Management Committee Meeting Notes
Thursday, October 21, 2021
Meeting conducted remotely due to COVID-19

Attendees:

Mark Tedesco, EPA LISO
Nikki Tachiki, EPA LISO
Cayla Sullivan, EPA LISO
Esther Nelson, EPA LISO
Alex Huddell, EPA LISO
Jordan Welnetz, EPA LISO
Mel Coté, EPA R1
Leah O'Neill, EPA R1
Bessie Wright, EPA R1
Casey Abel, EPA R1
Rick Balla, EPA R2
Jim Hagy, EPA ORD
Nancy Seligson, CAC/NY
Holly Drinkuth, CAC/CT
Erik Bedan, CT DEEP
Brian Thompson, CT DEEP
Kathleen Knight, CT DEEP
Mark Parker, CT DEEP
Harry Yamalis, CT DEEP
Christopher Bellucci, CT DEEP
Kevin O'Brien, CT DEEP
Kelly Streich, CT DEEP
Emily Van Gulick, CT DA/BA
Evelyn Powers, IEC
Cassandra Bauer, NYSDEC
Sue Van Patten, NYSDEC
Mary Arnold, NYSDEC
Victoria O'Neill, NYSDEC/NEIWPCC
Kristin Kraseski, NYSDEC/NEIWPCC
Richard Friesner, NEIWPCC
Jordan Bishop, NEIWPCC
Maryann Dugan, NEIWPCC
Jim Ammerman, LISS/NEIWPCC
Robert Burg, NEIWPCC
Gary Wikfors, NOAA
Rebecca Shuford, NYSG Jimena Perez-Viscasillas, LISS/NYSG
Sylvain De Guise, CTSG
Judy Preston, LISS/CTSG
James O'Donnell, UConn
Penny Vlahos, STAC/UConn
Darcy Lonsdale, STAC/SBU
Suzanne Paton, USFWS
Audrey Mayer, USFWS
Nancy Ferlow, USDA-NRCS
Thomas Morgart, USDA-NRCS
Danielle Alexander, NYCDEP
John Morrison, USGS
Paige Allison Meyer, CCE/CAC
Todd Randall, USACE-NAE
Lisa Marshall, Galveston Bay Estuary Program
Christian Rines, Galveston Bay Estuary Program
Cynthia Clevenger, Galveston Bay Estuary Program
Bill Lucey, Save the Sound

Introduction: Mark Tedesco called the meeting to order at approximately 9:00am in the Microsoft Teams Meeting. He gave an update on personnel: Esther Nelson completed her 6-month detail; and NY Sea Grant has selected the 3 NY Sustainable and Resilient Communities Extension Educators and the Western Long Island Sound Outreach Coordinator. He outlined the meeting agenda to review the FY22 work plan and budget process with emphasis on pursing a new approach this upcoming year where the identified needs and priorities from the FY22 LISS Work Group work plans and the Federal Coordinating Group will be connected to various funding vehicles using the capabilities of Management Conference partners. He added that at the January Management Committee (MC) meeting, LISO will present an analysis of identified needs and different options (tasks and budgets) to fulfill those needs. There were no changes to the agenda or July 15 meeting notes.

Science and Technical Advisory Committee (STAC) Update provided by Jim Ammerman:

- Jim Ammerman: STAC did not meet since last the July 15 MC meeting, but there is an upcoming meeting on November 19 where there will be an update on 2018 Long Island Sound Research Grant Program projects.

Citizens Advisory Committee (CAC) Update provided by Nancy Seligson and Holly Drinkuth:

- Holly Drinkuth: CAC met online on September 21. Presentations included LISS Funding Process Update by Mark Tedesco, Infrastructure Bill and Re-authorization Updates by Policy Subcommittee Chairs, Environmental Justice (EJ) Work Group Update by EJ Co-Chairs, LISS Tracking and Reporting Tool by LISO, and Strategic Communications and Outreach Plan by Marstel-Day to incorporate priorities related to community outreach and engagement.
- Nancy Seligson: Added that the CAC recognized that with the dramatic changes in funding will require an increase in accountability and responsibility with emphasis on managing and reporting on future investments (possibly requiring more staff) and analyzing outcomes related to the restoration of the Long Island Sound.

FY2022 Work Plan and Budget Process – Mark Tedesco

- Leah O'Neill: Presented on the FY22 Work Plan and Budget in which she covered FY22 proposed funding, match considerations, estimated base funding (> $21 million), budget scenarios, anticipated schedule, and next steps (see attached presentation for more details). She emphasized the different match levels required for different projects (40% for Section 119 implementation, 5% for Section 119 education, 50% for Section 320) and the challenges to meeting these requirements. She noted that Bipartisan Infrastructure Bill would allow the EPA Administrator to eliminate or reduce the match requirement for funds appropriated through that vehicle. She highlighted that the LISS will not release a request for enhancement proposals. Instead, the LISS will focus on evaluating all the Work Group and other identified priorities and needs and then identify various existing funding vehicles and Management Conference partner capabilities to address them. She also highlighted the next steps: LISO to formally request FY22 Base Proposals, review and summarize FY22 work plan and budget needs, and prepare for January 20 MC meeting.
    - Richard Friesner: Highlighted that the Nitrogen Coordination Work Group included collaboration/cross-over between priorities, and asked if the work groups should analyze the overlap between work groups.
        - Leah O'Neill: Responded that there is no defined process yet, but agreed that the overlap between work groups should be identified; there is a possibility that the Federal Coordinating Group could also address some of those overlapping priorities.
        - Mark Tedesco: Suggested to review the packaged work group work plans to make connections and start discussions.
    - Evelyn Powers: Highlighted that there are some concerns with the schedule between when partners determine match commitments (i.e., in-kind) and when the federal fiscal year needs to show match commitments. When does match needs to be documented?
        - Leah O'Neill: Responded that LISO has and is looking into additional flexibilities once the funding level started to increase. Highlighted that once the match is in the award it is between EPA and grantee and has to be within the project and budget period; however, may have flexibilities as to how it ties into the CCMP. Additionally, mentioned that there may be other flexibilities with the Infrastructure Bill. Suggested to talk to Project Officer about these issues.
    - Sylvain DeGuise: Asked if the Federal Coordinating Group is limited to the federal agencies or if it will be adopted by the broader partnership.
        - Mark Tedesco: Responded that any work proposed by the Federal Coordinating Group identified will have to link back to the CCMP and work group identified needs; additionally will look to integrate the work within broader partnership activities to advance the program.
    - Suzanne Paton: Asked if there is potential to increase the Long Island Sound Futures Fund (LISFF) and Long Island Sound Research Grant Program even further after funding is determined.
        - Mark Tedesco: Responded that both LISFF and Research Grant Program were increased in FY21, and those funding allocations can be expanded even further in FY22. Additionally, added that there will be a new competition – EJ Grants Program which will be discussed later (see EJ Work Group Requests).
- Esther Nelson: Presented on the updates from the newly formed Federal Coordinating Group including identified outcomes and potential federal collaboration topics (see attached presentation). Next steps include identifying priority outcomes to target, potential agency leads, and specific activities to support outcomes and outreach.

    - Mark Parker: Suggested the following implementation actions for the Federal Coordinating Group to address WW-39, HW-21, SC-8, and SM-25.
    - Mark Tedesco: Added that the Group also determined a geographic focus to monitor activities and progress to ensure results, including the CT NERR as one of these locations.
    - Nancy Seligson: Highlighted that the CAC would be willing to collaborate with the Group.
    - Jim Hagy: Suggested that EPA ORD should be more included with the Federal Coordinating Group as ORD can support the outcomes and associated activities.
    - Mark Tedesco: Agreed and emphasized that the intent is for federal partners to complement EPA (both regional offices and ORD) work and needs.
- Mark Tedesco: Summarized the next steps of the FY22 work plan and budget process: 1) Encourage everyone to review the FY22 work plans prepared by the work groups, 2) EPA will prepare and release a memo to request base program proposals, 3) LISS staff will review and summarize program needs, track appropriations, and develop specific funding options for the January MC meeting, and 4) Make decisions at the April MC meeting. Additionally, mentioned that the EJ Grants Program award may be made quicker than others, but there is a need to determine match requirements.

Stretch Break at 10:15am

Environmental Justice Work Group Requests – Bessie Wright, Nikki Tachiki, and Jimena Perez

- EJ Co-Chairs: Presented on the EJ Work Group including EJ Mapping Tool and outward facing/engagement and inward facing subgroup activities and progress. Additionally, presented the work group's requests including increasing MC Representation Plan commitment and collaboration with other LISS work groups. Also introduced the Request for Applications for the EJ Grants Program with emphasis on a discussion regarding match requirements.
    - Holly Drinkuth: Supported the request to increase MC representation on behalf of the CAC.
    - Jim Hagy: Suggested that the Federal Coordinating Group consider these requests to determine how to support EJ initiatives from their own agencies in the Long Island Sound.
    - Sue Van Patten: Emphasized that NYSDEC is currently struggling to meet their own match requirements, and unsure if they can contribute to the overmatch in this upcoming cycle. Also suggested that the subrecipient provide some kind of match, even if it is low/in-kind, to ensure commitment.
        - Bessie Wright: Responded that assuming this is funded through Section 119, there will be at most a 15% match requirement on implementation awards and 5% match requirement on education awards.
        - Sue Van Patten: Suggested that a match requirement of 10% demonstrate buy-in without over burdening the applicant. Also asked if there is any consideration to amend Section 119 language to require 5% for EJ projects.
        - Mark Tedesco: Responded that there is a formal process for EPA to comment on or advocate for proposed legislation. The last re-authorization of the Long Island Sound authority, however, reduced match from 50% to 40%. So, it can be done. Additionally, the current bipartisan Infrastructure Bill provides flexibility for EPA Administrator to waive or reduce match requirements which could be applied here.
    - Erik Bedan: Highlighted that CT DEEP has provided most of the overmatch over the past few years, and acknowledged that this is not a guarantee of the ability to provide future overmatch. However, in the meantime, will evaluate year-by-year to determine the overmatch the agency can provide.

    - Jim O'Donnell: Highlighted that it is difficult to change priorities for support, but state agencies should consider providing overmatch for this RFA as it is a priority and has been overlooked for too long.
        - Mark Tedesco: Responded that this RFA will not be released with the standard 40% and 5% match requirement for implementation and education awards, respectively, as there is an intent to reduce these requirements. Added when making the grant award, the program has the flexibility to not have the statutory match met on an individual award but only if the match requirement is met on the aggregate.
- Jordan Welnetz: Presented on the EJ Mapping Tool, which is hosted on EPA's ArcGIS GeoPlatform and utilizes EPA EJ Screen data layers. The Tool identified EJ hotspots, mapped LISS partners and areas they support/service, and mapped LISFF project locations ultimately to better understand the LISS' presence in the watershed compared to the hotspots. However, she highlighted that the presence does not equal engagement. She also identified next steps including identifying names of municipalities, community-groups, non-profits in or serving in hotspots, identifying gaps (i.e., what areas/communities does LISS not have a presence in), implement needs assessment, prioritize grants/projects/funding, and add other data layers to the Tool (see attached presentation for more details).
    - Penny Vlahos: Asked what the data of health indices are based on.
        - Jordan Welnetz: Responded that the health indices are based on risks, rather than occurrences, which is why the tool uses a categorized approach.
    - Chris Bellucci: Suggested that CT DEEP could identify dominant languages in these hotspots to enhance engagement.
        - Jordan Welnetz: Highlighted that there is a "linguistically isolated" layer in EJ Screen; however, it is challenging to understand the national data trends on a local scale.
    - Penny Vlahos: Suggested to add protected areas to help advocate for green spaces.
        - Vicky O'Neill: Added that she and Harry Yamalis have the coordinates of all of the completed habitat restoration and land protection projects since 1998 in which could be overlaid. She also suggested to add public access points to the Tool.
    - Bill Lucey: Mentioned that Save the Sound went through a similar process with the Sound Health Explorer. Determined that 30% of STS projects are in EJ communities; and their current Strategic Plan intends to increase this to 40%. Also added that Save the Sound has boat launches and currently mapping public access points which can be utilized by this Tool.
    - Nikki Tachiki: Highlighted that the Tool helped identify limitations of EJ Screen; and emphasized that the EJ Work Group is using EJ Screen as a "first-assessment", and the Engagement subgroup is starting to focus on some of these hotspots to work with community-groups.
    - Jim Ammerman: Suggested to overlay remote sensing of pollutants.
- Mark Tedesco: Asked the Management Committee if they would support pursuing the establishment of an EJ Advisory Committee in which co-chairs would sit on the MC to build on existing efforts and increase EJ representation on the MC.
    - Sylvain DeGuise: Supported the motion.
    - Holly Drinkuth: Seconded the motion.
    - Sue Van Patten, Richard Friesner, Rebecca Shuford, Thomas Morgart, Penny Vlahos, Cassie Bauer, and Rick Balla supported the motion.
    - Mark Tedesco: **Confirmed that the Management Committee endorsed this action.**
- Mark Tedesco: Asked the Management Committee if they would support to create a dialogue from the EJ Work Group to other LISS Work Groups where overlap between activities will be addressed to successfully incorporate EJ initiatives into these activities.

- Sylvain DeGuise: Supported the motion.
- Sue Van Patten: Seconded the motion.
- Richard Friesner, Rebecca Shuford, Nancy Seligson, Evelyn Powers, Cassie Bauers, Holly Drinkuth and Thomas Morgart supported the motion.
- Mark Tedesco: **Confirmed that the Management Committee endorsed this action.**

CT DA/BA Presentation on Harmful Algal Blooms (HABs) monitoring – Emily Van Gulick

- Emily Van Gulick: Presented on HAB Monitoring in Connecticut including overview of the program, selected routine sampling stations, and history and trends of HAB species occurrence, distribution, and concentrations (see attached presentation for more details). Please see their Report for more details: https://portal.ct.gov/-/media/DOAG/Aquaculture/2021/2020-Connecticut-HAB-Report.pdf
    - Penny Vlahos: Asked if there are any patterns in the long-term monitoring date (i.e., high vs. low flow, high vs. low temperatures).
        - Emily Van Gulick: Responded that more data is needed to make accurate observations of trends as these some of these occurrences are natural; however, noted that storms do cause diatom blooms.
    - Sylvain DeGuise: Asked about NY's contribution to this work.
        - Emily Van Gulick: Responded that CT does work with NY in the sense of communicating findings; however, they do not work together on sampling.

Implementation Tracking and Program Reporting – Cayla Sullivan

- Cayla Sullivan: Presented on the LISS SharePoint Tracking and Reporting Tool and the Program Implementation and Progress webpage (see attached presentation for more details). The Tool tracks program implementation, through funded LISS projects' progress reports, to evaluate the statuses of the implementation actions and ecosystem targets. The webpage summarizes the information included in the Tool to communicate to the public the current investments LISS is making and how it is related to the overall health of the Long Island Sound.

Next Meeting & Adjournment – Mark Tedesco

- Meeting was adjourned at 12:30pm.
- Next meeting: January 20, 2022

LONG ISLAND SOUND STUDY

A PARTNERSHIP TO RESTORE AND PROTECT THE SOUND

LISS FY 2022 Work Plan and Budget

Presentation Overview

- FY22 proposed funding
- Match considerations
- Estimated base funding
- Budget scenarios
- Anticipated schedule
- Outline next steps

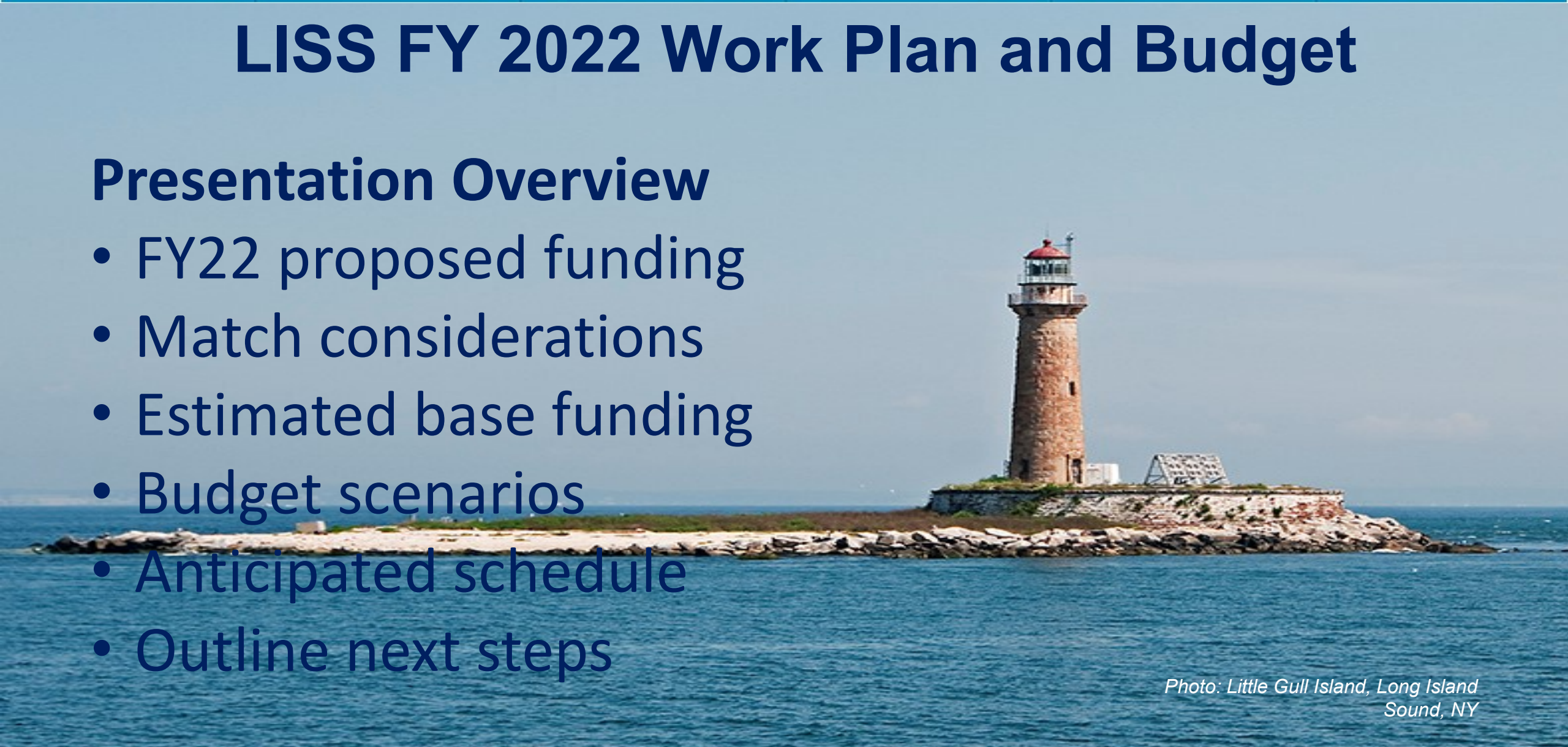
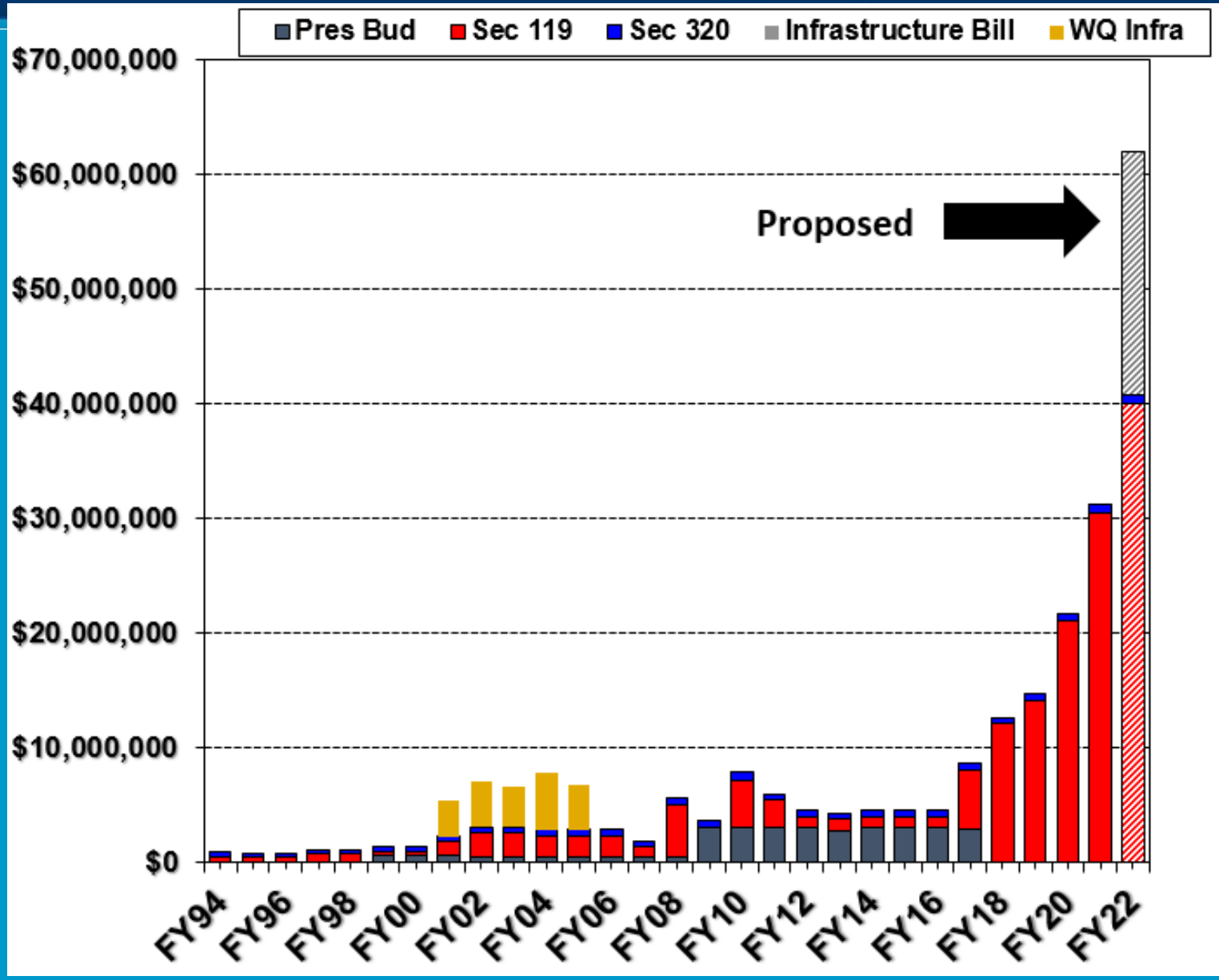


Photo: Little Gull Island, Long Island Sound, NY



- President's Budget for LIS
- CWA Section 119 Congressional
- CWA Section 320 NEP & NEP Congressional
- WQ Infrastructure
- Infrastructure Bill

EPA LISS Possible FY22 Funding Sources

- CWA §119 - Long Island Sound Restoration & Stewardship Act
  - ✓ Under Continuing Resolution at $30.4M until Dec 3
  - ✓ Possibly up to $40M in appropriations
  - ✓ Match requirements: 5% for education, 40% for all else
- CWA §320 - National Estuary Program (NEP)
  - ✓ Under Continuing Resolution at $700,000 until Dec 3
  - ✓ Possibly up to $1.7M in appropriations
  - ✓ Match requirement: Straight 50%
- *(Proposed) 2022 Infrastructure Investment and Jobs Act*
  - ✓ *Proposed $106M over 5 years to Long Island Sound*
  - ✓ *Proposed $132m for National Estuary Program, 28 estuaries*
  - ✓ *Match requirement uncertain and may be waived*

FY 22 Work Plan and Budget Development

Starting Point (roughly $21M for Base)

- **Ongoing Base Budget (Roughly $6 million)**
- **Future Fund ($7 million)**
- **Research Program ($3 million)**
- **Proposed EJ Work ($2 million)**
- **Sustainable & Resilient Communities ($3 million)**

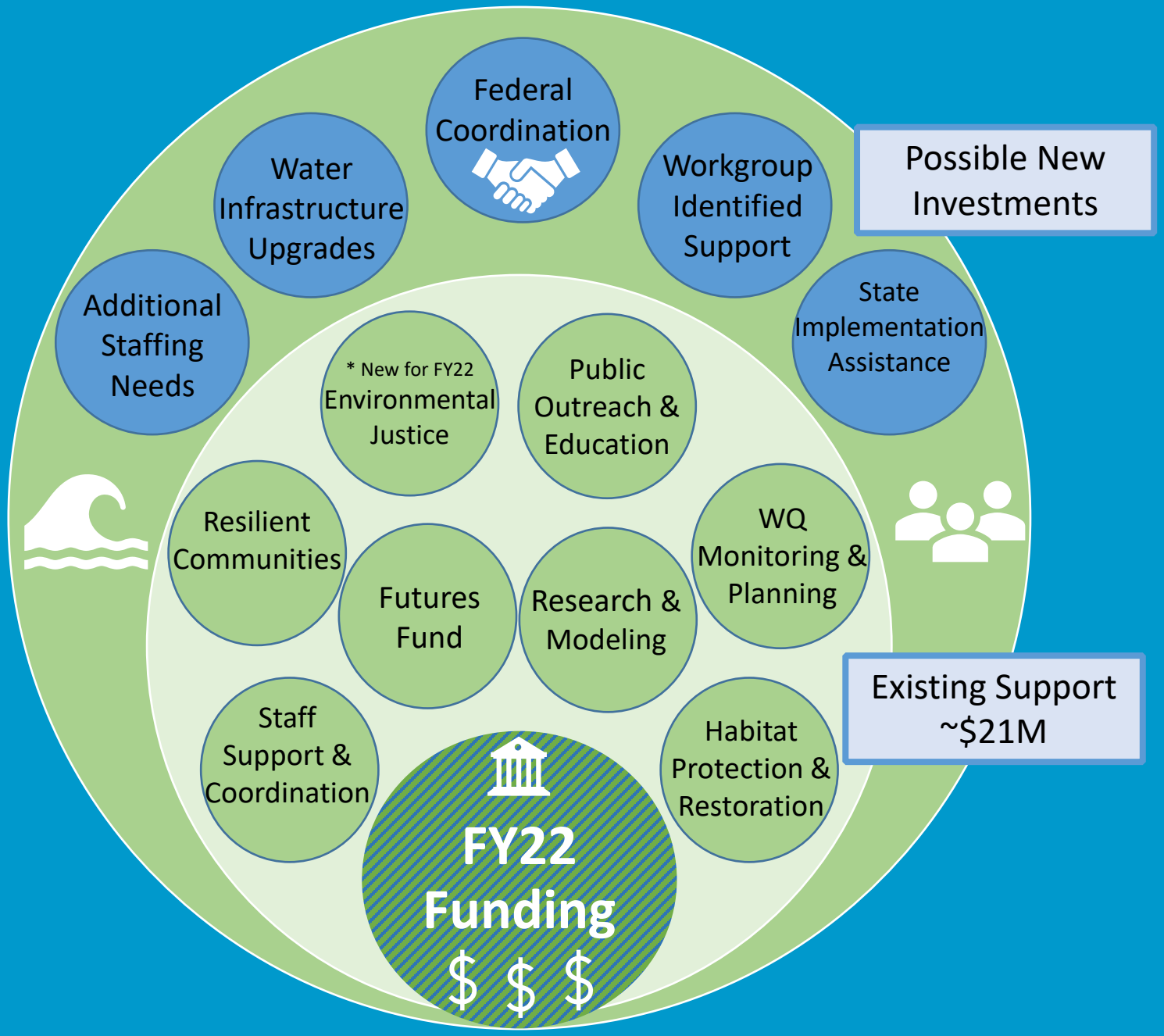
*LISO Base Budget request will go out soon, begin preparing materials now

LIS Workgroup Priorities

Each work group was required to submit a final workplan for FY2022. This included topics like: Mission Statement, Background, Desired Outcomes, Implementation Actions, and FY2022 Priorities & Needs.

- *Climate Change & Sentinel Monitoring*
- *Environmental Justice*
- *Habitat Restoration & Stewardship*
- *Public Involvement & Education*
- *Nitrogen Coordination*
- *Sustainable & Resilient Communities*
- *Watersheds & Embayments*
- Water Quality Monitoring

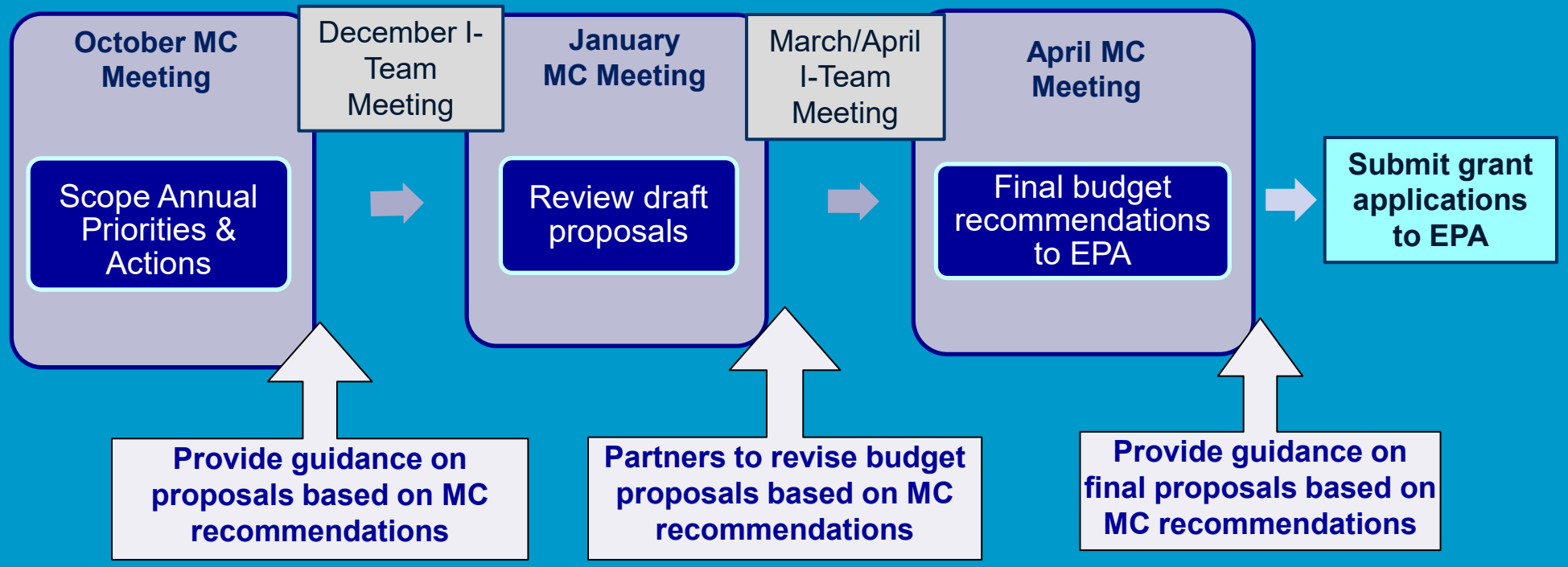
Scoping FY22 Budget Scenarios



Annual Long Island Sound Budget Process

MC – Management Committee

I-Team – Implementation Team



FY22 Work Plan and Budget Development -- Next Steps

- **LISO to formally request FY22 Base proposals**
- **Finalize FY22 budget needs**
  - **Federal Coordinating Group finalize LISS request**
  - **Outline State infrastructure support opportunities**
  - **Work Groups finalizing any FY22 budget needs**
- **Prepare for Jan 20 MC meeting**
  - **Present specific options for workplan tasks and funding levels**

Long Island Sound Federal Coordinating Group

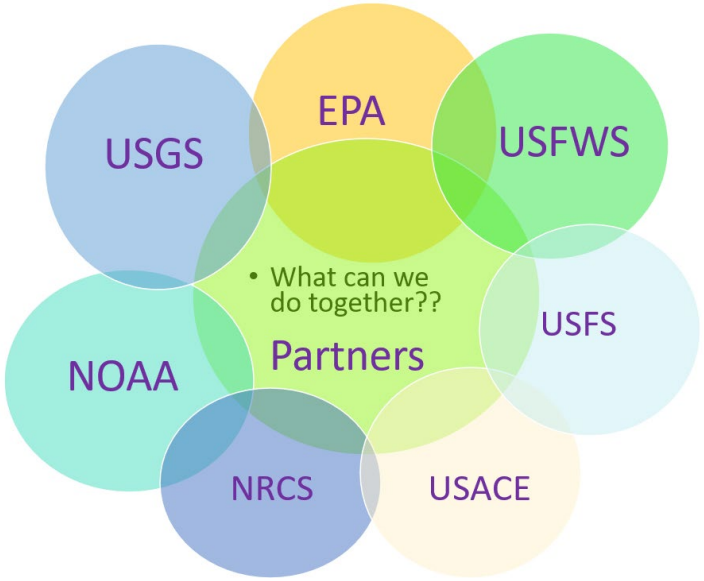
To help fulfill the Comprehensive Conservation and Management Plan (CCMP) vision of a *restored and protected Long Island Sound*, the Federal agencies of the Long Island Sound Study have come together to share opportunities for collaboration.

Met every other month beginning in April 2021

Long Island Sound Federal Coordinating Group

The group meets to coordinate and collaborate on mutual Long Island Sound priorities. Initial participating agencies, which can be expanded, include:

- Environmental Protection Agency
- Fish and Wildlife Service
- Geological Survey (New England and New York)
- National Oceanic and Atmospheric Administration
    - Fisheries, Coastal Ocean Science and Restoration
- Natural Resources Conservation Service, Department of Agriculture
- Forest Service, Department of Agriculture
- Army Corps of Engineers



Long Island Sound Federal Coordinating Group Potential Federal Collaboration Topics for FY 2022

What we requested.

Each agency asked to identify areas of opportunity for collaboration, including science and tool development, on-the-ground projects, data management and communication, etc.

For all topics/activities will consider Climate Resilience and Environmental Justice and potential geographic focus.

Long Island Sound Federal Coordinating Group

Response, over 90 specific activities suggested. We grouped by key categories such as habitat restoration, water quality, science & management, and coastal resiliency.

*Example of potential **habitat** related activities by organization:*

Collaboration Activity	DA-NRCS	NOAA	US Forest Service	USACE	USFWS	USGS	Grand Total
Habitat Restoration	2	10	2	1	7	19	41
Forest management / Riparian buffers/ Coastal forests			2				2
Fish Passage Restoration		1				10	11
Thriving and Abundand Wildlife						1	1
Seagrass	1	1			1	1	4
Sediment		0				1	1
Shellfish (suitability assessment, restoration, ecological and economic valuation).		4		1			5
Tidal wetlands	1	1			6	6	14
Tidal wetlands, fish passage, shellfish, eelgrass		3					3
Resilience, Navigation - Dredged material islands				1			1

Long Island Sound Federal Coordinating Group Potential Federal Collaboration Topics for FY 2022

Six Outcome Themes: (not in particular order)

1. Habitats are Protected & Restored (wetlands, submerged aquatic vegetation, fish passage) in the face of climate change
2. Natural and Cultured Shellfish Populations are Increased
3. Water Quality is Improved
4. Science is Integrated and Data Analysis and Visualization Improved
5. Marine Spatial Plans to Maximize Use and Minimize Conflicts
6. Ecosystem Valuation: Value of Natural Capital and Services of the Ecosystem Are Estimated to Inform Management Investments.

Long Island Sound Federal Coordinating Group

Potential Federal Collaboration Topics for FY 2022

1. Outcome: Habitats are Protected & Restored (wetlands, submerged aquatic vegetation, fish passage) in the face of climate change

Outputs:

- *Understand functions and threats (e.g., sea level rise impact, increase resiliency)*
- *Assess and advance restoration techniques, including pre- and post-restoration monitoring, (e.g., thin layer deposition, submerged aquatic vegetation seeding or planting, etc.)*
- *Characterize and map status and trends*
- *Implement on-the-ground projects supporting ecosystem targets*
- *Facilitate permitting*

Resilient coastal communities

Potential Federal Collaboration Topics for FY 2022

An example project with

Integrated Habitat Restoration of *Seagrass*

NRCS Underwater habitat restoration

NOAA hatchery seed enhancement

Using **USGS** seagrass modeling, statistically robust survey design & analysis to implement on-the-ground projects supporting ecosystem targets for waterfowl, survey design, monitoring and analysis

NOAA Fisheries
Assess and advance restoration techniques, including pre- and post-restoration monitoring

USFWS Characterize and map status and trends of seagrass beds – including incorporation of new techniques to better assess inter-annual variation in extent

Outcome:
Seagrass Habitats are Protected & Restored

NOAA & USGS:
Understand functions and threats

All: integrate data with decision GIS support tools

Long Island Sound Federal Coordinating Group
Potential Federal Collaboration Topics for FY 2022

2. Outcome: Natural and Cultured Shellfish Populations are Increased

Outputs:

- *Understand functions and threats including HABS, disease, pollution, etc.*
- *Characterize and map status and trends*
- *Estimate natural capital and ecosystem service*
- *Implement on-the-ground projects supporting ecosystem targets*
- *Enhance sustainability; living shorelines*
- *Facilitate permitting*

Potential Federal Collaboration Topics for FY 2022

An integrated Habitat Restoration project example with shellfish restoration

… in the face of multiple climate-change induced stressors.

NOAA NMFS, NCCOS, FWS, and USDA/NRCS: A) Quantification and valuation of fisheries enhancement, habitat provisioning, and nutrient reduction provided by LIS shellfish aquaculture. B) Harmonize CT and NY shellfish aquaculture and restoration BMPs; implement related monitoring and baseline assessments.

NOAA NMFS: Assess effects of environmental change upon shellfish growth, health, reproduction, and survivability.

NOAA-NCCOS , NMFS, OHC: Bivalve bio-extraction and water quality quantification.

NOAA & USGS: Monitor and collect data across LIS to bridge knowledge gaps of changing environmental conditions and climate change-induced stressors.

Outcome: Natural and Cultured Shellfish Populations are Increased, propagating ecosystem services and value

All: Integrate data with decision GIS support tools, such as the CT Aquaculture Mapping Atlas, CT Shellfish Restoration Map Viewer, and LIS Blue Plan Map Viewer.

Long Island Sound Federal Coordinating Group
Potential Federal Collaboration Topics for FY 2022

3. Outcome: Water Quality is Improved

Outputs:

- *Pollutant source identification and tracking (nutrients, pathogens, sediment, toxic contaminants)*
- *Monitor status and trends of pollutants including landscape drivers*
- *Develop and apply decision support tools*
- *Nutrient management plans and implementation projects*
- *Implement best management practices, including riparian buffers, wetlands, stormwater treatments, bioextraction, etc. …*

Long Island Sound Federal Coordinating Group
Potential Federal Collaboration Topics for FY 2022

4. Outcome: Science is Integrated and Data Analysis and Visualization Improved

Outputs:

- *Integrated modeling and mapping tools*
- *Science sharing; example, Virtual Sound*
- *Inform resiliency strategies including flood risk evaluation & potential mitigation/adaptation*
- *Establish Long Island Sound as a Priority Ecosystem Science study location.*
- *Data management and facilitation of Open Science data availability and use*

Long Island Sound Federal Coordinating Group
Potential Federal Collaboration Topics for FY 2022

5. Outcome: Marine Spatial Plans Maximize Use and Minimize Conflicts

Outputs:

- *Nearshore subaqueous characterizations*
- *High resolution bathymetric mapping of embayments*
- *Expand comprehensive mapping of seafloor and living resource and human uses*

Long Island Sound Federal Coordinating Group
Potential Federal Collaboration Topics for FY 2022

6. Outcome: Ecosystem Valuation – value of natural capital and services of the ecosystem are estimated to inform management investments.

Outputs:

- *Economic valuation of wetlands, aquaculture, water quality, and seagrass*
- *Incorporate information into project planning prioritization*

Long Island Sound Federal Coordinating Group
Potential Federal Collaboration Topics for FY 2022

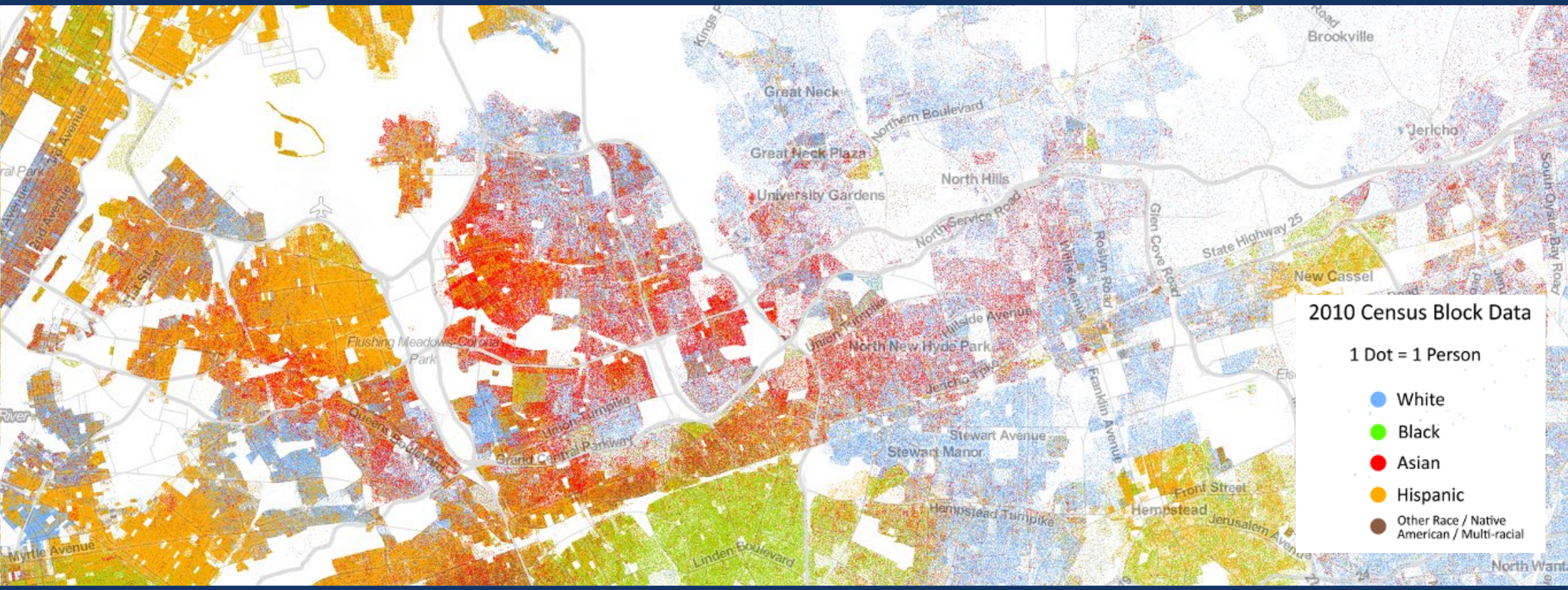
Next Steps..

- Identify which of these Outcomes to target initially
- Identify potential agency lead (or co-leads) for selected Outcomes.
- Federal partners to help identify what specific activities support the outputs.
- Outreach
  - Long Island Sound Study Management Committee
  - Citizens Advisory Committee
  - Long Island Sound Congressional Caucus
  - States and partners
  - Science and Technical Advisory Committee
  - Other?
- Begin to develop budgets and work plans for potential Interagency Agreements.

Note to mention:

Geographic focus areas that have been suggested in Connecticut include Norwalk Harbor and the proposed National Estuarine Research Reserve System (NERR) and in New York Oyster Bay as well as Port Jefferson Harbor Complex.

Long Island Sound Study
A Partnership to Restore and Protect the Sound



Environmental Justice Updates and Requests

Jimena Perez-Viscasillas, NYSG
Bessie Wright, EPA R1
Nikki Tachiki, EPA R2

Environmental Justice Work Group Summary

Long Island Sound Study
A Partnership to Restore and Protect the Sound

Mission Statement: To promote the incorporation of environmental justice into LISS decision-making and implementation of all CCMP goals.

Strategies to Achieve the Mission:

Strategy 1: Foster internal learning and education of environmental justice, diversity, equity, and inclusion within the Long Island Sound Study.

Strategy 2: Improve outreach to build and sustain relationships with new and diverse partners within the LIS watershed, focusing on environmental justice groups and communities.

FY22 Priority Implementation Actions:

SM-17: Establish and implement practices to effectively engage underrepresented stakeholders and communities in CCMP implementation and LISS Management Conference decision-making.

SC-4: Support federal, state and local environmental justice initiatives that promote equitable access, appreciation, and understanding of the Long Island Sound.

Remaining priorities: HW-22, SC-31, SC-6, HW-9, SC-5, SC-7, SC-19, SC-16, SC-32, HW-13

Engagement Sub-Group

- **Developing Logic Model**

- **Outreach Prep**
  - LIS EJSCREEN Map + DEC Maps
  - Identifying 3-4 potential 'hotspots'
  - Potential Contacts, networks and meetings

- **Tracking what other groups are doing and streamlining communication efforts (*listserv?*)**
  - Avoid fatiguing local communities!

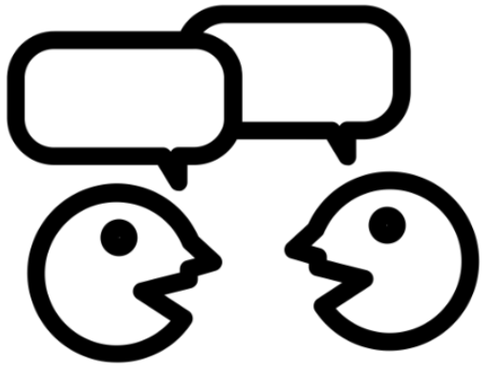


Image: clarification by RAFSAN from thenounproject.com

Inward Facing Group

- **Creating a shared understanding of EJ within the context of LISS**
  - Internal Assessment
  - Trainings
- **Fully integrating EJ into LISS operations and decision-making processes**
  - New Committee Proposal
- **Measuring success**
  - Collaboration with other work groups

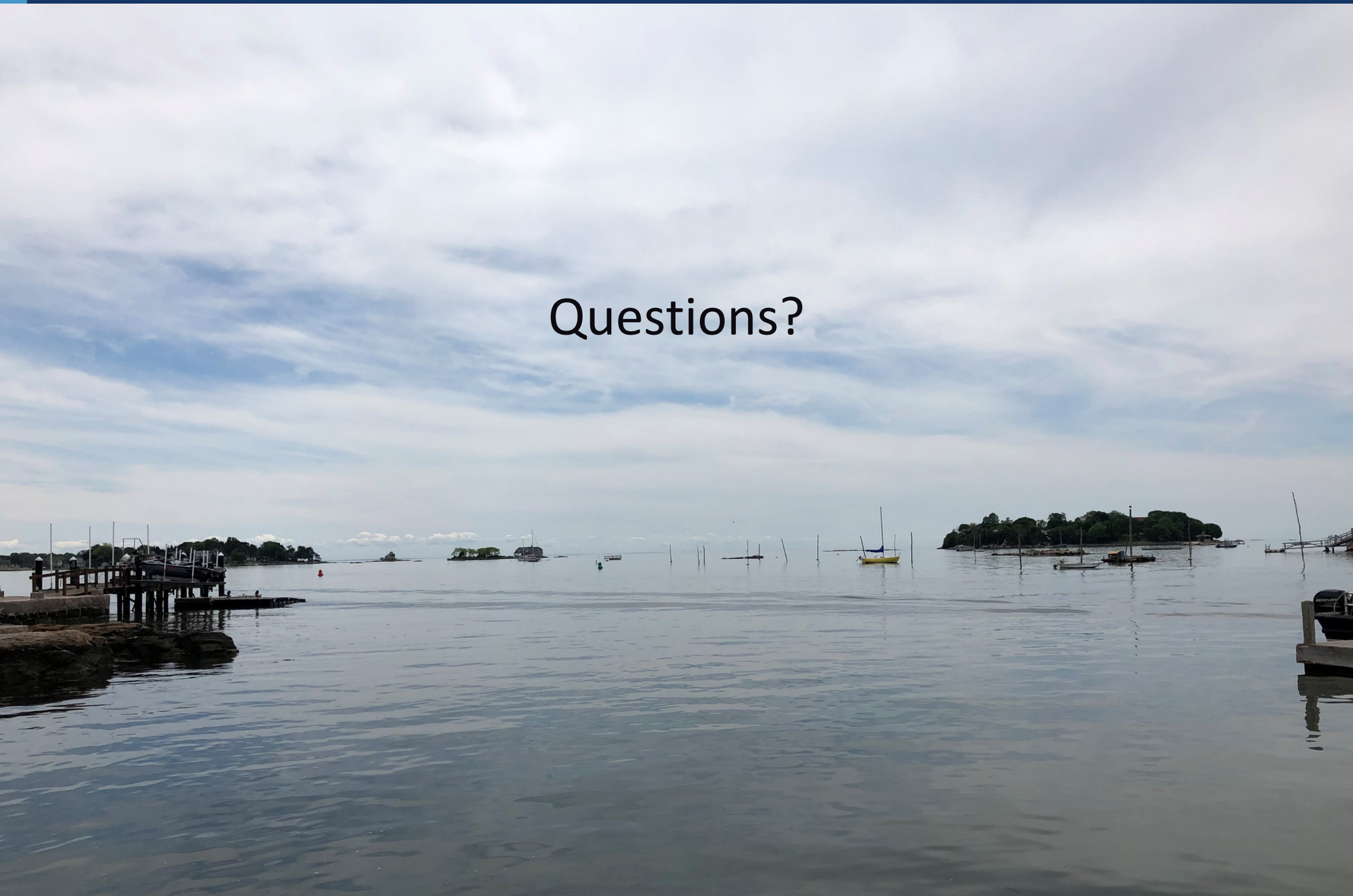
Requests to Management Committee

Asks of Management Committee:

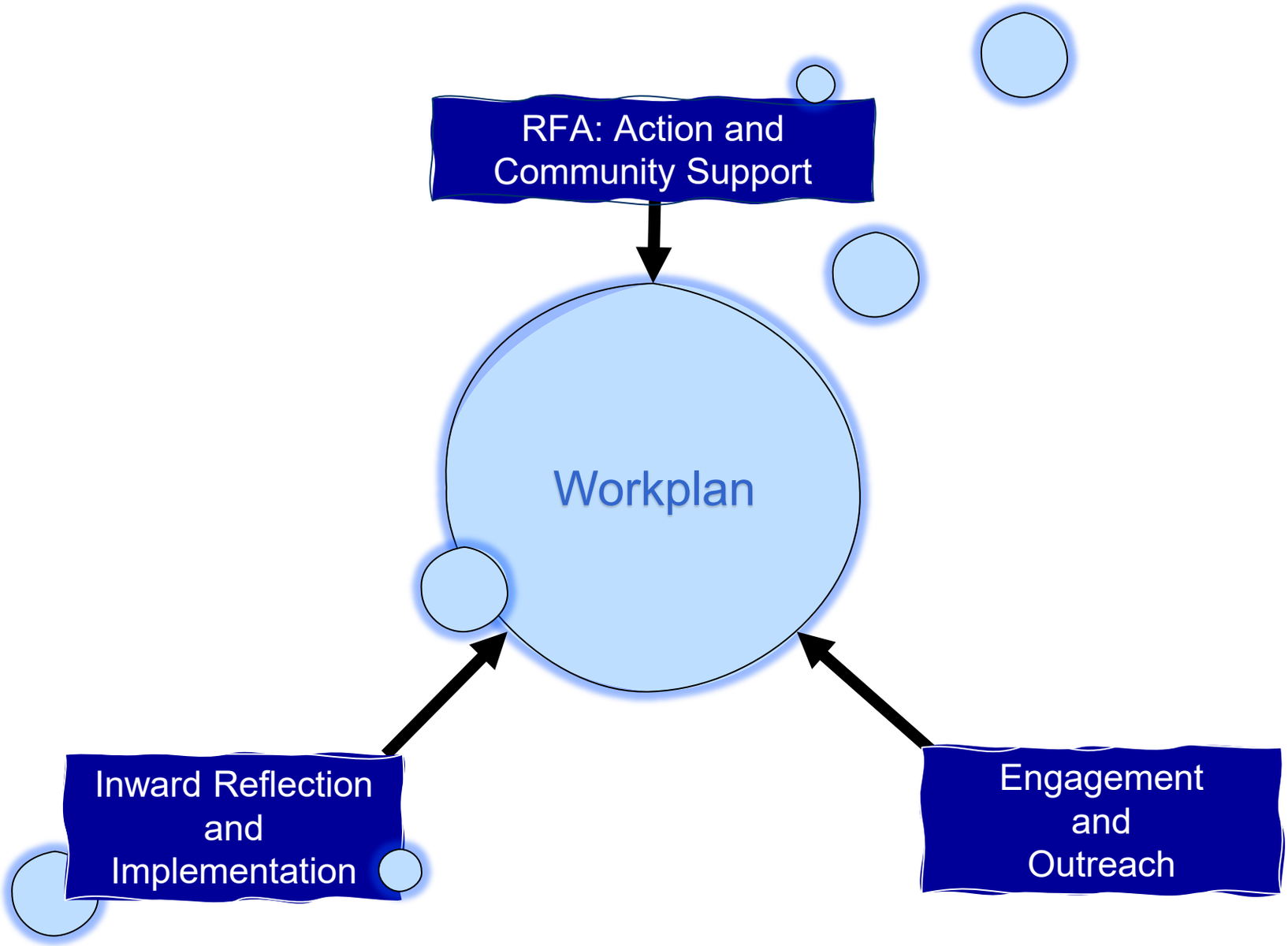
- Increasing MC Representation Plan commitment
- Collaboration with fellow Work Groups

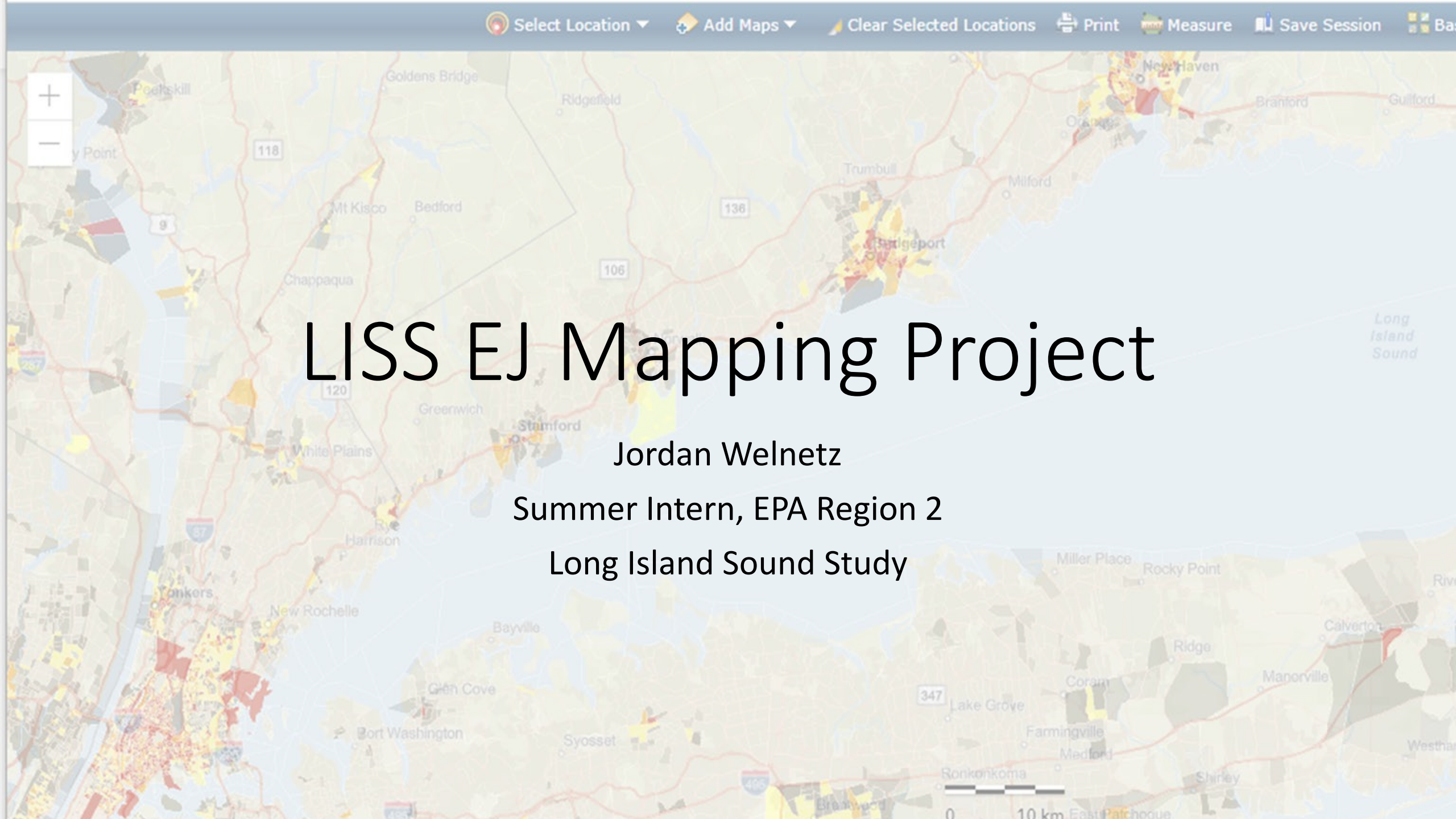
Request for Applications

- **What is this program?**
  - Competitive Grant Admin
  - Technical Support, Outreach, Guidance
- **How did we try to integrate EJ into this RFA?**
  - Linked the EJ goals from the CCMP into the RFA
  - Language to encourage environmental benefits and investments in underrepresented, underserved, and overburdened communities
  - Prioritize EJ knowledge and engagement
- **Match Discussion**



Questions?


RFA: Action and Community Support
Workplan
Inward Reflection and Implementation
Engagement and Outreach



LISS EJ Mapping Project

Jordan Welnetz

Summer Intern, EPA Region 2

Long Island Sound Study

EJ Mapping Project Overview

EJ Mapping Project - Scope

1. Explore Existing Mapping Tools
2. Identify EJ ‘hotspots’ in LISS area
3. Map current partners and areas they support/service & compare with EJ hotspots.
4. Create a map of LISFF projects and compare to EJ hotspots
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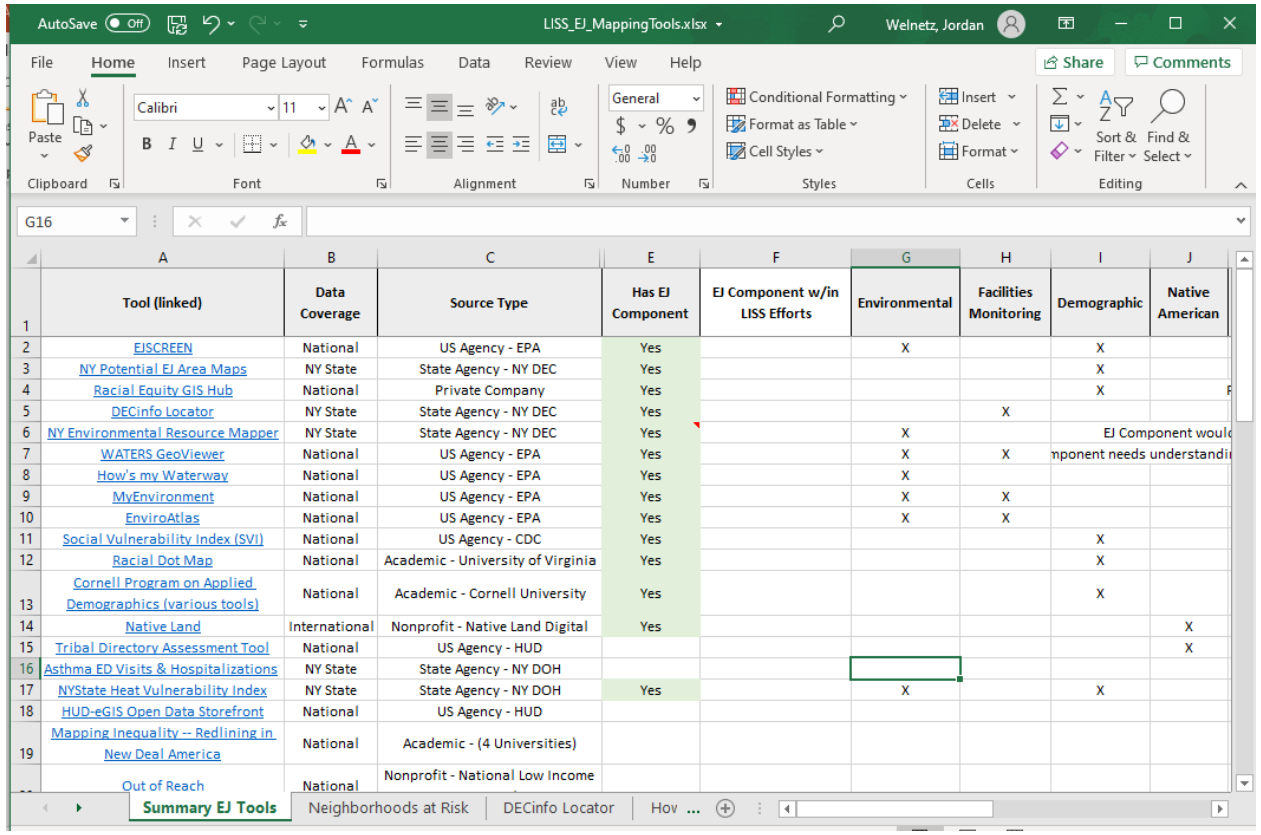
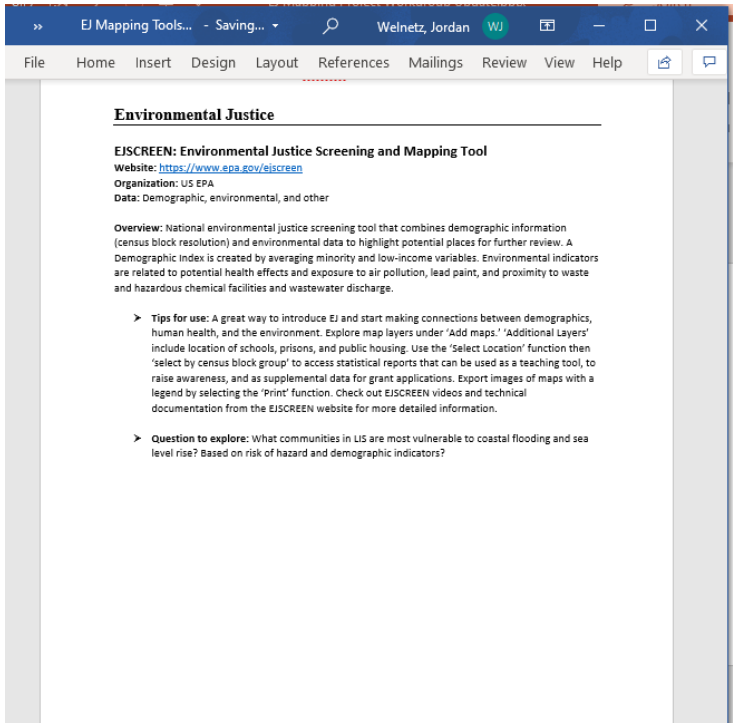
Methodology – Evaluating existing tools

Explore tools → Evaluate & Refine → Identify EJ hotspots



Tool (linked)	Data Coverage	Source Type	Has EJ Component	EJ Component w/in LISS Efforts	Environmental	Facilities Monitoring	Demographic	Native American
EJSCREEN	National	US Agency - EPA	Yes		X		X	
NY Potential EJ Area Maps	NY State	State Agency - NY DEC	Yes				X	
Racial Equity GIS Hub	National	Private Company	Yes				X	
DECinfo Locator	NY State	State Agency - NY DEC	Yes			X		
NY Environmental Resource Mapper	NY State	State Agency - NY DEC	Yes		X		EJ Component woul	
WATERS GeoViewer	National	US Agency - EPA	Yes		X	X	mponent needs understandi	
How's my Waterway	National	US Agency - EPA	Yes		X			
MyEnvironment	National	US Agency - EPA	Yes		X	X		
EnviroAtlas	National	US Agency - EPA	Yes		X	X		
Social Vulnerability Index (SVI)	National	US Agency - CDC	Yes				X	
Racial Dot Map	National	Academic - University of Virginia	Yes				X	
Cornell Program on Applied Demographics (various tools)	National	Academic - Cornell University	Yes				X	
Native Land	International	Nonprofit - Native Land Digital	Yes					X
Tribal Directory Assessment Tool	National	US Agency - HUD						X
Asthma ED Visits & Hospitalizations	NY State	State Agency - NY DOH						
NYState Heat Vulnerability Index	NY State	State Agency - NY DOH	Yes		X		X	
HUD-eGIS Open Data Storefront	National	US Agency - HUD						
Mapping Inequality -- Redlining in New Deal America	National	Academic - (4 Universities)						
Out of Reach	National	Nonprofit - National Low Income						



Environmental Justice

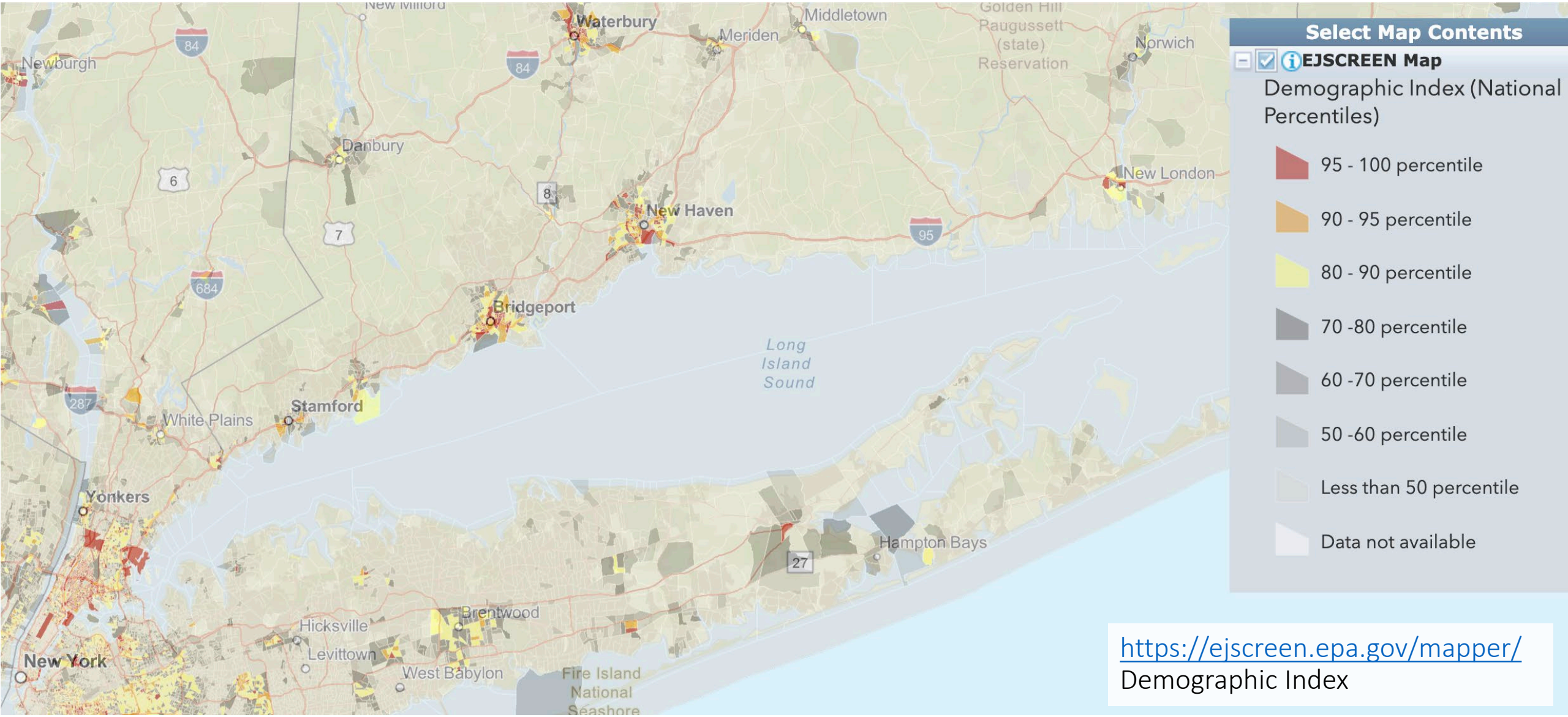
EJSCREEN: Environmental Justice Screening and Mapping Tool
Website: https://www.epa.gov/ejscreen
Organization: US EPA
Data: Demographic, environmental, and other

Overview: National environmental justice screening tool that combines demographic information (census block resolution) and environmental data to highlight potential places for further review. A Demographic Index is created by averaging minority and low-income variables. Environmental indicators are related to potential health effects and exposure to air pollution, lead paint, and proximity to waste and hazardous chemical facilities and wastewater discharge.

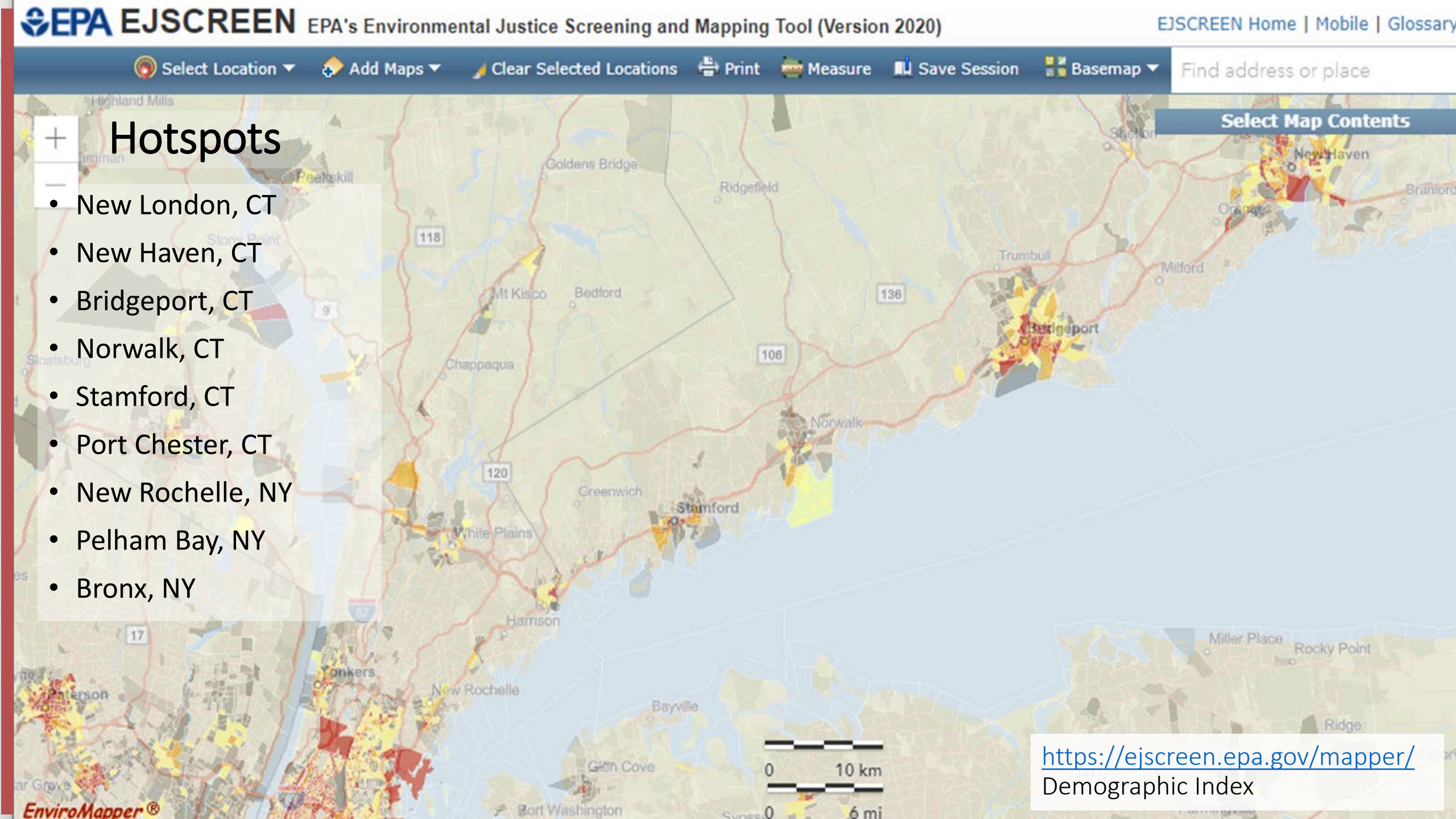
- **Tips for use:** A great way to introduce EJ and start making connections between demographics, human health, and the environment. Explore map layers under 'Add maps.' 'Additional Layers' include location of schools, prisons, and public housing. Use the 'Select Location' function then 'select by census block group' to access statistical reports that can be used as a teaching tool, to raise awareness, and as supplemental data for grant applications. Export images of maps with a legend by selecting the 'Print' function. Check out EJSCREEN videos and technical documentation from the EJSCREEN website for more detailed information.
- **Question to explore:** What communities in LIS are most vulnerable to coastal flooding and sea level rise? Based on risk of hazard and demographic indicators?

EPA EJSCREEN EPA's Environmental Justice Screening and Mapping Tool (Version 2020)

Select Location | Add Maps | Clear Selected Locations | Print | Measure | Save Session | Basemap



https://ejscreen.epa.gov/mapper/
Demographic Index


EPA EJSCREEN EPA's Environmental Justice Screening and Mapping Tool (Version 2020)
EJSCREEN Home | Mobile | Glossary
Select Location
Add Maps
Clear Selected Locations
Print
Measure
Save Session
Basemap
Find address or place
Select Map Contents
Hotspots
New London, CT
New Haven, CT
Bridgeport, CT
Norwalk, CT
Stamford, CT
Port Chester, CT
New Rochelle, NY
Pelham Bay, NY
Bronx, NY
Goldens Bridge
Ridgefield
Mt Kisco
Bedford
Chappaqua
Trumbull
Milford
Bridgeport
Norwalk
Greenwich
Stamford
White Plains
Harrison
Yonkers
New Rochelle
Bayville
Glen Cove
Port Washington
Miller Place
Rocky Point
New Haven
0 10 km
0 6 mi
EnviroMapper®
https://ejscreen.epa.gov/mapper/
Demographic Index

EJ Mapping Project - Scope

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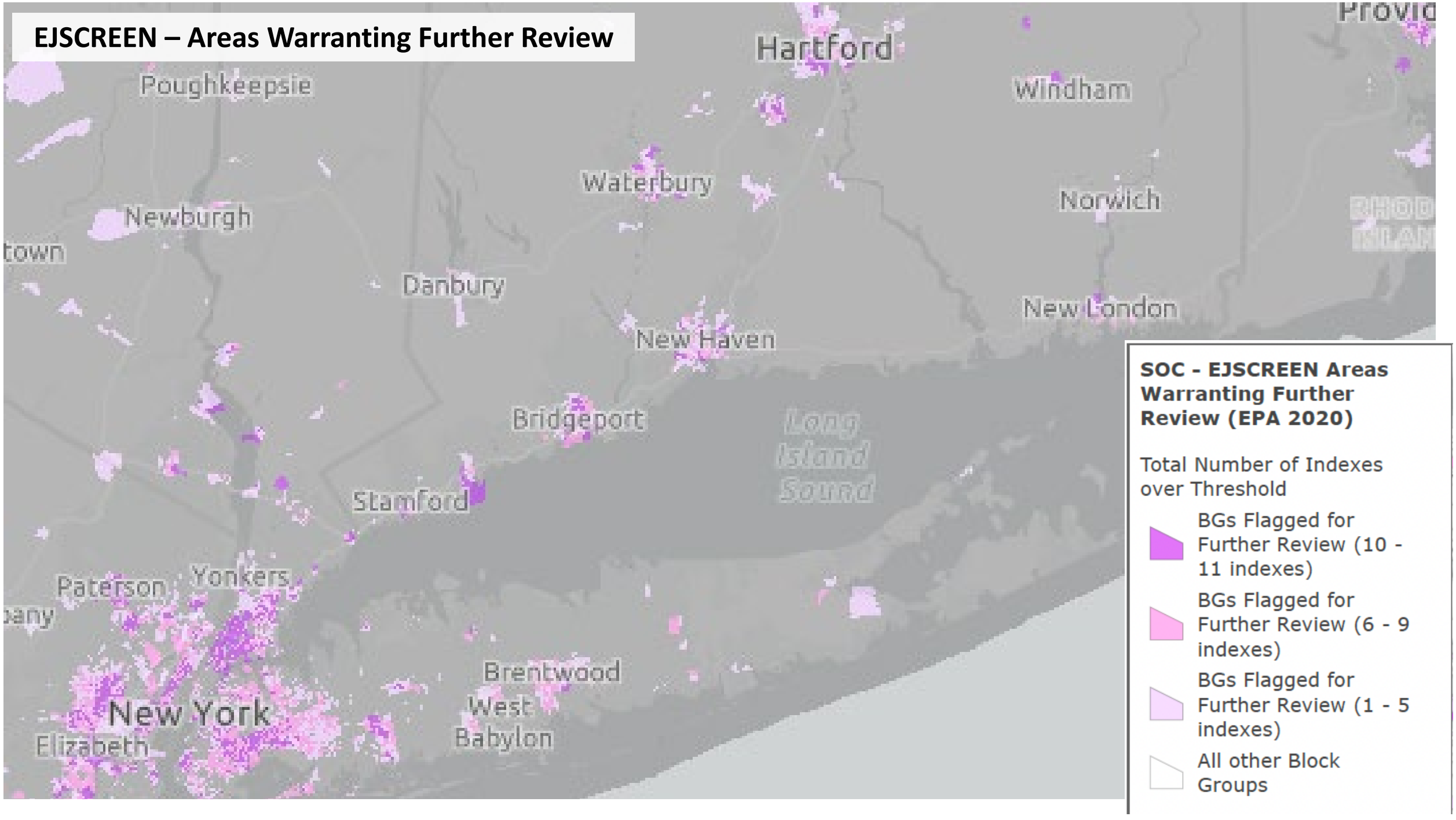
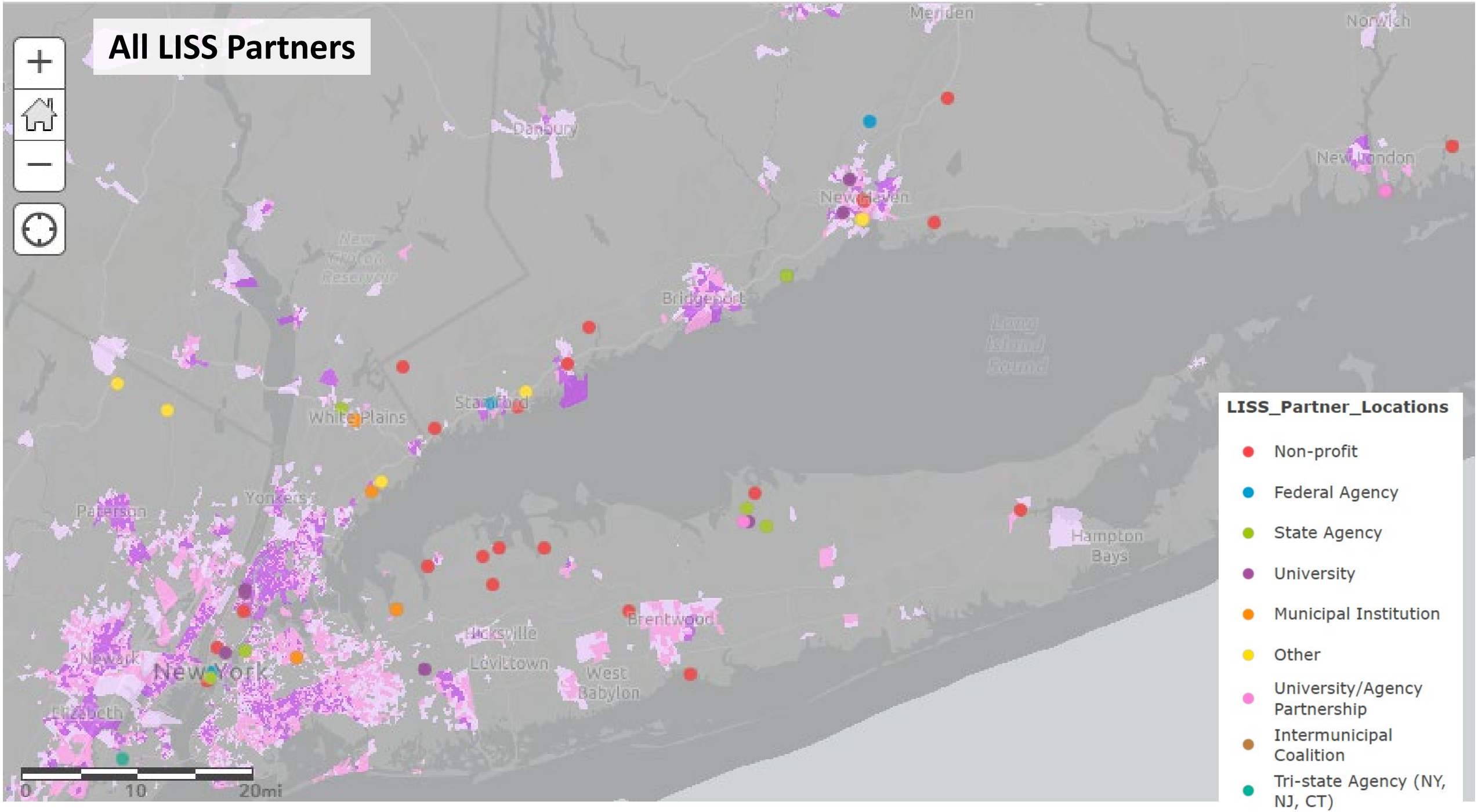
EJSCREEN – Areas Warranting Further Review

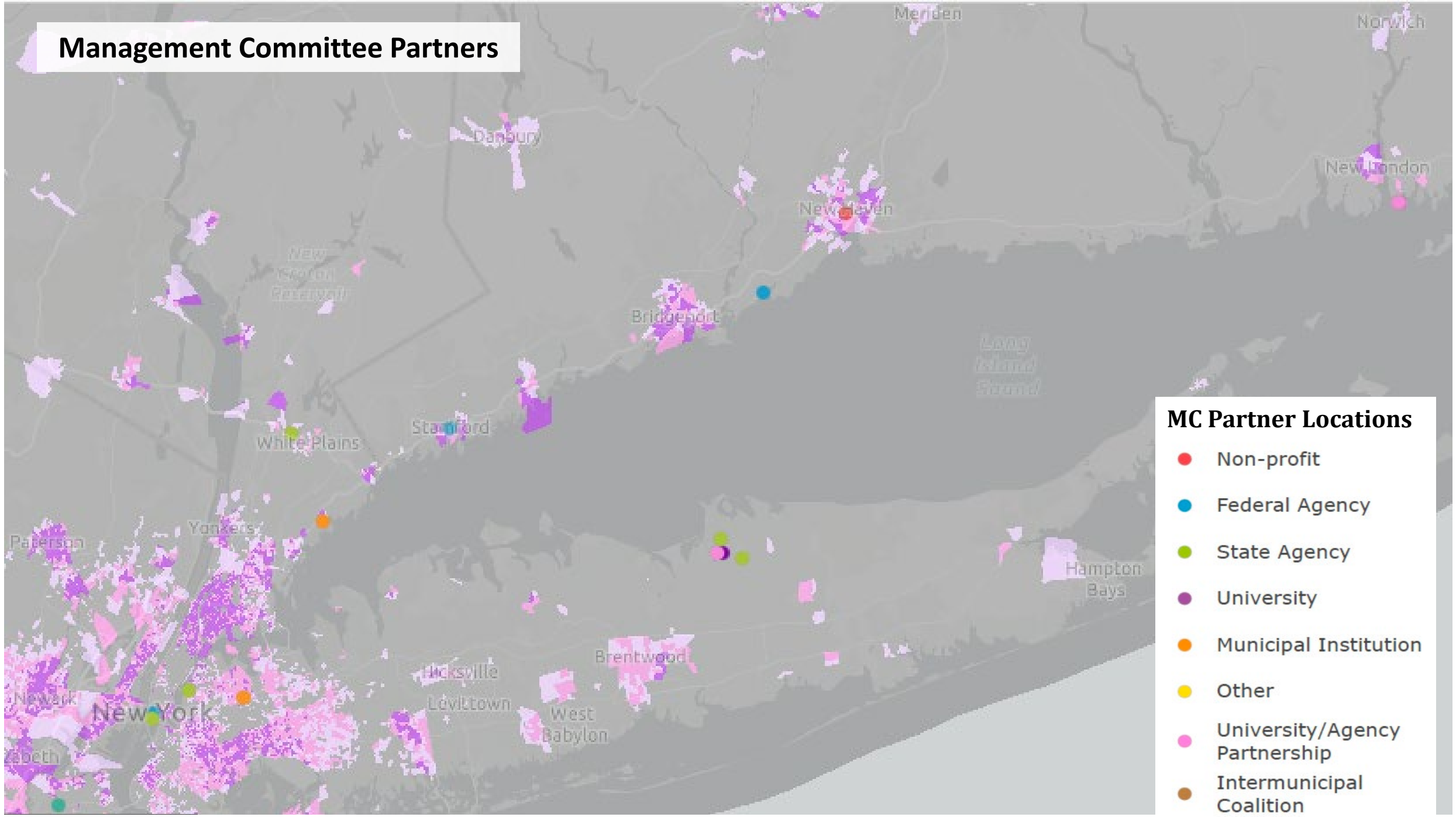


All LISS Partners

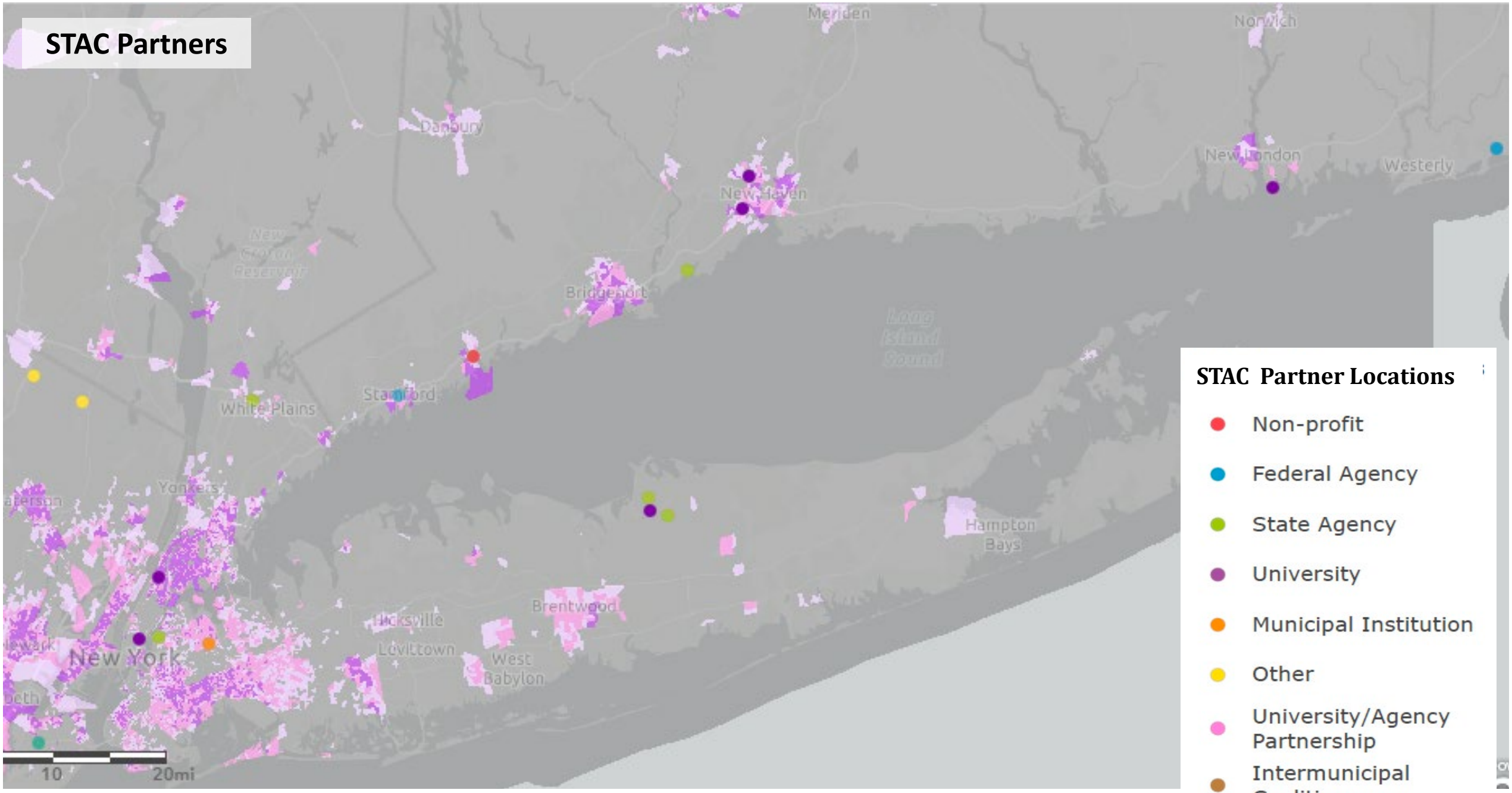


CAC Partners

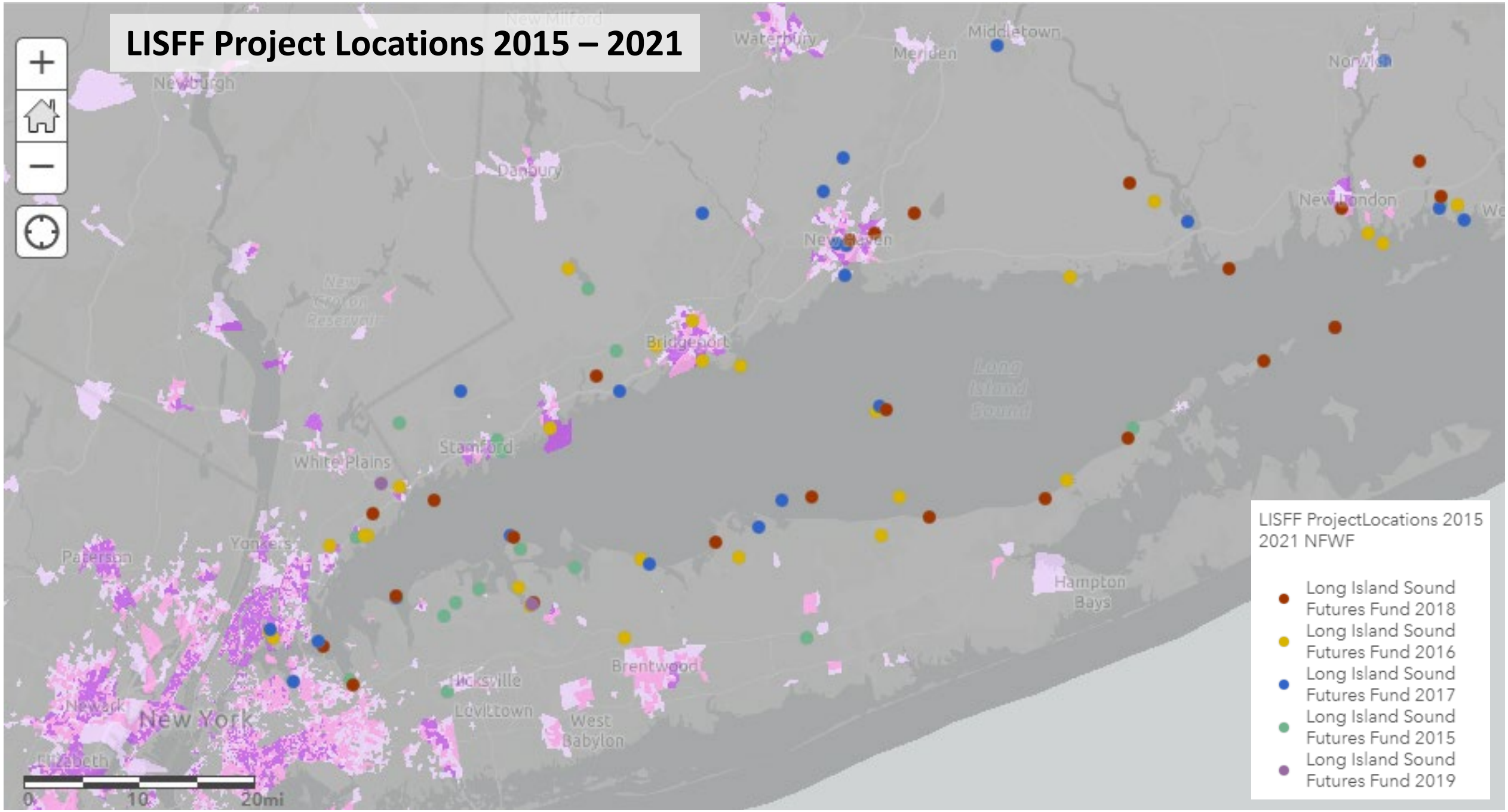
Management Committee Partners



STAC Partners



LISFF Project Locations 2015 – 2021



Takeaways/Challenges

- Visualizations are helpful and imperfect
- Useful information across different tools, ability to compare across tools depending on topic of interest
- EJ Mapping tools are meant to be “first-pass assessments” not to define boundaries of Environmental Justice Communities
- Creating new maps/tools means they needs to be maintained in the long-term

<u>Refining Expectations</u>:

- What kinds of questions are we trying to answer with the EJ Mapping tools?
- What is helpful for informing future LISS EJ efforts (i.e. partnerships, grants, etc.)

EJ Mapping Project - Scope

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Next Steps

- Identify names of municipalities, community-groups, non-profits, etc. in or serving identified hot spots.
- Identify gaps – what areas/communities does LISS not have a presence?
- Needs assessment
- Prioritization of grants/projects/funding
- Add other layers to the maps – flood risk, habitat type, impervious cover, access to LISS

Questions? Comments?

jordan.welnetz@gmail.com




HAB monitoring in Connecticut

Connecticut Department of Agriculture

Bureau of Aquaculture

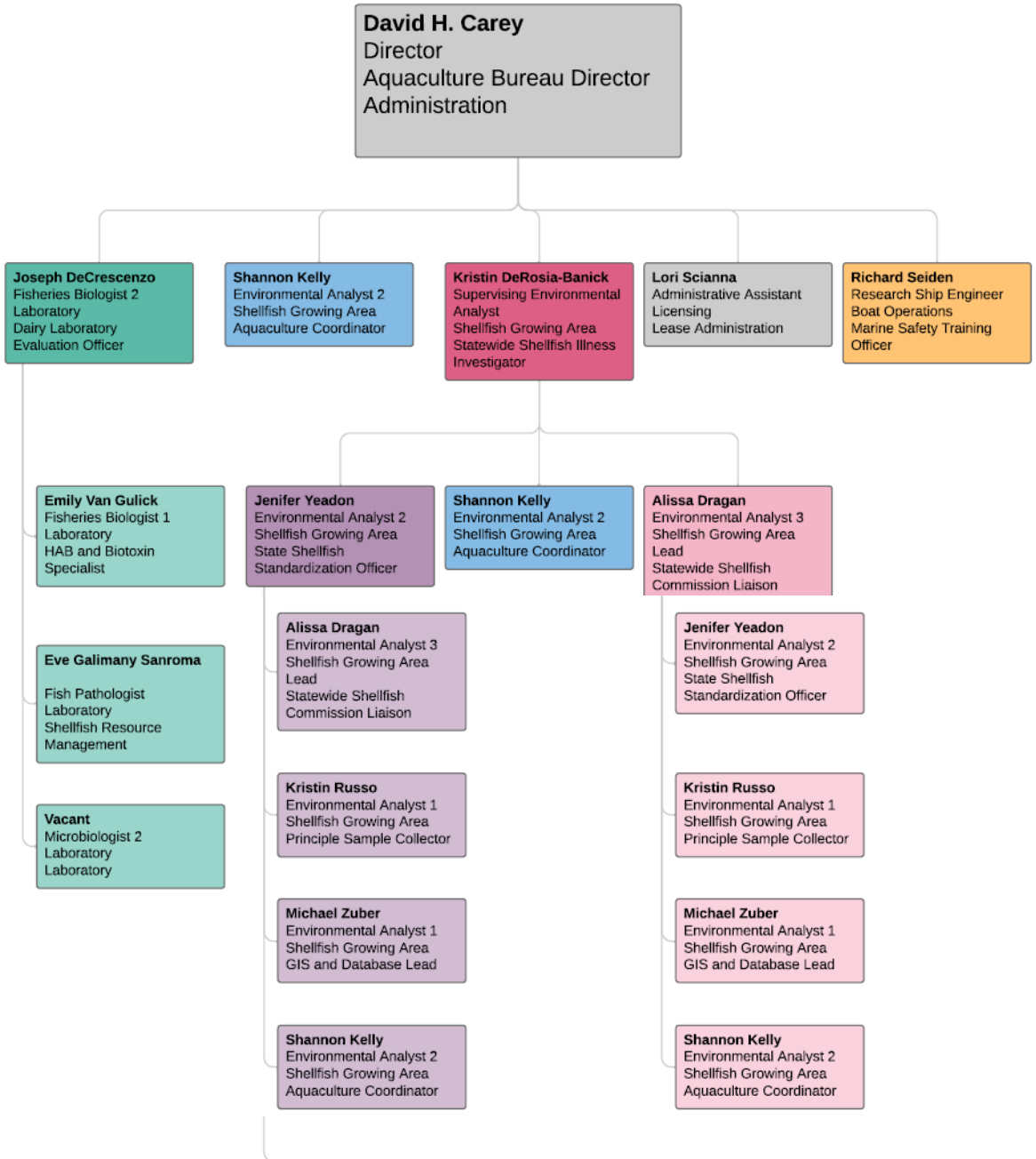
Emily (Van Gulick) Marquis, Fisheries Biologist I



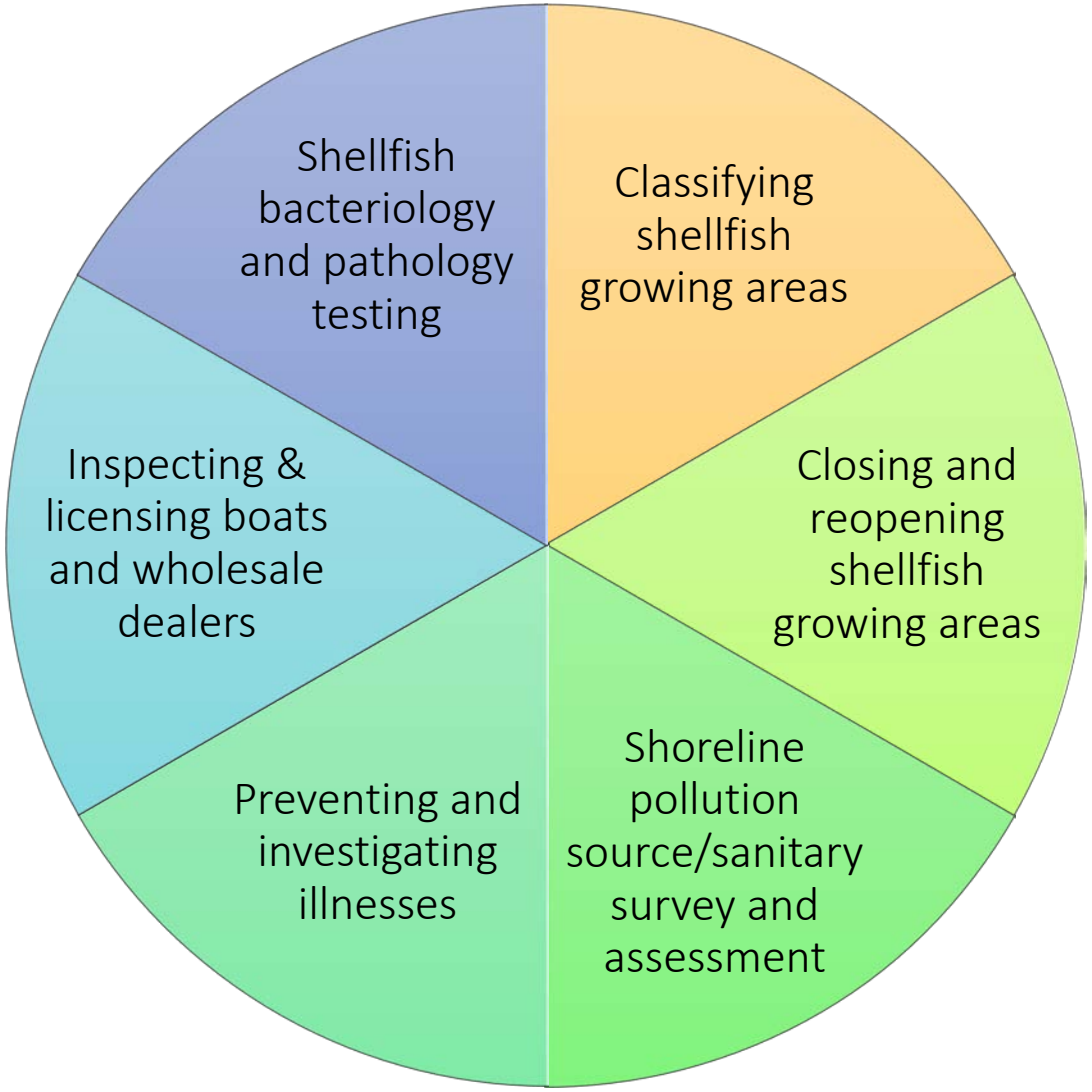




CT Bureau of Aquaculture



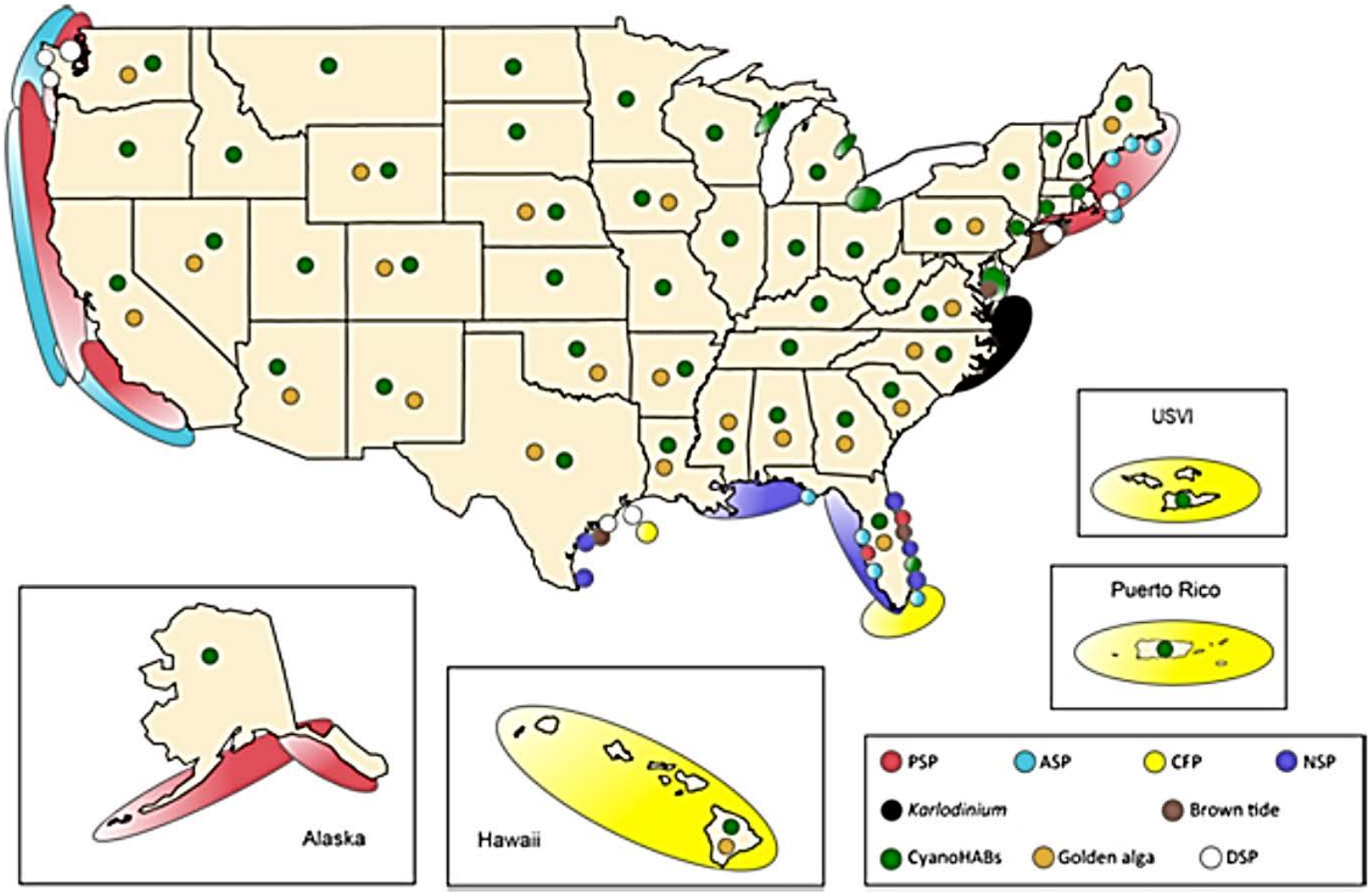
-Part of the National Shellfish Sanitation Program
-Program oversight by the FDA



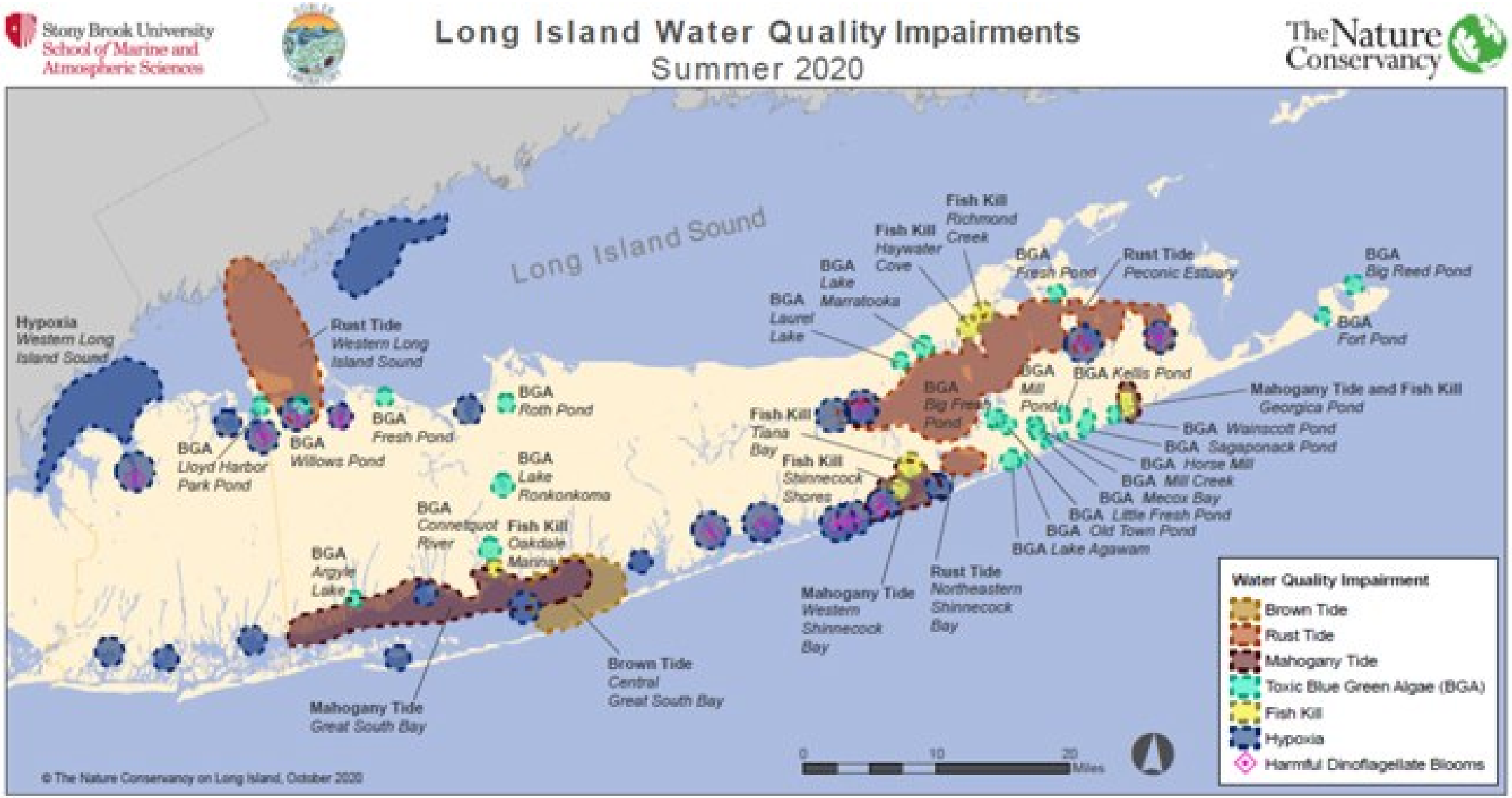
Harmful algal bloom (HAB)

- Excessive growth of phytoplankton that have detrimental impacts on human health, the environment and/or the economy
- ~300/5,000 phytoplankton species are harmful
- Can be associated with the production of toxins and/or other “harmful” substances

U.S. HAB trends (WHOI)



Long Island HAB occurrence (2020)



HAB monitoring in Connecticut

Bureau of Aquaculture

DEEP Water Quality Program

marine

estuarine

freshwater

- Seafood contamination
- Animal deaths
- Recreational exposure

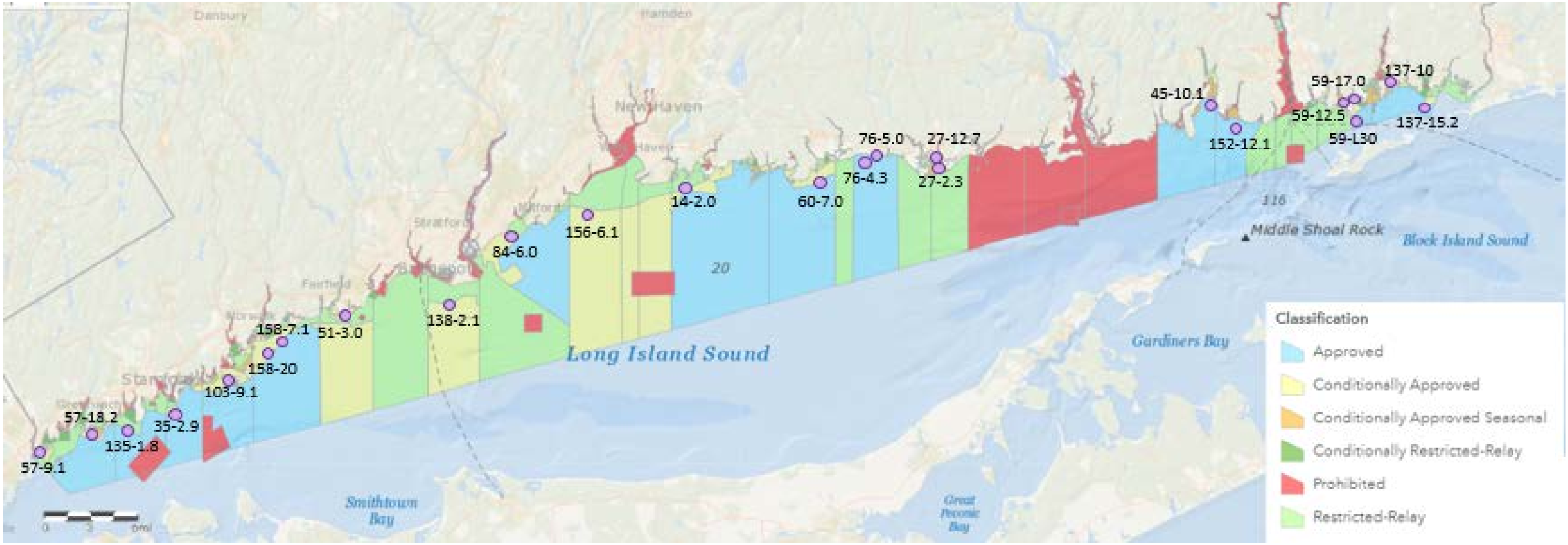
- Drinking water & food contamination
- Animal deaths
- Recreational exposure

HAB program enhancements – initiated 2019

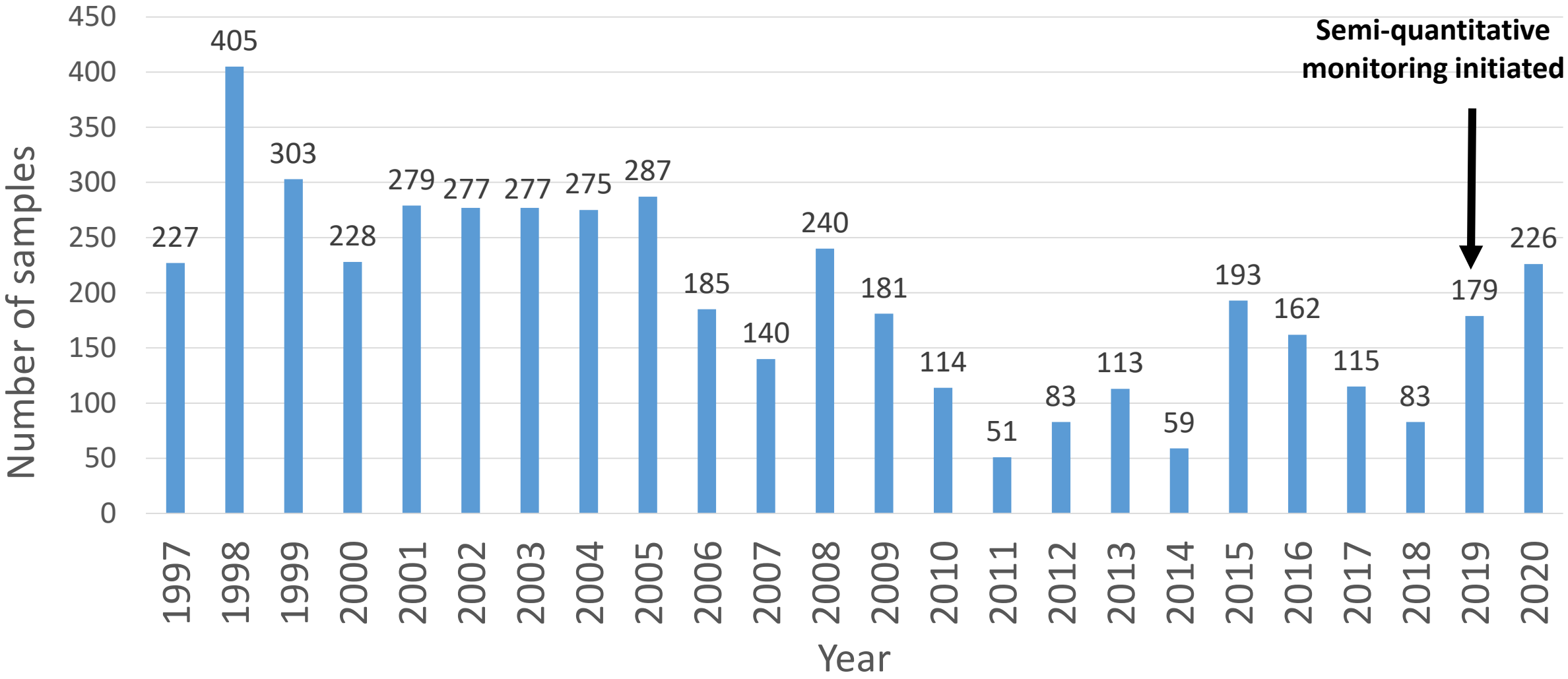
- Enhancements initiated as a result of emerging and increasing HAB events reported in neighboring states, **not** due to an increase of HAB events or severity in Connecticut.

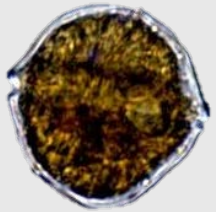
- Training through MERHAB program (2018)
- Semi-quantitative monitoring
- Increased frequency and spatial extent of monitoring
  - Recreational shellfish commissions
- Recording all HAB taxa (not just FDA regulated genera)
- Recording species-level identification, when possible

CT routine HAB sampling stations

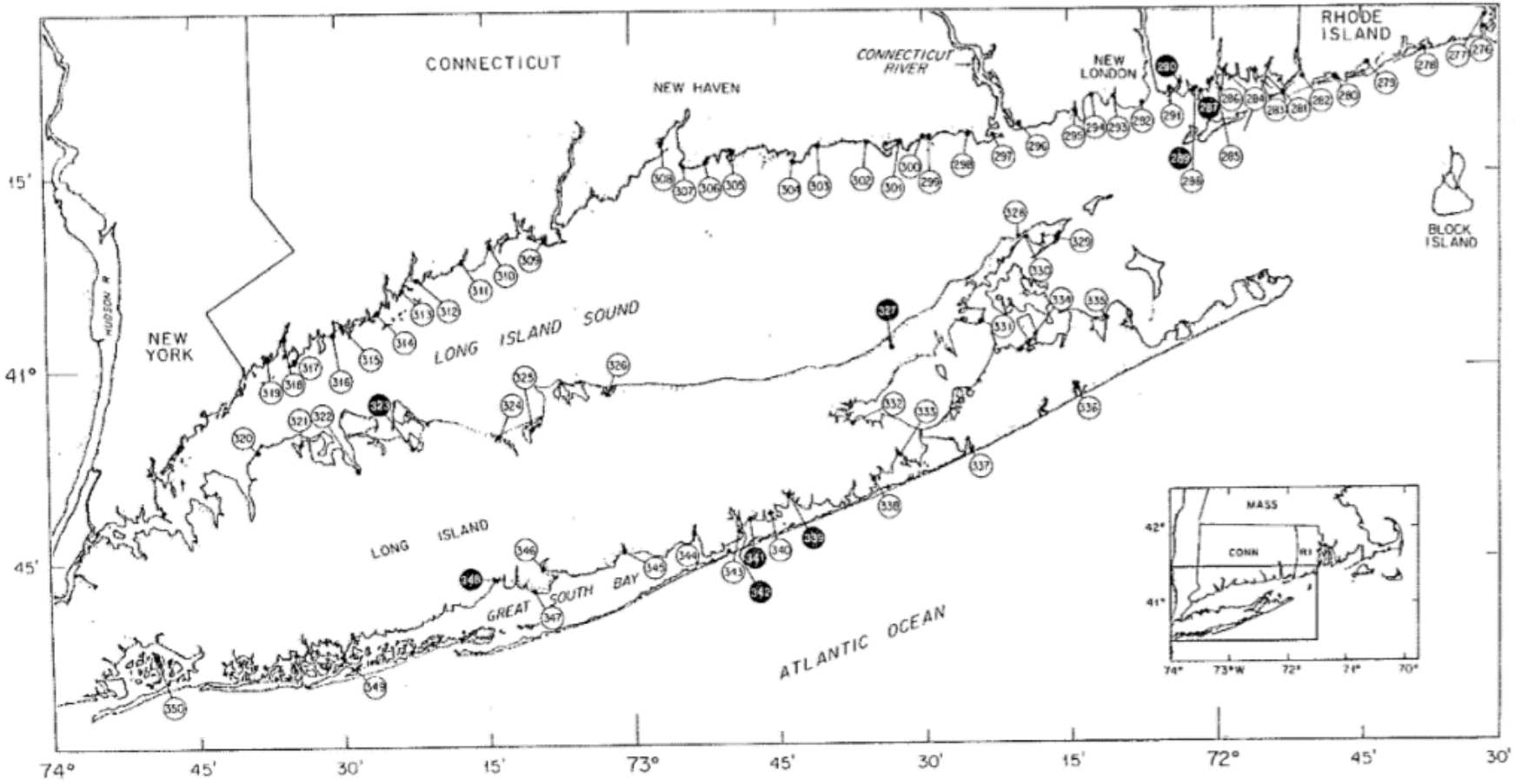


Total number of HAB samples (1997-2020)

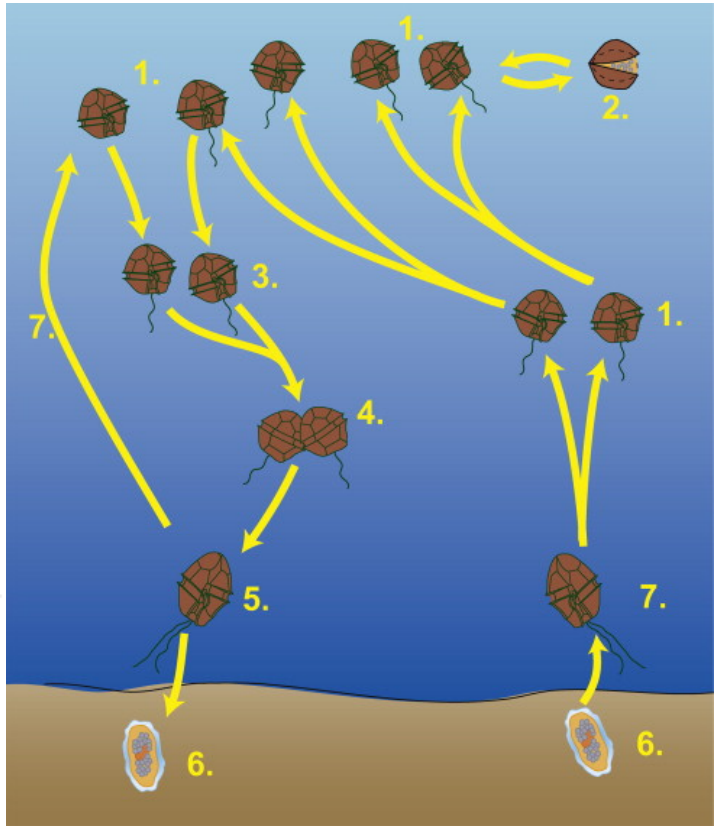


HAB genus	Toxin	Syndrome	Potential effects
Alexandrium 	Saxitoxin	Paralytic Shellfish Poisoning (PSP)	Numbness in extremities or mouth; lack of coordination/staggering; fever; rash; respiratory difficulty and/or arrest; death -Gastrointestinal: Nausea, vomiting, diarrhea
Pseudo-nitzschia 	Domoic acid	Amnesic Shellfish Poisoning (ASP)	-Dizziness; headache; disorientation; short-term memory loss; seizures; respiratory difficulty; coma; long-term neurological damage; death -Gastrointestinal: nausea, vomiting, diarrhea
Dinophysis 	Okadaic acid	Diarrhetic Shellfish Poisoning (DSP)	-Gastrointestinal: Incapacitating diarrhea, nausea, vomiting, abdominal pain; recovery typically within 3 days -Potential association with cancer (long-term exposure)
Prorocentrum 			

First CT & NY *Alexandrium* cyst survey

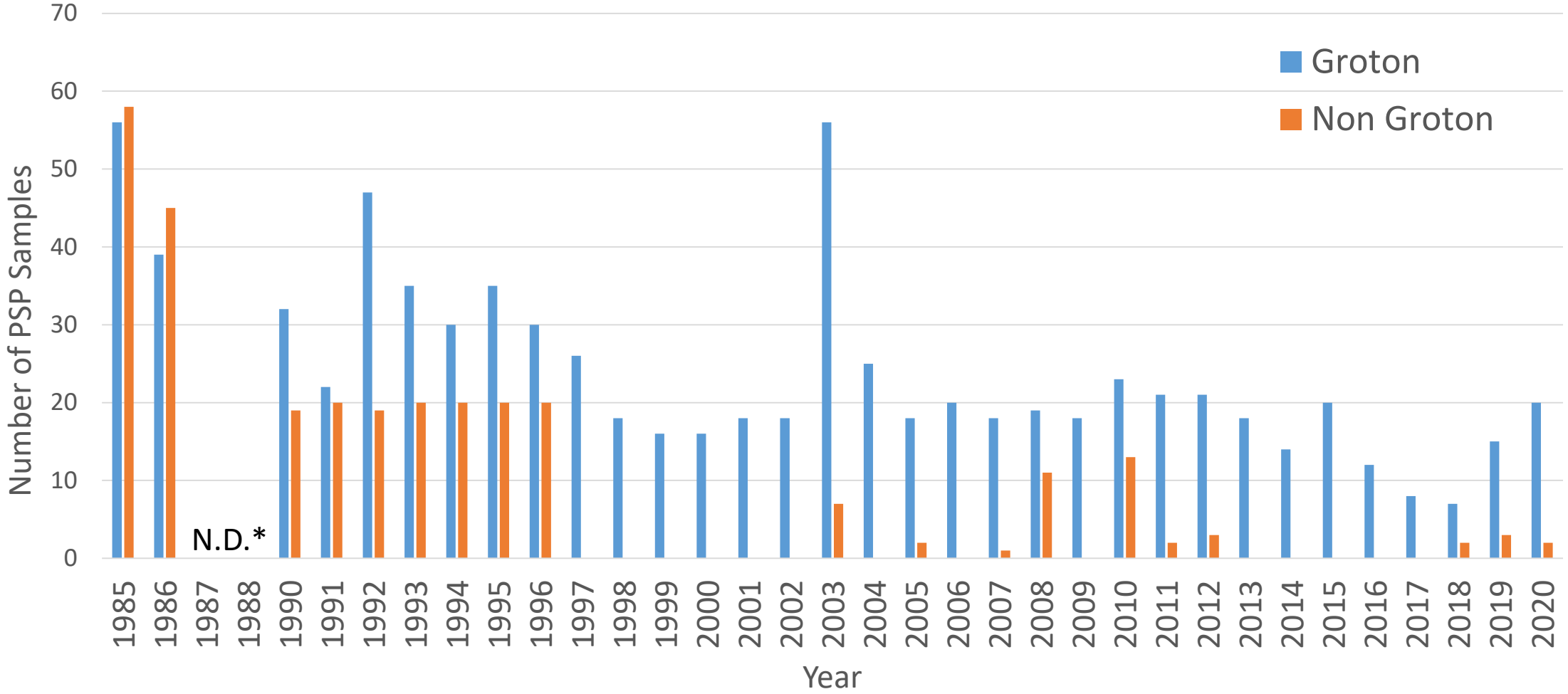


(Anderson et al. 1982)



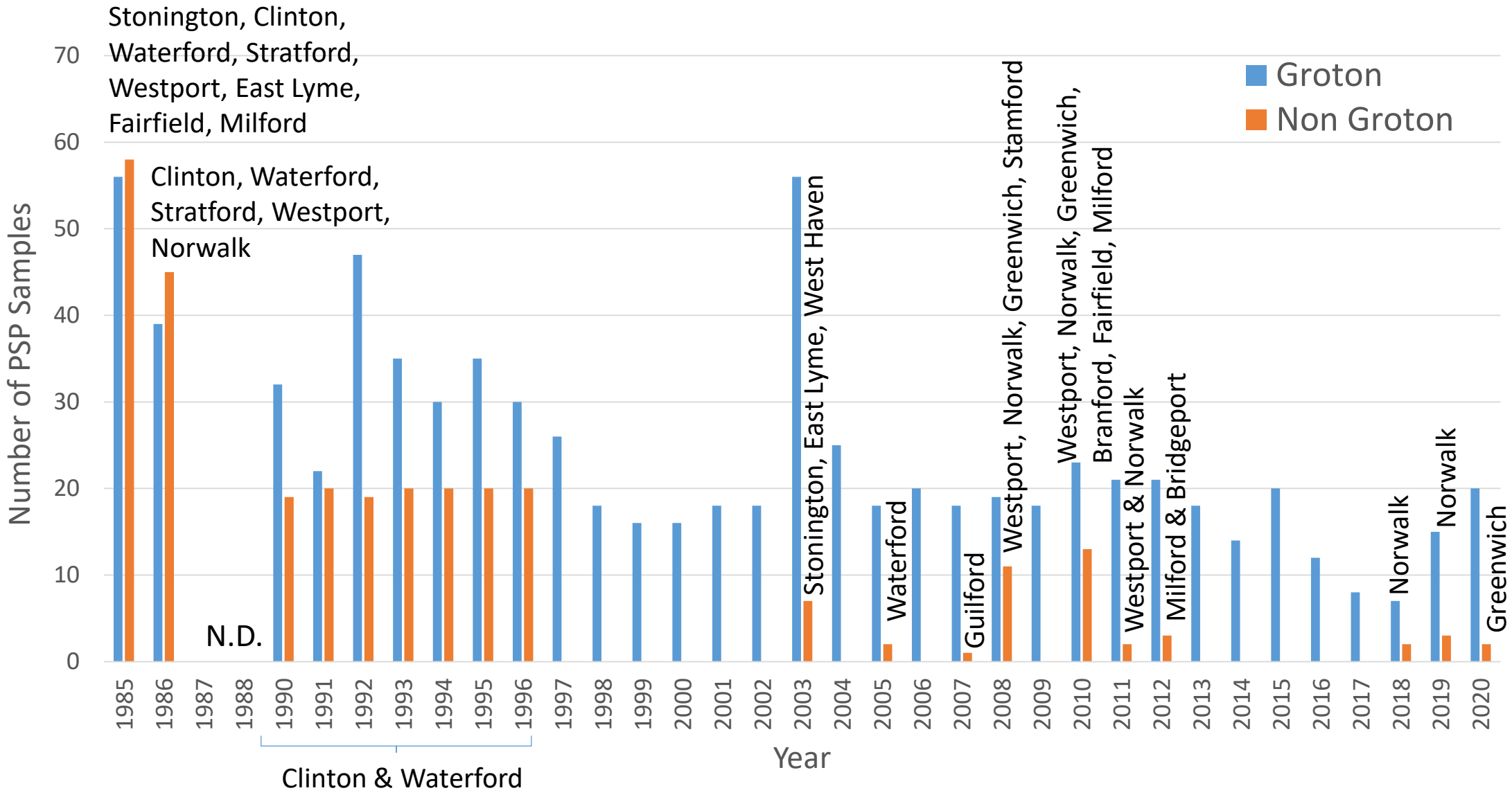
(Anderson et al. 2012)

Number of PSP Samples (1985-2020)



*DABA conducted testing, but saxitoxin was not detected and records were thrown away. This was before a database was used for record keeping.

Number of PSP Samples (1985-2020)



Alexandrium cell concentrations in LIS

(Gobler and Hattenrath-Lehmann 2011)

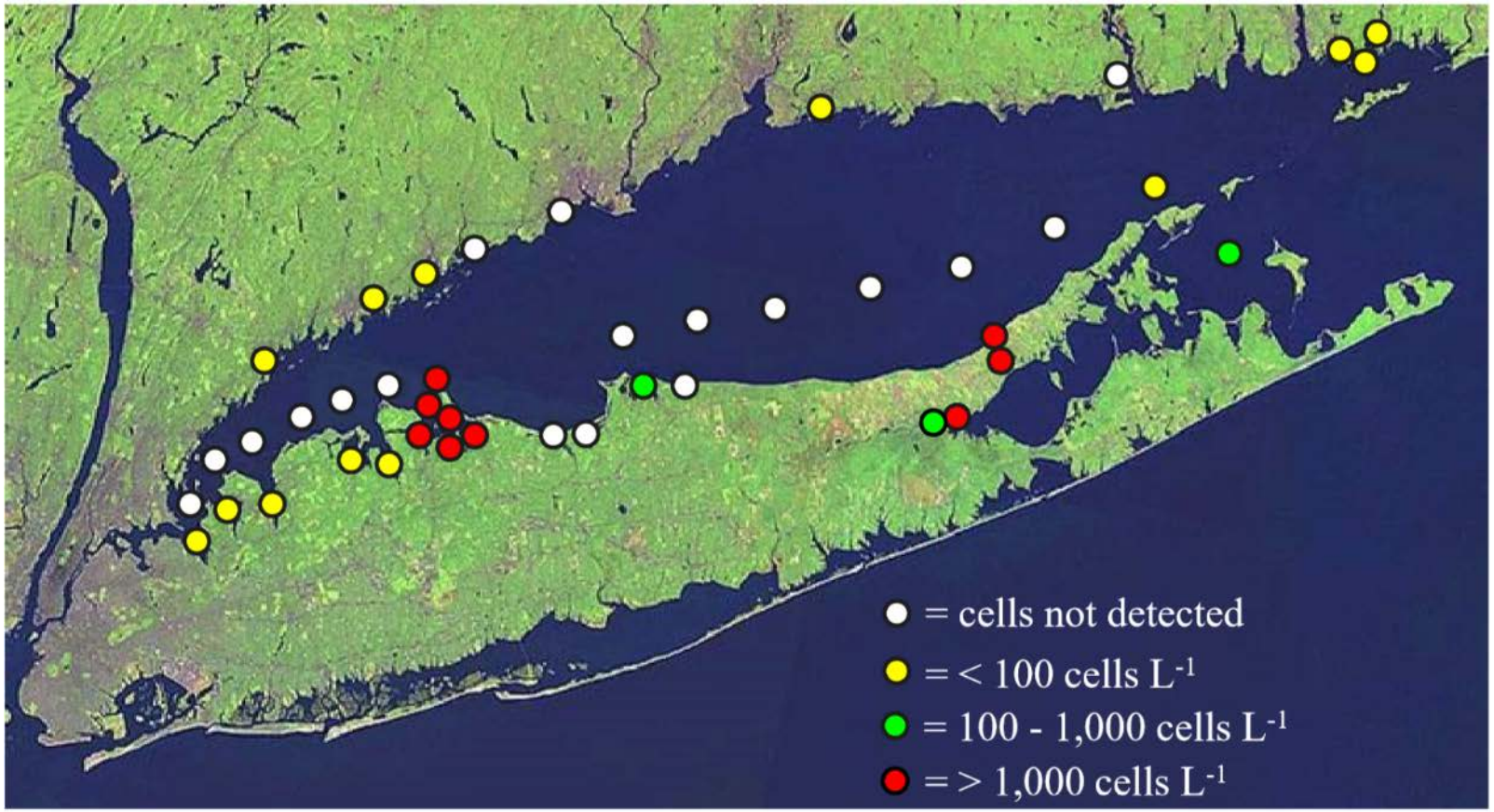


Figure 1. The distribution of PSP-producing *Alexandrium* in Long Island Sound. Circles indicate the highest concentrations of *Alexandrium* found at each site in New York and Connecticut from 2007-2010. White circles= cells not detected; yellow= <100 cells L^{-1}; green= 100- 1,000 cells L^{-1} and red= > 1,000 cells L^{-1}.

Saxitoxin distribution in LIS (Gobler and Hattenrath-Lehmann 2011)

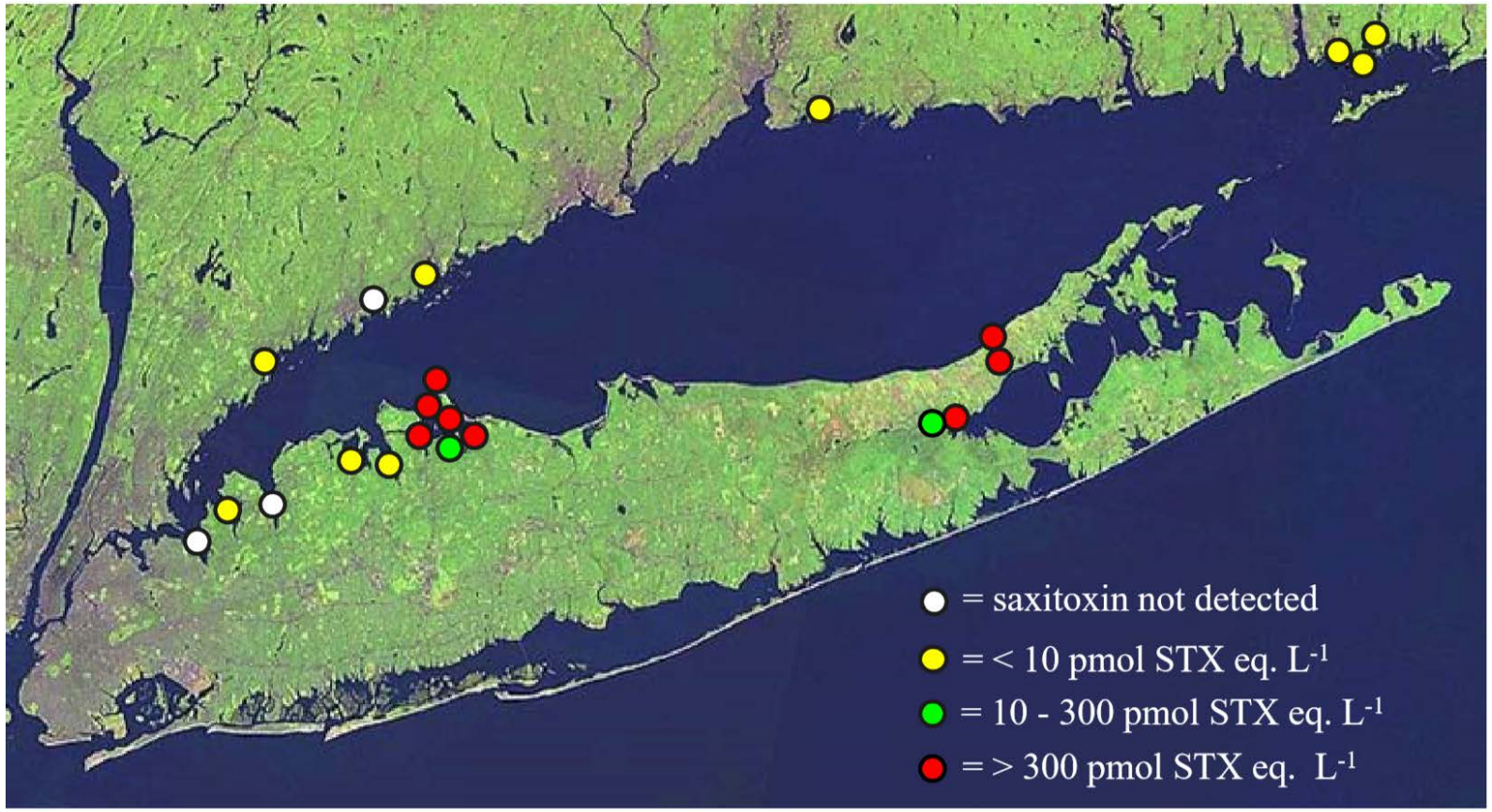
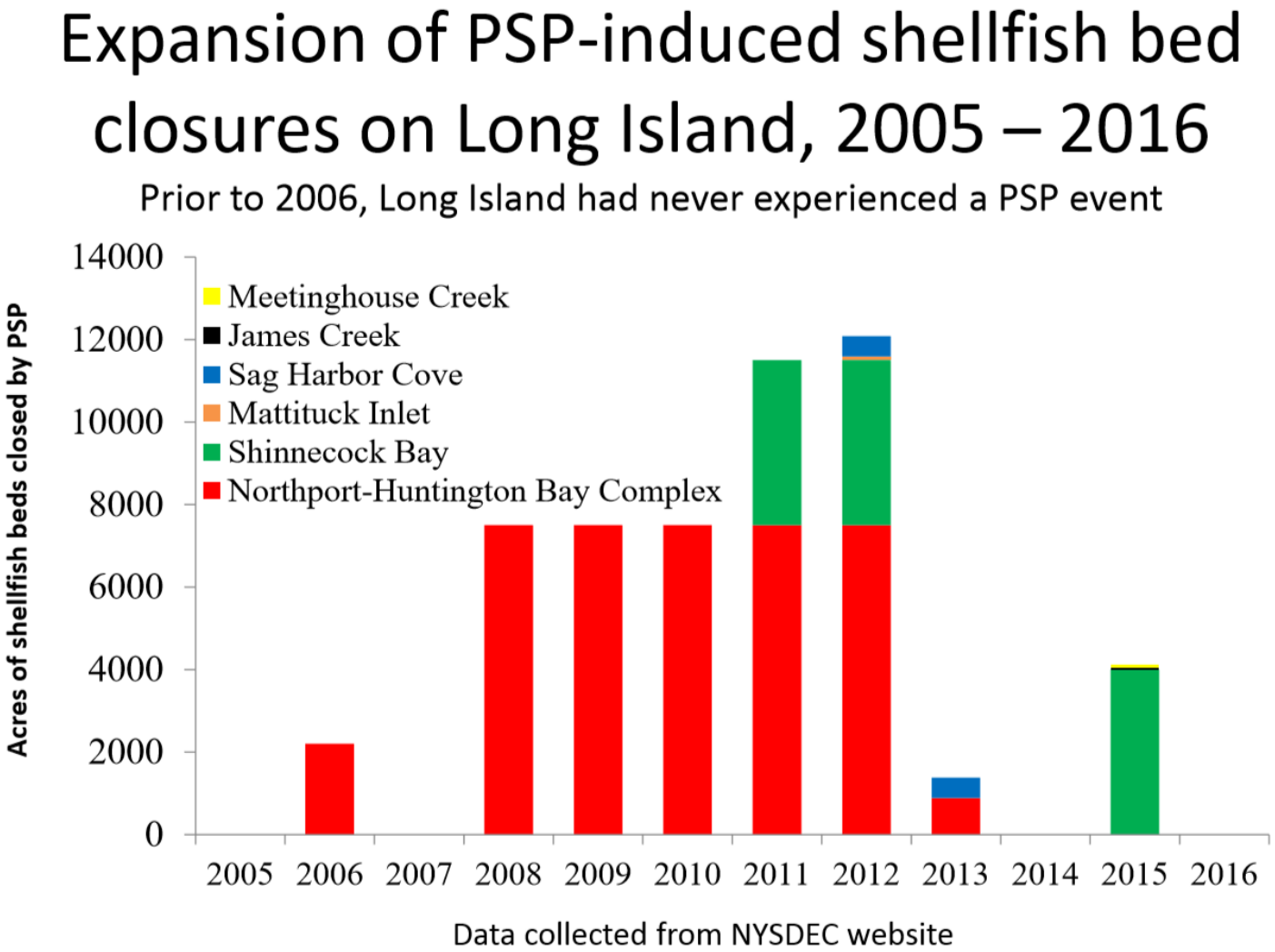


Figure 1A. The distribution of saxitoxin in Long Island Sound. Circles indicate the highest saxitoxin concentrations found at each site in New York and Connecticut from 2007-2010. White circles= saxitoxin not detected (but *Alexandrium* is present); yellow= <10 pmol STX eq. L^{-1}; green= 10- 300 pmol STX eq. L^{-1} and red= > 300 pmol STX eq. L^{-1}. Sites which were shown as negative for the presence of cells in Figure 1 and sites with no available data have been removed.

Long Island *Alexandrium* trends

(Hattenrath-Lehmann and Gobler 2016)



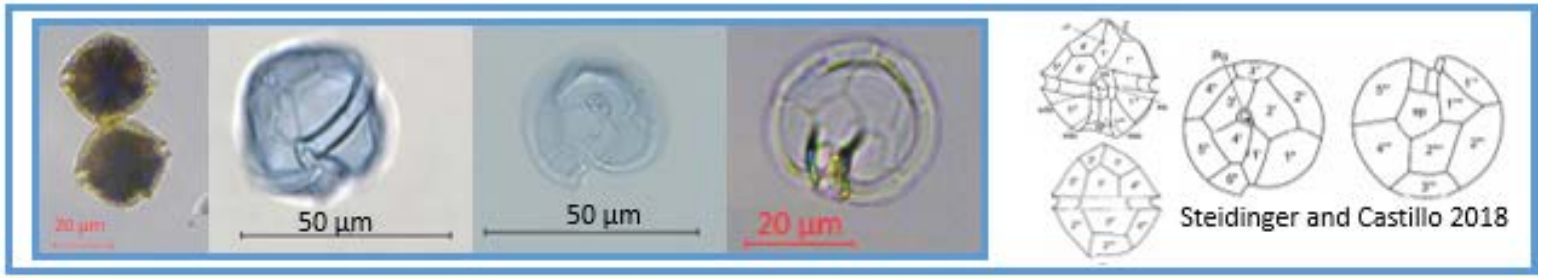
Northport Bay:

- Blooms persisted up to 2 months some years
- Toxicity: >1.4mg saxitoxin eq./100g shellfish
- Cell concentrations: >1,000,000 cells/L (Hattenrath et al. 2010)

- Comparatively, Connecticut is **not** reporting an increase in bloom intensity, toxicity, or expansion of closures.

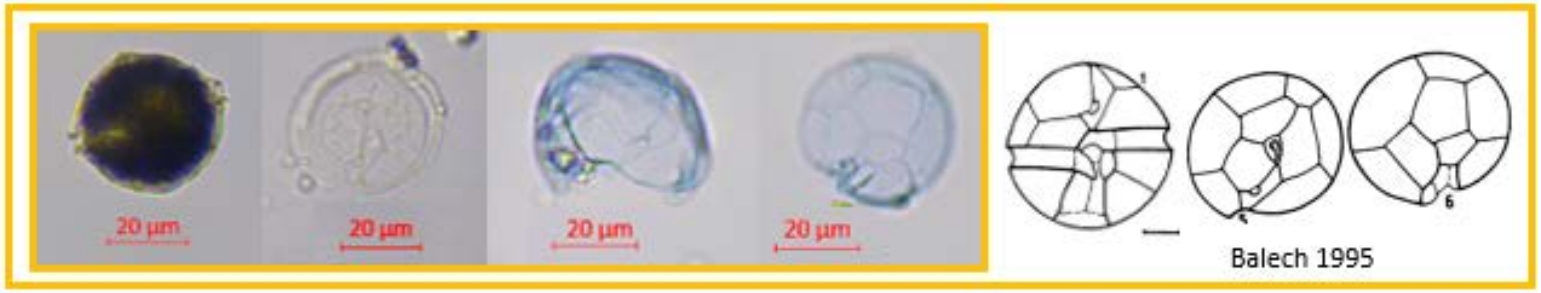
Alexandrium species identified in CT

Alexandrium catenella



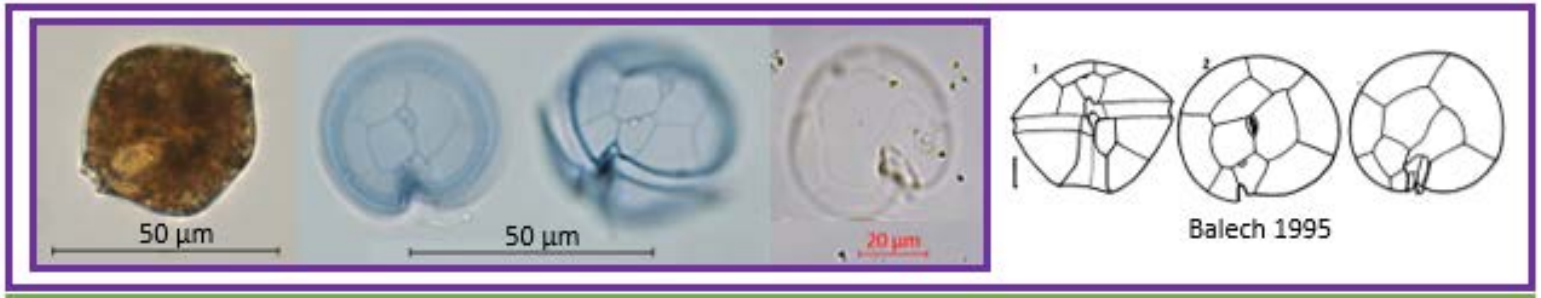
PSP

Alexandrium ostenfeldii



PSP

Alexandrium pseudogonyaulax



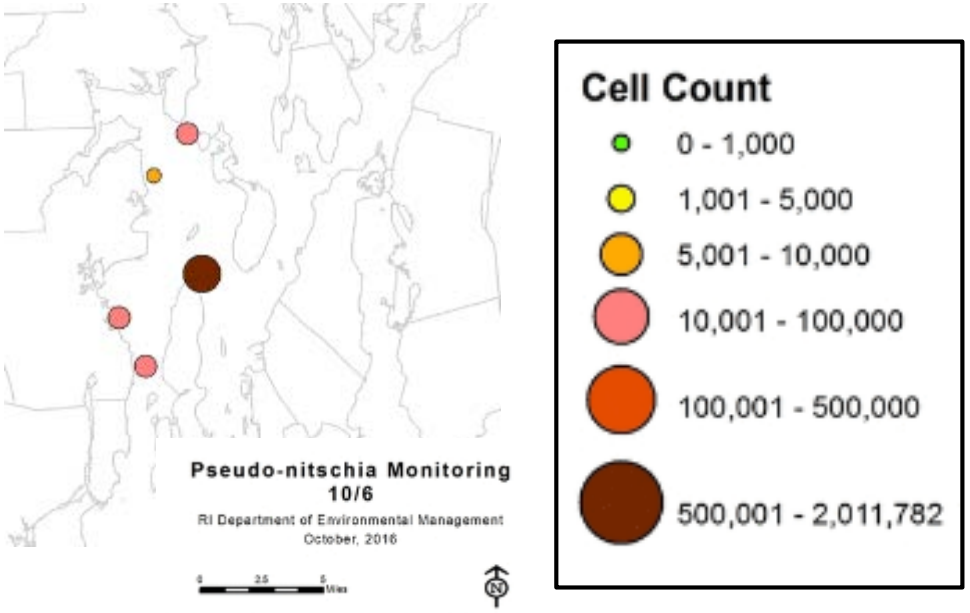
Ichthyotoxic

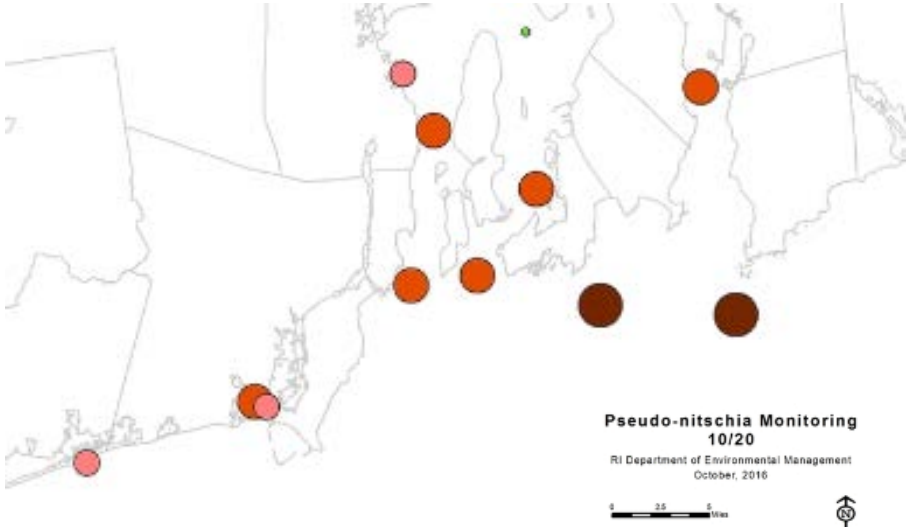
Alexandrium margalefii

Non-toxic

Pseudo-nitzschia australis in New England

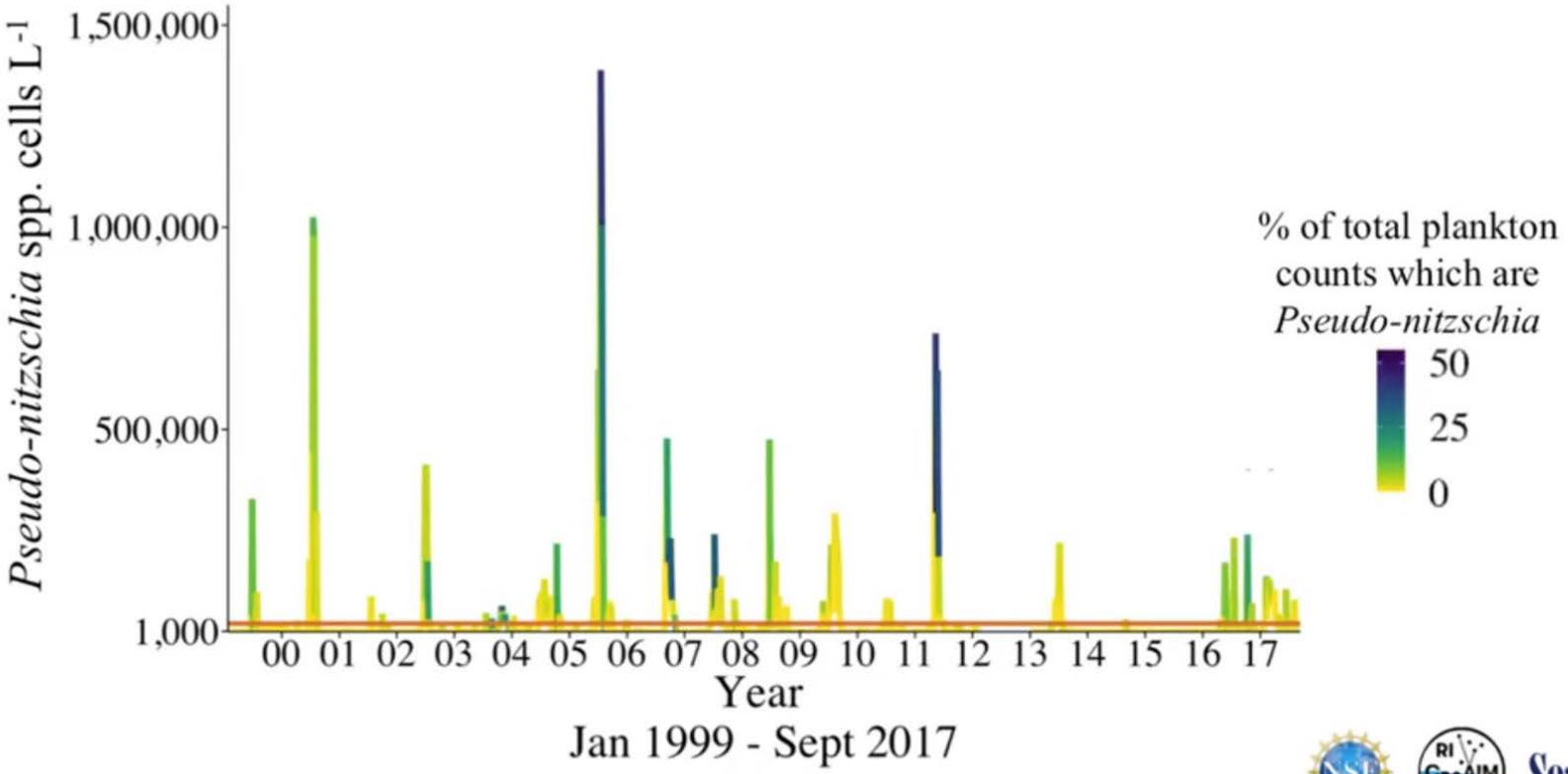
- Fall 2016 – Maine to Rhode Island – shellfish bed closures and recalls
- March 2017 – Rhode Island closure
- 2017-2019 – recurrent Maine closures





Pseudo-nitzschia in Narragansett Bay

Pseudo-nitzschia have been present in the Narragansett Bay Long-Term Plankton Time-Series record since the 1950s



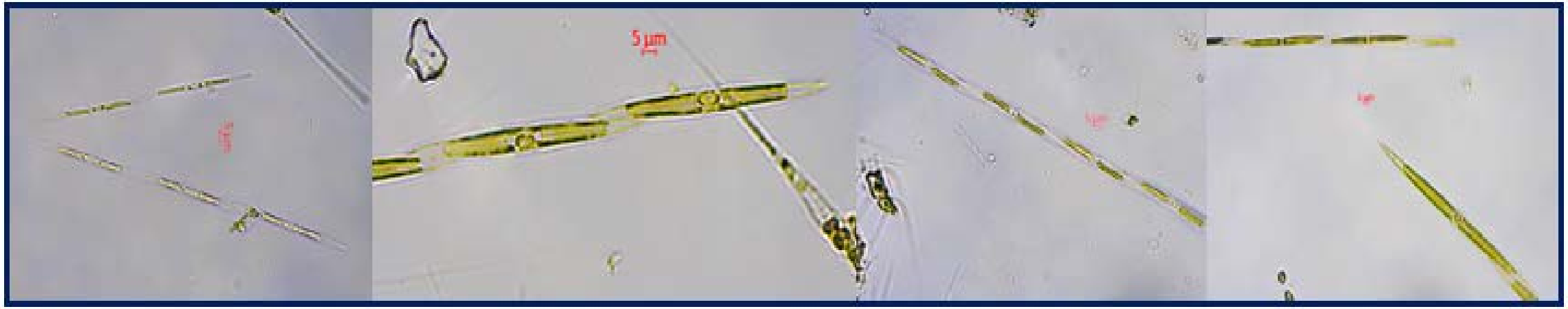
Data from https://web.uri.edu/gso/research/plankton/

Dr. Alexa Sterling, University of Rhode Island | https://www.youtube.com/watch?v=tlsdjYbe5lc

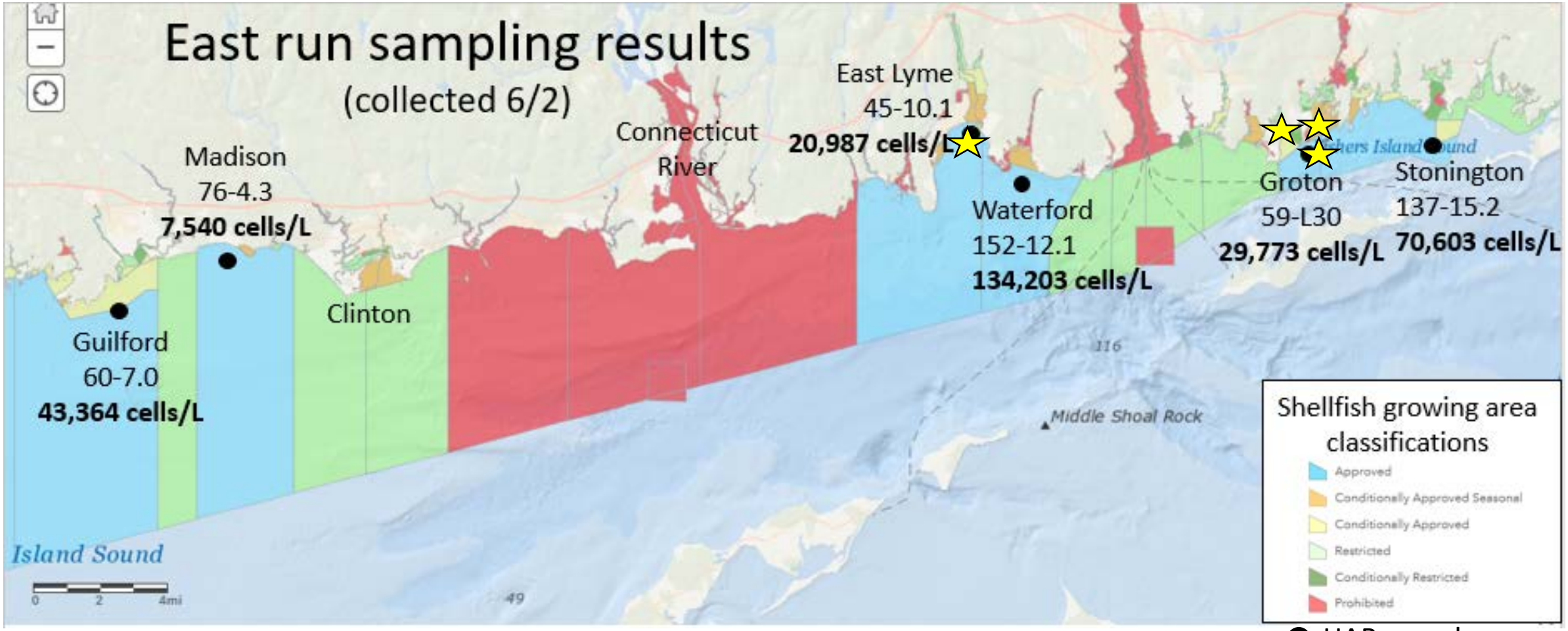
Pseudo-nitzschia in southern New England

- *P. australis, P. caciantha*, P. calliantha, P. cuspidata, P. delicatissima, P. fraudulenta, P. galaxiae*, P. hasleana*, P. multiseries, P. multistriata*, P. pseudodelicatissima, P. plurisecta, P. pungens, P. seriata, P. subpacifica, P. turgidula*

(Riley et al. 1956; Riley and Conover 1967; Capriulo and Carpenter 1983; Hargraves et al. 1993; Hargraves and Maranda 2002; Bates et al. 2018; Sterling et al. 2021*)

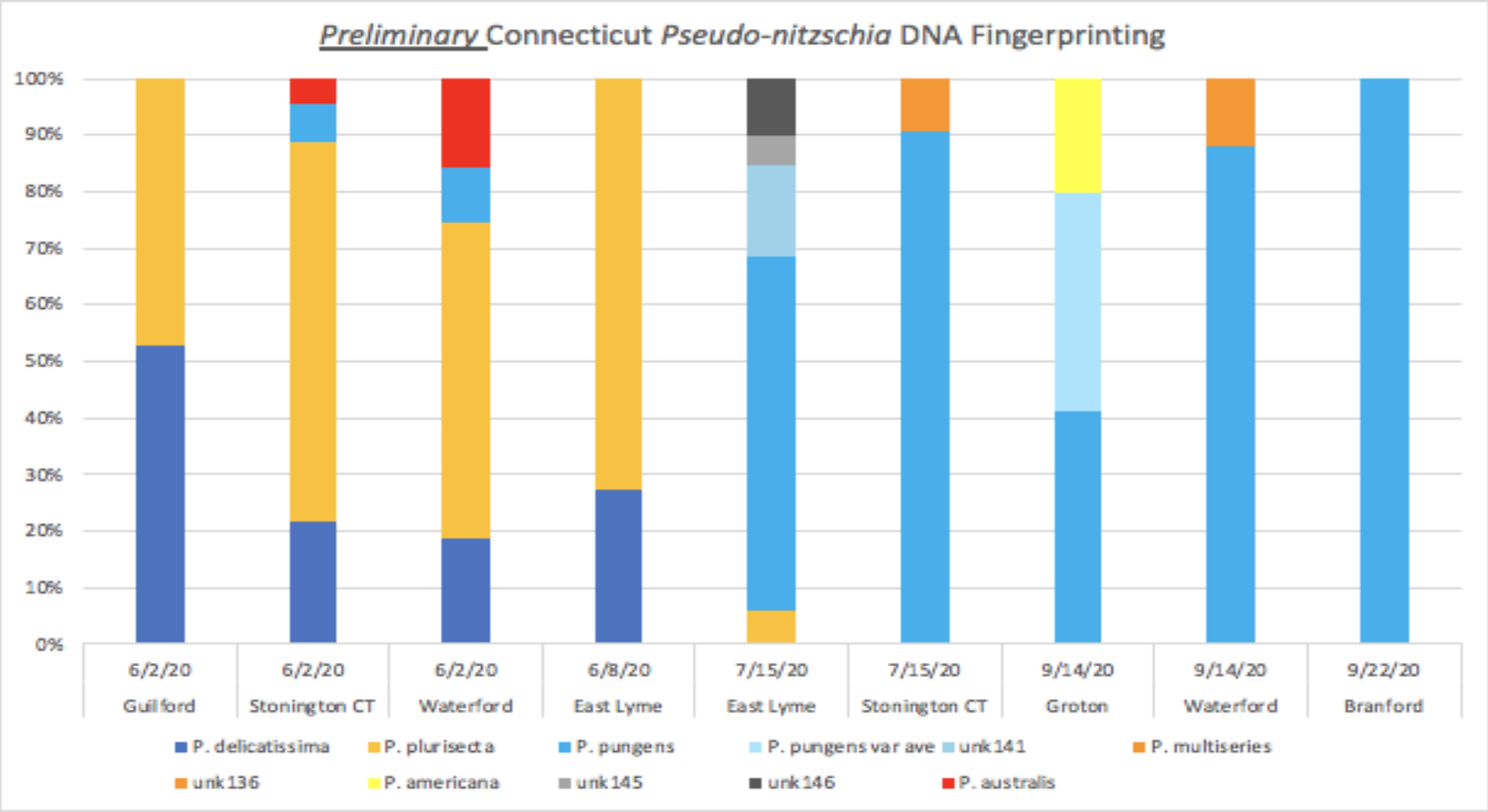


Pseudo-nitzschia in June 2020



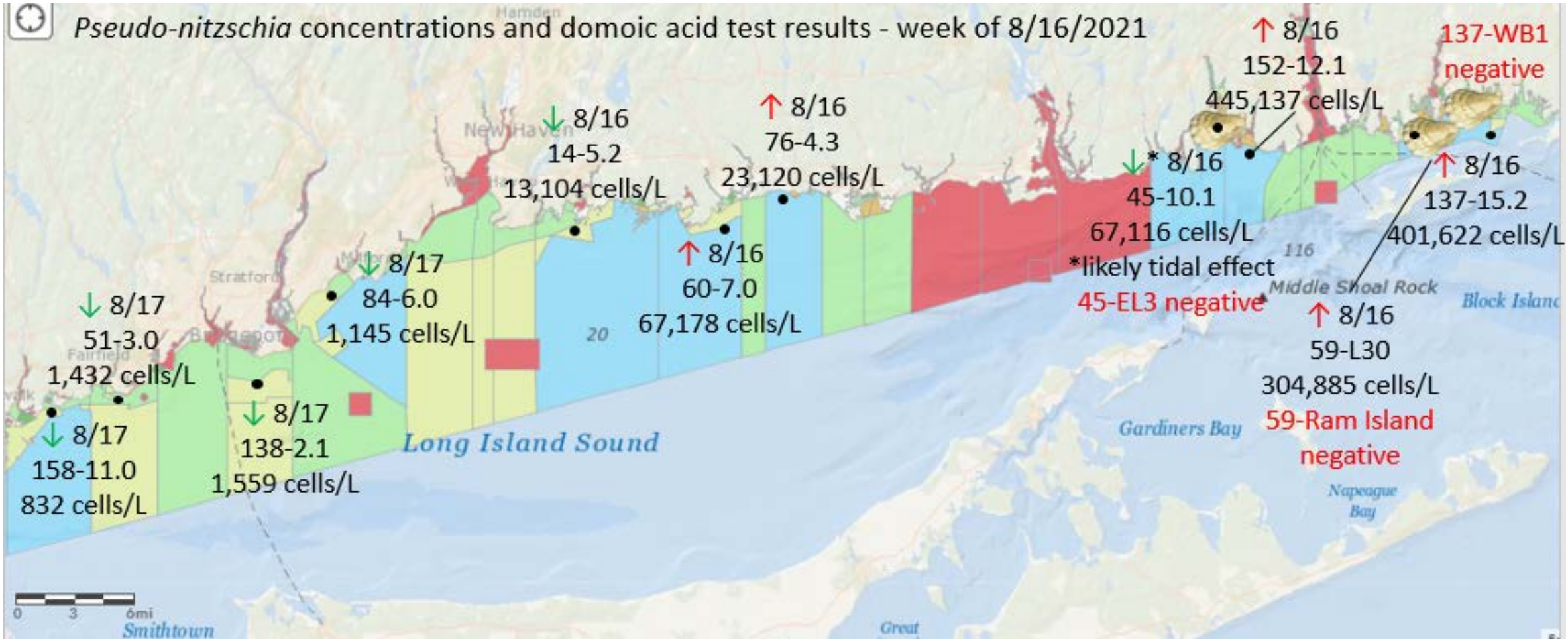
● HAB sample
☆ Toxin sample

Pseudo-nitzschia DNA fingerprinting

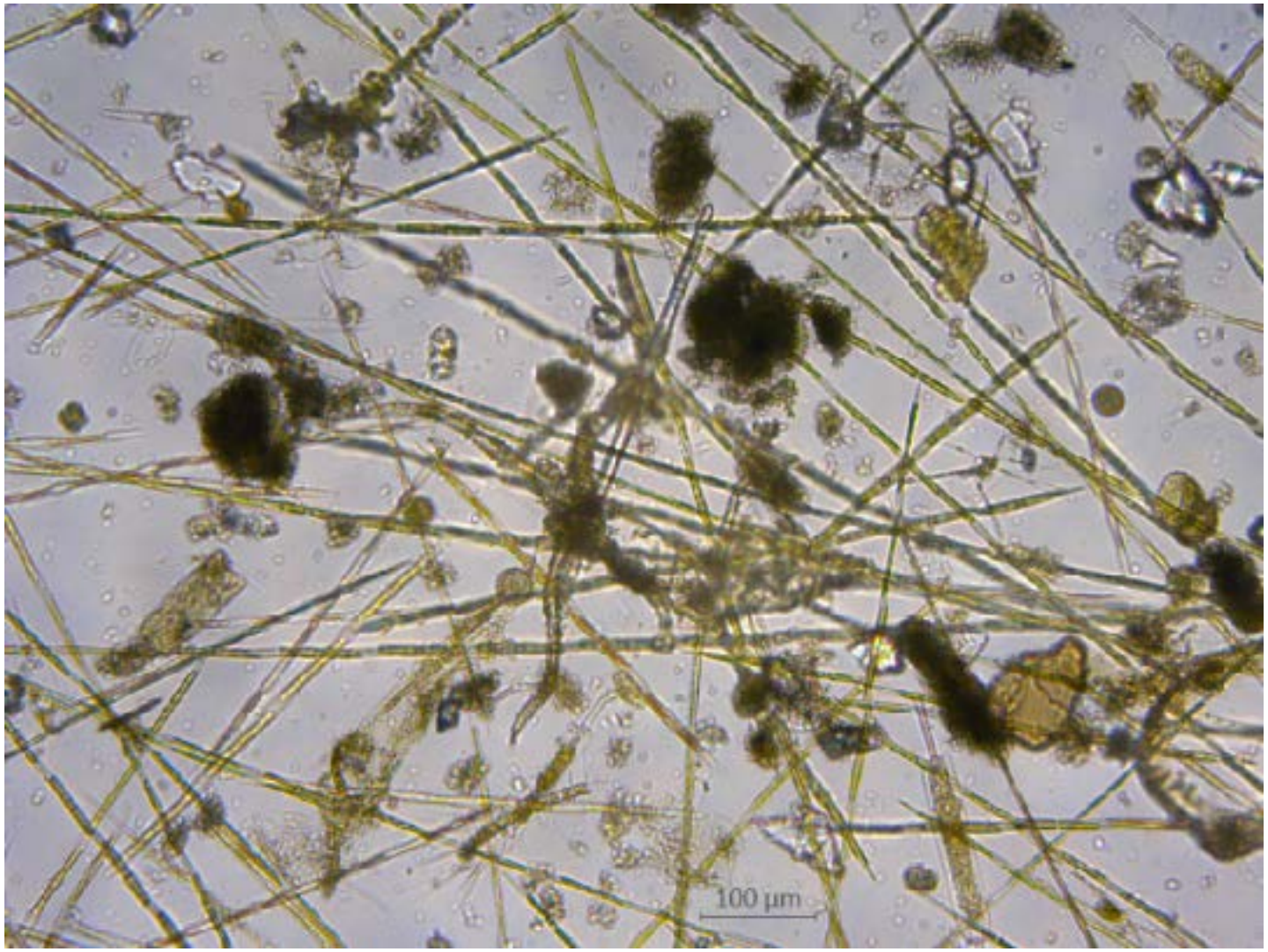


Work conducted by Florida Fish and Wildlife as part of a collaborative study with the Woods Hole Center for Oceans and Human Health.

Pseudo-nitzschia in August 2021

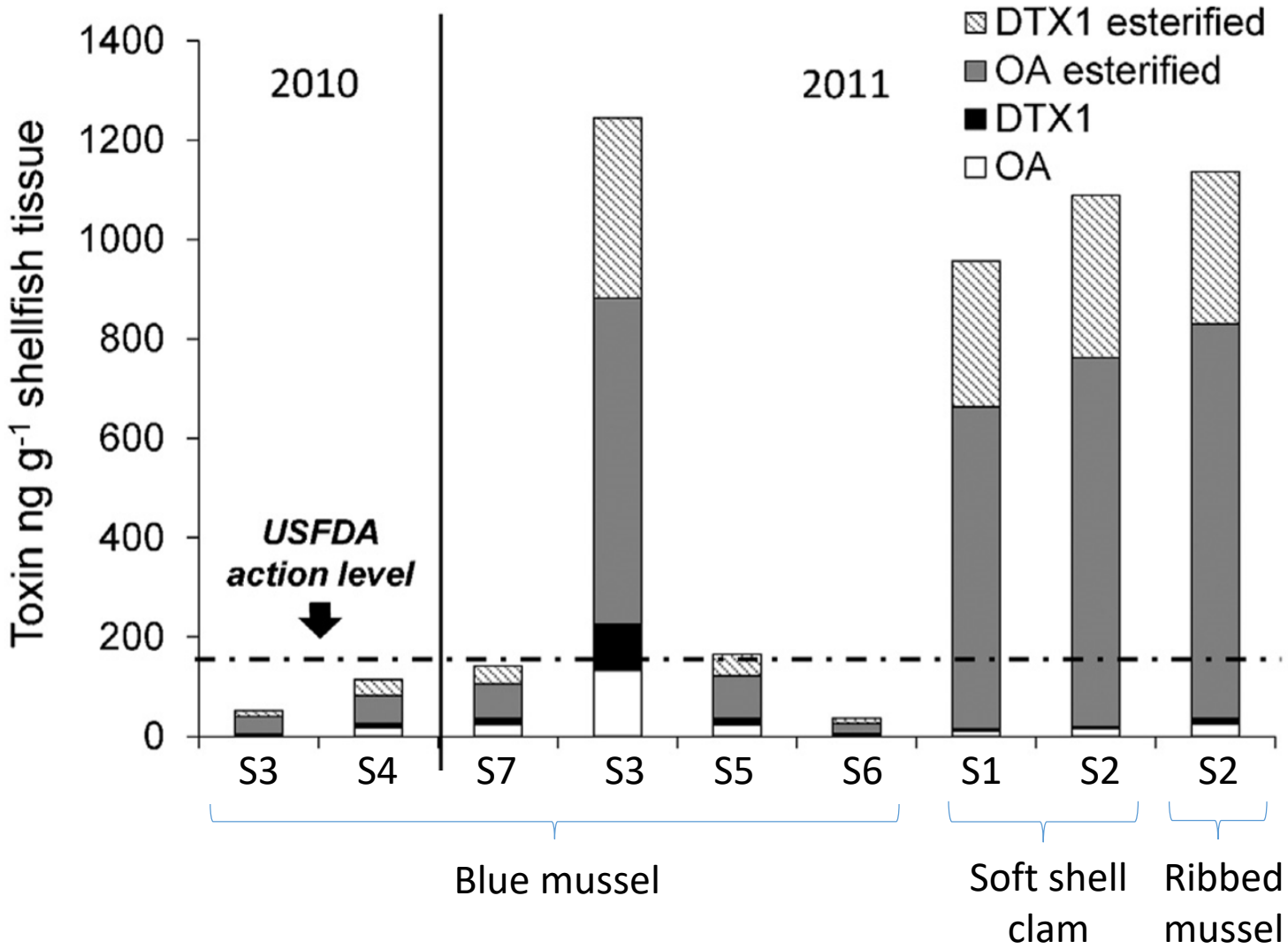


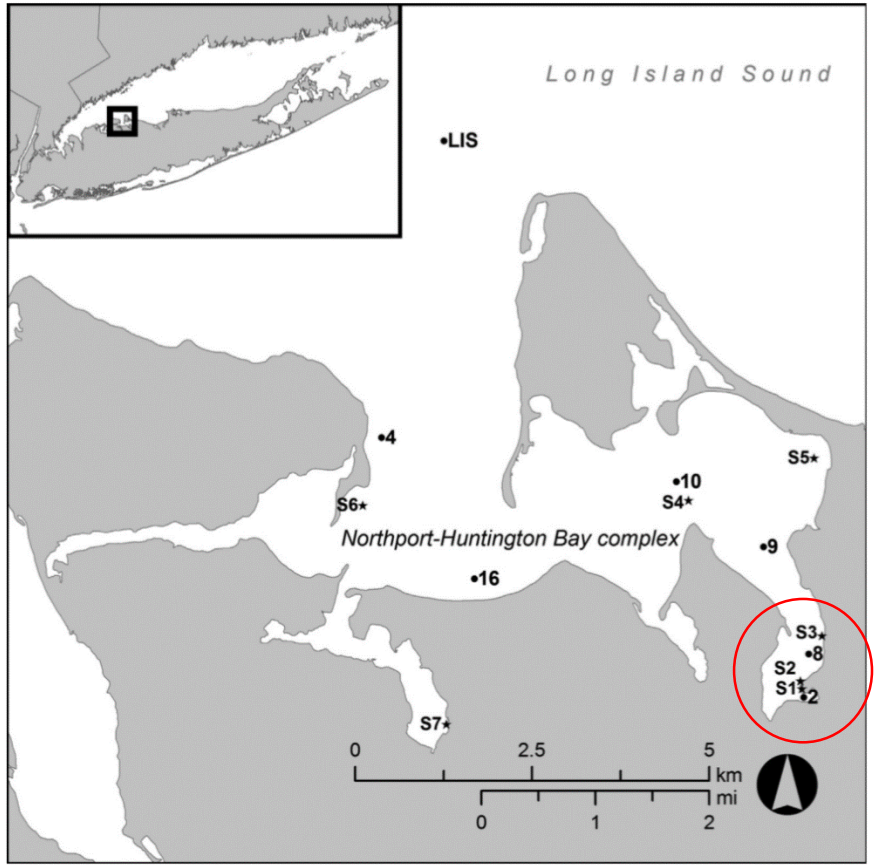
Pseudo-nitzschia in August 2021



Dinophysis acuminata bloom exceeds FDA limit

(Hattenrath-Lehmann et al. 2013)





2011 – *D. acuminata* ~1.3 million cells/L; shellfish ~7.8x greater than FDA toxicity limit (1,245ng/g vs 160 ng/g)

Low DSP threat in New England

- Low to moderate threat of significant DSP outbreaks in New England (Tong et al. 2015)
- Relatively low toxin content in New England strains
- CT – 48.9% of 2020 samples contained *Dinophysis* sp. The maximum concentration was 2,199 cells/L.
- CT – no commercial mussel harvesting

Dinophysis acuminata

Dinophysis norvegica

50 µm

Dinophysis fortii

Dinophysis tripos

CT *Prorocentrum* spp.

- Globally, DSP is typically associated with *Dinophysis* sp.
- Threat of DSP from *P. lima* in New England is low (Maranda et al. 2007)
- CT - <2% of 2020 samples contained *P. lima*

STATE OF CONNECTICUT
DEPARTMENT OF AGRICULTURE
Bureau of Aquaculture & Laboratory Services

Bryan P. Hurlburt
Commissioner

David H. Carey
Director

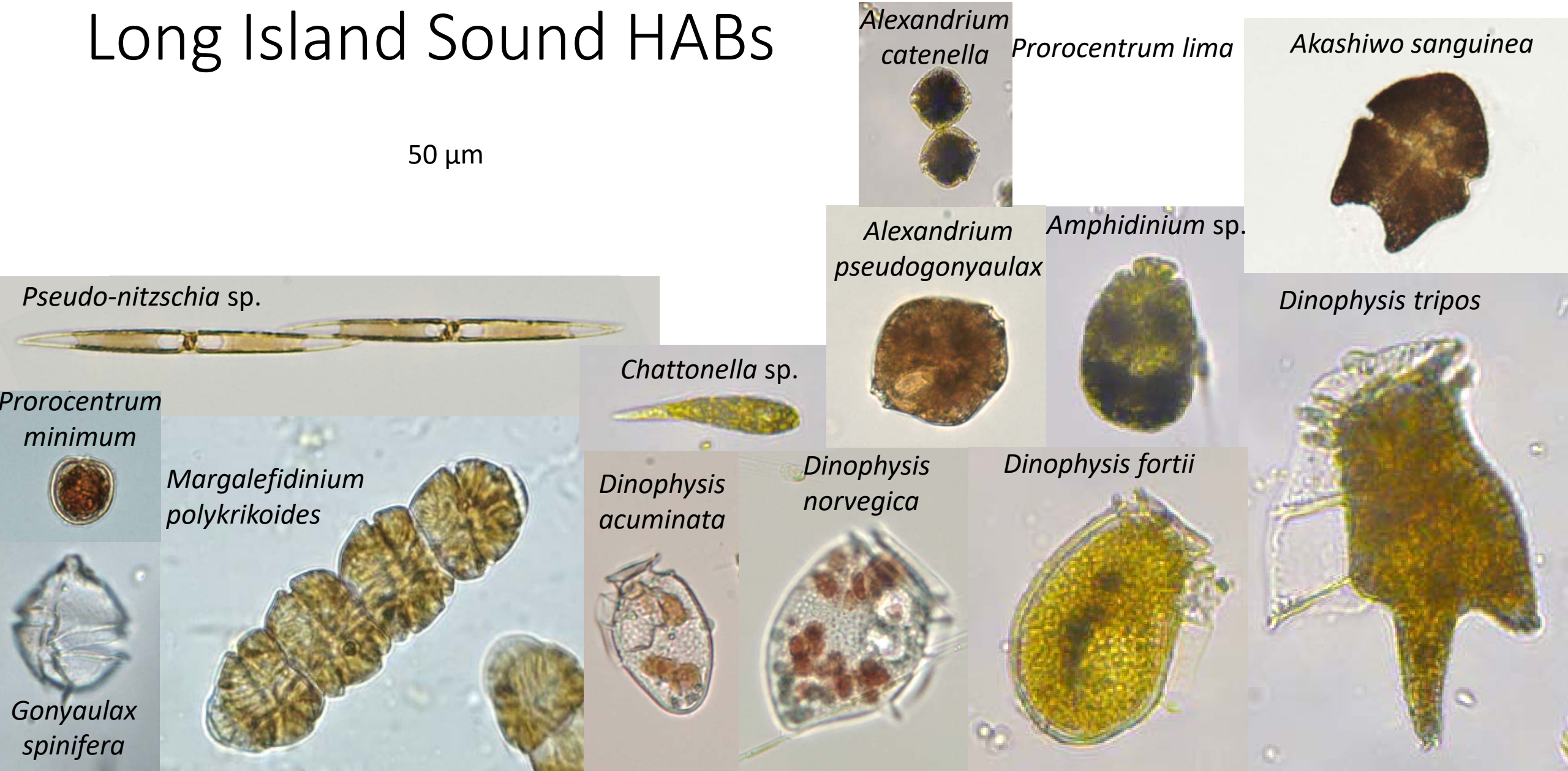
2020 Connecticut Harmful Algal Bloom Report

Table of Contents

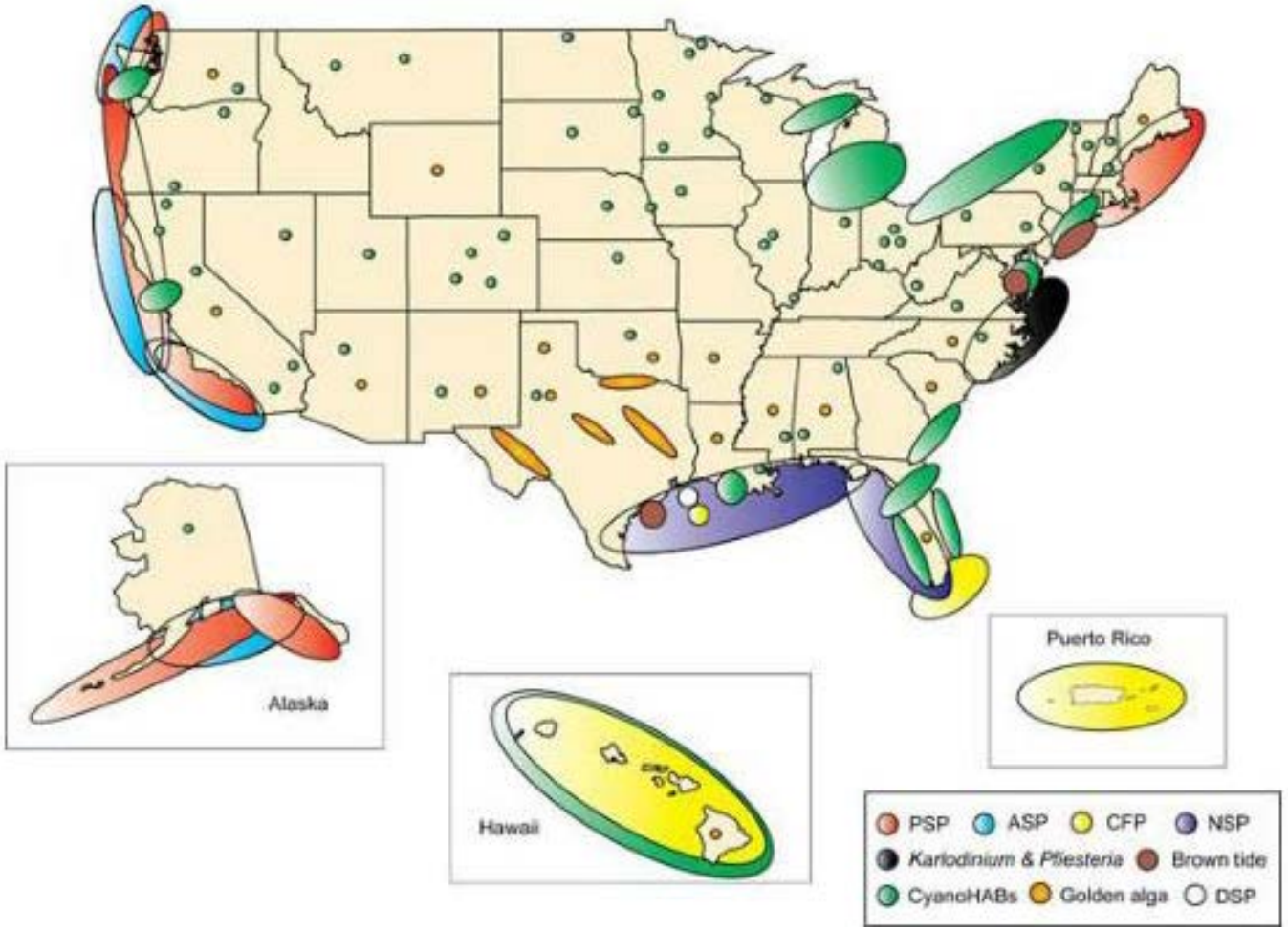
- https://portal.ct.gov/DOAG/Aquaculture1/Aquaculture/Harmful-Algal-Blooms

Long Island Sound HABs

50 µm



Emerging toxins – transport of cyanobacteria



Thank you! Questions?

Connecticut Department of Agriculture
Bureau of Aquaculture
Emily Marquis, Fisheries Biologist I
Emily.VanGulick@ct.gov

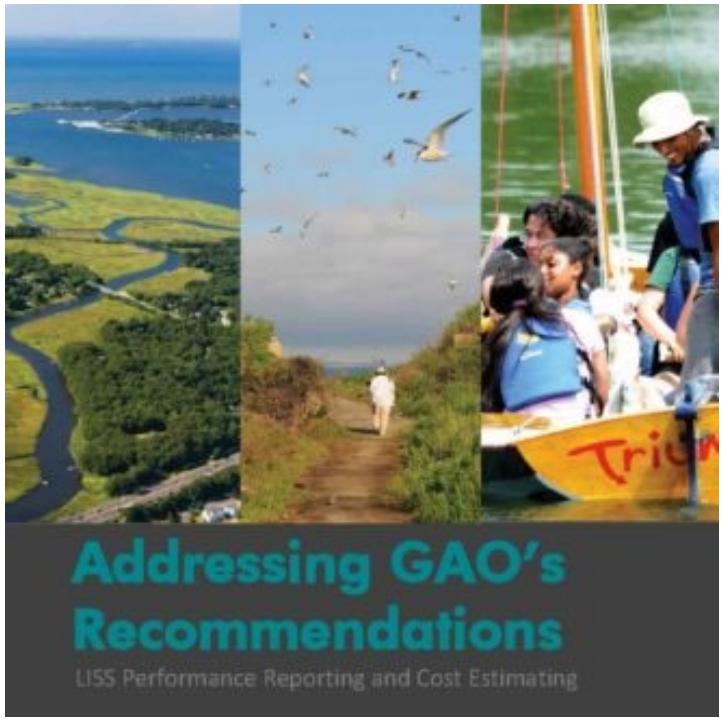
https://portal.ct.gov/DOAG/Aquaculture1/Aquaculture/Harmful-Algal-Blooms

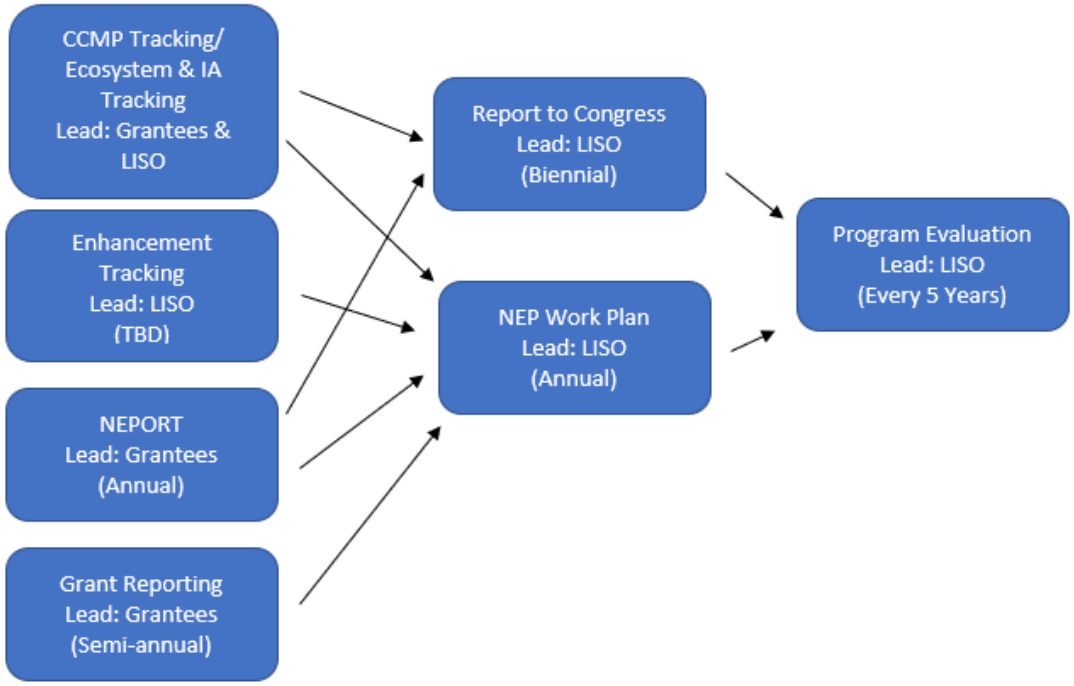
Long Island Sound Study
A Partnership to Restore and Protect the Sound

LISS Tracking and Reporting

Management Committee
October 21, 2021

Why the switch in Progress Reporting?





Program Implementation Drives Program Progress

Three tables linked by a key identifier:

- **Implementation Actions – LISO**
- **Projects – LISO**
- **Progress Report - Grantees**

Progress Report
- EPA Agreement Number

→

Projects
- IA Number

→

Implementation Actions

Implementation Actions (IA) Table

- IA Number
- CCMP Theme
- IA Text
- IA Type
- IA Status
- IA Lead
- Total Estimated Costs
- EPA Dollars Spent
- IA Outputs
- IA Metrics
- Ecosystem Target
- CCMP Outcome
- CCMP Objective
- CCMP Strategy
- Last Update

Structure

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Projects Table

- Title
- Work Plan Element
- Activity Type
- Project Type
- Project Objectives
- Project Description
- Implementing Agency
- Responsible Partners
- Funding Type
- Project Estimated Budget
- Federal Amount
- Match Amount
- FY Funded
- Project Estimated Milestones
- CWA Core Program Elements
- Project Anticipated Long-term Outcomes
- IA Number
- Project Location
- EPA Assistance Agreement Number
- Project Officer
- Region
- Other Information
- Annual Drawdown
- Last Updated

Progress Reports Table

- Agreement Number
- Title
- Recipient Organization
- Contact Name
- Project Period (Start and End Date)
- Reporting Period
- Report Type
- Project Description
- Narrative Summary of Project Progress
- Deliverable/Output
- Timeline
- Metric
- IA Number
- Funds Allocated
- Project Progress
- Challenges or Changes
- Quality Assurance

Current Status of SharePoint Tracking Tool

- **The SharePoint Tracking and Reporting Tool is complete and live**
- **The Program Implementation and Progress Webpage is published**

Long Island Sound NEP Projects: Overview

Implementation Actions

IA Number	IA Text	IA Status	Dollars Spent
HW-1	Complete projects that result in restoration of coastal habitat.	No Progress	$7,577,329.7755
HW-10	Promote management practices that limit human disturbance and protect functional ...	No Progress	$6,048
HW-11	In lieu of hard armoring, develop and promote the use of living shoreline habitat prot...	No Progress	$305,351.0225
HW-13	Promote directed volunteer-driven invasive species reconnaissance and removal work.	No Progress	$389,764.2225
HW-14	Develop and implement invasive/non-native species management plans for priority t...	No Progress	$2,160
HW-15	Assess adequacy of current legislation and programs that target prevention, spread, a...	No Progress	$1,296
Total			$62,865,170.0253

Progress Reports

Id	Title	Recipient Organization	Metric	Progress	Funds Allocated
576	A Blue Marine Plan for Long Island S...	University of Connecti...	44 workshops conducte...	Completed	$32,977.25
342	A Student Urban Field-study of Wat...	SoundWaters, Inc.	1500 people with knowl...	On-Track	$16,967.33
343	A Student Urban Field-study of Wat...	SoundWaters, Inc.	1500 people with knowl...	On-Track	$16,967.33
328	All for Wildlife: Discovering Art in Co...	Group for the East End...	1258 volunteers	On-Track	$5,000
329	All for Wildlife: Discovering Art in Co...	Group for the East End...	9000 lbs of marine debr...	On-Track	$5,000
566	Alley Creek Shoreline and Coastal Fo...	New York City Depart...	Acres of salt marsh rest...	On-Track	$75,000
Total					$25,936,650.9582

Projects

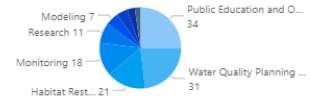
Id	Title	Project Estimated Budget	Federal Amount	Match Amount
238	A Blue Marine Plan for Long Island Sound (NY, CT) (53824)	$32,977.25	$32,977.25	
239	A Student Urban Field-study of Water Quality and Species Diversi...	$67,869.32	$67,869.32	
230	Acoustic Data Acquisition for Seafloor Mapping	$955,000	$573,000	$382,000
1	Acoustic telemetry array for monitoring tagged, migratory fish in...	$1,009,500	$605,700	$403,800
240	All for Wildlife: Discovering Art in Coastal Cleanups around Long ...	$20,000	$20,000	
241	Alley Creek Shoreline and Coastal Forest Restoration (NY) (53625)	$300,000	$300,000	
Total		$921,107,694.77	$660,950,79...	$260,156,901

135
Projects

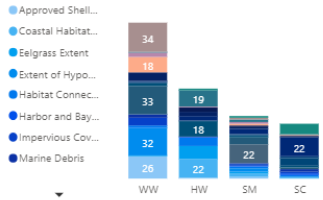
$62.87M
Dollars Spent

IA Number: All
Recipient Organization: All
Agreement Number: All
Reporting Period: All

Projects by Activity Type

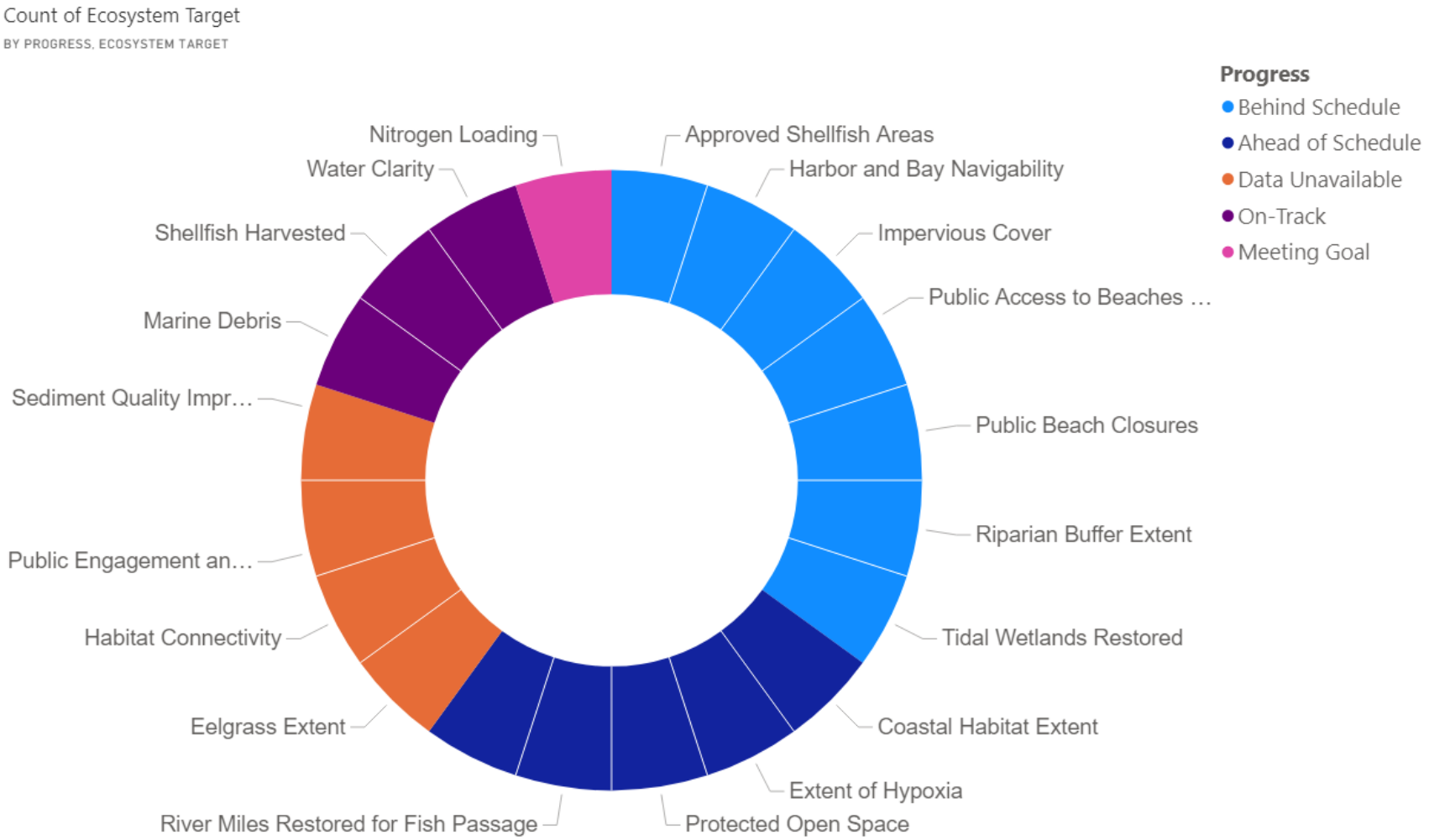


Actions by Theme and Target



Next Steps

- **Incorporating NEPORT**
  - Developing visualizations to communicate match
  - Publishing another webpage emphasizing the importance of partnership
  - Working with state partners to brainstorm ways where progress reporting and NEPORT can be used to inform each other
- **Report to Congress**
  - Utilize SharePoint (via Power BI) visualizations to communicate program implementation and progress


Count of Ecosystem Target
BY PROGRESS, ECOSYSTEM TARGET
Progress
Behind Schedule
Ahead of Schedule
Data Unavailable
On-Track
Meeting Goal
Approved Shellfish Areas
Harbor and Bay Navigability
Impervious Cover
Public Access to Beaches …
Public Beach Closures
Riparian Buffer Extent
Tidal Wetlands Restored
Coastal Habitat Extent
Extent of Hypoxia
Protected Open Space
River Miles Restored for Fish Passage
Eelgrass Extent
Habitat Connectivity
Public Engagement an…
Sediment Quality Impr…
Marine Debris
Shellfish Harvested
Water Clarity
Nitrogen Loading

Power BI Visualizations

Long Island Sound Study
A Partnership to Restore and Protect the Sound

Power BI Visualizations

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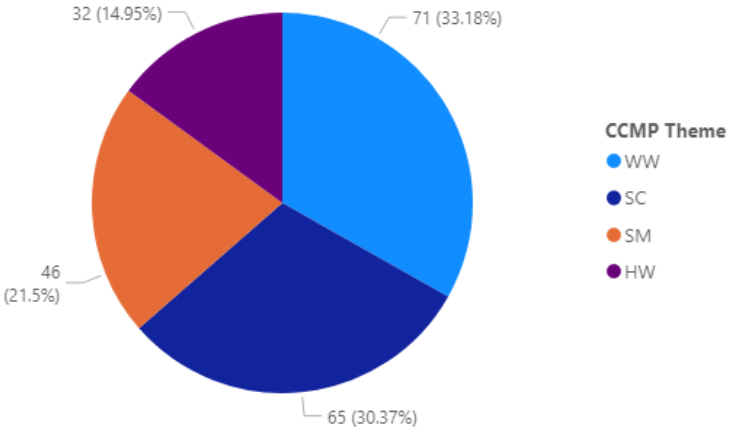
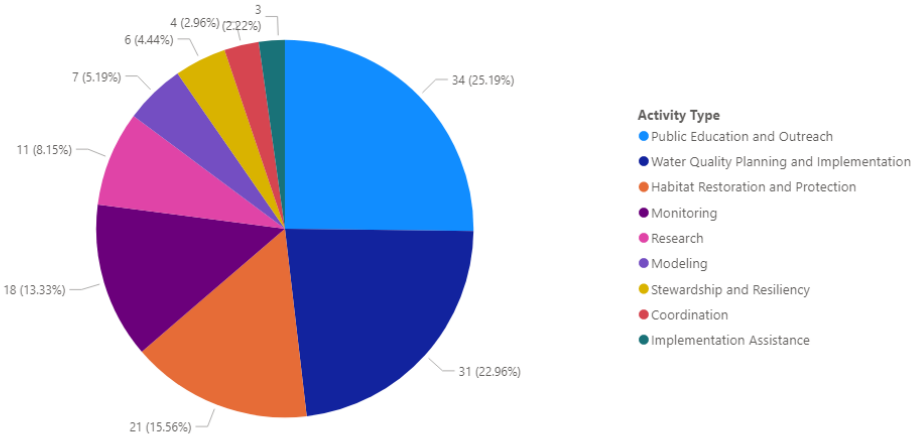
Projects
BY CCMP THEME



Projects
BY ACTIVITY TYPE



Power BI Visualizations

Long Island Sound Study
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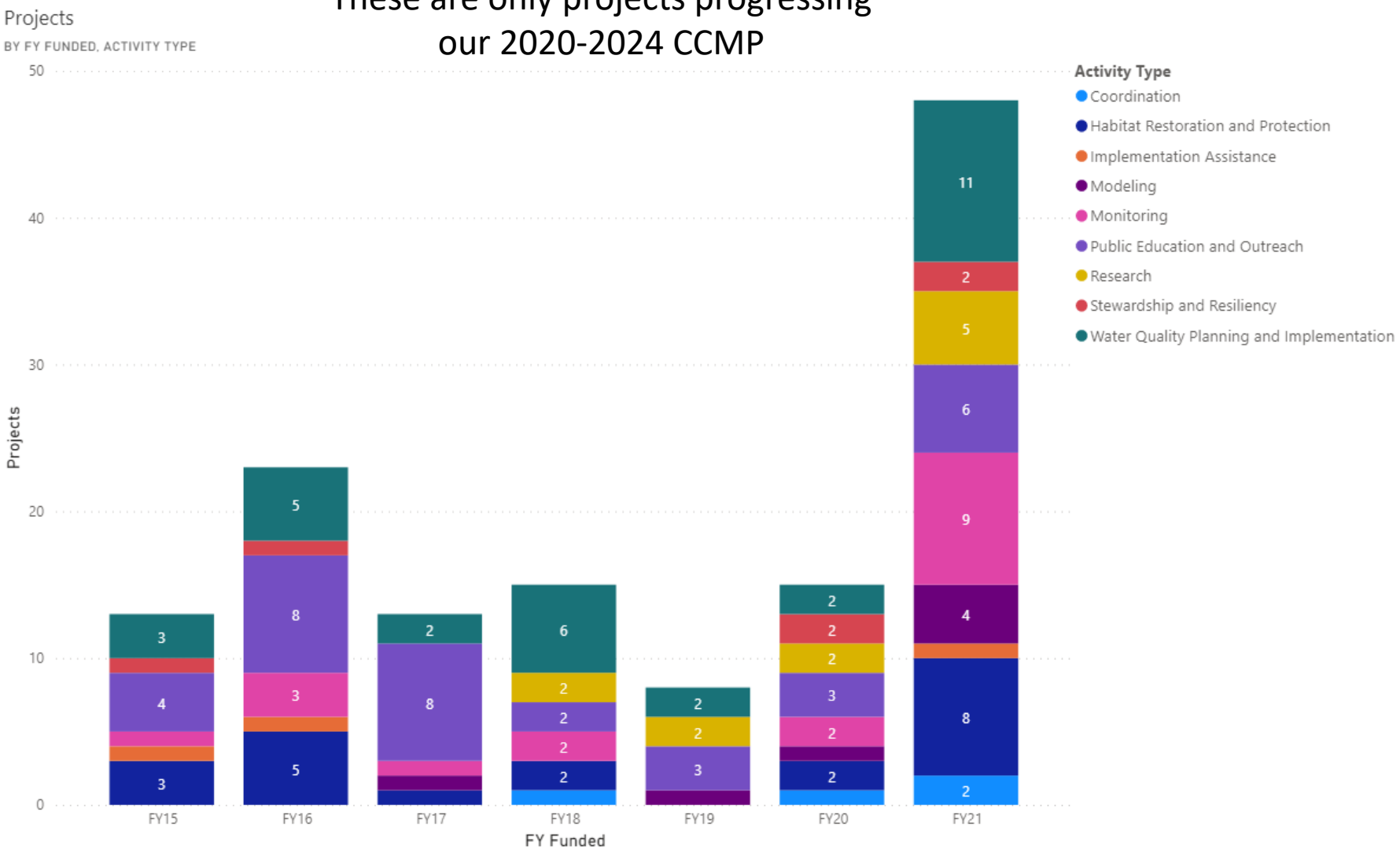
These are only projects progressing our 2020-2024 CCMP



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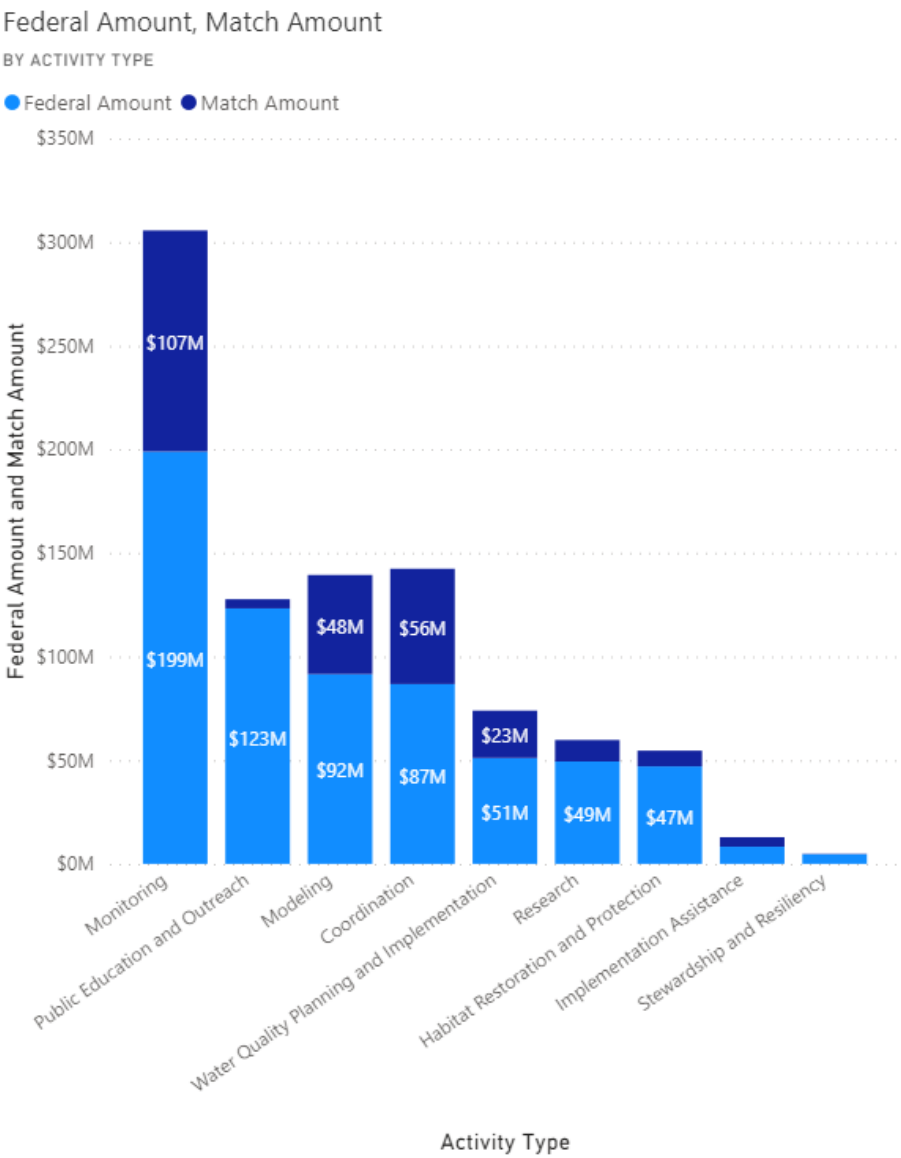

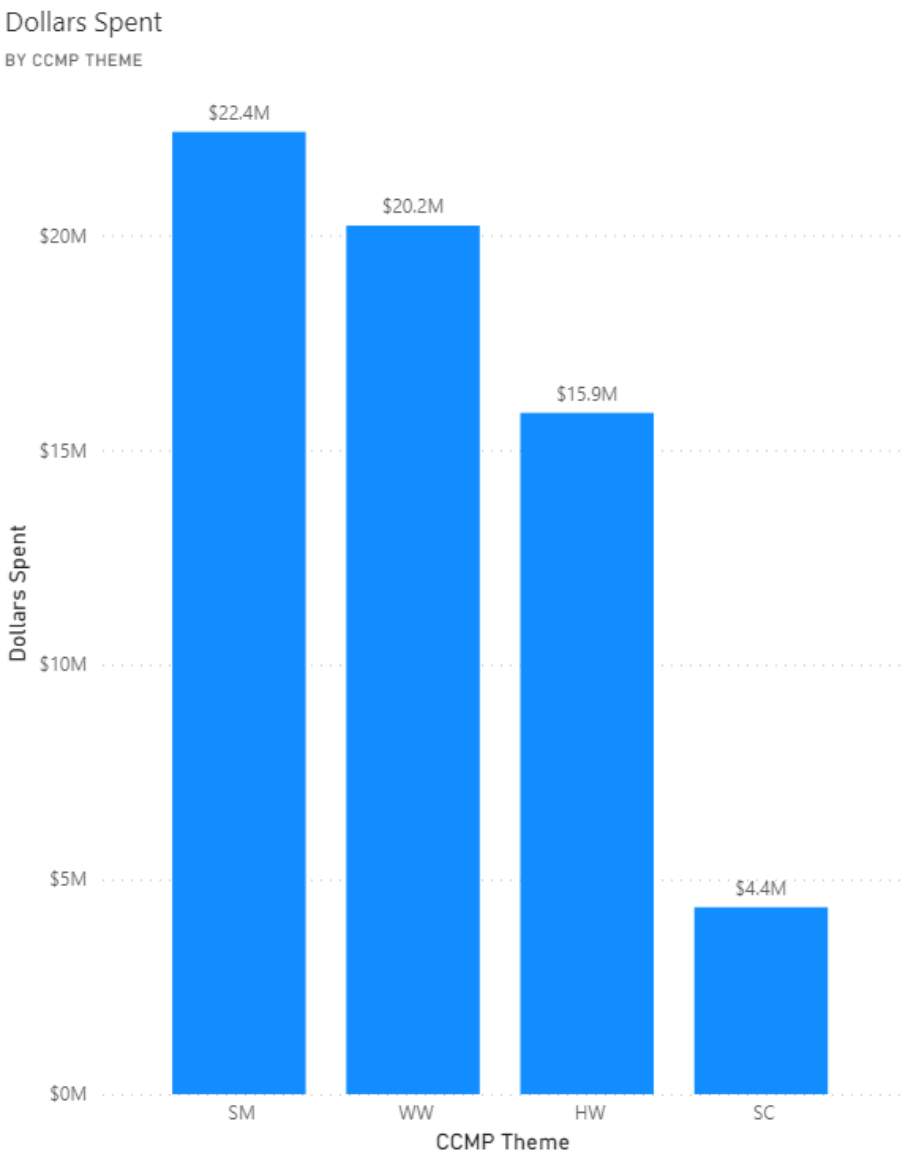

Power BI Visualizations

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