Long Island Sound Study

A Partnership to Restore and Protect the Sound

Long Island Sound Study
Science & Technical Advisory Committee
On-line Skype Meeting, June 19, 2020

In Attendance:

STAC Members: James Ammerman, Chester Arnold, Vincent T. Breslin, Sylvain DeGuise, Kristin DeRosia-Banick, Dianne Greenfield, Ashley Helton, David Hudson, Christine Kirchoff, Elizabeth Lamoureux, Darcy Lonsdale (NY Co-chair), Kamazima Lwiza, Robin Landeck Miller, John Mullaney, James O'Donnell (CT Co-chair), Evelyn Powers, Julie Rose, Paul Stacey, Kelly Streich, R. Lawrence Swanson, Mark Tedesco, Craig Tobias, Maria Tzortziou, Jamie Vaudrey, Penny Vlahos, Nils Volkenborn, Chester Zarnoch

CAC Liaisons to STAC: Sarah Crosby (Earth Place/Harbor Watch), Mickey Weiss (Project Oceanology)

Others: David Berg (LIRPC/LINAP), Chris Conroy (U. New Haven), Cindy Corsair (USFWS), Mel Cote (EPA R1), Holly Drinkuth (TNC, CT CAC Co-chair), Syma Ebbin (CTSG), Kaitlin Willig Giglio (Stony Brook), George Hoffman (Setauket Harbor Task Force), Kate Knight (CT DEEP), Matt Liebman (EPA R1), Bill Lucey (STS), Audra Martin (NEIWPCC), Esther Nelson (EPA R2), Katie O'Brien-Clayton (CT DEEP), Gabriella Panayotakis (EPA R2), Jimena Perez-Viscasillas (NYSG), Casey Personius (NYSDEC), Nancy Seligson (Mamaroneck Supervisor, NY CAC Co-chair), Becky Shuford (NYSG), Tom Shyka (NERACOOS), Samantha Siedlecki (U. Conn.), Lane Smith (NYSG), Nikki Tachiki (EPA LISO), Phil Trowbridge (CT DEEP)

Mark Tedesco, EPA LISS ran the meeting on Skype and Darcy Lonsdale, NY Co-Chair, opened the meeting at 9:00 AM (This was the first STAC meeting that was totally online.)

Links to Available Presentations

- **Swanson and Giglio**
- **Ammerman**
- **DeGuise and Shuford**

Samantha Siedlecki, U. Conn.: *"Modeling the Magnitude, Extent, and Potential Impacts of Acidification on the Northeastern Shelf: Implications for the LIS Region"*
Samantha gave brief background information and a global tour of ocean acidification (OA) before focusing in on the East Coast, the Gulf of Maine, and the Long Island Sound region. She emphasized that the large global trends may not represent what is going on in coastal regions. In the Gulf of Maine, acidification caused by climate change is increased by freshwater input but decreased by increasing temperatures and increased Gulf Stream inflow. Thirty percent of the increased temperatures are also due to climate change. Increases in heavy precipitation events has led to more occurrences of low aragonite saturation in this region.

The Northeast and Mid-Atlantic continental shelves are well-sampled and Samantha and colleagues are using a multiple linear regression approach with measured or modeled

hydrographic data to estimate carbonate system parameters. They use region-specific empirical models to estimate OA parameters and compare them with observations. Model simulations run out to 2100 suggest significant periods of aragonite saturation values below 1.5 in the Gulf of Maine by 2050, though warming will continue to attenuate OA. For Long Island Sound (LIS), the model results suggest that nitrate variability, suggestive of denitrification, is important to the variability of aragonite saturation. Though warming is currently reducing OA stress in LIS, it will be less significant in the future. She concluded that most of the Gulf of Maine will experience OA stress for most of the year by 2050, despite attenuation by increased temperatures and Gulf Stream inflows. This threatens the billion-dollar New England commercial fisheries of which vulnerable shellfish like lobsters and scallops account for more than half.

Tom Shyka, NERACOOS: *"NERACOOS Update"*
Tom provided an overview and update of recent NERACOOS activities, with a focus on ocean and coastal acidification (OA). He mentioned that NERACOOS had recently hired a new Director, Jake Kritzer, and released an RFP for mini-proposals. He then described the LIS NERACOOS Array (LISICOS) and showed 2018 pH, pCO_2, and dissolved oxygen (DO) data from the Western LIS buoy. It showed a decline in pH and an increase in pCO_2 as DO declined in the summer. Tom then highlighted the 2015 and 2018 East Coast Ocean Acidification Cruises which extended from Canada to Florida and provided the link for data access. He also showed the combination of the NECOFS (Northeast Coastal Ocean Forecast System) model, which is based on the well-known FVCOM model, with the Water Balance Model showing the Eastern US water cycle including river runoff to the coast. This combination couples a hydrologic model with a hydrodynamic one. The river discharge determined by the Water Balance Model was in close agreement with the USGS observed discharge. Tom continued by discussing coastal and ocean acidification modeling and how that engaged stakeholders including water quality managers as well as shellfish aquaculture and wild capture industries. He then concluded with NECAN, the Northeast Coastal Acidification Network, a collaboration of diverse partners providing scientific information on coastal and ocean acidification and its impacts to decision makers and stakeholders. Shell Day 2019, a single day monitoring event with participants at almost 90 different sites from Maine to Long Island Sound, is a recent example of a NECAN activity.

Larry Swanson and Kaitlin Willig Giglio, Stony Brook University: *"The New York Ocean Acidification Task Force"*
Larry described New York Ocean Acidification Task Force (OATF), its enabling legislation, purpose, and focus on mitigation of OA in New York waters. His listed the authorities which appoint members, the taskforce members themselves, and the project team. OATF deliverables include reviewing existing information on OA, identification and monitoring of the factors contributing to it, and an assessment of its anticipated impacts. The Task Force is supposed to provide recommendations for stronger OA standards, adaptive measures, state and local regulatory actions, and increasing public awareness. Larry then characterized in detail the five OATF Pillars: 1. Mitigate, 2. Educate, 3. Research, 4. Engage, and 5. Legislate. Going forward, the OATF has a detailed process for the evaluation of their current interim report, which includes a detailed list of recommendations for each of the five pillars. First is a public meeting to approve the report, second is national peer review, and third is a public hearing. Following that

there will be an assessment of public comments following by final OATF approval and publication.

Jim Ammerman, LISS/NEIWPCC: "*Long Island Sound Study Science and Management: Updating Science Needs and Implementation Actions"*
Jim gave a quick background on the four themes of the CCMP and their Ecosystem Targets (ETs), listing the ETs of the Clean Waters and Healthy Watersheds Theme as an example. Both the Science Needs and the CCMP Implementation Actions (IAs), the subjects of the remainder of the presentation, are organized by ET. Jim then described the Science Needs document, which was posted on the LIS website in March. This is a broad reference document based on input from a diverse array of LIS partners. It is meant to highlight needs but not set priorities and is subject to continuous input and revision. It is organized into monitoring and research needs for each ecosystem target, and includes current projects addressing each need (where available) as well as suggested targets for support. For the Sound Science and Inclusive Management Theme which has no ETs, a series of monitoring and research needs focused on climate change, harmful algal blooms, ecosystem-based management, and other cross-cutting problems were included. Jim concluded by showing examples of some of the proposed changes in the CCMP IAs for the Clean Waters and Sound Science Themes and reminding attendees to send him comments on these or other IAs by June 26th.

Nikki Tachiki, EPA: "*2015 CCMP Progress Tracking & 2020 Implementation Action Update"*
Nikki followed by discussing 2015 IA progress and 2020 IA revisions in much more detail. The Long Island Sound Restoration Act requires biennial reports to Congress and reporting on progress towards completing the 2015-2019 IAs is part of that. Nikki reviewed progress in the four CCMP themes using pie charts divided into three categories of complete/significant progress, partial progress, or no progress. For all four themes, the sum of the first two categories was 73% or above. Nikki also discussed the proposed initial revisions of the IAs for the 2020-2024 period again by CCMP theme. They were again divided into three categories, no change, revised language, or IA removed. All except the Habitat theme (19%) had revision or removal proposed for at least 50% of the IAs. Nikki concluded by noting that input was still being received and a draft final IA list would be submitted to the Management Committee in July and a final list posted on the LISS website by the end of the year.

Sylvain DeGuise and Becky Shuford, CT and NY Sea Grants: *"The Working Group for Sustainable and Resilient Communities: Theme Year 1: Objectives and Proposed Activities"*
Sylvain and Becky discussed the origins of their new Sustainable and Resilient Communities working group and their plans for the group going forward. The working group developed out of observations from the 2019 July and October Management Committee meetings that less progress had been made on the resilience theme than some other themes which had working groups, and that the "human dimension" in particular seemed less developed. They then reviewed a series of CCMP outcomes from the Sustainable and Resilient Communities theme that will be the focus of the working group. The Year 1 deliverables for the working group are: 1. a five-year work plan and implementation strategy, with accompanying LISS budget request, and 2. an engaged working group ready to implement the work plan. Their strategy to devise this plan includes a two-day meeting to inventory current and potential projects, engaging interns to follow up on identified issues, and convening the working group in a facilitated meeting to select priorities. This will be followed by in a presentation of the draft work plan to partners and communities to get feedback. (Note: The above meetings were planned prior to

COVID-19 and are subject to revision and/or online presentation.) The final work plan will then be paired with an implementation strategy and budget request and submitted to the LISS. While it is too early to define specific science needs, research encompassing human dimensions and coupled socio-ecological systems is anticipated. The current working group membership was listed and regular quarterly meetings are expected.

The meeting was adjourned about noon. Stay safe and healthy everyone!