



# 2022 Annual Report

*Restoring oyster reefs to New York Harbor  
through public education initiatives*

# Billion Oyster Project's achievements to date



*Since 2014...*

**100** million oysters have been introduced to NY Harbor

**18** restoration sites have been established; 12 are field stations — designed to engage the local community

**2.2M+** pounds of shell have been reclaimed from NYC restaurants

**15K** volunteers have been engaged by the project



# Executive Summary



In 2022, **Billion Oyster Project connected 8,500 people from communities throughout New York City to our restoration and education initiatives** through volunteering, hands-on engagement at our field stations, water quality sampling, monitoring oyster research stations, and tabling at public events.

**Our Education team engaged just over 4,900 New York City students this year.** New Billion Oyster Project curriculum is now available to local teachers free of charge, and oyster stewardship along the New York Harbor waterfront is bouncing back following the COVID pandemic.

In 2022, we restored nearly 23 million oysters across Billion Oyster Project oyster reefs, field stations, Oyster Research Stations, and classroom tanks. We also surpassed a major milestone of **100 million oysters introduced to New York Harbor since the inception of Billion Oyster Project in 2014.**

Thank you for your support this year! We hope you enjoy reviewing all that we've accomplished together.



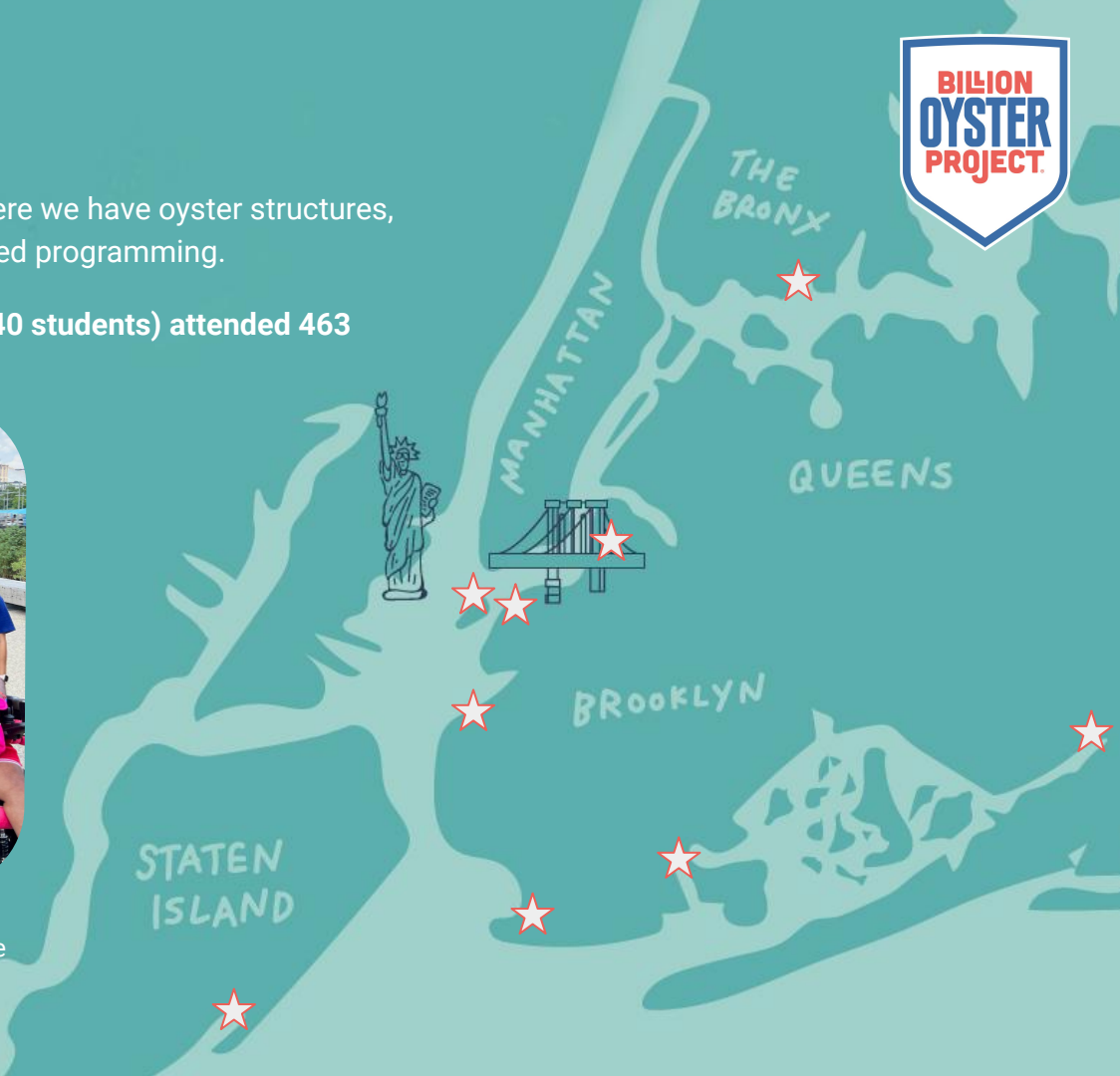
# Field Stations Program

Billion Oyster Project has a dozen Field Stations where we have oyster structures, funding for engagement, and regularly host scheduled programming.

**In 2022, 2,556 community members (including 1,140 students) attended 463 events at Billion Oyster Project Field Stations!**



ADAPT Community Network members joined Billion Oyster Project staff and Harbor School interns at our Brooklyn Bridge Park Field Station to monitor oysters and learn about New York Harbor.



# Volunteer Program



**In 2022, we hosted 117 public volunteer events at which 1,346 public volunteers donated 6,306 hours of time!** Volunteers cleaned shell, filled supertrays (pictured right), and fabricated oyster structures like Gabions and Oyster Research Stations.

Billion Oyster Project Ambassadors are long-term volunteers who have attended at least 3 public volunteer events and have also completed at least one training in reef monitoring and/or ORS maintenance.

**This year, we trained 40 Ambassadors at 10 training events.** These individuals – 13 of which were returning Ambassadors – participated in 40 working events across Billion Oyster Project's field season.

[Check out this Instagram reel](#) to hear from one of our newest Ambassadors, Katherine Lowe!



# Community Science Program: Oyster Research Stations



Billion Oyster Project engages students, teachers, and community members in hands-on environmental restoration and stewardship at the water's edge through Oyster Research Stations or ORS'. Each cage, housing roughly 30 live oysters, is a shared experimental laboratory. Attached to a dock, bulkhead, or floating buoy, each ORS builds community through data collection!

**This year, we received 268 datasheets, across 28 sites, from ORS stewards!**

These datasheets will be analyzed by our Marine Habitat Resource Specialist and Community Science Program Manager. We hope to share this reviewed data with stewards from each site, so they can see how their data collection supports our work. Students and members of the public can request this data for projects or general interest.

We offer Professional Development training opportunities for community scientists, teachers, and community-based organizations. These trainings provide an overview of Billion Oyster Project, oysters, and how to collect data. Upon completion, stewards are assigned an ORS to monitor in the Harbor.

**In 2022, we trained 93 people on ORS monitoring protocols.** This number includes 35 educators, 11 volunteer ambassadors and 46 community scientists.

# Community Science Program: Water Quality



Billion Oyster Project has taken the lead on the [Community Water Quality Testing \(CWQT\) Program](#) — a long-running dataset of New York Harbor water quality that can inform the connection between rainfall and sewage pollution. Collection of this data, funded by Two Trees, is intended to help identify human risk of exposure to pathogens when engaging in recreational activities and/or working in the water.



This year we:

- Teamed up with partner labs, universities, and community scientists to test water samples from 69 sites [on a weekly basis](#) from May-October
- Monitored sewage pollution via fecal indicator bacteria
- Performed year-round testing at three East River sites near our Williamsburg Field Station and water quality lab
- Supported student and community researchers

# 8th Annual BOP Student Symposium



The annual Billion Oyster Project Student Symposium culminates a year of learning for NYC students — offering an opportunity for them to share the results of BOP-inspired research. This year's event was hosted on Governors Island on Friday, June 10. We also carried on the tradition of offering freshly shucked oysters to participants!

**18** schools   **110** projects  
**65** teachers   **254** students

The 2nd Annual Scy-posium, on Thursday, June 9, was a virtual showcase and networking event for community scientists working on the harbor and estuary-themed projects and data-based advocacy.





# Professional Learning for Teachers



Billion Oyster Project professional learning workshops are designed to empower and retain partner teachers, particularly in schools with high numbers of students from low-income households. These sessions also provide teachers with Billion Oyster Project staff support and networking opportunities.

**This year, 262 teachers — each representing 30-50 students — attended a Billion Oyster Project professional training.**

## Oyster Research Station (ORS) Training Workshops

- 90+ participants in 5 two-part workshops this year
- 24+ datasets submitted by more than 20 community scientists

## Oyster Research Tank (ORT) Training Workshops

- ORTs are fish tanks populated with live oysters
- ORTs are placed in NYC public school classrooms
- 51 NYC school teachers were trained in 2022
- 1,530+ students were engaged by this educational resource



## Data Analysis Trainings

- Based on our two new curricular units (next slide)
- Hosted 1 oyster data training and 4 GIS workshops
- 21 NYC teachers attended

# New Curriculum for Students

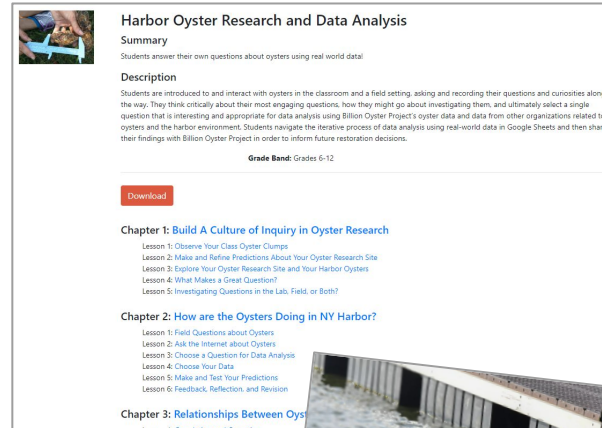


This year, our Education team sought to increase student exposure to New York Harbor, oyster restoration, environmental science, and community advocacy.

Billion Oyster Project published two new units of curriculum (30 lessons) on the [Digital Platform](#).

- [Harbor Oyster Research and Data Analysis](#)
- [Where Should Future Oyster Restoration Take Place?](#)

**262 teachers were trained** or reported using Billion Oyster Project curricular resources in 2022 – reaching an estimated **10,000 students**.



**Harbor Oyster Research and Data Analysis**  
Summary

Students answer their own questions about oysters using real world data!

**Description**

Students are introduced to and interact with oysters in the classroom and a field setting, asking and recording their questions and curiosities along the way. They think critically about their most engaging questions, how they might go about investigating them, and ultimately select a single question that is interesting and appropriate for data analysis using Billion Oyster Project's oyster data and data from other organizations related to oysters and the harbor environment. Students navigate the iterative process of data analysis using real-world data in Google Sheets and then share their findings with Billion Oyster Project in order to inform future restoration decisions.

**Grade Band:** Grades 6-12

[Download](#)

**Chapter 1: Build A Culture of Inquiry in Oyster Research**

- Lesson 1: Observe Your Class Oyster Clumps
- Lesson 2: Make and Refine Predictions About Your Oyster Research Site
- Lesson 3: Explore Your Oyster Research Site and Your Harbor Oysters
- Lesson 4: What Makes a Great Question?
- Lesson 5: Investigating Questions in the Lab, Field, or Both?

**Chapter 2: How are the Oysters Doing in NY Harbor?**

- Lesson 1: Field Questions about Oysters
- Lesson 2: Ask the Internet about Oysters
- Lesson 3: Choose a Question for Data Analysis
- Lesson 4: Choose Your Data
- Lesson 5: Make and Test Your Predictions
- Lesson 6: Feedback, Reflection, and Revision

**Chapter 3: Relationships Between Oysters and the Harbor**

- Lesson 1: Background Reading and Test for Relationships Between Your Data
- Lesson 2: Relationships Between Oysters and the Harbor

**Who do you want to engage in the community?**

Browse through the [Community Members and Groups - Resource](#). This resource has categories of people you might consider involving in your restoration process. As you browse, consider which groups of people you would be interested in asking for input on your restoration **proposal**.

**Part 1:**

1. Choose 2 broad categories of community members or groups to involve in the planning of your **reef**. Write them out below and describe your reasoning for selecting them. *For example, you might choose the local schools because you want students like you to be engaged with the waterfront.*

Community Member or Group (schools, nonprofits, general public, etc.)	Why engage this person or group?
<i>Example: Students and Schools</i>	<ul style="list-style-type: none"><li>● Young people should be involved in community decisions.</li><li>● Learning at the waterfront is a fun and memorable experience.</li><li>● Teachers are good at organizing student ideas.</li></ul>



**Oyster Restoration & Education Structures**

What structures will you use to build your reef? And how will people interact with oysters at your site?

# Harbor School Happenings



In 2022, the Urban Assembly New York Harbor School received New York State Approval for the Professional SCUBA Diving program, the school's seventh Career & Technical Education program to attain this status.

During the Summer, 102 Harbor School students participated in paid internships, including 27 with Billion Oyster Project.

In August, Mayor Adams announced that Harbor School will expand, with two additional buildings containing

classroom space, a swimming pool, gymnasium, and science labs. The expansion will allow enrollment to grow significantly from the present 520 students.

With a new maritime-themed middle school coming to Red Hook, Brooklyn, NYC is now home to an elementary school, middle school, high school, and college, where local students can explore marine studies and prepare for careers on and around our waterways.



# Gansevoort Peninsula Project



Billion Oyster Project provided oysters and reef infrastructure to Hudson River Park Trust for their Gansevoort Peninsula Project.

**Billion Oyster Project staff and volunteers fabricated 227 gabions and filled each gabion with cured shell; 144 of the gabions were set with oyster larvae and almost all of the remaining 83 gabions were topped with adult oysters.**

Billion Oyster Project also set 44 reef balls of varying sizes with oyster larvae. All oyster setting activities for this project took place at our Remote Setting Facility in Red Hook Terminals.

This project was covered by [The New York Times](#) in August 2022.



# Soundview Reefs



This year, we completed a five-year project that added five acres of reef habitat to the mouth of the Bronx River off Soundview Park. Key accomplishments over the past five years include:

- 589 cubic yards of oyster shells
- 181 gabions
- 4 community cabinets creating three-dimensional structured habitat
- 22 million spat-on-shell and 200,000 adult oysters to the site

Project partners engaged over 1,200 adults and 1,600 students in project fabrication, deployment, post-

construction monitoring, and educational and recreational programming during after-school and summer programs.

Many high school and college students and researchers have used Soundview Reefs as a 'living laboratory' over the lifetime of the project, and the restoration site will continue to be used in the future.



# Shell Collection & Fabrication



**In 2022, we collected ~335,000 pounds of shell from 63 restaurants in New York City.** That means each week, we collected between 5,000 lbs to 7,000 lbs of shell.

In May, we added another day to our schedule, increasing our weekly truck route from 3 to 4 days per week. This allowed us to add 18 new restaurant partners to the program! Talisker Single Malt Scotch Whisky is the lead supporter of Billion Oyster Project's Shell Collection Program.

With volunteers, we cleaned and processed over 150,000 pounds of cured shell, or shell that has become sterile after sitting outside for a full year.

Approximately 120,000 pounds of shell were deployed this year at various Billion Oyster Project reef sites, including our two largest installations – Gansevoort Peninsula in Hudson River Park's Estuarine Sanctuary and Soundview Reefs at the mouth of the Bronx River.

The remaining shells were prepped for 2023 installations.



# Updates around the Harbor



**Remote setting at Red Hook Terminals:** The 2022 setting season brought us to a huge milestone of 100 million oysters deployed since 2014. Using piloted setting structures and setting in a new location, we were able to gain valuable information about how to continue improving our setting system.

**Aquaculture students deploying oysters at the EcoDock:** This summer, Billion Oyster Project Aquaculture Interns deployed newly set oyster spat from the MAST Hatchery on the Governors Island Ecodock. These oysters will be used in restoration-related school-based programs.

**Dive monitoring at Bush Terminal Park:** Billion Oyster Project interns and recent graduates of the New York Harbor School diving program collected underwater oyster growth and mortality data and performed video surveys of our bagged shell reef and deep water cabinets across a 3-day period.

**Brooklyn Bridge Park reef cabinet replacement:** Ambassadors, interns, and volunteers removed oysters from deteriorating structures and placed them into new structures where they can continue to live and grow!



# Corporate Volunteers



Corporate volunteer days allow companies to gain hands-on experience and knowledge of oyster restoration while building camaraderie with their team and spending a day outside supporting Billion Oyster Project.

**In 2022, we hosted 59 corporate volunteer days, engaging 1,200 people from 50 organizations who contributed a combined 2,400 hours of service.**

2022 volunteer projects included fabricating mesh inserts for a new installation at the Gansevoort peninsula and cleaning recycled oyster shell for use in upcoming restoration work.

During our corporate volunteer events, we educate participants on our mission through a deep dive tour of our facilities on Governors Island and share information about our impact to date with the goal of strengthening these partnerships.





# Billion Oyster Project in the News

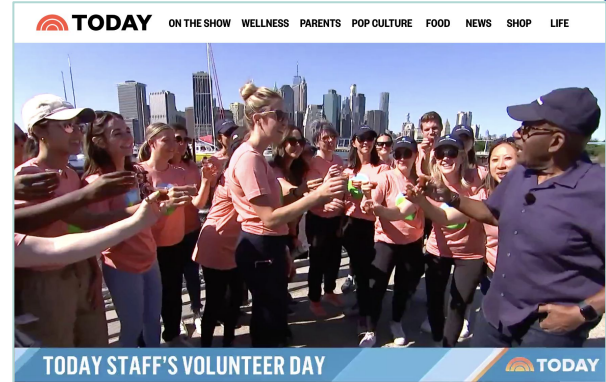


- Edible Magazine
- Brooklyn Daily Eagle
- NY1
- Nautilus
- Univision
- The New York Times
- The Guardian
- The Economist
- The TODAY Show
- CBS Saturday Morning

See a full list on our [Press](#) page.

## The Billion Oyster Project: Reversing History to Move Forward

STORY BY JULIA SEKTON



# Social Media Highlights

Facebook, Instagram, LinkedIn & Twitter:

**5.3M**  
Impressions

↑ 178%

**123K**  
Engagements

↑ 6.1%

**9.2K**  
New Audience Members

↑ 25.7%

*\*Compared to last year*

 **billionoyster**  
Thu 10/20/2022 4:58 pm EDT

Thank you @Lendlease for spending the day with us on Governors Island - cleaning and processing shells collected every day...



Impressions 22,887

 **billionoyster**  
Sun 10/9/2022 11:01 am EDT

We collected roughly 4,000 pounds of shell at this year's Billion Oyster Party, bringing our 2022 total to more than 260,000...



Impressions 14,178

 **billionoyster**  
Fri 9/16/2022 5:28 pm EDT

Found a massive horseshoe crab while surveying oysters and biodiversity at the Canarsie Billion Oyster Project Field Station...




Impressions 17,707

 **billionoyster**  
Tue 3/29/2022 2:55 pm EDT

Watch @billionoysterpete in this new short film "Urban Environmentalist" by @onlyone. View the full feature in our bio link. "New..."



Impressions 44,815

 **billionoyster**  
Mon 7/25/2022 12:16 pm EDT

The next oyster deployment on the Gansevoort Peninsula Project with @HudsonRiverPark just completed last...



Impressions 19,235

 **billionoyster**  
Fri 7/15/2022 2:51 pm EDT

Spotted wild Billion Oyster Project staff crossing Buttermilk Channel this #fishyfriday! Swimmers are a rare sight in...



Impressions 14,586

 **billionoyster**  
Fri 4/15/2022 1:42 pm EDT

"Where was the @harborschool when I was in high school?" is a question we get on a weekly basis. We can't help you there, but...



Impressions 12,338

# BILLION OYSTER PARTY

Nearly 1,300 guests joined us for our 8th annual Billion Oyster Party, hosted on Thursday, Sept. 29, at Building 269 in the Brooklyn Navy Yard. The Billion Oyster Party is the ultimate oyster-eating celebration and education experience.



Guests interacted with 45 oyster farmers and chefs from 21 top NYC restaurants that participate in our shell collection program, while enjoying live music and learning more about the work of Billion Oyster Project.



# Looking ahead to 2023



## Environmental Bond Act

On Tuesday, November 8, **New Yorkers voted to pass the Clean Air, Clean Water and Green Jobs Bond Act** – the only statewide ballot proposal this election – with more than 59% of the vote, or a two-to-one margin.

As a result, New York state will fund \$4.2 billion in bonds for clean-energy projects to upgrade water infrastructure, reduce the risk of floods and preserve parks, and more. The bond act will also fund more than \$1 billion for flood reduction, fixing dams and culverts for aquatic life; \$650 million for wastewater and stormwater upgrades; \$650 million to preserve parks, open space and farmland; and up to \$1.5 billion for green infrastructure and renewable energy projects to fight climate change.

We look forward to exploring how this funding can help Billion Oyster Project in our ambitious oyster restoration, education and engagement efforts.



## Shellfish Restoration Plan

In 2017, the [New York Shellfish Restoration Council](#) was created to support and guide shellfish restoration efforts throughout our state's marine waters. The development of the New York State Shellfish Restoration Plan is now underway, led by a Steering Committee made up of the NYS Department of Environmental Conservation, Billion Oyster Project, Cornell Cooperative Extension, Stony Brook University and professional facilitators from The Pew Charitable Trusts and Due East Partners. An initial draft of the plan is expected to be completed in the first half of 2023.