LIS Eelgrass Collaborative

December 5, 2024 Agenda

1:00 - 1:05 (5 mins)	Welcome & Agenda Overview	Katie Lund (CT NERR)
1:05 - 1:30 (25 mins)	Updates on the LIS Coastal Zone Soil Survey	Jacob Isleib (USDA-NRCS, Soil Scientist)
1:30 - 1:45 (15 mins)	Q&A and discussion on use of soil survey products for eelgrass restoration	ALL
1:45 - 2:30 (45 mins)	Eelgrass Seed-Based Restoration Topics w/ Q&A: - CT & NY agency guidance white paper - Draft BMPs for seed transport - LISS seed dispersal RFP	Katie Lund (CT NERR) Steve Schott (Cornell Cooperative Extension) Cayla Sullivan (EPA-LISS)
2:30 - 3:00 (30 mins)	Agency/Partner Updates	ALL

Funded by:

Facilitated by:

USDA

United States Department of Agriculture

Connecticut

Natural Resources Conservation Service

Long Island Sound Coastal Zone Soil Survey

2024-12-5 | Jacob Isleib, Soil Scientist CT/RI

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LIS CZSS - Background

Senator Murphy Congressionally Directed Spending to complete a Coastal Zone Soil Survey of Long Island Sound

The Connecticut Council on Soil and Water Conservation, as prepared by board member Denise Savageau, submitted a request for congressionally directed spending for a coastal zone soil survey of Long Island Sound. Created by state statue, the Council coordinates activities and partnering opportunities of Connecticut's conservation districts and other federal, state and local agencies on environmental and natural resource land use projects.

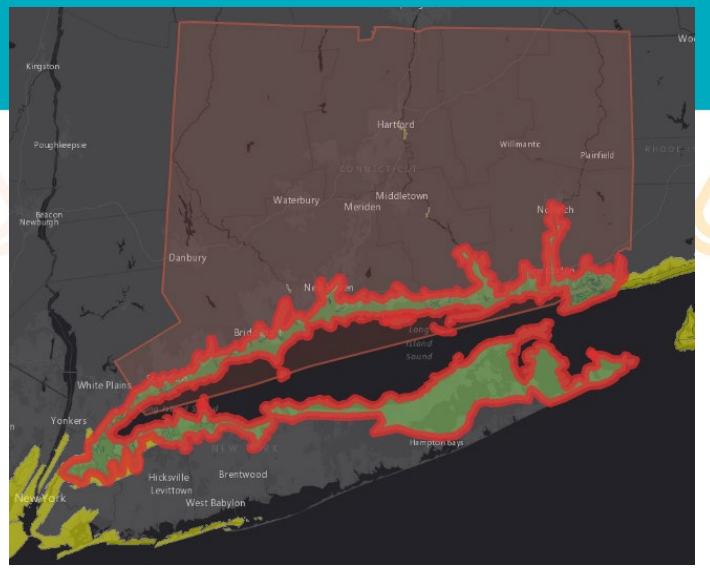
The Council was notified that President Biden signed the bill into law on Friday, March 11, 2022.

The congressionally directed spending will provide USDA Natural Resources Conservation Service (NRCS) funding to work with partners to conduct and publish a coastal zone soil survey for the shallow water and nearshore mainland areas of the Long Island Sound Estuary System in Connecticut and New York. This will become part of the National Cooperative Soil Survey managed by NRCS and provide crucial information to help manage, restore, and protect the Long Island Sound and its coastal areas.

LIS CZSS - Timeline

- 5+ year project timeline - for entirety of LIS (CT + NY shores)
- **first 2 years focus on CT shoreline**
- NY shoreline may exceed 5-year mark depending on funds to support project acceleration)

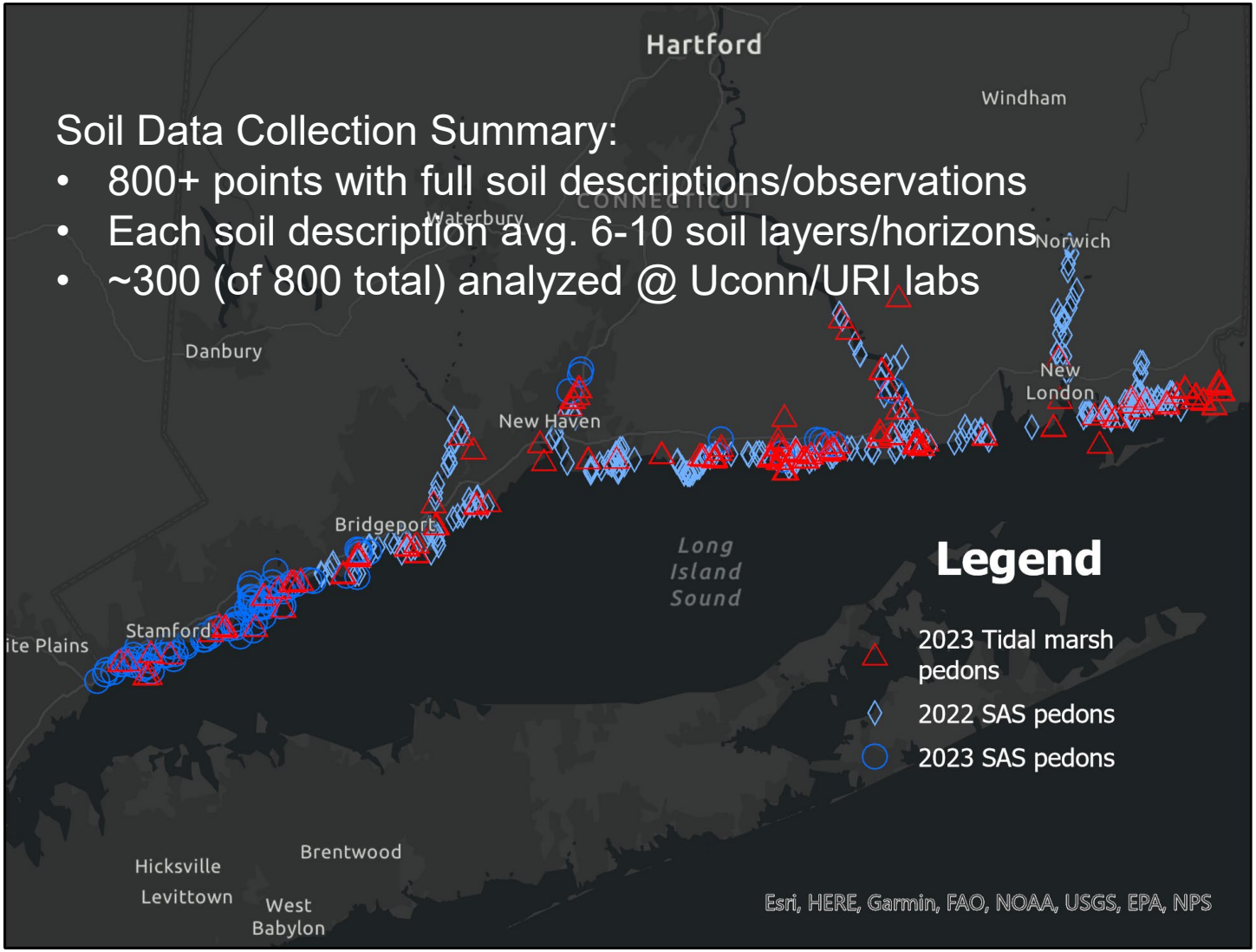
LIS CZSS - Strategy



How USDA-NRCS completes the CZSS in this accelerated timeframe:

- **Soil Data Collection Surge**
  - Bring in staff from outside region; ~30 staff total
- **Laboratory analysis**
  - Kellogg Soil Survey Lab in Lincoln NE could not analyze within 2-year timespan
  - **Agreement - UConn Geosciences** & **URI Soil Science**
- **Basemap needs - Hi-resolution Bathymetry/Imagery**
  - **Agreement (Interagency) - NOAA/USDA** –for topobathymetric LiDAR data acquisition
  - TBL from NOAA will serve remote-sensing needs for project mapping
  - ***BONUS!*** NOAA will use to update shoreline mapping (CUSP), nautical charts

Staff Surge - Data Outcomes



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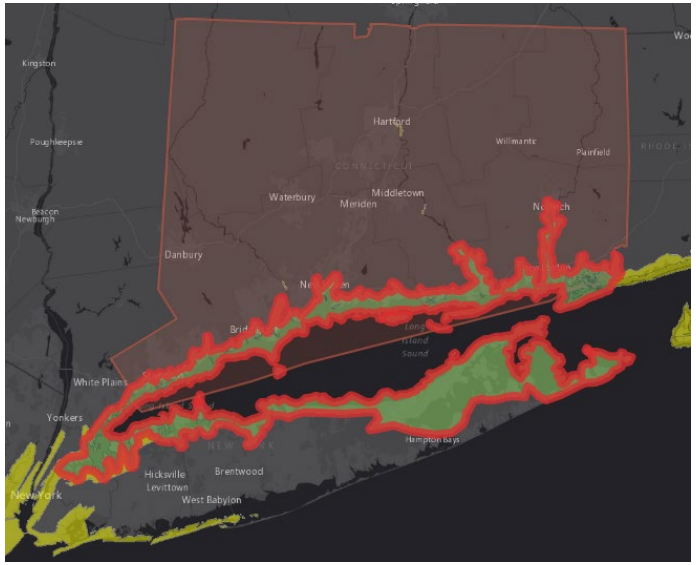
Topobathy Timeline & Deliverables

- ***Jan '23 to July '23 –*** *Contractor selection; Water quality+ monitoring, LiDAR collection flights* ***DONE***
- ***Aug '23 to Fall '24 –*** *Post-processing, QC/QA* ***DONE***
- ***Early'25–*** *LIS TBL data published to NOAA Digital Coast* ***PENDING***



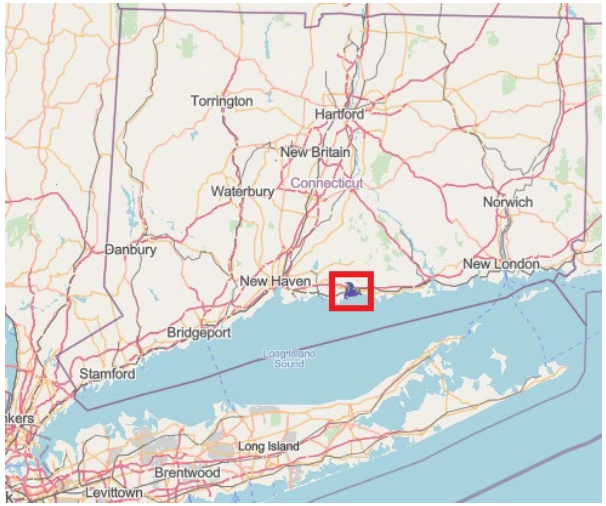
Deliverables:

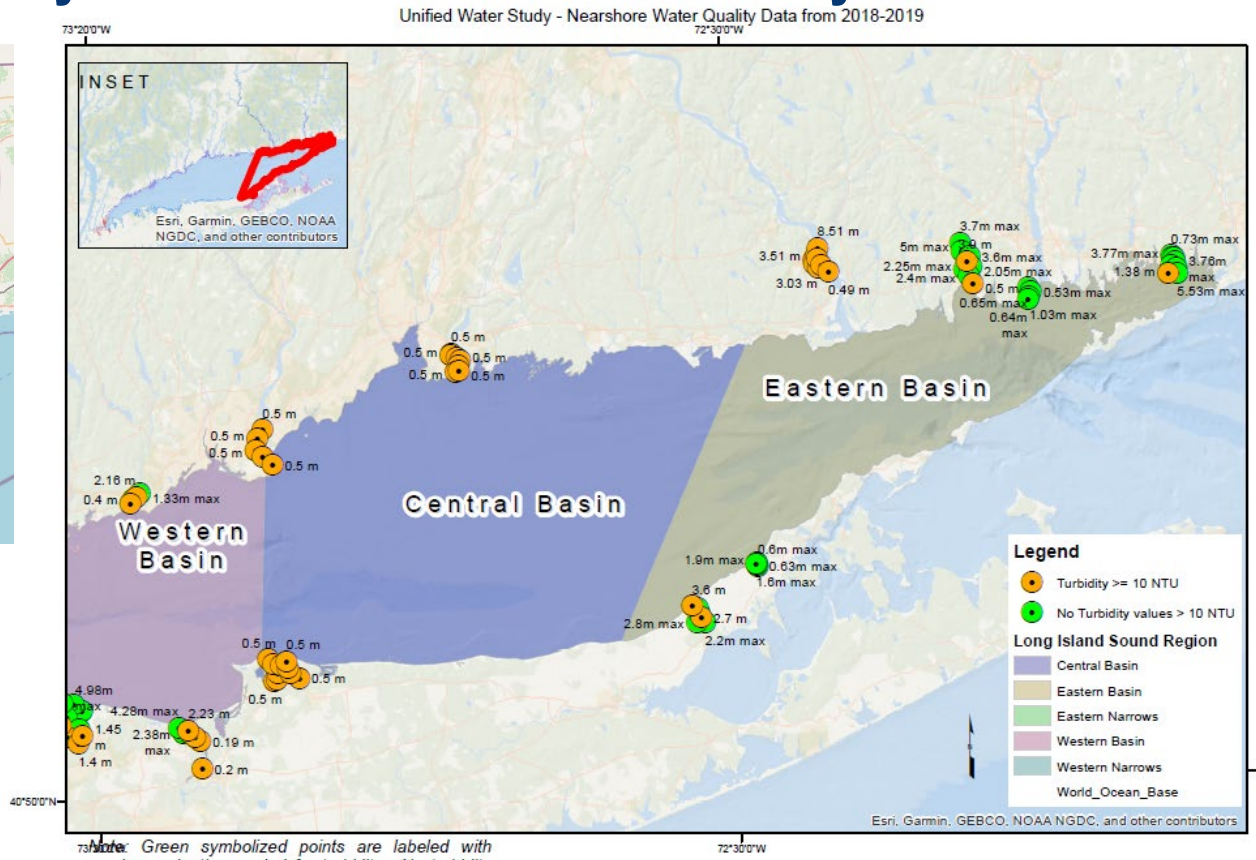
- LAS Pointcloud data
  - **SAV will be a class for points!**
- DEMs of bathymetric bottom/topographic surface
  - NAVD88 & Tidal datums will be available
- Ortho Imagery (collected simultaneously with TBL)

Examples of LIS Topobathy data

Example from area near Central/Eastern basin boundary

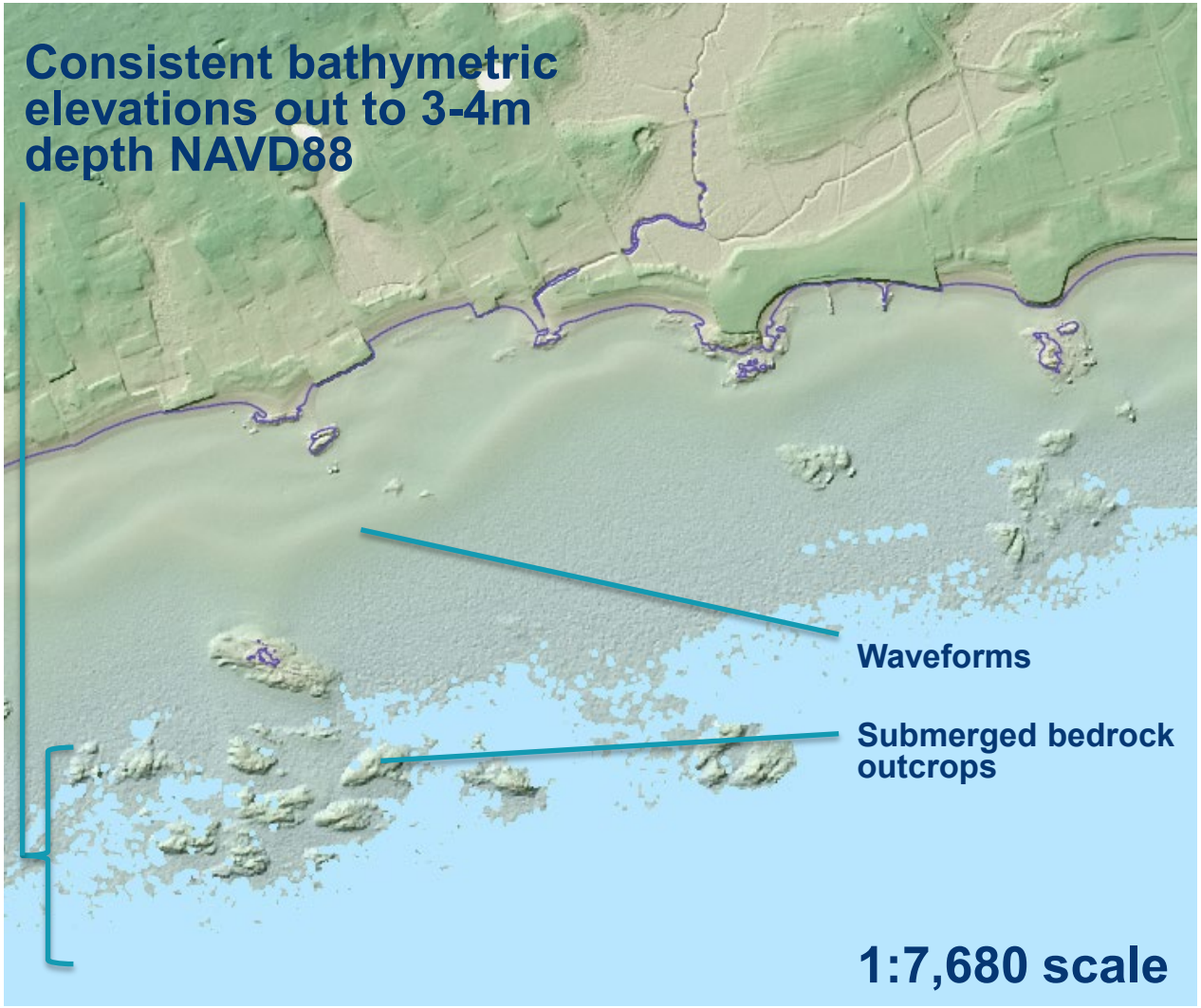
Represents high turbidity area from Unified Water Study data



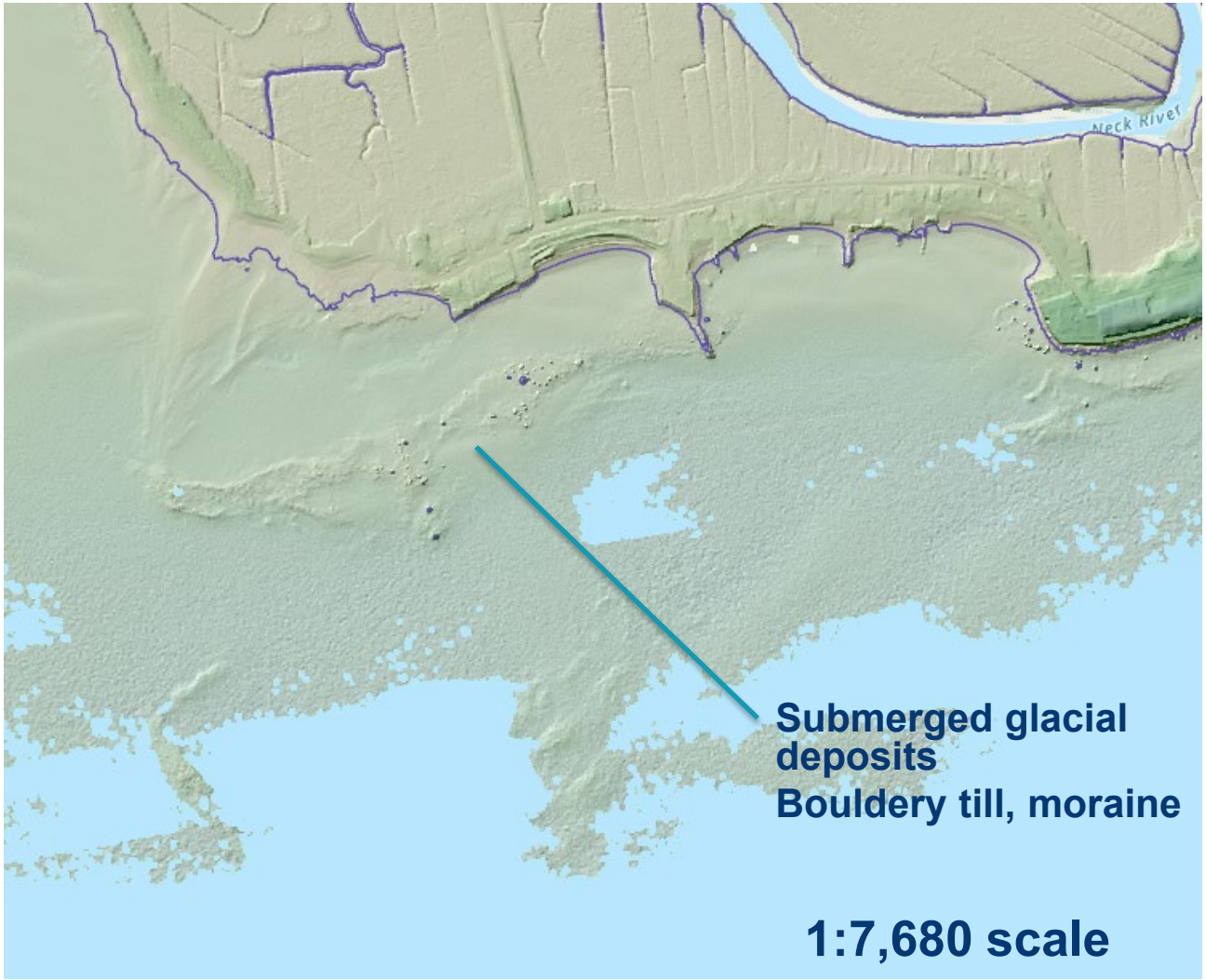


Note: Green symbolized points are labeled with maximum depth sampled for turbidity. No turbidity values above 10 NTU were measured at these locations. Orange-symbolized points are labeled with the first depth at which a value of 10+ NTU was measured.

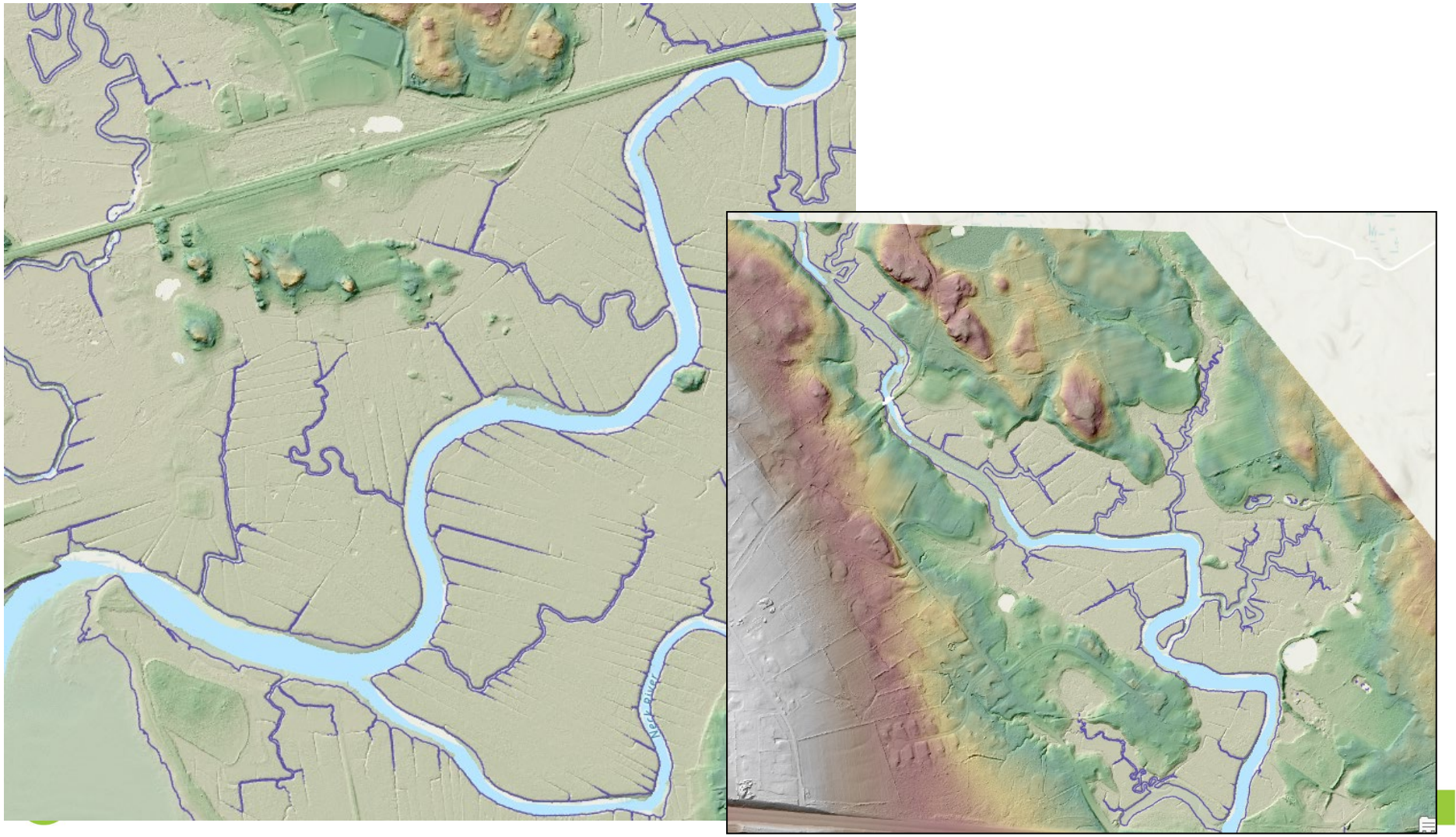
Examples of LIS Topobathy data



Examples of LIS Topobathy data

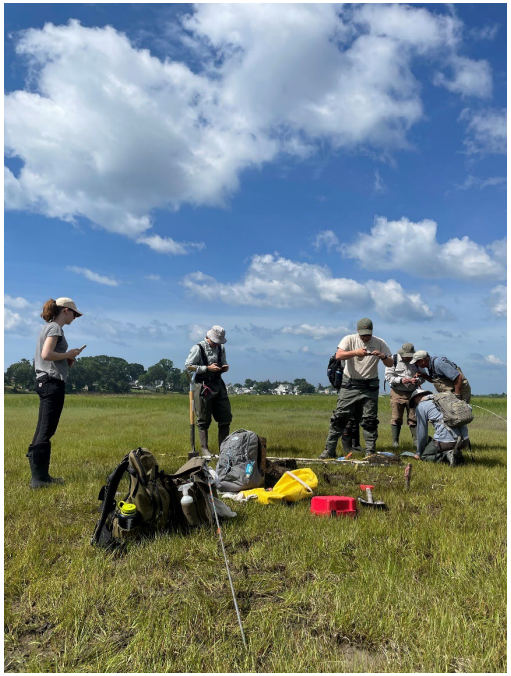


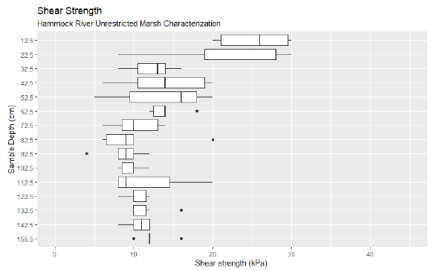
Tidal marsh and adjacent uplands



LIS CZSS – *Status*

- **LIS Connecticut data was published on October 1, 2024**
- **LIS New York CZSS project is currently in planning phase, potentially starting FY25**





Profile photo of 2022CT007001

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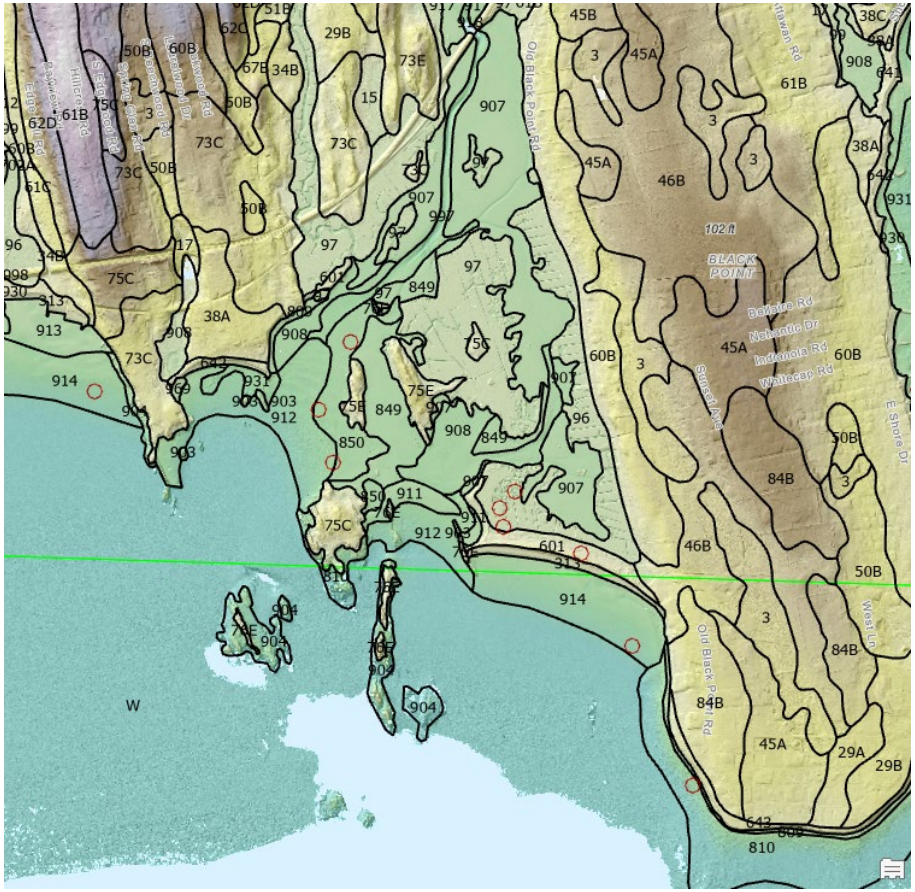
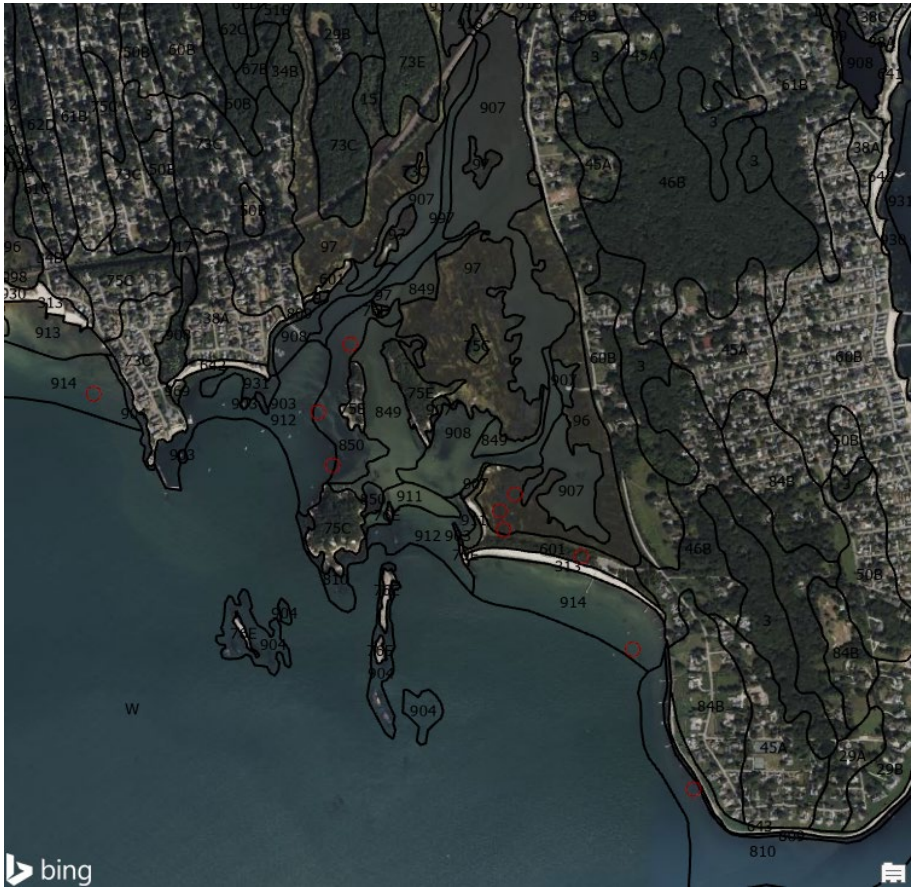
Example of LIS CZSS data





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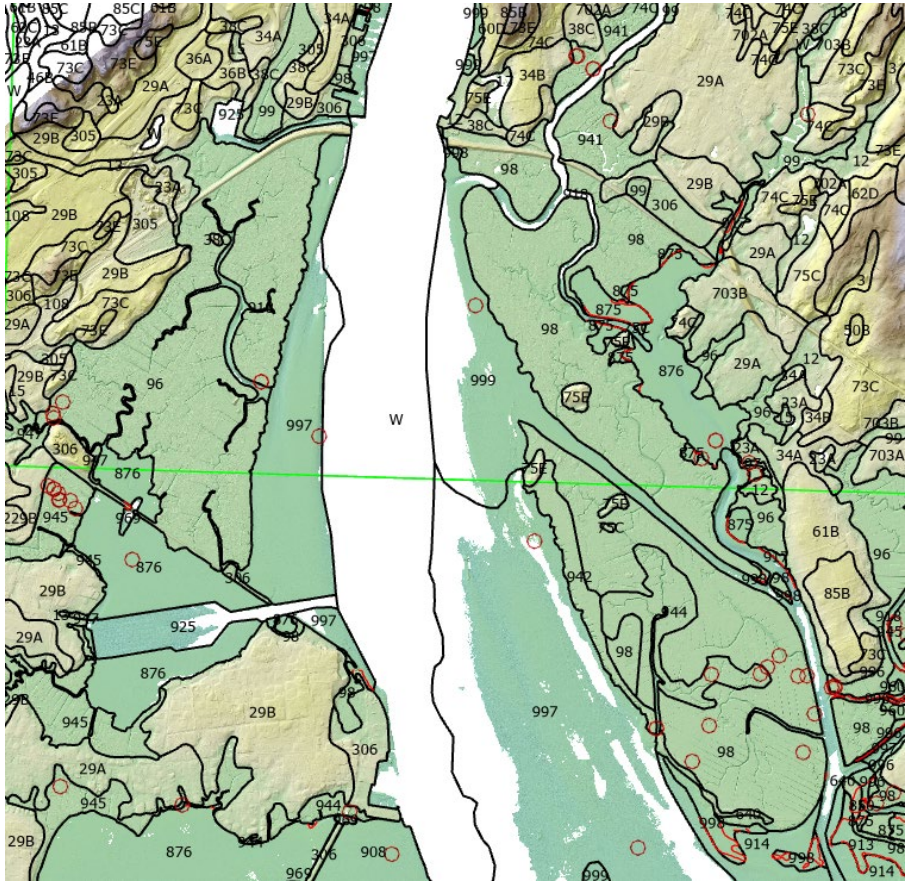
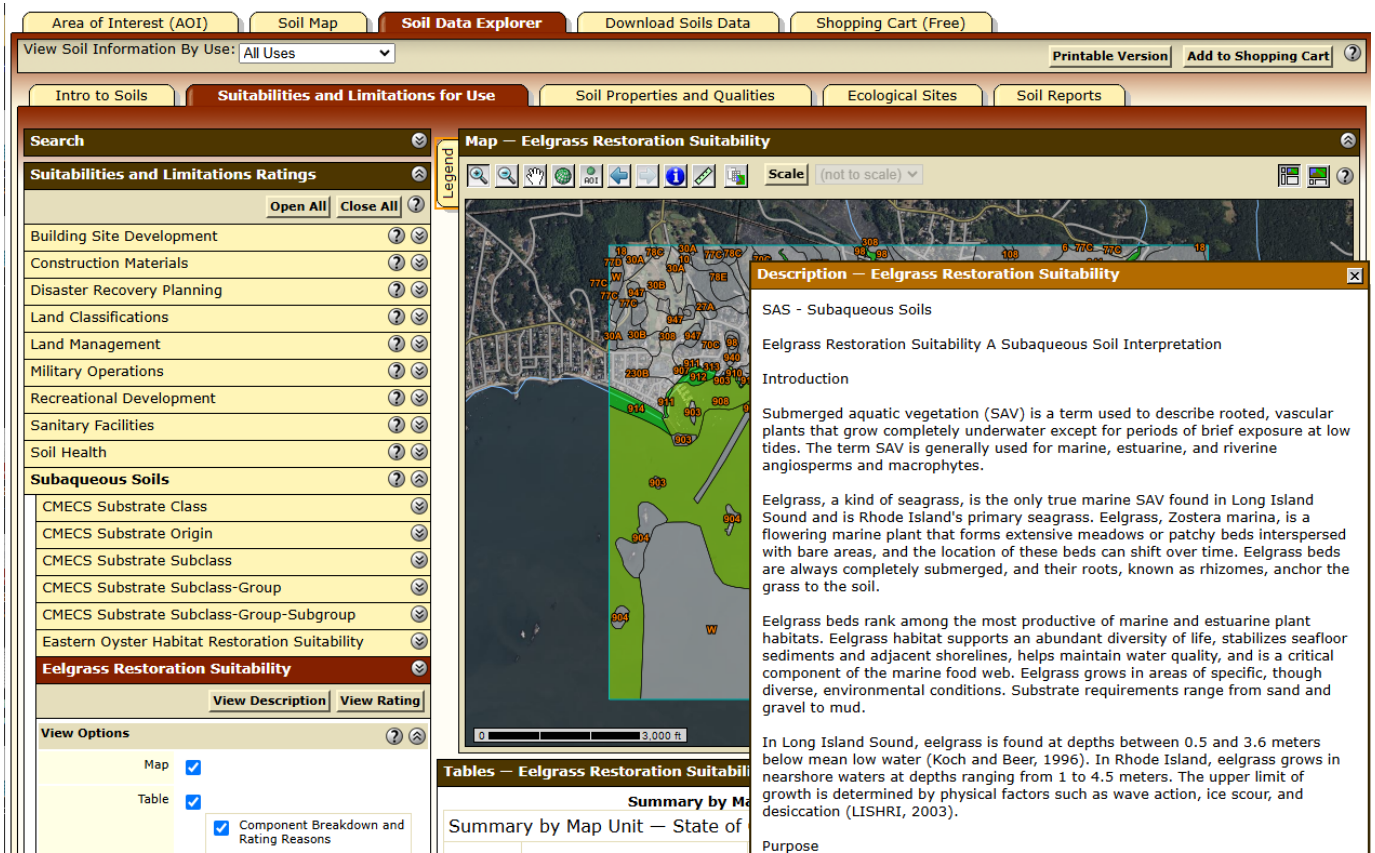


[Live Demo]

Soil Survey Products Supporting Eelgrass Mgmt

Eelgrass Restoration Suitability A Subaqueous Soil Interpretation

Web Soil Survey and Desktop GIS tools allow for Interpretive Ratings using soil survey data



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Soil Survey Products Supporting Eelgrass Mgmt

- **Soil Survey Property Data**
  - Soil geographic database – tables and/or maps
  - modernized subaqueous soil inventory
- **Point and Lab data (Abundant in CT & RI)**
  - soil descriptions at specific point locations along LIS shoreline; many with associated lab data (Ox pH, particle size data)
  - All descriptions contain results of field tests (whiff, fizz, H2O2 color change), field estimated soil texture, profile morphology, PM interp
- **Advisory/consultation technical assistance for specific projects**
  - USDA-NRCS soil scientists may be available to advise on soil investigations
  - Limited capacity; NRCS may not unfairly compete with private industry, so TSS requests to NRCS assessed on individual basis