

## Continuous Monitoring Subcommittee

### IEC Shared Waters Workgroup and HEP Water Quality Work Group

October 14, 2021

Location: Remote Meeting

### **Minutes**

**Attendees:** Jim Ammerman (NEIWPCCLISS, james.ammerman@longislandsoundstudy.net), Michael Crowley (Rutgers/MARACOOS, crowley@rutgers.edu), Rosana Da Silva (HEP, rosana@hudsonriver.org), Chris Girgenti (Randall's Island, christopher.girgenti@randallsisland.org), Danielle Grunzke (US EPA, grunzke.danielle@epa.gov), Roop Guha (NJDEP, biswarup.guha@dep.nj.gov), Siddhartha Hayes (Hudson River Park River Project, jhayes@hrpt.ny.gov), Kay Howard-Strobel (UConn), Kelly Knee (RPS Ocean Science/MARACOOS, Kelly.knee@rpsgroup.com), Peter Linderoth (Save the Sound, plinderoth@savethesound.org), Matt Lyman (CT DEEP, matthew.lyman@ct.gov), Esther Nelson (EPA, nelson.esther@epa.gov), Nicole Petersen (BBP, npetersen@ocean.edu), Evelyn Powers (IEC, epowers@iec-nynjct.org), Dan Rearick (NEIWPCCLISS, daniel.rearick@dec.ny.gov), Melissa Sinisgalli (PVSC, msinisgalli@pvsc.com), Garret Stillings (US EPA, stillings.garrett@epa.gov)

**Next Meeting:** December 10, 2021 from 1:30-3:00pm

#### **Introductions and Agenda Overview**

Evelyn Powers welcomed the group and reviewed the agenda.

#### **QA/QC National Level Update**

Danielle Grunzke discussed EPA's Continuous Data Workgroup where federal partners are working to compile/create products to help monitoring and improve data assessment. The workgroup has focused on trying to address what is quality data and how to use continuous data for assessment purposes. Largely, this includes data management, data storage, and documenting data quality (QAPPs/SOPs). There are seven key quality assurance questions that the Workgroup is discuss:

1. Why should Organizations define a study purpose and need for continuous data prior to collection?
2. What accompanying documentation should be made available to evaluated and assess continuous data quality?
3. How do you ensure continuous data quality in your planning process?
4. How often should continuous monitoring equipment be maintained?
5. How can continuous data be screened to identify QA problems and are there considerations for addressing instrument drift or fouling-related drift?
6. What unique QA challenges apply to continuous data and how can problems be identified during the QA screening process after data is collected?
7. How can organizations ensure collected continuous data accurately represent the water quality of their waterbody of interest?

Danielle shared an internal index that Garret Stillings has been leading to capture citations on various topics, including monitoring procedures, maintenance, data review procedures, etc. The index sorts and links each citation, and although currently an internal document, EPA is anticipating this being part of a larger document and accessible outside of the federal partners. Any documents or publications from your agency or organization on continuous monitoring, please do send it to Garret and Danielle. There are currently limited sources from the region at this time. Esther Nelson added that there may be a document from NYSDEC that currently is not listed in the index. Roop Guha shared for the continuous DO assessment, NJ's Science Advisory Board who addressed a few questions in 2016: [https://www.nj.gov/dep/sab/NJDEPSAB-Continuous%20Monitoring%20of%20Dissolved%20Oxygen\\_012616.pdf](https://www.nj.gov/dep/sab/NJDEPSAB-Continuous%20Monitoring%20of%20Dissolved%20Oxygen_012616.pdf) and indicated that he can also share R scripts that NJ is utilizing with EPA. Mike Crowley indicated that he will shortly be showcasing IOOS and QARTOD, but there are a host of manuals linked there on everything from temperature to radar, and acoustics. Kelly Knee added that there is also python library that is accessible from the site. Danielle added that right now, EPA is focused on river and streams, but believes in not reinventing the wheel. Peter Linderoth shared the Unified Water Study QAPP: [https://www.savethesound.org/wp-content/uploads/2020/06/2020\\_UWS\\_QAPP\\_with\\_Addendum\\_Letter\\_04\\_21\\_2020.pdf](https://www.savethesound.org/wp-content/uploads/2020/06/2020_UWS_QAPP_with_Addendum_Letter_04_21_2020.pdf) and that the NERR data page includes SOPs, QAQC guidance etc. and available at <http://cdmo.baruch.sc.edu/>. Danielle indicated that there are a number of opportunities to engage the workgroup with on these efforts, including writing or reviewing answers, or presenting to the workgroup. Roop Guha asked if there have been any discussions on methods or a standard procedure for assessing continuous monitoring data? Danielle indicated that this is a known issues and understand that some sort of standard would be helpful, but they have not yet resolved this. Siddhartha Hayes asked if there somewhere we can access the spreadsheet with parameter specific citations? Garret indicated that they may be able to share the spreadsheet, but the links will not work. However, you could google the citations to find them elsewhere if that is helpful.

**Next Steps:** Any documents or publications from your agency or organization on continuous monitoring, please do send it to [stillings.garrett@epa.gov](mailto:stillings.garrett@epa.gov) and [grunzke.danielle@epa.gov](mailto:grunzke.danielle@epa.gov).

## Oceansmap

Michael Crowley and Kelly Knee provided an overview of MARACOOS as one of 11 regional associations in the Integrated Ocean Observing System (IOOS), funded through NOAA. MARACOOS is stakeholder driven and bottom line, they are working to collect and archive data from the ocean and estuarine waters. This includes gliders, drifters, radars and more to drive models. The webpage <https://ioos.noaa.gov/project/qartod/> includes manuals, QAPPs, and python codes. One of the key functions of MARACOOS is to make data available to the public in real-time, specifically using data that has gone through quality control procedures.

Kelly Knee conducted a live demo on how to use OceansMap from different data sources/types, the various functions, and comparisons that can be made. MARACOOS harvests data that has been quality assured and brings it to a centralized location to use within OceansMap. The map also allows you to create comparisons between forecasts and observations, generate a unique link to re-share the map, compare different models relevant to station locations, and toggle through different time scales. This enables users to identify the data sets that you may want to download. Kelly indicated that while they do not change the data, they do flag data if any issues are found and those flags are seen within ERDDAP. Mike indicated that the flags are there to see what may be considered bad data, but in theory the data is QC'd prior to harvesting it to OceansMap.

Danielle Grunzke asked in the QAPP is included. Kelly indicated that federal partners are not included in their data management plan, but for example, HRECOS is a good example of a program that HRECOS procedures were incorporated into the data management plan. Within the table of contents, links to the data and additional information is available. Mike added that data providers can QC their own data, and if it meets their QARTOD, then MARACOOS accepts the data and pulls it into OceansMap. Kelly noted that ERDDAP is the backend that is largely used, but OceansMap is much more user friendly. MARACOOS is always seeking suggestions on forecasts, models, observations, and where they may be able to harvest data from. Roop Guha added the use of continuous data and forecasting could be a topic. USGS Long Island Sound presented a project along the similar lines which by now probably has finished by now.

### **Partner Updates**

Rosana shared the subcommittee's newly launched site on the Foundation's page to include minutes as well as publications the subcommittee publish: <https://www.hudsonriver.org/article/continuous-monitoring-practitioners-subcommittee>