

Continuous Monitoring Subcommittee

IEC Shared Waters Workgroup and HEP Water Quality Work Group

December 10, 2021

Location: Remote Meeting

Minutes

Attendees: Jim Ammerman (NEIWPCCLISS, james.ammerman@longislandsoundstudy.net), Jessica Bonamusa (IEC, jbonamusa@iec-nynjct.org), Rosana Da Silva (HEP, rosana@hudsonriver.org), Roop Guha (NJDEP, biswarup.guha@dep.nj.gov), Siddhartha Hayes (Hudson River Park River Project, jhayes@hrpt.ny.gov), Kay Howard-Strobel (UConn), Natalie Kim (Hudson River Park River Project), Peter Linderoth (Save the Sound, plinderoth@savethesound.org), Matt Lyman (CT DEEP, matthew.lyman@ct.gov), Katie O'Brien-Clayton (CT DEEP), 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), Jackie Wu (Randall's Island, Jackie.wu@randallsisland.org)

Next Meeting: TBD

Introductions and Agenda Overview

Evelyn Powers welcomed the group and reviewed the agenda. The goal of today's meeting is to build off of our previous efforts in understanding each of our programs and lessons learned. Shared earlier, the Biofouling Tips and Document has been drafted with no comments received. Peter Linderoth indicated minor edits that he would like to have applied. Rosana Da Silva will make those changes and assuming no other, the document will be posted on the subcommittee's page here: <https://www.hudsonriver.org/article/continuous-monitoring-practitioners-subcommittee>. We hope that this document captures everyone's tips in a concise manner that can aid your future interns or volunteers when conducting field work.

Spatial Analysis of Monitoring Programs & Indicators

Rosana Da Silva shared a spatial analysis of the monitoring programs and the parameters being monitored based upon the 2021 Monitoring Map update. As noted, the update of the map had included new columns in which not all programs included responses such as those monitored by USGS. Meaning this preliminary analysis does not include those stations nor does it show any inactive stations. The subcommittee discussed each major parameter being monitored in terms of why we are monitoring this parameter, how is the data being used, and what are the questions we are trying to answer.

Dissolved Oxygen: majority of the group agreed that DO is largely being looked at to understand aquatic life, the conditions that support aquatic life, and help to inform management decisions (i.e., POTW upgrade needs). Several papers have been published that utilizes a mixture of programs represented. Peter Linderoth indicated data is assessed and used as part of the Long Island Sound report cards while also placing loggers in priority areas identified by CT DEEP. Siddhartha Hayes indicated the data is also being used to inform ecological research by park staff and visiting researchers, like Dr. Young Chen. The park has also providing river conditions data to the public through their [new dashboard](#) that builds on

models developed by Dr. Wade McGillis to loosely estimate CSO risk based on HRECOS rainfall data. Dan Rearick added HRECOS in general is viewed as an educational resource with an objective to create a long term dataset. Everyone agreed they would like to learn more on who actually accesses the data. A general consensus is that the public engages with the data when connected with weather data, particularly the fishing community. Dan added that HRECOS also gets a lot of requests for DO and turbidity data and seeking to improve their visualization. The HRECOS website and USGS mapper have a feature called awstats that tracks views but limited to identify the type of user.

Water Temperature: all agreed that this parameter is collected to validate the interpretations for other parameters. Programs are also beginning to look at this data set in terms of historical records to see temperature changes, how wide temperature shifts from storms, and Siddhartha Hayes added the Hudson River Park is interested in exploring temperature data in correlation with fish incidents (i.e., fish abundance).

pH: Largely, efforts are being made to collect long term pH data to address questions around ocean acidification. Kay Howard-Strobel indicated they are working to purchase more robust pH meters but have found this parameter difficult to monitor and use of the SeaBird system. Nicole Petersen added that pH data is usually cut out from datasets due to drifting, even with their EXO (which seemed to work better than SeaBird). Katie O'Brien-Clayton indicated that if money was not an issue, Durafet pH sensors are considered the gold standard for ocean acidification monitoring. Jim Ammerman indicated that for Ocean Acidification, pCO₂ is also necessary. Kay added that they are collecting pCO₂ but it has a very short life due to biofouling. Nicole added that they are also collecting pCO₂ but as a plug in and swap out sensors frequently during the summer, give the pump a good cleaning, and have been successful in getting good pCO₂ data. Siddhartha Hayes added interested in looking at the effects on bivalves, especially with the completion of the deployment of the Park's Tribeca Enhancement Project this season.

Salinity/Turbidity: Similar to water temperature, these two parameters are used to add context for other parameters. Salinity can be used for DO corrections, effects of storms and discharges within embayments, and when added with specific conductance helps to understand road salt inputs. Nicole Petersen indicated turbidity is a parameter they do look at in reference to their Submerged Aquatic Vegetation (SAV) beds. Siddhartha Hayes indicated interest in seeing the effects on fish abundance and informed HRPT will be working to continue the historical fish abundance survey, using traps and measurements, and plan to further assess the correlations of thresholds with fish abundance. Roop Guha asked if there are any plans on evaluating fish abundance against other parameters. Siddhartha indicated [annual summaries are posted](#) but there are plans for a more in depth report.

Chlorophyll-a: Although helpful in understanding HABs, sensors to monitoring chlorophyll are very costly. Peter Linderoth indicated the data collected in relationship to the costs (\$3,700-4,000) is hard to justify and has found discrete monitoring helpful for post-corrections. Kay Howard-Strobel indicated beginning to collect fluorescent chlorophyll using SeaBird nitrate sensors and that it is significant work to get a relevant signal. Jim Ammerman indicated that it would be nice to have reliable sensor to collect algae information and Evelyn Powers indicated that discrete sampling has been than sensors due to the nature of needing to reorder replacements often.

Next Steps: Rosana Da Silva will update the map to include the Long Island Sound Buoys with continuous DO per Jim Ammerman's comment (Execution Rocks: 40 53.00 N, 73 43.70 W; Western Sound: 40 57.35 N, 73 34.8 W; ARTG: 41 00.60 N, 73 17.29 W; and Central Sound: 41 8.25 N, 72 39.30 W).