



Integrated Monitoring Networks Workgroup Meeting

August 19th, 2015, 1:00pm – 3:00pm

Meeting Materials:

<http://www.chesapeakebay.net/calendar/event/22934>

Participants: Doug Chambers (USGS WV), Doug Moyer (USGS VA), Ken Hyer (USGS VA), Kevin McGonigal (SRBC), Tom Parham (MDNR), Mindy Ehrich (UMCES/CBPO), Peter Tango (USGS/CBPO), Lea Rubin (CRC/CBPO), Mike Mallonee (ICPRB/CBPO), Mary Ellen Ley (USGS/CBPO), Tim Seiple (PNNL), Cindy Johnson (VADEQ), Ken Moore (VIMS), Dave Parrish (VIMS), Anna Mathis (Alliance for the Chesapeake Bay), Carl Friedrichs (VIMS), John Wirts (WVDEP), Lucretia Brown (DDOE), Mark Trice (MDNR), Tish Robertson (VADEQ)

MINUTES

Welcome, Introductions, Announcements (*Peter Tango – Workgroup Coordinator*)

- Integrated Networks Workgroup (INWG) Meetings will be held on the 3rd Wednesday of each month
- **Next Meeting:** Wednesday, September 16th, 2015

Workgroup Business (Peter Tango and Mindy Ehrich)

Peter [presented](#) the purpose and 2015 priorities for the INWG. Peter also discussed how this workgroup will operate and lead to producing recommendations for the integration of monitoring to enhance the Bay Program partnership's tracking of [Agreement](#) outcomes. There will be several activities guiding the work through this group such as recommendations from the Building Environmental Intelligence Phase II Report, Phase III activities, and STAC workshops.

Discussion

- **ACTION:** Add relevant reports (i.e. STAC, BEI, MRAT) and other background materials, to the Integrated Networks Workgroup webpage. (Lea Rubin)

Network Support (Peter Tango and Mary Ellen Ley)

Update on the grant status of Tidal and Nontidal Networks

This round of the grant cycle is complete. Peter asked "What are foreseeable challenges facing the integrity of the networks for the upcoming year?"

- *Nontidal Network Station – Shenandoah River at Millville, WV*
Sampling at this station will continue through the end of this federal fiscal year. Then, in order to continue, WVDEP will be working with a couple different groups to pull together funding for at least one more year of sampling. There are commitments from VADEQ and WVDEP to help support this station. The current funding available will not cover a full year of sampling. Additionally, MDNR is looking to potentially offer support, budget permitting.

The station at Millville adds to the trends analysis for the Potomac River. **QUESTION:** Is this a priority site for the Modeling Team?

- *SAV Monitoring Program*
There is work underway to close the funding gap for this year of SAV monitoring. Additionally, VADEQ is sponsoring the needed replacement of older instruments at VIMS.
- **QUESTION:** Do any participants have a position on renting vs. owning equipment?

Sampling success for NTN WY14

Mary Ellen presented an Excel file (can be found [here](#)) in which she computed the completeness of NTN sampling for WY 2014 using data pulled from the DUET database. Overall, the results look good, most of the missed sampling events are storm samples. It is unknown how that will affect the USGS WRTDS modeling, one of the end users of storm sampling data.

Discussion

- What are the quality of the storm samples being collected, regarding the range of hydrological conditions sampled?
 - This could be determined by looking at the span of samples collected during the beginning, middle, and end of high flow events.

NTN sites moving from PA to MD

A comparison study of PA and MD field and lab methodologies is underway in order to smoothly transition six stations previously sampled by PADEP to MDNR. The Data Integrity Workgroup is evaluating the impacts of the transition.

Monitoring Strategy for Using Continuous Monitoring Sensors (All)

By December 2016, STAR would like to have a monitoring strategy in place for using continuous monitoring (COMMON) technology for the Chesapeake Bay Program partnership. The workgroup discussed current examples of continuous monitoring in MD and VA.

Maryland Department of Natural Resources – Tom Parham and Mark Trice

- Continuous monitors are being used in MD for sentinel sites, providing data to support the management of oyster habitat, SAV, and fish health. For example, vertical profilers are deployed in Harris Creek to assess oyster habitat.
- The modeling group is interested in incorporating shallow water data from COMMON into the model.
- Walter Boynton at the Chesapeake Biological Laboratory is being supported by DNR to tease out as much information as possible from the shallow water COMMON data. For example, “what is the best way to deploy some of these resources for WQ criteria standards attainment assessments?”
- Vertical profilers work very well in some areas, though there are limiting factors (i.e. currents in the mainstem).

- COMMON also draws in research interest. Researchers are interested in choosing study areas that can be connected to high frequency COMMON data.

Virginia Department of Environmental Quality – Tish Robertson and Cindy Johnson

For the past few years, continuous data has been collected from tidal and nontidal waters.

- In tidal waters, insights from COMMON data is helping VADEQ make progress in understanding short term DO criteria.
- In the James River, VIMS researchers using Data Flow monitoring, in cooperation with COMMON data, has been used to fill gaps in exploring how algae and chlorophyll a are tied to water quality over long-term time scales (i.e. seasonally).
- COMMON is also being used to explore pH levels and the identification of eutrophication.
- In nontidal waters, VADEQ is using USGS COMMON data to look at DO, Temp, and pH, in a way that VADEQ hadn't been able to in the past. The body of data that USGS has gathered is extremely valuable in assessing towards the TMDL.
- COMMON however is expensive to maintain.

Virginia Institute of Marine Science – Ken Moore

Understanding of system dynamics has enhanced due to the collection of COMMON data at VIMS, for example:

- During Hurricane Isabelle, COMMON stations in the Mattaponi and Pamunkey rivers allowed VIMS to observe a real dip in DO as a function of the storm event.
- COMMON for mapping water clarity over sea grass beds has allowed VIMS to track the biofeedback from the grass bed. This is something that was perceived, however, now it can be measured.
- Ken Moore expressed interest in using COMMON data to improve the understanding of duration, intensity, and size of algal blooms, and how it's related to physical conditions and controllable factors.

U. S. Geological Survey: VA Water Science Center – Ken Hyer

Based on his experience with COMMON in Virginia, Ken Hyer [presented](#) some benefits and the many applications for COMMON stations, and thoughts for developing a strategic plan. Surrogate-Regression Models are being used to estimate sediment concentrations and consequently to generate sediment loads. His take home message is that COMMON is well developed for field parameters, though "one size doesn't fit all" the network needs a strategic plan to determine which monitors belong where. The applications are numerous, we need to determine the partnerships priorities for implementing COMMON.

Discussion

- Using the COMMON nitrate sensor, how low is the detection limit for Nitrate in fresh water?
 - The actual detection limits for fresh water and saltwater are available in the manufacturer's guide.
- Through our current monitoring networks the Bay Program partnership has realized the complexity of the estuarine systems. COMMON could provide a rich source of data.