

State Researchers Find New Non-Native Invasive Species

Discovery of first European marine shrimp in North America highlights value of marine survey

BOSTON - August 19, 2010 - A team of 20 scientists led by the Massachusetts Office of Coastal Zone Management (CZM) and the Massachusetts Institute of Technology (MIT) Sea Grant College Program working in Salem last month discovered the first European shrimp to appear in North American waters.

The discovery was made during a four-day Massachusetts survey - part of a seven-day day effort to collect, identify and catalogue marine organisms in coastal waters from Cape Cod through Maine's mid-coast. The team scoured docks and piers along the Massachusetts coast from Cape Cod to Cape Ann from July 26 through July 30, searching for and identifying non-native marine species.

"This information is vital to the improved understanding and protection of our marine ecosystems and natural resources because control of established species is difficult. Improving prevention is the real key to protecting our bays, beaches and estuaries from invasive species," said Energy and Environmental Affairs Secretary Ian Bowles, whose office includes CZM.

CZM and MIT Sea Grant, a research program of the National Oceanic and Atmospheric Administration (NOAA), inspected permanently floating docks and rocky shores in Westport, New Bedford, Sandwich, Bourne, Plymouth, Boston, Salem and Gloucester. Goals of the study include developing a baseline inventory of marine species, identifying species recently introduced to local ecosystems and helping natural resource managers prevent and control future invasions of non-native species. Surveys in 2000, 2003 and 2007, revealed over 30 introduced marine organisms, several of which were identified for the first time in New England coastal waters.

"Global shipping is considered one of the most significant sources for the spread of non-native species into local waters," said Deerin Babb-Brott, EEA Assistant Secretary for Ocean and Coastal Zone Management and CZM Director. "This rapid assessment survey helps us to identify problem areas so we get to work on finding solutions to prevent the spread of these invasive species."

The shrimp were discovered on July 31 in Salem's Hawthorne Cove Marina while scientists were searching for another invader, an Asian shrimp recently discovered in Long Island Sound. The European shrimp, known as *Palaemon elegans*, which is edible, can reach 2½ inches in length. On August 9, a team of scientists returned to Salem and found a large population, collecting over 70 shrimp at Hawthorne and at nearby Palmer's Cove Yacht Club.

"This is a major discovery," said Dr. James T. Carlton, Director of the Williams College - Mystic Seaport Maritime Studies Program, and a survey participant. "This is a well-known and well-studied shrimp in Europe, which will help us make predictions as to what the impact of this species may be in America."

Known as the "Rock Pool Prawn" in England, *Palaemon elegans* is a carnivore, consuming large numbers of smaller crustaceans. Recent studies in Sweden revealed that this shrimp can eat so many smaller animals that green algae growth is no longer controlled, and the increased mass of algae in turn may smother eelgrass beds, according to Dr. Carlton.

A probable source for the shrimp introduction is the release of ballast water from commercial overseas vessels from Europe, according to Dr. Judith Pederson, of the MIT Sea Grant Program, one of the survey leaders who emphasized

the need for monitoring potential sources of new invasions.

"It is exactly these types of much-needed surveys that permit us to detect new invaders and launch studies to understand what effects they may have," said Dr. Pederson.

In New England coastal waters, the European green crab and Asian shore crab prey on commercially valuable native shellfish, while other invasive species damage piers and pilings, clog pipes and cause public health problems through disease and pathogens. Of particular concern is recent discovery of the fast-growing sea squirt *Didemnum vexillum* on the highly productive shellfish beds of Georges Bank. With the potential to cover the sea floor like a mat, this species threatens to impact scallop fishing.

Other organizations participating and providing funds and support the survey include the Massachusetts Bays Program, Casco Bay Estuary Partnership, Northeast Aquatic Nuisance Species Panel, Piscataqua Region Estuaries Partnership, Narragansett Bay Estuary Program, and Rhode Island Bays, Rivers, and Watersheds Coordination Team. Scientists participating in the project include CZM staff and researchers hailing from The Netherlands, Brazil and across the United States.