

UConn

UNIVERSITY OF CONNECTICUT

Department of Marine Sciences

Presents a Seminar by

Matthew Hare

Cornell University

Genetic and Genomic Insights Furthering Oyster Restoration in the Big Apple

When a species is overharvested or otherwise depleted, what determines its ability to recover? Like extinction, population recovery was long considered a strictly demographic phenomenon controlled by birth and death rates in an ecological context. More recently, genetic and evolutionary processes have been recognized as potentially relevant over surprisingly short time scales. This talk will focus on several hypothesized genetic and evolutionary processes potentially constraining oyster restoration in the Hudson/Raritan estuary (HRE) and elsewhere. New York City, in the lower HRE, used to enjoy local populations of the native eastern oyster (*Crassostrea virginica*) but by the late 1800s overfishing, pollution and habitat degradation left only a small remnant population in the marginal low-salinity habitat north of Manhattan. Now, restoration of this ecosystem engineer is expected to help revitalize the urban lower HRE because of the water filtration oysters accomplish as they feed, and the ability of reefs to provide habitat for other species. We measured genetic diversity and relative performance in caged outplants of several oyster strains across the HRE salinity gradient and found similar survival and growth among strains but large heterogeneity among sites. One exception was that the native remnant oysters performed better in their upper-HRE home environment than did the other oyster strains, consistent with local adaptation but possibly due to maternal effects. Unlike the isolated remnant oyster population in the HRE, oysters in most areas experience strong homogenizing gene flow over macrogeographic scales. Local adaptation is only expected at large spatial scales under these conditions, but we will show that local responses to strong estuarine selection gradients can elevate mean population fitness in a dynamic process that may support resilience.

Host: Zosia Baumann

Time & Date: 11:00 am, Friday, November 13, 2020

Please visit this page to request a link to the seminar:

<http://s.uconn.edu/1208uconnmarineseminar>

If you are an individual with a disability and need accommodations, please contact 860-405-9152 or email marinesciencesseminars@uconn.edu.

For cancellations and additional seminar information see: <https://marinesciences.uconn.edu/seminar/seminar1208/>.