

Rapid Assessment of Southern New England and New York

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Rapid Assessment Surveys



Photos: J. Pederson

- Purpose: identify non-native, cryptogenic and native species on floating pontoons from Maine to New York
- Taxonomic experts identify macroalgae and macroinvertebrates in the field, confirm in the lab
- Mentor graduate and undergraduate students, some are not “experts”
- Communicate findings with managers, policy makers, and stakeholders to prevent and take management actions to mitigate impacts
- Started in 2000, conducted surveys every 3-4 years and is the longest (or one of the longest), most consistent surveys in the US.

Map of locations

Revisited 6 of ten sites last visited in 2003



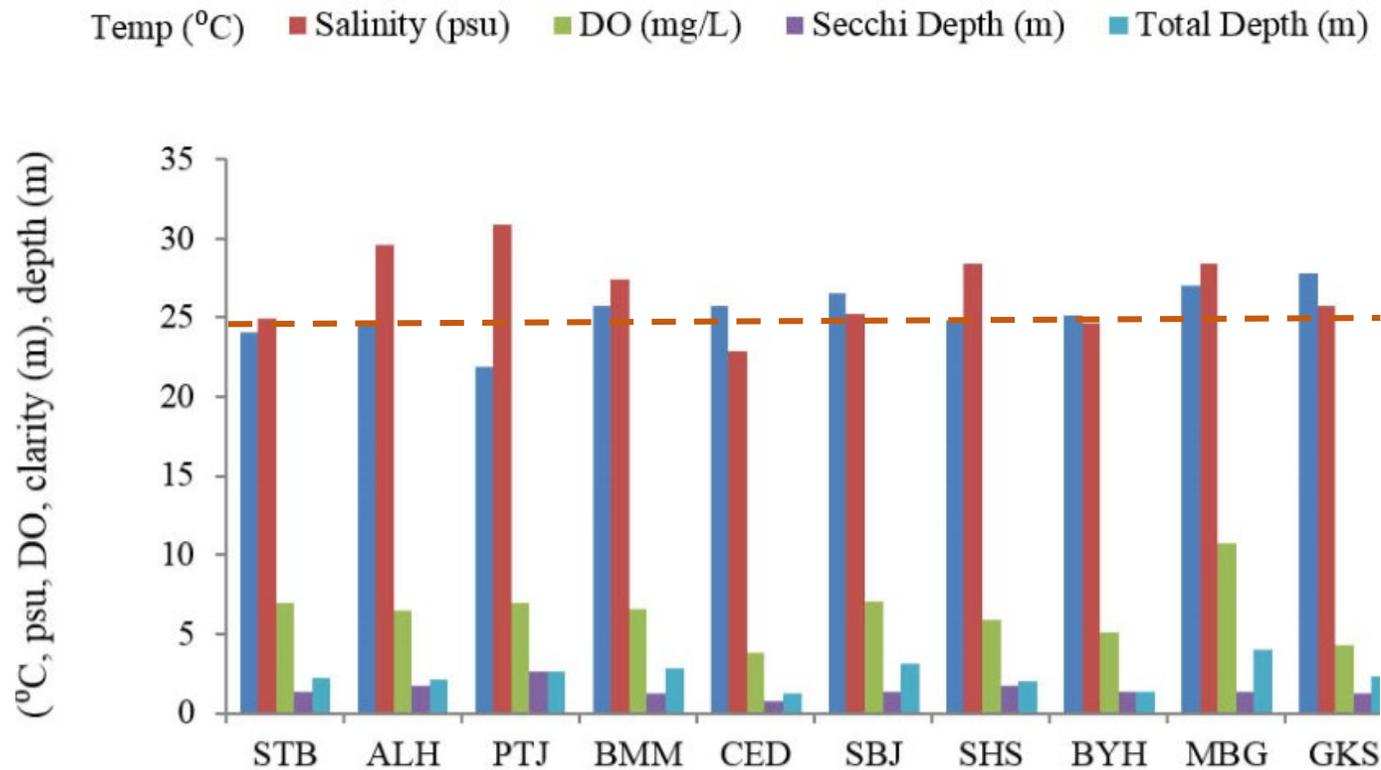
Photo: J. Pederson



Environmental data



Photo: J. Pederson

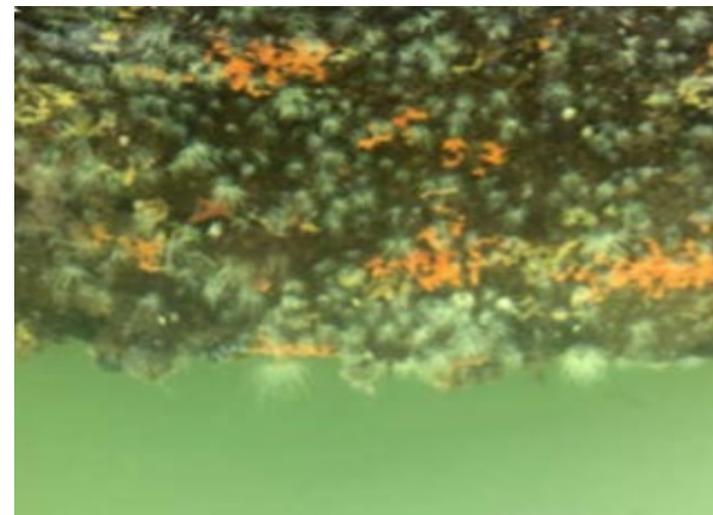


Salinity is lower than in more northern areas

Lower salinities are within the suitable habitat for Chinese mitten crab

Highlights of the survey

- 21 Non-native species
 - Present 70% or more of the locations, 3 ascidians,
 - 1 crab, 1 anemone



Diadumene lineata
Photo: J. Carlton

- 22 Cryptogenic species
- 2 Range expanding species
 - Sea anemone and barnacle



Pink-spotted anemone,
Aiptasiogeton eruptaurantia
Photo: M. McCuller

First appearance in LIS/NYC

- Southern Atlantic U.S. barnacle *Amphibalanus subalbidus*
- Atlantic U.S. sea anemone *Aiptasiogeton eruptaurantia*
- Asian bryozoan *Tricellaria inopinata* was found on Long Island
- Asian amphipod *Grandidierella japonica* Stephensen, 1938.

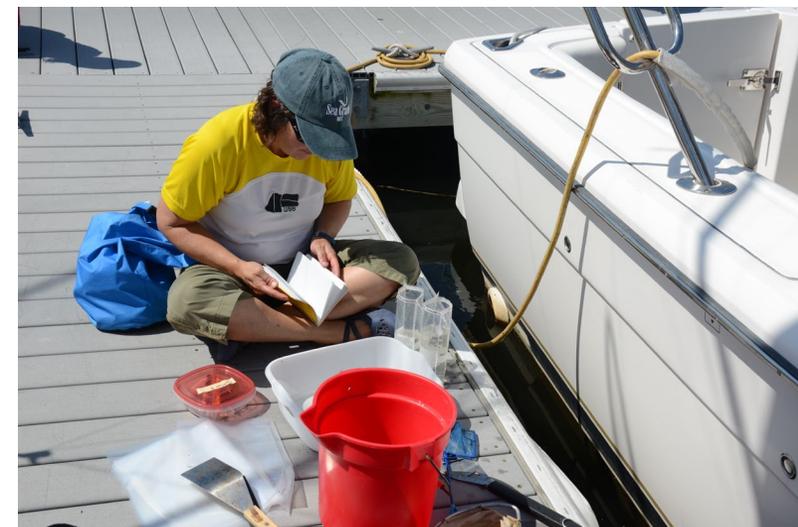


Photo: J. Pederson

Observations



Oriental Shrimp
Palaemon macrodactylus



Photos: J. Pederson, E. Runnels, J. Carlton



Native, Polychaete
Hydroides dianthus



Non-native Bryozoan, *Bugula neritina*

Chinese mitten crab seen in Rhode Island!



Photo: J. Pederson

Differences in 16 years

- Although present in Narragansett Bay in past we did not find *Didemnum vexillum* (tunicate) in this survey
- Temperatures were slightly higher in 2019 than 2003, but not significantly different
- Surface dissolved oxygen at two or three sites were associated with lower diversity
- Genetic investigations have reclassified several species: *Ciona intestinalis* (vase tunicate) is once again non-native; *Botryllus schlosseri* (star tunicate) is both native and non-native, and a non-native haploid of a hydroid was found in Long Island Sound. This suggests that there is coastal exchange and continued new invasions of species already present.

2019 Rapid Assessment Survey of marine bioinvasions of southern New England and New York, USA, with an overview of new records and range expansions

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