OUR MISSION
To restore oyster reefs to New York Harbor through public education initiatives

OUR VISION
A future in which New York Harbor is the center of a rich, diverse, and abundant estuary. The communities that surround this complex ecosystem have helped construct it, and in return benefit from it, with endless opportunities for work, education, and recreation. The harbor is a world-class public space, well used and well cared for—our Commons.

“WITH BILLION OYSTER PROJECT, I WAS ABLE TO GET TO KNOW NEW YORK HARBOR. I HELPED RESTORE OYSTERS AS PART OF MY CLASSES, AND THANKS TO LEARNING AND PRACTICING VESSEL TRAINING IN SCHOOL, I’M NOW WORKING FOR NEW YORK WATER TAXI.”

RYAN, Vessel Operations student at New York Harbor School and Deckhand at New York Water Taxi
DEAR FRIENDS:

Billion Oyster Project (BOP) was founded on the belief that direct engagement and interaction with wild animals and functioning ecosystems has a transformative effect on young people. As our world is increasingly urbanized, there is a growing subset of the human population that is coming of age separate from nature. Simultaneously, efforts abound aimed at increasing engagement in school to improve outcomes for millions of young people. Too often, these interventions exist in the vacuum of school without the real-world, hands-on implementation that leads to improved self-confidence, authentic problem solving, teamwork, and the belief that anyone and everyone has the power to affect positive change.

Billion Oyster Project is an attempt to bring these too often separate issues together. It has grown from the belief that if we are to continue living, working, learning, and learning on this planet, we must fundamentally change how humans interact with nature. Our solution began in a New York Harbor School Aquaculture classroom and has grown into a region-wide initiative involving 70 restaurants, 75 public schools, thousands of students, millions of oysters, and a dozen active restoration and research sites.

Billion Oyster Project grew out of the New York Harbor School. Harbor School staff and students remain integral to the reef construction and monitoring activities of BOP. Our reef installations are designed to leverage the skills these students are learning in their Career and Technical Education (CTE) classes: Aquaculture, Marine Biology Research, Marine Policy and Advocacy, Marine Systems Technology, Ocean Engineering, Professional Diving, and Vessel Operations. Students design and build oyster reef structures, operate and maintain vessels, grow oysters, and conduct research projects at these sites. Through this work, these young people gain experience in maritime trades and access to marine careers available locally.

New York Harbor is a massively degraded natural system. Every time it rains, billions of gallons of untreated household wastewater enter the system. Underwater visibility is very low, often less than a foot. Currents are strong and commercial traffic is constant. To restore 1 billion oysters in this challenging environment, it is essential to engage the entire metropolitan community. With this in mind, it is with great pride that we present to you this Annual Report of the work of Billion Oyster Project. As much as this is meant to communicate what we have accomplished, it strikes us that it is really a reflection of the effort of thousands of students, donors, volunteers, and partners who are all coming together to restore one billion oysters to New York Harbor.

When we created Billion Oyster Project together, we believed that such an ambitious and important project had the potential to mobilize an extraordinarily diverse and passionate group of people to reclaim our Harbor. But we never could have imagined the energy and excitement that has come from this work.

We are so proud of the reefs we have built with communities throughout the city. We are so proud of the thousands of middle school students who are learning through the lens of oyster restoration. We are so proud of the Harbor School students who are actively growing the oysters, building the reef infrastructure, planting the reefs, monitoring the success of the reefs, and advocating for more oysters and more access—all through BOP and with BOP’s support. None of this work would be possible without the generosity of private individuals and institutions who believe in us and in our ability to deliver on our ambitious mission: to restore oyster reefs to New York Harbor together.

WITH APPRECIATION, MURRAY AND PETE

“I DEEPLY BELIEVE IN THE WORK OF BILLION OYSTER PROJECT—IT OFFERS A PATHWAY TOWARD A FUTURE WITH ENGAGED, COMMITTED STEWARDS WORKING TOGETHER TO CREATE A MORE RESILIENT AND BIODIVERSE COASTAL LANDSCAPE.”

KATE ORFF, Board Member, founder and principal of SCAPE Landscape Architecture

BOARD OF DIRECTORS: Murray Fisher, Chair • Sophia C. Koven, Vice Chair • Mercedes Tach, Treasurer • Mark Rion • Christy A. Ruder • Maria A. Sönmez • Riva Shalom • Kate Orff

Andria Castellanos • Captain John DelCruz • Noah Heller • Ayana Elizabeth Johnson • James F. Lima • Carleen Lyden-Walker • Chris Mole • Kate Orff • Editorial Assistant: Shea Thorvaldsen
Oyster reefs have the power to transform NY Harbor. They provide habitat for thousands of marine species, filter water, and can help shield NYC shorelines from storm damage. And did you know—New York City was once oyster capital of the world?

1609
When Henry Hudson entered New York Harbor, he navigated around 220,000 acres of oyster reefs. New York Harbor was one of the most biologically productive, diverse, and dynamic environments on the planet.

1600s
New York City’s Pearl Street was named for the many oysters found in the waters. “Before the 20th century, when people thought of New York, they thought of oysters. This is what New York was to the world—a great oceangoing port where people ate succulent local oysters from their harbor. Visitors looked forward to trying them. New Yorkers ate them constantly. They also sold them by the millions.” —Mark Kurlansky, Author of The Big Oyster

1800s
Oyster houses dotted the streets of lower Manhattan.

1906
New York Harbor was nearly lifeless due to pollution and overharvesting.

1972
The Clean Water Act prohibited regular dumping of waste and raw sewage into the harbor.

2014
Water quality has improved enough that oysters and other life can survive in New York Harbor, including oysters, mussels, and clams. The nonprofit Billion Oyster Project launches in New York City, with the goal of restoring 1 billion oysters to New York Harbor by the year 2035.
2018

The people of New York City’s five boroughs are bringing oyster reefs back, with help from the BILLION OYSTER PROJECT!

As of June 2018:

9 active oyster reefs (7 acres), 3 floating oyster hubs, and 27,475,800 oysters have been installed in New York City waterways since 2014.

500+ Harbor School students have contributed to Billion Oyster Project as part of their Career and Technical Education (CTE) experience.

6,000+ students from across the 5 boroughs monitor oyster and harbor health as part of their STEM education.
New York City locals and Billion Oyster Project installed a **NEW COMMUNITY REEF: THE CANARSIE COMMUNITY REEF**.

50+ COMMUNITY MEMBERS came out to oyster reefs to help with installation and monitoring.

70+ RESTAURANTS DONATED 312,493 SHELLS, so that baby oysters could attach to them and survive in the harbor.

**THE NATIONAL SCIENCE FOUNDATION** renewed its support for Billion Oyster Project’s field-science-based middle school curriculum development and teacher training, with additional funding allowing us to expand the program to public elementary schools and high schools. 4,500,000, in the form of two new grants for fiscal years 2018 and 2019, will focus on increasing student motivations and capacities to pursue STEM careers, especially within underrepresented groups in these fields.

70+ RESTAURANTS DONATED 312,493 SHELLS, so that baby oysters could attach to them and survive in the harbor.

**THE NATIONAL SCIENCE FOUNDATION** renewed its support for Billion Oyster Project’s field-science-based middle school curriculum development and teacher training, with additional funding allowing us to expand the program to public elementary schools and high schools. 4,500,000, in the form of two new grants for fiscal years 2018 and 2019, will focus on increasing student motivations and capacities to pursue STEM careers, especially within underrepresented groups in these fields.

**THE NATIONAL SCIENCE FOUNDATION** renewed its support for Billion Oyster Project’s field-science-based middle school curriculum development and teacher training, with additional funding allowing us to expand the program to public elementary schools and high schools. 4,500,000, in the form of two new grants for fiscal years 2018 and 2019, will focus on increasing student motivations and capacities to pursue STEM careers, especially within underrepresented groups in these fields.

70+ RESTAURANTS DONATED 312,493 SHELLS, so that baby oysters could attach to them and survive in the harbor.

**THE NATIONAL SCIENCE FOUNDATION** renewed its support for Billion Oyster Project’s field-science-based middle school curriculum development and teacher training, with additional funding allowing us to expand the program to public elementary schools and high schools. 4,500,000, in the form of two new grants for fiscal years 2018 and 2019, will focus on increasing student motivations and capacities to pursue STEM careers, especially within underrepresented groups in these fields.

**THE NATIONAL SCIENCE FOUNDATION** renewed its support for Billion Oyster Project’s field-science-based middle school curriculum development and teacher training, with additional funding allowing us to expand the program to public elementary schools and high schools. 4,500,000, in the form of two new grants for fiscal years 2018 and 2019, will focus on increasing student motivations and capacities to pursue STEM careers, especially within underrepresented groups in these fields.

70+ RESTAURANTS DONATED 312,493 SHELLS, so that baby oysters could attach to them and survive in the harbor.

**THE NATIONAL SCIENCE FOUNDATION** renewed its support for Billion Oyster Project’s field-science-based middle school curriculum development and teacher training, with additional funding allowing us to expand the program to public elementary schools and high schools. 4,500,000, in the form of two new grants for fiscal years 2018 and 2019, will focus on increasing student motivations and capacities to pursue STEM careers, especially within underrepresented groups in these fields.

70+ RESTAURANTS DONATED 312,493 SHELLS, so that baby oysters could attach to them and survive in the harbor.

**THE NATIONAL SCIENCE FOUNDATION** renewed its support for Billion Oyster Project’s field-science-based middle school curriculum development and teacher training, with additional funding allowing us to expand the program to public elementary schools and high schools. 4,500,000, in the form of two new grants for fiscal years 2018 and 2019, will focus on increasing student motivations and capacities to pursue STEM careers, especially within underrepresented groups in these fields.

70+ RESTAURANTS DONATED 312,493 SHELLS, so that baby oysters could attach to them and survive in the harbor.
Lucas and Mark were essential to the project of welding 422 gabion reef structures for the Hudson River reef system. They even came up with an improved design for the structures, which the Billion Oyster Project team is now prototyping.

Employees from engineering firms AKRF and HDR helped out for the day on Governors Island. They built 111 mesh inserts for oyster reef structures in just one day, in a friendly face-off.

Asly has helped us to grow millions of oysters in our hatchery at Governors Island, both as a Harbor School student and a Billion Oyster Project summer intern. This year, she also spoke at the United Nations on World Oceans Day, standing up for the ocean beside Cody Simpson and other passionate changemakers.

As part of their participation in Billion Oyster Project, a team of robotics students at the St. Clare School created a prototype with proposed enhancements to the Billion Oyster Project oyster research station (the structure NYC schools use to install and monitor oysters in local waters). The team’s creativity won them the NYC FIRST Lego League Champions’ Award, and they then traveled to Detroit to participate in the world championship.

Crave Fishbar doesn’t just donate its shells to Billion Oyster Project. The restaurant team, led by Chef Todd Mitgang and Brian Owens, joins us every year for volunteer days and participates in Billion Oyster Project’s annual fundraisers.

This skillet fish, this oyster toadfish, and these tunicates (animals that look like flowers), are just some of the many animals that Billion Oyster Project staff and students observed near oyster reefs this year.

Clarissa has been known to climb fences so that her students can have an Oyster Research Station in a concrete ‘Greenway’ near the FDR Drive. Clarissa and her students are reenvisioned by the natural world thanks to her tenacity, reflectiveness, and generosity of spirit.

Chef Todd Mitsigas and Crave Fishbar Crave Fishbar doesn’t just donate its shells to Billion Oyster Project. The restaurant team, led by Chef Todd Mitsigas and Brian Owens, joins us every year for volunteer days and participates in Billion Oyster Project’s annual fundraisers.

Mary Lee, teacher at St. Clare School

"I AM SO IN LOVE WITH THIS PROJECT. IT IS SO FULFILLING. IT FEELS LIKE MY LIFE’S CALLING."

Clarissa, teacher at Central Park East II school

"Thank you so much for everything you taught me. I not only realized how our community has to change, but it taught me the importance of life outside of humans. We need to take care of our shorelines. As a community we need to come together to restore our community. Thank you!"

Ashley, middle-school student at Wheels

"Getting into the Next Generation Science Standards—getting involved in something like Billion Oyster Project, you’re doing it. The field work entices the kids, getting to work with pros in the field. They get engaged in actively collecting real-world data. They love the excursions and working with different types of tools. And the lessons we learn come up all school year. There are so many benefits to a project like this."

Mary Lee, teacher at St. Clare School

"...The Oysters, I didn’t know what they were or what they did, but now after a year working with Billion Oyster Project, I can’t wait to help plant oysters all over NYC."

Steven, Professional Diving student at New York Harbor School
As sophomores, all students enroll in one of seven CTE programs of study, leading to industry certification in marine science or technology. The experience includes a continuum of work-based learning, and Billion Oyster Project provides a real-world context for practicing maritime skills. Freshmen are introduced to various CTE programs via Harbor Class. For each CTE program, a Billion Oyster Project staff member, or “BOP Professional,” acts as an instructor and advisor to students and leads Billion Oyster Project activities, such as growing oysters in the Aquaculture lab or designing reef structures in Ocean Engineering.

MEET OUR FLAGSHIP SCHOOL: The Urban Assembly NEW YORK HARBOR SCHOOL

The Urban Assembly New York Harbor School, a maritime high school located on Governors Island, is the flagship school of Billion Oyster Project, and its students take on a leadership role in our work—growing oysters, designing and building oyster reef structures, diving to monitor reefs, operating boats, performing marine biology research, and more. Billion Oyster Project supports the Harbor School’s seven Career and Technical Education (CTE) programs, extracurricular programs and activities, and waterfront operations.

CAREER AND TECHNICAL EDUCATION (CTE) PROGRAMS

AQUACULTURE
Aquaculture students work toward understanding the fundamentals of water chemistry, organism biology, business, and marketing. Students grow oysters for Billion Oyster Project.

OCEAN ENGINEERING
This program introduces students to engineering in an ocean environment. They design, build, and operate Remotely Operated Vehicles that can be used to collect data in monitor oyster reefs. Ocean Engineering students also design the 3D structures used to build reefs.

MARINE SYSTEMS TECHNOLOGY
This program prepares students for careers in building, maintaining, and repairing boats, and culminates in an American Boat and Yacht Council’s Marine Systems Technician Certificate. Students put their vessel maintenance skills to use building “oyster cabinets” — the infrastructure for many reefs.

VESSEL OPERATIONS
This program prepares students for careers as licensed deck crew, and serves as a stepping stone into management and operations positions aboard small passenger vessels and commercial towing units. Students operate the vessels required to build, maintain, and monitor BOP’s oyster reefs, harvest oysters, and floating oyster bivalves.

PROFESSIONAL DIVING
This program is the only one of its kind in the United States, training public high-school students as effective scientific SCUBA divers and putting them to work underwater on real environmental restoration projects. Professional Diving students can graduate to careers in the commercial and recreational diving industries and work directly with Billion Oyster Project as they dive to install and inspect reef structures and oysters.

MARINE BIOLOGY RESEARCH
Students begin their studies by learning the basics of biology, ecology, and oceanography, and finish their senior year having engaged in high-level scientific research with mentor scientists. Students use their research to propose solutions to environmental problems and questions.

MARINE POLICY AND ADVOCACY
Students will develop a clear understanding of the principles and applications of environmental/marine policy and law, through the study of the maritime industry and oyster restoration. They will be able to communicate the role of citizen engagement in policy making, as well as the roles of community, advocacy, and government in the development and implementation of law and policy in our waterways.

MARINE SYSTEMS TECHNOLOGY
This program prepares students for careers in building, maintaining, and repairing boats, and culminates in an American Boat and Yacht Council’s Marine Systems Technician Certificate. Students put their vessel maintenance skills to use building “oyster cabinets” — the infrastructure for many reefs.

VESSEL OPERATIONS
This program prepares students for careers as licensed deck crew, and serves as a stepping stone into management and operations positions aboard small passenger vessels and commercial towing units. Students operate the vessels required to build, maintain, and monitor BOP’s oyster reefs, harvest oysters, and floating oyster bivalves.

MARINE BIOLOGY RESEARCH
Students begin their studies by learning the basics of biology, ecology, and oceanography, and finish their senior year having engaged in high-level scientific research with mentor scientists. Students use their research to propose solutions to environmental problems and questions.

MARINE POLICY AND ADVOCACY
Students will develop a clear understanding of the principles and applications of environmental/marine policy and law, through the study of the maritime industry and oyster restoration. They will be able to communicate the role of citizen engagement in policy making, as well as the roles of community, advocacy, and government in the development and implementation of law and policy in our waterways.

I LOVE THAT WE’RE DOING WORK THAT’S IMPORTANT, DOING WHAT WE NEED TO DO UNDER WATER. IN MY MIND, THIS IS MY FIRST JOB IN DIVING. I DIDN’T EVEN KNOW ABOUT CSOS [Combined Sewer Overflows] UNTIL I STARTED WORKING WITH BILLION OYSTER PROJECT. MY FAMILY IS EXCITED TOO, WE’RE GOING TO RECYCLE, BE CAUTIOUS OF OUR WATER USAGE, AND KEEP UP WITH THE PROGRESS OF NY HARBOR’S WATER.”

ROB, Billion Oyster Project intern and Harbor School student
When we go out to our reef sites, we always see an abundance of all these different types of encrusting invertebrates, and we’re also seeing a bunch of small specialist fish and crabs, that thrive in an oyster habitat, a reef habitat. They might not necessarily have that habitat without oysters being there."

LIZ BURMESTER, Restoration Ecologist and “BOP Professional”

CASE STUDY: Sunset Park Community Reef at Bush Terminal Park

OYSTER GROWTH IS PROMISING
We put oysters into New York Harbor as small “spat,” and they’re growing and surviving in these waters. Oysters are forming reefs, complex 3D structures that create habitat—like an underwater city—for thousands of species. The growth pattern of Bush Terminal Park oysters resembles that of wild oyster reefs in other regions. A great sign for oyster restoration in New York Harbor!

OYSTER GROWTH OVER ONE YEAR

FUN FACT! This year we are seeing excellent “recruitment” among New York Harbor oysters, meaning that baby oysters near our Oyster Research Stations and reefs are setting on the shells we put out for them. Sightings are widespread, including Soundview and Castle Hill in the Bronx, Cony Island Creek, West 79th Street Boat Basin, and Pier 40 near Greenwich Village.

BILLION OYSTER PROJECT NEAR YOU

- REEFS
- OYSTER NURSERIES
- SCHOOLS
- OYSTER RESEARCH STATIONS
- RESTAURANTS
- COMMUNITY PARTNERS

Join the movement!
SUPPORTERS and make it possible Project to exist.

THANK YOU 2017–2018

Our generous Thank you to supporters

Daniella Botterbusch and Mark Tercek
Jake Kramer
Leatrice Haiken
Kenneth Stein
Stephen Glascock
Lauren and David Farnsworth
Nancy Crawford
Sally and Chuck Carpenter
Hannah Swett
Emily and Murray Fisher

Individual Supporters

Elliot and Jocelyn Steelman
Joseph Slakas and Barbara Hart
Austin and Gwen Fragomen
Cynthia and John Deermount

$2,500–$4,999

Adam Isserlis
Trey and Kate Huey
Dixon and Janet Harvey
Sarah Hartman
Gregory Gerard
Sandy and Rossie Fisher
Suzanne Dvells
Anastasia Cole Plakias
Jayni and Chevy Chase
Amy Chang
Jeffrey Younger

$5,000–$9,999

The Jerome & Dolores Gewirtz
Alexander Swistel
Jin Park
Nicholas Panagopulos
Rebecca and Jay Markley
Carleen Lyden-Walker
James Lima
The Lieberman Family
Susan Kelly
Francis Petrie
Robert Croonquist

CREDITS

BILLION OYSTER PROJECT •
GET INVOLVED

DONATE
Help us to continue oyster reef building and restoration education in NYC schools. Visit bit.ly/bopgiving, text “donate” to 267.460.0483, or call 646.276.2515.

VOLUNTEER
Whether at our headquarters on Governors Island or at a Community Oyster Reef near you, there are many opportunities to help. Sign up for our newsletter at bit.ly/bopnews.

BRING BILLION OYSTER PROJECT TO YOUR SCHOOL
Our hands-on STEM Curriculum is open to educators, at platform.bop.nyc. After signing up for the platform, teachers can register for Billion Oyster Project professional development.

BECOME A STUDENT AT NEW YORK HARBOR SCHOOL
New York Harbor School also welcomes high-school students interested in maritime careers. Contact educate@nyharbor.org

BECOME A MEMBER
Members enjoy special perks from our restaurant and other program partners, an exclusive behind-the-scenes look at NYC oyster reef restoration, and much more! Contact btw@nyharbor.org for more information.

DIVERT SHELLS FROM THE LANDFILL
If you are affiliated with a restaurant interested in reducing food waste by donating shells to Billion Oyster Project, learn about our Shell Collection Program at bit.ly/nyshell.

ATTEND A BILLION OYSTER PROJECT EVENT
Special events like Oyster Socials provide opportunities for tasting oysters, sampling paired beverages, and mingling with fellow Billion Oyster Project community members—at some of the most charming spots in the city (think Chez Danya, Moet & Grand Banks). Follow billionoyster on Twitter and Instagram and billionoystersproject on Facebook.
DAILY, I AM IMPRESSED BY THE TALENT, HARD WORK, AND DIVERSITY OF OUR STAFF. AT A TIME WHEN DIVISIVENESS AND DISCORD ARE SUCH A STRONG THREAD IN OUR CULTURE, I AM INSPIRED TO SEE OUR TEAM COME TOGETHER IN SERVICE OF A MORE SENSIBLY PACIFIC ENVIRONMENT.

PETE MALINOWSKI, Executive Director

OUR CREST

Pete Malinowski
Executive Director

Restoration, Education, and Outreach
Alex Frishkoff
Director of Education

Kate Mosher
Director of Restoration

John Andrewes
Foster Parent and Community Organizer

David Bateman
Science Manager

Bob Buchanan
Field and Community Science (Rolex)

Mia O'Brien
Education Consultant

Nina Reynolds
Professional Wells Manager

Jerome Exarchos
(Through June 2018)

Lia Metzler
Accountant (April 2017)

RebeccaReducer
Government Affairs Manager

Heather Flanders
Digital Learning Specialist

Anita Lueders
Curriculum & Teaching Specialist

Mike Coburn
Resource and Operations Manager

Jennifer Turpin
Mechanical Engineer

Development, Partnerships, and Communications
Laura Rodriquez
Director of Development

Madelena Cuylen
Director of Strategic Projects

Matthew Hakim
Executive Board Chair

Jenelle Billings
Communications Manager

Charlotte Bagley
Chief Collection Manager

Montana Jorgensen
Development Associate

Finance and Operations
Vicky Marvenik
Director of Finance & Administration

Alberto Carreras
(Since May 2018)

Operations Manager

Thom Courtemanche
Office & IT Manager

Jeff McManus
Accountant

NEW YORK HARBOR REVITALIZATION AND REGRASSMENT AUTHORITY

ANNUAL REPORT 2017-2018 BILION OYSTER PROJECT
BILLION OYSTER PARTY
20+ top New York City restaurants and 50+ sustainable oyster farms from across the nation joined Billion Oyster Project to offer oyster sampling, bites from master chefs, premium beverage pairings, and an oyster-farmer vs. chefs All Star Shucking Championship. Billion Oyster Party is a ticketed spring celebration for 1,200 guests.

CELEBRATIONS

BILLION OYSTER PARTY

NEW YORK HARBOR SCHOOL 15TH ANNIVERSARY

This day of celebration recognized the extraordinary achievements of The Urban Assembly New York Harbor School and its students, and honored the school’s founding partners. Proceeds support Harbor School’s seven Career and Technical Education programs, extracurricular programs and activities, and waterfront operations for the 2018–2019 school year.

Founding honorees: The Urban Assembly, NYC Department of Education, United Federation of Teachers, New Visions for Public Schools, South Street Seaport Museum, and Waterkeeper Alliance

Harbor School signing historic MOUs with the United States Coast Guard – Station New York and SUNY Maritime College, allowing opportunities for Harbor School students to study with and job-shadow Coast Guard team members, and sharing educational resources and facilities with SUNY Maritime

Friends and supporters celebrating at The Lighthouse at Chelsea Piers
SPEAKING AT THE UNITED NATIONS ON WORLD OCEANS DAY WAS A BIG MOMENT FOR ME. SEEING ALL THESE IMPORTANT PEOPLE IN ONE BUILDING AND BEING ABLE TO BE PART OF THAT WAS CRAZY, WORKING AS A TEAM.”

ASLY, Billion Oyster Project intern and Harbor School student