

Long Island Sound Study
Citizens Advisory and Science and Technical Advisory Committees
Thursday, September 17, 2015
Stony Brook University's Wang Center, Stony Brook, NY
Meeting Summary

Welcome, Housekeeping & Logistics

Nancy Seligson, *Town of Mamaroneck* and the *NY Citizens Advisory Committee (CAC) Co-chair*, and Larry Swanson, *Stony Brook University (SBU)* and the *NY Science and Technical Advisory Committee (STAC) Co-chair*, welcomed the group at approximately 9:30am. A quorum of approximately 45 CAC and STAC members was present.

Updates

- **Comprehensive Conservation and Management Plan (CCMP)** – Mark Tedesco, *EPA Long Island Sound Study*, welcomed the group and said that the CCMP will be released soon. He also thanked Jim Latimer, *EPA Office of Research and Development*, and the CCMP Core Team for their efforts in the revision of the CCMP.
- **Draft Dredge Material Management Plan (DMMP)** – Jim O'Donnell, *UConn* and *STAC Co-chair*, explained how the Army Corps of Engineers (ACE) is reviewing and assessing the options for dredge material disposal in Long Island Sound. He said that the draft DMMP outlines how some dredge material would be used for upland placement as well as beach nourishment. In addition, the draft DMMP assesses the future needs of what dredging would be and characterizes how much of what is dredged would be suitable for beach nourishment. It also states that the management of dredge materials will be determined project by project. Comments on the draft DMMP will be accepted until October 16, 2015.

Joel Ziev, *Town of North Hempstead*, commented how he served as the CAC representative for the draft DMMP. He said that the draft DMMP doesn't get into alternatives for beneficial reuse of dredge material. Unfortunately, the research that has been conducted by the ACE on alternatives for the dredge material reuse wasn't included in this plan. He suggests that the ACE goes back and adds more information on alternatives for dredge material reuse.

Adrienne Esposito, *Citizens Campaign for the Environment*, commented that New York State rejected ACE's DMMP in the past. She said that the DMMP will adversely affect shellfishing and maritime businesses. The draft DMMP doesn't phase out open water dumping. She has attended DMMP ACE meetings and has spoken out against the plan. She also said that this issue has turned into New York versus Connecticut issue. She thinks that it would be more expensive to do beneficial reuse of the dredge material, but it would be even more expensive to pollute the Sound.

Jennifer Wilson-Pines, *Nassau County*, mentioned that each person take a look at the draft DMMP to look at their personal harbor to see how the plan would impact their particular area. Mickey Weiss, *Project Oceanology*, would like to look at environmental studies that show how dredge materials are detrimental.

Curt Johnson, *Save the Sound/CT Fund for the Environment* and the *CT CAC Co-chair*, said that the dredge material needs to be seen as a resource to rebuild our wetlands, not necessarily a waste product. He also mentioned that the STAC and LISS Habitat Restoration Work Group need to figure out how to use this resource. Penny Howell, *CTDEEP*, said that ACE has been doing dredge demonstrations in upland LIS. Suzanne Paton, *USFWS*, said that we need to think about use the dredge material for thin layer deposition in marshes.

Curt Johnson said that the LISS CAC policy committee will put together a letter from the CAC to the ACE about this issue. There will also be a conference call to discuss the letter from the CAC. Jim O'Donnell said that the STAC will not be drafting a letter to the ACE.

- **Long Island Sound (LIS) Blue Plan** – Nathan Frohling, *The Nature Conservancy*, gave a presentation on the LIS Blue Plan. He explained how the plan is about marine spatial planning and trying to understand the rules to make the new use for LIS that is beneficial to the environment. There currently isn't a plan for LIS, so this is trying to do that. The overall lead on this initiative is CTDEEP, and UConn will be convening a sub-committee. There is also a 16-member advisory committee that is involved in the process. NY State is encouraged to be involved and so are LISS and NY and CT Sea Grants. There should be a plan by March 2019.
- **Summer Water Quality Monitoring Season Recap** – Katie O'Brien-Clayton, *CTDEEP*, gave a presentation on the open water monitoring for summer 2015. She said that CTDEEP completed seven cruises in LIS looking at hypoxia. She observed hypoxia in five areas in the western LIS, with a hypoxia start date of around July 16, 2015. She also mentioned that all hypoxia maps from 1991 to present are available on CTDEEP website. In addition, CTDEEP participated in the National Coastal Assessment Survey, funded by EPA, at select monitoring stations. This summer's monitoring indicated that this year had the second smallest area of hypoxia in LIS.
- **Summer Water Quality Monitoring Season Recap** – Robin Jazxhi, *Interstate Environmental Commission (IEC)*, gave a presentation on the western LIS water monitoring for summer 2015. She said that the monitoring stations include embayments and open water areas from the Whitestone Bridge to Hempstead Harbor, including bottom water, mid-water and surface water samples at all locations. This summer, they completed twelve surveys and analyzed all the samples in house. She did record hypoxia in open waters and Manhasset Bay, the only embayment that she saw hypoxia. She did not see any dead menhaden or bunker or jellyfish. She ended her presentation by showing a video of dolphins swimming in Hempstead Harbor.

- **Water Quality Workshop** – Jason Krumholz, *National Oceanic and Atmospheric Administration (NOAA) Liaison to LISS*, gave a presentation on the LIS Water Quality Workshop that was conducted in July 2015. He discussed how the keynote speaker was from the Tampa Bay Estuary Program and how we can use that area as a case study. He mentioned how they shifted their focus from point to nonpoint source pollution. He also stressed the importance of how delays in nitrogen groundwater transit time should not preclude further management action, and that we need to continue our efforts at looking at other sources of nitrogen into LIS while applying adaptive management. He said that the management link between nitrogen load and hypoxia is not straightforward. He also explained how the Tampa Bay Estuary Program used an alternative framework of eelgrass, an outcome-based framework, to monitor the restoration of their system.

As for work being done in LIS, Jamie Vaudrey, *UConn*, created an eelgrass suitability model, and eelgrass restoration is a priority in the CCMP. Embayments were also brought up as a cross-cutting concern. Jason mentioned how groups are doing a good job monitoring their areas, but there needs to be an established method to do it consistently throughout LIS. He also said how open water patterns don't necessarily extend well into the embayments, and that what happens in the open water in regard to hypoxia is different than what is happening in the embayments. For example, on-site wastewater treatment systems such as septic systems might be a bigger problem in the embayments. He said that we don't need to eliminate main stem water quality monitoring, but we need to extend it further into embayments and near-shore areas.

Jason said that, as a result of the LIS Water Quality Workshop, the focus areas should include:

- Collecting more data on the carbon to chlorophyll ratio and distribution.
- Studying benthic flux (benthic-pelagic coupling), where a large amount of nitrogen from the sediment is entering into the water column.
- Measuring productivity rate.
- Collecting more data in the field (ground-truthing).
- Studying how shellfish populations react to climate change and ocean acidification.
- Using alternate or ensemble models for SWEM. Using multiple models helps with uncertainty and helps fill in weak spots.
- Developing a single, unified effort for data sharing to enhance communication and collaboration. Work with the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) to share data with the Mid-Atlantic region.

The presentations and proceedings from the LIS Water Quality Workshop are available on the LISS website: <http://longislandsoundstudy.net/research-monitoring/water-quality-monitoring/water-quality-monitoring-workshop-2015/>.

Discussion of Report Card Next Steps and Improvements

Caroline Donovan and Alex Fries, *UMCES Integration and Application Network*, and Tripp Killin, *Jeniam Foundation/LIS Funders Collaborative*, gave a presentation on the LIS Report card. Caroline discussed the background of the LIS, Norwalk, and Hempstead Harbor report cards and how they worked with CAC, STAC, and local organizations to develop the report cards.

Following the presentation, a healthy dialogue between CAC and STAC members took place. Tripp Killin said that we needed the report cards to help us set a benchmark, and that they can be used as a valuable tool. Marty Garrell, *Adelphi University*, said that we need to get away from grades. Use 'excellent,' 'good,' 'fair,' and 'poor' to avoid fights. He said that scientists understand the numbers, but the media and general public do not. Dave Miller, *NYLCEF*, said that we need specifics and need to highlight the underlying message.

Lynn Dwyer, *National Fish and Wildlife Foundation*, said that it is not always a good moment when we talk about damaged harbors, such as Hempstead Harbor. For example, the Baltimore Harbor got a poor grade ("D") for floatables, and this area has a very important tourism industry. As a result of the report card, the business community came together to buy street sweepers. Also, legislators have used these report cards to show what areas need improvement. Therefore, the report cards can have a positive result.

Jason Krumholz commented that there was confusion between human health and ecosystem health. Julie Rose, *NOAA*, agreed that we need to make a distinction between the human and ecosystem health. People are now afraid to go in the water and to eat shellfish. Carmela Cuomo, *University of New Haven*, said that we need to separate the human and ecosystem health and that it needs to be put into context. Long Island Sound was a lot worse years ago. She added that we don't want to kill local economies and good work that we've done. She thinks that we didn't do a good job with these report cards and that we need to get away from grades. Tripp Killin responded that success can energize people. He went into this thinking that people want a D+ to show that we have work to do.

Jennifer Wilson-Pines pointed how Manhasset Bay has very healthy osprey and piping plovers, but we need to bring together water quality and other ecosystem health indicators. She also added that most public read the news article, not the report card. Erin Reilly, *Town of North Hempstead*, said that the Town's public relations department was blind-sided, and that they need talking points/messaging, and how to explain the difference between ecosystem versus human health. She likes the letter grades, but the communications needs to be ready.

Jamie Vaudrey suggested that we provide grades for other indicator metrics, such as 'swimmable,' 'fishable,' and/or 'resilient.' Eric Swenson, *Hempstead Harbor Protection Committee*, added that more grades would give a more realistic evaluation, as Hempstead Harbor received a low grade due to poor water clarity.

Adrienne Esposito ended the dialogue by reminding us to think of what drives change, as it's not just science, but a combination of science and advocacy. She said that we need to include the top 10 things we can do to improve the grade.

Thank You

Curt Johnson thanked to Jason Krumholz and Georgia Basso, *United States Fish and Wildlife Service (USFWS) Liaison to LISS*, for their service to LISS over the past few years. Both Jason and Georgia will be leaving their positions this fall.

Embayment Assessment: Hypoxia and Ocean Acidification

- Jamie Vaudrey, *UConn*, gave a presentation on "Hypoxia and Local Embayment Rapid Assessment and Modeling Results." As part of this project, Jamie's research team looked at 110 embayments in LIS and identified embayments that need to be monitored. She looked at various land cover around LIS and put together a graph of nitrogen loads into LIS. She said that if you look at the coastal portion of the watershed, not the upper reaches of the rivers, that the East River has the highest input of nitrogen into the Sound. She also mentioned how different embayments will have different impacts of nitrogen as it depends if the system is well flushed. She said that her research will help identify priority areas around LIS, help to focus the attention between point and nonpoint source pollution, where to focus our outreach, and to see where to control nitrogen inputs from land. She said the technical and outreach reports, an Excel spreadsheet tool, and website will be done by mid-October.

Mark Tedesco asked where more data is needed in LIS; Jamie responded that more data is needed in the areas with the high total load as well as areas with high error bars. Larry Swanson asked if Jamie compared these results to other models. Jamie responded that she has been talking with USGS about Sparrow modeling comparisons. She also mentioned how field data was designed to be compared to the model too and used as verification. Jim O'Donnell asked if Jamie's study takes into account the internal processes that happen in the Sound. Jamie responded that this is the load from the coastal area to the embayments, not necessarily the open water of the Sound. Processes internal to the embayments are not evaluated. Adrienne Esposito commented that Jamie's study will be helpful with the nitrogen action plan for all three estuaries around Long Island: LIS, Peconic estuary, and the South Shore estuary.

- Chris Gobler, *SBU*, gave a presentation on "Correlation of Hypoxia and Ocean Acidification and Impacts on Marine Life." Chris explained how the pH of the surface of the ocean is about the same at the atmosphere. As carbon dioxide goes up, carbonate goes down; as such, there is a concern about shellfish with calcium carbonate shells. This is a serious concern in New York, as four of the five fisheries in New York State are fisheries associated with calcium carbonate shells. This issue also affects the early life stages of finfish, such as Atlantic Silversides, which are a forage fish and an important link in the food web. Areas with high productivity and hypoxia

also have higher ocean acidification, as there is a co-occurrence of low oxygen and acidification in LIS. Chris said that this is already occurring in western LIS, with the seasonality of acidification and hypoxia in LIS (diurnal exposure of hypoxia isn't good for shellfish, with the low pH and dissolved oxygen during the night and high pH and dissolved oxygen during the day).

Carmela Cuomo asked if Chris looked how sediment creates a buffer for the shellfish. Chris said that his research group is looking at the larval stage which is free floating in the Sound. Lisa Suatoni, *Natural Resources Defense Council (NRDC)*, asked how LIS's pH compares to other estuaries. Chris said that he has seen similar patterns in Narragansett and Chesapeake Bays. Soren Dahl, *NYSDEC/Peconic Estuary Program*, asked how the forage fish can adapt over time. Chris said that some species can adapt, but he doesn't know how rapidly. Katie O'Brien-Clayton mentioned the Northeast Coastal Acidification Network (NECAN), and that NECAN plans to have a meeting in Connecticut in November 2015.

- Lisa Suatoni, *NRDC*, gave a presentation on "Long Island Sound's Vulnerability to Ocean Acidification: Regional, Economic, and Hypoxia Related Stressors." Lisa explained how ocean acidification can hurt people in addition to marine life. She explained a socioeconomic study of ocean acidification in the United States led by Ekstrom. The study team did an economic vulnerability assessment where they focused on the shelled mollusk industry in since they are the most vulnerable species. She explained how Long Island Sound has a lot of vulnerability because of combined factors of ocean water chemistry and socioeconomic dependence. She said how this study was done at a national scale, but more funding is needed to conduct a similar vulnerability assessment on a local scale.
- Curt Johnson led a group discussion on ocean acidification. He asked the group what we should do about ocean acidification in Long Island Sound. Katie O'Brien-Clayton said that CTDEEP is already monitoring pH, but asked what else should be added to the LIS monitoring to help measure ocean acidification. Chris Gobler said that data needs to be collected for pH, alkalinity, total inorganic carbon, and partial pressure of carbon dioxide (pCO_2). Jim O'Donnell said that there will be a pCO_2 sensor installed on a buoy in western LIS next summer. Penny Howell said that we need to focus on areas that are most at-risk and get more data. From there, we need to get citizens involved.

Marty Garrell asked when ocean acidification will eventually overwhelm the system and nothing else would matter no matter what we do. Lisa Suatoni said that we need to figure out how nutrients are playing a role in the estuaries by doing more research. She mentioned how there will be funding for coastal adaptation in the coming years to identify resistant bivalves, grow shellfish with kelp and eelgrass, etc. She doesn't think that we should be stuck thinking that there is nothing we can do. Chris Gobler commented how atmospheric carbon dioxide will continue to rise, so it's possible that we might be holding the line when it comes to acidification, but there are a lot of unknowns.

Jamie Vaudrey added how embayments contribute very little nitrogen load to Long Island Sound. Instead, the big rivers and big sewage treatment plants are the ones with the highest contribution of nitrogen. However, even though embayments are not that important to the nitrogen load to the Sound, we need to train people on how to reduce nitrogen, by fertilizing properly, maintaining their septic systems, etc.

Joint CAC/STAC Recommendations for the 2-Day Management Committee Meeting

Nancy Seligson led a group discussion on how to incorporate the CAC and STAC's recommendations for the October Management Committee meeting. She mentioned how the group identified embayment monitoring, ocean acidification, and eutrophication modeling as priorities. Jamie Vaudrey suggested that the Long Island Sound Study can play a role by providing embayment monitoring guidelines.

George Hoffman, *Setauket Harbor Task Force*, suggested that we need to change the name of the Long Island Sound Study, as people that he talks to are confused with the name. Larry Swanson pointed out that Long Islanders don't recognize themselves with Long Island Sound the way people do around the Chesapeake Bay. To change this, we need to instill the excitement of Long Island Sound and why it's important in their lives. Nancy Seligson agreed and suggested that we need to think about the communications of Long Island Sound. Mark Tedesco pointed out that an embayment focus often connects more with people than the larger Long Island Sound.

Adjourn

The meeting adjourned at approximately 3:00pm. The next CAC meeting will be held on December 10th in CT.

For the meeting presentations, visit: <http://longislandsoundstudy.net/event/citizens-advisory-committee-4/>

For additional information on the CAC, visit:
<http://longislandsoundstudy.net/about/committees/citizens-advisory-committee/>

For additional information on the STAC, visit:
<http://longislandsoundstudy.net/about/committees/science-technical-advisory-committee/>