Habitat Restoration and Stewardship Work Group
Coogan Farm Nature & Heritage Center
162 Greenmanville Ave
Mystic, CT 06355
9:15am-2:30pm
September 18, 2019

Meeting Minutes

Attendance

Emily Hall	Seatuck Environmental Association
Kimberly Palmo	Friends of the Bay
Amanda Pachomski	Audubon NY
David Gumbart	The Nature Conservancy
David Kozak	CTDEEP/LISS
Victoria O'Neill	NYSDEC/LISS
Suzanne Paton	USFWS
Tim Visel	The Sound School
Kevin O'Brien	CTDEEP
Patrick Comins	CT Audubon
Paul Stacey	Footprints on the Water/LISS STAC
Nicole Tachiki	EPA LISO
Mark Tedesco	EPA LISO
Corrie-Folsom-O'Keefe	Audubon CT
Juliana Barrett	CT Sea Grant
Angela Schimizzi	NYSDEC
Harry Yamalis	CTDEEP/LISS
Jim Ammerman	NEIWPCC/LISS
Alex Krofta	Save the Sound
Jeff Main	Westchester Parks
Genevieve Nuttall	Audubon-CT
Jen Pagach	CT College
Kjirsten Alexander	NYC Parks

Welcome to the Coogan Farm Nature & Heritage Center
Davnet Conway Schaffer, Denison Pequotsepos Nature Center
-Welcomed us to the farm and explained the history of the site and current uses of the property. The site provides an expansive area of green space and trails for the community of Mystic. The farm is open to the public daily and we were welcomed to come back another time to explore the grounds. Learn more here:
https://dpnc.org/

Presentations
Review of Partner feedback on LISS habitat and wildlife priorities
V. O'Neill / H. Yamalis / D. Kozak
-We reviewed our progress towards the Ecosystem Targets. In many Targets (Coastal Habitat restored, Tidal Wetlands, River Miles), we are meeting or surpassing our goals. Our Eelgrass Target is in decline. Our Habitat Connectivity Target

has not been tracked and we have yet to determine how to track this data.
-It was pointed out by many in attendance that the numbers do not tell the whole story. These numbers represent restoration projects that have been recorded as completed and reported to the EPA. We do not track the life span or status of the habitat restored post reporting (so we do not know its fate and whether it is functioning, in decline, or has disappeared altogether).
-Eelgrass is the only Target that measures extent and restoration of the habitat is tied to water quality.
-Discussion focused on the importance of salt marsh monitoring.
-There will be a request from the LISS MC to the Work Groups in November to determine priority projects. The LISS HRSWG co-chairs will email this request to the group and will be looking for State matching funds and partners to complete projects.
-USFWS is focused on not just targeted species but species that are now at risk. Want to halt the declines of at-risk species. LISS HRSWG Co-chair To Do: Make change from targeted species to GCN (includes all listed species) and other species of concern (such as those at risk of decline).
-Reviewing the Top Coastal Habitat Restoration projects in the back of the LISS CCMP (pg68-69)
    -Priority #1: Coastal Island Stabilization and Restoration
        -Great Gull-LISFF has funded a 7-acre restoration in the past. USFWS providing habitat upslope, some areas of the coast line are eroding, need to stabilize shoreline (could be a USACE project)
        -Falkner-Barge to bring material.
        -Charles Island-14 acres of restoration funded through the LISFF.
        -Duck and Chimon are also identified as key island for restoration and stabilization but no one was aware of restoration work on these islands. Other islands of importance include Huckleberry and South Brother, both large nesting wading bird colonies.
    -Priority #2: Urban Habitat Restoration
        -Examples of work include restoration funded through the LISFF at Alley Creek and Pelham Bay.
    -Priority #3: Sandy Point Habitat Restoration Project
        -More creation than restoration
    -Priority #4: Resiliency Enhancing Techniques for Tidal Wetland Restoration
        -Examples include LISFF funded sediment placement in marsh ponding areas at Alley Creek and the living shoreline project at Stratford Point. NYS has completed a Wetlands Trends project on its marshes to see wetland loss and change over time and is in process of completing a vegetated to unvegetated marsh ratio for NY marshes, a project with USGS. CT and NY have completed SLAMM analysis.
    -Priority #5: Flax Pond Habitat Restoration
        -This project was approved for funding in FFY19 but was not funded because NYS could not come up with money for the match. The project is held up because the NYSDEC needs to fix the jetty at the site before the tidal inundation issues are addressed. The project is now estimated to cost $1million.

Identifying targeted/future LIS habitat monitoring and research needs
D. Kozak, CTDEEP; James Ammerman, LISS; Ron Rozsa, retired CTDEEP
-Jim Ammerman led the discussion on science needs related to the Ecosystem Targets identified in the LISS CCMP.
-First, Jim posed the question about focus on habitat types. It seems that most of the restoration, monitoring, and research to date has focused on tidal wetlands and eelgrass, what about the other coastal habitat types?
-There was a statement from the group that we should be monitoring and studying the quality of the habitat after it is restored. LISS does not track projects once they are restored and can't speak the current quality of restored habitat. LISS only reports acres and miles restored to the EPA.
-Another suggestion from the group is to fund more research and monitoring projects focused on new, innovative restoration techniques for tidal wetlands (thin layer deposition, creating runnels, using coir logs to fill ditches, etc).
-Another statement was made regarding looking at a watershed view concerning habitat restoration. Need to always consider SLR and its impact on coastal habitat types.
-There was a side discussion on finding other sources of funding. Living shoreline projects can be very costly. There is the LISFF but it is difficult to come with such a large match for these types of projects.
-Comment from H. Yamalis: CTDEEP has about $850k left in an existing account. It can fund pilot projects, engineering and construction. Money could be used by municipalities at a cost share. CTDEEP is currently deciding the best way to spend these funds.
-The Sound School has been installing pilot reef ball projects in New Haven. They have reef ball mini cams. Groups can

come to watch the reef ball deployment for their next reef.
-Coastal resiliency funds are only good if communities have a surplus, which very few communities have.
-There was a posed question of how healthy are our watersheds?
-There was talk of a need to monitor restoration sites and adjust them as needed. Standardize monitoring of tidal wetlands and living shoreline work. Measured across different sites in different parts of New England. Suzanne Paton USFWS said that the Estuarine Research Reserve has created a top ten metrics list to evaluate and rank any tidal wetland. Basically, this report states that if you know these ten things then you can prioritize your wetlands. The USGS published a report on a regional level to determine baseline data about tidal marshes. Restoration action available to come up with a restoration site plan. Could make this plan at the state level.

Eelgrass

-It is a volatile species. Surveys are not frequent. 2017 survey showed a loss. In the future, need more frequent surveys (ex: drones, satellites).
-There was a statement that we need to subdivide the surveys into embayments, need to request that breakdown from the contractor.
-Extent survey is only done every 3-5 years, but sentinel sites could be done between years. Certain embayments could be monitored between years.
-Zosterapalooza is the name of EPA Region 1's annual eelgrass summit, held every year in Boston at the end of March to discuss regional eelgrass work. There's no formal website for this meeting, but contact Phil Colarusso (colarusso.phil@epa.gov) and he will add you to his contact list.
- USFWS suggestion to combine some fine scale monitoring with the broad scale assessments, and evaluating off shore vs. embankments and perhaps including some long term monitoring of water temperature, clarity / turbidity, sediment at a few sites to look at possible co-variates that are influencing the populations.
-Jamie Vaudrey's eelgrass suitability model is limited. Suggestion to update and improve this model.

Tidal wetland

-LIS Tidal Wetlands Workshops (2003 and 2014) resulted in a list of top priorities. One of those priorities is developing a conceptual model. Create a sentinel monitoring plan (perhaps with Sea Grant) There could be submodules that include marsh migration, natural marsh, ditched marsh. The model would cover anything that would impact marshes, from soil characteristics to hydrology.
-Chris Elphick wants to develop explicit hypothesis on how marshes will occur. Need to identify gaps-drivers for monitoring, research. What do we do? Establish underlying issues and pull together across the board. What metrics?
-Sue Adamovicz-back in the 1600s all marshes have had grazing, embankments (for hay meadows). Need to identify how marshes were altered before we can tackle their issues.
-Marsh migration (CT and UConn CLEAR) (info from Dave Kozak)

-Analyzing the probability for marsh migration in the 21 larger marshes in CT and how SLR impacts coastal road flooding.
-model can be enhanced as needed.
-Yale would study examine rates of SLR and marsh migration since SLAMM base year of 2010 and ground truth SLAMM marsh migration projections. Focus of investigation would be marsh migration into forests using upland vegetation (tree) mortality, marsh plant occurrence through field ID and other bio-marker tests.
-Maybe take advantage of Chris Elphick and Chris Field work? But they only used aerial marsh migration study
-Will look at indicator types of forest and plant species.

-Another LIS Tidal Wetland Loss Workshop will be held in 2020. See Vicky O'Neill for details.
-Comment from S. Paton USFWS: USGS researcher Neil Ganju and others are working with Refuges to compile elevation data and to create management units which is a great example of a first step to understanding your marsh and identifying individual units for management. USFWS has been discussing implementation of management on a subset of any given marsh (similar to rotational grassland mowing / burning prescriptions) to allow other portions of the marsh to continue to support nesting birds, etc. which will then be able to colonize the newly restored areas. In this way you can also have different management objectives for different portions of marsh and / or different recommended actions. The description of and links to some of the products of this effort are here:
https://www.sciencebase.gov/catalog/item/5b73325ee4b0f5d5787c5ff3
- S. Paton USFWS comments:

-Assessment of tidal marsh integrity, including a focus on high marsh habitat quality and the likelihood that the high marsh will persist into the future.

-Collection of baseline data in tidal marshes to inform (above)-could include mapping of historic alterations to elevations and hydrology (i.e.. embankments and ditches) and mapping of current elevations and existing vegetation that could inform management (Neil Ganju work—see above link)-additional metrics could also be collected across several sites.

-V. O'Neill NYSDEC: NYSDEC is working with Neil Ganju USGWS to study vegetated to unvegetated marsh ratios in NY.

Riverine Migratory Corridors

-Monitoring success of fish passage is needed. USACE might require monitoring. Monitoring what happened when you remove a dam (how does the river recover).

Shellfish Harvested

-CT new shellfish management plan

-Maybe incorporate seaweed harvest into tracking.

Habitat Connectivity

-Chet Arnold at UConn CLEAR-forest fragmentation model. Need to follow-up on this idea. Using this as a proxy for habitat connectivity. http://clear.uconn.edu/projects/landscape/CT/forestfrag.htm

- Assessment of tidal marsh integrity, including a focus on high marsh habitat quality and the likelihood that the high marsh will persist into the future.

Other

-S. Paton USFWS comments:

- Evaluation of tidal marsh restoration techniques to help inform best management practices for site selection and implementation. The goal (of course) is to maintain the quality and quantity of this habitat into the future.

- Routine monitoring of fish populations in Long Island Sound, including a forage fish assessment (if possible). This is important for many species, but we are particularly concerned about sand lance populations that supply over 90% of the Roseate tern diet during the summer months (and drive productivity of nesting birds). This is related to climate change impacts (warming waters pushing fish deeper and / or further offshore) .... and the forage fish densities and distribution will also impact larger commercially and recreationally important fish.

Restoration Design for Harding Park & Hammond Cover in the Bronx, NY

Kjirsten Alexander, NYC DPR

-NYC has lost a great deal of its tidal wetlands. The first priority is preservation.

-Restoration is reestablishing the original marsh area, but while adapting to future change.

-Through a LISFF NFWF grant, NYC Parks selected two locations for restoration design: Harding Park and Hammond Cove in the Bronx. The design process was a community driven model (incorporating the community in every step of the process).

Hammond Cove

-the marsh has lost ~30ft since 1974. Not sure what caused the loss, but Parks wants to prevent further loss and build back to the 1974 edge. The edge is currently being undercut and sloughing cut.

-They are looking at a living shoreline options for this site, including sand placement, hard rock sills (or possibly oyster castles), shell bags with coir logs.

-Design will be completed and Parks hopes to build the project in 2020.

-There was a suggestion from the group to use boulders every few feet (instead of reef balls). There was a project in Cold Spring that used this technique.

-No more sediment is coming downstream from this creek. Need to bring in more sediment for this work.

Harding Park

-There is limited tidal wetland habitat left in the Bronx. Robert Moses filled in most of the tidal wetland in the south Bronx with fly ash. Most of the new coastline that was created was edged with rock/rubble and debris. The coves at Harding Park were created by Moses and are still used by the community for fishing.

-This this site will be a combination of tidal wetland restoration and public access (walking path, fishing pier). Need to incorporate managed access of the site.

-First step is to acquire some property from other NYC agencies. Next, excavate fill, make slope more gradual, place clean sand, plant salt tolerant species.

Restoring Fish Passage on Whitford Brook
Alex Krofta, Save the Sound
-This is a fairly developed watershed and there was a need to address four historic barriers, mouth to headwaters: Hyde Pond Dam, Whitford Pond Dam, Long Pond Dam, and Lantern Hill Pond Dam.
Hyde Pond Dam
-Dam was built in the 1700s. Water flow was disrupted at this site due to beaver activity. Storm in 2010 impacted structure. No cultural connection to the dam or the pond. No opposition from community for removing it. It was decided that the dam would be removed.
-The removal has been completed and restoration has been passive. They let the river run its course with minimal interference. They did create a pilot channel and stabilize the banks.
-Initial monitoring at this site post restoration revealed that over 1000 alewife passed the structure in 2018 but far less in 2019 due to an increase in water which disturbed the fish traps.
-Vegetation monitoring has also been successful with 36 monitoring stations in place. Over 80 different species have been found, 86% herbaceous, 32% shrubs, and 17% trees. Roger Wolfe at CTDEEP will be treating the Phragmites that has come into the site. There was only one planting area at the site, all other plants are voluntary.
-Stream channel has maintained its diversity in stream depths and banks.
-Next steps, Yale School of Forestry will be studying the stream channels and plants.
Whitford Pond Dam
-Built in the 1800s. Exploring possible fish passage. Dam owner came to STS interested in fish passage. Owner likes the pond (25-acre impoundment). CTDEEP is the partner. Currently analyzing options. NFWF has helped to fund the design.
Long Pond Dam
-Natural lake that was impounded. There are two spillways at this site. There is aesthetic value. Value for recreation (State boat launch is located here). Dam removal likely not possible. 109-acre pond.
Lantern Hill Pond Dam
-Fish Passage completed in 2013. Pequot Tribe pool and weir structure was installed. 35-acre pond.
It was noted during the presentation that there was landlocked alewife in the ponds. A member of the work group posed the question, “What would happen to the landlocked alewife once the migrating alewife are introduced? Will the migrate as well? Will they reproduce with the migrating alewife? Suggestion was to ask SUNY ESF, Karin Limburg. A Yale researcher has already looked into this, studying a land-locked population of alewife in Roger’s Lake in Old Lyme: https://cgab.yale.edu/projects/ecological-environmental-and-behavioral-genetics/evolutionary-genetics-ct-populations

For those of you who missed the meeting, or for those that would like to revisit the presentations, you can find the presentations here:
https://drive.google.com/drive/folders/1PefipsRo76scxdO-7jDC4H04fPlHhKXh?usp=sharing

Tour of Mumford Cove Saltmarsh (and water quality/eel grass) Restoration, Groton, CT
H. Yamalis and Ron Rozsa

2019 Meeting Dates:
Thursday, November 21 NY (Location TBD)

View of Mumford Cove in Groton, CT (*photo Victoria O'Neill, NYSDEC*).

LISS HRSWG members listen to Ron Rozsa as he describes the restoration work at Mumford Cove in Groton, CT (*photo Victoria O'Neill, NYSDEC*).