

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: <ul style="list-style-type: none"> <li>- CT &amp; NY agency guidance white paper</li> <li>- Draft BMPs for seed transport</li> <li>- LISS seed dispersal RFP</li> </ul>	Katie Lund (CT NERR) Steve Schott (Cornell Cooperative Extension) Cayla Sullivan (EPA-LISS)
2:30 - 3:00 (30 mins)	Agency/Partner Updates	ALL



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# 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 statute, 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.

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# LIS CZSS - Timeline



## FY 2022 LIS CZSS starts



## FY 2023 New London & Middlesex County

+90 coastal miles total



## FY 2024



- 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**

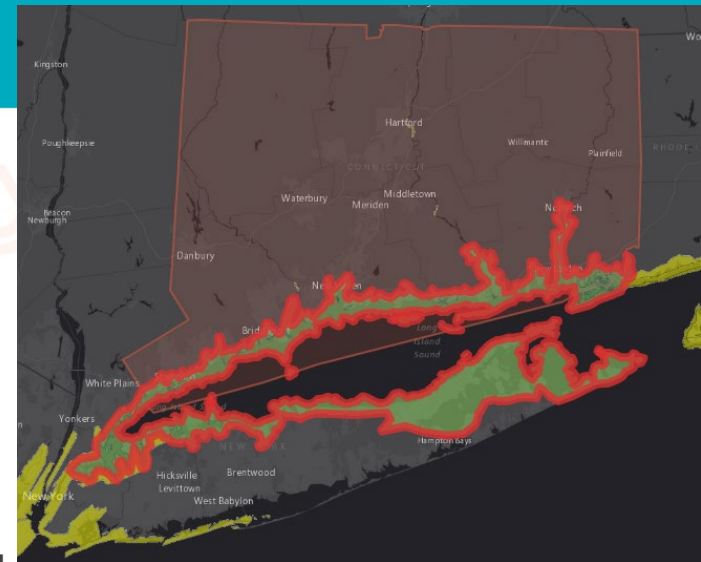
- Bring in staff from outside region; ~30 staff total

- **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

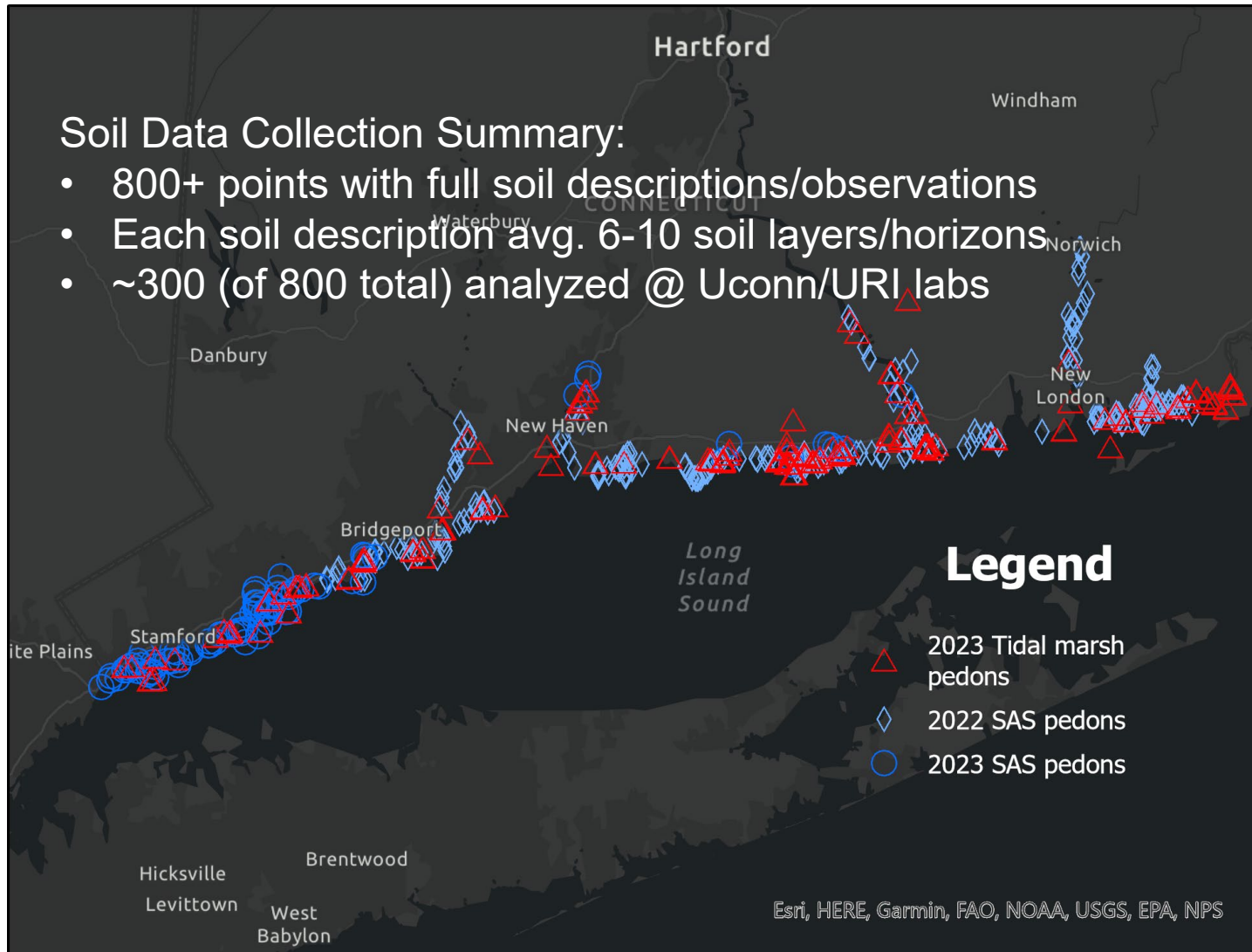


# Staff Surge - Data Outcomes



## Soil Data Collection Summary:

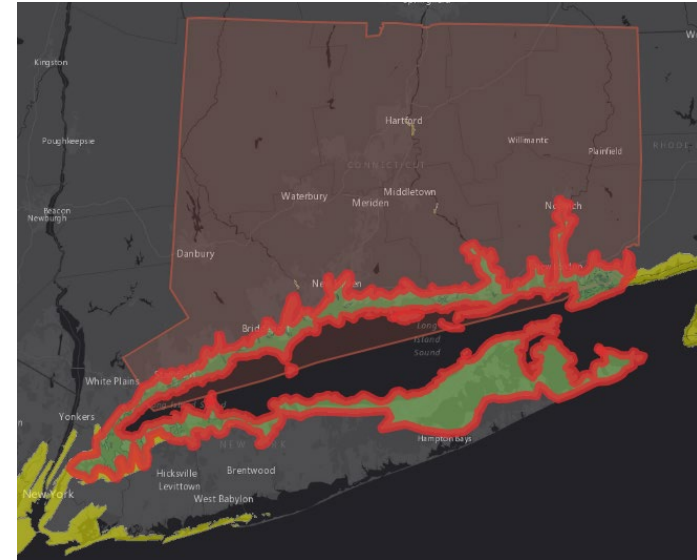
- 800+ points with full soil descriptions/observations
- Each soil description avg. 6-10 soil layers/horizons
- ~300 (of 800 total) analyzed @ Uconn/URI labs





# 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:

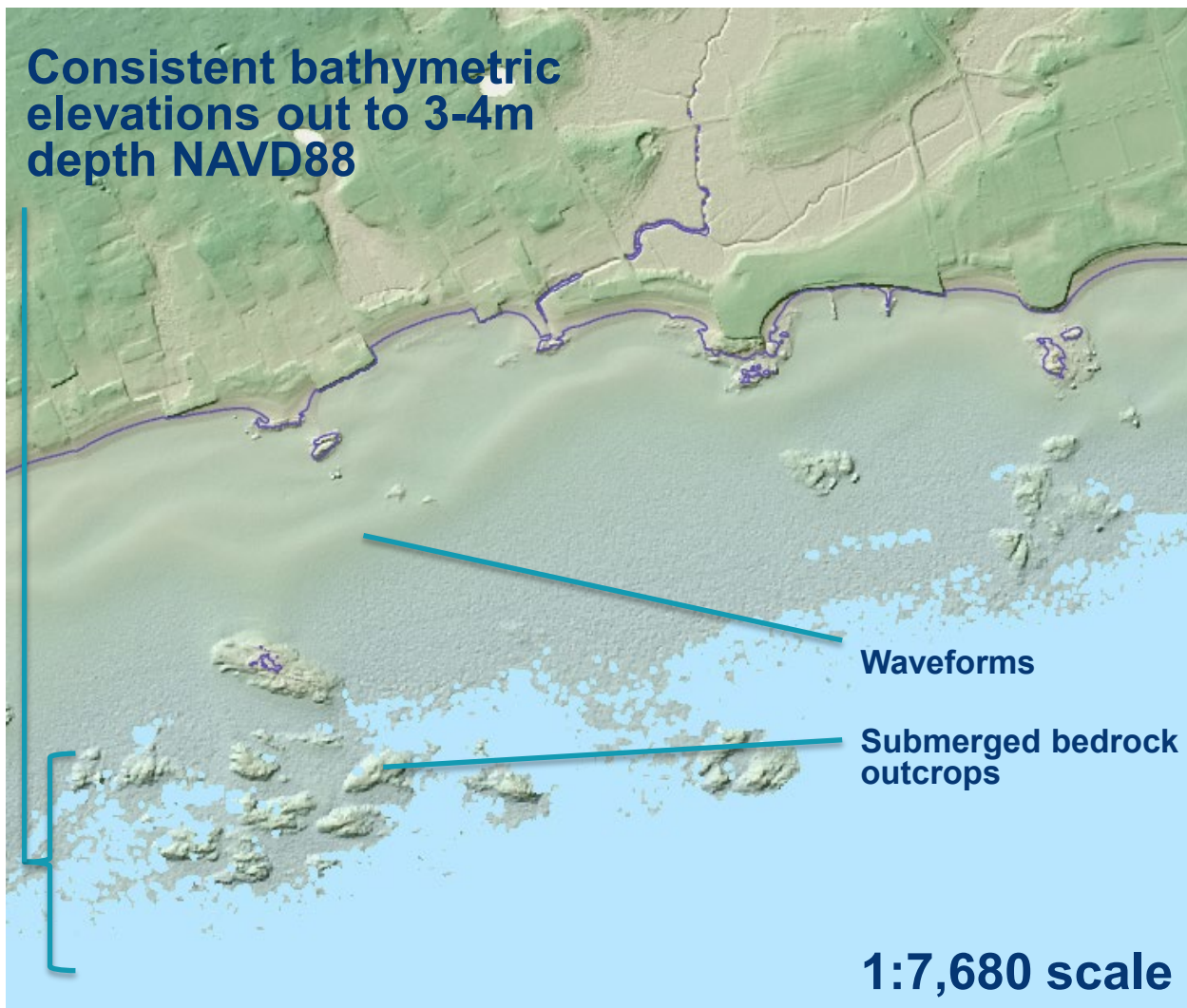
- LAS Pointcloud data
  - **SAV will be a class for points!**
- DEMs of bathymetric bottom/topographic surface
  - NAVD88 & Tidal datums will be available
- Ortho Imagery (collected simultaneously with TBL)



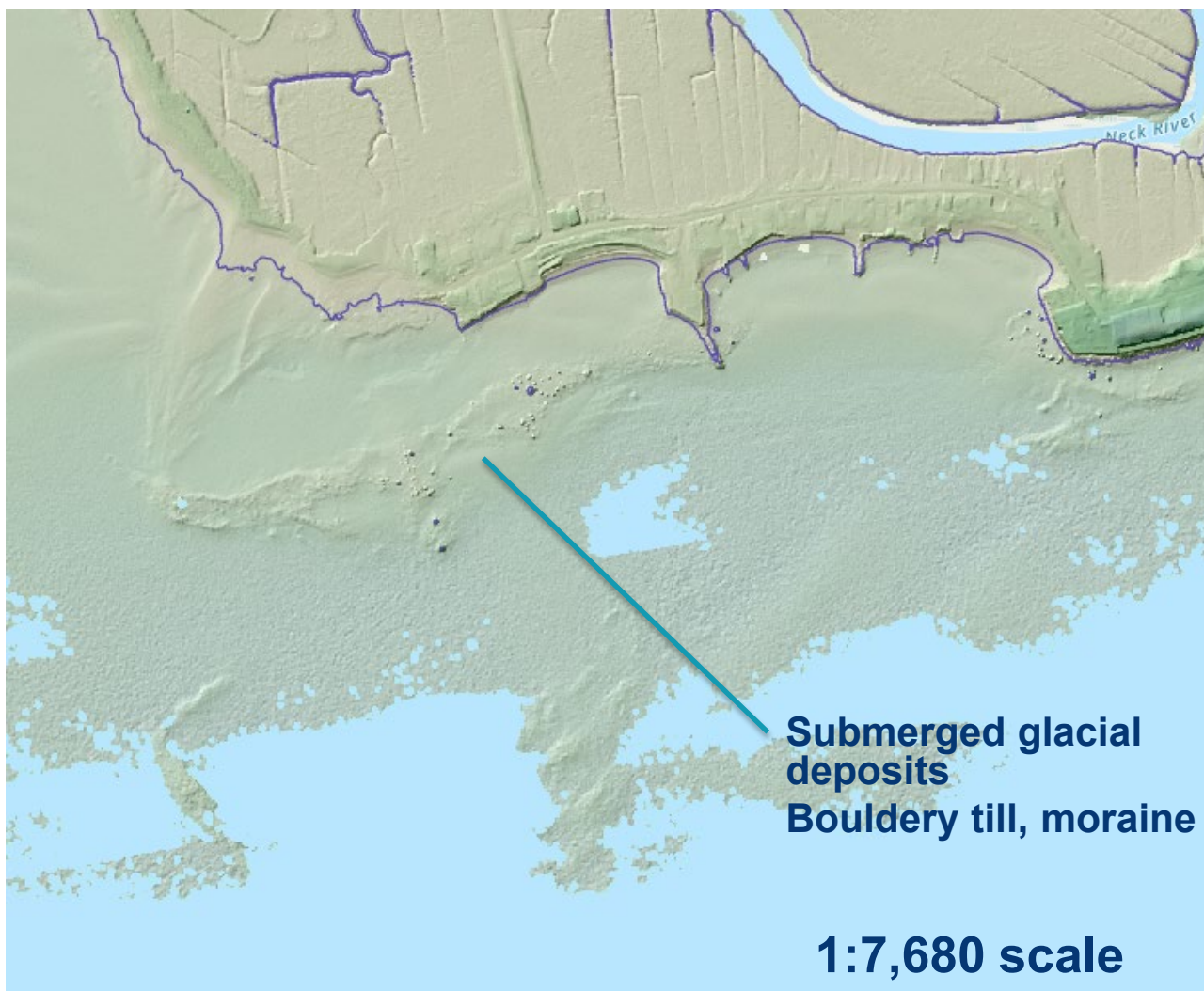




# Examples of LIS Topobathy data

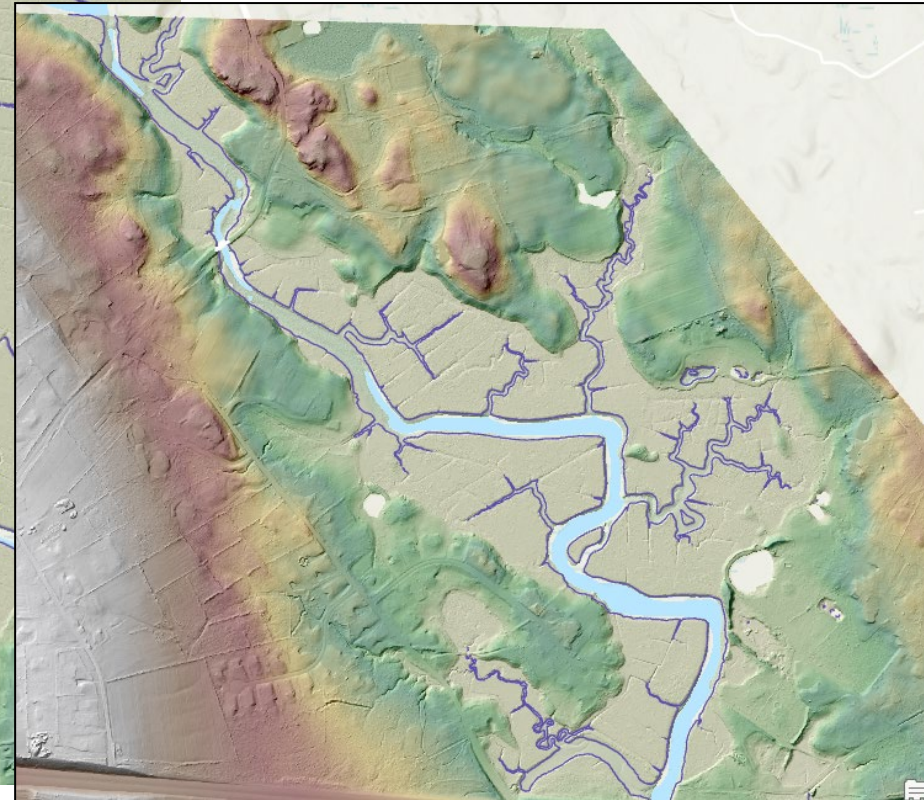


# Examples of LIS Topobathy data





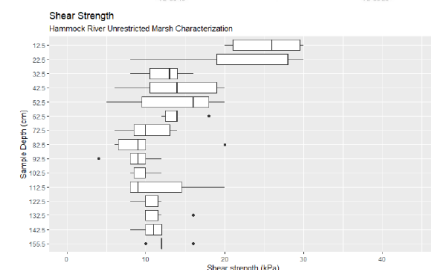
# Tidal marsh and adjacent uplands





# 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



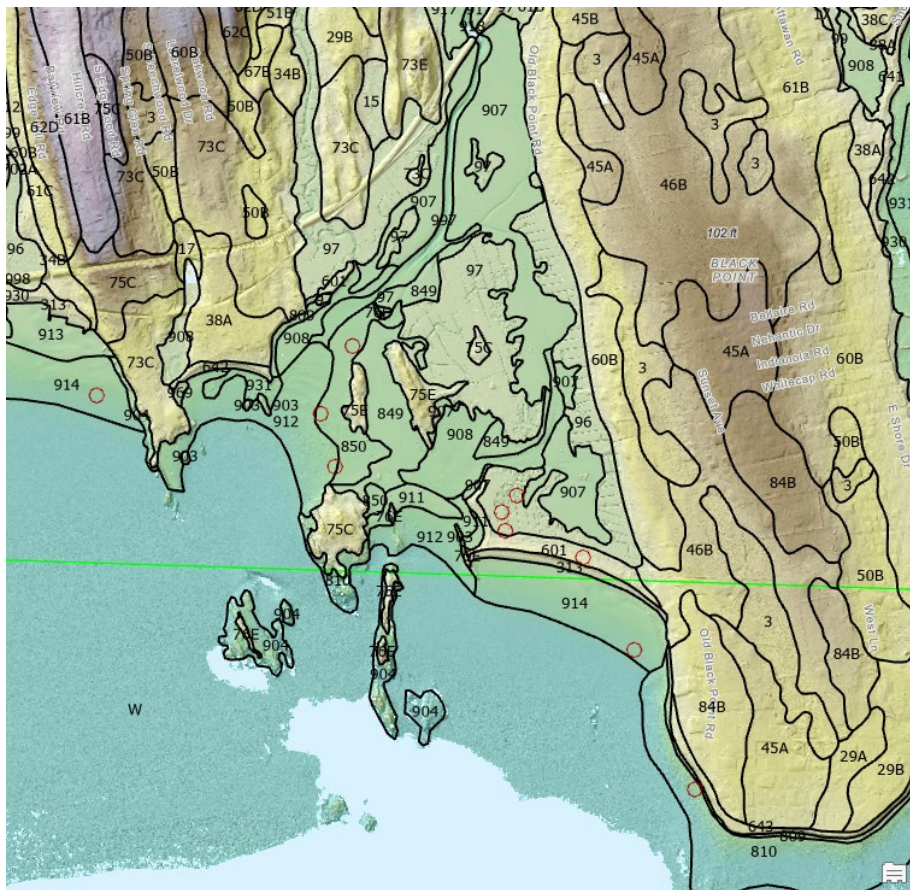
Profile photo of 2022CT007001

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# Example of LIS CZSS data



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**[Live Demo]**



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# 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

The screenshot displays the USDA Web Soil Survey interface. At the top, there are navigation tabs: 'Area of Interest (AOI)', 'Soil Map', 'Soil Data Explorer', 'Download Soils Data', and 'Shopping Cart (Free)'. Below these, a dropdown menu shows 'View Soil Information By Use: All Uses'. On the right side of the top bar, there are links for 'Printable Version' and 'Add to Shopping Cart'. The main navigation bar includes 'Intro to Soils', 'Suitabilities and Limitations for Use', 'Soil Properties and Qualities', 'Ecological Sites', and 'Soil Reports'. The left sidebar contains a search bar and a list of categories with expand/collapse icons, including 'Suitabilities and Limitations Ratings', 'Subaqueous Soils', and 'Eelgrass Restoration Suitability'. The central map area is titled 'Map - Eelgrass Restoration Suitability' and shows a satellite-style map with colored overlays representing suitability. A 'Description - Eelgrass Restoration Suitability' popup window is open, providing detailed information about Subaqueous Soils (SAS) and Eelgrass Restoration Suitability A Subaqueous Soil Interpretation. The description includes an introduction to submerged aquatic vegetation (SAV) and a specific section on Eelgrass, describing it as a flowering marine plant found in Long Island Sound and Rhode Island. It notes that Eelgrass beds are always completely submerged and their roots anchor to the soil. The text also mentions that Eelgrass beds are highly productive and support a diverse marine food web. A scale bar at the bottom of the map indicates 3,000 feet. Below the map, there are sections for 'Tables - Eelgrass Restoration Suitability' and 'Summary by Map Unit - State of'.

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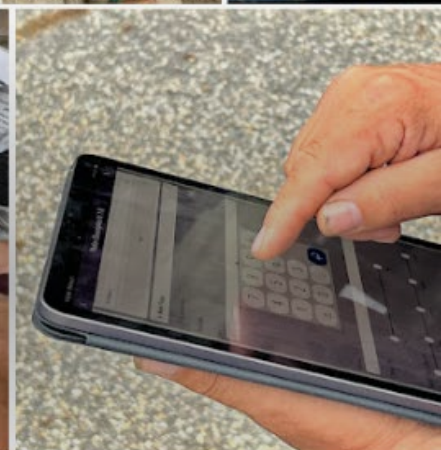


# Soil Survey Products Supporting Eelgrass Mgmt

- **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







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