



National Water Quality Monitoring Council November meeting, Crystal City, VA National Monitoring Network for Coastal Waters and Their Tributaries (NMN) Workgroup Meeting, November 29, 2012

Participants in person:

Suzanne Bricker, NOAA
Jeff Deacon, USGS
Glenn Skuta, MN Pollution Control Agency
Rob Ragsdale, NOAA
Steve Wolfe, FL DEP
Mike Yurewicz, USGS

Participants on the phone:

Jane Caffrey, UWF
Treda Grayson, EPA
Anne Hoos, USGS
Charlie Peters, USGS
Hugh Sullivan, EPA
Jeff Thomas, ORSANCO

Mike Yurewicz provided attendees at the meeting with a session handout that requested input from workgroup session attendees. This handout is amended at the end of these notes. Attendees (in person at the meeting and those on the phone) are asked to send their input to Mike Yurewicz (mcyurewi@usgs.gov) who will compile responses.

Steve Wolfe provided a presentation on the planned design of a tidal water-quality network for the Gulf of Mexico. The Powerpoint presentation will be posted on the Council website for the November 2012 meeting. The primary focus of the network is to monitor for nutrients, harmful algal blooms, pathogens, and mercury. The design is built largely around fixed-site sampling points augmented with continuous water-quality monitoring at key flow/transport sites. Different design approaches are used for shallow, near shore, and deep waters. Sampling transects run a gradient from shallow to deep waters.

Suzanne Bricker, Director of the National Estuarine Eutrophication Assessment (NEEA) Program, discussed linking inland nutrient flux to estuarine waters. Her PowerPoint presentation will be posted on the Council web page for the November 2012 meeting. Selected key points from her presentation are provided below.

NEEA focuses on 5 indicators of estuarine conditions for the 141 estuaries that are part of the Program: chlorophyll; macro algae; HABs; dissolved oxygen; and SAV loss. Effects of nutrient loads need to be assessed in regard to estuarine flushing patterns and mixing.

What are roadblocks for a national network?

- Funding - monitoring is not sexy but there is no substitute
- Human vision i.e. new monitoring systems should leverage/link to existing systems.

- Interagency collaboration – NOAA, EPA, USGS should work together, pursue joint funding.
- The political will to ensure that adequate water quality and load monitoring is funded, conducted and reported.

What are data gaps?

- Resolving human vs. natural loads of nutrients, also requires physics of the system, temporal dynamics, and source fluxes
- Uninterrupted high-resolution (sensor) timeseries that reveal temporal variation to help determine system perturbations
- Understanding of all sources, all pathways of delivery and delivery efficiency needed to develop criteria and set cost effective management goals/plans that can withstand scrutiny, including regulatory mechanisms such as trading programs.
- Linkage of nutrient loading to biological impact so criteria and management goals can be set (e.g. Is eelgrass the right indicator? What is the most sensitive indicator? What load is truly protective of not only eelgrass, but ecosystem integrity as a whole).
- The role of multiple stressors on the selected endpoint, or the suite of ecosystem services desired. Think climate change and how that affects nutrient impacts.

What kind of data are needed for better nutrient assessment in coastal environments?

Sources and amounts, efficiencies of delivery, physics of the system, temporal dynamics. This requires not only intensive monitoring, but good modeling of hydrology, hydrodynamics, water chemistry, and biological effects.

What data quality is needed?

The data have to be appropriate and high quality but, there is not much problem meeting data quality objectives (DQO) with today's technologies, so there's much promise and a lot of good things with ocean observing, and probes.

What is the key issue regarding data availability?

Accessibility is getting better with online data servers, but there are few systems that have adequate chemical, physical and biological monitoring in a multimedia source context (air-land-water).

There is no substitute for long-term monitoring

Additional comments:

- Monitoring - tells us what a natural system looked like, used to develop management goal end points and to negotiate management compromises with a realistic look at recovery potential.
- Management - should include consideration of environment, society, and economics.
- Indicator development – what is the ‘right’ indicator? The most sensitive indicator? How to be truly protective of the indicator, (e.g. seagrass) and ecosystem integrity as a whole.
- Intensive monitoring required - also modeling (hydrology, hydrodynamics, water chemistry, and biological effects) to evaluate the role of multiple stressors on endpoints, or desired ecosystem services E.g. climate change and how that affects nutrient impacts.
- Single number criteria - worked well for toxic chemicals, is poor model for nutrients.
- IOOS can help - there are 11 national regional associations all have data serving capacity. Investment in this system is efficient since the data will be added to current capacity / capability, and once so, it is available nationally.

Currently, Suzanne is collaborating with Anne Hoos and others in the USGS on a demonstration effort to assess how nutrient inland flux models, representing 2002 nutrient source conditions, can be linked with NOAA’s estuarine eutrophication assessments. This demonstration effort is being conducted for 45 – 50 estuaries on the eastern seaboard of the United States, and will be used to determine how future eutrophication assessments can be better linked with inland nutrient flux models.

Mike Yurewicz indicated that an updated inventory of freshwater NMN monitoring sites is being compiled. Several tables from the 2006 design report are being merged to provide an improved format to present relevant information about monitoring sites.

The remaining part of the session largely focused on suggested elements of a communication plan for the NMN.

- Steve Wolfe suggested we select a national-scale component of the NMN to provide a simple message about the benefits of the Network. This way we demonstrate the national scope of the Network, but focus on a simple message that would help better ensure the message is readily understood and appreciated.
- Rob Ragsdale indicated that the previous communication plan was largely focused on how can we link the Network with the IOOS community and their primary activities and interests. Our overall goal is to create the political will to support linked monitoring among different networks. To date, an emphasis by IOOS has been to point stakeholders to data sources, or provide data through data portals.
- Rob suggested we use previous or ongoing demonstration studies to showcase lessons learned and approaches to leverage resources. We need to be sure to close the loop with the demonstration studies and their respective IOOS association. For example, the regional IOOS associations could also provide their data inventory and link with the inland freshwater monitoring inventory being updated. It would be most effective to identify a focus issue, such as where are the highest priority monitoring needs, or where are the most critical monitoring gaps?

- Rob Ragsdale can facilitate having the NMN link in with monthly calls of the Directors of the 11 regional IOOS associations.
- Glenn Skuta thought that time-series monitoring data would be a shared interest between the inland monitoring programs and coastal monitoring programs.

At the close of the workgroup breakout session, Mike Yurewicz indicated a workgroup conference call will be scheduled in early 2013. In the meantime, notes from the breakout sessions, along with a draft workplan for 2013-2014 will be prepared and sent out.

National Monitoring Network Work Group Breakout Sessions
Session Handout to Document Input

Communication Plan:

What specific agencies or programs should be targeted?

Can you provide comments on the existing pamphlet, with an eye to update it for the targeted audience?

Please provide comments on the current NMN web pages.

What are suggested Council-sponsored webinars that we should conduct (provide specific topic and person to conduct the webinar)?

What are the primary topics that should be covered in briefings?

Please indicate specific suggested briefing opportunities and associated contacts.

How do you think we can effectively link nutrient loads or flux models to estuarine waters and eutrophication?

As part of an updated inventory of freshwater NMN monitoring sites, what additional information or attributes do you suggest we include in the spreadsheet? Who is the contact person to obtain the attribute information?