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NOAA Reports Fall 2007 Plankton Bloom Failed to Develop on Georges Bank *No Fall Bloom Could Mean Fewer Haddock*

The fall 2007 plankton bloom failed to develop on Georges Bank, one of the region's most productive marine habitats, possibly reducing the amount of haddock in the area, according to NOAA's spring ecosystem advisory for the northeast U.S. Continental Shelf.

NOAA also found a long-term warming trend continues in some areas of the shelf, possibly causing the lack of plankton.

The advisories are issued twice yearly, in the spring and fall, by the Northeast Fisheries Science Center's Office of Marine Ecosystem Studies. The spring 2008 Ecosystem Advisory reports conditions from the fall of 2007.

"Despite year to year variations, long-term trends in sea surface temperature show that New England shelf waters are warming, and that can have major effects on the marine life on Georges Bank and other areas of the region," said Kevin Friedland, who coordinates the advisory program. "Information about the abundance of plankton and zooplankton is important to both fishery biologists and fishery managers as they look to apply an ecosystem approach to fisheries management."

The fall plankton bloom was of average intensity and magnitude in the Gulf of Maine region, but did not develop on Georges Bank, which is important since phytoplankton fuels the base of the food chain. Friedland said recent research suggests that the fall bloom on Georges Bank contributes to the pattern of recruitment of Georges Bank haddock. No fall bloom could mean fewer haddock the following year.

The spring bloom is a regular feature on Georges Bank, but the fall bloom is less well understood. In the past ten years, fall blooms have failed to develop in roughly one in three years, and it is not clear why.

The advisory provides a summary of trends in sea surface temperature (SST), primary productivity, and zooplankton productivity. The current advisory also includes information on dominant zooplankton species on Georges Bank, long-term changes in SST, and trends in fish sizes in the various subregions of the northeast U.S. Continental Shelf.

While long-term trends indicate SST warming, sea surface temperature was cooler in 2007 as compared with the overall trend of recent years, though it varied by subregion within the ecosystem.

The temperature trend is significant since most fish are cold-blooded and temperature affects every aspect of their lives, from how much they eat and how fast they grow to where they live. Fisheries scientists are already seeing changes in growth rates and shifts in distribution northward for many species as the waters continue to warm.

Long-term trends in SST show that the Northeast U.S. Continental Shelf ecosystem is warming, especially in the Gulf of Maine, Georges Bank, and southern New England subregions. The Middle Atlantic Bight (the area of the U.S. East Coast and continental shelf between Cape Cod, Mass., and Cape Hatteras, N.C.) does not show the same overall warming trend largely due to a continuing trend of cool winter conditions.

“The advisory is a snapshot of conditions on the northeast U.S. Continental Shelf over the past two seasons, similar to a slowly developing weather forecast,” Friedland said. “It provides information about a variety of factors that can be useful to people who live and work in the region and manage the ecosystem.”

On the Web:

2008 Spring Advisory: <http://www.nefsc.noaa.gov/omes/OMES/spring2008/advisory.html>

OMES website: <http://www.nefsc.noaa.gov/omes/OMES/>

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