A Seine Survey of Sandy Hook & Raritan Bays

On Saturday, June 7, 2014, volunteers with the Bayshore Regional Watershed Council, an all-volunteer environmental group dedicated to restoring Raritan Bay & Sandy Hook Bay, and members of the public participated in a hands-on program using a 50-foot long seine net to discover the diversity of aquatic life that lives along the edge of the bay.

The goal was to estimate the seasonal abundance and distribution of fish, crabs, and other estuarine species that use our local near shore estuarine waters as feeding and/or nursery areas, located downstream from New York City. In the past, volunteers have found a good assortment of local crabs and fish that people were able to see up close and touch.

Watershed members were citizen scientists. Volunteers sampled four sites along the bay (west to east), and made two to three hauls at each site with a seine net on an incoming tide. All fishes, crabs, and other aquatic creatures caught in the net were identified, measured, and cataloged; and returned to the water.

A total of 18 different species were found. The list consists of 8 species of fish (including Striped Bass, Bluefish, Northern Puffer fish, and Fluke), six species of invertebrates (including Blue-claw Crabs, Hermit Crabs, and Shore Shrimps), and 3 species of jelly-like fish (including Salps, Moons, and Browns).

There seemed to be a good variety and population of aquatic species, especially bait fish and juvenile fish existing near the edge of the bay. The clarity or turbidity of the water was murky and most sites. This might have been due to the buildup of phytoplankton and nutrients into the water. The mouth of Pews Creek was especially turbid, most likely from on-going beach replenishment activities at nearby Ideal Beach. Overall water quality appeared cloudy and turbid, but free from excessive amounts of seaweed.

Air temperature was in the upper 70s to low 80s. Bay water temperatures were warm between 70 to 78 degrees F. Turbidity or clarity of the water was measured between less than a foot to 2 feet. Salinity was measured overall at around 20 ppt. Skies were sunny with a light westerly breeze.

The weather was beautiful and a wonderful day by the bay was had by all. Results can be found below:

Cliffwood Beach/Aberdeen Township
10:00am
Water temperature = 70 degrees F.
Turbidity = 1.25 feet
Salinity = 20 ppt
Low Tide

200+ Mud Snails
25+ Shore & Sand Shrimp
10+ Hermit Crabs
10 Bay Anchovies
5 Atlantic Silversides or Spearing
2 juvenile Windowpane flatfish
2 juvenile Summer Flounder or Fluke (About 2 inches long each)
2 juvenile Winter Flounder (About 2 inches long each)
Lots of Oyster Drill eggs masses

Conaskonck Point/Union Beach
12:00pm
Water Temperature = 74 degrees F.
Turbidity = 1.5 feet
Salinity = 27 ppt
Incoming Tide

200+ Juvenile Bluefish or Snappers (about 2 inches long)
100+ Bay Anchovies
5+ Hermit Crabs (including one without a shell)
1 juvenile Windowpane flatfish
1 juvenile Summer Flounder or Fluke (about 6 inches in length)
1 adult Northern Puffer (about 10 inches in length)

Pews Creek/Port Monmouth/Middletown Township
2:00pm
Water Temperature = 78 degrees F.
Turbidity = less than one foot (water very cloudy most likely due to nearby beach replenishment activities at Ideal Beach)
Salinity = 19 ppt
Incoming Tide

200+ Bay Anchovies
100+ Mud Snails
60+ Hermit Crabs
40+ Sand & Shore Shrimp
10+ Salps
3 Windowpane flatfish
3 Juvenile Summer Flounder or Fluke
1 juvenile Striped Bass (about 14 inches in length)
1 juvenile Blue-claw Crab
1 Moon Jelly
1 Brown Jelly
1 Bloodworm

Many Mind Creek/Atlantic Highlands

3:30pm
Water Temperature = 75 degrees F.
Turbidity = 2 feet
Salinity = 19 ppt
Incoming Tide

50+ Bay Anchovies
20+ juvenile Bluefish or Snappers (about 2 inches in length)
20+ Hermit Crabs
7 Shore & Sand Shrimp
2 juvenile Windowpane flatfish

A history of seine surveys results dating back to 2010 can be found at the Bayshore Watershed website at http://www.restoreourbay.org/current-projects/seine-the-bay-summer-survey/

For more information, pictures and year-round sightings of wildlife in or near Sandy Hook Bay, Raritan Bay, and Lower New York Bay, please check out my blog entitled, Nature on the Edge of New York City at http://natureontheedgenyc.blogspot.com/