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## **Constructing a Man-Made Oyster Reef in the Little Hellgate Salt Marsh, Randall's Island, New York: A Project Overview**

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# 2015 GSA Annual Meeting in Baltimore, Maryland, USA (1-4 November 2015)

Paper No. 2-1

Presentation Time: 8:00 AM

## CONSTRUCTING A MAN-MADE OYSTER REEF IN THE LITTLE HELLGATE SALT MARSH, RANDALL'S ISLAND, NEW YORK: A PROJECT OVERVIEW

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Atlantic oyster beds provide instrumental estuarine infrastructure, shaping waterways and mediating the impacts of storm surge. In addition, the reefs provide habitat for numerous species. The oysters themselves are expert filter feeders, remediating poor water quality at little cost to the organism. As the free-swimming oyster larvae (spat) only settle on the shells of their forbears, the reefs are essential in perpetuation of the species, as well as for the continuation of such invaluable ecosystem services. Oyster reefs of the New York City waterway system have long been subject to environmental degradation, from water pollution and sedimentation to dredging. Randall's Island Park Alliance's Natural Areas crew received a donation of six hundred oysters from the New York Harbor School to conduct a test for the viability of a manmade oyster garden in 2014. Three hundred oysters were placed in each cage, which were then established in different parts of Randall's Island Park's Harlem River shoreline. One was hung by the 103<sup>rd</sup> Street footbridge seawall and the other was placed on the seawall by the Little Hellgate Salt Marsh inlet. The cages were monitored monthly for oyster growth and mortality rate, and water quality was tested as well. After a year of monitoring, it was determined that the Little Hellgate Salt Marsh was the ideal site for a man-made oyster reef—oysters had shown significantly more growth and a lower mortality rate than those in the cage at the 103<sup>rd</sup> St. Bridge, most likely due to the protective shape of the salt marsh inlet. The cages that will serve as the reef framework were constructed in the spring of this year and await the placement of oyster shells, which

are being treated and sterilized (completion is projected to be late fall 2015). Future monitoring of oyster colonization and growth are expected, with the aim that water quality will measurably improve.

Session No. 2

Marine/Coastal Science

Sunday, 1 November 2015: 8:00 AM-12:00 PM

Room 342 (Baltimore Convention Center)

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