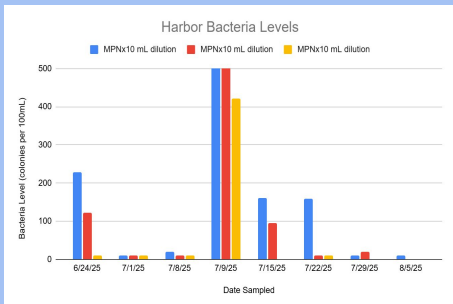


# Bacteria

- Bacteria is collected using sterile procedure from various locations using a sample pole and a sterile idexx bottle.
- The bacteria that we focused on from the harbor was Enterococci, which are known to cause infection in humans.
- By reducing the amount of Enterococci in the harbor, we can make the harbor a much safer place to swim



# Oceanography 2025: What is the State of Our Harbor?

By: Ciaran Bergan, Cole Otfinoski, Owen Levy, Jack Roach, Liam Roach, Rose Guzek, Asher Tarby, Liv DeGrass, Rosalie Hauser, Charlotte Lynch, Project Leaders: Elsie Hession and Kyra Neumann

## Research Sites:

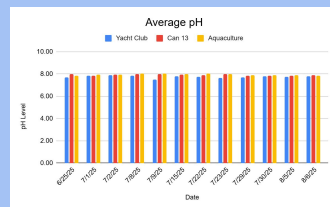
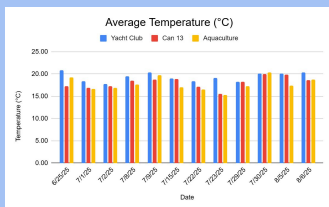
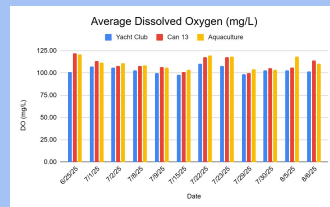
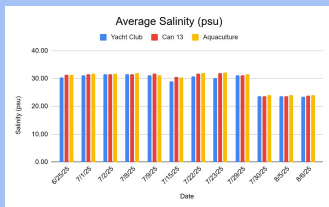
Yacht Club (Inner Harbor), Can 13 (Mid Harbor), Aquaculture (Outer Harbor)

## Overview

Our oceanography team conducted research at key locations in the harbor of Cohasset, Massachusetts. From Tuesday through Thursday each week over the summer, fieldwork involved boating to sampling locations to collect bacteria samples, perform plankton tows, collect YSI water quality data, and deploy data loggers for ongoing monitoring. Collected samples and data were then analyzed in the lab to better understand water quality and ecosystem dynamics in the area.

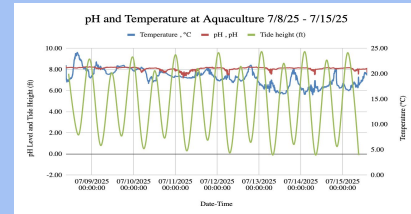
## ProDSS YSI Data

- Before the team heads out onto the water, the YSI has to be calibrated for Dissolved Oxygen (DO%), ensuring more accurate measurements.
- The team uses our YSI probe off the research vessel to assess the water quality in Cohasset Harbor.
- The probe measures the salinity, pH, conductivity, depth, dissolved oxygen (DO), and temperature.



# Data Loggers

- Deployed at Aquaculture, they provide new statistics in short time intervals for a week.
- Once a week, the data is downloaded and the loggers are calibrated.
- The data is put into a spreadsheet, where it can be analyzed and made into graphs.
- These data points are very important to track how the water quality outside of the harbor is changing on a day to day basis with tidal changes.



## Plankton

- Plankton are tiny ocean organisms that drift with the current.
- Zooplankton are animal-like plankton that eat phytoplankton and are food for larger animals.
- To collect plankton, a tow net is used. The net filters water and catches the plankton in a cup.
- Microscopes are then used to identify the different types of zooplankton at different research sites.
- Copepods are the most common Zooplankton found at all sites.

