



Oyster Restoration Genetics Project Update

Cezanne C. Bies | New York Harbor School | March 10, 2015

What is Oyster Restoration Genetics?

The **Oyster Restoration Genetics Project** is a three year comparative analysis of the farm-raised oysters and the native Eastern oyster (*Crassostrea virginica*)



Purpose of study

- Test oyster levels of genetic diversity and heterozygosity by viewing their genomes
- Evaluate which strain has a better growth and mortality rate

Objectives

- To evaluate genetic variation in an aquaculture strain and native Eastern oysters (*Crassostrea virginica*)
- To determine which strains mortality rate in the Hudson River has a better growth rate
- To understand how *Crassostrea virginica* interacts with stressors in its environment

Project Phases




Phase 1




- Mentor Search
- Draft Proposal to M. Gonzalez
- Proposal Review to M. Hare
- Approval of proposal
- Solicit volunteers for project (3 to 5)
- Submit Final Proposal to the NYC Science and Engineering Fair (NYCSEF 2016)

Phase 2



- Daily discussions & project review with partner
- Coordinate with Aquatic Team to grow and incubate oysters
- Collect doz. oysters for each group
- Take specimens and place in tanks
- Breed Oysters

Phase 3



- Transport juvenile oysters from tanks to crates
- Deposit crates into in Hudson River (Areas TBD)



Project Phases

Phase 4



- Water quality, mortality rates, salinity and weather will be surveyed
- Data record will be created for collection of data
- Frequent monitoring of the oysters

Phase 5



- The surviving oysters will be randomly selected for genetic analysis
- Extract, isolate, and analyze wild and cultured oyster DNA
- Submit Final Report and Digital Presentation
- Present findings at the 2016 NYCEF Science Fair



The world's my oyster



... and yours too.

Questions/Comments?

