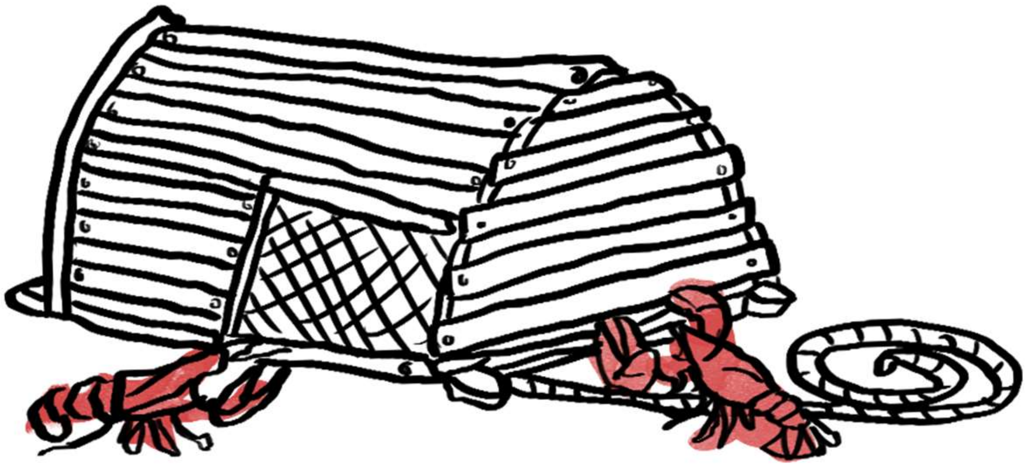
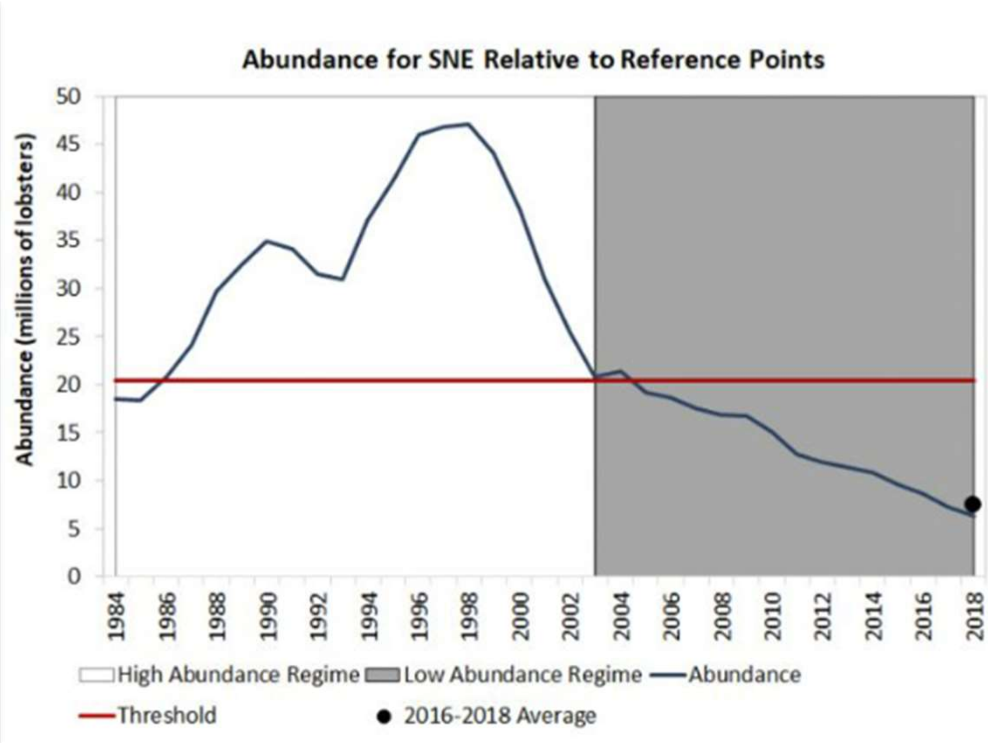


Early Life History of American Lobsters in Coastal Southern New England Waters

Declan McCormick - Dr. Jeremy Collie - Dr. Conor McManus - Dr. Rick Wahle

Southern New England (SNE) Lobster Stock



- SNE lobster stock robust in late 1990s, has declined abruptly
- Combination of fisheries mortality, environmental changes, epizootic shell disease etc.
- Climate warming primary environmental cause (Rheuban et al. 2017)

ASMFC 2020

Recruitment Failure

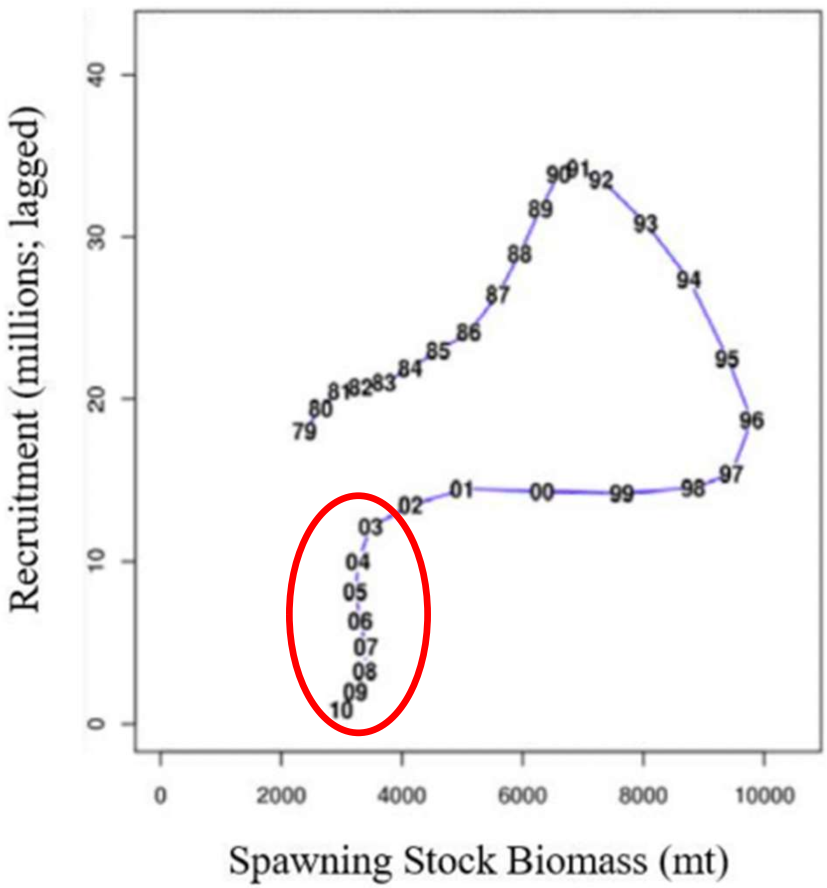


Figure adapted from ASMFC 2017

SNE lobster stock appears to be experiencing recruitment failure

Population bottleneck occurring between egg and recruit stages

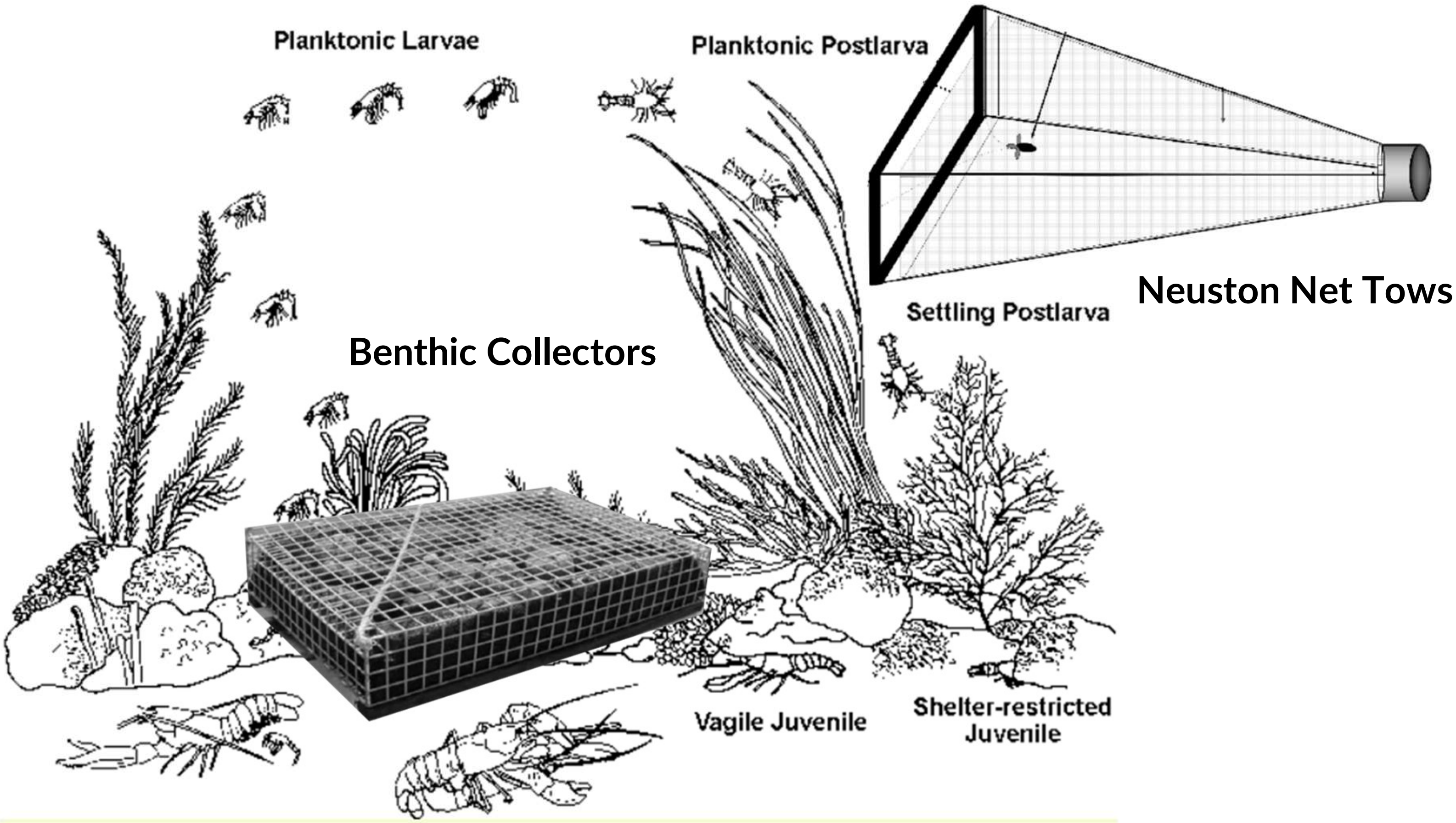
Project Objectives

To understand and quantify the recruitment bottlenecks in the lobster life history

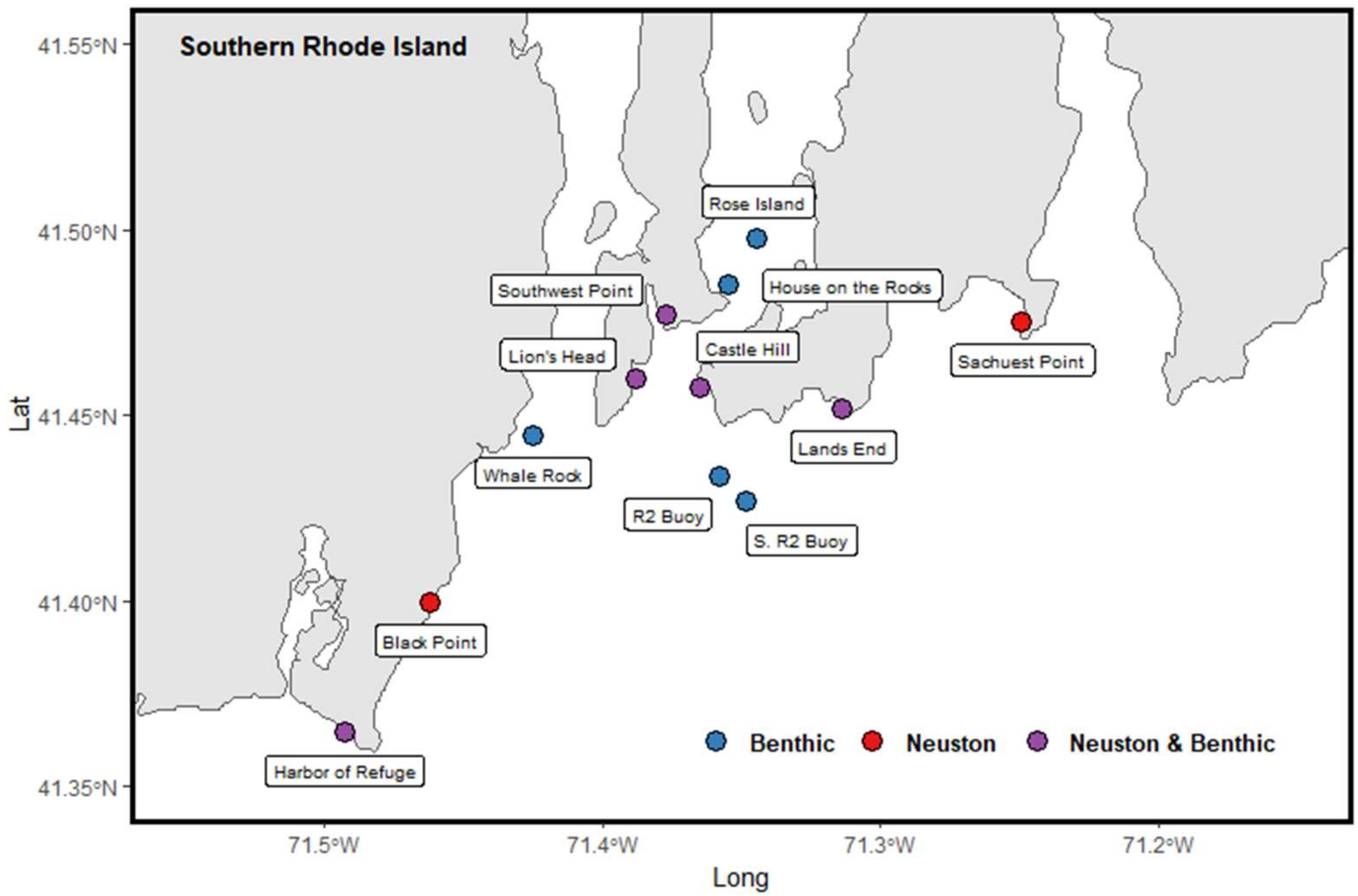
To assess the abundance and spatial distribution of larval and post-settlement lobsters in SNE

To compare observations of abundance and spatial distributions with historical data to observe changes over time

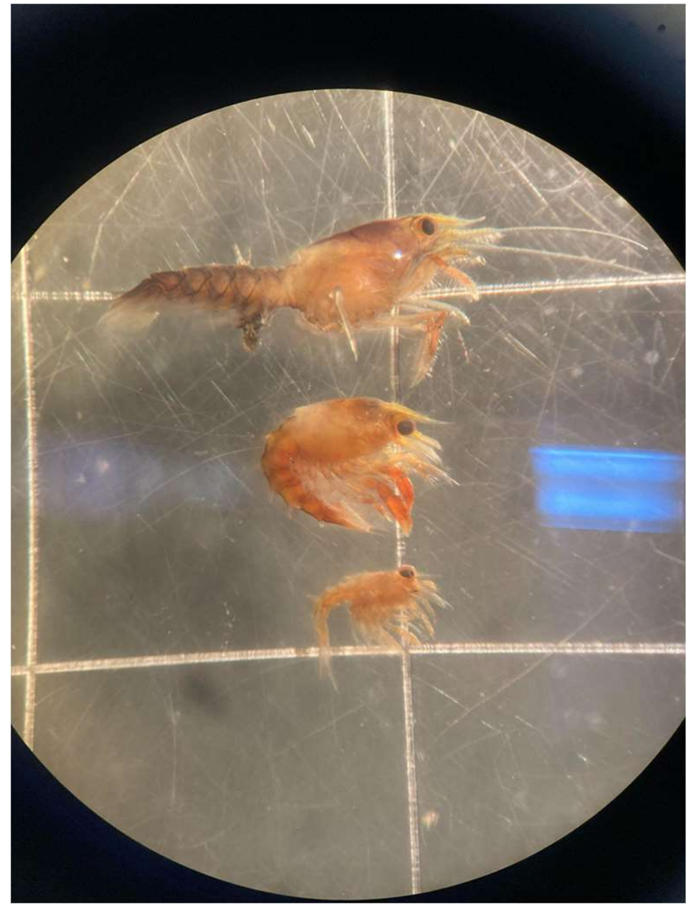
American Lobster Life History Overview



Rhode Island Sampling Sites

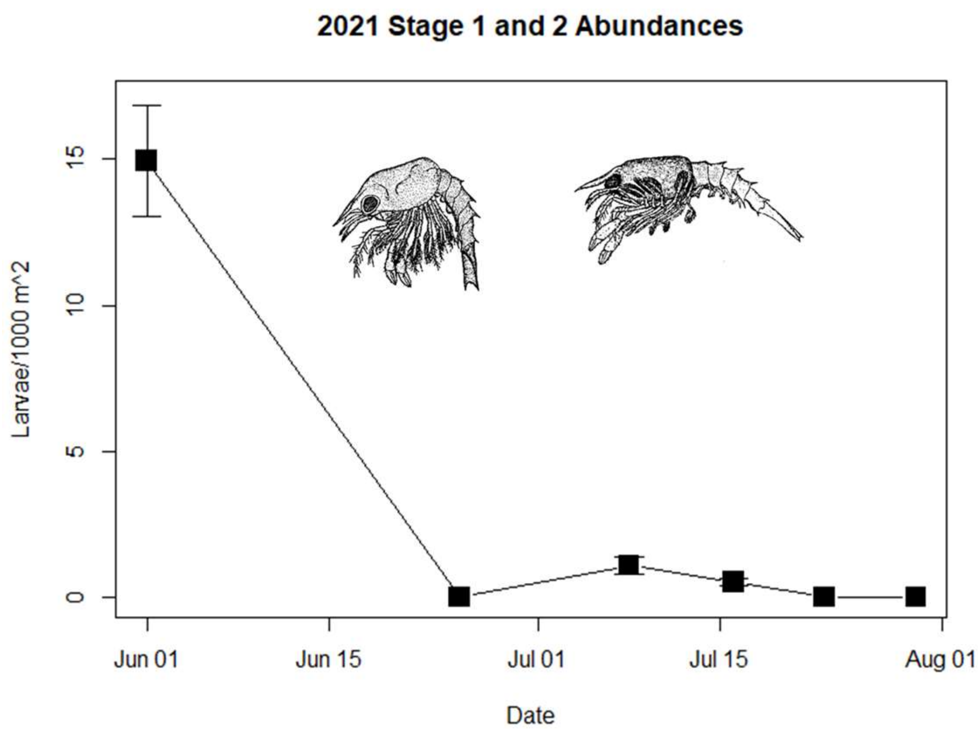


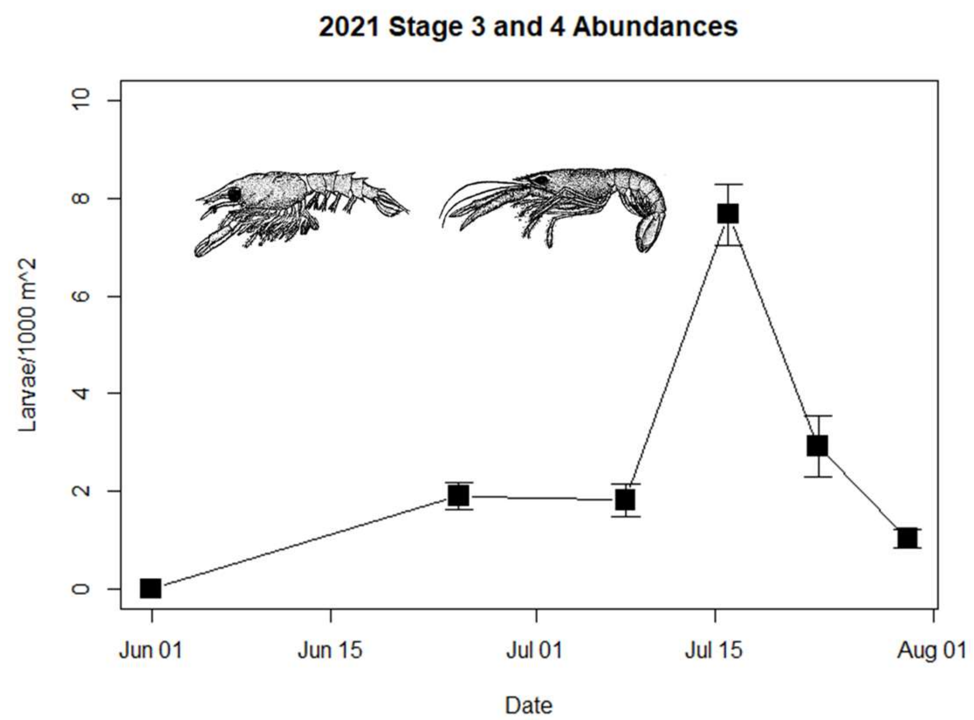
Larval Sampling



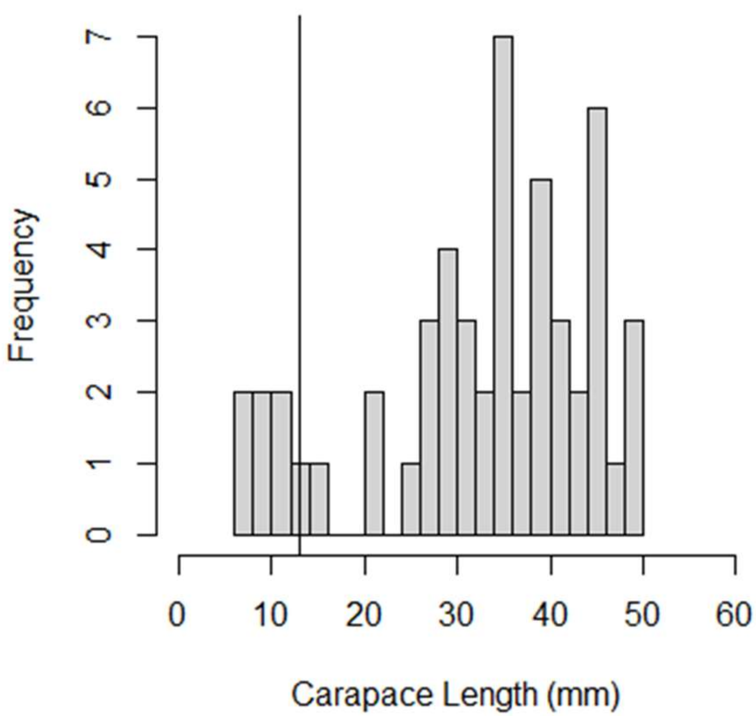
Benthic Sampling

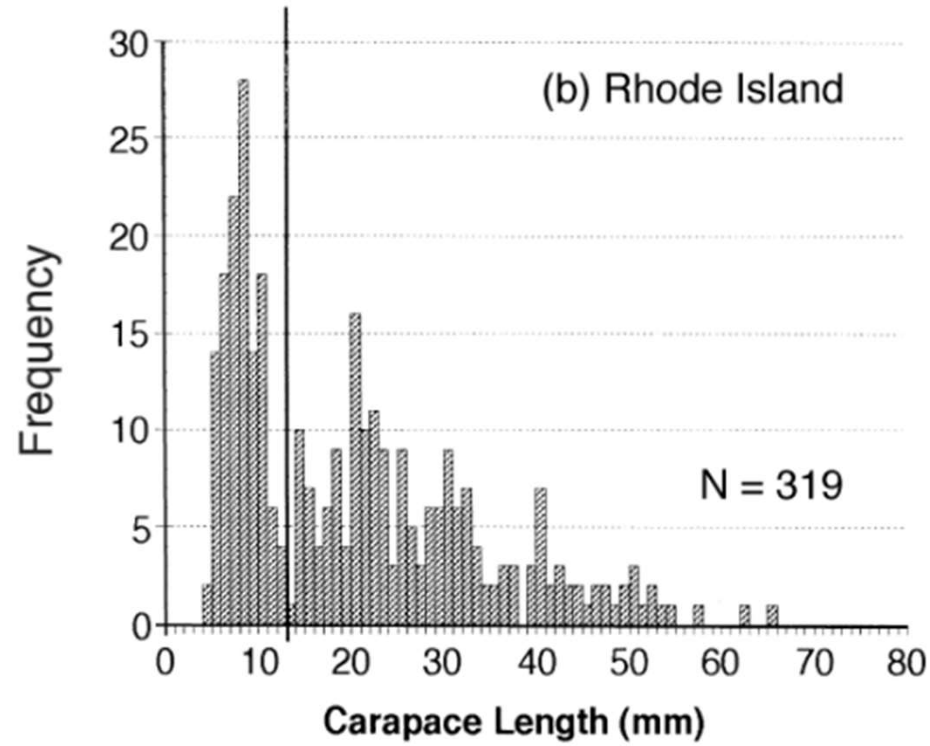
Postlarval Abundances





Young-of-year/Juvenile Abundances

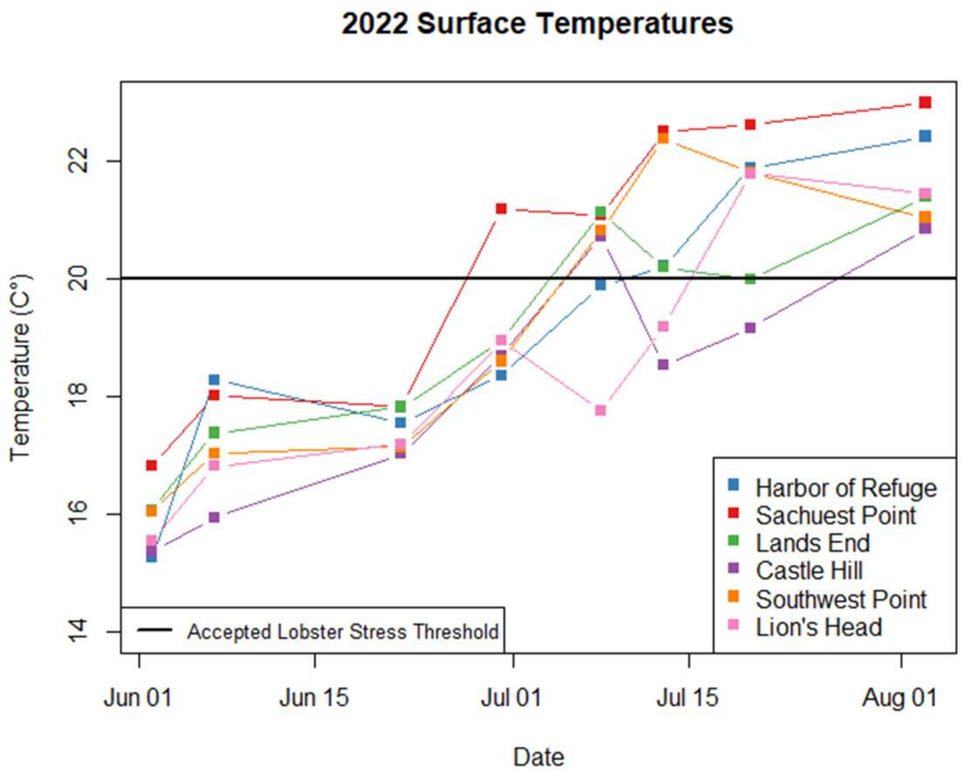


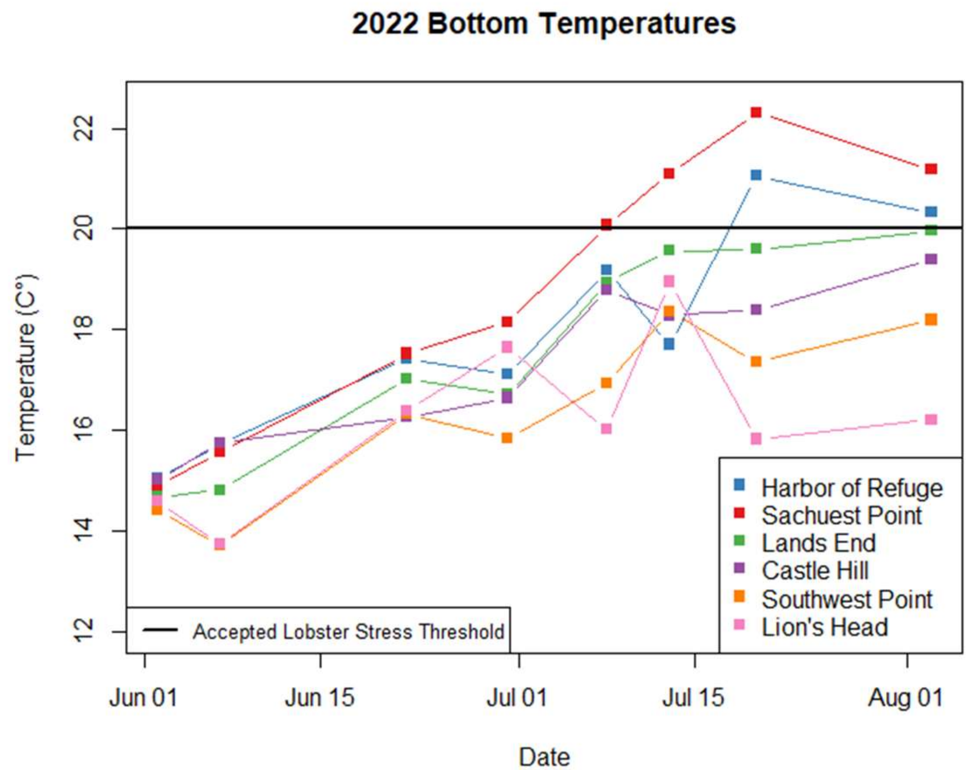


Incze et al. 1997

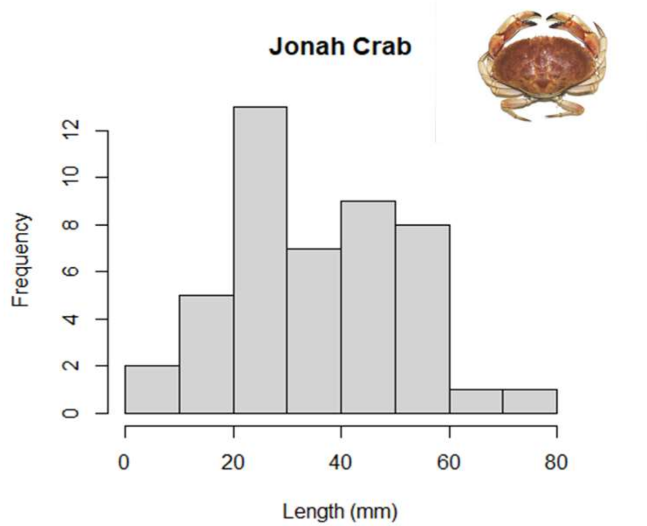
RIDEM Seasonal Sampling

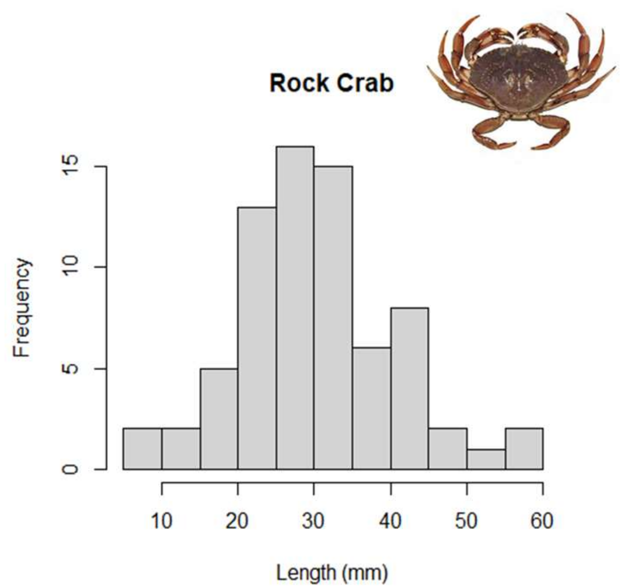
Climate Data

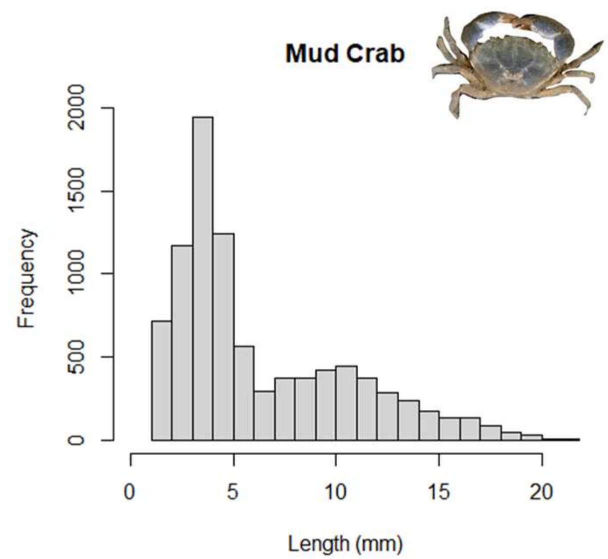




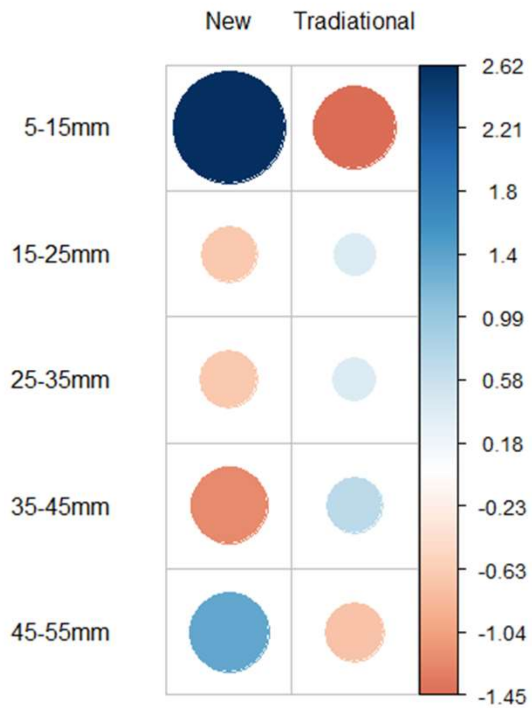
Additional Benthic Species



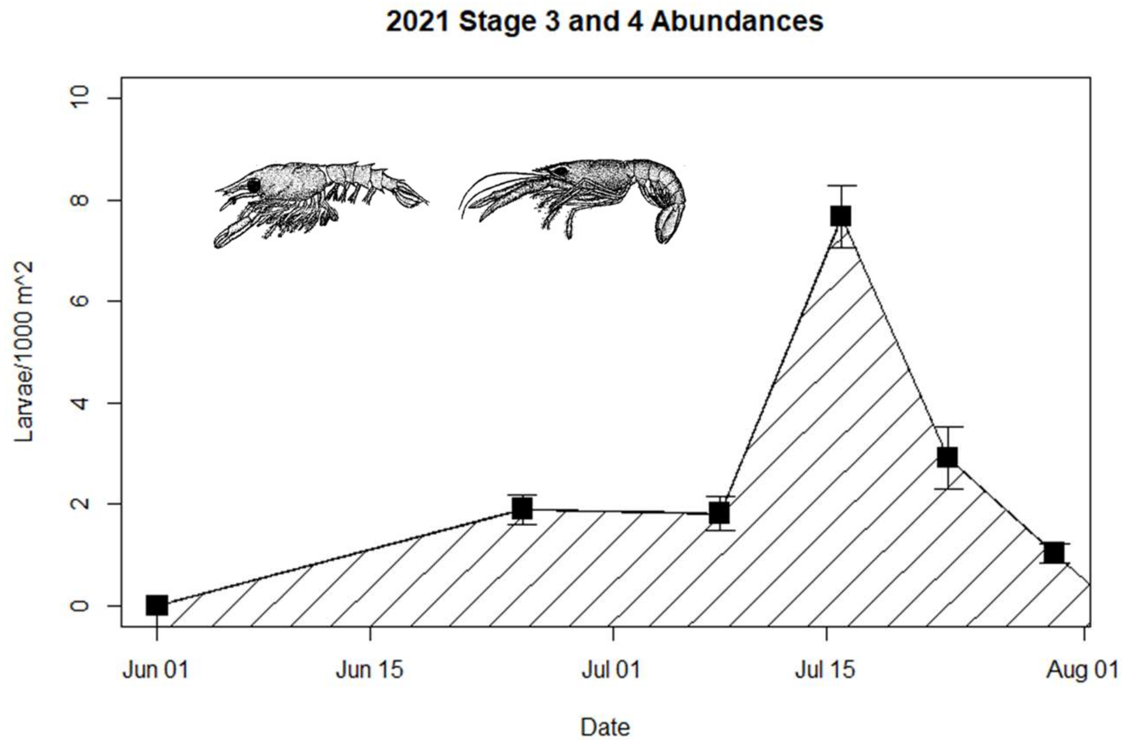




Future Directions - Continue Exploring the Data



2-way Chi-squared residual plot for New vs. Traditional Trap Type



Potentially fit polynomial equation and integrate under the curve

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Questions?