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Today's Globe Opinion

Invasion of the sea squirts The Boston Globe Creatures' growth explosion may threaten native marine life

Science

By Carolyn Y. Johnson, Globe Staff | May 19, 2005

If you look closely, you can see it -- a thin layer of glistening, gelatinous goop forming on rocks and docks along the New England coast. It's the beginning of a crop of creatures known to scientists as a species of the genus Didemnum, but commonly called sea squirts, or, more descriptively, "alien vomit."

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By next month the invasion of the sea squirts is expected to be well underway. The cream-colored rubbery glaze will bubble out to form pale, warty blooms or squid-like tendrils, growing underwater on anything that sits still.

This particular brand of invasive sea squirt is new to New England researchers, and is still largely shrouded in mystery. No one knows for sure where it came from, or what its presence portends. But based on early observations, researchers worry it could endanger local shellfish and fish populations, crowd out other species, or signal larger environmental problems.

"This is so new, people are still trying to figure out what to do," said Mary Carman, a research associate at Woods Hole Oceanographic Institution. She said she began to study the creature seven years ago after she led kids into a Sandwich tidal pool and they discovered it was teeming with what they said looked like peanut butter or macaroni.

Carman traces the growth explosion of the Didemnum squirts (there are other, less problematic varieties previously identified) to the 1980s, when "something happened to the environment, to the climate. Nitrogen levels grew to an all-time high. Algae blooms and algae growth are increasing. We're in a rapid warming trend," she said. "Is it just coincidental?"

While scientists poke and prod at the organism and study its larvae under a microscope, local shellfishermen are already fighting a war against the creatures.

These sea squirts have been found smothering mussels along Cape Cod, forming walls of choking jellyballs on oyster nets in Duxbury, and, in 2002, splotching a 40-square-mile patch of the ocean floor on Georges Bank, a vital offshore fishing ground. They have been found all along the New England coast, from Long Island Sound almost to the tip of Maine. They are multiplying in other parts

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of the world as well.

Seth Garfield has farmed oysters on Cuttyhunk Island for 24 years, and blames sea squirts -- likely the Didemnum -- for the loss of a third of his crop this year. Colonies of sea squirts grow on the outside of his nets, forming a rubbery wall that slowly suffocates and starves the oysters by blocking water flow and filtering out all the food and oxygen.

Garfield said his labor costs have increased over the past five years, as this single form of sea squirt has crowded off the other native sea squirts and seaweeds around Cuttyhunk, which sits between Buzzards Bay and Vineyard Sound. This season his staff will spend hours dragging the nets -- each loaded with about 70 pounds of squirts, also known as tunicates -- out of the water to clear the infestation every few weeks. *Continued...*

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