

41°17'1.1"N

71°57'39.7"W

09/12/25

fishers isl

LIS EELGRASS MAPPING AND MONITORING STRATEGY (DRAFT)

LIS Eelgrass Collaborative Virtual Meeting September 24, 2025



Long Island Sound Study

A Partnership to Restore and Protect the Sound

THE
UNIVERSITY
OF RHODE ISLAND



THE TEAM

University of Rhode Island:

Mike Bradley - Project Lead

Charles LaBash – Drone Ops (purchasing)

Chris Damon – Drone Ops (image processing)

EPA / LISS:

Cayla Sullivan – Project Lead/Admin/Dive Ops

Phil Colarusso – Dive Operations

USFWS:

Suzanne Paton – Project Lead /Admin

Tom Halavik (ret) – Boat Operations

MacKenzie Payne – Field Technical Support

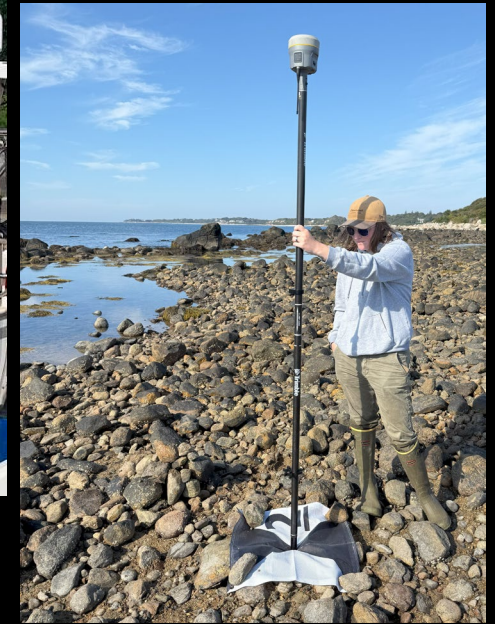
CT DEEP:

Kelly Streich - Admin

Chuck Morrison – Drone Ops (pilot in charge)

Dan Denyer – Drone Ops (pilot in charge)

Matt Green – Drone Ops (pilot in charge)



REVIEW AND GOALS

- Purpose of the Intercomparison Study
- Neckles et al 2012
- Oakley et al 2025 (example of successful Tier 2 monitoring)



Estuaries and Coasts (2012) 35:23–46
DOI 10.1007/s12237-011-9410-x

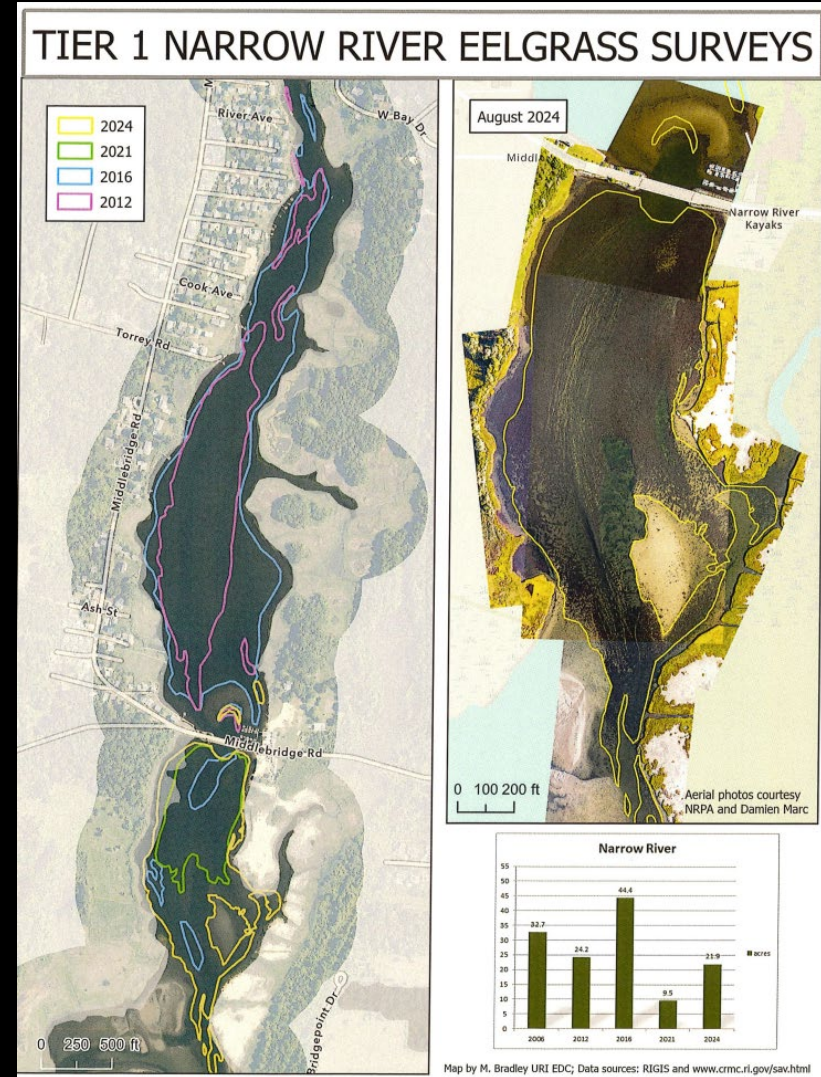
Integrating Scales of Seagrass Monitoring to Meet Conservation Needs

Hilary A. Neckles • Blaine S. Kopp •
Bradley J. Peterson • Penelope S. Pooler

Received: 29 November 2010 / Revised: 11 March 2011 / Accepted: 25 April 2011 / Published online: 10 May 2011
© Coastal and Estuarine Research Federation (outside the USA) 2011

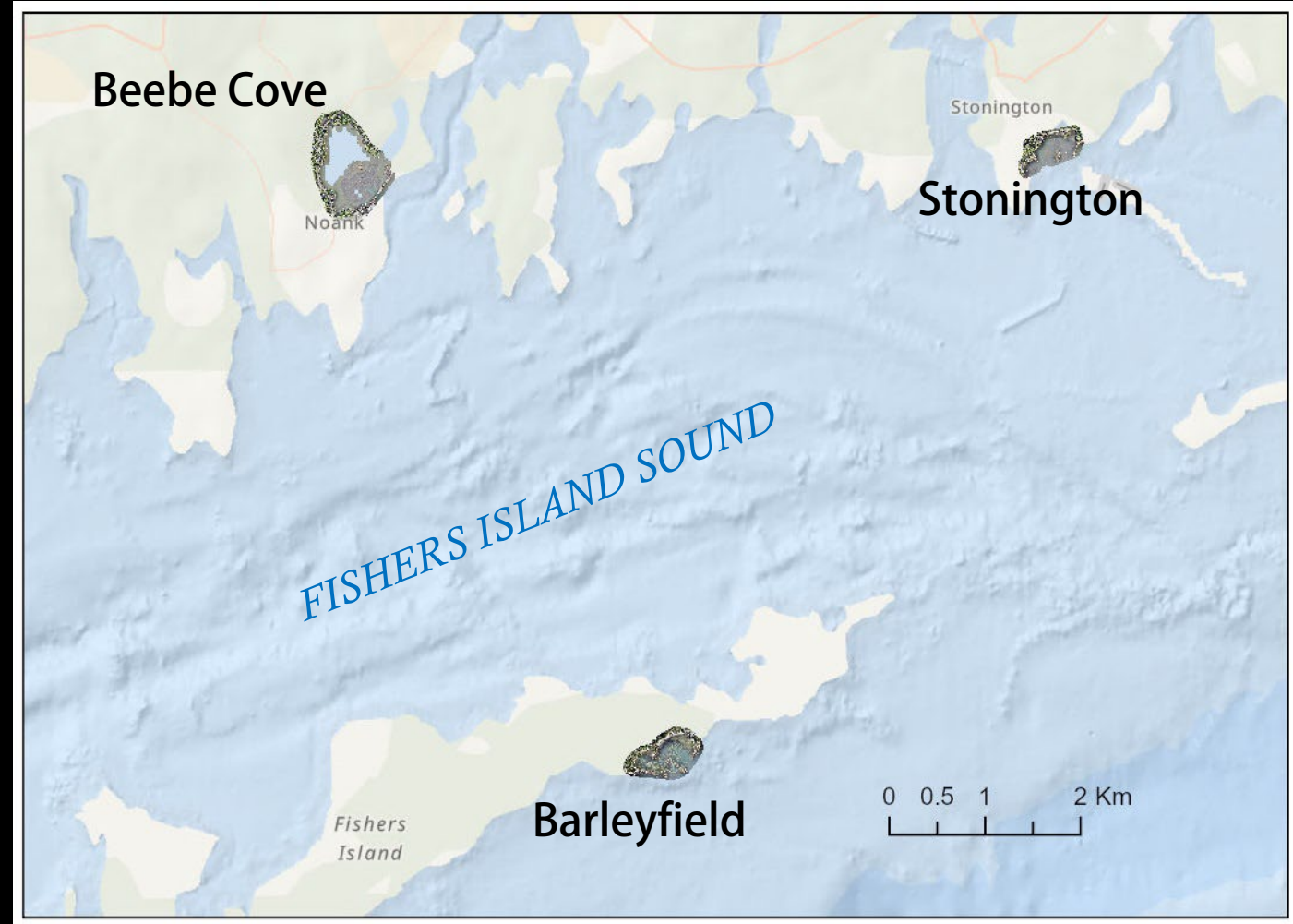
EELGRASS DYNAMICS

Mystic, CT 2012-2017



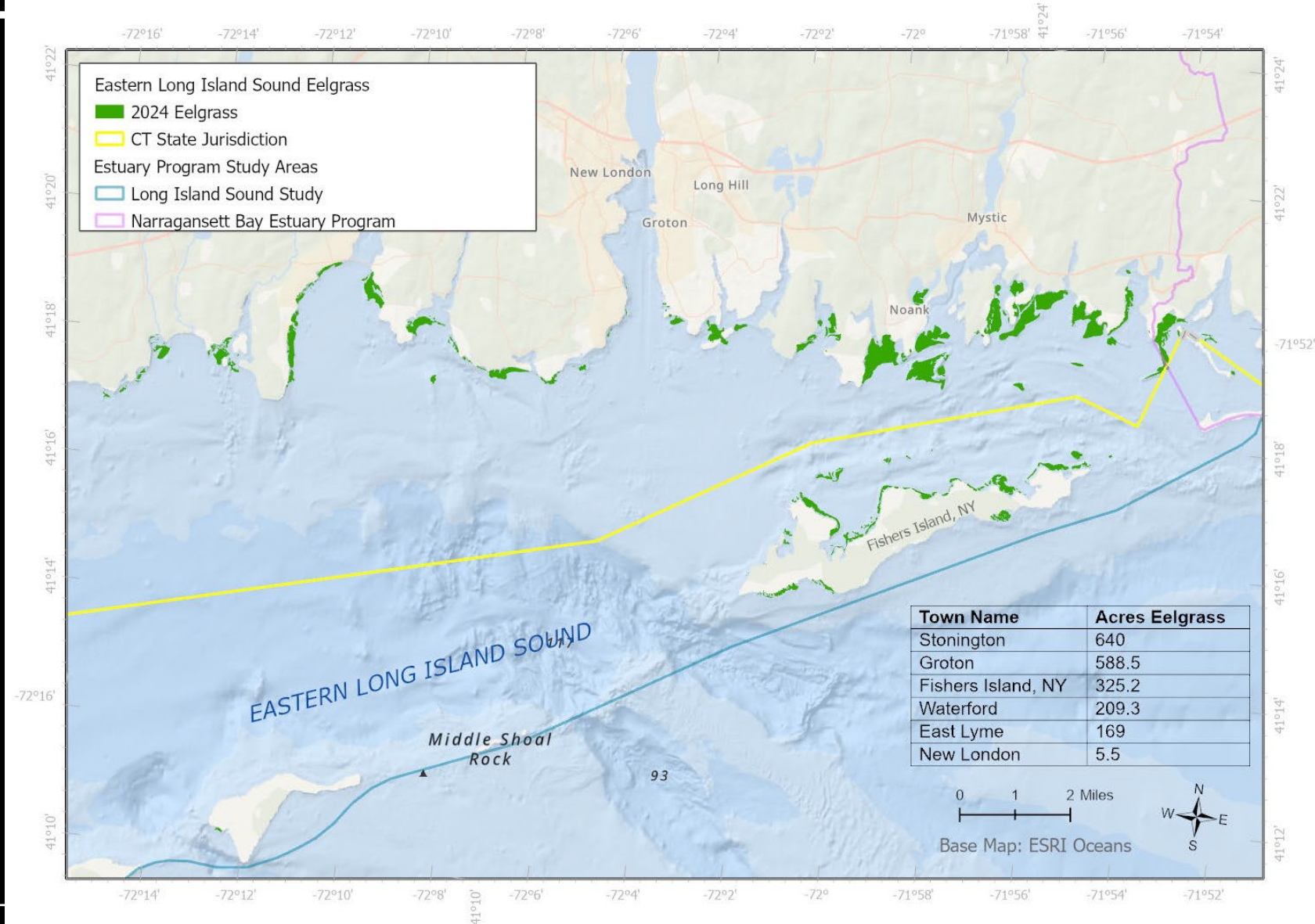
2024 DATA COLLECTION EFFORTS

- Final ortho-imagery from the aerial survey delivered to URI on December 30th, 2024.
- Three sites (Barleyfield, Beebe Cove, and Stonington) had drone imagery flown in June and September.
- Over 7000 benthic habitat points generated from the underwater video data
- Percent cover measured by divers in June and September for all three drone sites (3 40 m diameter plots/site).
- Monthly basemaps downloaded from Planet.com for June, July, August, and September 2024



2024 AERIAL SURVEY RESULTS

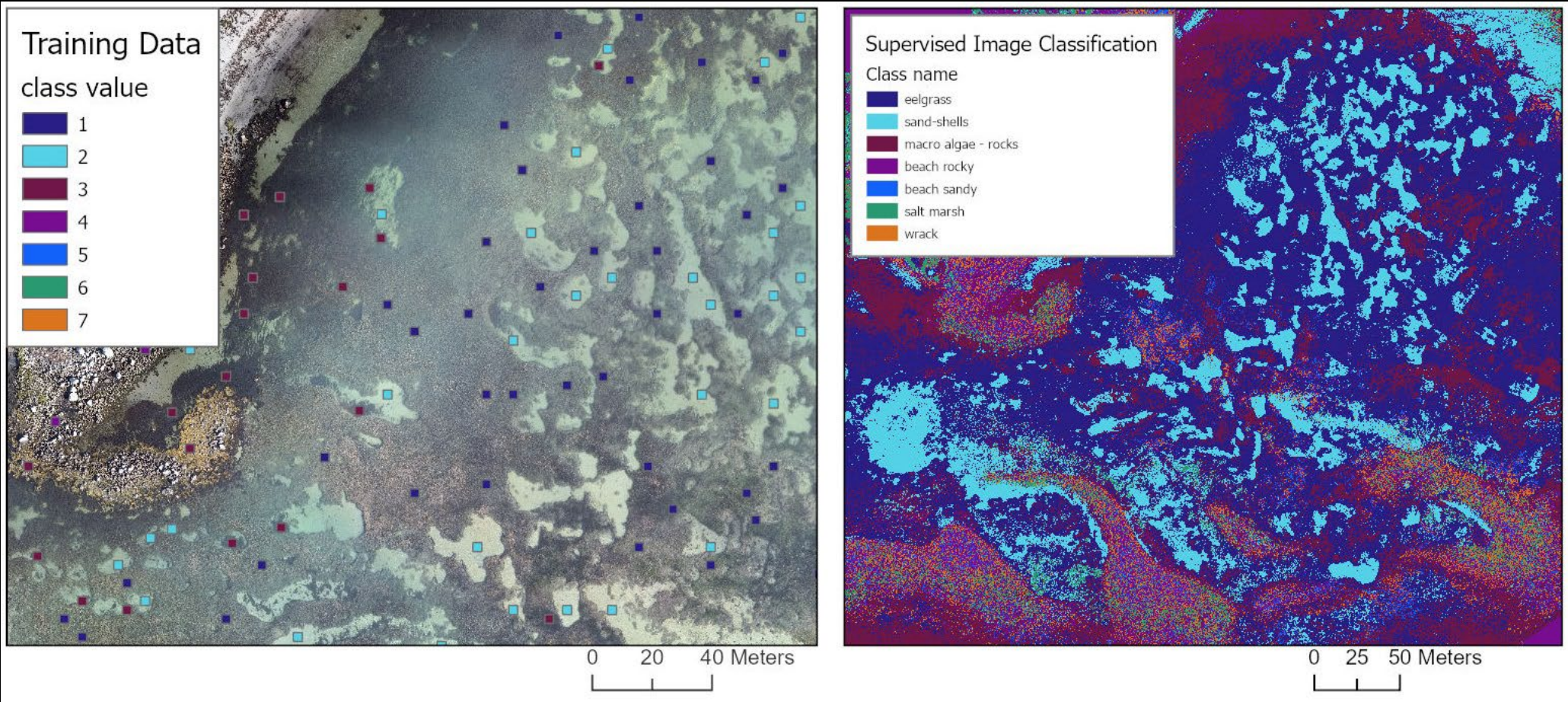
- Finalized (report submitted) on July 1, 2025
- Net  of 473.3 acres since 2017
- For more info, go to:
<http://lispartnership.org>



BARLEYFIELD AERIAL SURVEYS: 2009, 2012, 2017, 2024



2024 DRONE SURVEY RESULTS (BARLEYFIELD)

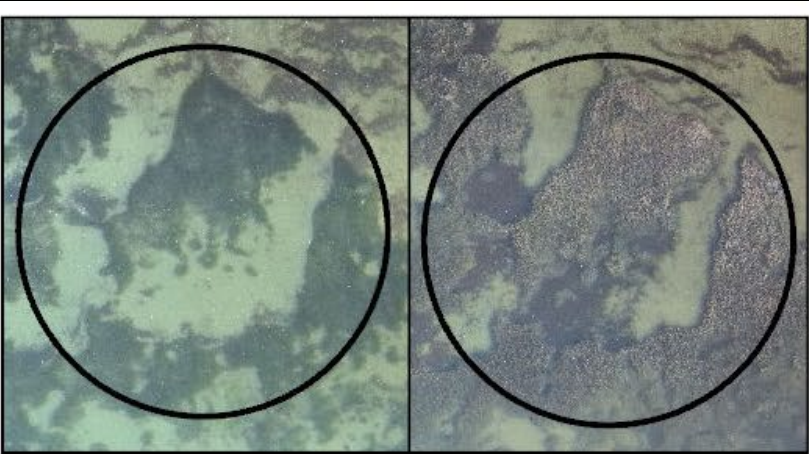


2024 DIVE SURVEY RESULTS (BARLEYFIELD)

Station 1

June

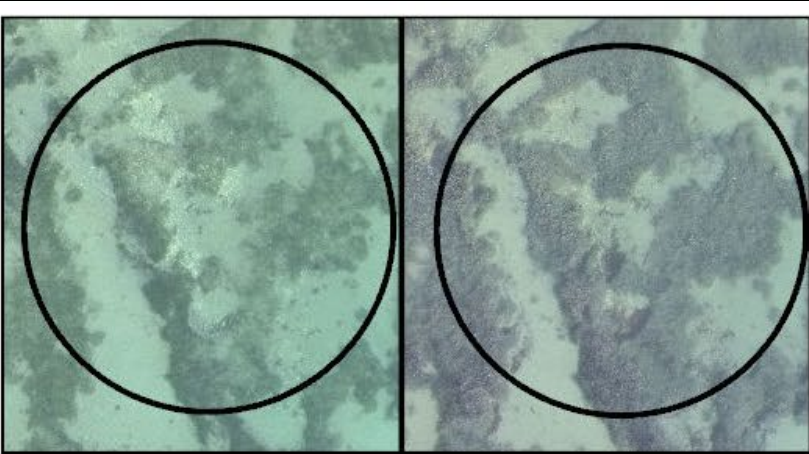
September



Station 2

June

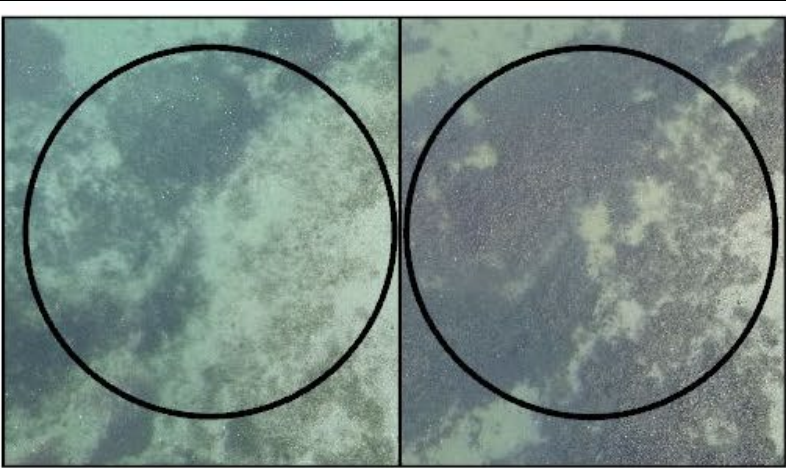
September



Station 3

June

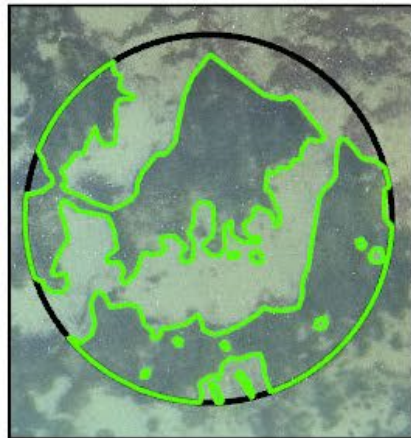
September



2024 DIVE SURVEY RESULTS (BARLEYFIELD)

Station 1

June



1,154 m2

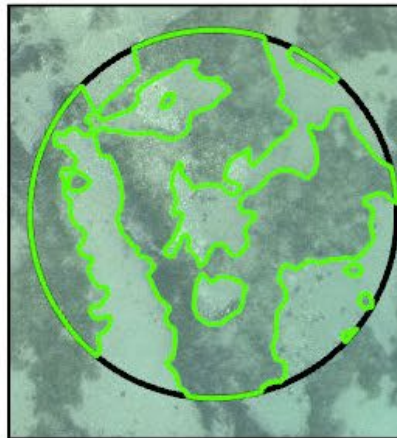
September



1120.1 m2

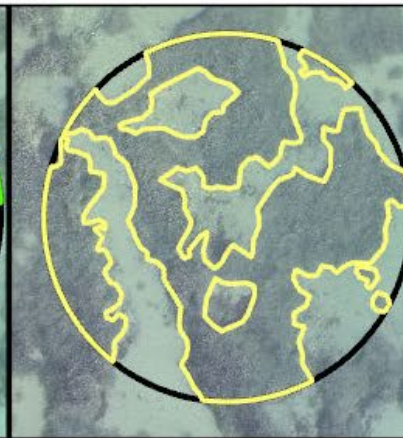
Station 2

June



721.9 m2

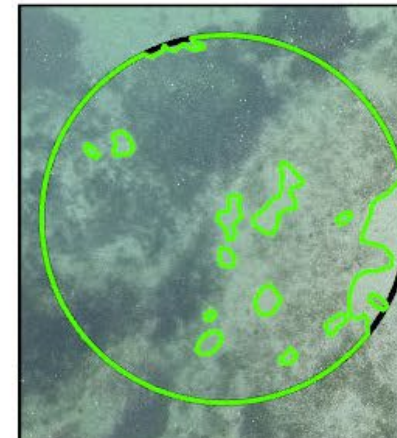
September



757.2 m2

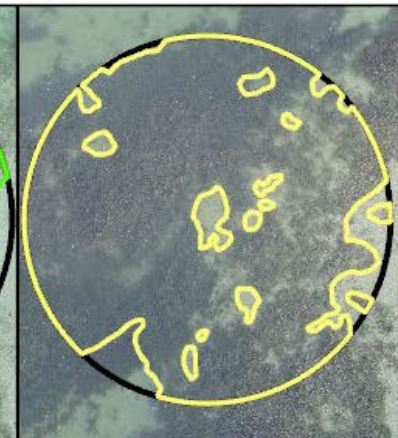
Station 3

June



689.9 m2

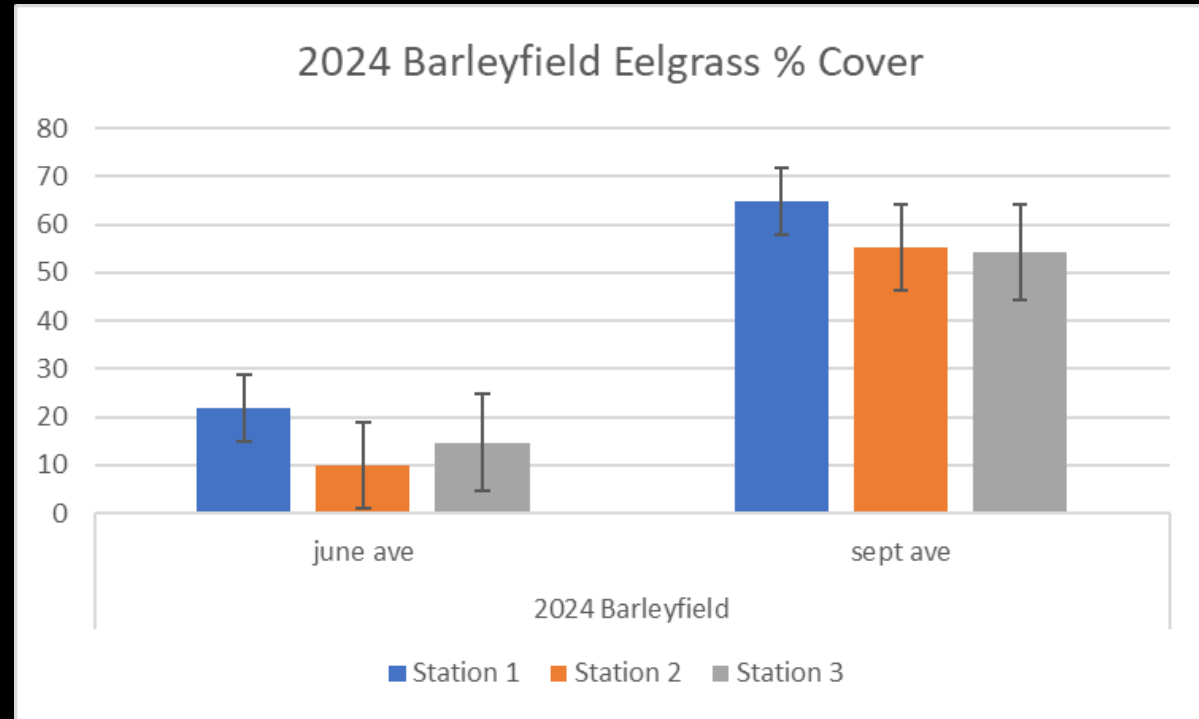
September



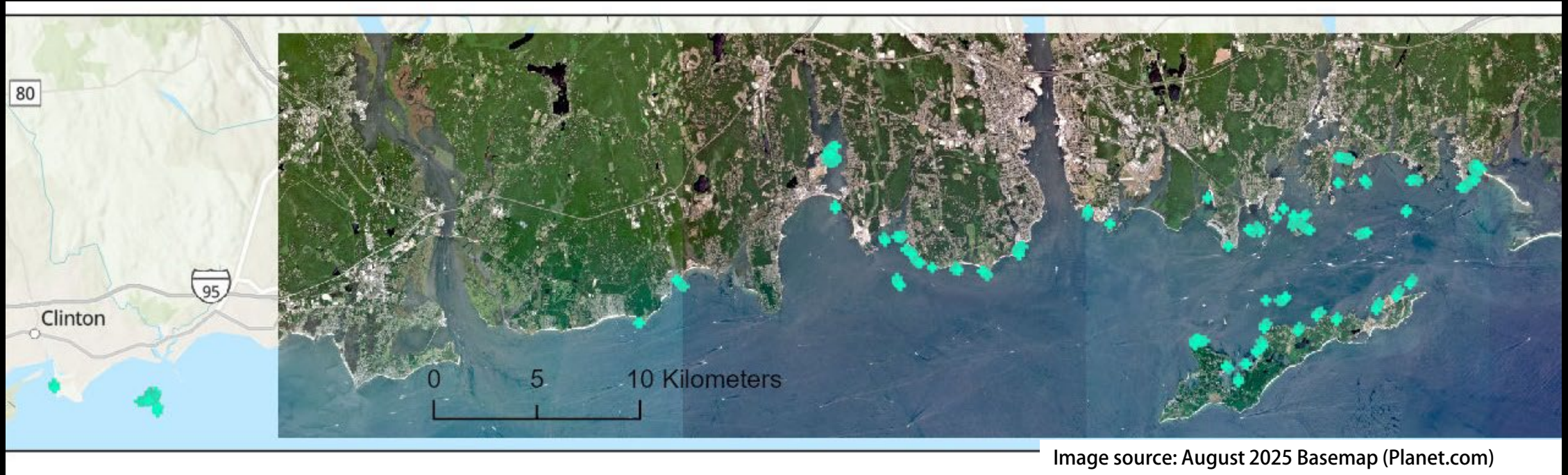
679 m2

2024 DIVE SURVEY RESULTS (BARLEYFIELD - % CV)

- Percent cover data at Barleyfield is significantly different between June and September 2024 (n=20; $P<0.001$)
- This trend is not reflected in the heads-up digitizing of the plots using the drone imagery
- The time of year for the aerial survey (June vs August or September) may not be relevant

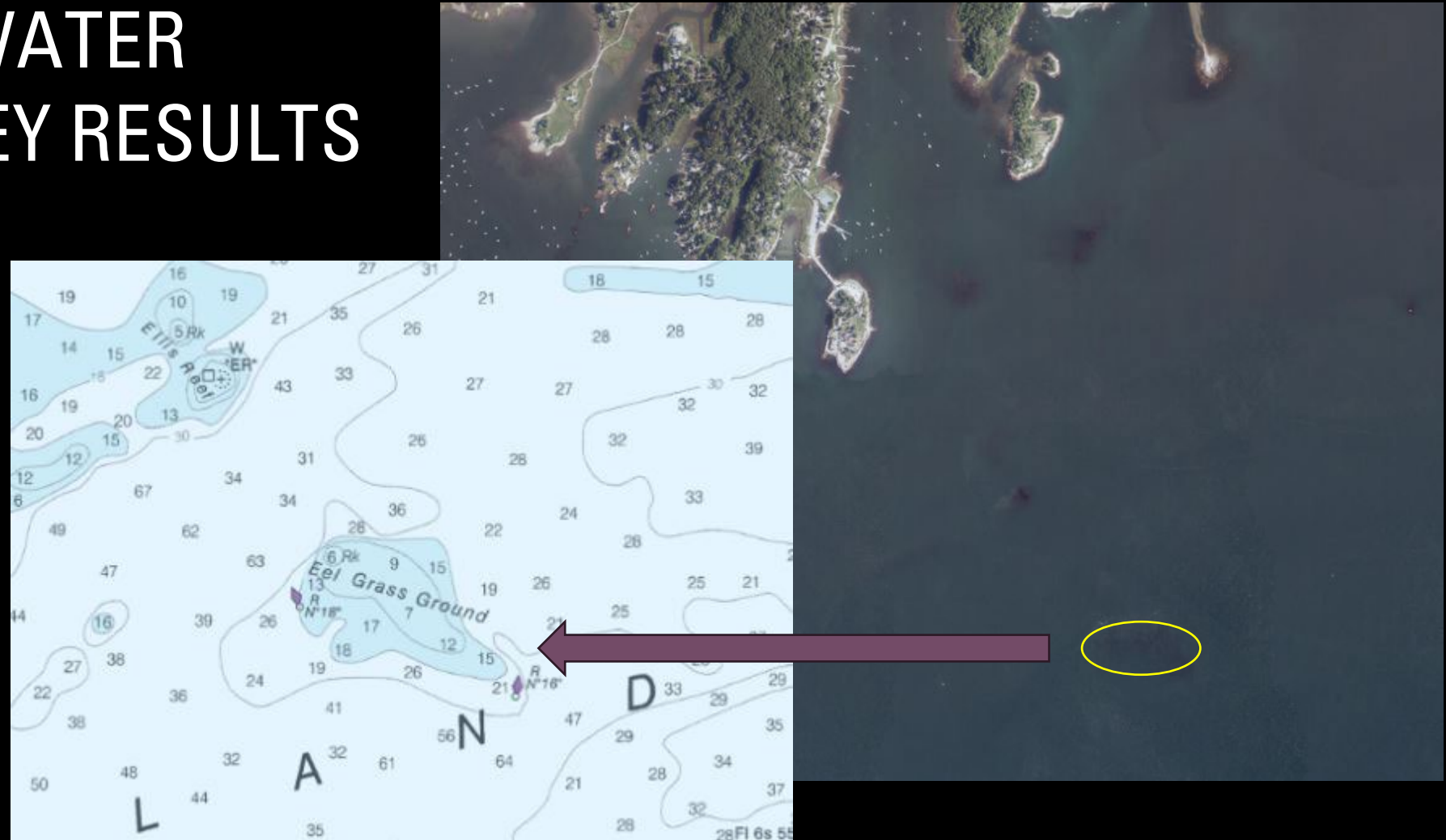


2025 UNDERWATER VIDEO SURVEY RESULTS

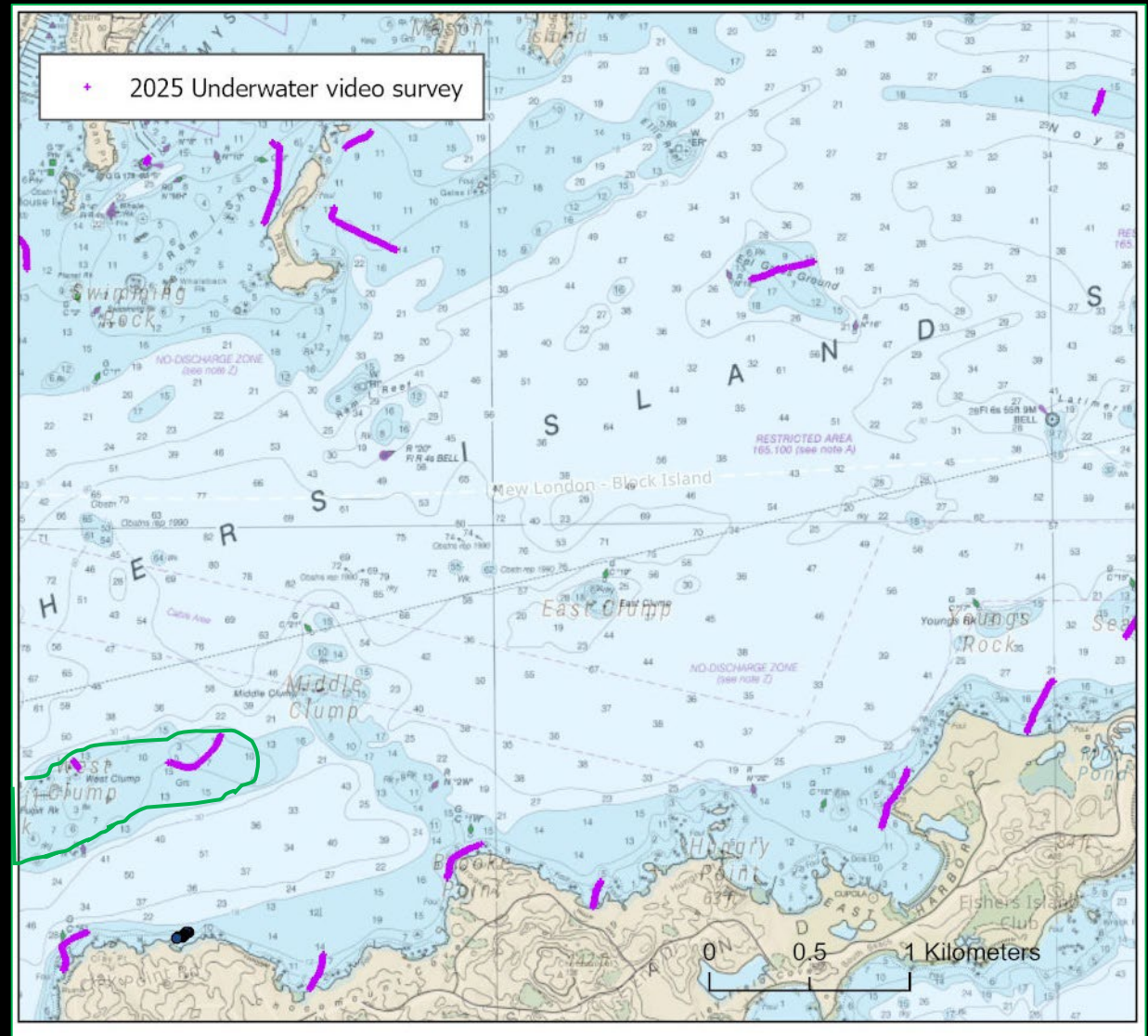


- No mappable beds east of CT river (there is eelgrass at Duck Island Roads)
- No eelgrass observed in the Niantic River
- New eelgrass beds discovered in Fishers Island Sound

2025 UNDERWATER VIDEO SURVEY RESULTS



2025 UNDERWATER VIDEO SURVEY RESULTS



DRAFT LIS MAPPING AND MONITORING STRATEGY- UPDATE

- Finalizing field work
- Literature review
- Data processing and analysis.

DRONE PURCHASE

- Inspired Flight Technology
- IF800 Tomcat
- Hi resolution imagery
- LiDAR payload capable (Geocue True View)
- ~50 minute flight time