National Water Quality Monitoring Council
Water Information Strategies Workgroup Meeting
Webinar https://doilearn.webex.com/tc
April 4, 2013

Attendees: Andy Fayram, Dave Neils, Dave Chestnut, Dave Fuller, Eric Host-Steen, Jeff Deacon, Jim Dorsch, Mike Higgins, Steve Wolfe, Greg Pettit, Barb Horn, Susan Holdsworth, Mike Yurewicz, Wendy Norton, Monty Porter, Rob Ragsdale, Jason Jones, Jane Caffrey, Leslie McGeorge, Jeff Thomas, Cathy Tate

1. National Network of Reference Watersheds –
    i. Outreach to States – help states understand the purpose of the network, value in participating in the network and potential issues that may arise. Update from Jeff Deacon
        1. Starting small and focusing on water chemistry. Will not lose sight of biological data (phase 2).
        2. Mike Y. mentioned the USGS biological database – BioData (available now, but the next phase will be to display the non-routine data – including NARS?). BioData is limited to USGS collected data.
        3. Challenge for Portal to hit BioData and WQX? Can we get a presentation of the new BioData system? How does it integrate with STORET?
        4. Original NNRW vision was to work with states to get an inventory of reference sites. New vision: work with states to get ideal reference sites. States input metadata to prevent a duplication of effort. NNRW will create its own site metadatabase. Site file will relate to the Portal. STORET doesn't require identification of reference sites (does have project weighting field). NARS sites have a tag (hand-picked and screened sites).
        5. BioData primarily NAWQA data (20+ years of data). Relaxing this to include the other protocols – will likely increase the volume of data captured.
        6. Jeff showed an update on the data compilation project. The eastern half of the US will be completed in April 2013. The western states will be approached for data later this year. During the compilation, USGS is asking for data not routinely entered into other datasets (STORET) and finding good data sets. USGS is asking for data providers to flag a site if it has ever been considered a reference site.

7. **Action Items:** Jeff Deacon will send Mary the 2-page summary and the desired requirements document for develop a 1 paragraph elevator speech for state representatives. The state representatives will talk with their counterparts in their regions (Jason Jones, Monty Porter, Greg Pettit have volunteered. Leslie suggested Martha Clark Mettler provide the information to ACWA).

2. Water Quality Indices Questionnaire
   i. Report on Status from Leslie McGeorge (see update report attached below).
   ii. Leslie requested additional participants for the survey. The following have volunteered:
      1. Monty Porter (OK) – Biological, Lakes, TSI indices
      2. Greg Pettit (OR) – Environment Canada, Washington have indices that he will get to Leslie.
      3. Steve Wolfe (FL) in FL the index doesn't just communicate the result of water quality, but is the determining factor to judge water quality.
      4. Jeff Thomas (ORSANCO). BMI, Fish, Water Quality and Draft Periphyton index.
      5. Andy Fayram: WI DNR indices plus volunteer index.
      6. Barb Horn – Leslie/Mary will get Barb language to send to the volunteer list serv requesting information on volunteer indices.
      7. Greg Pettit – indicated that Oregon calculates indices for volunteers.
      8. Leslie McGeorge – NJ hired a consultant to translate the volunteer data into the State metrics.
      9. Barb Horn noted the need for states to communicate their requirements for biological data (what taxa level are id's needed).
      10. Susan – NARS integrated indices (send questions to Sarah Lehman). Susan noted that the individual resource classes have indices for BMI, Fish Veg, etc. Coastal Waters have an integrated WQI for clarity, N, P, D.O. and an overall score.
      11. Greg P – A toxics index is being developed for Oregon. Susan H. noted that Larry Willis is also developing a toxics index.
      12. Mary S. – consider adding a watershed disturbance index (see Region 7 effort).
      13. Monty Porter – recalls an inventory of MMIs assembled by EPA (Wayne Davis? check with NABS). Susan will track down the survey with OST.

14. Susan H. recommended adding a question "Are you in the process of developing an index?" Leslie will add this question in order to get feedback on the future of index development.

iii. **Action Item:** Add Susan's question to the survey, "Are you in the process of developing an index?"

iv. **Action Item:** Finish gathering information.

v. **Action Item:** A webinar will be scheduled at a later date and a report for the Council website.

3. NEMI-SAMS – Defer discussion until Doug is available. Did not discuss the items below:
    i. Survey of State Statistical/Assessment Approaches. Jeff Ostermiller (UT) will have a staff person collect information: Update?
        1. What's new from previous assessment periods?
        2. What approaches are potentially ground-breaking and of interest to other states?
        3. Contact person for each state.
        4. Intern will create a list-serv (akin to ACWA's "The Wrap" to communicate with assessment staff).
    ii. Consumer Review of methods submitted.
    iii. Suggestion was made to place a link to the Water Quality Portal on the NEMI-SAMS site and a NEMI-SAMS link on the WQP.
    iv. Resolution for ACWI to support NEMI-SAMS. Doug will draft and submit for NWQMC review.
    v. Discussion of having Volunteer Monitoring Council provide review of NEMI-SAMS (what's useful, what else could be added).
4. Water Quality Portal/WQX
    a. Discussion on WIS role.
        i. WIS work with EPA to help promote State data entry to WQX/STORET Data Warehouse. Charles Kovatch
            1. Review the inventory of state data flows.
                a. Are data holdings reflective of actual data collection efforts?
                    i. Data types (chemical, physical, biological, etc.) What's missing (biological data?)
                    ii. Which Organizations are submitting data – what's missing?
            2. Discuss challenges regarding data flows.
                a. States have sophisticated 305b/303d tools that don't plug into Portal (California, Nevada).
                b. IT staffing issues

c. Washington – parameters don't translate well (Nevada – unionized ammonia).
d. Oregon – in the process of mapping data.
e. South Carolina – applications hitting our own database well.
f. Oregon – historical data issues – difficult to transfer into WQX.

3. Outline ways to improve the process for states.
    a. Conference Calls/Webinars
    b. ACWA – April 17th meeting (Monitoring Committee) to introduce the dashboard. May want to include the Portal on the August ACWA agenda. Target 305b/303d coordinators.
    c. MAP Workgroup – Self Assessment Tool (more specific questions regarding data flows?)
    d. State and Regional Water Quality Monitoring Councils – get the word out.
    e. Work with the Water Science Center directors – they may be able to help with this effort.
    f. River Basin Commission representatives.
4. Goal for 2013 – what can we accomplish?
    a. Increase the amount of state data reported.
    b. **Action Item:** Create a subcommittee: Charles Kovatch, Mike Y., Barb H., Mary S., Dwayne Young, others?

ii. *Parking Lot*: Nate Booth suggested the concept of a Monitoring Marketplace that can identify data needs and data collection capacity through the Portal (holdover from November '12 meeting).

5. WIS
    a. **Action Item**: Mary will send out a Doodle Poll to set WIS call date and time.
    b. *Parking Lot*: Review of Workplan (see attached at the end)
    c. *Parking Lot*: Capacity Building for WIS
        i. Keep past Council members involved in workgroup activities.
        ii. Utilize staff and other state partners in workgroups as a way to build for succession planning and building capacity for workgroup activities.
        iii. **Action Item**: Create list of contacts (former membership).
6. Parking Lot Topics and Issues (from previous meetings).
    a. Communicating Your Message and/or Connecting Monitoring to Policy
    b. Program and Monitoring Integration

i. "Toward an Integrated Approach to Assessing our Nation's Waters Discussion Draft for the Water Information Strategies Workgroup Meeting February, 2011".
    1. Highlight some examples of this integration at other scales (state and volunteers/others).
    2. Capacity Building – extend our technical capacity to other groups to integrate with other groups (WWTP, volunteers, agriculture groups).

c. Compile Tool Examples
    1. State Tools (examples – Iowa, California)
    2. Beach Act Example
    3. EPA's "My Environment" information.

d. What Your Boss Needs to Know (Gary K.).

e. Monitoring Effectiveness of BMPs
    i. Monitoring of green infrastructure effectiveness in reducing wet weather flows and improving ambient water quality?
    ii. More Active Participation of NRCS. Mike Y. and Susan follow-up per Steering Committee Discussion.
    iii. Future WIS Call.
        1. Nancy Mesner University of Utah (?) – Manual for Monitoring for BMP Effectiveness
        2. State Models of 319 Monitoring (Webinar – Gary, Neil and Jeff).
    iv. Work more closely with National Nonpoint Source Monitoring Program.

f. Monitoring for Spills & Natural Disasters (Mary, Susan, Jeff O., and Chris Piehler)
    i. Monitoring Spill White Paper

7. Data Sharing – Rick Hooper Data Sharing – Rick Hooper
    i. **Action Items**:
        1. Webinar to demo HydroDesktop -- completed
        2. Rick will write a Fact Sheet
        3. Rick is willing to work with States to make our data "discoverable". Pilot a State (IA and SD – borehole data)

National Water Quality Monitoring Council

Water Information Strategies Work Plan

Draft 9/13/2012

Background:

The WIS workgroup defines and promotes strategies for monitoring designs; data management, access, and exchange; data integration and analysis; and information reporting to address water needs.

Goals:

1. Increase the visibility of the Water Information Strategies workgroup products and activities.
2. Develop tools/products/strategies to assist agencies, organizations or other entities with integrating data, sharing information and reporting information.
3. Build capacity for WIS and plan for succession of team members.

Actions:

1. Conduct 6-8 webinars a year. The webinars will serve as a forum for showcasing WIS workgroup products, sharing successful approaches on "water information", and recruiting new workgroup members.
    a. Schedule (calls will be the second Wednesday of the month at11:00 EST unless otherwise noted).
        i. September 2012: Water Quality Report Cards (Warren Kimball, MassDEP)
        ii. October 2012: SMART Monitoring (Warren Kimball, Mass DEP)
        iii. November 2012: Oregon Water Monitoring Summit (Aaron Borisenko, Oregon DEP)
        iv. January 2013: Arc Hydro Desktop (Rick Hooper, CUAHSI)
        v. February 2013: N/A
        vi. March 2013: No webinar (NWQMC meeting)

vii. April 2013: Reporting Tools (Aaron Borisenko, Oregon DEP)
viii. May 2013: Web-based Reporting Tools (Mary Skopec, Iowa DNR)
ix. June 2013: Monitoring for Floods/Spills (USGS)
x. July 2013: No webinar (NWQMC meeting?)
xi. August 2013: What Your Manager Needs to Know (Gary Kohlhepp, Michigan DEP)
xii. On-deck webinars without a date:
    1. Water Portal
    2. Analysis of continuous water quality monitoring data in the context of water quality criteria (OR/UT).
    3. Best Management Practice Effectiveness (Nancy Mesner, UT)

2. Integration of Water Data
    a. Finalize white paper and post on the NWQMC website
    b. Compile examples of successful integration for web
    c. Provide link on website for other examples to be submitted ("share your example here"….)

3. Monitoring for Floods and Spills and Droughts (Severe Weather)
    a. Develop a portion of the NWQMC website to serve as an outlet or resource for agencies, entities working on flood or spill monitoring issues. Include examples of FAQs, Tips and Lessons Learned from other partners.
    b. USGS has begun a working group (floods only?) and WIS will coordinate with USGS as they develop standard procedures or protocols.
    c. Define issues needing further attention (such as improving laboratory report time, interpreting short-term health and/or environmental data, communicating with the public and decision makers, etc.)
    d. Drought Health Issues - Harmful Algal Blooms, etc.
    e. Event Response Monitoring
        a. http://water.epa.gov/scitech/datait/databases/wcit/index.cfm

4. Water Quality Portal
    a. Coordinate with WQP team to have WIS involvement in defining the next steps or goals for future Water Quality Portal development.
    b. Provide feedback to the Water Quality Portal development team (Nate Booth) including areas for focus and prioritization of activities.
    c. Conduct quarterly meetings with the WQP team. Respond to work plan elements from the WQP team.

5. What Your Manager Needs to Know about Water Quality Monitoring
    a. Develop Fact Sheet to Share with Managers
        i. Define audience and potential other audiences, such as legislators, watershed groups, other programs {TMDL, 319}).
        ii. Define message(s) (including "Monitoring is a core activity and for states, needed to meet requirements in the CWA".)
        iii. Provide powerpoint "talking points" for message.

6. WIS Capacity Building
    a. Increase the number of "general interest" webinars and use the attendance list as a way to recruit new WIS members.
    b. Keep past Council members involved in workgroup activities.
    c. Utilize staff and other state partners in workgroups as a way to build for succession planning and building capacity for workgroup activities.
    d. Create list of contacts (former membership, webinar attendees).
    e. Documenting Duties for WIS chair, committee members; provide email lists, history of activities and functions, work plans.

7. Update Webpage Information
    a. Remove outdated information (National Water Quality Indicators)
    b. Link to Webinar information noted above.

8. National Environmental Methods Index – Statistical and Assessment Methods Search (NEMI_SAMS) prototype

a. Hold conference calls with WQSA workgroup to develop a plan for advancing the prototype, including populating the database

Task	WIS Action Items/Tasks	FY13 Q1	FY13 Q2	FY13 Q3	FY13 Q4	FY14 Q1	Ongoing
1	Webinars						
2	Integration of Water Data						
3	Monitoring Floods/Spills/Drought						
4	Water Quality Portal						
5	What Your Manager Needs to Know						
6	Capacity Building						
7	Web Page Information						
8	NEMI-SAMS						

Water Quality Indices and Report Cards Summary

The NJDEP-Water Monitoring and Standards Division with the guidance and input of the National Water Monitoring Council's Water Information Strategies Workgroup have created a questionnaire to gather information regarding the use of composite water quality indices and report cards for communicating results to managers and the public. The goal of the questionnaire is to evaluate the use of water quality indices, the parameters used, how the overall index was developed and how the information is displayed graphically. Currently we have eight participants that have submitted completed questionnaires (Table 1).

The following is an ideal example of the type of information we are seeking : The South Carolina's Estuarine and Coastal Assessment Program (SCECAP) uses a composite water quality index in "The Condition of South Carolina's Estuarine and Coastal Habitats" technical reports. The water quality index combines several parameters: dissolved oxygen, fecal coliform bacteria, pH, and a Eutrophic Index composed of total nitrogen, total phosphorus, and chlorophyll a. These parameters are integrated to give an overall water quality index score which can be displayed using GIS to disseminate water quality information to managers and the public.

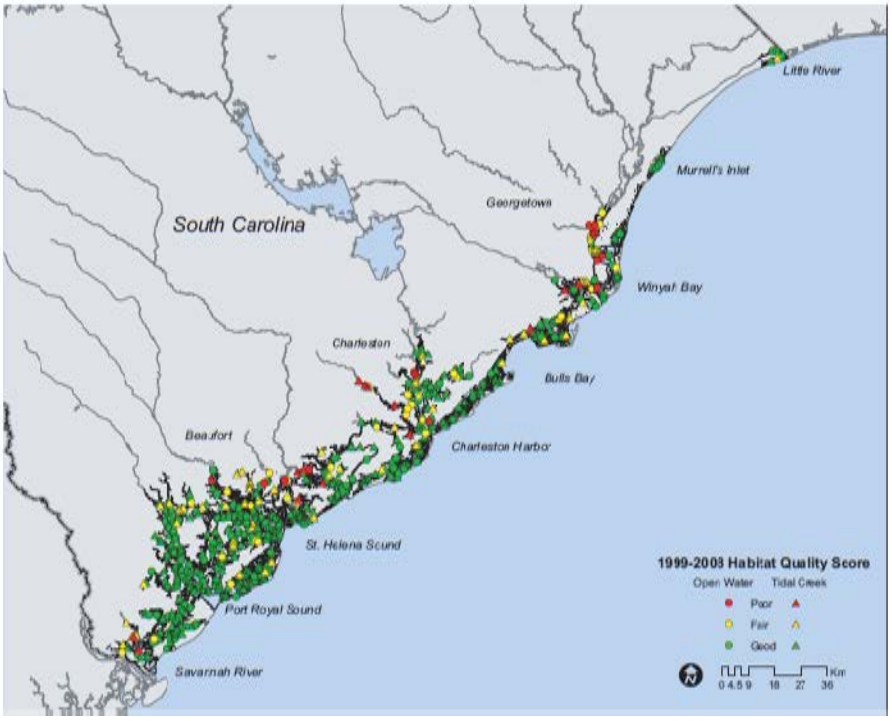

Figure taken from: Berquist, D.C., R.F. Van Dolah, G.H.M. Riekerk, M.V. Levisen, S.E. Crowe, D.E. Chestnut, W. McDermott, M.H. Fulton, E, Wirth, and J. Harvey. 2011. The Condition of South Carolina's Estuarine and Coastal Habitats During 2007-2008: Technical Report. Charleston, SC: South Carolina Marine Resources Division. Technical Report No. 106. 64 p.

Table 1. List of participants that submitted questionnaire responses.

Participants of Water Quality Indices Questionnaire

	Organization	Assesment Tool	Area	Waterbody type	Parameters	Contact
1	South Carolina Dept. Health & Environmental Control	Water Quality Index	South Carolina Estuary and Coastal Habitats	Coastal tidal rivers and bays	Chemical Physical Biological	David Chesnut
2	Iowa DNR	Water Quality Index	Iowa	Iowa rivers and streams	Chemical	Mary Skopec
3	Oregon Department of Environmental Quality	Water Quality Index	Oregon	Freshwater streams	Chemical	Lesley Merrick
4	Massachusetts DEP	Report Card	Massachusetts	Freshwater streams	Chemical Physical Biological	Warren Kimball
5	Florida Department of Environmental Protection	Multiple biological indices	Florida statewide	Freshwater streams, rivers,lakes, wetlands	Chemical Physical Biological	Joy Jackson
6	USGS (CT)	National Water-Quality Assessment (NAWQA)	New England Coastal Basins	Coastal Rivers	Chemical Physical	Karen Beaulieu
7	Vermont DEC	Vermont Lake Scorecard	Vermont	Lakes	Chemical Physical Biological	Neil Kamman
8	New Jersey Pinelands Commission	Multiple-indicator ecological-integrity scores	NJ Pinelands	Pinelands streams and impoundments	Chemical Physical Biological	Sarah Smith

Water Quality Indices Questionnaire

A. Chemical, Physical , Microbiological Composite Indices

1. Does your organization use any composite water quality indices for chemical, physical and/or microbiological water column parameters?

   If so, what parameters comprise the index (e.g. DO, TN, T, fecal coliform), and for what water body types? (e.g. estuarine waters, streams, lakes)
2. What were the primary objective(s) in developing this index?

3. How was the index developed and what entities were involved? Was there a public, stakeholder or scientific peer review process used in its development?

4. How is the index calculated, and what, if any, criteria/standards or thresholds are utilized in the index determination? Is there weighting used in the calculation?

5. Describe the monitoring program design and type of data used for the index (e.g. summer sampling probabilistic design, quarterly sampling fixed station network)

6. What are the primary uses of the index and who are the primary audiences? Is the index used to evaluate progress toward strategic environmental or sustainability goals for your state/region?

7. How and on what frequency is the index reported?

8. What are the primary strengths and limitations of the index? How successful do you believe the use of such an index has been?

9. Please provide website addresses or other references for the index.

B. Biological or Eutrophic Condition Indices

1. Does your organization use any multimetric, biological indices? If so, for what trophic levels (e.g. benthics, fish, phytoplankton) and what water body types (e.g. estuarine waters, streams, lakes)?

2. If you have more than one trophic level index, does your organization aggregate any of the biological indices (e.g. benthics and fish)? If so, which ones and how?

3. Do you use an index that combines any biological indices with other water quality and/or habitat data for a consolidated indicator? If so, which ones and how?

4. Do you use any indices of eutrophic conditions? If so, what parameters comprise the index and for what water body types?

5. If answers to any of above questions in Section B. is yes, please provide general information on objectives of the index, its development and use as in Section A above. If information in

Section A. is applicable to the Biological or Eutrophic Condition indices, please indicate as the same.

6. Please provide website addresses or other references for biological or eutrophic indices above.

C. Sediment Quality Indices

1. Does your organization use a sediment quality index? If so, for what parameters (e.g. sediment contaminants, sediment toxicity) , water types, and describe the index.

2. If yes, please provide general information on objectives of the index, its development and use as in Section A. If information in Section A. is applicable to the Sediment Quality Index, please indicate as the same.

3. Please provide website address or other references for sediment quality index.

D. Overall Condition Indices

1. Does you organization use an overall composite index, or combine any of the above into an overall condition index? If so, for what parameters (e.g. water quality, biological, sediment, and habitat) water types, and describe the index.

2. If yes, please provide general information on objectives of the index, its development and use as in Section A. If information in Section A. is applicable to to the Overall Condition Index, please indicate as the same.

3. Please provide website address or other references for Overall Condition Index.

E. Indices Contacts in Your Organization or Other Organizations

Are you aware of anyone else in your organization we should speak to regarding water quality indices? Are you aware of other organizations, particularly state/interstate/tribal organizations, that are using water quality indices? If so, could you provide contact information?

F. Would you like a copy of the Summary information from this water quality index questionnaire? If so, please provide email address.

Contact :

Leslie J. McGeorge, M.S.P.H.
Administrator
NJDEP, Freshwater and Biological Monitoring
PO Box 420 (Mail Code 35-01)
Trenton, NJ 08625-0420
Ph: 609-292-0427
Fax: 609-633-1095
leslie.mcgeorge@dep.state.nj.us

Brian Henning
Research Scientist
New Jersey Department of Environmental Protection
Bureau of Freshwater and Biological Monitoring
35 Arctic Pkwy, Trenton, NJ 08625
Office: 609-633-7012
Brian.Henning@dep.state.nj.us