Long Island Sound Eelgrass Collaborative Meeting – Virtual
March 6, 2026 (10:00-12:00)

Participants (alphabetical order):

Alex DuMont, Allison Rugila, Andy Mirchel, Athena Hermann, Bill Lucey, Blake Busch, Carl Persson, Carriel Cataldi, Cassie Bauer, Cayla Sullivan, Chris Clapp, Darcy Young, David DeBell, David Hudson, Della Campbell, Emily Watling, Emma Coffey, Eric Schneider, Evan Park, Eve Frankin Lynes, Gavin Jackson, Hannah Vagts, Holly Drinkuth, JA Macfarlan, Janelle Goeke, Jennifer USGS, Jim Ammerman, Jonah Saitz, Jamie Vaudrey, Juliana Barrett, Kenzie Payne, Kevin O'Brien, Laura Logozzo, Lauren Barrett, Leason, Matthew, Lund, Katie, Marissa Velasquez, Marissa Zwickler, Mike Bradley, Pat Barrett, Pat Kelly, Peter Linderoth, Phil Colarusso, Robert Vasiluth, Sabrina Pereira, Sarah Healy, Shauna Kamath, Simen Kaalstad, Steve Schott, Susan Bryant, Suzanne Paton, Tim Visel

* presentations can be found on the LIS Eelgrass Collaborative website

I. LIS Eelgrass Intercomparison Study – results and recommendations
Mike Bradley, URI GIS Analyst Research Associate

Mike Bradley presented on the intercomparison study (2024, 2025) to help develop a monitoring plan for Long Island Sound (LIS) eelgrass. There are new tools/platforms available that were part of this study including aerial, remote sensing satellite, and drone imagery. The goal of the study is to investigate pluses and minuses of these different platforms. Partners on the project include URI, EPA/LISP, USFWS, CT DEEP.

Q&A

In the drone imagery - where some areas drop off - is that because the technology can't see the bottom? For example, is that due to water clarity, epiphytes on the plants, or high biomass of the plants? Can you elaborate on that point?

- It has everything to do with water clarity. The way the model works is using something called "structure from motion". And if structures can't be seen, the model falls apart.

For the drone sites, you were looking at three to five sites. You mentioned Barleyfield (on Fishers Island) is a sentinel site. Do you envision all three to five sites being of that sentinel site quality?

- Barleyfield is our sentinel site, and we will continue to do that site twice a year. We are able to pick up seasonal differences at this site. In other words, when we fly in June, we can see eelgrass and then when we fly in September, we can see that there's more eelgrass. So it's worth it to spend the time doing the ground control and to do it twice a year at this site.

  At the other sites, because of the water quality issues, I just don't think it's worthwhile spending the field time to create an image where half of it is dropped out. So what I'm suggesting is trying to create one good image from Barleyfield, Stonington, and BeeBe Cove and potentially one more, that doesn't use ground control, but where we can get a clear picture of the bottom. Because the technology uses RTK, the image will still be plus or minus 1 m, which is very good accuracy. And we'll be able to draw conclusions and interpretations just based on those.

Did you look at Mumford Cove?

- We can't do drone work in Mumford Cove because it's too close to Groton and the airport.

Do you think the satellite data could be used during the earlier part of the summer (late May or June) to look at a broader set of sites if we target them earlier?

- I did look at the growing season in May, June, and July. Because of the timing of the satellites and because of the sun angle being pretty high in May and June on the horizon, you get a lot of solar

glare. So the best time to pick out eelgrass from imagery in this part of the world is roughly August to October. It might be worth looking next year in May and June, but for the 2024 and 2025 years of satellite data, the later timing was better.

Is there an ability through machine learning to use the gold standard (fixed wing aerial imagery) to identify the water clarity we're looking for and then have it roll through satellite imagery to determine when, for a given location that the quality of imagery might be available - even if it varies for a little bit of time. If so, that would mean that we might not be catching peak biomass, but we might have greater confidence of what we're mapping for a given point in time that is more accurate?

- One of the nice things about satellite imagery is that there is a tremendous amount of data per pixel and the data on satellite imagery is different than the data for aerial imagery. Aerial imagery is based on intensity. Satellite data is based on surface reflectance and can be corrected by geometric or atmospheric corrections. That's not to say that using some automated classification techniques for the aerial imagery couldn't be done, but it would add a lot of workload, and I think photointerpreting it with the underwater video camera is working great. So I don't see any reason to change that process right now.

Bays on the South Shore of Long Island (Shinnecock and west) are really shallow and typically get algae blooms and flowering earlier, with aerial mapping being done before the end of May since the waters heat so fast. With biomass buildup in bays with less than 6 feet of water, how might you suggest the approach change if it's earlier in the season and in shallower waters?

- In LIS we're getting eelgrass to 20 feet and the light penetration doesn't go that deep. So monitoring shallower sites earlier in the season would have better results.

With NRCS's release of the benthic sediment data for the Connecticut shoreline, have you considered including that information into your models to help with vetting locations? Because if areas have sandy sediments and you start seeing any kind of dark signatures, it's most likely eelgrass in that case. And then it would help you identify areas where you're going to have cryptic issues with boulders/rocky bottoms and macroalgae?

- The answer is yes and a colleague suggested making a mask of all the rocky bottom in the study area. We could do that using the subaqueous soil data, but instead we trained a model to create a mask of these areas.

Are there any plans to process earlier satellite data, perhaps coincident with the earlier aerial surveys?

- Imagery became available only in 2017 (also the 8 band 3 m imagery is very new ~2023)

Other Comment: Mapping eelgrass in the winter is not considered feasible, but in most cases there's been success delineating meadows (not shoot density or % cover) and on Long Island there is a brown algae that tends to accumulate in eelgrass in the winter, which enhances signatures of low density meadows. So you can get at least a delineation of a meadow and create a shapefile in the winter and then in the growing season, go back out and do a % cover estimate with divers and transects when the visibility is low in areas with only 6 feet of water (e.g. Long Island's south shore estuaries).

II. Unified Water Study - updates & discussion about how it relates to eelgrass management Peter Linderoth, Save the Sound's Director of Healthy Water and Lands

Peter Linderoth gave a presentation about the Unified Water Study, which is a Sound-wide water quality monitoring project that covers LIS embayments, and specifically about the LIS report card.

How often is it important to check on light meters to correct for results?

- Once you get fouling on light meters, you have to do a different type of monitoring to correct it. We send people out every 4-7 days to clean the meters (if you're looking for a continuous record). But, but we also clip the data - so if the meters are out for two weeks, then we just take three days of the data and clip to where there's a time period with the most confidence.

Is the new HOBO MX 2502 sensor which takes more accurate light measurements available yet and is it worth the added cost?

- Consider the quality of the data that we're trying to get versus the instrument that we're putting out. If UWS got the wipers with the more expensive light meter, I don't know it's worth the money because of the type of our deployments. For example, we're putting them off docks, and so we're dealing with shading issues. So the philosophy of the UWS is that we're looking for high data density. Meaning that the Tier 2 approach is to want a lot of data so that we can screen out some of these issues and still get usable data that's relevant. We're also trying to put these light meters out everywhere and so a need lower cost. Some organizations (like the CTNERR) can deploy higher quality light sensors with wipers at a few select sites to compare with lower cost hobos. Consider trying to make it affordable and make sure that citizen scientists can be involved.

Are the UWS teams that are looking at macrophytes recording presence/absence of eelgrass too?

- Yes - Tier 1 groups who record macrophyte data do record presence of eelgrass and try to do % eelgrass in some type of qualitative way (using rakes) to determine eelgrass presence. There are specific locations with GPS coordinates that can also be provided.
- It would be worth doing a comparison of this data with the aerial mapping results.

How does the UWS overlap with the EHSI modeling?

- EHSI Update – QAPP approved so moving forward to correct layers to inform the modeling.
- The temperature and the light sensors from UWS will be investigated. Ben Lawton developed a shallow water temperature model from the UWS data that will be used.
- HDR Consulting's water quality model is also being used – they are modeling light, temperature and current speed, which will be cross checked with other existing LIS data before using it in EHSI.
- A TAC is being formed for the EHSI and results will be shared with the Collaborative to update this model, which has much more data now than in the last 2013 version.

Other Comments:

- The MX2502 PAR Logger's price has dropped to ~$1600 with the accessories.
- CT DEEP just purchased a few of the MX2502's and plan on deploying them at our monitoring location at Groton Long Point this Spring/Summer.
- Maine is testing a MX2502 vs the HOBO pendants and PME continuous loggers right now. So far it's seeming more user friendly than at least the PMEs.

III. Discuss potential for additional SeagrassNet monitoring sites in LIS
Cayla Sullivan and Phil Colarusso, EPA

To follow the theme of today's call on monitoring, discussion on SeagrassNET monitoring sites to look at biomass, density, and flowering would be a good complement. This is a global monitoring program that

looks at a variety of high level parameters. New England sites are being monitoring 3x/year or even just 1x/year at peak biomass (some sites in MA, NH, ME already being monitored)

LIS is at a place where we are ready to have a longer term SeagrassNET dataset. Fisher's Island currently has a site at Barleyfield Cove. Collaborative discussion is needed about where the best sites are. For example Beebe Cove, Stonington, or few UWS sites where there's already eelgrass presence being recorded could be possibilities. CTDEEP is deploying loggers at Groton Long Point this summer and the NRCS Soil Survey is another resource to bring into this discussion. More discussion about capacity, resources required, and identification of appropriate sites is needed.

Comments:

- Save the Sound's restoration sites could be considered as possibility.
- Perhaps the seed based restoration work will provide an opportunity for CCE or CTNERR to receive funding to have a site (donor and restoration) along Long Island and one in CT – the best way to tackle that possibility is to go through the LISP Thriving Habitats and Abundant Wildlife work group's supplemental proposal process.
- Consider getting someone from another region's SeagrassNet monitoring effort to present to the Collaborative (e.g. UNH or Maine DEEP)
- Cayla shared two helpful links:
  a. SeagrassNet manual: https://www.seagrassnet.org/seagrass_manual_2015.pdf
  b. Rapid Assessment methods: https://www.seagrassnet.org/sgnet-rapid.pdf

IV. Agency/Partner Updates

Zosterapalooza, Phil Colarusso

- The 35th annual Zosterapalooza will be held this year in Boston, Massachusetts on March 25 - 26 in a hybrid format. March 25th will feature a variety of topics, while March 26th will focus on the broader challenges of large-scale seed restoration.
- Swag will be available for attendees who arrive early.

USDA-NRCS Coastal Zone Soil Survey Update, Evan Park

- NRCS is planning to do the soil survey next on the North Shore of Long Island Sound this summer, working around the New York coast line from Westchester County across Nassau and Suffolk. The survey includes tidal marsh transects and soil core collection. The NRCS team is interested in learning how to support eelgrass management with this work (e.g. better documentation of rocky areas). The team is also determining what portion of the Bronx and Queens can be included in the next survey. They will share findings with the Collaborative at a future meeting.

FISMC and NYSDEC have summer eelgrass focused internships available:
NYSDEC:
https://nysinternships.cs.ny.gov/nnyl/main/viewinternship.cfm?IntID=110633&Sort=title&County=52&Agency=09000&Standing=All&Interest=All&Concentration=All&Down=

Fishers Island Seagrass Management Coalition (FISMC): https://www.fiseagrass.org/jobs

May 19th LIS Eelgrass Collaborative Workshop

- The agenda and registration are available on the Collaborative's website. Travel support is available for those that request it when registering.