

LISS Science & Technical Advisory Committee Meeting Summary
Friday, December 20, 2013 Avery Point, CT.

Introduction/Membership Discussion (Jim O'Donnell)- The STAC discussed membership protocols with respect to the maximum number of members, new member admittance process, and requirements for STAC participation. The following conclusions were reached:

- We will send a letter to members of the STAC who have not been meeting the minimum participation requirement asking if they wish to remain active members of the STAC
- Prior to the next STAC meeting, we will hold an email vote about changing the STAC bylaws by raising the maximum size of the STAC from 40 to 45
- With regards to new members, any current STAC member can nominate a new member. Membership decisions are made by the STAC membership committee, no vote by the STAC is necessary
- The STAC welcomes its newest member, Dr. Christine Kirchoff from UCONN.
- Dr. Ashley Helton (UCONN) was nominated for membership to the STAC.
- A nomination committee for the Connecticut Co-Chair (election at next meeting) was convened, consisting of Darcy Lonsdale and Robert Wilson. If you have nominations, please let them know
- The STAC also discussed the 2014 meeting calendar, particularly whether to add a fourth meeting to meet jointly with the CAC. One suggested option was to maintain three annual meetings, but make one a longer joint CAC/STAC meeting, with the STAC conducting separate business at the beginning. The current draft schedule is to meet three times: February 21, June 20, November 21; the 2014 meeting schedule will be finalized at the February 21 meeting.

CAC Update (Curt Johnson)- The CAC met on Thursday December 12 in Bridgeport, CT. Primary topic of discussion was the CCMP update, particularly with respect to the formulation of action items. A key takeaway was the need to prioritize storm mitigation, resiliency, and preparedness efforts to take advantage of the availability of emergency money for this purpose. Other priority items included beach closures, the issue of prioritizing actions and strategies within the CCMP, and the future of the TMDL/nitrogen reductions.

Budget Update (Mark Tedesco)- There is no substantive budget update. More information is anticipated sometime in January, and we are hopeful for a level funding scenario at 2013 levels minus the sequester cuts.

LIS Report Card Project (Heath Kelsey)- We were fortunate to have Dr. Heath Kelsey from Univ. of Maryland join us by videoconference for an update on the newly funded LIS report card project. A powerpoint of the presentation was circulated to the STAC. Key points regarding this project included:

- The project will characterize ecosystem health in LIS proper, as well as two well studied embayments, Hempstead and Norwalk harbors (which already have QAPP's in place)
- The primary goal is to standardize reporting and generate a sustainable product by increasing local capacity
 - To this end, the project will be working with local scientists, including Jamie Vaudrey.
 - The project will also involve heavy stakeholder involvement through workshops
- The project will utilize a DPSIR framework
- The general process involves setting a threshold, then calculating a score based on frequency of pass/fail or using a multiple threshold approach. In development of the

report card, generally the score will be accompanied by a map/picture, and a story, as well as a short “what you can do about it” statement

- The University of Maryland team will hold two workshops, one in CT and one in NY to get input on local issues and perspectives. The team will also work to use local scientific expertise in the development of indicators and thresholds
- STAC members interested in participating in local workshops or in reviewing any aspect of the identification of indicators or threshold values should contact Jamie Vaudrey or Jason Krumholz

Geochemistry/Oxygen Exchange in LIS (Mark Altabet)- Mark Altabet from UMASS joined us to discuss some of the results from his LIS research grant dealing with the use of stable isotopes to look at the sources and sinks of N and O in LIS (see attached presentation slides). Key discussion topics included:

- The present high δ^{15} signal observed in the western sound may change as N loading changes
- We do not see DIN accumulate in bottom waters during the summer, with one explanation being denitrification in the sediments
- However, N_2/Ar ratios suggest little summertime denitrification. This raises questions on either the methodology or our understanding of nutrient pathway terms.
- Only trivial amounts of N are accumulating despite large amounts of oxygen removal by respiration.
- Much of the respiration which is taking place is occurring in the sediments, and while western LIS has the lowest concentrations of DO, a larger percentage of it is from photosynthesis, not from surface mixing.

CCMP Update (Jim Latimer)- Jim Latimer (EPA) gave a brief presentation on the present state of the CCMP update before requesting STAC input on one of the next stages of the process, which includes setting indicator targets. Using the DPSIR framework, the CCMP core team is hoping for STAC feedback on indicators which are under management control (mostly State and Impact). The hope is that STAC members will communicate expectations with respect to complexity, historical/reference levels, reasonable targets and/or whether some indicators should be direction/relative impact only. A questionnaire was circulated to this effect. Please complete and return to Jim Latimer (latimer.jim@epa.gov) at your earliest convenience, no later than 1/31/14.

WQ workgroup update (Jason Krumholz)- This agenda item was postponed due to the meeting running behind schedule.

Eelgrass Model Presentation (Jamie Vaudrey)- Jamie Vaudrey from UCONN gave a presentation on the results of the GIS based eelgrass restoration model project which was recently completed. The model was funded by a LISS research grant to assist in targeting areas for restoration, and the final report will be available in early January on the UCONN digital commons (<http://digitalcommons.uconn.edu/>) Key points include:

- Many parameters were considered, but the 5 selected model parameters were sediment grain size, sediment % organic content, DO, % light, and temperature. The model is scored out of 100 points, with each parameter assigned a weighting

- Thresholds were identified for the presence of eelgrass at a model score of roughly 50, and for increased probability of a successful restoration at 88.
- The parameter weightings were adjusted to arrive at a final weighting which maximizes the % of cells with a score over 88 which are observed to have eelgrass (at 10.56% vs. a survey wide average of 4.6%)
- A Soundwide model was tested alongside a high resolution model for several pilot embayments, which demonstrated the importance of local data (e.g. bathymetry, light, and temperature) in maximizing the model's ability to predict successful restoration sites.

Long Term Habitat View for Eelgrass (Tim Visel)- Tim Visel was unable to attend the meeting. This discussion was therefore postponed

SWEM Discussion (Jim O'Donnell)- The most recent iteration of the Systemwide Eutrophication Model (SWEM) is nearing completion of a review phase by an independent model evaluation group. This revision to SWEM was conducted to attempt to fix a "patch" which was put in place in an earlier version of SWEM which unrealistically reduced vertical mixing in order to more accurately capture patterns in dissolved oxygen. This results from the fact that the model is generally not producing enough production or respiration to draw down oxygen concentrations. Although there have been notable improvements in the model, the model still cannot reproduce the observed oxygen patterns current parameterizations of mixing or biology. The STAC discussed some alternatives including reducing vertical mixing within the range of uncertainty from estimated rates, increasing photosynthesis maximum rates, increasing algal exudation rates and grazing rates, which would serve as a vehicle to move organic material into the benthos where it can be respired and draw down oxygen concentrations.

Data Archiving Committee Jim O'Donnell reported that the STAC subcommittee met twice in the past year. Results have been summarized in a draft report that needs to be reviewed by the committee (attached). Please take the time to read and provide comments at your earliest convenience, but no later than 1/15/2014. If you are interested in participating in an ad hoc data management workgroup, please email Jim O'Donnell.

Other Agenda Items/Future Business:

- There will be an election for the CT co-chair at the next meeting. If you have nominations for this important role, please contact Darcy Lonsdale or Robert Wilson
- An update on the progress of the Water Quality Monitoring workgroup was moved to the next STAC meeting.
- The STAC will vote on possible meeting schedule changes and/or bylaw changes to the maximum size of the STAC at the next meeting, February 14, 2014, which will be a New York meeting.