

Atlantic Ribbed Mussel - Gowanus Survey No. 3

Vane Brother's Rip-Rap Shoreline

Survey Date: October 23, 2023



Introduction

On October 23rd, 2023, The Gowanus Dredgers Canoe Club and Gowanus Canal Conservancy organized a volunteer survey of the Vane Brothers shoreline, located at the mouth of the Gowanus Bay in Brooklyn, New York. The primary goal of the survey was to estimate how many Atlantic Ribbed Mussels (*Geukensia demissa*) are living in the estimated 496 feet of intertidal mixed shoreline. Portions of the shoreline in the target site were comprised of rip-rap stone, others were mixed granite architectural debris fill with metal girder remnants, and still others were eroded embankments with remnant wooden bulkheads/crib pier timbers. The survey took place in the mid morning, at and just after low tide.

A key consideration in conducting the survey is the impending federal superfund cleanup work overseen by the EPA; as the cleanup work proceeds down the Gowanus Canal, it will eventually come to include this portion of shoreline (and likely require replacement of current bulkhead conditions with steel sheet piling bulkheads, as has happened on the upper reaches of the Gowanus Canal).



Participants searching for mussels along the shoreline



Counting mussels via canoe

Survey Site Plan

A group of 8 volunteers surveyed the shoreline throughout the intertidal zone at low tide.

Observations were done along the entire shoreline, from shore when possible and via canoe when the rip-rap was not navigable on foot. Mussels were counted by carefully moving rocks and looking in all crevasses. Tally was kept with a clicker. To the best of the volunteer(s) ability, each individual mussel was counted as one. Spat smaller than 10mm were not counted.



Total Number of Mussels Counted = 1,577

Observations

The densest grouping of mussels was in the mid-tide area. The mussels seem to prefer rip-rap made up of a combination of medium and small sized rocks or large rocks/blocks with texture and holes (small size-only rip rap may move more than desirable for the mussel spat, we infer from our previous mussel research work on the Gowanus Canal).

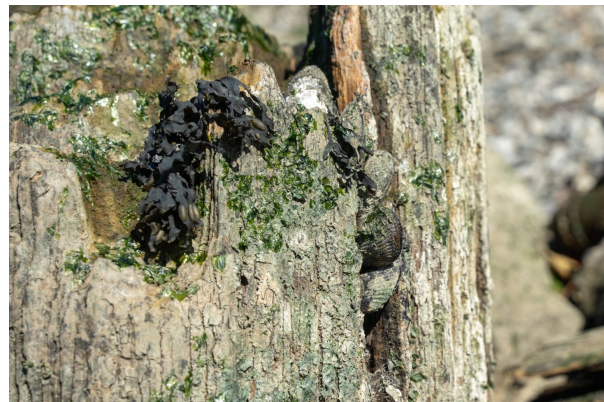
We were surprised by how many mussels we found near the upper edge of the intertidal zone on top of wooden piles and bulkheads. Mussels were a variety of sizes, we found a good number of noticeably large/larger than typical on the Gowanus Canal mussels, more than were observed along the 19th St. rip-rap shoreline at our previous [2022] survey or in our 2020 survey in the wooden bulkhead of the 6th Street Basin in the Gowanus Canal.

We also observed wild oysters, green crabs, mud snails (a very large number, in line with extraordinarily large numbers observed previously in parts of the Gowanus Canal like the 11th Street Basin), tunicates, barnacles (both small and large), sponges, and a handful of sturgeon scutes. Spotted lantern flies were observed ashore, including a very heavy infestation on one tree near the tugboat gangway. There were quite a few clam shells along the shoreline. We think this would be a good site for a future clam study, as well as potential mud snail and barnacle studies. In terms of flora, rockweed dominated the water's edge, with Virginia creeper, ailanthus, white mulberry, and phragmites filling out most of the immediate upland edge.

Evidence of human pollution was found in abundance; remnant portions of styrofoam, plastic, metal, bottlecaps, discarded float booms, and other debris were located in many stretches of the target site.



Sturgeon scutes



Mussels in the top of an old wooden pile



Mussels in the rip-rap



Oyster found in the rip-rap