results.

"It was very, very valuable," said Paul Hogan of the Massachusetts Department of Environmental Protection after a meeting that brought together members of NEIWPCC's TMDL and Stormwater Workgroups. Held at the EPA New England Regional Laboratory in Chelmsford, Mass., on April 28, the meeting was designed to increase mutual understanding



At the joint meeting of NEIWPCC's Groundwater Managers and Underground Storage Tanks/Leaking UST workgroups, Rodney Pingree, Chief of Vermont DEC's Water Resources Section (left) spoke with Chuck Schwer, Section Chief of VT DEC's Sites Management Section. In the background are the state breakout groups for Maine (right) and Massachusetts.

between the programs, lay out the key issues and challenges they each are facing, and hear the current thinking about solutions.

"The timing was right for a couple of reasons," said Hogan, who coordinates MA DEP's NPDES Permit Program and is a Stormwater Workgroup member. "First, we are currently completing many TMDLs that require control of stormwater, and second, Stormwater Phase II general permits have recently been issued, which require communities to implement programs that will control pollutants from stormwater. With all this interconnection, it's important that the people in one program know what those in the other program are doing."

During the meeting, EPA and NEIWPCC staff gave overviews of TMDL and stormwater regulations and discussed the legal and policy challenges involved in permitting stormwater discharges into impaired waters. Vermont Agency of Natural Resources staff discussed recent activity in that state that has led to the development, via a collaborative process, of a new approach to restoration of streams in urban areas. Bruce Cleland of America's Clean Water Foundation, a national expert on TMDLs, delivered a technical presentation on wet weather assessments and the use of load duration curves, which Vermont and other states are using to help evaluate and manage the impacts of wet weather discharges to water bodies.

Attendees also identified key issues of concern to both programs, including the need for further training and guidance on certain issues and the appropriate use of best management practices. NEIWPCC hopes to repeat the joint TMDL-Stormwater meeting annually for the next few years.

Another recent joint session, this one involving NEIWPCC's Groundwater Managers and Underground Storage Tanks/Leaking UST workgroups, took place at the EPA lab one week later on May 5—with the same positive impact.

"By having all the right people in the room and meeting together, we accomplished more in three hours than we could have in three years," said Kira Jacobs, EPA New England's Vermont Source Water Coordinator.



(left to right) Eric Perkins, EPA New England's Vermont TMDL Coordinator; Bruce Cleland, TMDL Project Coordinator at America's Clean Water Foundation; and Ron Entringer, NYS DEC's TMDL Coordinator, speak during the joint meeting of NEIWPCC's TMDL and Stormwater workgroups.

Jacobs, who participates in the Groundwater group, had attended that group's January meeting, where members made the decision to meet with their UST counterparts as a means of building a partnership to protect drinking water. Analysis of state source water assessment program reports shows that tanks pose a high risk to the region's water supplies.

At the meeting, more than 40 participants discussed ways to improve communication between groundwater and UST staff, and how NEIWPCC can help foster greater collaboration between the two programs. They also spent time in groups divided by state, to address specific strengths and weaknesses of intrastate cross-program communication. In the end, the group created a list of areas that needed improvement and identified ways in which they could realistically work together on such issues as tank installation, inspections and source protection areas, and spill prevention.

In recent months, NEIWPCC also coordinated an information sharing session involving our Nonpoint Source Pollution Workgroup and Onsite Wastewater Task Force. It too was applauded by those who took part. In light of such positive feedback, plans are in the works for more joint sessions in the near future. When programs come together, communication takes place that leads to awareness and understanding—and progress on the path to cleaner water. 💧

Editor's Note: The acronyms that appear in the first sentence of this article are featured in this issue's "Know Your Acronyms!" quiz, which appears on page 11. Answers on page 12.

BAY STATE HANDOVER

NEIWPCC Now Conducting Massachusetts's Onsite Wastewater Training and Exams

by Tom Groves

NEIWPCC's role in wastewater training in Massachusetts continues to grow. In addition to leading a consortium that is running the state's wastewater operator certification and training program, NEIWPCC is now coordinating the Massachusetts Title 5 Onsite Wastewater Training and Examination of Soil Evaluators and System Inspectors. In April, the Massachusetts Department of Environmental Protection transferred the programs to NEIWPCC, which will conduct the training and exams as well as chair the committee that was established to oversee these efforts. The Onsite Advisory Committee includes representatives from MA DEP, the Massachusetts Health Officers Association, the Natural Resources Conservation Service, and other interested agencies.

The demand for the programs is evident in the long waiting list of applicants that's been compiled since

MA DEP last offered the training. The Soil Evaluator training emphasizes soil morphology principles, and consists of three days in the classroom, 2-3 days in the field, and a one-day combined written and field exam. The goal is to enhance the design, review, and approval of onsite wastewater systems throughout the state.

The System Inspector training certifies individuals to conduct the septic system inspections that Massachusetts requires when a house is sold. Attendees spend one day in the classroom, then take a half-day exam. All certified Soil Evaluators and System Inspectors are placed in a database on MA DEP's Web site.

NEIWPCC's assumption of this new role comes amid growing awareness of the importance of onsite training. In fact, MA DEP is considering regulation changes that would increase the amount of training required. A proposal for relicensing the more than

1,900 current Soil Evaluators and over 3,600 System Inspectors includes a continued education component. Evaluators and inspectors would be required to obtain 20 training contact hours every two years to demonstrate their continued professional development.

The current schedule calls for Inspector training programs to begin in July and Soils training programs to begin in August. Details on the schedule are available on the Onsite Training page of NEIWPCC's Web site (<http://www.neiwpcc.org/massonsite.htm>). For more information, go to MA DEP's Title 5 Training Web page (<http://www.mass.gov/dep/brp/wmw/localoff/training.htm>). 💧

Tom Groves (tgroves@neiwpcc.org) is NEIWPCC's Director of Wastewater and Onsite Programs.

SUCCESS STORY

Nonpoint Source Pollution Conference Draws Record Crowd

by Becky Weidman

Looking at the scene at the Fort William Henry Hotel in Lake George, N.Y., on May 25-27, it was hard to imagine that environmental conferences were once long, frequently dull, sparsely attended affairs. More than 140 people—from federal, state and local governments, private consulting firms, watershed organizations, and academia—packed the hotel on those three days for the 15th Annual Nonpoint Source Pollution Conference. NEIWPCCC has been coordinating the conference since 1990, but never before has the session attracted so many attendees and so much interest.

The New York State Department of Environmental Conservation cohosted the event, which carried the theme “Planning for Water Quality.” Sean Nolon, Director of the Land Use Law Center at Pace Law School in White Plains, N.Y., delivered an inspiring, informative keynote address titled, “Love the Locals: Why Local Governments Need our Support and Assistance and How We Can Help.”

Nolon and the presenters in the opening plenary discussed NPS pollution from multiple perspectives, sharing thoughts on the importance of involving all levels of government—including neighborhood groups—in NPS pollution controls and stormwater management. They addressed the need for low impact development and integrated watershed planning approaches that provide for community wastewater disposal while maintaining recreational uses of local waterbodies. These ideas remained a focus as attendees moved on to a mul-

titude of sessions on topics such as innovative techniques for addressing stormwater and onsite wastewater management.

The primary role of the conference is to bring NEIWPCCC’s member states, partners and other interested parties together to share information about policies, management strategies, and new approaches for addressing NPS pollution. But there is also a secondary purpose—to highlight successful NPS pollution projects and management activities in the host state. This is accomplished in part through field trips, and this year, participants had the choice of touring the stormwater retrofits of Lake George Village or seeing first-hand how one New York county is managing the installation of a major new onsite wastewater treatment system. The conference also featured a dinner cruise of Lake George—and to tour this magnificent lake on a beautiful evening, after the storms and clouds of the day had finally dissipated, was to see first-hand why the professionals who attended the conference work so hard to preserve water quality in this region.

Next year’s NPS Conference will be held May 24-26 at an equally inviting site—the Mount Washington Hotel in Bretton Woods, N.H. For more information,



George Barden, Ontario County (N.Y.) Soil and Water Conservation District, leads conference participants through the process of installing an onsite wastewater system at a new residential development.

TOM GROVES, NEIWPCCC

please visit NEIWPCCC’s NPS Meeting Web page (www.neiwpccc.org/npsannualmeeting.htm).

Becky Weidman (rweidman@neiwpccc.org) is a NEIWPCCC Environmental Analyst and coordinator of our NPS workgroup and related activities, including the Annual NPS Conference.

BIOSOLIDS ISSUES UPDATE

by Michael Jennings

EPA RESPONDS TO CITIZENS’ PETITION

In the last issue of *IWR* we reported that EPA had received a petition from the Center for Food Safety calling for a moratorium and ban on the land application of biosolids. On December 24, 2003, EPA responded to the citizens’ petition with a 22-page document outlining the agency’s response. EPA said the assertions made by the center concerning the hazards of land-applied biosolids were not substantiated. G. Tracey Meehan, former Assistant Administrator of the Office of Water, stated, “Petitioners do not present scientifically-based evidence or documentation that links the land application of sewage sludge or chemical pollutants allegedly contained in sewage sludge to human health and environmental impacts that are described in the petition.”

The complete 22-page EPA response can be downloaded at <http://biosolids.policy.net/relatives/27281.pdf>.

EPA ISSUES FINAL RESPONSE TO NRC REPORT

In the December 31, 2003, Federal Register, EPA released its final action plan to address the recommendations made in the National Research Council’s July 2002 report on the land application of biosolids. The plan includes 14 specific projects to enhance the agency’s ongoing research and outreach activities. EPA is also presenting the results of its review of existing biosolids regulations to identify additional pollutants for potential future regulations. Based on a screening assessment of chemical pollutants for which EPA had adequate data, the agency has identified 15 pollutants for possible regulation.

EPA’s Federal Register notice regarding the NRC report is available at <http://a257.g.akamaitech.net/7/257/2422/14mar20010800/edocket.access.gpo.gov/2003/pdf/03-32217.pdf>.

LEADING THE WAY

A Look at NEIWPCCC’s Latest Slate of Officers

by Stephen Hochbrunn

When speaking with **Glenn Haas**, it takes only a minute to realize that NEIWPCCC’s latest Chair has some clear ideas about the value of the organization and his goals. “NEIWPCCC offers two main things that the states need to take advantage of,” said Haas, Director of the Division of Watershed Management at the Massachusetts Department of Environmental Protection. “First, through NEIWPCCC, states can share information and solve their problems together. It simply doesn’t make sense, especially in times of tight resources, for states to try to solve problems on their own. Second, NEIWPCCC provides the ideal forum for solving those issues that are regional in nature. I think NEIWPCCC is doing a good job in these areas, but we need to continue to do so, and improve where we can. I’m also interested in ways to enhance the contributions made by NEIWPCCC’s Non-Agency Commissioners.”

Haas assumed the role of NEIWPCCC Chair on Oct. 1, 2003, and it is expected that he, like most of his predecessors, will serve two one-year terms. Few would doubt his qualifications for the position. Haas has served for seven years in his current position at MA DEP, where he provides overall management of the state’s drinking water, watershed permitting, wetlands and waterways, and watershed planning programs. It’s the latest stop in a career at the agency that began 33 years ago; his other positions included a stint as Deputy Assistant Commissioner from 1990 to 1996. In 1982, Haas earned a master’s degree in environmental engineering from Northeastern University.

Glenn Haas, Director of the Division of Watershed Management at MA DEP and NEIWPCCC Chair



NEIWPCCC is also benefiting from plenty of experience in the Vice-Chair seat. **Harry Stewart** has been the Director of the Water Division at the New Hampshire Department of Environmental Services since 1998, managing seven bureaus and more than 230 employees. He has 29 years of diverse environmental program management and technical experience with NH DES, environmental consultants, and U.S. EPA. Stewart has an MBA from Northeastern University and a master’s degree in sanitary engineering from the Georgia Institute of Technology. As NEIWPCCC’s Vice-Chair, he will in all likelihood assume the role of Chair once Haas’s tenure ends.

NEIWPCCC’s roster of Commissioners has remained largely intact in recent months. In one change, **Dr. J. Robert Galvin** took over as Connecticut’s Commissioner of the Department of Public Health on Dec. 1, 2003, replacing Dr. Joxel Garcia in that position and as a NEIWPCCC Commissioner. In Vermont, Governor Jim Douglas granted **David Clough** of Williston a new six-year term as one of NEIWPCCC’s Non-Agency Commissioners.

NEW ENGLAND SPARROW

Findings Boost Effort to Lighten Nutrient Load

by Laura Blake


According to a 1997 study published in the journal *Ecological Applications*, nitrogen input to ecosystems doubled in the second half of the 20th century, resulting in a significant increase in nitrogen concentrations in many rivers and increased nitrogen loading to coastal waters. Such a surge in nutrients is bad news for water quality (see “Water Basics” on pg. 7), and NEIWPCC is actively involved in helping our member states and EPA manage and reduce nutrient loading to waters. That effort got a lift recently with the release of a new study led by the U.S. Geological Survey in cooperation with NEIWPCC and EPA Region 1. Scientists used a new computer model that they devised—a New England version of the well-known national SPARROW Model—to obtain critical new information about nitrogen loading in the region’s waterbodies.

The new study shows that an estimated 86,100 metric tons of nitrogen enter New England’s rivers and streams each year, and that nitrogen in rain and airborne particles (i.e., atmospheric deposition) contributes as much as 50 percent of this total. The study also confirms that New England’s waters receive significant amounts of nitrogen from non-atmospheric sources, such as discharge from wastewater treatment plants and runoff from urban and other developed land as well as from farms (see figures on pg. 7).

The scientists also looked at phosphorus loading, and found that an estimated 7,380 metric tons of this nutrient pour into New England’s waterbodies every year. Of this total, a little more than half is estimated to be from municipal wastewater treatment facilities or the paper industry, 5 percent from developed land sources, 19 percent from agricultural lands, and 24 percent from forest lands (see figures on pg. 7).

This information is immensely helpful to natural resource managers who are designing programs to reduce nutrient loading. To craft effective programs, managers need to know as much as they can about the location of nutrient sources and the watershed factors that influence nutrient delivery to waterbodies. SPARROW, which stands for SPATIALLY REFERENCED REGRESSIONS ON WATERSHED ATTRIBUTES, is a model that provides this information by relating nutrient stream concentrations to pollutant sources and watershed characteristics. The model defines an empirical relationship between in-stream water quality measurements, watershed conditions, and pollutant sources. It then predicts pollutant concentrations, loads, and sources by stream reach.

The use of the New England SPARROW Model in this new study and in future research will increase our region’s understanding of nutrient load distributions, nutrient transport, and the relative contributions of various sources to nutrient loading. The model can also be used to predict future conditions. In the coming months, NEIWPCC will be working with USGS to make the model data more widely available. NEIWPCC is also in the process of organizing a series of SPARROW Model training workshops (see article on this page).

The complete study, along with other information about the model, is available on NEIWPCC’s SPARROW Model Web page (<http://www.neiwpcc.org/sparrow.htm>). 

Laura Blake is a NEIWPCC Environmental Analyst and coordinator of our work on the SPARROW Model. For more information, contact Laura at lblake@neiwpcc.org.

NEW GRANT PROVIDES FOR GREATER ACCESS TO WATER QUALITY DATA

The NOAA/UNH Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET) has elected to fund a proposal submitted by NEIWPCC’s Laura Blake. The grant will allow the results and data from the New England SPARROW Model to be documented, packaged, and disseminated through both CDs and an interactive Web page (accessed through NEIWPCC’s site, www.neiwpcc.org). This will provide the region’s scientists and environmental managers with immediate access to watershed data for New England, including estimates for nutrient concentrations, loads, sources, and transport for all stream reaches and coastal waterbodies.

NEIWPCC will also use the grant to sponsor a series of SPARROW Model workshops at the environmental agencies of the New England states. Participants will be trained in the use of SPARROW tools and data, and learn how to use the model’s results for conducting total maximum daily load (TMDL) allocations, developing numeric stream nutrient criteria and strategies for new monitoring activities, and relating landscape nutrient loads to near coastal water assessments.

CICEET is a national center for the development and application of innovative environmental technologies for monitoring, managing, and preventing contamination in estuaries and coastal waters. It is a partnership of the University of New Hampshire and the National Oceanic and Atmospheric Administration.

INSIDERS’ VIEW

A Talk With the Model’s Developers

by Stephen Hochbrunn

Richard Smith, Richard Alexander, and Gregory Schwartz of the USGS National SPARROW team in Reston, Va., developed the original SPARROW Model. Through a cooperative effort with NEIWPCC and EPA Region 1, the model was adopted for the New England region by Richard Moore, Keith Robinson, and Craig Johnson of USGS’s New Hampshire/Vermont District. *IWR* recently spoke with Robinson, Moore, and Brian Mrazik, USGS’s NH/VT District Chief.

IWR: After some five years of work on the model, how gratifying is it to finally go public with it?

Robinson: What is really exciting is that the SPARROW results are already helping to drive programs on a regional basis. It’s helping to set research priorities within (EPA) Region 1 and to assist in coastal water assessments by EPA for all of New England. Certainly, SPARROW has been used in other areas to assist in understanding nutrient movement, but in New England it’s being used as a potential *management* tool. I think we’re breaking new ground in that area.


I’d also like to point out that having NEIWPCC as a partner has been critical to making this model a reality. The process would have been a lot more difficult without the support and assistance from an interstate commission that’s interested in the entire region.

Moore: Along those lines, one of the issues in regard to regional water quality is always consistency and reproducibility. How do you get a “big picture” answer when people are using different methods, different types of models in the different states and in the different basins? The fact that NEIWPCC initiated this kind of look, which essentially is consistently reproducible across the states, is really a tremendous contribution.

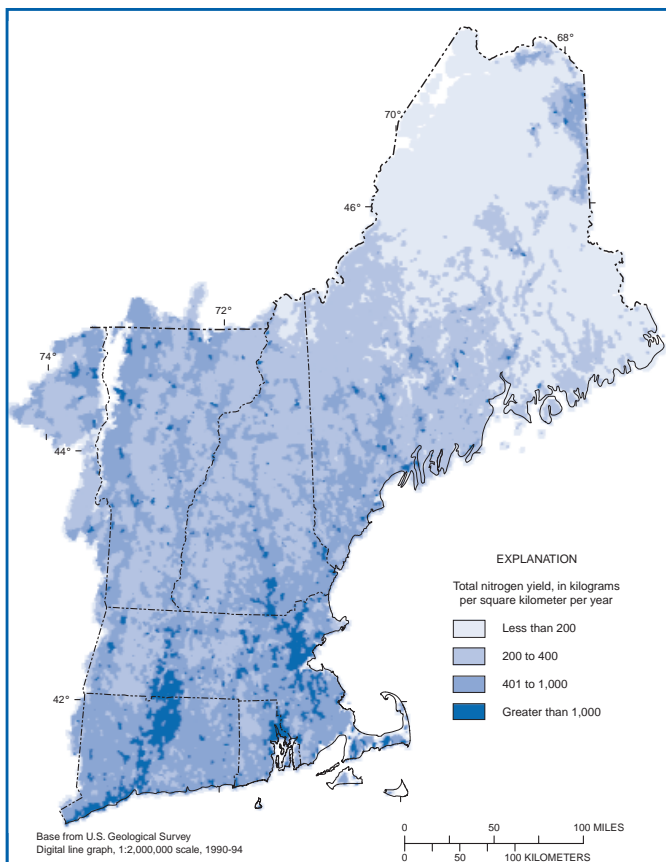
IWR: What is different about what you created compared to the original model?

Robinson: First of all, our model is much more detailed. The average catchment size in the previous model is about 29 square miles and in ours the average is 1.7 square miles. We have better land use coverage than existed before. And while we’re not completely happy with our point source dataset, it’s still better than the previous version. We also have much better, much more detailed information on atmospheric deposition of nitrogen. The New England model is more reflective of what is unique to this region.

Mrazik: Basically, as we customized the model, we put in a lot more specific data and a lot more detailed data for New England, leading to what we assume is a significant improvement in its predictive ability. What we suspect is that as time progresses there will be further attempts to focus on smaller and smaller areas with more and more detail and data. So I think that this is not a thing that is a one-shot deal that sits on a shelf and then ten years from now is dead. It has the capability to zoom down and address more and more narrow areas of focus as the datasets become available to calibrate it and apply it in those areas.

Moore: For example, look at what we are doing with NEIWPCC on the Connecticut River Nitrogen Project. One of our findings that raised concern was that we identified a lot less nitrogen attenuation in the Connecticut River Basin than found in the national model. There are a lot of potential explanations for that, but the direction being taken is to actually conduct a more detailed study of attenuation. New data from the Basin will be plugged right back into the SPARROW Model, as we recalibrate it. We are expecting that, just as when we moved from the national model to the New England model, as we attempt to improve the New England model, we will gain accuracy and reduce the size of the confidence limits surrounding the answers that we are getting from it. 

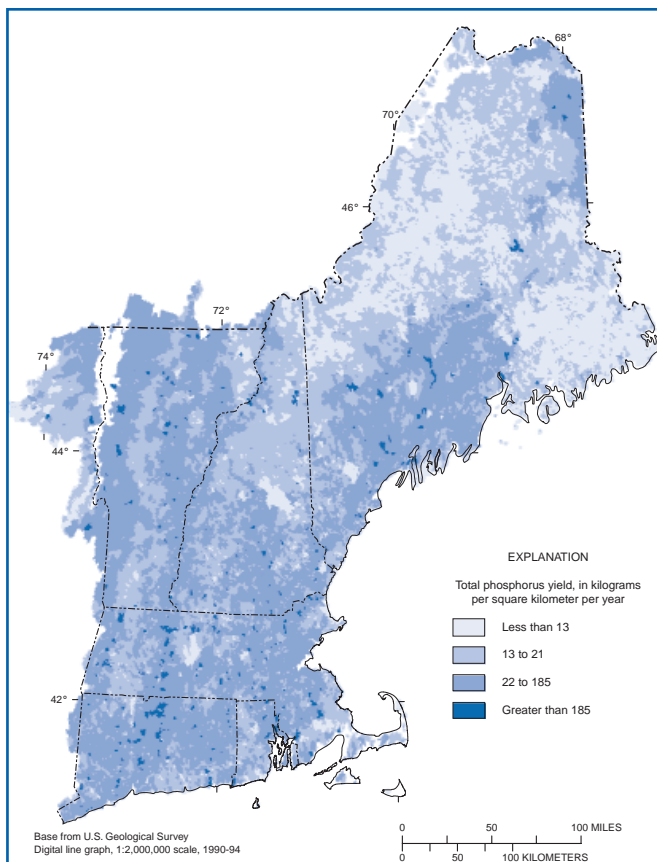
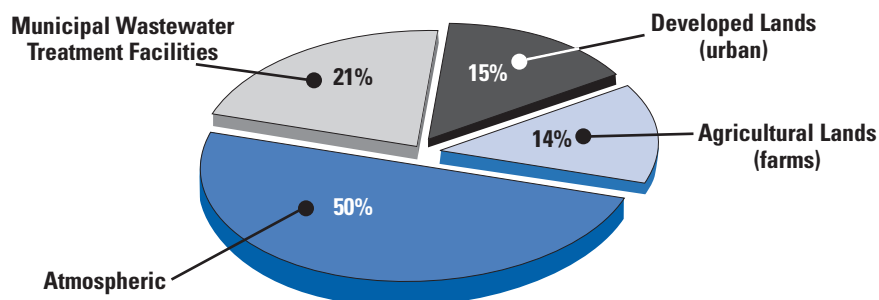
WATER QUALITY MODEL



TOTAL NITROGEN ESTIMATES

This map shows the annual yield of total nitrogen, reported in kilograms per square kilometer per year (kg/km²/yr), as estimated by the New England SPARROW Model. The model's estimates of the primary sources of nitrogen in New England's rivers and streams are shown below.

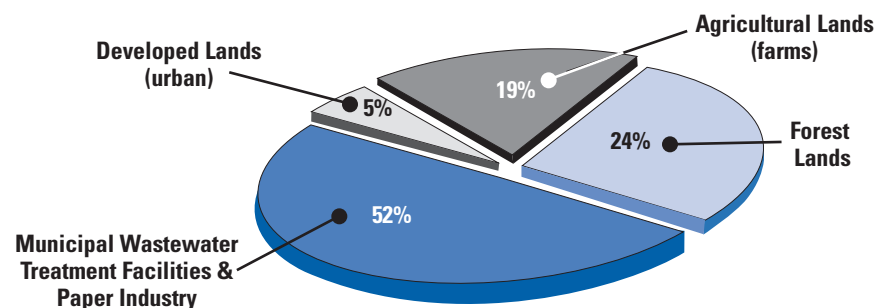
Primary Sources of Nitrogen in New England Rivers & Streams



TOTAL PHOSPHORUS ESTIMATES

This map shows the annual yield of total phosphorus, reported in kilograms per square kilometer per year (kg/km²/yr), as estimated by the New England SPARROW Model. The model's estimates of the primary sources of phosphorus in New England's rivers and streams are shown below.

Primary Sources of Phosphorus in New England Rivers & Streams



WATER BASICS: NUTRIENTS

by Laura Blake

WHAT ARE NUTRIENTS?

Nutrients, such as nitrogen and phosphorus, occur naturally in water, soil and air. They are vital to the growth of all plant and animal life.

Sources of nutrients to surface waters are both natural and human-derived, and come from point and nonpoint sources, including agricultural and urban runoff, wastewater treatment plants, forestry activities, and atmospheric deposition. Nutrients in nonpoint source runoff come mostly from fertilizer, animal wastes, and atmospheric deposition in the form of precipitation or dry deposition. Nutrients in point source discharges typically come from human waste, food residues, cleaning agents, and industrial processes.

HOW ARE NUTRIENTS IN WATER QUANTIFIED AND COMPARED?

Several measures are used to quantify amounts of nutrients, including concentration, load, and yield.

Concentration, or analyzed mass of nutrient per volume of water (often reported in milligrams per liter, or mg/L), is used to assess in-stream conditions at monitoring

stations. Nutrient concentrations can differ from stream to stream because of differences in land use, geology, streamflow, point sources, and other factors in the drainage basin. **Load** is the mass of nutrient transported by streamflow over time, and is estimated as the product of nutrient concentration and streamflow (often reported in pounds (or kilograms or tons) per year). **Yield** is the load per unit area of each basin (often reported in pounds (or kilograms or tons) per year per square area), and is computed by dividing the load by basin area. Because the influence of basin area on load is removed, yield is more useful than load in comparing nutrient contributions from basins of different sizes.

HOW DO NUTRIENTS AFFECT WATER QUALITY?

While nutrients are beneficial to aquatic life in small amounts, excessive nutrient concentrations can stimulate algal blooms and plant growth in ponds, lakes, reservoirs and estuaries. Through respiration and decomposition, algal blooms can deplete the water column of dissolved oxygen and contribute to serious water quality problems.

HOW CAN NUTRIENT IMPACTS TO WATER QUALITY BE REDUCED?

A variety of steps can be taken, including:

Upgrades to Wastewater Treatment Plants. Municipal and industrial wastewater treatment plants are the principal sources of nutrients to streams. In response to the Federal Water Pollution Control Act of 1972 and the Water Quality Act of 1987, state and local governments have increasingly supported consolidation of the treatment plants and the use of more efficient technology in the treatment of wastewater, including biological nutrient removal.

Implementation of Best Management Practices (BMPs). Engineering and agricultural BMPs are designed to minimize surface runoff of nutrients and suspended material reaching streams from nonpoint sources such as highways, construction sites, farms, and urban areas.

Reducing Atmospheric Deposition of Nitrogen. Both government and industry can take steps to reduce nitrogen emissions (to air) by supporting and developing more efficient fossil fuel combustion technologies for automobiles, power generation plants, and industries.

LEGAL LINES



A Review of Significant Water-Related Legal Developments

by Beth Card

Permit or No Permit?

"...actually the water is not our concern. It is the pollutants. Whenever they say merely conveying water, we would say conveyance is defined as a point source and they convey pollutants. If they didn't convey this massive amount of pollutants, we would not be before Your Honors." [EXCERPT FROM ORAL ARGUMENT OF

DEXTER LEHTINEN, ESQ., COUNSEL OF RECORD FOR THE RESPONDENT,
SUPREME COURT OF THE UNITED STATES, JANUARY 14, 2004]

On January 14, almost two years after an appeals court affirmed a lower court's judgment that the South Florida Water Management District violated the Clean Water Act, the United States Supreme Court heard oral arguments in the case. The dialogue between the justices

and attorneys for the water district and its courtroom rivals—the Miccosukee Tribe of Indians of Florida and the Friends of the Everglades—lasted no more than an hour. But the conversation covered many topics, including water quality standards, the 1975 General Counsel opinions on irrigation, New Hampshire's water supplies used for snow-making, dams, federalism, the Bible book Genesis, point source discharges, and ultimately NPDES permits. The justices queried, interrupted, poked, and prodded the attorneys in an effort to answer a critical question: Can the pumping of water by a state water management agency—even when nothing is added to the water being pumped—be considered an "addition" of a pollutant from a point source? If so, then under the Clean Water Act, a NPDES permit is required.

The case concerns a pumping station located within the maze of pumps, canals, levees, and water impoundment areas managed by the water district. The

station pumps water from a canal through two levees into a pipe and ultimately into a water conservation area that is a jurisdictional water of the United States. While the pumping station doesn't add pollutants to the water, the water that it transfers contains levels of phosphorus that are higher than the natural level in the conservation area. That's an environmental problem, since a rise in phosphorus can lead to harmful algal blooms and a drop in water transparency. The 11th Circuit Court of Appeals determined that rerouting the pumping station is *cause in fact* of additional pollutants from a point source being discharged and therefore a violation of the Clean Water Act.

The water district, which petitioned the Supreme Court to consider the case, concedes that its pump and canal system *does* contain waters polluted from a variety of point and nonpoint sources. But the district argues that its pumping station does *not* add pollutants to navigable waters, but simply allows the district to move waters around. The Miccosukee Tribe disagrees, contending that a pollutant is added whenever it's put into navigable waters where it would not otherwise be or to where it would not naturally flow.

The tribe isn't alone in this opinion. In a brief provided to the Supreme Court, a number of states (including NEIWPC members Conn., Maine, Mass., N.Y., and Vt.) urged the court to affirm the appeals court decision. The states wrote, "The Clean Water Act requires a permit where a 'point source' conveys water containing pollutants from one distinct water body to another even though the point source is not the original source of the pollutants."

The states' attorneys general filed the brief, so it's not necessarily the view of their environmental agencies. But it's not surprising that states in the Northeast are concerned. As the brief notes "...the *amici* States have a strong interest in ensuring a strong 'national floor' of water quality controls through the Act's permitting requirement."

On behalf of the affected federal agencies, the U.S. Department of Justice filed a controversial amicus brief that argued a permit was *not* required because pollutants were not added to the navigable waters, but rather they were *transferred* from one navigable water to another. Part of this position, now known as the unitary waters theory, suggests that all waters of the United States constitute a single unified system, and therefore a pollutant could not have been added to that system in this case.

On March 23, Justice O'Connor delivered the Supreme Court's opinion. The Court sent the case back to the district court, ordering it to determine whether the two waterbodies are the same or different. If the district court finds the waterbodies are one and the same, a permit would not be required. The Supreme Court also noted that the lower court could consider the unitary waters argument if asked, because the issue wasn't raised during the court's earlier proceeding.

This anti-climatic remand means the waiting game goes on. Potentially thousands of situations could be affected by the outcome of this case as the water management district's process for transferring water is not at all uncommon. For now, both sides can interpret the Supreme Court's decision to be in their favor. In reality, the "winner" remains to be seen.

Power Play

Every day power plants and factories across the country withdraw more than 279 billion gallons of water to cool their facilities. The pressure from the flow of large volumes of water into these cooling systems traps larger fish and sucks in and kills smaller organisms like plank-

continued on page 9

PUTTING AN END TO SSOs

New NEIWPC Collection System Project Begins

by Michael Jennings


Having recently developed and published the guidance document *Optimizing Operation, Maintenance, and Rehabilitation of Sanitary Sewer Collection Systems*, NEIWPC has now undertaken a new collection system project. This one involves the development of model CMOM (capacity management, operation, and maintenance) programs for wastewater collection systems of various sizes.

The need for such materials is clear. When wastewater collection systems function properly, they contribute greatly to the general level of good health enjoyed in the United States. Unfortunately, not all work as they should. A history of inadequate investment in infrastructure maintenance and repair has left many collection systems performing poorly. When they fail, the result can be sanitary sewer overflows (SSOs)—releases of raw sewage that endanger public health and the environment.

In NEIWPC's latest project, model CMOM programs (analogous to model sewer-use ordinances) will be developed to establish recommended systems and procedures to address collection system performance and prevent SSOs. The project takes into account the fact that approaches taken by municipalities to implement the measures and activities of a CMOM program will vary, depending on the size of the municipality. For example, in smaller municipalities, collection system maintenance equipment and maintenance personnel may share a facility with other operations such as water and street departments. In larger municipalities, sewerage departments typically have independent and self-sufficient facilities. For this reason, NEIWPC will develop model CMOM programs for small, medium, and large collection systems.

The model programs will be based on an intensive study of one municipality in each of the three size categories. In March, a technical advisory committee was established to assist in identifying and selecting these municipalities, two of which must be in New York State and the other in New England. The committee, which includes representatives from the environmental agencies of NEIWPC's member states, is looking primarily for municipalities with collection systems that discharge to their own wastewater treatment plant. So far, the committee has identified two communities, which will be approached to determine their interest. In exchange for participating, a municipality will have its operation and maintenance program refined at no cost.

Once selected, a chosen community will use the EPA Region 4 Management, Operation, and Maintenance (MOM) self-audit as an initial evaluation of their operation and maintenance program. The advisory committee will evaluate the audit and determine which areas of a community's programs should receive technical assistance in developing what would be considered a model CMOM program for a collection system of similar size.

The creation of the model programs is expected to take approximately 18 months. But once completed, the payoff will be immediate: Municipalities throughout the Northeast will be able to use the programs to develop appropriate and effective measures and activities to prevent, reduce, and ultimately eliminate water pollution from SSOs. 

Michael Jennings (mjennings@neiwpc.org) is a NEIWPC Environmental Analyst and manager of our collection system projects.



After injecting smoke into a sewer in Ravena, N.Y., observers monitor where the smoke emerges; inappropriate releases can indicate illicit connections, line punctures, or faulty pipes. Periodic smoke testing of a collection system is part of an effective CMOM program.

MATTHEW GRIFFITHS, NEIWPC

TECHNOLOGY FOCUS

New York Team Finds a Way to Provide Virtual Visits to Hudson's Wetlands

by Evan Picard

Evan Picard, a NEIWPCC environmental analyst, works with the Hudson River Estuary Program in the Bureau of Marine Resources of the New York State Department of Environmental Conservation. Picard is a member of the agency's Tidal Wetlands Inventory and GIS Unit, and has spent much of the past four years mapping wetlands of the Hudson River.

In May 1996, New York Governor George Pataki released the Hudson River Estuary Action Plan. The plan is the New York State Department of Environmental Conservation's blueprint to protect and conserve the estuary's natural resources and ecosystem health. It charged the Hudson River Estuary with a challenging task—to inventory the tidal wetlands along the Hudson from the Tappan Zee Bridge to the Troy Dam and determine if they are adequately protected.

In meeting this challenge, DEC sought to map the river's tidal wetlands, no simple feat. But the potential payoffs were clear: A completed inventory, with detailed, accurate maps, would be a great help to those working to further protect freshwater tidal systems under DEC regulations. Maps of the wetlands also give the state a new tool to use to achieve its wetlands management goals, such as achieving a "no net loss" of wetlands and coastal zone resources.

In 1998, work got underway. San Francisco-based URS Corporation, the main contractor on the project, hired TVGA, a surveying firm in Elma, N.Y., to do the aerial photography. TVGA used a specially designed camera that fit in the belly of a plane to shoot color infrared photos of the river from an altitude of 6,000 feet. The photos were rectified, registered, and mosaicked, which gave them real-world scale and allowed the pictures to be combined into a single seamless image map of the entire river.

In addition to this aerial mosaic, a URS team went out on the river to delineate the wetlands, shoreline types, and coverage of invasive species. While in the field, the team took digital photos, completed site

reports, and made videos of each site. To delineate the wetlands, they used geographic information system (GIS) software, which allows a user to draw lines and polygons delineating areas that are at map scale and measurable. These polygons can hold data such as physical (area, perimeter) and assigned attributes (ID# or unique identifiers).

But getting the data was only part of the challenge. How could we make it easily accessible to those who needed it? We knew we wanted to create a "virtual field visit" linking the unique ID of each wetland polygon to photos, videos, and descriptions, thereby allowing interested persons to view every aspect of a wetland from their computer. Our plan was to provide the aerial photo background image, site photos taken from both the ground and from a helicopter, and video shot from the helicopter.

That presented a problem, since there was no one program to view all these different types of media together. Some members of the Tidal Wetlands Inventory and GIS Unit had been using Microsoft PowerPoint to deliver presentations, linking the photos and videos to polygons representing the wetlands in ESRI's ArcView. But that approach wouldn't work for general use; in order to view the data, people working from their own computers would have to have and know how to use ArcView, an expensive and complicated piece of software. Clearly, we had to find an easier method of distribution.

The solution came in another product from ESRI called MapObjects. It's a collection of mapping tools that can be added to custom-made programs, such as those developed in Microsoft Visual Basic. Visual Basic is a user-friendly programming language that allowed us to design exactly the program we needed, with exactly the features we wanted, and none of the confusion that came with ArcView.

The end result is the program we call the "Hudson River Estuary Wetland Mapper." It allows both advanced GIS users and first-timers to view aerial photos, wetland delineation lines, oblique helicopter photos, ground photos, helicopter videos, and written descriptions of a



Top: Croton Point, N.Y., just north of the Tappan Zee Bridge.
Bottom: The same area as it appears on a computer screen when using the Hudson River Estuary Wetland Mapper program.

wetland area. The mapper comes packaged in a two-CD set, which includes the program and videos that provide access to wetland data for the entire Hudson River.

With the inventory based on the 1998 photography complete, the next step is to conduct a "trends analysis" to compare our photography with historical photography. We've acquired aerial photos of the Hudson valley from 1975, and are now comparing them to the 1998 pictures to look for changes that will indicate losses or gains of wetlands on the river. 

For more information, contact Evan Picard at 631-444-0429 or via email at empicard@gw.dec.state.ny.us. For copies of the mapper CDs, contact Bethia Waterman at (845) 256-3015 or bxwaterm@gw.dec.state.ny.us.

Legal Lines *continued from page 8*

ton, eggs and larvae. It is, to anyone concerned about the environment, a distressing situation. But a solution has been elusive, and now the legal battle over the right approach is getting increasingly bitter.

According to section 316(b) of the 1972 Clean Water Act amendments, EPA must ensure that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impacts. Is it doing that? A district court in New York didn't think so in 2002. After looking into the matter during the case of *Riverkeeper, Inc. v. Whitman*, the court issued a consent decree that ordered EPA to develop new cooling water intake regulations and included deadlines for each step of the rulemaking process.

That process is taking place in three phases. In July 2003, the Phase I regulation—which addresses cooling water intake structures at new power plants and factories—went into effect. EPA plans to publish a final rule for existing facilities in Phase II later this year. And the agency continues to make progress on Phase III, which focuses on offshore facilities and vessels; the deadline for that phase's final rule is June 1, 2006.


Sounds like progress? Not to some. A group of

environmental and watershed protection organizations filed suit in the U.S. Court of Appeals for the Second Circuit last summer over several provisions in the Phase I rule. The rule provides two alternatives for compliance—plants must either meet new, stricter velocity and capacity requirements for cooling systems or implement alternative technologies that yield comparable results. A plant choosing the latter alternative must attain 90 percent of the reduction in mortality and entrainment that would occur with the upgraded cooling systems or achieve a "substantially similar" level of wildlife in the water. In December of last year, the environmental petitioners argued in court that this alternative violates the Clean Water Act by allowing compliance either with lower standards than provided by the best available technology or through restoration measures that are unrelated to the cooling water intake structures that are intended to be regulated.

The judges on the appeals court rendered their decision on February 3. They found the 10 percent margin of error portion to be acceptable. But the court declared the restoration provision to be "plainly inconsistent with the statute's text and Congress's intent in passing the 1972 amendments," and sent that part of the

rule back to a lower court to determine the appropriate remedy.

The decision was a big win for the environmental petitioners and a defeat for members of industry who claimed in court that Phase I was too restrictive. The appeals court threw out those claims, and industry representatives immediately expressed concerns about increased compliance costs for specialized cooling systems.

Despite the court ruling, the proposed Phase II rule released by EPA in late February and the proposed Phase III rule contain language similar to the defeated restoration provision. Outraged, the environmental petitioners have vowed to sue EPA to block use of the restoration measure at existing plants. In fact, the Riverkeeper organization has already filed a Request for Stay Pending Judicial Review with EPA in anticipation of the official release of the Phase II Cooling Water Intake Rule. EPA is now deciding whether to seek a rehearing or appeal to the Supreme Court. This is one battle that is far from over. 

Beth Card (bcard@neiwpc.org) is NEIWPCC's Director of Water Quality Programs. She is also a licensed attorney in Massachusetts.

OUT OF BOUNDS?

The Latest on the Debate Over Which Waterbodies the Federal Government Can Regulate

by Rebekah Lacey

Questions about environmental policy seldom have easy answers, and that's certainly the case in the debate over the proper role for the federal government in implementing the Clean Water Act. Just how far does the government's reach extend? Can it regulate small wetlands that aren't near other waterbodies? What about irrigation ditches? Intermittent streams?

The questions came to the fore after the Supreme Court's 2001 ruling in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, known as the SWANCC decision. The Court found that the Army Corps was wrong in trying to regulate the filling of some manmade ponds in Illinois. This was generally interpreted to mean that EPA and Army Corps regulations had gone beyond the intent of Congress in defining the "waters of the United States" over which the Clean Water Act gives those agencies jurisdiction. Since SWANCC, other court cases have raised more questions, and EPA and the Corps have struggled to define the limits of their jurisdiction. In recent months, there were several key developments related to this difficult issue.

BUSH ADMINISTRATION ABANDONS CONTROVERSIAL WATER RULE

In January 2003, EPA and the Army Corps issued an "advance notice of proposed rulemaking" (ANPRM)

stating that they wished to clarify the definition of "waters of the U.S." in the Clean Water Act, and sought input from interested parties. The wording led many to believe that any eventual rulemaking stemming from the process would narrow federal jurisdiction under the CWA, perhaps greatly. NEIWPCC, on behalf of our member states, submitted a comment letter indicating the states' opposition to any such action.

In December came good news: EPA and the Army Corps announced they would not move forward with the rulemaking, much to the relief of NEIWPCC's member states and most other states across the U.S. Environmentalists and hunting and fishing groups also cheered the decision.

But some feel the administration should go further and withdraw guidance included in an appendix distributed with the ANPRM. The appendix contained a memorandum from EPA and the Corps dictating how Corps districts should make jurisdictional determinations in the absence of further clarification through rulemaking. This guidance, which remains in effect despite the decision not to move forward with the rule, essentially implements a broad view of SWANCC, restricting the instances in which jurisdiction can be asserted by Corps districts over isolated waters and wetlands. Many states and groups that opposed the jurisdictional rulemaking feel that the policy articulated in the memo unnecessarily excludes a whole group of waters and wet-

lands from CWA jurisdiction, shifting the burden to the states for preventing their degradation or destruction.

CONGRESS GETS IN ON THE ACT

Some members of Congress have been concerned that Army Corps decisions regarding Corps jurisdictional authority have been inconsistent, creating uncertainty for applicants seeking permits to fill wetlands under the Clean Water Act Section 404 program. Rep. Doug Ose (R-Calif.), the chairman of the House Energy Policy, Natural Resources and Regulatory Affairs Subcommittee, requested that the congressional General Accounting Office study the matter. The GAO presented its findings in a March report entitled *Waters and Wetlands: Corps of Engineers Needs to Evaluate Its District Office Practices in Determining Jurisdiction*, and Rep. Ose's subcommittee followed up with a hearing regarding Clean Water Act jurisdiction on March 30. At the hearing, the Corps and EPA pledged to review Corps jurisdictional determinations and to work to increase the consistency and transparency of these determinations.

NEIWPCC COMMENTS

NEIWPCC responded to the ANPRM withdrawal and the GAO report by submitting a comment letter on behalf of our member states to EPA and the Corps on March 18. The letter reiterated our member states' support for broad federal Clean Water Act jurisdiction. John Meagher, EPA Wetlands Division Director, responded to the letter on April 23 and indicated that our comments would be considered as EPA and the Corps move forward with their jurisdiction policies.

continued on page 11

PROFILE

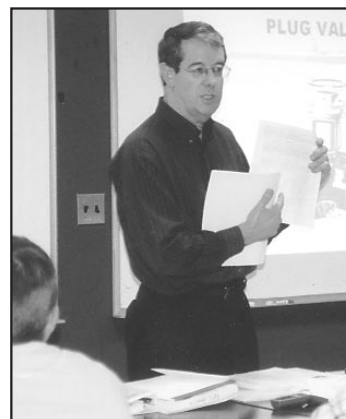
NEIWPCC's Don Kennedy: Wastewater Expert With a Talent for Training

by Stephen Hochbrunn

As a veteran of the wastewater industry, Don Kennedy has no shortage of stories to tell. Consider his experience in the legendary Blizzard of '78: The snow began falling during his shift at the wastewater treatment plant in North Andover, Mass., falling so hard and fast that the men on the next shift couldn't make it in. Kennedy worked as long as he could, but finally needed to rest. By then, the snow had crippled the state, and driving anywhere, let alone to his home in Boxborough, was virtually impossible. His parents lived close by in Lawrence, but how to get there? Several of the plant's maintenance men came up with the clever solution. They drove the plant's pickup truck to a nearby cemetery, and filled its bed with spare cement burial vault covers, adding critical weight and grip to the rear end. Over the next few days—as the state struggled to dig out from the blizzard—the burial vault-laden truck weaved around 10-foot-tall snowdrifts and abandoned cars as it shuttled Kennedy between the plant and his parents' home, allowing him to work until he almost dropped and then recuperate in comfort before another long shift.

Kennedy, 53, is known to include such stories in the presentations he makes as NEIWPCC's Training Coordinator. Much of the year, he's on the road teaching courses throughout New England and New York State on everything from the operation and maintenance of collection systems to the right and wrong way to work in confined spaces. We spoke with Kennedy at his office in NEIWPCC's Lowell headquarters, during a break in his travels.

Don Kennedy, NEIWPCC's Training Coordinator



IWR: You have more than 30 years of experience in the wastewater industry, working as an operator, manager, and—for the past five years—as a trainer at NEIWPCC. How did you get started?

Kennedy: I graduated from Framingham (Mass.) State College in 1973, with a major in English and a minor in teaching. But teaching jobs here were scarce, and I wasn't interested in teaching in another country, which was big at the time. So, I approached Raytheon in Lowell, where I'd worked for several summers as a plater, immersing printed circuit boards in chemicals to increase reliability. It turned out they had a brand new plant to treat the waste from plating, and they hired me to help run it. I fell in love with the job, and ended up taking every course in wastewater that UMass Lowell had to offer.

Over the years, I worked at several other wastewater treatment plants, including the Greater Lawrence Sanitary District in North Andover during its start-up phase. That was great, because brand new treatment plants have lots of problems; they have to be adjusted and tweaked. The equipment lays dormant during construction, and when the switch is turned on, they don't operate too well. You have to debug them to bring them online. I think working during a start-up is a great opportunity for anybody.

I also worked at smaller, private facilities where I supervised teams of operators and worked every day

except Thanksgiving and Christmas. I just really liked the field, and stuck with it.

IWR: As a trainer, you're able to combine your one-time interest in teaching with your expertise in wastewater. What's that like?

Kennedy: Teaching is a good way of putting everything together, all your experience. It's not always easy because I'm training people whose experience may differ from mine, but I like the challenge. The nice thing about this kind of teaching is it's a two-way process. I try to incorporate as many of the students' field experiences as possible, and I learn that way as well.

It's also great to be part of such a vital training operation. Tom (Groves, NEIWPCC's Director of Wastewater and Onsite Programs) and Chuck (Conway, NEIWPCC's Manager of Training Operations) have really expanded the programs. Our cooperative agreements with EPA only require us to do a certain number of classes a year, but we always go way beyond that because there's a need. The technology continues to change in wastewater treatment, and operators have to keep up.


IWR: When you're not thinking about wastewater, what do you like to do?

Kennedy: I do a lot of cycling, and I like watching hockey and baseball. I see probably 10 to 12 Lowell Lock Monsters and Spinners games a year. I'm not going to pay Red Sox and Bruins prices.

IWR: And you and your wife have two daughters, right? Are they following in your footsteps?

Kennedy: I hope not (laughs)! Leanne just graduated from UMass Lowell with a degree in nursing, and Megan is going to Middlesex Community College, studying early childhood education.

IWR: Do they go to the games with you?

Kennedy: They just come to me when they want money (laughs again). 

IN THE SPOTLIGHT

At the Annual State Fund Administrators Conference on June 20-23 in Providence, R.I., **Ellen Frye**, editor of the NEIWPCC publication *LUSTLine*, received an Outstanding Achievement Award for Excellence in Communicating Underground Storage Tank Issues. Frye has been editing *LUSTLine* since its debut in 1985, and it has become the publication of record for UST matters nationwide.

Also at the State Fund Administrators Conference, NEIWPCC Executive Director **Ron Poltak** moderated a session on alternative funding sources for cleaning up underground storage tank sites. **Susan Sullivan**, NEIWPCC's Deputy Director, moderated a session that compared four different approaches to covering UST cleanup costs, and NEIWPCC's **Kara Sergeant** led a roundtable discussion on state experiences with MtBE and other fuel oxygenates.

For the fourteenth consecutive summer, NEIWPCC and the Lowell Wastewater Treatment Plant are conducting a Youth and the Environment Program at the Lowell facility. The program introduces disadvantaged urban high school students to professional opportunities in the environmental field, with a particular emphasis on careers in the wastewater industry. **Peter Cavanaugh**, a NEIWPCC intern and student at Stonehill College in Easton, Mass., selected five students for this year's program and is coordinating their daily activities. The program runs from July 12 to August 20.

At the National Monitoring Conference on May 17-20 in Chattanooga, Tenn., NEIWPCC Director of Water Quality Programs **Beth Card** moderated a session titled "Collaborative Monitoring Efforts in the Interstate Arena." More than 425 people, from the U.S. and abroad, attended the conference, which was sponsored by the National Water Quality Monitoring Council.

NEIWPCC's training program, "Alternative Onsite Wastewater Technologies," was the focus of an article in *Onsite Installer* magazine. The article included several quotes from **Tom Groves**, NEIWPCC's Director of Wastewater and Onsite Programs. It is available online at www.neiwpcc.org/PDF_Docs/exploring_alts.pdf

KNOW YOUR ACRONYMS!

As regular readers of *IWR* know, we've made it a practice in every issue to test your knowledge of acronyms encountered in the water field. If you read the article titled "Joint Sessions" on page 4, then you've already seen the acronyms listed below. But what do they stand for? And what exactly do the terms mean? The answers to these all-important questions are on page 12.

BMP

MEP

MS4

NOI

SWMP

The North American Lake Management Society presented its 2003 **Friend of NALMS Award** to NEIWPCC. The award is given to individuals or corporations making major contributions to NALMS, which strives to forge partnerships among citizens, scientists, and professionals to foster the management and protection of lakes and reservoirs. For years, NEIWPCC has actively supported NALMS and its New England Chapter, helping to extend the reach of the organization. NALMS also presented a Technical Merit Award for Public Outreach to Champlain 2000, a weekly television partnership for Vermont's Lake Champlain. NEIWPCC serves as financial manager and program adviser to the **Lake Champlain Basin Program**, one of the partners in the television effort and a leader in the effort to protect and restore the lake.



NEIWPCC's **Rebekah Lacey** cochaired the New England Biological Assessment of Wetlands Workgroup Annual Meeting, held March 16-17 at Jiminy Peak in Hancock, Mass. The meeting also included a presentation by NEIWPCC's **Matt Witten** on lessons learned from his efforts to promote volunteer wetland monitoring.

One of NEIWPCC's newest partners, the New York-New Jersey Harbor Estuary Program, awarded mini-grants (up to \$5,000) to 11 projects that promote understanding of and participation in the protection and restoration of the estuary. This year's grant recipients are the **Bayshore Regional Watershed Council, Beczak Environmental Education Center, Brooklyn Bridge Park Conservancy, East River Community Recreation and Education on the Water, Greater Newark Conservancy, Kean University, New Jersey Marine Sciences Consortium, New York Restoration Project, South Street Seaport Museum, St. Francis College, and Turnaround Friends, Inc.** NEIWPCC oversees the grant program in cooperation with New York Sea Grant.



Dr. Steve Chapra, a professor at Tufts University and one of America's foremost authorities on water quality modeling, has become an almost familiar presence at NEIWPCC's Lowell headquarters. In February, Dr. Chapra led a two-day NEIWPCC workshop on the LAKE2K Model, sharing his expertise with state and federal TMDL staff, including **Mary Garren**, the Connecticut TMDL Coordinator at EPA Region 1 (seen above). In June, Dr. Chapra returned to NEIWPCC with his Tufts colleague **Dr. Linfield Brown** to lead a three-day course on the QUAL2E and QUAL2K Models.

NEIWPCC's **Laura Blake** coordinated the well-attended and well-received sessions. In an email to Blake after the June course, MA DEP's **Russell Isaac** wrote, "It has been particularly difficult during the last few years to obtain this type of technical training, and having Professors Chapra and Brown from Tufts, both of whom are outstanding in this field, was a great benefit as well as a rare opportunity. I am sure I speak for all of the other states and attendees as well in appreciating both your efforts and the workshop itself." Thank you, Russ, for attending and for your gracious email.

Out of Bounds? continued from page 10

THE SUPREME COURT WEIGHS IN

Capping all this activity, the U.S. Supreme Court added a major development on April 5 when it denied a petition to review three Clean Water Act jurisdiction cases from the Fourth and Sixth U.S. Circuit Courts of Appeal. Each of the cases, known respectively as Deaton, Newdunn, and Rapanos, had been decided in favor of the government in the circuit courts, upholding the government's assertion of jurisdiction. By declining to review the decisions, the Supreme Court allowed a broad view of federal jurisdiction to stand.

Clearly, Clean Water Act jurisdiction will continue to be a topic of debate and litigation for the foreseeable future. Watch for updates in future issues of *IWR*.

IWR

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CALENDAR OF EVENTS

Please note that NEIWPCPC workgroup meetings are designed to foster focused small-group discussions among workgroup members on specific issues. Workgroup members are drawn from state and federal regulatory agencies and NEIWPCPC staff. For general information about our workgroups and their points of focus, please visit our Web site (www.neiwpcc.org) or call 978-323-7929.

AUGUST

Aug. 8-10

Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) Annual Meeting
Chicago, Ill.

Aug. 11

NEIWPCPC Onsite Wastewater Task Force Meeting

Aug. 13

Youth and the Environment Program Graduation Ceremony
Roger Williams Park Zoo, Providence, R.I.

Aug. 17-18

USGS Mercury Workshop
Reston, Va.

Aug. 26

NEIWPCPC Drinking Water Administrators Workgroup Meeting

SEPTEMBER

Sept. 1-2

UST/LUST National Conference Planning Meeting
Washington, D.C.

Sept. 16-17

NEIWPCPC Executive Committee and Commission Meeting
Essex, Vt.

Sept. 18-22

Ground Water Protection Council Annual Forum
Charleston, S.C.

Sept. 19-22

New England Water Works Association Annual Conference
Newport, R.I.

Sept. 21-23

"Putting the LID on Stormwater Management" (national conference on Low Impact Development)
College Park, Md.

Sept. 28-30

EPA's Environmental Quality Systems Training Conference
Merrimack, N.H.

Sept. 29

Massachusetts Water Pollution Control Association Annual Trade Show and Mass. Training Advisory Committee Meeting
Westford, Mass.

OCTOBER

Oct. 2-6

2004 Water Environment Federation Technical Exhibition and Conference (WEFTEC)
New Orleans, La.

Oct. 3-7

Association of State Drinking Water Administrators (ASDWA) Annual Conference
Austin, Texas

Oct. 13

NEIWPCPC Stormwater Workgroup Meeting

Oct. 19-20

Association of State Wetland Managers National Symposium: Wetlands 2004
Kansas City, Mo.

Oct. 21-22

JETCC North Country Convention
Presque Isle, Maine

Oct. 22

Massachusetts Water Resources Research Center Conference: Water Resources in the Northeast—Emerging Issues
University of Massachusetts, Amherst, Mass.

Oct. 27

NEIWPCPC Wetland Mitigation Meeting

To check for additions or changes to this listing, see the Calendar of Events at NEIWPCPC's Web site www.neiwpcc.org.

KNOW YOUR ACRONYMS ANSWERS

BMP – Best Management Practice This term, which appears in Section 208 of the Clean Water Act, applies to a practice, or combination of practices, that have been determined by a state or other agency to be the most effective and practicable means of reducing the amount of pollution entering a waterbody to a level compatible with water quality goals. BMPs may be developed for maintenance and operating procedures, treatment requirements, practices to control runoff, etc. To comply with Phase II stormwater regulations, operators of regulated storm drain systems must identify BMPs that will be carried out for each of the six minimum control measures required in the Phase II rule (public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control, and pollution prevention and good housekeeping).

MEP – Maximum Extent Practicable Section 402 of the Clean Water Act states that permits for municipal dischargers of stormwater must require controls to reduce the discharge of pollutants to the MEP, but there is no statutory or regulatory definition of the term. One common interpretation of MEP is it means that when considering and choosing BMPs to address a pollution problem, a municipality should consider many factors, including technical feasibility, fiscal feasibility, public health risks, societal concerns, and social benefits.

MS4 – Municipal Separate Storm Sewer System An MS4 is essentially a publicly owned or operated storm drain system. The word "separate" indicates that *combined* sewer systems, in which stormwater and sewage discharge are mixed together in the same pipes, are *not* MS4s. Typically, operators of MS4s are municipalities, but storm drain systems operated by other public entities, such as state departments of transportation and state universities, are also considered MS4s. An MS4 is not always just a system of underground pipes; it can include roads with drainage systems, gutters, and ditches.

NOI – Notice of Intent An NOI is a published notice of a proposed action, and the term is encountered in many fields. (If you intend to home school your kids, for example, you may have to file an NOI with education officials.) In the stormwater world, an NOI serves as the application for a Phase II stormwater general permit. The operator of an MS4 regulated under Phase II submits an NOI to the NPDES permitting authority (the state or EPA) that describes the stormwater management plan for the MS4, including BMPs and measurable goals.

SWMP – Stormwater Management Program The operator of an MS4 regulated under Phase II must develop, implement, and enforce a stormwater management program designed to reduce the discharge of pollutants from the MS4 to the "maximum extent practicable," to protect water quality, and to satisfy the appropriate water quality requirements of the Clean Water Act. The SWMP is the actions the MS4 operator will take to reduce pollution, embodied in the BMPs and measurable goals described in an MS4 operator's NOI.

Contributions to *IWR* are welcome and appreciated. Please submit articles or story ideas to: Stephen Hochbrunn, *IWR* Editor Email: shochbrunn@neiwpcc.org ♦ Phone: 978/323-7929, ext. 235



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