

RESEARCH HIGHLIGHTS



November
1991

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The Northeast Fisheries Science Center's *Research Highlights* is a news bulletin on selected Center research findings. News write-ups focus on practical applications and implications of those findings to fisheries resource and habitat management. A name and telephone number have been included at the end of each write-up to contact for detailed information. Names of organisms follow--to the extent possible--the lists of scientific and common names of fishes, mollusks, and decapod crustaceans published by the American Fisheries Society. Any mention of trade names does not imply endorsement. *Research Highlights* is produced by the NEFSC Information Services Unit with the assistance of the Center's scientific staff.

Northeast Fisheries Science Center

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Autumn Bottom Trawl Survey Conducted; Cartilaginous Fish Dominate; Fishermen's Report Available

The Center's autumn 1991 bottom trawl survey of the Northeast Continental Shelf showed a continuing dominance of cartilaginous fish. Catches of spiny dogfish and fish in the survey's "other" category (largely other sharks, skates, and rays) comprised 71 percent by weight of the survey's total catch. Catches of the three "traditional" groundfish species (Atlantic cod, haddock, and yellowtail flounder) comprised only four percent of the total. Even the four-percent value is misleadingly high for U.S. fishermen -- most of these traditional groundfish were caught well into Canadian waters (western Scotian Shelf).

The 1991 survey sampled fish and invertebrate populations during September 9 - October 24 at 354 sites on the continental shelf between the western Scotian Shelf and Cape Hatteras. A *Fishermen's Report* is available on the location, catch, and bottom temperature at each sampling site.

Contact Linda I. Despres-Patanjo, FTS 840-1346 or (508) 548-5123.

NOTE: In looking over the Fishermen's Reports of autumn bottom trawl surveys conducted in the 1960s and 1970s, it is interesting to note that the charts depicting the locations and sizes of haddock catches routinely did not include any catches less than 20 kilograms (44 pounds) because the "dots" depicting those catches would have been so numerous that they would have "blotted out" much of the chart. In the 1991 autumn bottom trawl survey, the total catch of haddock in U.S. waters was exactly 44 pounds!

Abundance and By-Catch of Harbor Porpoise Higher than Previously Thought; Scientific Report Available

Based on preliminary analyses, both the abundance of harbor porpoise in the Northeast, and the by-catch of this species in the region's sink gillnet fishery, are higher than previously thought.

During summer 1991, NEFSC scientists counted harbor porpoises during a 40-day survey of the Gulf of Maine - Bay of Fundy region. Depending on certain assumptions, the point estimate of harbor porpoise abundance would be roughly 45,000 or 66,000 animals. There is considerable uncertainty in this estimate, but it is much higher than the 3,500-animal estimate contained in the NMFS's just-released "First Annual Report on the Status of U.S. Living Marine Resources." Improvements are now being made in analytical methods to increase the accuracy and precision of this population estimate.

Based on data gathered during 1989-91 by NEFSC agents at fishing ports in the Northeast, and by NEFSC contractors aboard sink gillnet vessels in the region, about 1,250 harbor porpoises are accidentally killed (by-catch) each year by the sink gillnet fishery. Again, there is considerable uncertainty in this estimate, but it is higher than the previous 730-animal estimate for the combined by-catch of the American and Canadian sink gillnet fisheries.

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A report on "Preliminary Estimates of Harbor Porpoise Abundance and By-Catch" (*Northeast Fisheries Science Center Reference Document 91-04*) is available.

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1991 Small-Mesh Fishery for Silver Hake Nets Few Nontarget Regulated Species

The 1991 small-mesh (2.5-inch or larger) trawl fishery for silver hake (whiting), which took place on the Cultivator Shoals portion of Georges Bank during June 27 - October 31, appears to have caught few nontarget "regulated" species. The fishery, in its fourth year, is conducted in an area otherwise limited to large-mesh (5.5-inch or larger) trawls by the Northeast Multispecies Fishery Management Plan in order to conserve small/young groundfish (Atlantic cod, yellowtail flounder, etc.). A major premise of the small-mesh fishery is that because of its specific location and timing, few of the plan-regulated groundfishes will be caught. This seems to be the case with the 1991 fishery, as it was also with the 1988-90 fisheries.

Statistics collected by sea samplers on six trips by vessels participating in this year's small-mesh fishery give an estimate of 80.5 percent of the catch in the fishery being whiting. Last year's fishery gave an estimate of 72.5 percent being whiting. The catch of other species on the sea-sampled trips in this year's fishery was dominated by red hake, skates, and Atlantic herring.

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Aquacultural Feed Changes Fatty Acid Profile of Striped Bass X White Bass Hybrids

We have analyzed the fatty acid composition of aquacultured striped bass X white bass hybrids. As has happened with other aquacultured organisms, the substitution in the diet of vegetable feeds for natural foods has raised the levels of omega-6 fatty acids in the edible portion of these hybrids, and concomitantly lowered the levels of omega-3 fatty acids. The latter are purported to be beneficial in the prevention of heart disease.

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Rare Fish Caught by Commercial Fisherman Near Hudson Canyon

A longnose chimaera (*Harriotta raleighana*) has been caught. The 45-inch long specimen was captured at a depth of about 650 feet near Hudson Canyon by the fishing vessel *Miss Judith* out of Point Judith, Rhode Island. This species, which normally lives along the bottom at depths greater than 2,000 feet, is rarely captured. The vessel's master, 'Skip' O'Leary, has donated it to Harvard University's Museum of Comparative Zoology.

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