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Can we Predict the Spread of Introduced Crabs? A Citizen Scientist Initiative: Marine Invasive Species Monitoring Organization (CSI MISMO)

Predicting the spread of non-native organisms in the oceans is difficult. Usually there is not enough data on the introduced species over a large enough geographic scale and for a long enough time to develop and test mathematical models. Collecting adequate data takes many people working together to identify a particular species and accurately record information. This project seeks to demonstrate that a large group of people working together can collect enough scientifically valid data for predicting the spread of recently introduced non-native crab species.

This project is designed to accomplish two goals. Firstly, it aims to train and validate the efforts of citizen scientists to collect data, and secondly, the data will be used to develop an invasion probability model for two crab species. European green crab (*Carcinus maenas*) and Asian shore crab (*Hemigrapsus sanguineus*) were selected as study organisms, because they have long temporal and large spatial scales and both possibly colonized the same initial state, New Jersey. Although the spread model will focus on well established invaders, the approaches developed for *C. maenas* and *H. sanguineus* could be extended to other marine invaders, such as mollusks, fish, echinoderms, tunicates, and other crustaceans.

The data, collected by citizens of seven states and presented through the link below, shows the abundance of male and female Asian shore and European green crabs. It also presents an absolute measure of the native crabs found in the same habitat. Early analysis depicts differences in the distribution of these crabs in their northern and southern ranges.

Crab Data

For more information about the project and how you can become involved by monitoring and/or contributing data, please visit the website: www.InvasiveTracers.com

Or contact the organizer of the project:

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The CSI MISMO project has been made possible through the contributions of many people and

organizations. Click here for [acknowledgements](#).

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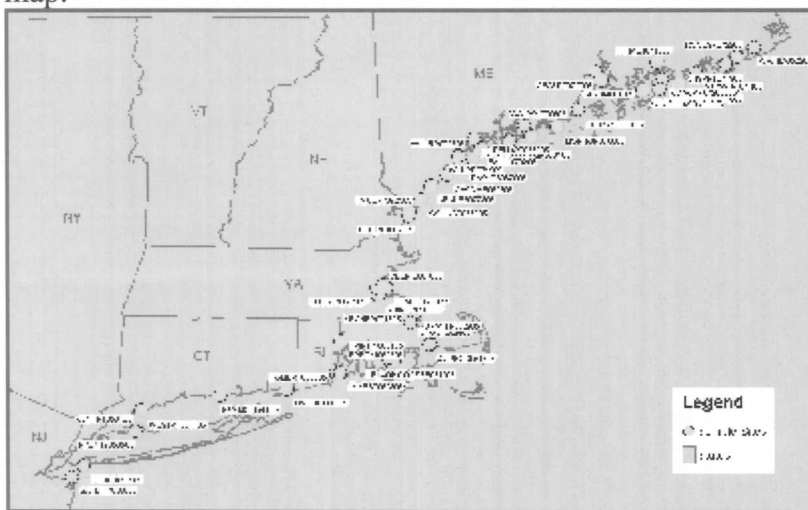
Crab Data

The data collected by the [CSI MISMO](#) project through July 19, 2005 is summarized in the following maps. The data have been summarized to show only the species of interest - the Asian crabs (male and female) and the Green crabs.

NEW: The maps have been updated (9/14/2005) with new data collected during summer, 2005.

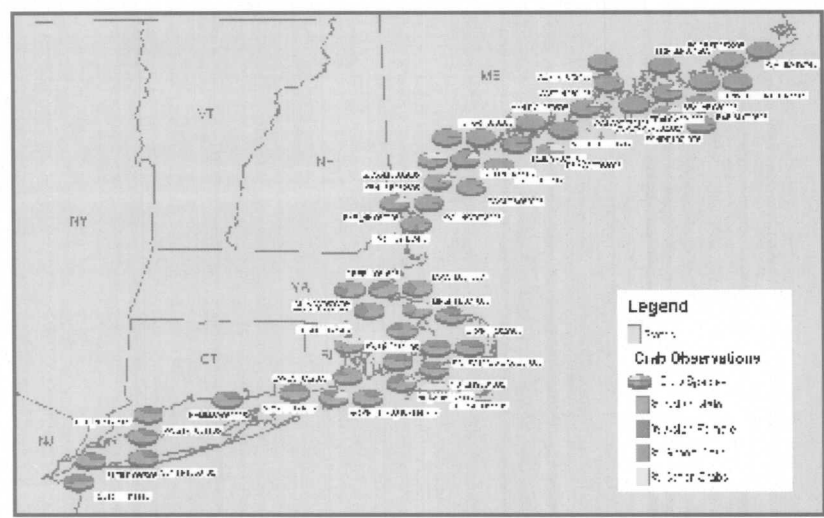
Map of Sample Locations

This map shows the locations sampled to date, labeled with the site codes. Click image for full-size map.



Map of Crab Species Charts

This map shows pie charts of the relative quantities of Asian (M & F), Green and Other crabs at each location. Charts are labeled with the site code, but may or may not be placed directly on the site location, to prevent overlap. Click image for full-size map.



Map of Species and Numbers Charts

This map shows the pie charts with relative numbers of each species as in the previous map. In addition, the size of the pie charts is scaled to represent the relative total number of crabs at each site. Click image for full-size map.

