Educating for a Resilient Future: Estuary Explorers 2019 Report

About Waterfront Alliance

Waterfront Alliance inspires and effects resilient, revitalized, and accessible coastlines for all communities. We are a coalition of more than 1,000 organizations with ties to our regional waterways working together to bring about real change to our region’s waterways and 1,600 miles of coastline.

About Estuary Explorers

Waterfront Alliance offers environmental education about our harbor estuary through the delivery of a model waterfront education field trip program to unlock underutilized waterfronts. The one-hour lesson brings students to waterfronts near their schools for an introduction to the geography of regional waterways, water quality, sea level rise, and extreme storms. Students are taught to measure salinity and pH in water samples, and learn about the different aspects of resilient waterfronts by determining permeable and non-permeable surfaces. The program is adaptable for a variety of ages, and teachers are provided extensive pre-trip information and post-trip activities to both prepare for the session and utilize the skills students develop in future lessons.

“The students felt like they learned about the importance of water resiliency, pH balance tests, and the correlation of salinity to large bodies of water.”

–Science teacher P94Q
The 2018–2019 Season

This school year, the Estuary Explorers program expanded to more districts, made possible through the support of City Council Members Justin Brannan of District 43, Ruben Diaz of District 18, Vanessa Gibson of District 16, Mark Levine of District 7, Carlina Rivera of District 2, Ydanis Rodriguez of District 10, Debbie Rose of District 49, and Paul Vallone of District 19. During fall 2018 and spring of 2019, we reached more than 800 students with 50 field trips across all five boroughs.

Students met with education associate, Kat Facchini and director of education and outreach, Maggie Flanagan, at various waterfront locations, never more than a short bus ride or walk from schools in order to make the experience hyper local and relevant.

Some students had previously visited the waterfront, others had not and were excited to be in a new place they didn’t know was so close to them. The trips were at no cost to the teachers and were taught with simple supplies: a hydrometer commonly used in fish tanks and pH test kits previously provided by Micro Essential Laboratory Inc.

The variation in ages of classes, which ranged from 4th grade to 9th grade, displayed the varying knowledge of students throughout the city. Most students knew the name of the river New York was near (Hudson River), but only roughly half of them knew the name of the ocean New York was near (Atlantic Ocean). Most had heard of pH, and were able to identify different things we encounter with high acidity, such as lemons, vinegar, and grapefruit. Students also had an understanding of the difference between water that was high in salinity and low in salinity, but had not used the terminology before.

Although students were excited to interact with the water, they did have some early perceptions of the water. Many did not understand why it wasn’t clear blue, and considered it to be unsafe and dirty. However, upon testing they were able to draw new conclusions.

“Overall, I think it was a great resource for our students. They very much enjoyed the hands-on aspect of the workshop.”

—Science Teacher at IS 229

“It allowed my students to apply classroom concepts. It was provided in a way where everyone understood what was happening.”

—Science Teacher at Gregorio Luperon
from their observations and develop a more positive perception of the waterfront around them.

Integrating resiliency into the Estuary Explorers lesson plans involved developing an understanding of the definition of the term for students. Many of them had never considered the term when thinking of waterfronts, but were able to grasp the concept and brainstorm different ways to be resilient. We discussed different surfaces and how they were or were not permeable surfaces. Students were able to understand the role that permeable waterfronts play in resilient communities, particularly against flooding and sea level rise.

Schools that participated in the 2018-2019 season include IS 229 Roland Paterson, IS 131 Albert Einstein Academy, Wheels, PS 185 Walter Kassenbrock, School of the Future, M421 West Prep Academy, MS 161 Pedro Albizu Campos, Gregorio Luperon High School for Science and Mathematics, IS 49 Berta A. Dreyfus, MS 158, and Q94 David D. Porter.

Workshop sites included the newly-opened Roberto Clemente State Park and Clason Point Park in the Bronx, the National Lighthouse Museum in Staten Island, 69th Street Pier in Brooklyn, Bayside Marina in Queens, Dyckman Street Pier, Stuyvesant Cove Park, Swindler Cove, and West Harlem Piers. Classes were able to interact with and observe the location while completing the water testing activities, as well as observing and researching the area while completing the resiliency activity.

Educators from many of the schools appreciated the different aspects of the Estuary Explorers lesson. All of the teachers surveyed said that Estuary Explorers provided a positive introduction to our local waterfront, and more
than 80 percent of the teachers stated they would consider replicating the lesson on their own for students in the future.

For more information about Estuary Explorers please contact: Maggie Flanagan, Director of Education and Outreach, mflanagan@waterfrontalliance.org

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**Estuary Explorers 2018–2019 by the Numbers**

- 8 City Council Districts Served, Across all 5 boroughs
- 837 Students Participated
- 11 Schools scheduled trips
- 50 Field Trips Scheduled
- Field Trips Scheduled in each district
  - 6 Trips scheduled in District 16 (Vanessa Gibson)
  - 6 Trips scheduled in District 18 (Ruben Diaz, Jr.)
  - 3 Trips scheduled in District 43 (Justin Brannan)
  - 4 Trips scheduled in District 2 (Carlina Rivera)
  - 7 Trips scheduled in District 7 (Mark Levine)
  - 8 Trips scheduled in District 10 (Ydanis Rodriguez)
  - 9 Trips scheduled in District 49 (Debbie Rose)
  - 6 Trips scheduled in District 19 (Paul Vallone)