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SCUBA & H₂O

A D V E N T U R E



OVER^{the} America



**Billion
Oyster Project**
NY Harbor School



**Whidbey
Island, WA**
Gateway to Paradise



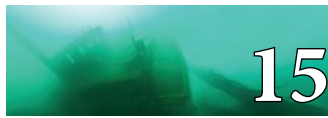
**Woman
Diving Legend**
Zale Parry

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We encourage readers to participate in determining the content of this publication by giving us their opinions on the types of articles they would like to see. We invite letters to the editor, manuscripts and photographs related to diving or dive-related business. Send us your stories and photos!



On the Cover: Isle Royale Charter's "Lake Superior Diver" sits moored over the wreck of the 183-foot steel steamer *America*, near the southern shores of Isle Royale while a diver inspects the bow. She struck a rock reef June 7, 1928.

Image by Cal Kothrade

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DNN Creates Top-notch Team

Dive News Network (DNN) is expanding our commitment to local diving by working with professionals across the country as DNN Correspondents. Local diving is the heart of our sport and we are committed to supporting the local dive community.

In the Southeast, we welcome writing team **Gene Muchanski** and **Dana Politics**. Gene is a 40+ year industry veteran and a former head of NAUI marketing department. Gene is currently the founder/head of the Dive Industry Association and resides in Melbourne, Florida. Dana, a retired Boeing executive, is now a writing partner for Gene.

In the Northeast, we are continuing to work with NEDN correspondent, **Bill Pfeiffer**. Bill is a professional/commercial diver and volunteer fire fighter for the Nesconset Fire Department. Bill continues to travel and write about the northeast dive community.

In addition, we would like to welcome **Pete Nawrocky** to our team. Pete is an industry veteran with more than 40 years' experience. A former field manager for Dive Rite, one of the largest technical diving brands, Pete is a technical diver, and technical dive instructor trainer. Pete is also a principal with Get Out & Dive, a company dedicated to promoting local diving and diver education. Because Pete lives in North Carolina, and travels extensively throughout the southeast and northeast, he will be writing about both territories.

In the Midwest, we continue to work with MWDN correspondent **Cal Kothrade**. Cal is a recreational diver and photographer. He is the founder of Milwaukee Dive Apparel and principle of Milwaukee Underwater Photography Contest. Cal will continue to write about the diving and dive news of the greater Midwest.

In the Northwest, we welcome **Barb Roy** and **Bill Coltart** as NWDN correspondents. Barb is an industry veteran with more than 30 years' experience; dive instructor, technical diver, writer and photojournalist. She also owns a dive shop, Orca Oceanic Diving and Photography in Bellingham, Washington.

Bill Coltart is a dive store owner (Pacific Pro Dive in Courtenay, BC) and dive operator (Marine Adventures) with more than 20 years experience. Bill is a dive instructor, technical dive instructor and instructor trainer and rebreather instructor trainer. Both Barb and Bill are highly regarded in their fields and we welcome them to our team.

In the Southwest, we welcome **William (Bill) Winters** to our team. Bill is a dive master on his way up the ranks. He is an avid local diver who in his real life is a nurse/paramedic and brings a background of public service to his writing. We are excited to have him be a part of our team.

We also continue to work with **Mike Hughes** in the Southwest. A frequent contributor for many years, Hughes is a master Instructor and author of several dive and non-dive books. He live in Las Vegas and as a flight attendant for SW can be found with his feet off the ground.

We are happy to work with this group of highly regarded professionals – they represent the finest in abilities and commitment to local diving. We all want to hear from you! Contact us, or one of our DNN correspondents and share your news. You will find us ready to listen and write about the many adventures that happen both above and below the water.

Happy diving,

Rick



Gene Muchanski



Bill Pfeiffer



Pete Nawrocky



Cal Kothrade



Barb Roy



Bill Coltart



Bill Winters



Mike Hughes



Rick Stratton



The Billion Oyster Project: Rebuilding an Ecosystem with the New York Harbor School

Article & Photos by Michael Salvatore & Christopher P. Weaver
from Eco-Photo Explorers

The dive site, a small inshore stretch of water off Governor's Island in New York Harbor, was not typical. Across the river were the container ship loading docks of Brooklyn, and in the distance was the majestic spire of the Freedom Tower. This bustling waterway is known as the "Buttermilk Channel" and is choked with commercial vessels, ferry boats, Coast Guard ships and other craft.

"Mind the wake!" was the shout from one of the students, which was again repeated, again by others on deck as a particularly large set of boat driven waves began to rock the dive boat and the attached platform.

While the dive site was unique, so was the dive operation. We were here to document the students of New York City's Harbor School as they prepared the seabed for an oyster seeding effort known as the "Billion Oyster Project".

"Diver descending!" shouted one of the dive tenders, a student enrolled in the Harbor School's Professional Diver program.

"Diver on the bottom!" was the next call as the diver in the water reported his status to the surface via an underwater communications system.

"Diver on the move!" yelled the surface support student as soon as the diver reported that he was moving to a different location on the site.

The Billion Oyster Project (BOP) is an effort to reintroduce one billion native oysters to the waters of New York Harbor over the next two decades and, in the process, educate thousands of young people in New York City about the local marine environment. The project is a center of study at the New York Harbor School, a public New York City high school located on Governor's Island close to lower Manhattan. Initiated in 2010 as a pilot program, the BOP now has partnerships with such well-known organizations as the Clinton Global Initiative, Hudson River Foundation, U.S. Army Corps of Engineers, U.S. Department of Agriculture, and many others.

On this day, students were installing metal structures in the water to hold the young oysters in place in the swift currents of New York Harbor. These triangular, prism shaped units are welded together using rebar and are stuffed with

mesh bags filled with oyster cultch. Cultch is used to provide a hard surface for young oysters to attach to. The mesh bags being placed into this structure by the Harbor School students contain shells that already have juvenile oysters growing on them. This stage of the oyster's life is sometimes referred to as spat-on-shell. The plan was to use underwater lift-bags to assist in moving and assembling the structures in the intertidal zones in an effort to create an interlocking linear framework parallel to the shoreline.

Student divers were also retrieving pouches of previously introduced oysters so students on the surface could measure their growth rates.



Reeling in a Record Whopper

In late July, spearfisherman Tim Fiordaliso of Mount Holly, New Jersey caught a massive 33-inch, 14.55-pound summer flounder – also known as a fluke – in Barnaget Light. If accepted by the International Underwater Spearfishing Association (IUSA), Fiordaliso's catch will become the spearfishing world record for that particular fish.

"I saw a decent fluke on a dive [and] decided to make another dive before the current moved me. I made it about 10 feet out and saw a giant sitting on the bottom. I swam up to him carefully, gun pointed the entire time, [and] got over him and aimed for five seconds to ensure I wouldn't miss," the spearfisherman recounts on online forum The Outdoorsmen's Voice. "I didn't even realize what I had shot until I got out and measured him. After deciding to go weigh him at Fisherman's HQ, I really realized I had accomplished something special. I texted a buddy and he said, 'Do not cut that fish up!'"

Well, long story short, pictures taken, documentation now, [and now] all I have to do it my part and submit it."

For a video account of Fiordaliso's accomplishment, visit <http://youtu.be/dIKKIL54HUA>.



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Oysters are first grown in tanks in the school labs

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Eastern Oysters (*Crassostrea virginica*) are considered a keystone species in the waters around New York City. Oyster reefs once covered more than 220,000 acres of estuary and hundreds of miles of shoreline. Historically oysters have played a critical role in the marine ecosystem by enabling continuous water filtration and wave attenuation, and the reefs they built provided habitat for many other marine species. With the arrival of European settlers to the area, oysters became over-harvested and were further decimated by pollution and the urbanization of the local environment. With the levels of pollution now decreasing, the BOP hopes to re-introduce oysters to these waters, with the anticipation of significant and measureable benefits to the local ecosystem.

Oysters are ecosystem engineers: they build reefs in much the same way that corals do. The process works over time as new oysters grow on top of old shells and in this way the reefs are born. These environments provide a home for valuable other native species, such as the Shortnose Sturgeon and the Atlantic sturgeon, both of which were once common in these waters. Oysters also filter the water, which enables greater light penetration through the water column. A single oyster can filter a gallon of water an hour. This can foster the growth of marine plant and animal life dependent upon sunlight. And with growing concerns over the rise in water levels due to climate change, oyster reefs, which can grow at a rate that outpaces the anticipated rise in water levels, can serve as wave attenuators and provide a degree of protection for waterfront development.

The New York Harbor School is one of 581 high schools in New York City, but it is arguably one of the most distinctive. In addition to the traditional curriculum common to all schools in the city, the Harbor School offers specialized studies in various marine fields: ocean engineering, marine systems technology, vessel operations, marine biology research, aquaculture, and professional diving. Tenth grade professional diving students learn to scuba dive, and all graduates from the school are well positioned for further education in these fields or entry-level jobs in a wide variety of capacities. It is the only public high school in the United States that offers a scientific diving program recognized by the American Academy of Underwater Sciences.

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A student is designated as the dive leader for each dive

Student divers preparing to introduce oysters into the water



Students participate in the BOP by jump-starting the natural life cycle of the oysters. This means helping to grow oysters as part of the aquaculture study, studying them in the marine biology research curriculum, reintroducing them to the environment by navigating vessels to the designated areas and through hands-on professional diving education, and by monitoring the oysters using technologies studied in the marine systems technology field.

"How do you engage kids in the local ecosystem?" asks Pete Malinowski, director of the Billion Oyster Project. The New York Harbor School, through its hands-on approach, has supplied one answer to that question.

It has taken the hard work of many dedicated people to get the project off the ground. But after years of preparation, hard work, tireless efforts at fund raising, and the identification of meaningful partners, the first oysters are now being placed into the local waters. In fact, as of mid-2014 the BOP has successfully restored some seven million oysters to local waterways. Indeed, Murray Fisher, founder of the Harbor School, is quick to emphasize. "It takes special people to do this," he explains.

"It's still a science project. We are starting from zero here," admits Malinowski. "We know the oyster larvae can survive. But will they be able to thrive and build the reefs we know used to exist here?"

Everyone involved understands it is not possible to recreate the environment of 400 years ago in these waters. The entire New York area watershed is now developed, and the resultant silt and freshwater runoff from the surrounding areas permanently alters the environment. But the entire team, buoyed by results from similar work in other locations around the country, remains optimistic.

The Harbor School and the Billion Oyster Project are helping to cultivate more than just marine organisms and revived ecosystems. Together, they are inspiring young people to pursue careers in marine sciences and maritime disciplines. They are growing the next generation of divers who approach scuba diving with a sense of purpose and long-term stewardship. And they are demonstrating the efficacy of a new approach to education in today's world.

After surfacing from the first dive of the day, Professional Diver student Kevin Mejia exclaimed, "That was the best dive EVER!"

When pressed to explain why it was such a great dive, he spoke about the surprisingly good visibility of three to four feet and the manageable current. But it was evident that his excitement really came from the simple joy of being under the water and doing something meaningful for the environment.

The vision for the school is to engage the entire student population across all fields of study at the Harbor School in this effort. The vision for the project is to return some of the local ecosystem to its natural state. The benefits for everyone living in this area are potentially huge. ■

For more information on this project, visit the following:

New York Harbor School
www.newyorkharborschool.org

American Academy of Underwater Sciences
www.aaus.org

Billion Oyster Project
www.billionoysterproject.org

Oysters! Channel One News
www.channelone.com/oysters



Director of the Billion Oyster Project Pete Malinowski

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