



## Joint Data Integrity and Integrated Networks Workgroups Meeting

November 18<sup>th</sup>, 10am-3pm

Smithsonian Environmental Research Center (SERC) Mathias Lab

### Meeting Webpage:

<http://www.chesapeakebay.net/calendar/event/23027>

**Participants:** Bruce Michael (MDNR), Cindy Johnson (VADEQ), Mary Ellen Ley (USGS/CBPO), Lea Rubin (CRC/CBPO), Peter Tango (USGS/CBPO), Mindy Ehrich (UMCES/CBPO), Matt Carter (VADEQ), Mike Mallonee (ICPRB/CBPO), Claire Buchanan (ICPRB), Elisha Rubin (DOE), Caroline Donovan (UMCES), Kristen Hyer (MDNR), Jerry Frank (UMCE-CBL), Shala (DHMC), Cindy (DHMH), Doug Moyer (USGS), Joel Blomquist (USGS), Suzanne Doughten (ODU), Kevin McGonigal (SRBC), Anna Mathis (Alliance for the Chesapeake Bay), Nissa Dean (Alliance for the Chesapeake Bay), Leah Miller (IWLA), Ken Moore (VIMS), Amy Williams (PADEP), Bill Romano (MDNR), Hassan Misajadi (DNREC), Julie Vastine (ALLARM), John Wirts (WV)

### MINUTES

#### **Introduction to the New SERC Lab – Kristen Minogue (SERC)**

Kristen Minogue informed the group of the objectives for SERC and the elements of the new Mathias Lab that have made the building Lead Platinum Certified.

#### **Coordinated Split Sample – Mike Mallonee (ICPRB/CBPO)**

MDNR collects a 40-gallon water sample from a mainstem (station CB4.4) or tributary station (Near Blue Plains WWTP). A stirring mechanism is placed in the 40-gallon sample for the division of the water sample into 1-gallon homogenous split samples then distributed to the laboratories who participate in the split sample assessment. All 1-gallon samples are delivered to the labs on the same day that they are collected by MDNR. All the labs analyze the samples, and then submit the results to Mike Mallonee for comparison. The results of the split sample comparison are reviewed with all laboratories present at the Data Integrity meetings to assess consistency of the results.

- [Mainstem Split Sample Data](#) (August 2014-August 2015)
- [Tributary Split Sample Data](#) (September 2014-September 2015)

#### **MDL Calculation Procedure**

The workgroup reviewed their existing procedure for Method Detection Limits (MDL) for comparison.

#### **Method in Guidance Document**

#### **Discussion**

- How are labs calculating their MDL?
  - **OOD:** Will make a low nutrient sample that they will analyze every quarter.

- **DHMH:** MDL is calculated twice a year for a number of Iso-methods (i.e. Nitrate-Nitrite, Nitrate, and Ammonia), and other parameters are assessed once a year in three separate runs with a total of seven replicates.
  - **VADEQ:** Seven replicates, multiple times a year.
  - **CBL:** Is interested in continuing with the standard method documented in the Method Guidance Document.
- **ACTION:** Mary Ellen Ley will make edits to the Guidance Document to allow for all laboratory MDL calculation methods, to be discussed once EPA makes final calculation rule.

Mary Ellen shared the response she submitted to EPA regarding the February 19<sup>th</sup> Federal Register 40 CRF Part 136 – Clean Water Act Methods Update Rule for the Analysis of Effluent. The comments EPA received were all over the map, no changes to rule immediately, therefore labs should continue with current procedures.

### **Overview of Citizen Science and Nontraditional Partnership Cooperative Agreement – Peter Tango (USGS/CBPO)**

Peter introduced the new integration of citizen science and nontraditional partnership cooperative agreement to support the process of integrating further monitoring efforts into a partnership data base for development of decision-making products. The partnership recognizes the number of other groups in the Watershed that could contribute to the monitoring based on the scale of monitoring required to understand the restoration of the Bay. The citizen science and nontraditional partnership project team are participating in this meeting, and their approach is a combination of looking at the capacity of the groups out there, and opportunities for addressing specific partnership needs to enhance spatial or temporal needs of the partnerships.

#### **Discussion**

- Palmer paper concluded that there is a lack of monitoring to examine the effectiveness of restoration in the Chesapeake Watershed. A few grants went out to groups (i.e. MDNR took a look at BMP implementation projects) to examine the results of the Palmer paper in their regions. (contact: Bruce Michael)

### **3-Tier Framework for the Integration of Citizen Science and Nontraditional Partnership data into CBP Monitoring – Julie Vastine (ALLARM)**

Julie Vastine presented an introduction to the citizen science and nontraditional partnership project and the development of a 3-tier system for the integration of data into the CBP. It is important to have a framework in place to guide how the data can be used including metadata for data users and quality assurance/quality control. Julie presented a number of case studies to identify examples of citizen science groups who were able to inform management decisions and to show various uses for citizen science data. The first four months of 2016 will be used to develop a QAPP for the citizen science project; therefore the involvement with the DIWG will be extremely helpful.

#### **Discussion**

- Have you been able to compare citizen data to laboratory methods?
  - In PA, there is a consortium to provide laboratory assistance to groups. USGS lab reference samples are used to help test citizen science equipment and test kits.

- Each project partner has established a list of nontraditional partner and citizen science groups in their state. A survey will be sent out to these groups to identify methods and quality assurance procedures for these groups.
- The activity of volunteer monitors varies by state. James Beckley of VADEQ has done a wonderful job in VA and a great example to aspire to.
- Meeting participant (VIMS) interested in looking at factors affecting the condition of the Bay. What questions do the CBP monitoring networks want to answer, and how could this project be useful as a tool to answer these questions?
  - This project is designed to do just that.
- Data that was originally collected for one purpose, often serves other purposes later on. New purposes come when the value of the long-term record are recognized. Making data available is the value we can provide.
- When evaluating fracking in western MD, a citizens monitoring program (50+ individuals) was developed to increase the spatial intensity of the monitoring program. A program developed to meet a specific need of the state, and to look at specific targeted area.
- MD trust fund program exists to put resources into local government to fund on the ground restoration. If some of these targeted areas where restoration is being implemented, support for citizen science monitoring could be arranged.

### **Tier 3 Citizen Science and Nontraditional partnership Sampling Protocol for DO Criteria Assessment Data – Caroline Donovan (UMCES/IAN)**

There are some developed monitoring programs in tidal areas that could supplement DO data collected by the CBP monitoring networks. It is imperative to make procedures available to give legitimacy to the citizen science and nontraditional partner groups for regulatory purposes.

What documentation can the nontraditional project team bring to these groups for Tier 3 integration into CBP?

Examples of developed groups:

- Blue Water Baltimore (Harbor Alert interactive map seen here: [www.harboralert.org](http://www.harboralert.org))
- Chester River (MTAC procedures being used)

### **Nontidal Benthic Macroinvertebrate Indicator – Claire Buchanan (ICPRB)**

The benthic indicator will serve as one driver to determine how much standardization among state agencies is needed to merge the data into a Bay-wide indicator. ICPRB staff are developing a flexible approach to analyzing benthic data that accommodates different enumeration protocols (taxonomic levels, minimum cell counts, etc.). The benefits of this indicator are that it will be eco-region based and crosses state boundaries. The indicator is intended as a screening tool not as a regulatory tool.

This work also supports the Stream Health Outcome of the 2014 Chesapeake Bay Watershed Agreement. Claire explained how Stream Health had been assessed in the past, and how the analysis could be adapted to directly answer the question identified in the Watershed Agreement based on

“stream miles.” The indicator development team is interested in including more data (i.e. citizen science, rural areas) to better assess stream health in the entire Bay watershed.

#### Discussion

- The citizen science groups are currently monitoring to family level, will that work for this indicator assessment?
  - Family level is being used now, that level of identification works well for this assessment.
- As for citizen science, targeting areas that are lacking in BIBI data could be an objective of the citizen science and nontraditional partner data integration project.
- MD Stream Waders program could be a candidate dataset for integration into this indicator. MD also had MBSS sentinel sites for trend assessments.
- If the Bay Program wants a routine process for this, a discussion on continual funding is required.

#### **Maryland Phytoplankton Sampling and Enumeration Protocols – Bruce Michael (MDNR)**

Bruce Michael presented the proposed new design for the phytoplankton monitoring network and enumeration protocols for the reinstatement of a subset of the historical MD phytoplankton monitoring network. The map presented includes the historic sampling sites (black – CBP and yellow – MDNR). By cutting back on live samples on surface layers (MDNR sites), it is possible to reinstate the CBP historic sites. Out of the 16 new sites, 12 are historic CBP sites and four sites are for specific fishery priority monitoring. Four sites will be continuous monitoring sites. MDNR would like to begin sampling in 2016. Bruce is interested in instating a split sample program for phytoplankton monitoring between VA and MD for consistency purposes.

#### Discussion

- Depth integrated samples would be better for assessing trends within the water column. This method was used in the historic sampling
- Surface water samples can be compared to the satellite imagery.
- **ACTION:** Comments and suggestions should be sent to Bruce Michael and Kathy Wozniak.

#### **Nontidal WQ Network Sampling Procedure (final)**

The final version of the Nontidal Sampling Procedure is available on the CBP website. You can find it at the following URL address:

[http://www.chesapeakebay.net/channel\\_files/23027/chapter\\_5- ntn\\_11-12-15.pdf](http://www.chesapeakebay.net/channel_files/23027/chapter_5- ntn_11-12-15.pdf)

Also, this will be available with other chapters from the Guidance on the [Data Integrity Workgroup page](#) under Projects & Resources.

#### **Continuous Monitoring Strategy: Continued – Peter Tango**

Peter updated the group on discussions of continuous monitoring from the previous INWG meeting. The development of a strategy for continuous monitoring for the CBP Partnership Monitoring Networks is based in the following themes:

- Track watershed level improvements in water quality
- Assess impacts and success of restoration and management efforts.

Proposed additional theme:

- Provide high resolution data to better link occurrences in the watershed with estuarine response (focus of RIM monitoring).

Next steps:

1. Agree on themes for continuous monitoring or sub-themes
2. Define and defend suggested sampling design, available networks to leverage, strategy, and parameters

#### Discussion

- One of the first things seen when improvements occur in areas, is a shift in the variance. This has been observed in chlorophyll *a* levels, algal blooms, and water quality conditions. When areas are improving VIMS study has seen decrease in variance. Continuous monitoring would be very useful in measuring variance.
- **Pilot study in VA:** Based on support from VADEQ, USGS implemented a continuous monitoring site in **Ackokin (sp?)** Creek, a small urban watershed, and used additional funding from VADEQ to identify sites that would benefit from the implementation of continuous monitoring. The assessment questions “How representative is the mean daily discharge value of the discharge that occurs during the day?” Some of this new technology for higher frequency data collection could be used to better assess particular sites. USGS performed an assessment on all nontidal network sites, a report will highlight sites that are being misrepresented by a mean daily discharge and could benefit from continuous monitoring. Doug Moyer will share this work with the DIWG and INWG at a future meeting.