Warming drives off Cape Cod's namesake, other fish

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(AP) -- Fishermen have known for years that they've had to steam farther and farther from shore to find the cod, haddock and winter flounder that typically fill dinner plates in New England.

A new federal study documenting the warming waters of the North Atlantic confirms that they're right - and that the typical meal could eventually change to the Atlantic croaker, red hake and summer flounder normally found to the south.

"Fishermen are businessmen, so if they have to go farther and deeper to catch the fish that we like to eat, eventually it won't be economical to do that," said Janet Nye, a fishery biologist with the National Oceanic and Atmospheric Administration and the lead author of the study.

"It just won't be in your local seafood store, or maybe it'll be more expensive," said Nye, who works at the Northeast Fisheries Science Center in Woods Hole, Mass. "So I think there'll be a natural, hopefully slow, switch to different seafoods."

For the study, which first appeared Oct. 30 in the journal Marine Ecology Progress Series, Nye and three other NOAA biologists analyzed water temperature trends from North Carolina to the Canadian border off Maine from 1968 to 2007. They then looked at fish survey data collected each spring and assessed where the fish were caught and how abundant they were.

The researchers looked at the familiar New England species. as well as lesser-known fish such as longhorn sculpin and blackbelly rosefish.

Of the 36 stocks studied, the distribution range of 24 of them had changed in unison with the rising water temperatures that have been occurring off the Northeast since the 1970s.

That temperature rise doesn't sound like much - less than half a degree Fahrenheit, on average - but it's been enough to cause fish to slowly move to areas with temperatures more to their liking.

The greatest movement was exhibited by the blackbelly rosefish, which moved more than 200 miles to the northeast during the years studied. Among commercial species, movements of more than 100 miles were observed for southern stocks of yellowtail flounder and red hake, as well as American shad and alewives.

Some fish exhibited little movement to the north, but rather moved to deeper waters where temperatures are lower, according to the report.

Small-boat fishermen on Cape Cod caught most of their haddock and flounder, as well as the peninsula's namesake fish, in waters close to shore 20 years ago, said Tom Dempsey, of the Cape Cod Commercial Hook Fishermen's Association. Nowadays, they have to travel as far 100 miles offshore to find those same fish, he said.

At the same time, he said, Massachusetts fishermen are catching more fish traditionally found in the Middle Atlantic - Atlantic croaker, in particular, usually caught off Virginia and North Carolina.

"How much of that is directly impacted by climate change is hard to get a handle on," Dempsey said. "There are a number of other factors that have been at play, one being overharvesting in inshore areas and,

subsequently, ecological changes as inshore areas have become dominated in a lot of areas by spiny dogfish populations."

The study is one piece of the puzzle in figuring out the factors that influence ocean species, said Jason Link, a NOAA fisheries biologist and a co-author of the study. While the report says climate change is the driving factor, he said, other influences - such as fishing pressure and long-term natural cycles in ocean temperatures and atmospheric conditions - play a role.

"We're looking at how much of this movement to colder waters is perhaps related to the environment as opposed to how much is due to fishing," he said. "I don't think this paper totally answers that question."

While the report documents the movement of fish in the Northeast and the Middle Atlantic, there's evidence to suggest that marine organisms in southern U.S. waters are also moving north, said Jay Odell, a marine specialist with The Nature Conservancy in Richmond, Va.

Sea turtles that normally nest on beaches in North Carolina and south have been nesting in Virginia and Maryland in recent years, he said, possibly because of rising water temperatures.

"One of the messages of this paper is that tracking why some fish are doing well and some aren't, and why fish are moving, is a very complicated business," Odell said.