

# RESEARCH HIGHLIGHTS



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1994

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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.

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### Cartilaginous Fishes Still Dominate Finfish Biomass

The Northeast's three "principal" cartilaginous fishes -- spiny dogfish, little skate, and winter skate -- accounted for 71 percent (by weight) of the total catch of the Northeast Fisheries Science Center's spring 1994 bottom trawl survey of the Northeast U.S. Shelf Ecosystem. The Northeast's three "traditional" groundfishes -- Atlantic cod, haddock, and yellowtail flounder -- accounted for only three percent of the survey catch. This lopsided biomass ratio (24:1) in favor of the principal cartilaginous fishes continues and deepens a trend of recent years.

As indicated in the May-June 1993 issue of *Research Highlights*, because of the ecosystem's "highly networked" food web, as traditional groundfishes have been fished down, their ecological niches have been quickly and easily filled by similarly-sized, less-heavily-fished, cartilaginous competitors. Fisheries managers are currently trying to rebuild depleted populations of the traditional groundfishes by incrementally reducing fishing mortality on these species in the next few years. An "ecological measurement" of the success of these rebuilding efforts will be the aforementioned biomass ratio; if it's going down, then the ecosystem is "probably" headed in the right direction.

The spring 1994 survey used the NOAA fisheries research vessel *Delaware II* to sample 345 sites between Cape Hatteras, North Carolina, and the western Scotian Shelf, Nova Scotia, during February 28 - April 27. A *Fishermen's Report* on each site's location, catch, and environmental conditions is available upon request. Free subscriptions to all issues (spring and autumn bottom trawl surveys, sea scallop surveys, and Atlantic surfclam - ocean quahog surveys) are also available.

**Contact Barbara Lewis, (508) 548-5123x281,  
for copies/subscriptions of the *Fishermen's Report*  
Contact Steven A. Murawski, (508) 548-5123x303,  
for more information on ecological aspects of Northeast fisheries**

### Catch & Release of Small Striped Bass Yields High Survival

Small striped bass (11-22 inches in total length) living in saltwater appear to survive well after having been caught and released by anglers. This is the preliminary conclusion from a controlled fishing experiment with 1,000 small stripers kept in a 5-acre saltwater pond in Salem, Massachusetts. Fishery scientists from the Northeast Fisheries Science Center and the Massachusetts Division of Marine Fisheries cooperated in the experiment.

Where the fish was hooked, how deeply the fish was hooked, what type of fishing gear was used, and how much experience the angler had, were all important factors in determining long-term survival of small stripers. Under the best conditions, survival was 98 percent for two months after being caught

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and released. Under the worst conditions, it was 74 percent. Under average conditions, it was 90 percent. These survival rates are generally much higher than those reported for freshwater stripers.

Contact R. Anne Richards, (508) 548-5123x357

### **PCBs Shown Capable of Harming Young Eastern Oysters**

For the first time, polychlorinated biphenyls (PCBs) have been shown to be capable of harming early life stages -- from fertilized egg to larva -- of the eastern oyster. This finding comes from a laboratory experiment by the Northeast Fisheries Science Center which looked at the individual and interactive effects on early-life-stage oysters of PCBs (Aroclor 1254) and two petroleum hydrocarbons (benzene and naphthalene) under various naturally occurring temperature and salinity conditions. Depending upon the chemicals, their doses, and the temperature and salinity, mortality was 100 percent in some cases.

Contact Sheila Stiles, (203) 783-4224

### **Shark Tagging Newsletter Describes High-seas Longlining**

The most recent issue (1993 summary and spring 1994 update) of *The Shark Tagger* -- the newsletter of the NMFS Cooperative Shark Tagging Program -- provides a firsthand description of current high-seas commercial longlining operations. The description covers U.S., Canadian, Spanish, and Japanese longliners operating in the Sargasso Sea, off Newfoundland, in the central North Atlantic, and off Tasmania. In addition, the newsletter: (1) summarizes the 31-year history of the tagging program; (2) details the 546 recaptured animals in 1993; (3) notes the new use of tags with satellite transmitters; and (4) provides informative accounts of tiger shark growth, nurse shark mating, and sandbar shark ecology.

*The Shark Tagger* is distributed semiannually to participants in the NMFS Cooperative Shark Tagging Program.

Contact Jack Casey, (401) 782-3200,  
if you are a fisherman who would like to participate in the program

### **NOAA's Marine Life Posters Reprinted**

NOAA has reprinted all nine of its exceptionally popular marine life posters. First printed in the 1970s, the large, display-size posters cover: (1) North Atlantic fishes, (2) Gulf and South Atlantic fishes, (3) North Pacific fishes, (4)

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California Current fishes, (5) Great Lakes fishes, (6) mollusks and crustaceans, (7) sea turtles, (8) marine mammals, and (9) pinnipeds.

The Northeast Fisheries Science Center still has available a limited number of free copies of posters #1, #6, #7, #8, and #9 for distribution to U.S. educational organizations (*e.g.*, school biology classrooms) and for public display (*e.g.*, retail seafood markets) in the United States. Requests for free copies must be written on organizational letterhead, state the intended use of the poster(s), and be addressed to: Teri Frady, National Marine Fisheries Service, 166 Water St, Woods Hole, MA 02543. Other organizations and individuals wanting to purchase a copy of one or more posters should call Posters International toll free at (800) 228-5066.

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