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Cobscook Bay

Invasive Sea Squirt Could Threaten Fishing Industry

Eastport — Scientists participating in a survey of marine invasives this month say one of the invasives identified in the bay — the tunicate, or sea squirt (Didemnum sp.) — could pose a threat to the commercial fishing industry that makes up a large portion of the region's economy.

Didemnum sp. was first documented on the East Coast of the United States in the 1970s when it was discovered in the Damariscotta River. Its presence there is widely believed to be the byproduct of importing Japanese oysters for aquaculture.

In recent years, Didemnum sp. has spread rapidly offshore along the bottom of Georges Banks, increasing its coverage from six to 40 square miles in just a short time.

Because this fouling species can severely alter the marine habitats it invades, commercial fishing, aquaculture and other marine commercial activities could be at risk.

"Didemnum sp. basically takes over by covering everything and there is the potential that it could smother mussels and scallops," said Larry Harris, a professor at the Center for Marine Biology at the University of New Hampshire, and a participant in the Cobscook Bay survey.

The Rapid Assessment for Marine Invasives in Cobscook Bay was organized by The Nature Conservancy and Cornell University with the local help of Maine Sea Grant and Cobscook Bay Resource Center and additional support from the Maine State Planning Office and the Maine Department of Marine Resources. Nearly 20 marine biologists from around the country took part in the project, which was designed to assess the size of the marine invasives problem in the region and potential threats.

A colony of the tunicate genus Didemnum encrusts pebble habitat and a sea scallop five inches in diameter in northern Georges Bank.

Earlier this month, researchers study Cobscook Bay marine plants as they inventory non-native invasives in the cold Washington County waters.

Photo Courtesy of USGS & Louis Torrieri

The extent to which Didemnum sp. has spread within Cobscook Bay is still unknown and will require more investigation to determine.

While the researchers agree that its presence is cause for alarm, Harris said the cold temperatures of the waters in the bay may be the best natural defense against the invasive species.

“The waters of Cobscook and Passamaquoddy bays are very cold and that could help to prevent many things, including Didemnum sp., from becoming a real threat in this region,” Harris said.

A local fisherman made the initial sighting of Didemnum sp., noticing something unusual that came up in a fishing drag in the area. He mentioned the unusual “pancake batter” material to Harris who then confirmed the presence of the Didemnum sp. in Cobscook Bay.

“The people who work the bay every day are the people who are most affected by the health of the marine ecosystem. They are also the people who know this bay the best and we will continue to rely on them to keep their eyes open and to let scientists know what they are seeing,” said Barbara Vickery, director of conservation programs at The Nature Conservancy in Maine.

Robin Hadlock Seeley of Cornell University, who, along with Vickery, organized the survey, said one goal of the Cobscook Rapid Assessment was to determine whether such a survey could be organized and funded locally rather than relying on larger regional projects funded by federal agencies.

“We hope that the local approach to funding and supporting rapid assessment surveys we are trying out in Cobscook Bay could be used elsewhere in Maine by other communities who want to find out what invasive species are present locally and what level of ecological and economic threat these species pose,” Seeley said.

In addition to Didemnum sp., researchers identified four to six other non-native species, none of which were abundant or pose a particular threat to the area. By contrast, 28 non-native species were present in 2003 during the Rapid Assessment Survey of Casco Bay in southern Maine.

“The good news is that there were so few introduced species in Cobscook Bay,” said Judy Pederson, coastal resources specialist and manager at the MIT Sea Grant Center for Coastal Resources, who also cited the cold conditions of Cobscook Bay as a natural defense against invasive.

“But now we need to figure out how we can prevent them from coming in, particularly as conditions keep warming,” Pederson said.

Pederson, Harris and other researchers involved in the assessment are considered to be experts in the field of marine invasives and have participated in similar projects in Maine and around the world.

Another of the experts involved in the assessment, James Carlton, director of the Maritime Studies Program of Williams College and Mystic Seaport, said the threat and potential harm caused by invasive species is one of the major problems facing ocean conservation efforts worldwide.

“No coastline is immune. But what we have seen here in Cobscook Bay are mostly native species and nothing like some of the problems we’ve seen further south,” Carlton said.

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