

Fishery Management Council Appointments Announced

Appointments to serve on the eight Regional Fishery Management Councils have been announced by U.S. Department of Commerce Secretary Malcolm Baldrige. The appointments are for 3-year terms which began 11 August 1985.

Named to the Caribbean Fishery Management Council was Stephen A. Monsanto, Auditor, Post Audit Division, Virgin Islands' Legislature, St. Thomas, V.I. The Caribbean at large seat appointment was to be announced at a later date.

Members reappointed to the Gulf of Mexico Fishery Management Council were Walter W. Fondren, III, Fondren Foundation, Houston, Tex.; Dayton M. Graham, President, Deep Sea Foods, Inc., Graham Charter Fishing, Inc., and Deep Sea Boat Builders, Inc., Bayou La Batre, Ala.; Alex M. Jernigan, former Council Chairman, consulting engineer, Islamorada, Fla.; and Sherman L. Muths, Jr., attorney, Gulfport, Miss. The newly appointed member is "Tee John" Mialjevich, Jr., commercial shrimper, Delcambre, La.

South Atlantic Fishery Management Council members reappointed were Allen F. Branch, past Chairman and Vice Chairman of the Council, owner and operator of marinas and fish camps, Midway, Ga.; and Gregory S. McIntosh, Jr., President, McIntosh Marine, Inc., Ft. Lauderdale, Fla. New members are Elaine W. Knight, General Manager, Knight Seafood, Brunswick, Ga.; and Ernest A. Carl, Deputy Secretary, North Carolina Department of Natural Resources and Community Development, Chapel Hill, N.C.

Appointed to the Mid-Atlantic Fishery Management Council were John H. Burger, President, Burger Construction Co., Dover, Del.; Alex B. Carlson, Jr., founder, Carlson's Fisheries, Manasquan,

N.J.; H. R. Humphreys, Jr., Chairman of the Board and CEO, Standard Products Co., Inc., Kilmarnock, Va.; and Frances E. Puskas, part owner, Barne-gat Light Yacht Basin and Viking Village Fishing Dock, Barne-gat Light, N.J.

Appointed to the New England Fishery Management Council were Patrick L. Carroll, III, Chairman "Bunker Boat Committee", Fairfield, Conn.; James Costakes, General Manager, Seafood Producers Association, New Bedford, Mass.; Gail Johnson, joint owner, swordfish vessel, South Harpell, Maine; Lester B. Smith, President, Lester Smith Color Productions, Natick, Mass.; Robert D. Smith, Liaison for Regulatory Affairs, Point Judith Fishermen's Cooperative Association, Inc., Narragansett, R.I.

Appointed to the North Pacific Fishery Management Council were James O. Campbell, President, Alaska Division, Spenard Builders Supply, Inc., Anchorage, Alaska; Oscar Dyson, commercial fisherman, Kodiak, Alaska; Rudy A. Peterson, commercial fisherman, Seattle, Wash.

Appointed to the Pacific Fishery Management Council were David N. Danbom, commercial fisherman, Moss Landing, Calif.; Allan L. Kelly, Executive Director, Oregon Wildlife Heritage Foundation, Portland, Ore.; Jerry L. Thomas, Vice President, Eureka Fisheries, Inc., Fields Landing, Calif.; William F. Yallup, Chairman, Fish and Wildlife Committee, Yakima Indian Nation, Toppenish, Wash.

Appointed to the Western Pacific Fishery Management Council were Louis K. Agard, Jr., commercial fisherman, Honolulu, Hawaii; Roy P. Duenas, General Manager, Port Authority of Guam, Piti, Guam; Melvin D. Makaiwi, part owner, Star of the Sea Fisheries, Inc., Pago Pago, American

Samoa.

The eight Fishery Management Councils were established in 1976 when Congress passed the Magnuson Fishery Conservation and Management Act. The Councils prepare plans to manage the marine resources out to 200 miles off the United States' coastline beyond state waters. The members appointed by the U.S. Commerce Department Secretary are selected from names submitted by the state governors. Council members also include representatives from each state marine resource department, the U.S. Coast Guard, U.S. Fish and Wildlife Service, U.S. Department of State, Marine Fisheries Commissions, and the National Marine Fisheries Service Regional Directors.

NOAA Establishes Estuarine Office

The National Oceanic and Atmospheric Administration (NOAA) has established the Estuarine Programs Office (EPO) to coordinate estuarine research and monitoring among NOAA, other Federal and state agencies, and research institutions. The EPO director is John B. Pearce.

Pearce said U.S. estuaries have undergone dramatic changes in the past century. New estuarine-related science, technology, and productivity have benefited the environment, but the consequences of progress and change have caused serious problems in the estuarine ecosystems, he said.

These problems include decreased water quality, declines in fishery catch, near extinction of some species, and loss of protective, spawning, feeding, and nursery habitats. The EPO will function as an advocate for long-term commitment to the restoration, protection, and conservation of living marine resources and fisheries habitats.

Initially, the EPO concentrated its activities in Buzzards Bay, Long Island Sound, Narragansett Bay, Puget Sound, and the Chesapeake Bay. It has inter-agency agreements with the Environmental Protection Agency, other Federal agencies, coastal states, and academic institutions to encourage development of

estuarine study plans.

The office has held several estuarine seminars for scientists and managers to identify important issues for study in Narragansett Bay, Delaware Bay, and Long Island Sound. EPO's plan to study the Chesapeake Bay includes observing living marine resources, improving fisheries statistics from data acquired by bay-wide sources, and evaluating effects of oxygen depletion on marine life. Pearce said, "Through these coordinated efforts, the Chesapeake Bay and all of our estuaries will be restored, protected, and used appropriately for our society and future generations."

Fishing Pressure Grows on Atlantic Cod Stocks

More Atlantic cod, *Gadus morhua*, are landed in the New England groundfish fishery than any other two groundfish species combined. Cod landings during 1980-83 averaged 51,000 metric tons (t), or 112 million pounds, annually, the highest for any 4-year period in this century. In 1984, however, U.S. landings from the Georges Bank and the Gulf of Maine cod stocks declined to 43,600 t (96 million pounds), 14 percent less than in 1983, and the lowest annual catch since 1979.

NMFS Northeast Fisheries Center scientists expected landings to decline further in 1985. Analyses of commercial fishery and research vessel information indicated that fishing mortality on both cod stocks had markedly increased and was at near-record high levels. The number of days fished for cod by the U.S. otter trawl fleet reached historically high levels in both stock areas during 1984 (Fig. 1). While fishing effort was increasing, the abundance of cod (catch per day fished for trips in which cod comprised 50 percent or more of the trip weight) declined by 30 percent on Georges Bank and by 35 percent in the Gulf of Maine from 1983 levels.

The estimate of abundance for the Georges Bank stock in 1984 was the lowest since 1965 (when such records were first kept) while the estimate of abundance in the Gulf of Maine for 1984 was the third lowest observed and lower

than any value since 1983. NEFC research vessel survey data showed comparable trends. The estimates of abundance from such research data for both stocks in 1984 were among the lowest ever obtained.

Since 1981, fishing mortality on cod has doubled on Georges Bank and has increased fourfold in the Gulf of Maine. In both stocks, recent fishing mortality rates are the highest in over 20 years, exceeding even those observed when foreign fleets were exploiting the New England cod stocks in the mid-1960's. The current levels of fishing mortality are much in excess of the levels which would produce the maximum yield.

Although abundance of scrod cod on Georges Bank will improve in 1985 due to recruitment of an above-average year class of cod hatched in 1983, the abundance of this year class is not as strong as those produced in 1971, 1975, and 1980 which contributed to large increases in commercial landings.

The recent increases in fishing pressure on the New England cod stocks have resulted from increased efforts directed specifically toward cod as other

groundfish resources (haddock, redfish, yellowtail flounder) have declined. Should fishing pressure remain at current levels, further declines in cod abundance are anticipated.

Foreign Fish Harvest Below 5-Year Average in U.S. 200-Mile FCZ

Foreign nations caught more fish in 1984 within the U.S. 200-mile fishery conservation zone than in the year before but less than the average for the preceding 5 years, according to the Commerce Department's National Oceanic and Atmospheric Administration (NOAA). NOAA's National Marine Fisheries Service said foreign countries harvested 3 billion pounds of fish and shellfish, compared with 2.9 billion pounds in 1983, a 4 percent increase.

However, the harvest was 11 percent below the average for the preceding 5 years—3.4 billion pounds. Meanwhile, the U.S. share of fish taken from the conservation zone increased. It hit 50 percent of all fish taken last year, up from 47 percent in 1983, and the highest since the 200-mile fishery conservation zone was established in 1977. In the late 1970's U.S. fishermen were harvesting only about one-third of all the fish taken from the fishery conservation zone.

U.S. fishermen landed 6.4 billion pounds of edible and industrial fish and shellfish, down slightly from 1983, but close to the record domestic landings of 6.5 billion pounds in 1980. About 2.9 billion pounds were caught in the fishery conservation zone.

Joint-venture harvests by American fishermen, who sell their catches at sea to foreign processing vessels, continued upward in 1984. Last year almost 1.5 billion pounds of fish, valued at \$79 billion, were loaded onto foreign vessels. This represents a substantial increase over 1983 when American joint ventures sold 959 million pounds of fish worth \$51.2 million. Japan continued to be the leading harvester in the U.S. fishery conservation zone, catching 2.1 billion pounds, or 69 percent of the foreign total. South Korea, with 605

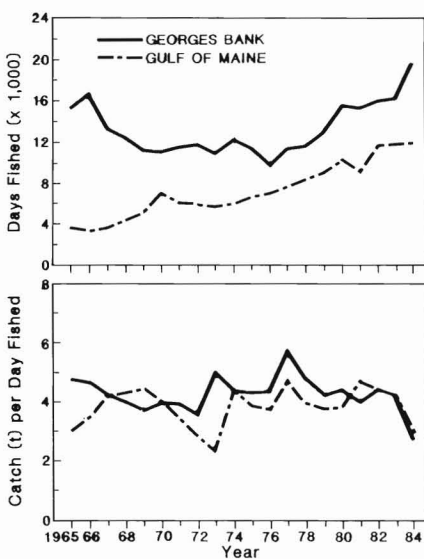


Figure 1.—U.S. otter trawl effort (thousands of days fished) and catch per unit of effort (t/day fished) for Atlantic cod from Georges Bank and the Gulf of Maine, 1965-84.

million pounds, 20 percent of the catch, was second. Other foreign fishing fleets included those from Canada, Spain, and

Italy. About 97 percent of the total foreign fish harvested was taken from the Gulf of Alaska and the Eastern

Bering Sea. Less than 100 million pounds were taken by foreign fishing vessels from the Northwest Atlantic.

Sea Scallops Decline; Fishing Patterns Shift

Preliminary 1984 commercial sea scallop landings data indicate that the total 1984 scallop catch (U.S. and Canada) from the Georges Bank, Mid-Atlantic, and Gulf of Maine regions declined to 9.900 metric tons (t) (meats), the lowest annual harvest in 10 years. Georges Bank landings in 1984 (4,800 t) were the lowest since 1948, with the U.S. catch the lowest since 1976 and the Canadian catch the lowest since 1958 (Fig. 1). U.S. 1984 landings from the Mid-Atlantic (4,000 t) increased 24 percent from 1983 while U.S. Gulf of Maine landings (800 t) declined 11 percent from 1983.

For the first time in 5 years, more

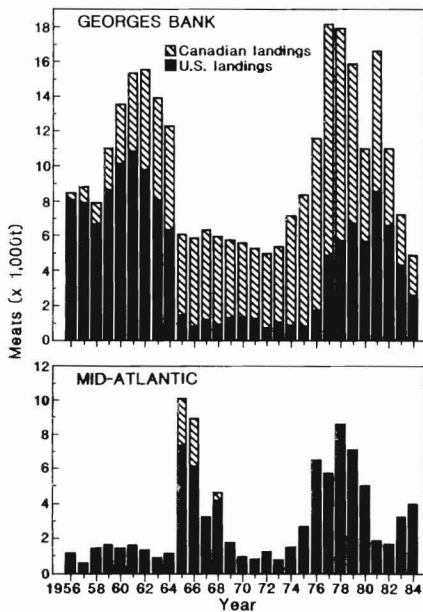


Figure 1.—Total U.S. and Canadian commercial sea scallop landings (metric tons, meats) from Georges Bank (NAFO Subdivision 5Ze) and the Mid-Atlantic region (NAFO Statistical Area 6), 1956-84.

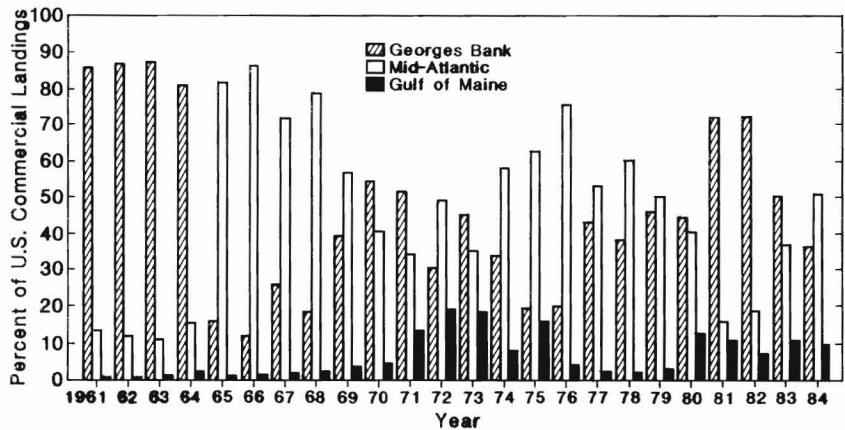


Figure 2.—Percentage distribution of total annual U.S. commercial sea scallop landings (metric tons, meats) from Georges Bank (Area 5Ze), the Mid-Atlantic (Area 6), and the Gulf of Maine (Area 5Y), 1961-84.

catch was taken by the U.S. fleet from the Mid-Atlantic region that from Georges Bank (4,000 t vs. 2,850 t), reflecting a change in fishing patterns (Fig. 2). Substantial increases in fishing effort occurred in the Mid-Atlantic region during 1984. Both the number of trips and the days fished per trip were higher in 1984 than in 1983.

Data from the NMFS's annual series of summer sea scallop research vessel surveys show that scallop abundance in almost all areas fished by the U.S. fleet has declined in recent years. The 1984 survey results indicate that, with the exception of the Northern Edge and Peak region of Georges Bank (in mostly Canadian waters) and the New York region (off Long Island and New Jersey), sea scallop abundance remains at historically low levels.

The current assessment indicates that fishing mortality continues at near record high levels and that the fishable stock depends upon the recruitment of new year classes. Recruitment of the 1981 year class in the 1984 survey was low in all areas except on the Northeast Peak and in the New York Bight. Given

the disparity in scallop abundance among the various offshore regions and the exclusion of U.S. fishing activity on the Northeast Peak in areas east of the World Court boundary line, the U.S. scallop fleet was expected to continue concentrating much of its activity in the Mid-Atlantic region during 1985.

Drift Bottle Makes Long Ocean Journey

A drift bottle released from the NOAA ship *Townsend Cromwell* more than 11½ years ago on 4 February 1973 at lat. 01°48'N, long. 157°04'W near Christmas Island was recovered on 15 June 1983 over 4,600 miles away due west on a beach on the northeast coast of Mindanao near lat. 09°48'N, long. 125°29'E in the Philippines, reports Richard S. Shomura, Director of the NMFS Southwest Fisheries Center's Honolulu Laboratory.

The bottle was reportedly found by Cesar L. Cabrera at White Beach in Cagwait, a town in Surigao Sur, Mindanao, a southern Philippine island. It is

not clear why the finder (or sender) waited over a year to mail the card to the Honolulu Laboratory (the envelope was postmarked 12 September 1984); the return address was: 4th Mun. Circuit Trial Court of Cagwait-Bayabas, Cagwait, Surigao del Sur.

This particular drift bottle was one of 840 released a few miles north, east, and south of Christmas Island on 4 February 1973, and was part of an experiment devised by Richard A. Barkley, an oceanographer then on the staff of the Honolulu Laboratory, to study the pattern of surface currents around oceanic islands. Christmas Island was selected for this study because it provided a relatively simple situation: A single small island that had no other intruding islands located "upstream" in the strong regular flow of the westerly North Equatorial Current. One bottle was recovered at sea the next day after it had traveled around the north coast of the island and then west. Twelve bottles were recovered from the windward beach on Christmas Island on 11 and 12 February 1973. Other areas of Christmas Island, and other islands in the Line Islands group (Fanning, Washington, and Palmyra) were searched but no other bottles were found.

In its westward travel in the grasp of the North Equatorial Current the bottle must have passed by numerous islands in the Equatorial Pacific Ocean on its way to Mindanao. For about 1,500 miles in the area immediately west of Christmas Island there are relatively few islands. However, further west in the path the bottle presumably took are the many Gilbert Islands, the Marshalls, Federated States of Micronesia, and the Republic of Palau.

Although the time elapsed between the time of release and recovery was over 10 years, Shomura speculated that the bottle may have been lying undiscovered on the Mindanao beach for a number of years, especially if White Beach is in a remote, relatively uninhabited part of Mindanao. Other drift experiments have shown that bottles released near the Equator in the central Pacific Ocean traveled at speeds of more than 36 miles a day, so it is possible that this bottle could have made the journey

of over 4,600 miles in about 128 days. It is also possible, of course, that although the bottle was under the primary influence of the North Equatorial Current, it could also have been affected by local currents near islands and thus taken much longer to reach the Philippines. So even though no information was obtainable on the speed of the drift for this bottle, the direction of drift was determined, and conforms to what is known of the surface currents in the Equatorial Pacific. But perhaps more interesting is what is not known: All the possible meanderings of the bottle in its long journey from Christmas Island to Mindanao.

Underutilized Fishery Resources of California

In 1981, about 8,500 vessels (most under 5 net tons) and 19,000 persons were engaged in commercial fishing in California. However, many "super-seiners" are also based in the State and some large trawlers have also entered the fleet.

Over 100 species of fish are caught by California commercial fishermen, but quite a number of others are not fully utilized. Therefore, the staff of the Underutilized Fishery Resources Task, Tiburon Laboratory, NMFS Southwest Fisheries Center, 3150 Paradise Drive, Tiburon, CA 94920 has prepared a looseleaf "Guide to Underutilized Species of California" as Administrative Report T-83-01.

The report contains a brief description of California's fisheries and the fishing gear and methods. Most of the species included are considered to be underutilized and therefore underharvested; many are also very similar to species utilized in other countries and the guide provides much pertinent information useful to foreign buyers or for those wanting to market new species in foreign countries. Data for each species include brief description of life history, distribution, abundance, and the present fishery, if any, and the authors also point out some new processing or marketing ideas which may be of commercial significance.

Species listed include shortbelly rockfish, *Sebastes jordani*; Pacific sanddab, *Citharichthys sordidus*; jack mackerel, *Trachurus symmetricus*; ocean sunfish, *Mola mola*; ocean whitefish, *Caulolatilus princeps*; night smelt, *Spirinchus starksi*; basking shark, *Cetorhinus maximus*; ratfish, *Hydrolagus coliei*; groundfish roe; market squid, *Loligo opalescens*; king crab, *Paralithodes californiensis*; Tanner crab, *Chionoecetes tanneri*; rock crabs, *Cancer productus*, *C. antennarius*, and *C. antonyi*; krill, *Euphausia pacifica*; Kelle's whelk, *Kelletia kelletii*; giant Pacific octopus, *Octopus dofleini*; spiny dogfish, *Squalus acanthias*; sea cucumber, *Parastichopus californicus* and *P. parvimensis*; sheep crab, *Loxorhynchus grandis*; and ridgeback prawn, *Sicyona ingentis*. In addition, six color plates illustrate 19 of the species. Further information on the report and the species is available from the Task Force in Tiburon.

Offshore Tagging Shows Maine Lobster Movements

Results from the first 18 months of a 3-year joint State of Maine-National Marine Fisheries Service (NMFS) lobster tagging and undersea (submersible) research program have been compiled, according to the NMFS Northeast Fisheries Center. The purpose of this program is to provide information on abundance, migration, growth, and stock interaction between inshore and offshore lobsters in the Gulf of Maine, and to better understand the effects of the expanding offshore fishery on the inshore stocks of lobsters.

Of primary interest is the role of the central Gulf of Maine lobster in providing recruitment to the coastal areas. Does the offshore Gulf of Maine lobster population represent an important part of the broodstock for the inshore population? Do the offshore Gulf of Maine deep water basins provide important habitats for a potential broodstock?

In July 1984, 917 lobsters were tagged and released in Area "A" (Jordan Basin - 643), Area "C" (Cashes Ledge - 203), Area "D" (Jeffreys Ledge - 41) and Area "E" (Bank Comfort - 30) in

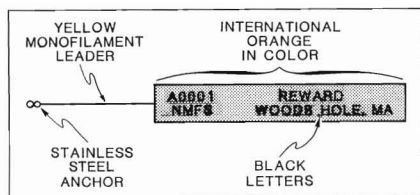


Figure 1.—Lobster tag.

the Gulf of Maine. Lobsters ranged in size from 2½ to 7¼ inches carapace length (CL); 60 percent females, 40 percent males. The average lobster tagged was 4¾ inches CL. Between July 1984 and July 1985, 226 tagged lobsters were recaptured; 19 were removed from the population (returned to NMFS) and 207 were recaptured between 1 and 4 times and released back into the population.

Movements from Cashes Ledge, Jeffreys Bank, and Bank Comfort were mainly toward the Maine coast or parallel to the shore. The maximum distance traveled was by a female lobster which covered 81.5 n.mi. in about 109 days. The average distance traversed by these 19 recaptures was 35 n.mi., averaging 0.5 n.mi. per day. One recapture averaged 1.13 n.mi. per day.

The remaining 207 recaptures, all but 10 released by a single offshore fisherman from Maine at Jordan Basin, were made in relatively close proximity to the original area of capture and tagging (less 10 n.mi.). However, since 18 Sept. 1984, no recaptures were made in the Jordan Basin areas because the offshore Maine fisherman had to move his gear to the west when the new U.S.-Canadian boundary line was finalized.

Of the 548 female lobsters tagged and released in July 1984, 133 (24.3 percent) were berried. The average CL of these females was 4¾ inches, 1/4-inch above the average size of all females. Recaptured females had both released eggs and extruded eggs between the time of tagging and recapture.

These preliminary results indicate a high removal rate in the vicinity of the tag and released areas with either an apparent tendency of tagged lobsters to remain in areas where there are a large number of lobster traps or a slow rate of migration through the tagging areas.

Of the 379 lobsters recaptured from the 1983 releases and 226 lobsters recaptured from the 1984 releases, only 83 and 16, respectively, were captured outside of a 10 n.mi. radius from the release locations. It is evident from the decline in the recapture rate in the vicinity of the release areas and the distribution of recapture locations that the original stock of tagged lobsters had dispersed over a very broad area.

On Saturday, 29 June 1985, the NMFS ended 6 days of tagging lobsters in the Gulf of Maine, with about 1,000 lobsters marked with international orange tags (Fig. 1) and released in the western part of Jordan Basin in about 100 fathoms. Fishermen who catch any of the tagged lobsters can claim a \$5.00 reward plus the current landed value of the lobster by keeping the lobster alive or frozen; recording the tag number, the date and location of capture, the carapace length, and any general comments about the lobster; and notifying the nearest NMFS port agent; or, by mailing the tag and above information to Tom Meyer, National Marine Fisheries Service, Woods Hole, MA 02543. This is the final year of the 3-year lobster tagging program between Maine's Department of Marine Resources and NMFS's Northeast Fisheries Center.

Kraft Markets Federally Inspected Fish Products

The Kraft, Inc. Foodservice Group¹ will begin marketing Federally inspected fishery products as part of its participation in the U.S. Commerce Department's voluntary national seafood inspection program. The Group is the nation's fifth largest distributor of food service products. Thus, in contracting to have its seafood products inspected and graded by the Commerce Department's National Marine Fisheries Service, it has become the largest food service distributor to take part in the Federal seafood inspection program. The voluntary program is carried out by

¹Mention of trade names or commercial firms does not imply endorsement by the National Marine Fisheries Service, NOAA.

the NMFS to offer processors and retailers impartial and certified inspection of fresh, frozen, canned, and cured fish and shellfish. The "Packed Under Federal Inspection" mark and the "U.S. Grade A" quality mark on fishery products assure buyers of safe, wholesome, and properly labeled products certified by Federal inspectors.

Horseshoe Crab Studied

Fisheries for horseshoe crabs for bait and biomedical purposes are growing, reports the NMFS Northeast Fisheries Center (NEFC). In fact, horseshoe crabs may be overfished in some areas. To establish the biological basis for managing horseshoe crabs—should that be needed—scientists from the NEFC and Fordham University initiated a joint study of the species' distribution, abundance, feeding, and growth.

Historical data from the Center's bottom-trawl surveys is providing information on trends in distribution and abundance. Recent data from the surveys will provide information on feeding by this predator on clams, scallops, etc. One of the more unusual efforts will be trying to determine the age of limpets growing on the shells of horseshoe crabs as a way of indirectly determining how long the crabs themselves can live.

Fish Prices by Phone

The National Marine Fisheries Service has installed an automatic telephone message center at Rockland, Maine. This provides callers with the Boston New England Fish Exchange daily landings, fish auction prices, and the New Bedford sea scallop landings and ex-vessel prices. The new 24-hour telephone service may be reached by calling Rockland (207) 596-0190.

Automatic telephone message centers are also available in: Portland, Maine (207) 780-3340; Gloucester, Mass. (617) 283-1101; Boston, Mass. (617) 542-7878; New Bedford, Mass. (617) 997-6565; New York, N.Y. (fresh fish prices) (212) 620-3577; New York, N.Y. (frozen fish prices) (212) 620-3244; and Hampton, Va. (804) 723-0303.