



# NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

National Council Highlights

Collaboration through Partnerships

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National Monitoring Network

## National Water Monitoring News

### Highlights

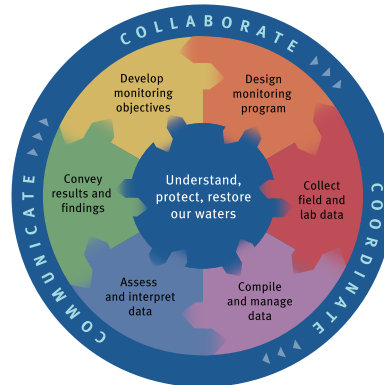
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The San Gabriel River Watershed supports a population of more than 2.3 million people. Protection and management ensuring sustainability of this resource requires an understanding of the watershed's overall health. (Photo courtesy of Council for Watershed Health)



National Wetland Condition Assessment field crew identifying wetland vegetation as a part of the National Aquatic Resource Surveys. (Photo by Joanna Lemly)



The National Water Quality Monitoring Council provides a voice for monitoring practitioners across the Nation and fosters increased understanding and stewardship of our water resources.

The National Water Quality Monitoring Council  
Editor: Cathy Tate  
(303) 236-6927 (phone) • email: [cmtate@usgs.gov](mailto:cmtate@usgs.gov)

<http://acwi.gov/monitoring/>

Spring 2012



# NATIONAL WATER QUALITY MONITORING COUNCIL

Working Together for Clean Water

## *National Water Monitoring News - Words from Council Co-Chairs*

Welcome to the fifth edition of the National Water Quality Monitoring Council ("Council") newsletter!

As Co-Chairs of the Council, we are pleased to provide this newsletter as a forum for communication among water monitoring practitioners across the Nation. In support of the Council's mission (<http://acwi.gov/monitoring/>), this newsletter is geared to foster partnerships and collaboration; advance water science; improve monitoring strategies; and advance data integration, comparability, and reporting. We hope the information in this fifth edition is useful for your water needs. Among the topics you will read about in this issue are:

- ✓ The Council's upcoming [8th National Monitoring Conference](#) (April 30 - May 4, 2012, Portland, OR)
- ✓ New Council resources - Water Quality Data Portal, Statistical NEMI, and Volunteer Monitoring web page
- ✓ New tools and technology:
  - Update on Diatoms of the US database
  - Applications of in-situ optical sensors
  - Recovery Potential Screening website to assist restoration planners
- ✓ Updates on monitoring including:
  - U.S. Forest Service's Inventory, Monitoring, and Assessment Program
  - U.S. EPA's National Aquatic Resource Surveys
  - Assessment of wetlands in Arizona and rivers in California
  - Septic system effects on coastal water quality
  - Lake Michigan water quality near Chicago
- ✓ Spotlight on the New Jersey Council
- ✓ Tribal monitoring in Puget Sound and Yukon River Watershed
- ✓ Reestablishing a workgroup for the National Monitoring Network for U.S. Coastal Waters and Their Tributaries

We encourage everyone to be an active part of the Council through this newsletter. Please share your successes and challenges in monitoring, announce upcoming meetings and conferences, and share related Internet links and other water-related information. If you have an article idea or would like to write something yourself, don't hesitate to contact our editor, Cathy Tate, [cmtate@usgs.gov](mailto:cmtate@usgs.gov), (303) 236-6927. New articles and ideas are always welcome!

On behalf of the entire Council and all those who contributed to this issue of our newsletter, thanks for reading and for helping to protect our Nation's waters. We hope you enjoy this newsletter and we encourage your input and future communication!

Sincerely yours,

Michael Yurewicz, USGS Co-Chair  
[mcyurewi@usgs.gov](mailto:mcyurewi@usgs.gov)

Susan Holdsworth, USEPA Co-Chair  
[holdsworth.susan@epa.gov](mailto:holdsworth.susan@epa.gov)

## National Council Highlights

### The Eighth National Monitoring Conference is Almost Here!



Join us at the Oregon Convention Center in Portland, Oregon for the Eighth National Monitoring Conference. (Photo courtesy of Travel Portland/Bruce Forster)

The *Eighth National Monitoring Conference – Water: One Resource – Shared Effort – Common Future*, will be held in Portland, Oregon from April 30<sup>th</sup> – May 4<sup>th</sup>, 2012. The Council's biennial forum provides a unique opportunity for the more than 1,000 water practitioners from all backgrounds—including governmental and tribal organizations, academia, watershed and environmental groups, and the private sector—to exchange information, develop new skills, showcase new findings, and highlight recent innovations and cutting-edge tools in water-quality monitoring, assessment, and reporting. This year's program is rich in content and scope, including nearly 336 platform presentations, more than 150 technical posters, and 33 workshops, short courses and panels.

To learn more about the Eighth National Monitoring Conference, visit: <http://acwi.gov/monitoring/conference/2012/index.html> or contact: Cathy Tate, [cmtate@usgs.gov](mailto:cmtate@usgs.gov), (303) 236-6927, Jeff Schloss, [jeff.schloss@unh.edu](mailto:jeff.schloss@unh.edu), (603) 862-3848, or Alice Mayo, [Mayio.Alice@epa.gov](mailto:Mayio.Alice@epa.gov), (202) 566-1184.

### Plenary Speakers at the 2012 National Monitoring Conference



**Todd Ambs**  
President,  
River Network

*"Amateurs Built the Ark,  
Professionals Built the Titanic –  
How to Get the Most Out of  
Volunteer Monitoring Data"*



**Ellen Gilinsky**  
Senior Policy Advisor to the  
Acting Assistant Administrator for  
Water, Office of Water, U.S.  
Environmental Protection Agency

*"Forty Years of the Clean Water  
Act: Progress and Challenges"*



**William Bradbury**  
Council member, Northwest  
Power & Conservation Council

*"Oregon – Effects of Climate Change"*



**Eric Quaempts**  
Director of the Confederated  
Tribes of the Umatilla Indian  
Reservation, Department of  
Natural Resources

*"Reestablishing Connections:  
Rivers to Floodplains, Water  
Quality to People"*

## National Monitoring Conference & River Rally Bridge Day is May 4th

For the first time, the Council's conference and River Network's National River Rally will overlap with mutually developed themes and presentations geared toward fostering improved collaboration between government and nonprofit groups working together for clean water. This day includes:

- Bridge Day sessions selected to specifically meet the needs of this audience such as, addressing contaminants and emerging threats; evaluating water protection and restoration efforts; communicating science and data to decision makers and the public; applying innovative monitoring technologies and assessment methods; strengthening monitoring collaborations and partnerships; and managing and sharing water quality data.
- A Bridge Day Panel on "*Are Monitoring Collaborations Worth My Time?*" This diverse panel presents case studies that focus on drivers, barriers and lessons learned.
- A Plenary luncheon featuring great speakers!
- A Bridge Day Regional Breakout continuing the theme "*Are Monitoring Collaborations Worth My Time?*" is designed to have participants meet organizations in their area, share what they do and what they need, discuss opportunities for future collaboration, and clarify what others are doing and need.
- The day concludes with the River Rally Opening featuring a welcome by U.S. EPA Administrator Lisa Jackson

## USEPA's National Aquatic Resource Surveys Program holds its National Meeting in Conjunction with Conference

The USEPA's National Aquatic Resource Surveys (NARS) program will hold its national meeting in conjunction with the National Monitoring Conference. USEPA staff and stakeholders representing states, tribes and other agencies are conducting training on data analysis approaches, discussing ways to improve the surveys overall and presenting technical papers relevant to each of the surveys. Several workshops or special sessions are planned to discuss data analysis for the rivers and streams, coastal and wetlands surveys and design and indicators for the 2013/2014 rivers and streams survey. USEPA and USGS scientist will also meet to discuss plans for a large regional synoptic study in the Midwest (see article *USEPA NARS and USGS National Water Quality Assessment Programs to Collaborate on a Regional Study in the Midwest*).

### **Don't Miss the Council Sponsored Sessions and Presentations at the Conference**

- *Building, Empowering & Sustaining State, Regional and Tribal Water Monitoring Councils and Water Monitoring Partnerships and Alliances* on Tuesday morning.
- *New Techniques in Accessing and Analyzing Water-Quality Data* featuring the Water Quality Data Portal on Tuesday afternoon.
- Presentation on *Establishing a National Network of Reference Watersheds and Monitoring Sites for Freshwater Streams in the United States* in the session *Challenges in Defining Reference Conditions* on Tuesday afternoon
- *Understand, Restore, and Protect Our Waters: National Water Quality Monitoring Council Programs, Initiatives and Products* on Tuesday afternoon where you can learn more about:
  - Water Quality Statistics and Assessments Workgroup's Online Database
  - National Network of Reference Watersheds
  - Water Quality Data Portal
  - Council's workgroups (Methods, Sensors, Water Information Strategies, Collaboration & Outreach, Volunteer Monitoring)
- *Advancing the Implementation of a National Water Quality Monitoring Network for U.S. Coastal Waters and their Tributaries* on Thursday afternoon
- Come visit us at the National Water Quality Monitoring Council's Exhibitor Booth!

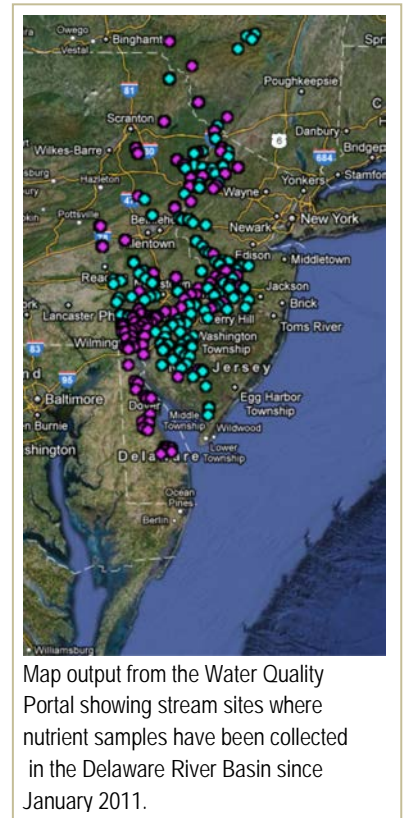
## Council Sponsored Products

### Water Quality Portal —Web access to over 150 million water-quality data records from States, Tribal Partners, USEPA, and USGS

The Water Quality Portal provides a single user-friendly web interface to water-quality data collected by federal, state and tribal partners to serve a wide range of prospective users including scientists, policy-makers, and the public. Over 150 million public water-quality data records from the USGS, USEPA, states, and tribal partners can be accessed and downloaded in a variety of formats through the portal. The portal accesses chemical, physical, and biological data from the USGS National Water Information System (NWIS) and the USEPA Storage and Retrieval (STORET).

The Water Quality Portal, sponsored by Advisory Committee on Water Information, NWQMC, USEPA, and USGS, will be publicly released in conjunction with the National Water Quality Monitoring Council's Eighth National Monitoring Conference in May 2012. The portal will be demonstrated during the Tuesday afternoon Extended Session "*New Techniques in Accessing and Analyzing Water-Quality Data*". Also stop by the USGS and USEPA booths for live demonstrations of the portal throughout the conference.

For more information, please contact: Mike Woodside, [mdwoodsi@usgs.gov](mailto:mdwoodsi@usgs.gov), Nate Booth, [nlbooth@usgs.gov](mailto:nlbooth@usgs.gov), Lorraine Murphy, [lmurphy@usgs.gov](mailto:lmurphy@usgs.gov) or Charles Kovatch, [kovatch.charles@epa.gov](mailto:kovatch.charles@epa.gov).



### Statistical Help at Your Fingertips — Coming Soon!



Ever ask yourself, "Now that I have this pile of water quality data, what does it mean?" Or maybe "How many samples do I need to collect to really see if there has been a change in water quality?" Perhaps your next question has been "Where can I get help with these questions?" Well, there is good news; the Council's Water Quality Statistics and Assessments (WOSA) workgroup is creating an online searchable clearinghouse of methods that can be used to analyze water quality data and help support water quality assessments.

The effort is being integrated with the Council's popular National Environmental Methods Index (NEMI, <http://www.nemi.gov/>) and joins sensors and biological methods as recent additions to this growing resource. The user interface is designed to support a variety of queries. Some may be driven by basic water resources questions like "How do I compare the nutrient concentrations at two sites?" or "How

do I look for patterns in macroinvertebrate data?" Or users may want to query "Statistical NEMI" (as it is called by the workgroup members) to find information on the latest methods used to evaluate temporal trends. The information in the database will include links to guidance documents and website, downloadable software, and more. Users will also have the option of providing their own method to the database.

Statistical NEMI will be demonstrated during the Tuesday afternoon session "*Understand, Restore, and Protect Our Waters: National Water Quality Monitoring Council Programs, Initiatives and Products*" at the 8<sup>th</sup> National Water Monitoring Conference. Also, be sure to stop by the Council information booth to get a first-hand look and provide feedback on the prototype.

For more information, contact: Doug McLaughlin, [douglas.mclaughlin@wmich.edu](mailto:douglas.mclaughlin@wmich.edu), (269) 276-3545, Leslie McGeorge, [Leslie.McGeorge@dep.state.nj.us](mailto:Leslie.McGeorge@dep.state.nj.us), (609) 292-0427 or Dan Sullivan, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov), (608) 821-3869.

## Integrating Volunteer Monitoring – A New Council Resource

Connecting volunteer monitoring groups to existing and new resources as well as to each other and with other monitoring efforts is the purpose of the Council's new volunteer monitoring webpage. The page provides an explanation of why volunteer monitoring is effective and important, provides information and links to the USEPA's National Directory of Volunteer Monitoring Programs and volunteer monitoring list serve, highlights volunteer monitoring success stories, links to a "how-to" library compiled by the National Water Resource project, and lists other key resources. Coming this spring, the website will include an interactive map of where volunteer monitoring programs are located. The website is also the home of the brand new e-newsletter *Volunteer Monitoring News* and provides a link to archived issues of the *Volunteer Monitor Newsletter*. Please visit this site at: <http://acwi.gov/monitoring/vm>, and provide your success story, program location or just share with others.

Contributed by: Barb Horn, [Barb.Horn@state.co.us](mailto:Barb.Horn@state.co.us), (970) 382-6667.

**NATIONAL WATER QUALITY MONITORING COUNCIL**

Working Together for Clean Water

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### Volunteer Monitoring

Across the country, trained volunteers are monitoring the condition of their local streams, lakes, estuaries and wetlands. EPA encourages all citizens to learn about their water resources and supports volunteer monitoring because of its many benefits. Volunteer water monitors build community awareness of pollution problems, help identify and restore problem sites, become advocates for their watersheds and increase the amount of needed water quality information available on our waters.

Volunteer Water Quality Monitoring of lakes, reservoirs, rivers, streams, estuaries, bays, groundwater, wetlands and other water body types is an active movement and essential aspect in protecting and restoring America's water bodies. Hundreds of programs exist nationwide, all unique, creating a community through our collective efforts. Volunteer Monitoring (VM) is not free, however it can be made more cost effective to obtain data and information through a strategy involving collaboration among interested parties, including academia, federal, state, local and tribal governments, private industry, citizens, and others.

## Collaboration Through Partnerships

### Federal Partnerships

#### Federal Agencies Join Forest Service in Improving Water Inventories, Monitoring, and Assessments



Aquatic macroinvertebrates could serve as a core indicator of overall watershed health. If information on select core variables and indicators is collected and analyzed using national or regional approaches in sample design and protocols and are consistent with partner programs, then the majority of data could be scaled up to answer regional or national questions and shared with partners for assessments across organizational boundaries and surrounding landscapes.

*(Photo courtesy of USDA Forest Service)*

The USDA Forest Service is engaging Federal agencies in a work group to conduct a needs evaluation for improving aquatic inventories, monitoring, and assessments (IM&A). The work group comprises over 20 experts from the Forest Service and partner agencies, including the Bureau of Land Management, National Park Service, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Geological Survey. Other government partners are encouraged and welcome to participate on the work group, including representatives from State agencies.

The work group is conducting a gap analysis that will describe the current situation and desired conditions of aquatic IM&A in the Forest Service and identify next steps in coordination with partners. Findings from this and other evaluations will inform the development of a strategy to meet the Forest Service's IM&A needs; the findings will also help in designing phased implementation actions to test initial improvements to the IM&A system. IM&A improvements will focus on regional and national-scale management questions and business requirements, and will take an all-lands conservation approach with partners.

The aquatics IM&A gap analysis team is initially focusing on improving monitoring of stream temperature and aquatic macroinvertebrates since these are related to climate and watershed condition. These are widely collected by field units and partners and will serve as templates for evaluating protocols, allocating targeted and probabilistic sample sites, improving data storage, and developing assessment tools. After procedures have been formulated for stream temperature and aquatic macroinvertebrates, the effort is expected to expand to other nationally relevant aquatic attributes.

**For additional information, contact:** Tracy Hancock, [tchancock@fs.fed.us](mailto:tchancock@fs.fed.us), (202) 205-1724; Brett Roper, [broper@fs.fed.us](mailto:broper@fs.fed.us), (435) 755-3566; or Katherine Smith, [klsmith@fs.fed.us](mailto:klsmith@fs.fed.us), (703) 605-4184.

## Data Collection and Analysis Continue on Four Major National Aquatic Resource Surveys

Working with partners in the States, Tribes, and other Federal agencies, USEPA is leading a series of statistically representative surveys of the Nation's waters. These National Aquatic Resource Surveys (NARS) report on water conditions using core indicators and standardized lab and field methods. The NARS help improve the States' capacity for water quality monitoring and assessment, and many States are conducting State-scale "intensifications" of the surveys. NARS data analysis and/or design workshops will be held at the National Water Monitoring Council conference in Portland, Oregon, this May.

Significant progress was made in all four assessments in 2011:

- **The National Wetlands Condition Assessment (NWCA):** During the summer, field crews completed sampling on nearly 1,200 wetland sites. This first-ever survey of the ecological integrity of the Nation's wetlands will help inform the public about wetland health and identify the most common causes of wetland degradation. Scientists collected data on vegetation, algae, soils, algal toxins, riparian habitat, water chemistry, and pesticides. When paired with information produced by Fish and Wildlife Service describing the quantity or extent of the Nation's wetland resources, the NWCA will give wetland managers a stronger basis for developing effective protection strategies. A report is scheduled for 2013.
- **The National Coastal Condition Assessment (NCCA):** Scientists conducted lab analyses of NCCA samples collected during the summer of 2010 and implemented quality assurance procedures for reviewing data. Indicator workgroups have developed threshold recommendations. Findings will be presented in the fifth NCCA report, which will include an assessment of marine and coastal waters as well as an evaluation of changes since the fourth NCCA.
- **National Rivers and Streams Assessment (NRSA):** Scientists completed data analysis and quality assurance validations for all of the NRSA samples collected in 2008 and 2009. A report will be issued in December 2012 that will include:
  - an evaluation of changes in the condition of small streams compared to the finding of the 2004 Wadeable Streams Assessment, and
  - an assessment of the current condition of streams and large rivers (including the Great Rivers such as the Mississippi and Missouri Rivers).NRSA also began research and planning for the 2013-2014 sampling season.
- **National Lakes Assessment (NLA):** With sampling scheduled to begin in 2012, USEPA and the States completed the planning phase for the second NLA. The team finalized the probability design, identified potential reference lakes, finalized methods, and produced technical support documents. The team also developed draft electronic field forms that field crews will use to more quickly and efficiently submit data to the NARS Information Management Center.



Field crew collects fish as a part of the National Rivers and Streams Assessment. (Photo courtesy USEPA)

For more information on the surveys, visit: [www.epa.gov/aquaticsurveys](http://www.epa.gov/aquaticsurveys).



## Regional and State Partnerships

USEPA National Aquatic Resource Surveys and USGS National Water Quality Assessment Programs to Collaborate on a Regional Study in the Midwest



Scientists from the USEPA National Aquatic Resource Surveys (NARS) and the USGS National Water Quality Assessment (NAWQA) Program are planning a regional collaborative study to demonstrate how water-quality and ecological assessments by these two national-scale programs can be integrated. Other collaborators will include the USGS Columbia Environmental Research Center (CERC) and several States in the Midwest region, through their participation in NARS. Water quality and ecological sampling are planned for the Midwest in 2013, to coincide with the next major sampling period of NARS, and the implementation of the next decadal cycle (2013–2022) of the NAWQA Program. The Midwest area was selected because it is one of the largest and most economically important agricultural regions in the country, has high levels of pesticide and nutrient use and occurrence, is important for contaminant loading to the Mississippi River and Gulf of Mexico, has several major urban areas, and is a high priority at the State and national levels in assessing the effects of agricultural management practices on water quality and aquatic ecosystems. Generally, NAWQA will provide contaminant stressor information, NARS will provide ecological community data, and CERC will conduct chronic and acute laboratory toxicity assessments along with targeted field toxicity assessments. Details of this regional collaborative study are being refined through ongoing discussions among all collaborators.

**For more information contact:** Peter Van Metre, [pvanmet@usgs.gov](mailto:pvanmet@usgs.gov), (512) 927-3506 or Mike Yurewicz, [mcyurewi@usgs.gov](mailto:mcyurewi@usgs.gov), (703) 648-5811.

Review of Water-Resources Information in the Northeast - Midwest Region to be conducted by the Northeast – Midwest Institute



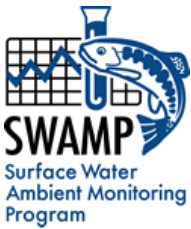
Adequate and up-to-date information is critical to the development of decisions that protect the 18 member Northeast-Midwest state's water resources. Public concern over possible effects of large-scale development activities, such as hydraulic fracturing, agricultural practices, and urbanization on water resources, raises an important question: What can and do we actually know about these valuable water resources and their vulnerability to development activity given the state of our region's water monitoring?

The Northeast-Midwest Institute (NEMWI), in a cooperative agreement with USGS, will review the region's existing water resource information specifically for its ability to inform decision-makers on new stressors to the region's water resources and potential ways to mitigate them. The project will begin with an assessment of water quality and quantity data necessary to address questions associated with shale gas extraction and nutrient enrichment. Assessments will identify any critical deficiencies in the region's available water data, including activity at the federal, state and local levels, and propose monitoring strategies for filling those gaps.

This project will pave the way for a water information source that is responsive to decision-makers' needs as they consider policies regarding urban, agricultural and industrial development.

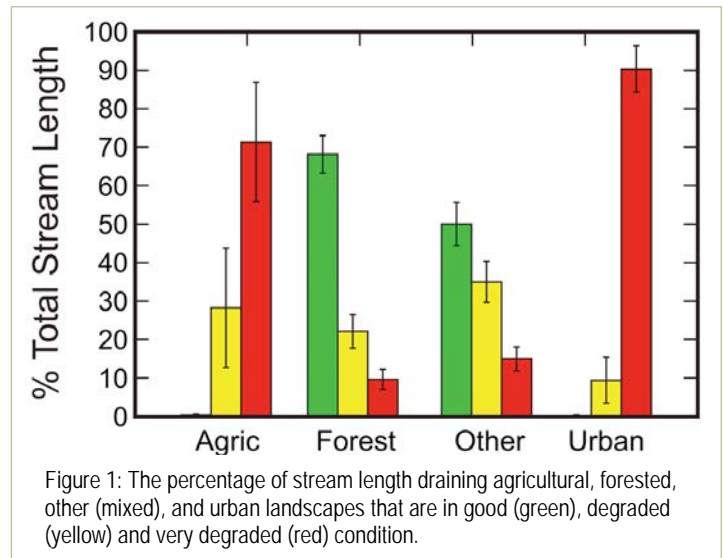
**For more information about NEMWI, visit:** <http://www.nemw.org/>, or this project, contact: Elin Betanzo, Senior Policy Analyst at the Northeast-Midwest Institute, [ebetanzo@nemw.org](mailto:ebetanzo@nemw.org).

### Assessing the Biological Condition of California's Perennial Streams



The Perennial Streams Assessment (PSA) is a comprehensive, long-term monitoring program to assess the biological condition of California's perennial streams (streams that flow year round). This collaborative effort is administered by the Surface Water Ambient Monitoring Program (SWAMP) – a partnership including the California State Water Resources Control Board, California Department of Fish and Game, and U.S. Environmental Protection Agency.

PSA surveys found 50% of the wadeable perennial stream length in California to be in relatively good biological condition, while about 22% is in very degraded biological condition. Land use appears to be a strong determinant of stream condition (Figure 1). Nearly all the streams in urban and agricultural watersheds are in poor biological condition. Streams draining agricultural areas tended to have high nutrient levels, chloride levels, and conductance. In addition, almost all of these streams exhibited some form of habitat disturbance, both instream and riparian. Urban streams had high levels of nutrients and very high levels of chloride. Habitat degradation was common in most urban streams where instream habitat was especially degraded. Forested areas had far better water quality and much less pervasive habitat degradation than either agricultural or urban areas. Although the PSA was not designed to determine cause and effect, there are clear and strong associations between habitat quality and biological condition.



The PSA program uses a probabilistic sampling design – a statistically valid random sampling of sites – to represent the perennial streams of California. This design permits scientists and natural resource managers to infer conditions for large geographic regions with a relatively small investment of resources. The sampling methodology incorporates measurements of the biological, chemical, and physical characteristics of the aquatic environment. Benthic macroinvertebrates (BMIs) – small, bottom-dwelling aquatic organisms that are visible to the naked eye – are used as indicators of biological condition. BMIs were chosen as indicators for this program because there are well-established scientific methods for sampling and identifying them and because a variety of existing tools (such as Indices of Biological Integrity and Observed/Expected models) use BMIs data to evaluate biological condition. These tools produce an easy-to-interpret numeric score for a particular site that reflects the biological condition compared to counts of many individual organisms in a sample from a site.

For more information, go to: [http://www.waterboards.ca.gov/water\\_issues/programs/swamp/reports.shtml#bmp\\_assess](http://www.waterboards.ca.gov/water_issues/programs/swamp/reports.shtml#bmp_assess), or contact: Lori Webber, [lwebber@waterboards.ca.gov](mailto:lwebber@waterboards.ca.gov), (916) 341-5556.

## Fire as a Wetland Indicator?

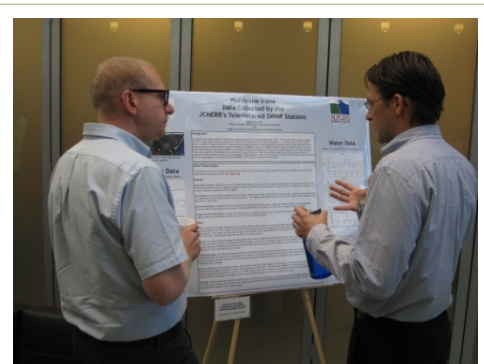
Arizona isn't the first place most people think of when the word "wetlands" is mentioned. Much of the southern part of the state is a desert. However, the middle of the state is very mountainous and can get as much rain as Wisconsin, up to 40 inches per year. Most of Arizona's perennial streams and wetlands are in this part of the state.

In June 2011, the Arizona Department of Environmental Quality (DEQ) was scheduled to sample 11 wetland sites near Alpine, Arizona, as part of the National Wetlands Condition Assessment (NWCA). On May 29, 2011, the Wallow Fire started. By early June, it was the largest fire in Arizona history. All of Arizona's wetland sites were within the perimeter of the fire, which decimated the mountaintops but left the wetland sites selected for the NWCA largely unscathed. Although a relatively wet monsoon season caused the DEQ's study sites to flood, debris flows and sediment deposits were not problematic in the headwater area of Boneyard Creek and associated wetlands (see photo).

Access to the area was delayed due to the fire. After lengthy discussions with Apache-Sitgreaves National Forest officials, DEQ personnel were finally able to conduct sampling at the designated sites in September 2011. Other than daily thunderstorms, the actual sampling was relatively easy. The Natural Resources Conservation Service (NRCS) provided expertise for the soil sampling and a contracted botanist from Tetra Tech made short work of the vegetation protocols.

**Contributed by:** Jason Jones, Arizona Department of Environmental Quality, [jdj@azdeq.gov](mailto:jdj@azdeq.gov), (602) 771-2235.

## Highlights from New Jersey's 2011 Water Monitoring Summit



Participants in the 2011 NJ Summit exchange information on monitoring.

On December 1<sup>st</sup> and 2<sup>nd</sup>, 2011, the 8th New Jersey Water Monitoring Summit was held at the NJ Department of Health & Senior Services' new Public Health, Environmental and Agriculture Laboratory facility. The Summit was co-sponsored by the NJ Department of Environmental Protection (NJDEP), the NJ Water Monitoring Council (NJWMC), and NJ's volunteer monitoring Watershed Watch Network. During the two-day meeting, 140 members of the State's ambient water monitoring community came together to exchange information and participate in training. There were 43 platform and eight poster presentations on a wide spectrum of topics including the new Barnegat Bay Monitoring Initiative, continuous monitoring sensor applications, monitoring and assessment of lakes, stormwater, private wells,



and stream critters, Marcellus Shale natural gas monitoring, monitoring to support water quality restoration and innovations in managing water data and accessing water information. Hands-on training focused on meter calibration and stream biota identification. Attendees included representatives from federal and state government, interstate agencies, environmental and regional planning commissions, academia, watershed associations, county and local health departments and improvement authorities, utilities authorities, consulting firms, environmental non-profit groups, NJ's AmeriCorps watershed ambassadors, as well as the press.

**For more information, including the agenda, presenters' bios/abstracts and presentations, visit:**

[http://www.state.nj.us/dep/wms/2011\\_summit.htm](http://www.state.nj.us/dep/wms/2011_summit.htm).

**Contributed by:** Leslie McGeorge, [Leslie.McGeorge@dep.state.nj.us](mailto:Leslie.McGeorge@dep.state.nj.us), and Alena Baldwin-Brown, [Alena.Baldwin-Brown@dep.state.nj.us](mailto:Alena.Baldwin-Brown@dep.state.nj.us), NJDEP and NJ Water Monitoring Council.



Arizona NWCA Team near Boneyard Creek during one of the afternoon thunderstorms. Note the burned trees along the edges of the stream. [Left to Right: Jason Jones and Lee Johnson, Arizona DEQ; Rob Wilson, NRCS; David Bleakly, Tetra Tech.] (Photo by Meghan Smart)

## Volunteer Monitoring News

### In Memory of Eleanor Ely — Longtime Editor of *The Volunteer Monitor* Newsletter



Ellie was one of the stalwarts of the volunteer monitoring movement, a prominent leader from its very beginnings. She was the editor and driving force behind *The Volunteer Monitor* – the voice of volunteer monitoring -- from 1990 to 2010, researching and writing many of the articles herself. *The Volunteer Monitor* was the critical link connecting the thousands of diverse members of the volunteer monitoring community. Ellie's persistence, patience, and unique editorial insight ensured that her publication was timely and timeless, an invaluable resource for the entire monitoring community. Most remarkably, Ellie translated the most arcane bureaucratic doublespeak or scientific technospeak into plain, clearly understandable English. She cared very much about the newsletter's technical and editorial quality, and was just as wholly dedicated to the volunteer monitoring movement itself; she knew more about individual volunteer monitoring programs, and their leaders, than any other person in the U.S. She was always eager to share her knowledge, experience, and connections with others, and to help forward the cause of volunteer environmental monitoring. Ellie also edited the *National Directory of*

*Volunteer Monitoring Programs* and proceedings of four national conferences, and wrote or edited a variety of other environmental and science publications.

In 2006, Ellie received the Elizabeth J. Fellows Award for outstanding achievement in the field of water quality monitoring, awarded by the National Water Quality Monitoring Council in recognition of her work as editor of *The Volunteer Monitor*.

Ellie passed away on January 26, 2012 after a four-year battle with ovarian cancer. Ellie will be remembered by so many for her gentle humor, her incisive mind, her remarkable writing and editing skills (her attention to detail was legendary among those who wrote articles for *The Volunteer Monitor*), her constant dedication to the volunteer monitoring community, her strength and courage in facing her illness, and most of all, for her wonderful friendship to those of us who had the privilege to work with her.

**Contributed by:** Alice Mayo, USEPA, [Mayio.Alice@epamail.epa.gov](mailto:Mayio.Alice@epamail.epa.gov), and Linda Green, URI Watershed Watch, [lgreen@uri.edu](mailto:lgreen@uri.edu).

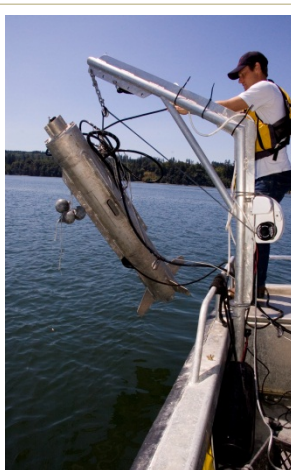
## Tribal Water Quality Monitoring

### Port Gamble S'Klallam Tribe: Monitoring Water Quality in the Puget Sound Area

The Port Gamble S'Klallam Tribe participates in several water quality monitoring efforts within Puget Sound. The tribe is one of many western Washington tribes partnering with local and state agencies to clean Puget Sound.

In Port Gamble Bay and northern Hood Canal, the tribe has overseen several water quality studies. The most recent effort is comprehensively monitoring the physical, chemical and biological aspects of the nearshore environment. The tribe used tow nets and beach seines, as well as a five-foot-long torpedo-shaped SONAR device, to gather water quality, fish size and fish population data.

The tribe also is studying contaminated soils found on Point Julia, its ancestral beach. According to Dave Fuller, the tribe's hydrogeologist, tidal surges move the contaminated soil into Port Gamble Bay.



Port Gamble S'Klallam Tribe habitat biologist Hans Daubenberger lowers a SONAR device into Port Gamble Bay. (Photo by Tiffany Royal)

The tribe is currently developing on-shore and nearshore clean up efforts and a monitoring plan.

The tribe routinely monitors dissolved oxygen (DO) levels in Hood Canal and Port Gamble Bay for the Hood Canal Dissolved Oxygen Program. DO levels have reached devastating lows over the past few years leading to fish kills in the canal. This partnership effort includes the University of Washington, Hood Canal Salmon Enhancement Group and Hood Canal Coordinating Council. The tribe and the Coordinating Council are also working to create a Hood Canal Pollution Identification and Correction program, bringing together various Hood Canal-based water quality programs and studies to build a comprehensive program that will address the canal's water quality issues.

**Contributed by:** Tiffany Royal, Northwest Indian Fisheries Commission (<http://nwifc.org/>), [troyal@nwifc.org](mailto:troyal@nwifc.org)

## The Yukon River Indigenous Observation Network: Local Knowledge with Global Implications



The Yukon River Inter-Tribal Watershed Council (YRITWC; <http://www.yritwc.org/>) is a consortium of 70 Alaskan Tribes and Canadian First Nations that live within the Yukon River Basin. Within the YRITWC, a Science Department was created as a direct result of observed changes and increased concerns about water quality by Indigenous peoples. Over the years, the YRITWC Science Department has developed the largest international Indigenous Observation Network (ION) in the

world. Over 100 environmental technicians have been trained by the YRITWC to participate in ION's efforts to effectively monitor and investigate their local environments with global implications.

Three projects that focus on water quality and permafrost monitoring are being done by ION in collaboration with the YRITWC and the U.S. Geological Survey (USGS). Starting with a detailed study by the USGS from 2001-2005, the ION database now covers over 10 years of historical water quality data in some locations. Water quality parameters such as pH, alkalinity, major ions, dissolved organic carbon, greenhouse gases, and water isotopes, have been collected at 45 sites during 2001–2010. The historical record and detail of this water quality study have led ION to become part of the Arctic Great Rivers Observatory project (<http://arcticgreatrivers.org/>) that compares discharge, water chemistry, and climate change among the great rivers draining into the Arctic Ocean.

In 2009, ION, YRITWC and USGS began monitoring the active layer of soil above permafrost at 20 locations throughout the Yukon River Watershed. Continuous (i.e., 30 minute data) soil moisture and temperature are recorded throughout the year at the surface and above the permafrost layer. Manual measurements of the active layer are taken during early fall of each year to monitor changes in thickness. Through this project, ION has become a major contributor to the Circumpolar Active Layer Monitoring Network.

The YRITWC recently developed a sewage lagoon monitoring and inventory program. By the end of this year, YRITWC will have inventoried the sewage systems of 47 communities and developed site-specific monitoring plans for a number of these communities.

These studies by ION contribute to an increase in local Indigenous knowledge about processes that effect water quality and permafrost in their communities. In addition, these local observations have contributed to the global understanding of climate change and ultimately its impacts on subsistence communities. In the future, ION will draw even more on the integration of Indigenous ecological knowledge with cutting edge scientific concepts and instrumentation to assess, mitigate and adapt to changing local environments.

**Contributed by:** Ryan Toohey, [rtoohy@yritwc.org](mailto:rtoohy@yritwc.org), Leah Mackey, [lmackey@yritwc.org](mailto:lmackey@yritwc.org), and Carol Thomas, [cthomas@yritwc.org](mailto:cthomas@yritwc.org), Yukon River Inter-Tribal Watershed Council; Paul Schuster, [pschuste@usgs.gov](mailto:pschuste@usgs.gov), and Nicole Herman-Mercer, [nhmercer@usgs.gov](mailto:nhmercer@usgs.gov), USGS.



Bryan, YRITWC Staff, teaching water sampling techniques to ION technicians. (Photo courtesy YRITWC Science website:

<http://www.yritwc.org/Departments/Science.aspx>)



Deborah filling water sample bottle, Ningliwak River, Chevak, AK. (Photo courtesy YRITWC Science website:

<http://www.yritwc.org/Departments/Science.aspx>)

## Monitoring the Health of the San Gabriel River Watershed

With over 1,236 miles of streams stretching from the San Gabriel Mountains to the Pacific Ocean, the San Gabriel River Watershed supports a population of more than 2.3 million people. Before 2005, monitoring in the watershed was largely uncoordinated, with numerous agencies independently collecting data from defined portions of the watershed—mostly around major discharges for permit compliance purposes—while much of the watershed was left unmonitored. Limited data comparability, redundancies among monitoring programs, and major data gaps resulted from this lack of coordination.



These deficiencies led to the development of a coordinated watershed monitoring program that integrates permit-mandated and ambient monitoring. The San Gabriel River Regional Monitoring Program (SGRRMP), formed in 2005, includes local, state and federal stakeholders such as the Los Angeles Regional Water Quality Control Board (LA Water Board), USEPA Region IX, the Sanitation Districts of Los Angeles County (LACSD), the Council for Watershed Health, and local municipalities. The monitoring framework addresses five key management questions:

1. What is the condition of streams in the watershed?
2. Are conditions at areas of unique interest getting better or worse?
3. Are receiving waters near discharges meeting water quality objectives?
4. Is it safe to swim?
5. Are locally caught fish safe to eat?

These questions provide the rationale for the design approach, selection of monitoring indicators, sampling frequencies, and appropriate data products. Monitoring is focused on collecting data that help managers make scientifically informed decisions. The monitoring design is also intended to be adaptive, able both to initiate follow-up studies as needed and to make necessary changes based on monitoring findings.

Since 2005, the SGRRMP has collected and analyzed bioassessment, chemistry, physical habitat, and toxicity samples annually at 127 random and targeted sites throughout the watershed (Figure 1). During summer months, *E. coli* samples are collected weekly at eight recreational swim sites and fish are collected from popular fishing locations and analyzed for Hg, Se, PCB's and DDT. All sample collection, analysis, and reporting follow rigorous, scientific protocols using a program-wide Quality Assurance Project Plan. After seven years, the SGRRMP has successfully shown that an integrated watershed monitoring program can provide context to these essential management questions, while saving money and improving monitoring efficiencies.

A comprehensive assessment of the first 5 years of monitoring is available in the San Gabriel River State of the Watershed Report.

For more information, visit: <http://watershedhealth.org/programsandprojects/sgrmp.aspx>

Contributed by: Kristy Morris, Council for Watershed Health, [kristy@watershedhealth.org](mailto:kristy@watershedhealth.org)

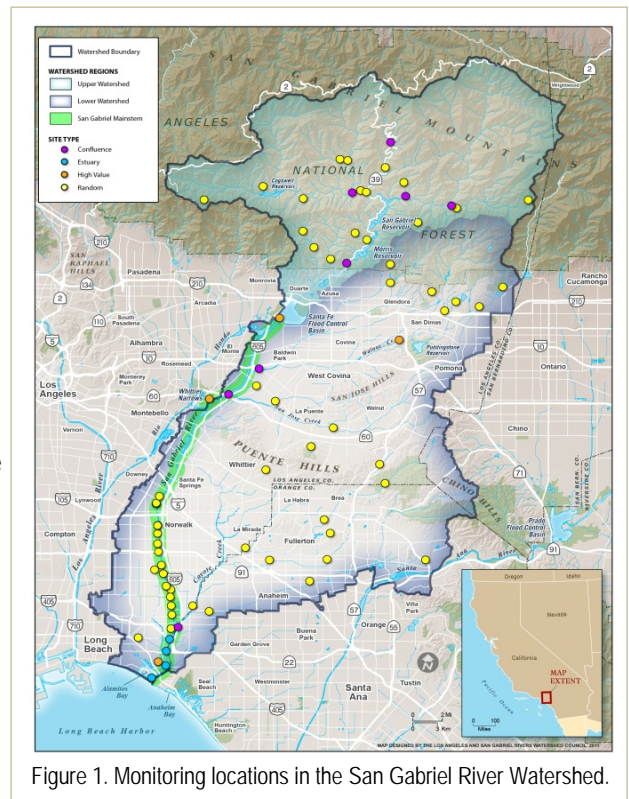


Figure 1. Monitoring locations in the San Gabriel River Watershed.

## Septic Systems Affect Coastal Water Quality

Fecal contamination of sensitive coastal waters, such as those used for recreation or shellfish harvesting, is a high-priority water quality issue. Septic systems in coastal areas can be a source of fecal contamination, particularly in areas with shallow groundwater and sandy soils. In eastern North Carolina, this risk is exacerbated by the high density of systems (>50% of residences) and episodic heavy precipitation events, which can lead to temporary or long-term failure of septic systems. These failures become visible as surfacing effluent, patterns of grass growth, and contamination of nearby ditches and streams (Figure 1).

Remediation and management efforts are often hindered by the inability to determine relative contributions from diffuse nonpoint sources such as septic systems. Researchers at the University of North Carolina's Institute of Marine Sciences recently completed a series of investigations<sup>1,2</sup> to understand microbial transport through functioning, failing, and repaired onsite wastewater treatment systems, or septic systems, and the implications for water quality in adjacent coastal waters.

Tracer studies and monitoring of microbial water quality were conducted at four homes in eastern North Carolina: two with functioning septic systems and two with failing systems. Water samples collected in wastewater, groundwater around the leach lines, and nearby ditches and coastal receiving waters were analyzed for fecal indicator bacteria (*Escherichia coli* (*E. coli*) and enterococci) and tracers (Rhodamine WT dye and the viral tracer MS2). The properly functioning septic systems were effective in treating wastewater in all conditions. In the area around the failing septic systems, groundwater quality was adversely affected, especially after a rain storm, but effects on the nearby coastal surface water were minor.

After one of the failing septic systems was repaired to local health department standards (Figure 2), a new round of sampling was done, to determine if the repairs had been effective. Results indicated that groundwater microbial water quality had improved. In surface water, however, the persistence of fecal indicator bacteria suggests that the septic system was not the only fecal contributor to adjacent coastal waters.

The MS2 coliphage results from this study use both older culture-based methods and newer molecular methods. These two methods often agreed, but the molecular assays were not as sensitive as the culture-based methods. The survival and transport of bacterial, viral, and dye tracers differ for the two methodologies, suggesting that a suite of tracers is needed to fully assess the effectiveness of septic systems in reducing microbial contaminants, especially in proximity to coastal waters.



Figure 1. Surfacing fluorescein dye around leach lines and in ditches indicate the failing of septic systems.



Figure 2. Repairing the failing septic system.

**For additional information, contact:** Rachel Noble, [rt noble@email.unc.edu](mailto:rt noble@email.unc.edu), (252) 726-6841 x 150; Mussie Habteselassie, [mussie h@uga.edu](mailto:mussie h@uga.edu), (770) 229-3336; or Kathy Conn, [kconn@usgs.gov](mailto:kconn@usgs.gov). (253) 552-1677.

<sup>1</sup>Habteselassie, MY, Kirs, M, Conn, KE, Blackwood, AD, Kelly G, Noble RT. 2011. *Tracking microbial transport through four onsite wastewater treatment systems to receiving waters in eastern North Carolina*. *Journal of Applied Microbiology*, 111, 835-847.

<sup>2</sup>Conn, KE, Habteselassie, MY, Blackwood, AD, Noble, RT. 2011. *Microbial water quality before and after the repair of a failing onsite wastewater treatment system adjacent to coastal waters*. *Journal of Applied Microbiology*, 112, 214-22

## USGS and Chicago Park District to Study Lake Michigan Water Quality Near Chicago



A study of water quality conditions in the nearshore environment of Lake Michigan by the U.S. Geological Survey and the Chicago Park District began in January 2012. Water temperature and specific conductance probes were installed at several points along the shoreline to monitor stormwater runoff to the lake. The winter deployment of the probes was designed specifically to document periods when road salt applications and resultant snowmelt produce runoff with high specific conductance.

Another aspect of the project will attempt to determine if the lock that is designed to be a barrier between the Chicago River and Lake Michigan is successful in preventing river water from entering the lake when the locks are opened to allow boats to pass between the lake and the river ("lockages"). A pair of vertical water temperature/specific conductance strings (6 probes in the vertical water column) will be installed on both sides of the Chicago Lock. Water temperature, specific conductance, and bacteria levels in the Chicago River contrast sharply compared to the water conditions in the lake. The lock maintains water levels that are higher on the lake side so that any flow is from the lake to the river; however, the density contrast between the river and lake may result in river water moving into the lake during lockages. The possible exchange of water during lockages (on average, over 40,000 boats pass through the Chicago Lock every year) may have important water quality impacts to the nearshore lake environment.

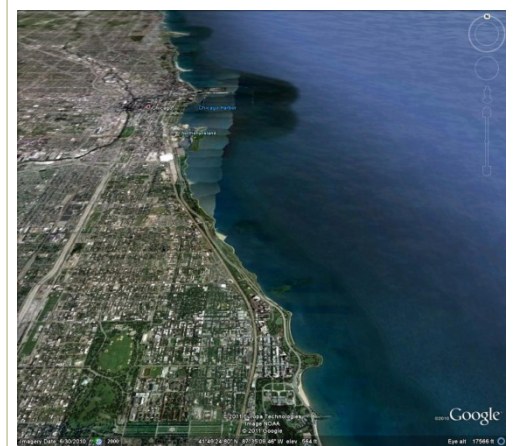


Figure 1. Google Earth image of the Chicago shoreline and a portion of the study area.

In July 2012, USGS and Chicago Park District staff will make a 26-mile longitudinal

coastline survey of the nearshore water quality using a manned boat outfitted with a multi-parameter water quality sonde synchronized to a GPS unit for location. Data from the longitudinal survey will be analyzed and used to guide sampling locations for additional water quality surveys with an autonomous underwater vehicle (AUV). The AUV (figure 2) can be programmed to "swim" along a pre-determined transect line, collecting a continuous timeseries of water-quality data in the flow-through sonde that is built into the nose of the AUV. The variation of water quality with depth will then be mapped by programming the AUV to "swim" the transect line while repeatedly diving and surfacing. Analysis of the water quality data with GPS position and depth will provide a 3-dimensional snapshot of the nearshore water quality environment and a bigger picture of water movement in the nearshore zone than traditional point sampling at specific beach locations (figure 3).

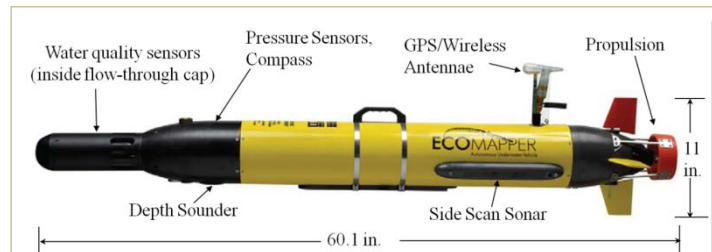


Figure 2. Autonomous underwater vehicle (AUV) for use in nearshore water quality surveys. (Note: AUVs, such as this YSI Ecomapper shown above, are available from a variety of manufacturers.)

This application of new tools and technologies will contribute to the basic understanding of processes in the nearshore environment and contribute to the management of Chicago beaches. This study builds upon a long-standing partnership between the USGS and the Chicago Park District to understand the nearshore environment of Lake Michigan in the Chicago area.

**Contributed by:** Jim Duncker, USGS, Illinois Water Science Center, [jduncker@usgs.gov](mailto:jduncker@usgs.gov).

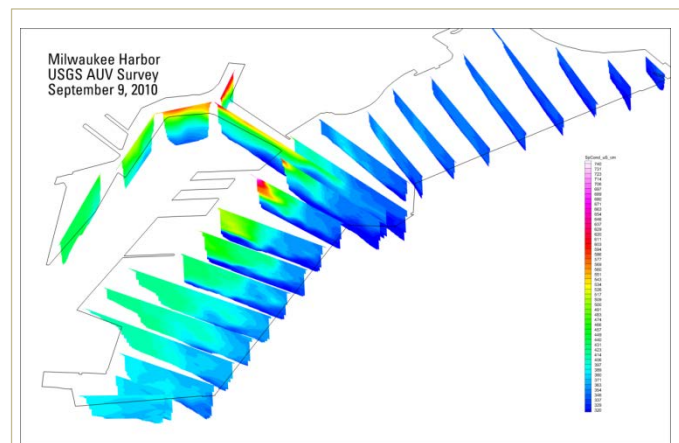


Figure 3. Specific conductance data collected in Milwaukee Harbor with autonomous underwater vehicle. A similar series of water quality transects will be collected along the Chicago shoreline in 2012.



## Workgroup Updates

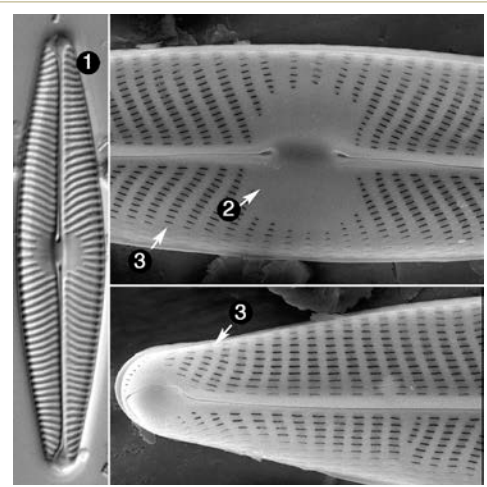
### News from the Water Information Strategies Workgroup

The Water Information Strategies (WIS) Workgroup continues to work on products that help inform decision makers on the value of water quality monitoring including a white paper on “Integrated Water Quality Monitoring of Our Nations Waters” and “What Your Boss Needs to Know About Water Quality Monitoring”. Additionally, the WIS workgroup began an effort on improving monitoring for spills and floods. Recent catastrophic, natural and human-made disasters have highlighted the need for monitoring programs to act quickly in response to these types of events. The WIS group is developing a page on the NWQMC’s web page dedicated to sharing valuable lessons learned and tips for agencies dealing with disaster monitoring. Anyone wishing to provide content for this webpage is encouraged to send information to the WIS chairperson. The WIS workgroup products mentioned above will be available at the NWQMC booth at the April 30<sup>th</sup> – May 5<sup>th</sup> conference in Portland, Oregon.

WIS workgroup calls are generally held the second Wednesday of the month at 11:00 ET. For more information, or if you wish to participate in these Workgroup calls, contact: Mary Skopec, [Mary.Skopec@dnr.iowa.gov](mailto:Mary.Skopec@dnr.iowa.gov), (319) 335-1579 or Peter Tennant, [ptennant@orsanco.org](mailto:ptennant@orsanco.org), (513) 231-7719.

## Tools and Technology

### Taxonomic and Ecological Resource for Diatoms Expands



The online guide includes detailed images such as this image of *Navicula lanceolata*, and key points for identification, literature citations and distribution. (Image courtesy of Marina Potapova)

With the support of the US Geological Survey National Water Quality Assessment program, the “Diatoms of the United States” surpassed the number of species planned for completion last year. As of January 2012, the site included 250 species pages (with over 500 pages in progress) covering an identification guide, images, literature and ecological information. Many species pages include geographic distribution and environmental response data. Although the ecological resource is directed at water managers, ecologists, scientists, students and the public, it is now also being used as a primary teaching tool in university courses and in public outreach for National Science Foundation projects.

State and tribal agencies are invited to be involved in this collaborative, community effort by including the taxonomic and ecological results from water quality surveys in this resource.

To access “Diatoms of the United States”, go to:

<http://westerndiatoms.colorado.edu> or for more information, contact: Sarah Spaulding, USGS, [sarah.spaulding@usgs.gov](mailto:sarah.spaulding@usgs.gov), (303) 492-5158.

### USEPA Releases Recovery Potential Screening Website to Assist Restoration Planners

USEPA recently released a new technical assistance tool for surface water quality protection and restoration programs: the Recovery Potential Screening website ([www.epa.gov/recoverypotential/](http://www.epa.gov/recoverypotential/)). Recovery Potential Screening is a user-driven, flexible approach for comparing relative differences in restorability among impaired waters. The website provides step-by-step screening directions, time-saving tools for calculating indices and displaying results, summaries of over 120 ecological, stressor and social indicators, a recovery literature database, and several case studies.

Practical applications include assisting watershed-level programs that need to focus on priority places due to limited resources; developing a 303(d) impaired waters list prioritized schedule; prioritizing implementation among many TMDLs; planning statewide nonpoint source control projects and restoration initiatives; helping develop strategies to meet performance tracking measures; identifying opportunities for synergy between healthy watersheds protection and impaired watersheds restoration; and revealing underlying factors that influence restoration success to improve programs. USEPA developed this technical method and website to assist states and others in complex planning and prioritizing activities, to provide a systematic and transparent comparison approach, and to help improve program results.

For additional information, contact: Doug Norton,  
[norton.douglas@epa.gov](mailto:norton.douglas@epa.gov).



## USGS Applications of In-Situ Optical Sensors for Water Quality Monitoring

The recent development of in-situ optical sensors and data collection platforms provides the opportunity to monitor changes in water quality on time scales of minutes to hours. In particular, optical sensors – those making measurements based on the interactions of light from a sensor with particles or dissolved constituents in water - are proving to be powerful tools for understanding and monitoring changes in nutrients and organic matter concentrations and loads in rivers and streams. Delivering the data in real-time also allows for early trend detection, helps identify monitoring gaps, and ensures timely information for science-based decision support related to drinking water quality, freshwater ecosystems, and human health.

The USGS is currently working with the broader community to advance the development and use of in-situ optical sensors to collect reliable and comparable water quality data in rivers and streams. Much of the recent effort has focused on nitrate and organic matter, both of which are significant issues for drinking water and ecosystems. Highlights of recent and ongoing USGS activities include:

- A joint USGS-CUAHSI workshop in 2011 on “In-Situ Optical Sensor Networks”, which was attended by 60 scientists and managers from government, academia and industry and has led to a number of key recommendations for further development and use;
- A pilot study funded by the USGS NAWQA program in 2011 to evaluate the feasibility and value of higher frequency (e.g. 15 minute) nitrate measurements in the Mississippi River and Potomac River watersheds;
- A forthcoming USGS Techniques and Methods report on the deployment and use of in-situ optical nitrate sensors in rivers and streams.



In-situ optical sensors being deployed in the Potomac River (Photo by Bryan Downing, USGS)

Collectively, these efforts are beginning to show the tremendous scientific value of in-situ optical data for water quality monitoring and research, as well as identifying the key steps to realizing the full power of in-situ water quality measurements for science and management.

For additional information, contact: Brian Pellerin, USGS California Water Science Center, [bpeller@usgs.gov](mailto:bpeller@usgs.gov), (916) 278-3167.

# National Monitoring Network

## Council Responds to President's Executive Order on National Ocean Policy



As part of President Obama's National Policy for the Stewardship of the Ocean, Our Coasts, and the Great Lakes, the National Ocean Council has released a draft Implementation Plan to address some of the most pressing challenges facing the ocean, our coasts, and the Great Lakes. The Plan describes more than 50 actions the Federal Government will take to improve the health of the ocean, coasts, and Great Lakes. In one of the milestones mentioned in the draft Plan<sup>1</sup>, the Council is charged with implementing the design of the National Water Quality Monitoring Network (Network). The Council is responding to this charge, led by its partners in USEPA, NOAA, and USGS, by reestablishing a workgroup to explore ways to advance the concepts and design of Network. The Council is seeking members for this workgroup; if you would like to become involved please let us know. Workgroup members are not required to be representatives of the Council.

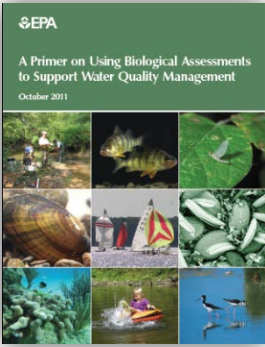
Current demonstration studies of the Network in San Francisco Bay, Lake Michigan and Delaware Estuary are being completed, and 2 additional demonstration studies are being implemented in 2012: one in Albemarle Sound, NC (contact: Michelle Moorman, [mmoorman@usgs.gov](mailto:mmoorman@usgs.gov), (919) 571-4013) and one in Puget Sound, WA (contact: Kathy Conn, [kconn@usgs.gov](mailto:kconn@usgs.gov), (253) 552-1677).

A panel session on "Advancing the implementation of a National Water Quality Monitoring Network for U.S. Coastal Waters and Their Tributaries" will be on Thursday afternoon at the 8th National Monitoring Conference.

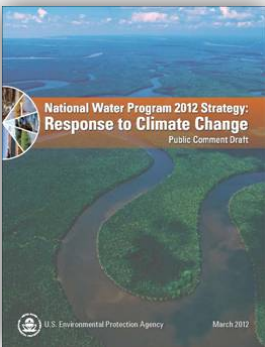
For more information, contact: Dennis Apeti, [dennis.apeti@noaa.gov](mailto:dennis.apeti@noaa.gov), (301) 713-3003; Bernice Smith, [smith.bernicel@epa.gov](mailto:smith.bernicel@epa.gov), (202) 566-1244; or Mike Yurewicz, [mcyurewi@usgs.gov](mailto:mcyurewi@usgs.gov), (703) 648-5811.

<sup>1</sup>See the *Draft National Ocean Policy Implementation Plan* at <http://www.whitehouse.gov/administration/eop/oceans> (p. 74, chapter "Water Quality and Sustainable Practices on Land", action 7 "Identify, seek to protect, and maintain high-quality near-shore ocean, coastal, and Great Lakes waters")

# Announcements



**New Release: USEPA's *A Primer on Using Biological Assessments to Support Water Quality Management (EPA 810-R-11-001)*.** This document serves as a primer on the role of biological assessments in a variety of water quality management program applications including reporting on the condition of aquatic biota, developing biological criteria, and assessing environmental results of management actions. The Primer provides information on new technical tools and approaches for developing strong biological assessment programs and on examples of application of biological assessment information by states and tribes. **The Primer can be accessed at:** [http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/biocriteria/uses\\_index.cfm](http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/biocriteria/uses_index.cfm). **For questions, or further information, please contact:** Susan Jackson, USEPA Office of Science and Technology, [jackson.susank@epa.gov](mailto:jackson.susank@epa.gov), (202) 566-1112.



**Open for Public Comment: Draft *National Water Program 2012 Strategy: Response to Climate Change*** – This draft strategy describes how USEPA's water-related programs plan to address the impacts of climate change and provides long-term visions, goals, and strategic actions for the management of sustainable water resources for future generations. The 2012 strategy builds upon USEPA's first climate change and water strategy released in 2008 and focuses on five key areas: infrastructure, watersheds and wetlands, coastal and ocean waters, water quality, and working with Tribes. It also describes geographically-based strategic issues and actions. USEPA will accept public comments on the draft strategy until May 17, 2012. **To read or submit a comment, visit:** <http://epa.gov/water/climatechange>.



**New USGS Publication: *Concentrations and annual fluxes of sediment-associated chemical constituents from conterminous US coastal rivers using bed sediment data*** – This paper estimates concentrations/annual fluxes for trace/major elements and total phosphorus, total organic and inorganic carbon, total nitrogen, and sulphur for 131 coastal river basins that represent a significant pathway for the delivery of natural and anthropogenic sediment-associated chemical constituents to the Atlantic, Pacific and Gulf of Mexico coasts of the conterminous USA. The list of estuaries identified by the ACWI/National Water Quality Monitoring Council (2006) for inclusion in a proposed National Water Quality Monitoring Network for US Coastal Waters were used in the site selection process for this study [See map in article on *Council Responds to President's Executive Order on National Ocean Policy*]. **Publication is available at:** [http://acwi.gov/monitoring/pubs/misc/FluxPaper\\_horowitz2011.pdf](http://acwi.gov/monitoring/pubs/misc/FluxPaper_horowitz2011.pdf). **For more information, contact:** Art Horowitz, [horowitz@usgs.gov](mailto:horowitz@usgs.gov), (770) 903-9153.

## National Water Monitoring News Editorial Board:

- Cathy Tate, U.S. Geological Survey, [cmtate@usgs.gov](mailto:cmtate@usgs.gov)
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- Dan Sullivan, U.S. Geological Survey, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov)
- Wendy Norton, U.S. Geological Survey, [wenorton@usgs.gov](mailto:wenorton@usgs.gov)

Layout by Kim Martz, U.S. Geological Survey, [kimmartz@usgs.gov](mailto:kimmartz@usgs.gov)