

Maine Coastal Program's Mapping Initiative

Maine Coastal Program and Maine Geological Survey

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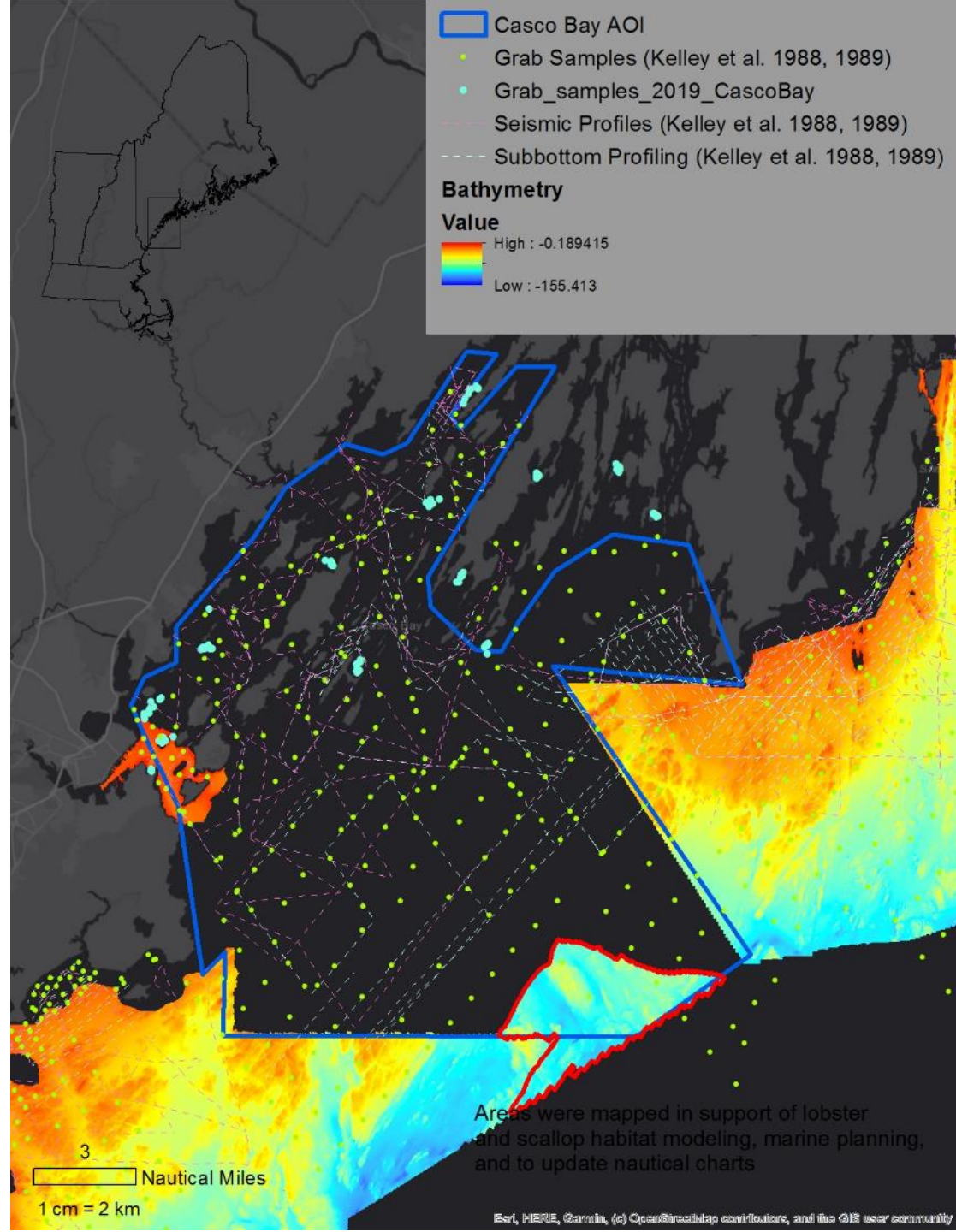
Stephen Dickson, Marine Geologist

Benjamin Kraun, Hydrographer

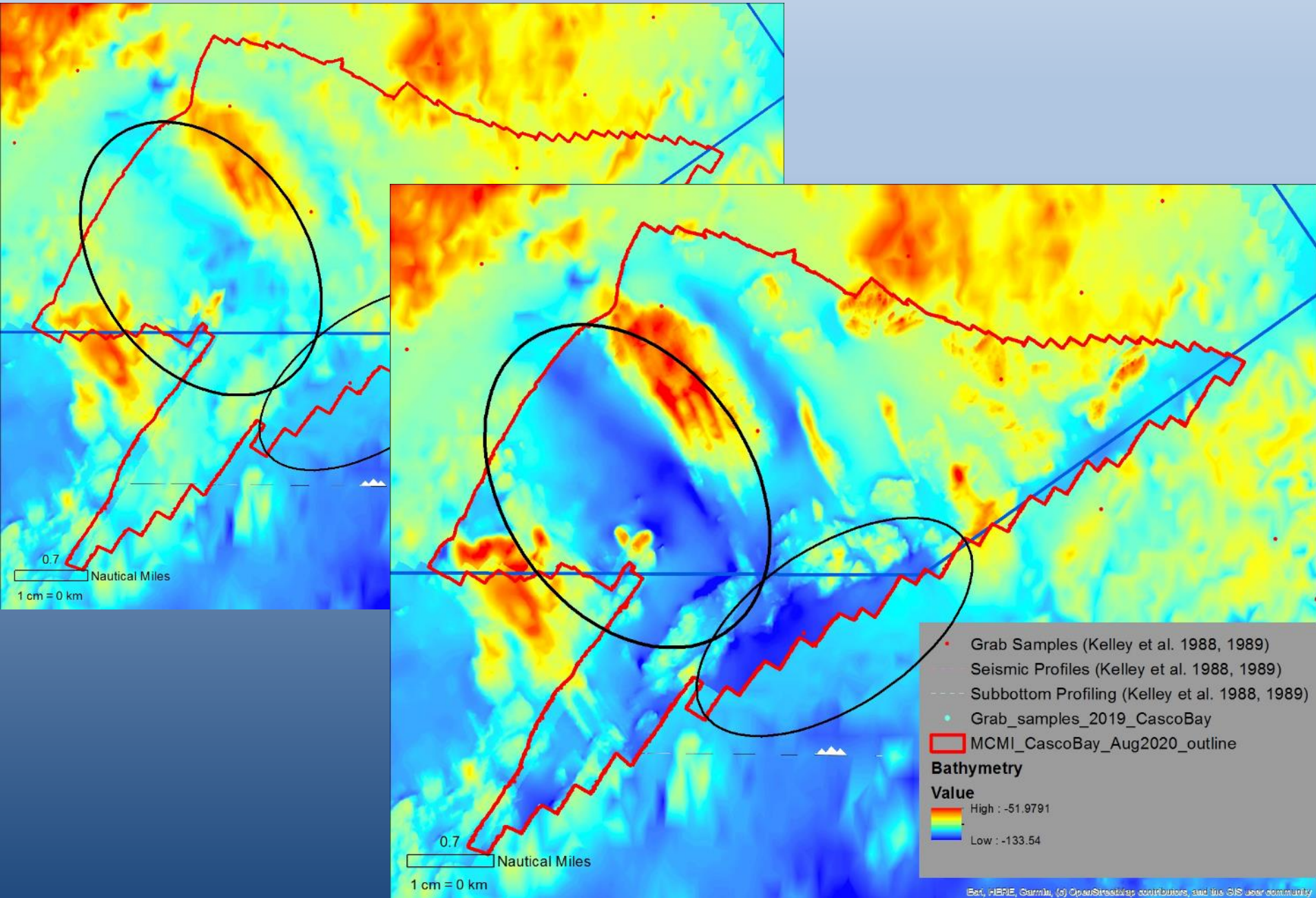


Casco Bay 2021 Season Objectives

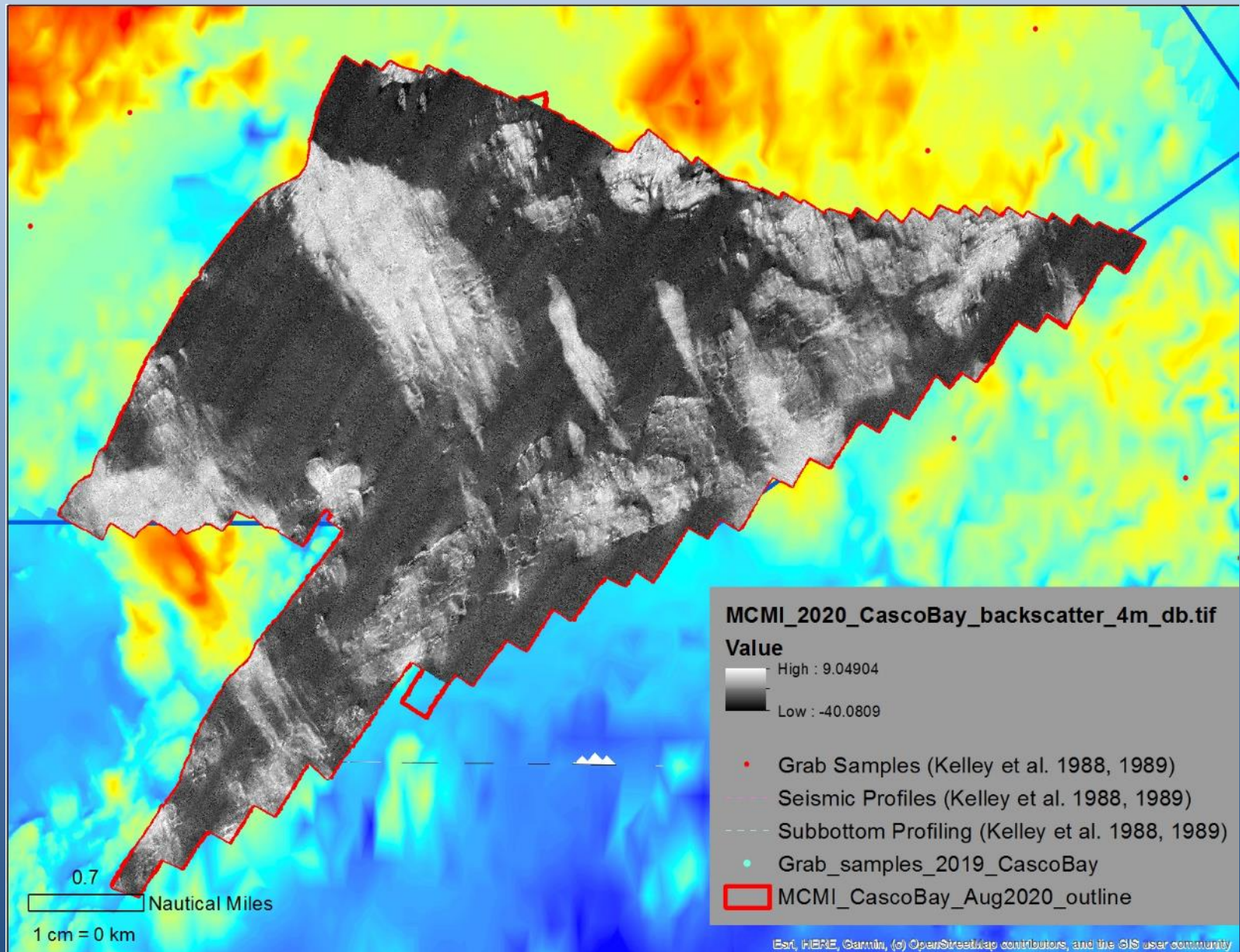
- Multibeam Echosounder mapping (bathymetry, bottom hardness)
- Sediment grabs
- Benthic fauna
- Water column and seafloor water quality



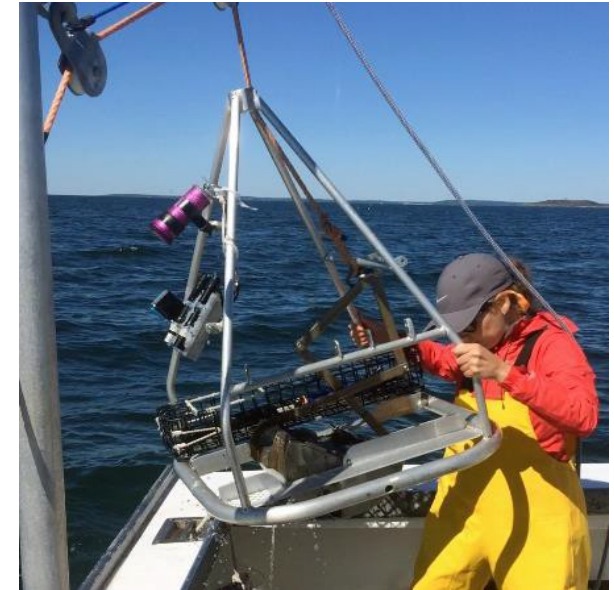
Casco Bay 2020 Results - Bathymetry



Casco Bay 2020 Results – Backscatter (Bottom Hardness)



GRAB SAMPLING



Physical Parameters

- Water Quality (ODO, Temperature, pH, Chlorophyll, Salinity, Depth)
- Sediment Grain Size

Biological Parameters

- Species Assemblage
- Species Diversity
- Preferred habitat

Spatial Parameters

- Spatial Distribution
- Outer Bay vs. Inner Bay



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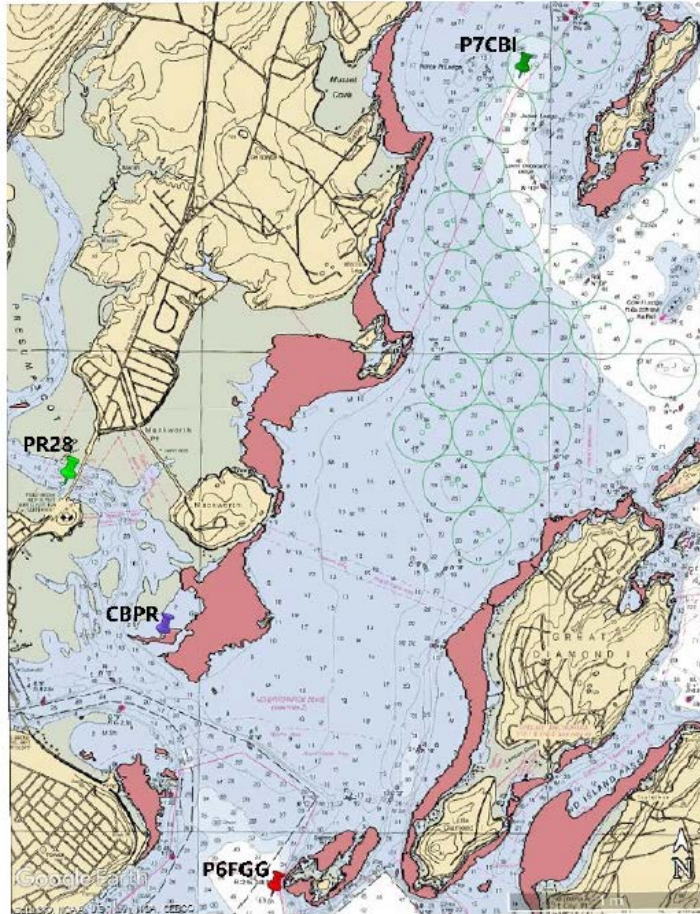


Figure 1. Sampling locations for 2020 benthic surveys in Casco Bay. Shaded areas indicate eelgrass beds.

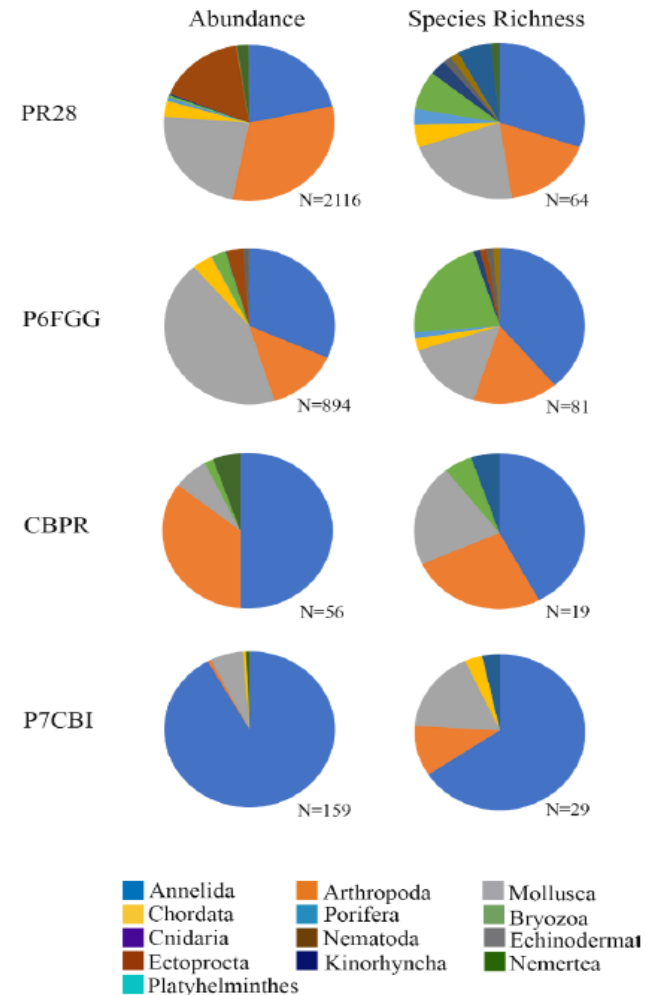


Figure 2. Composition of benthic species assemblages among Casco Bay sample stations. N refers to the number of individuals or number of species for abundance and species richness, respectively.

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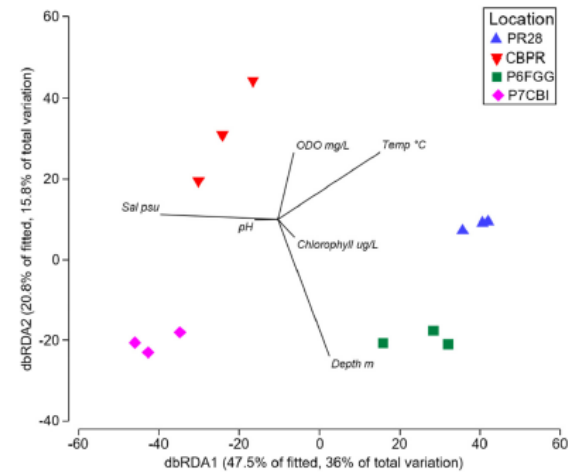


Figure 6. dbRDA of Casco Bay benthic species assemblages with vector overlays for environmental parameters.

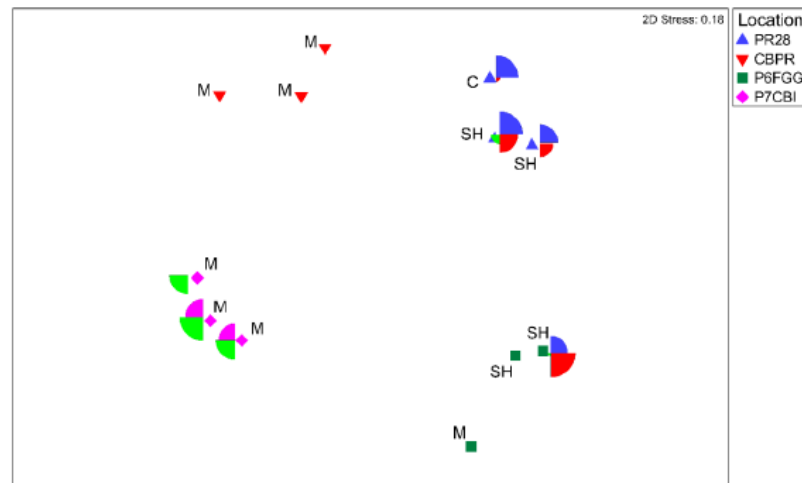
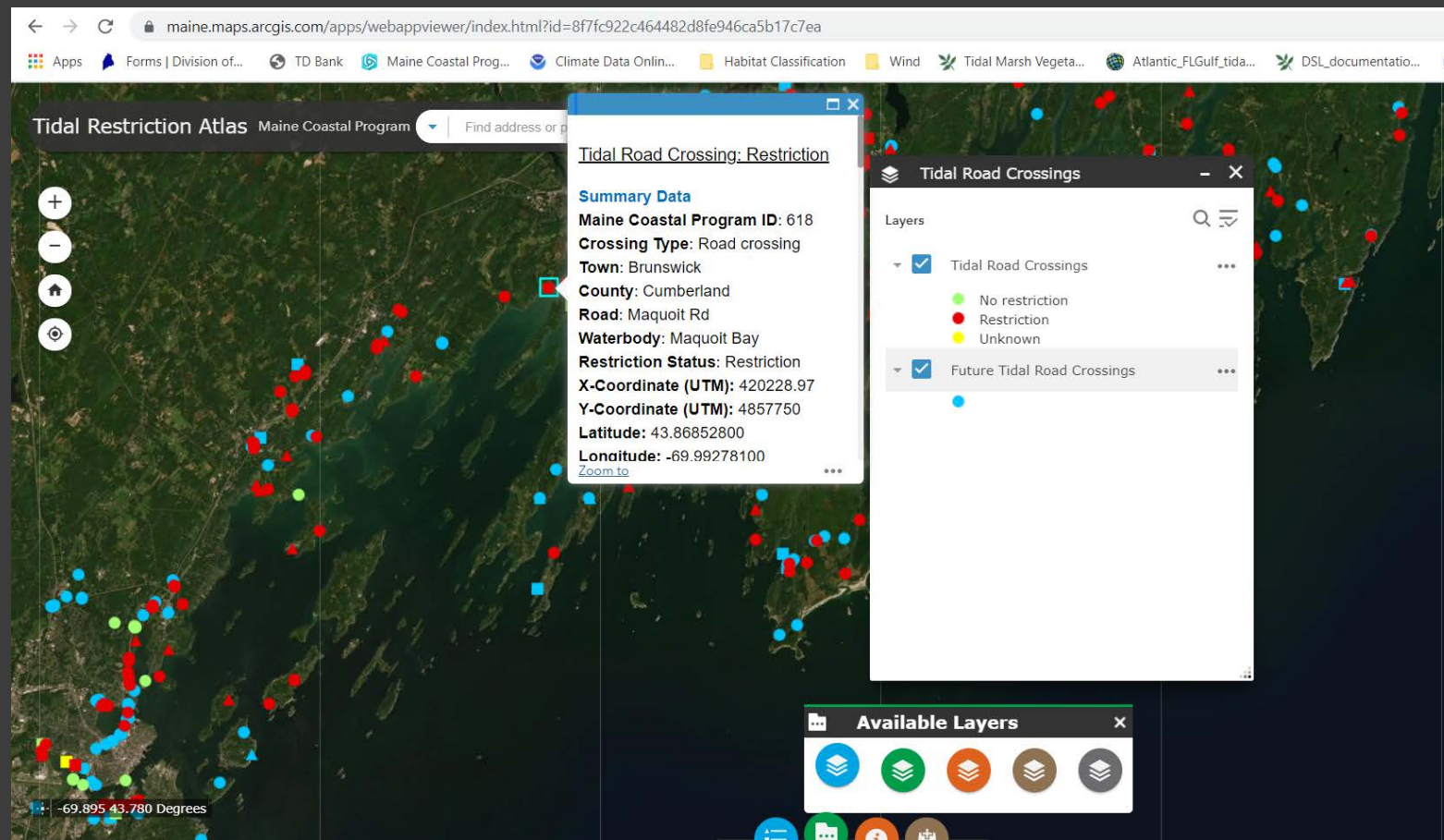


Figure 7. Combined MDS of Bray-Curtis similarities and environmental data (salinity, pH, dissolved oxygen, temperature, and depth) for Casco Bay samples. Primary sediment types are: M, mud; SH, shellhash; C, cobble. Bubble plots and size correspond to *Amathia gracilis* (●), *Capitella capitata* (●), *Mediomastus ambesita* (●), and *Levinsinia gracilis* (●). Scale for bubble size: 1-20 except for colonial *A. gracilis* (not counted).



Tidal Marsh Resilience

Marsh Resilience Monitoring Tidal Restriction Database & The CoastWise App

<https://maine.maps.arcgis.com/apps/webappviewer/index.html?id=8f7fc9fe946ca5b17c7ea>

