



## Working Together For Clean Water: 2011-2012 Council Highlights

Water issues are becoming more complex. Resources to monitor, assess, protect and restore our waters are tighter, and the demand for high-quality water continues to grow to support a complex web of human activities and aquatic ecosystem needs. The Council is a vehicle for bringing together the diverse expertise needed to develop collaborative, comparable, and cost-effective approaches for monitoring and assessing our Nation's water quality (<http://acwi.gov/monitoring>). The approaches are fundamental to the successful management and sustainability of our waters.



Council goals to improve data comparability and reliability; data management, assessment, sharing, and reporting; and collaboration are increasingly achievable as technology and expertise advance in data collection and exchange, assessment, and reporting. As a result,

the Council and its partners have made significant advances in its priorities, including data management and information dissemination; compatible web services; State and regional councils; volunteer monitoring; assessment and statistical tools; sensors and real-time monitoring; and integrated land-to-sea assessments through the Network. Multiple Council products and services are now available to help meet water needs across the Nation.



*Created in 1997, the National Water Quality Monitoring Council (Council) is a national forum for coordination of comparable and scientifically defensible methods and strategies to improve water quality monitoring, assessment and reporting. The Council promotes partnerships to foster collaboration, advance the science, and improve management within all elements of the water quality monitoring community. Vital to this role, the Council provides a voice for monitoring practitioners across the Nation and fosters increased understanding and stewardship of our water resources. The Council is chartered as a subgroup of the Advisory Committee on Water Information (ACWI) under the Federal Advisory Committee Act.*



**The Monitoring Framework**

## Council Workgroups

**Methods and Data Comparability Board (Methods Board)** – Provides a forum for evaluating and promoting methods that facilitate comparability among water-quality monitoring and analytical methods. (Contacts: Dan Sullivan, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov), (608) 821-3869 and April Dupre, [dupre.april@epa.gov](mailto:dupre.april@epa.gov), (513) 569-7019)

The **Aquatic Sensor Workgroup** is a subcommittee of the Methods Board that has focused on quality control and data management of sensor data. (Contacts: Dan Sullivan, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov), (608) 821-3869 and Chuck Dvorsky, [cdvorsky@tceq.texas.gov](mailto:cdvorsky@tceq.texas.gov), (512) 239-5550)

**Water Information Strategies Workgroup** – Defines and promotes strategies for monitoring designs; data management, access, and exchange; data integration and analysis; and information reporting to address water needs. (Contacts: Mary Skopec, [mary.skopec@dnr.iowa.gov](mailto:mary.skopec@dnr.iowa.gov), (319) 335-1579, Peter Tennant, [ptennant@orsanco.org](mailto:ptennant@orsanco.org), (513) 231-7719, 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) 292-1254, and Dan Sullivan, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov), (608) 821-3869)

**Collaboration and Outreach Workgroup** – Works to build partnerships that foster collaboration and communication within the water-quality monitoring community. (Contact: Cathy Tate, [cmtate@usgs.gov](mailto:cmtate@usgs.gov), (303) 236-6927, and Barb Horn, [Barb.Horn@state.co.us](mailto:Barb.Horn@state.co.us), (970) 382-6667)

**New Workgroups:** 1) A national collaborative network of reference watersheds for freshwater streams (see page 3) and 2) A workgroup to further implement the National Monitoring Network for Coastal Waters and Their Tributaries (see page 4).

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

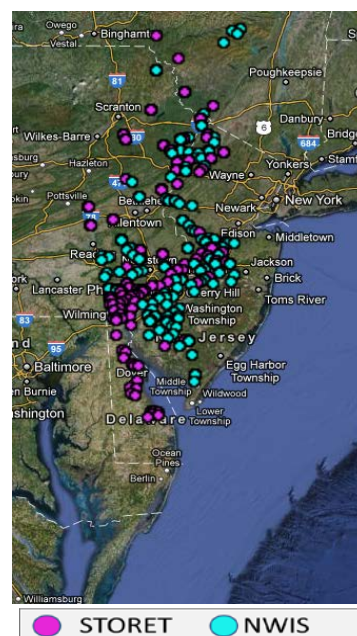
A single user-friendly web interface to water-quality data collected by Federal, State, and tribal partners to serve a wide range of prospective users including scientists, policy-makers, and the public has been released. Called the **Water Quality Portal**, it contains over 150 million public water-quality data records that can be accessed and downloaded in a variety of formats. The portal accesses chemical, physical, and biological data from the USGS National Water Information System (NWIS) and the USEPA Storage and Retrieval Data Warehouse (STORET).

Data collected by USGS and by States and Tribes (submitted to STORET) conform to a common nomenclature known as the Water Quality Exchange for biological and physical elements, chemical substances, chemical groups, sites, types, and sampling media developed through the Council. The **Water Quality Portal** uses this common nomenclature between NWIS and STORET to yield a merged dataset from both sources. A variety of filters including geographic and sample parameters are available in the portal to narrow down the retrieval dataset to sites and samples of interest. Output formats available through the portal include comma-separated, tab-separated, MS Excel, Keyhole Markup Language (KML), and Extensible Markup Language (XML).

The USGS/USEPA portal development activities began in 2003, resulting from an interagency *Agreement on the Management of Water Quality Data*, supported by the Advisory Committee on Water Information. The Council continues to sponsor development of the **Water Quality Portal's** user interface, web services, and compatibility with popular mapping tools. The portal is also designed to support additional data sources that are integrated with the Water Quality Exchange.

Visit the **Water Quality Portal** on the Web at [www.waterqualitydata.us](http://www.waterqualitydata.us).

(Contacts: Nate Booth, [nlbooth@usgs.gov](mailto:nlbooth@usgs.gov), (608) 821-3822, Charles Kovatch, [kovatch.charles@epa.gov](mailto:kovatch.charles@epa.gov), (202) 566-0399, and Mike Woodside, [mdwoodsi@usgs.gov](mailto:mdwoodsi@usgs.gov), (615) 837-4706).



Map output from the **Water Quality Portal** showing stream sites where nutrient samples have been collected in the Delaware River Basin since January 2011. The merged dataset includes both NWIS and STORET sites.



## Council to Establish a National Network of Reference Watersheds for Freshwater Streams



A unique national network of pristine and minimally disturbed watersheds is the focus of a new Council effort to address the need for reliable long-term data and information from watersheds

that are minimally disturbed by human activities. The collaborative, multipurpose design will emphasize chemical, physical, and biological aspects of water quality and integrate, to the extent possible, with existing networks. Membership in the network would be voluntary and open to interested individuals and institutions. Outcomes and benefits include: a database of high-quality observations that can be used to establish background conditions for select hydrologic variables and water-quality measures; a benchmark for understanding environmental stressors on aquatic communities; internet access to real-time data and annual data summaries and syntheses that are responsive to current environmental issues; and increased efficiency of monitoring through improved coordination and collaboration. More information at:

[http://acwi.gov/monitoring/workgroups/wis/National\\_Reference\\_Network\\_for\\_Streams.pdf](http://acwi.gov/monitoring/workgroups/wis/National_Reference_Network_for_Streams.pdf) (Contact: Bill Wilber, [wgwilber@usgs.gov](mailto:wgwilber@usgs.gov), (703) 648-6878 and Jeff Deacon, [jrdeacon@usgs.gov](mailto:jrdeacon@usgs.gov), (603) 226-7812).

### Aquatic Sensor Workgroup (ASW)

The ASW expects to submit its recommendations for sensors data elements to the Advisory Committee on Water Information prior to the 8<sup>th</sup> National Monitoring Conference. This has been a complex effort, and collaboration and input from numerous groups has been key. The AWS has also worked closely with USEPA in support of its goal to include sensors time-series data in a future iteration of its WQX water-quality database.

A partnership between the Council, the Alliance for Coastal Technologies, and USEPA has resulted in a web portal that integrates sensor information with NEMI (see <http://www.nemi.gov> and <http://www.act-us.info/>). The sensor workgroup including representatives from all sectors: Federal, State, and local governmental entities and academia have worked alongside organizations that manufacture freshwater sensor manufacturers.

Other products developed through the sensor partnership are available, including a checklist for users related to calibration and record keeping to ensure that data are of known and documented quality; a deployment guide to assist in siting

and maintaining sensors in the field; the draft data elements (or metadata) for sensors; and a glossary of terms. A website (<http://watersensors.org/>) has been built to help disseminate this information and as a clearinghouse of information on emerging sensors information. (Contacts: Dan Sullivan, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov), (608) 821-3869 and Chuck Dvorsky, [cdvorsky@tceq.texas.gov](mailto:cdvorsky@tceq.texas.gov), (512) 239-5550).

### National Environmental Methods Index

The National Environmental Methods Index (NEMI), in its 12<sup>th</sup> year as one of the Council's flagship products, is an online resource of laboratory methods and field protocols, including more than 1,100 methods for chemical, biological, and physical monitoring (see <http://www.nemi.gov/>). NEMI continues to evolve; new this year is a web portal with access to sensor information and statistical data (see below). (Contact: Dan Sullivan, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov), (608) 821-3869).



### Water Quality Statistical and Assessment Methods Online Database Available Soon!

An online searchable clearinghouse of methods to analyze water quality data and help support water quality assessments has been announced by the Council's Water Quality Statistics and Assessments workgroup. 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 macro-invertebrate 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 methods to the database. (Contacts: 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 and Dan Sullivan, [djsulliv@usgs.gov](mailto:djsulliv@usgs.gov), (608) 821-3869).

### Council Hosts Its 8<sup>th</sup> National Monitoring Conference – Water: One Resource – Shared Effort – Common Future

A centerpiece forum for communication and collaboration among the monitoring community is the Council's biennial national conference. The 8<sup>th</sup> National Monitoring Conference in Portland, Oregon includes more than 870 water practitioners from all backgrounds. This national forum provides an exceptional opportunity for Federal, State, local, tribal, volunteer, academic, private, and other water

stakeholders to exchange information and technology related to water monitoring, assessment, research, protection, restoration, and management, as well as to develop new skills and professional networks. For the first time, the Council's conference and River Network's National River Rally are coordinating an overlap day (May 4th) with mutually developed themes and presentations geared toward fostering improved collaboration between government and nonprofit groups working together for clean water ([www.rivernetwork.org](http://www.rivernetwork.org)). (Contacts: 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 and Alice Mayio, [Mayio.Alice@epamail.epa.gov](mailto:Mayio.Alice@epamail.epa.gov), (202) 566-1184).

### 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:

<http://acwi.gov/monitoring/vm> and provide your success story, program location or just share with others. (Contact: Barb Horn, [Barb.Horn@state.co.us](mailto:Barb.Horn@state.co.us), (970) 382-6667).



### 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 released a draft Oceans Policy Implementation Plan

(<http://www.whitehouse.gov/administration/eop/oceans>) to address some of the most pressing challenges facing the ocean, our coasts, and the Great Lakes. In one of the

milestones mentioned in the draft Plan, the Council is charged with implementing the design of the National Water Quality Monitoring 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 the National Monitoring Network (Network). The Council is seeking members for this workgroup; if you would like to become involved please let us know. (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).

Current demonstration studies of the Network in San Francisco Bay, Lake Michigan and Delaware Estuary are being completed, and two 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).

### The Council Continues to Reach Out to the Water Monitoring Community by:

Publishing the bi-annual online issues of *National Water Monitoring News*, highlighting recent activities of the national, State, regional, and tribal councils, watershed partnerships, and volunteer monitoring groups; projects, publications, tools, findings or announcements of interest to the water monitoring community. (<http://acwi.gov/monitoring/newsletter/>).

Hosting *webinars* representing a wide range of topics and audiences including State and regional councils, volunteer and tribal monitoring, sensors, NEMI, data exchanges, data elements, and much more!

*Supporting* the creation and sustaining of partnerships among the water monitoring community, including State, regional, and tribal councils, as well as watershed groups and alliances through webinars and organizing workshops at the National Monitoring Conference. (Contact: Cathy Tate, [cmtate@usgs.gov](mailto:cmtate@usgs.gov), (303) 236-6927, Barb Horn, [Barb.Horn@state.co.us](mailto:Barb.Horn@state.co.us), (970) 382-6667).

### Additional information on Council activities

can be found at the Council website, <http://acwi.gov/monitoring/> or contact the Council Co-Chairs, Susan Holdsworth, USEPA, [holdsworth.susan@epa.gov](mailto:holdsworth.susan@epa.gov), (202) 566-1187 and Mike Yurewicz, USGS, [mcyurewi@usgs.gov](mailto:mcyurewi@usgs.gov), (703) 648-5811.