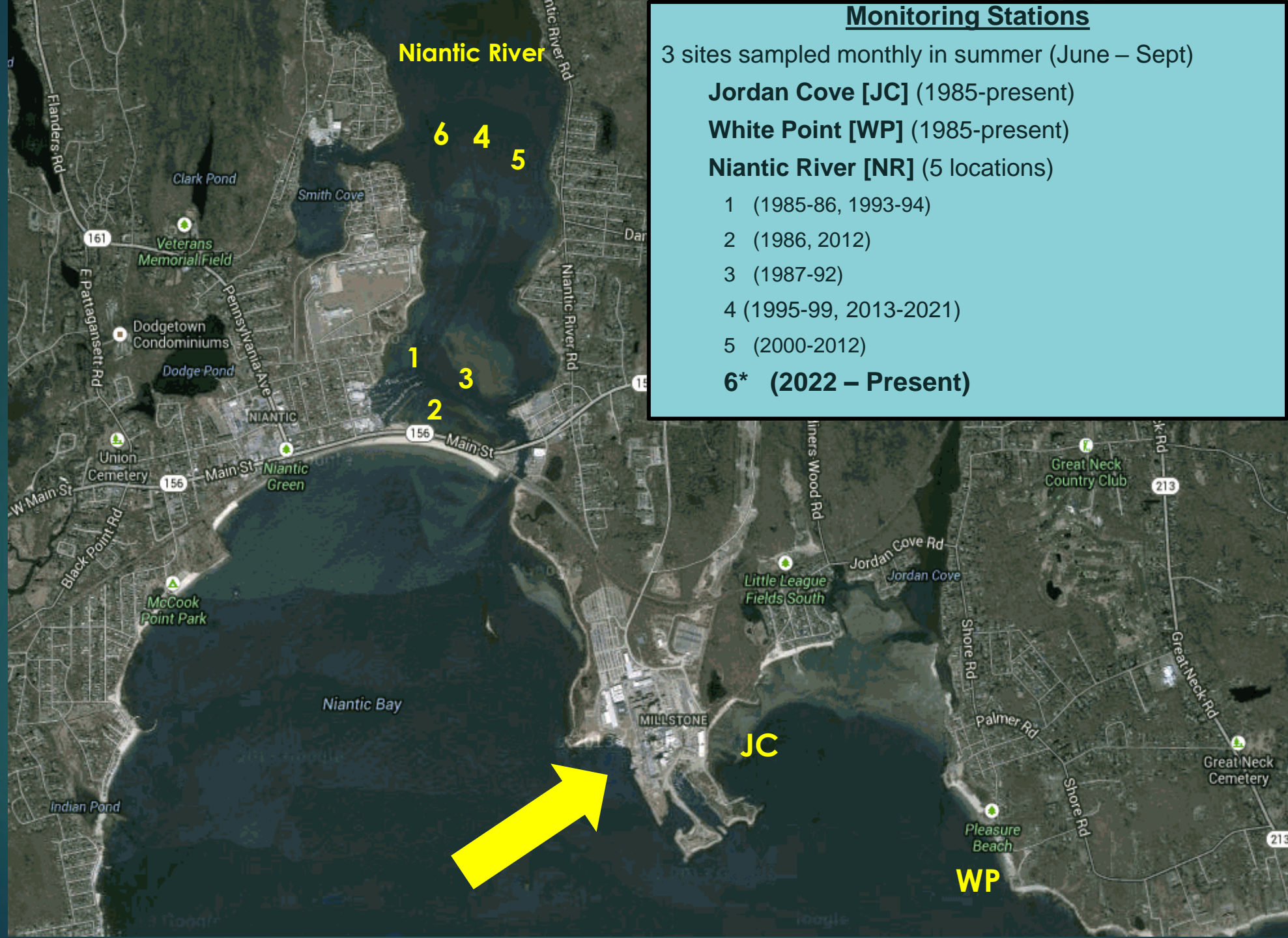


An underwater photograph showing a dense field of eelgrass (Zostera marina) growing in a shallow, clear water environment. The grasses are green and have long, thin leaves. The water is a clear, light blue-green color, and the sandy bottom is visible in the foreground. The lighting is bright, suggesting a sunny day.

Eelgrass Monitoring outside of Millstone Power Station

Athena Ryan
Long Island Sound Eelgrass Collaborative
Workshop





Monitoring Stations

3 sites sampled monthly in summer (June – Sept)

Jordan Cove [JC] (1985-present)

White Point [WP] (1985-present)

Niantic River [NR] (5 locations)

1 (1985-86, 1993-94)

2 (1986, 2012)

3 (1987-92)

4 (1995-99, 2013-2021)

5 (2000-2012)

6* (2022 – Present)

Field Collection

- ▶ Eelgrass collection
 - ▶ Once monthly in June, July, August, September
 - ▶ 16 quadrats at each station
 - ▶ 25x25 cm
 - ▶ 10 m radius of each station marker
 - ▶ Collect all eelgrass shoots
- ▶ Sediment sample
 - ▶ 3.5 cm diameter x 5 cm deep core
- ▶ Water Temperature
 - ▶ Taken bi-weekly by the trawl team



Lab Processing

- ▶ Length
 - ▶ The longest blade of each shoot was measured to the nearest centimeter.
- ▶ Counts
 - ▶ Seed-bearing shoots
 - ▶ Vegetative shoots
- ▶ Weight
 - ▶ Shoots were spun in a salad spinner then weighed.



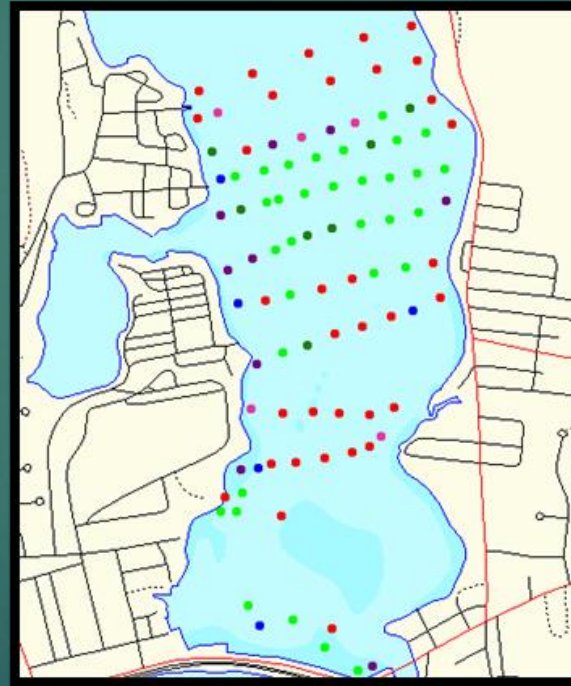
Lab Processing - Sediment

- ▶ Grain size
 - ▶ Samples dried in a drying oven.
 - ▶ Samples shook in a sieve shaker
 - ▶ Different layers measured to determine grain size and silt/clay content.
- ▶ Organics
 - ▶ Samples dried then weighed.
 - ▶ Samples then combusted and weighed to determine organic content.

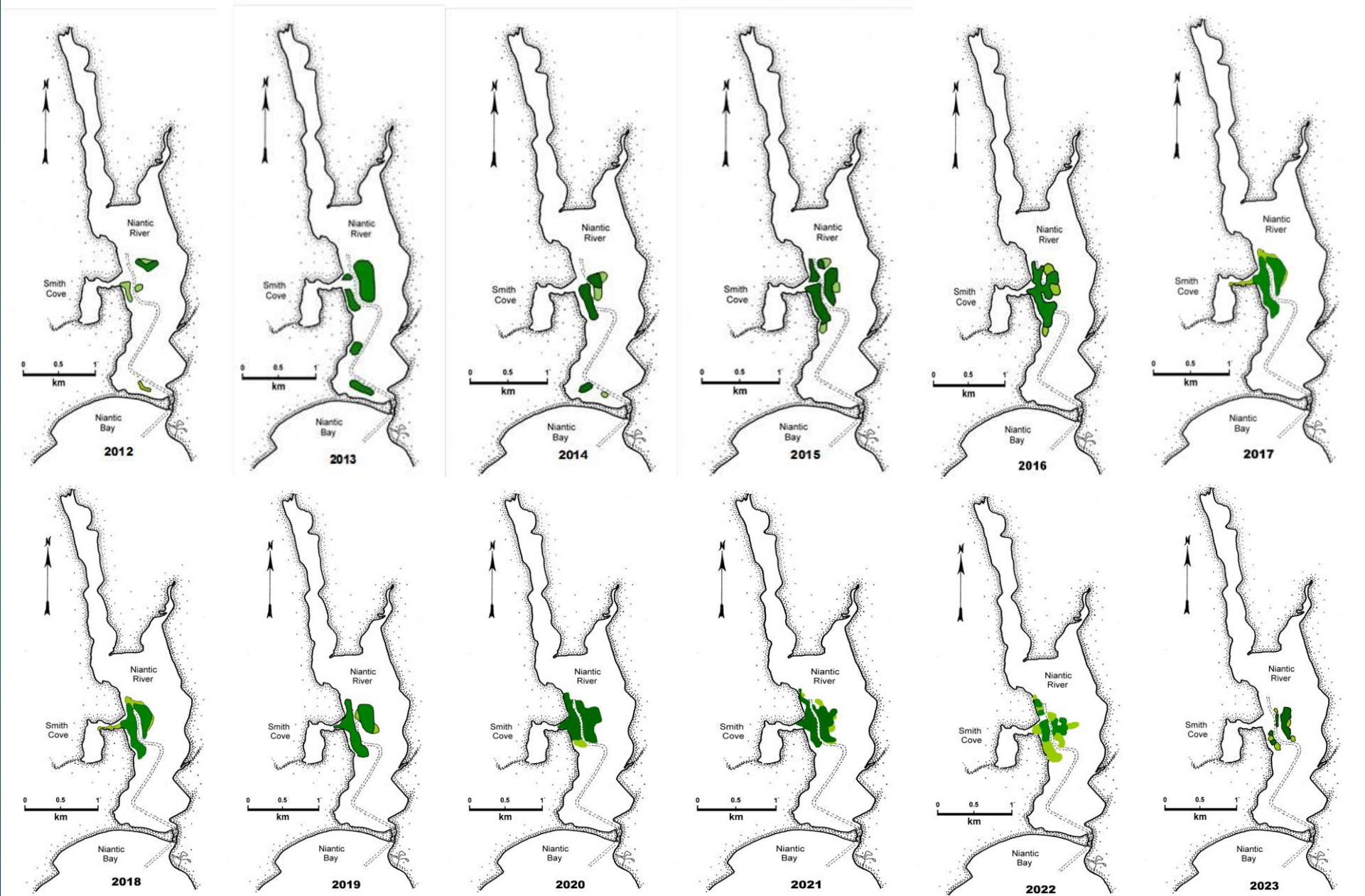


Eelgrass Bed Mapping

- ▶ 1 time a year in August
- ▶ Underwater camera/GPS
- ▶ Estimate percent cover



Niantic River Eelgrass Distribution Surveys



Conclusion

- ▶ Strengths
 - ▶ Consistent long-term dataset (since 1985)
 - ▶ Variation in site location (river, coastal)
 - ▶ High confidence in bed density
- ▶ Weaknesses
 - ▶ Very localized study
 - ▶ Semi-destructive sampling
 - ▶ Focused on monitoring rather than restoration

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