New Programs and Tools to Reach Students, Teachers and Communities with Coastal Resilience Education

Estuary Explorers Year in Review 2020–2021
About Waterfront Alliance

Waterfront Alliance inspires and effects resilient, revitalized, and accessible coastlines for all communities. We are a coalition of more than 1,100 organizations, working together to bring about real change to our region’s waterways and 1,600 miles of coastline.

About Estuary Explorers

Waterfront Alliance’s Estuary Explorers program was founded to educate youth in the New York-New Jersey Harbor Estuary through our waterfront-based program.

Our Estuary Explorers program consists of field labs, multi-session activities and virtual resources, all of which are adaptable for students in grades 4 through 12. These resources provide teachers or parents and students with extensive background information and post-activity resources to both prepare for the experience and help extend and connect learning beyond the immediate activity.

Our popular field labs give students the opportunity to learn at waterfronts in their own communities, often unexplored or unfamiliar to them. The one to two hour lesson connects to the geography of the harbor, teaches about permeable and non-permeable surfaces, measures basic water quality parameters such as pH and temperature, and draws conclusions on how these scientific metrics observed by the students themselves factor in to the coastal resilience of their waterfront.

Expanding on the growing interest in the waterfront field labs and the topics explored, we released a new version of our multi-activity comprehensive Coastal Resilience Education Toolkit, both in English and Spanish. The lesson plans in this robust toolkit have been tested and reviewed by teachers and include a range of activities from an experiment on ocean acidification that can be observed in a jar to mapping the permeable and non-permeable surfaces around ones community.

Since its launch in 2018, Estuary Explorers has served more than 15,000 students in 120 schools!
Coastal Resilience Education Toolkit

At the start of the Covid-19 pandemic, Waterfront Alliance released resources for at-home educational activities to meet the changing landscape due to remote school. Building off of these popular resources, Waterfront Alliance educators got to work developing a robust Coastal Resilience Education Toolkit. With detailed lesson plans, interactive activities, curated links to multimedia resources, and tips for adapting these resources across grades 4 through 12, the education toolkit provides teachers, students, and parents with the necessary materials for meaningful environmental education in any setting. The 7-part curriculum, now available in English and Spanish, builds students’ understanding of an urban estuary, the effects of climate change, and what can be done to keep local waterfronts healthy.

Virtual Engagement

Students from our 120 school partners, along with a dozen community based organizations (CBOs) around New York and New Jersey, participated in activities from the education toolkit. We partnered with CBOs such as the Queens Library and the Long Island City YMCA for live virtual webinars on topics like climate change and coastal resilience. Partnering with the New York Public Library, we recorded presentations for the library’s online virtual learning center exploring estuaries and coastal resilience, as well as a step-by-step instructional segment on how to do the Neighborhood Water Budget activity. We also partnered with civic groups in Elizabeth, NJ for two pre-recorded presentations, focusing on maritime and ecological issues across northern New Jersey. We also led multiple virtual programs with the Intrepid Sea, Air and Space Museum.

Our Partner Organizations

- Queens Public Library
- Long Island City YMCA
- Castle Hill YMCA
- Intrepid Sea, Air, and Space Museum
- New York State Marine Education Association (NYSMEA)
- Alice Austen House
- New York Public Library (NYPL)
Professional Development Sessions and Thought Leadership

Waterfront Alliance organized three educator professional development sessions, in partnership with Billion Oyster Project (BOP), in the environmental justice communities of West Harlem, the north shore of Staten Island, and Red Hook. We equipped over 20 educators, both formal and informal, with STEM resources in our first in-person engagement since the pandemic began in March 2020. Demonstrations led by both BOP’s and Waterfront Alliance educators showed off the tools and techniques for how to bring coastal resiliency and estuarine science education into their classrooms.

The Coastal Resilience Education Toolkit was also presented at several notable education leadership conferences, including the New York State Marine Environmental Association (NYSMEA) conference and the CUNY Conference on Climate Change Education (C4E) showcasing the thought leadership of Waterfront Alliance educators in this sector. In November, our educators also led a webinar on how teachers can implement our Coastal Resilience Education Toolkit into their classrooms.

In-Person Programming with Schools and Community Partners

In the summer of 2021, Waterfront Alliance partnered with the Castle Hill YMCA to provide hands-on field labs as part of the YMCA’s multiweek camp. Our educators led 10 different activities over the course of five weeks with campers. We also partnered with the Long Island City YMCA summer camp and conducted shoreline activities at Hallets Cove in Astoria.

We held pop-up educational programs at events such as Castle Hill YMCA’s Back-to-School Family Day, Viva la Sound presented by City Island Oyster Reef, and Green Activist New York with the Museum of the City of New York. Fall 2021 also saw the return of in-person field labs with schools and our newest offering, multi-week residency programs.
Based on evaluations after the professional developments, **100%** believed there to be a need to increase education on climate change and coastal resilience and **80%** believed the training gave them the best skills and resources to do so.

**Estuary Explorers Numbers 2020-2021**

- Schools served in all 5 NYC Boroughs and New Jersey
- 400+ people engaged in-person at community climate events and camps
- 25 educators taught across 3 environmental justice communities
- 1,000+ students served, either through live-webinars or pre-recorded programs, across New York and New Jersey

**Evaluations**

We evaluate *Estuary Explorers* by:
1) Tracking the numbers of participating schools, classes, and students.
2) Tracking the number of digital downloads and website visits.
3) Gathering feedback from participating teachers through surveys given at the end of every season.

**Looking Ahead**

This upcoming year, we will:
1) Reconnect with teachers in New York City Public Schools.
2) Maintain and expand relations with the CBOs we’ve worked with this past year.
3) Make more community connections at public events.
“It was great having our campers be connected with the waterfront right next to the Castle Hill YMCA! Learning about climate change and resiliency as it relates to the kid's own community was such a unique experience.”

Ibrahim Diakite – Senior Youth & Family Director, Castle Hill YMCA

“This is a very important topic for our community here in Red Hook and is an awesome opportunity for students to learn about what makes their environment work and what harms it.”

Timothy Heintz – Teacher, P.S. 676 Red Hook Neighborhood School

“I really enjoyed learning about the different animals in the harbor, and how pollution impacts the water.”

Michael – Student, P.S. 101Q: The School in the Gardens

Intrepid Sea, Air, and Space Museum hosted our Coastal Resilience Education Toolkit’s “Neighborhood Water Budget” activity on Zoom on July 28, 2021
During the 2020-2021 school year, Estuary Explorers was supported by City Council Members Margaret Chin, Carlina Rivera, Ben Kallos, Mark Levine, Ruben Diaz Sr., Paul Vallone, Justin Brannan, and Deborah Rose.