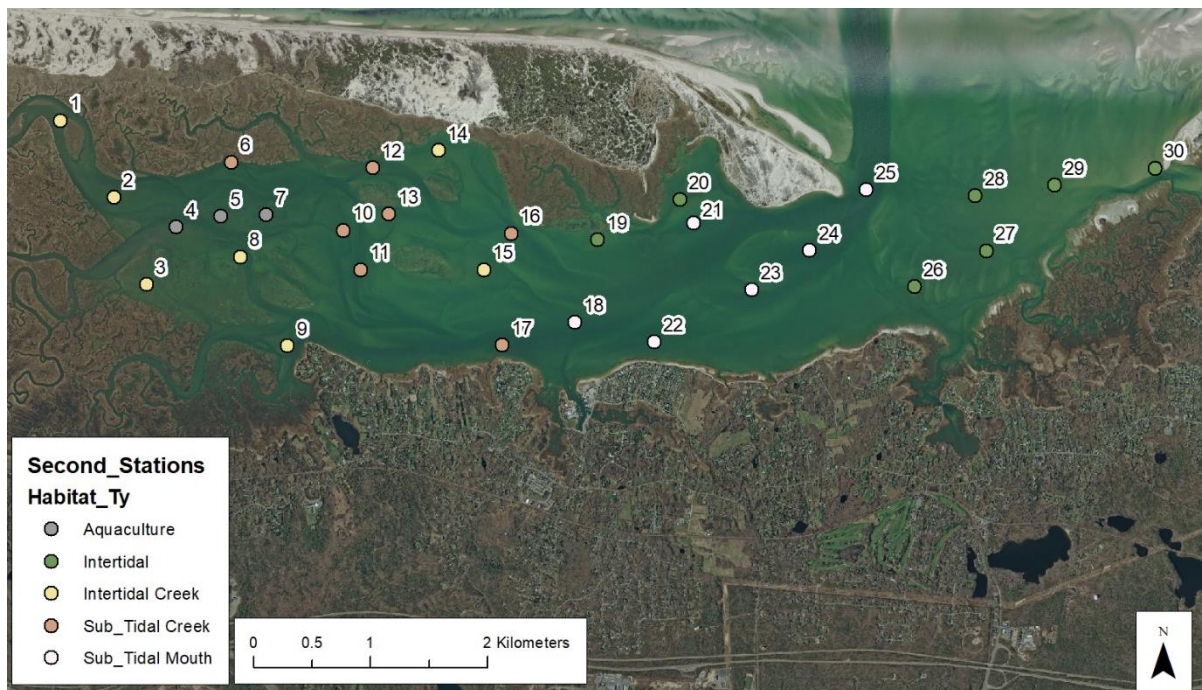




Barnstable Harbor Benthic Habitat Map

Interim Report 2019: Benthic data

The Center for Coastal Studies collected faunal and sediment samples at 31 stations throughout Barnstable Harbor on 10/1, 10/2, and 10/4 of 2018. Sampling stations were randomly stratified to include intertidal areas (n= 7), areas of aquaculture (n= 3) intertidal and subtidal creeks, areas of aquaculture and intertidal (n=7) and subtidal (n=7) creeks, subtidal mouths of creeks (n=6) as well as one station in the marina. All samples were collected with a Young modified Van Veen grab sampler.

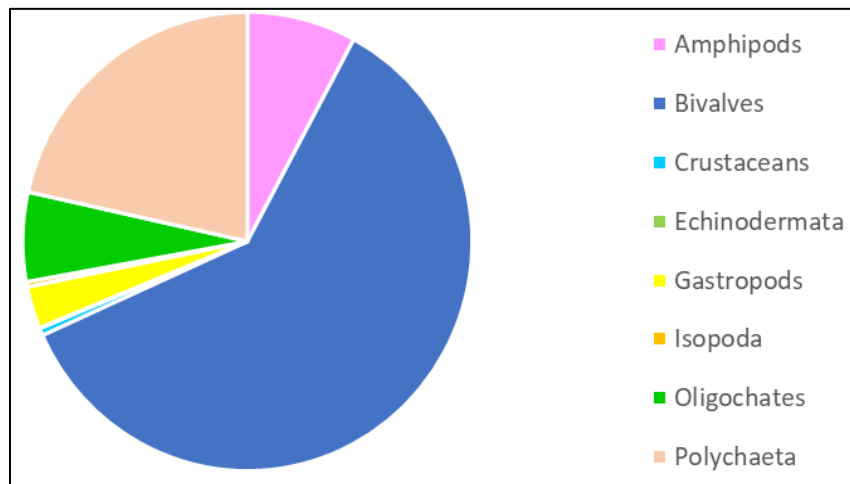


Benthic sampling sites in Barnstable Harbor.

Sediment samples were transferred into small *Whirl-paks*® for transportation to the lab. Samples were then dried, before further processing, at 105°C for 24 hours before being placed in the muffle furnaces at 550°C for 4 hours to burn off all organic matter. Grain size was then determined with a Horbia Camsizer (for coarser samples) or a Beckman-Coulter laser diffraction particle size analyzer (for finer samples).

Faunal samples were collected in triplicate (total n= 93) and stored in 1-gallon buckets for transportation to the lab. These samples were then sieved at 1mm and transferred into large glass

jars for storage. 90% ethanol was added for fixation and Rose Bengal was added to facilitate sorting of organic tissue. On August 12th 2019 sorting of benthic invertebrates started. This process is still ongoing. As of the end of 2019, 77 samples of 26 stations have been sorted over 350 hours. Animals are sorted into broad categories such as: worms, clams, sea cucumbers, snails etc. Identification of animals is conducted to species level whenever possible and genus or family level when appropriate. Thus far, 69 samples have been identified, counting 14,056 individual invertebrates belonging to 74 different species. Approximately 80% of the samples have been sorted and 70% have been identified.



Invertebrate abundance in Barnstable Harbor (69 samples of 91 total).

Most invertebrates identified to date are bivalves, with the Amethyst gem clam (*Gemma gemma*) being the most abundant species in Barnstable Harbor, particularly at station 2. While bivalves are the most abundant type of invertebrates, polychaete worms are the most diverse. 26 species of polychaetes have been identified, followed by 14 species of amphipods, or side swimmers, and 12 species of bivalves and gastropods each. Thus far, station 17 was the most diverse station with 30 species, the least diverse station is station 1 with 6 species. The least abundant stations were 11 and 12 with 79 individuals respectively, the most abundant station is station 2 (n= 6,393).