



**Water Quality Monitoring Workgroup  
Conference Call  
Meeting Minutes Wednesday, January 16, 2019**

**Presentation:** [LISS Climate Vulnerability Assessment-Water Quality \(J. Barrett\)](#)

**Participants:** (Note: Since this call occurred during the Federal shutdown, no EPA or other Federal employees participated.)

Jim Ammerman (Chair)—Long Island Sound Study (LISS)/New England Interstate Water Pollution Control Commission (NEIWPCC)

Juliana Barrett—Connecticut Sea Grant

Cassie Bauer-- New York State Dept of Environmental Conservation (NYSDEC)

Carol DiPaolo—Coalition to Save Hempstead Harbor

Holly Drinkuth—TNC (Connecticut CAC Co-Chair)

Richard Friesner—NEIWPCC

Jessica Haley—Interstate Environmental Commission (IEC)

Peter Linderoth—Save the Sound (STS)

David Lipsky—New York City Department of Environmental Protection (NYCDEP)

Matt Lyman—Connecticut Department of Energy and Environmental Protection (CT DEEP)

Audra Martin—NEIWPCC

Katie O'Brien-Clayton—CT DEEP

Mark Parker—CT DEEP

Paul Stacey—Footprints in the Water

Kelly Streich— CT DEEP

Koon Tang—NYSDEC

Anna Weshner-Dunning—New York Sea Grant

Jamie Vaudrey—U Conn

Advance Agenda and Notes

Agenda

1. Member updates as needed.
2. The main subject of discussion is the LIS Climate Vulnerability Assessment that Dr. Juliana Barrett (CT Sea Grant) is leading for the LISS. Most National Estuary Programs are going through this process. This particular Assessment is based on a northeast climate change assessment by Battelle and Juliana is applying it specifically to LIS. She has already met with a number of workgroups and other LISS groups and this particular discussion will focus on aspects of the effort most relevant to water quality. Two relevant handouts and a PowerPoint were sent out for advance review.
3. Begin initial discussions on the two enhancement pre-proposals that were sent out in advance, numbers 6 and 15 on tributary and embayment sampling.

#### 4. Other topics of importance.

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1. Updates: Jim Ammerman started by asking about the status of the combined CT DEEP—IEC 2018 Hypoxia Report for Long Island Sound. Katie O'Brien-Clayton noted some delays because of review by the new Assistant Division Director at CT DEEP, Phil Trowbridge. Jim mentioned the need for a designated review team which will review the final report in a specified time period, as discussed previously. Mark Parker mentioned that the individual summer hypoxia monitoring maps are available on the CT DEEP website and related hypoxia information is on the LISS website. Peter Linderoth said that all the data templates from the Unified Water Study (UWS) partners had been submitted. The quality assurance process has started and should be completed in February, the data he should be available to the public this winter. He also said that the UWS was also entering data in the EPA WQX database. There were no other updates.

2. LISS Climate Vulnerability Assessment: Juliana Barrett lead a discussion of LIS Climate Vulnerability Assessment described above with a specific focus on pollution control and recreation and public water supplies, based on the Clean Water Act goals addressed by EPA. She led the group through a PowerPoint presentation and invited input and discussion. The presentation listed various climate change stressors and their potential impacts in both 2050 and 2100. The tables compared the potential impacts in terms of Likelihood of Occurrence vs. Consequence of Impact.

Under discussion of the pollution control topic, workgroup members offered many comments and suggestions, some were already included in the tables and others were not, a selection is listed here. Paul Stacey mentioned sea level rise (SLR) and the resulting rise in the water table causing septic system failures, even if not manifested at the surface. Others mentioned CSO and regular sewer system overflows due to SLR, as well as increased pathogens and algae in rivers and marine waters because of increased temperature. The latter might threaten shellfish survival. In comments separate from this call, Jim O'Donnell mentioned concerns that Southern New England (and Long Island Sound) may behave differently than Northern New England in terms of these climate change vulnerabilities and the Battelle report does not account for these differences. Paul Stacey noted that because of greater growth under climate change, forests could become more nitrogen-limited and this could cause ecosystem disruptions.

In discussion of the recreation and public water supplies topic, Juliana noted that the table did not address the impact of barriers built to protect from SLR. David Lipsky raised the issue of low groundwater recharge and the potential for seawater inundation of groundwater aquifers and wells. Mark Parker mentioned that current fishing seasons may not coincide with fish abundance and activity patterns. David Lipsky mentioned that because of increased organic matter likely to be in the water from increased production, the disinfection by-products in New York City drinking water would increase, leading to increased treatment costs. Paul Stacey noted that lawn watering would increase in dry periods, lowering the water table, and that a longer growing season would increase evaporation and transpiration.

Juliana Barrett then refocused the discussion on management options and setting priorities. She noted that other National Estuary Programs are also undertaking these climate variability assessments and that Casco Bay, Maine (<https://www.cascobayestuary.org/publication/casco-bay-climate-change-vulnerability-report/>) and Barnegat Bay, New Jersey

([https://www.barnegatbaypartnership.org/wp-content/uploads/wpallimport/files/Leichenko-March2013\\_FinalReport%20with%20logos.pdf](https://www.barnegatbaypartnership.org/wp-content/uploads/wpallimport/files/Leichenko-March2013_FinalReport%20with%20logos.pdf)) have public reports currently available.

Paul Stacey noted that there will be major ecosystem transitions in structure and function under climate change and predictability is very limited. Ecological predictions are much more difficult than physical predictions like temperature and SLR, therefore potential management actions are much more uncertain. David Lipsky also said that impacts on Connecticut and Long Island may also be very different. In sum, this is an important effort but will need frequent re-evaluation to reflect new information and potential new management strategies.

### 3. Initial discussions of selected enhancement pre-proposals:

#6 Major Long Island Sound Tributary Sampling (USGS/CT DEEP). Mark Parker provided an overview of this proposed project. It would expand the current monitoring in the Connecticut River to two other important LIS tributaries, the Housatonic and Thames Rivers. Nutrients and other physical and chemical parameters would be measured at seven surface stations in each tributary during the summer season. This project would enhance current USGS monitoring efforts and contribute to the increased emphasis on tributary and embayment monitoring in the current LIS nitrogen reduction strategies.

Recognizing that this is still a pre-proposal, Paul Stacey mentioned that a final proposal should have clearer objectives and anticipated outcomes. He thought that this and the following proposal could better link to ecosystem health and develop bio-integrity indicators. This could be analogous to the National Water-Quality Assessment (NAWQA) Project approach that the USGS has applied in the Midwest and elsewhere (<https://water.usgs.gov/nawqa/>). Jim Ammerman asked about whether the proposed sampling of just surface waters was sufficient.

#15 Embayment and Watershed Data Collection for Model Input (CT DEEP). Kelly Streich briefly outlined an ambitious pre-proposal that supports CT DEEP's Second-Generation Nitrogen Strategy. She noted the current watershed and embayment sampling of the Pawcatuck River and the use of the HSPF (Hydrological Simulation Program-Fortran) watershed model for N, P, and TSS serves as a pilot study for the larger project which would include numerous other priority embayments listed in the proposal. Ultimately estuarine and watershed models will be linked, and nitrogen impacts on estuaries will be traced back to their watersheds. The current pilot study should improve the understanding of data needs for the larger project. Peter Linderoth mentioned that data on other embayments was now available from the Unified Water Study.

Koon Tang asked if this was like a TMDL and Kelly replied that it was similar in that they would develop methods to understand the watershed-embayment connection and how to manage it. Katie O'Brien-Clayton mentioned that the priority embayments for analysis were still being discussed but benefitted from the prior work of Jamie Vaudrey. David Lipsky and Koon Tang wondered if there were parallel studies in New York. They noted that embayment studies in Nassau and Suffolk County were more focused on pathogens for shellfish. Kelly mentioned and Jim Ammerman confirmed the upcoming Suffolk County Subwatersheds meeting on January 24, 2019.

Paul Stacey asked about calibration of the HSPF model and how it would connect to embayment models in different embayments. He also mentioned the need for a detailed plan for the \$2M request and said that any data collected need to be of sufficient quality to detect changes. Kelly Streich said that details were being worked out in the Pawcatuck which could

then be applied more broadly. She also noted that this is still a pre-proposal. Also one of the suggested estuarine indicators, macroalgae, may prove difficult to apply.