

NOAA Ocean Climate Study Begins in Equatorial Pacific

The National Oceanic and Atmospheric Administration (NOAA) has begun the first major study of how Pacific Ocean waters reflect changes in global climate. The Equatorial Pacific Ocean Climate Studies (EPOCS) seeks to determine the driving forces behind large variations in sea surface temperature, and how these variations are linked to climatic changes, according to Richard A. Frank, Administrator of NOAA.

The study is a highly focused, multi-year program of experimentation and research, the Commerce Department agency official said, which it is hoped will provide useful new insights into how the "climate machine" works. At the heart of the climate machine—and the research—is the relationship between the ocean and atmosphere; a kind of geophysical marriage of opposites. The atmosphere is the flamboyant, active partner, with a short memory. The ocean is the stable partner, long of memory, given to hoarding energy which is squandered by the atmosphere.

One of the more energetic and variable parts of the climate machine is the equatorial Pacific, a huge and influential source of stored heat, and an enormous engine for the redistribution and release of that heat into the tropical atmosphere. This energetic part emits tantalizingly strong climatic signals, according to Joseph O. Fletcher, EPOCS director and deputy director of NOAA's Environmental Research Laboratories in Boulder, Colo.

"It seems clear that, on a year-to-year basis, the spatial distribution of heat released into the atmosphere appears to

be associated with large sea-surface temperature anomalies in the eastern tropical Pacific", he explained. "These anomalies—that is, warmer or cooler deviations from the long-term average sea-surface temperature—are quite large, amounting to several degrees Celsius over thousands of miles and perhaps 20 degrees of latitude. Changes on that scale could influence the global atmosphere and, in any case, are reflecting global scale atmospheric

Peterson Heads NMFS NE Regional Office

Allen E. Peterson, Jr., 39, has been selected as Director, Northeast Region, National Marine Fisheries Service, pending Civil Service approval, Terry L. Leitzell, National Oceanic and Atmospheric Administration's Assistant Administrator for Fisheries, has announced.

"Allen Peterson has had lengthy fisheries experience in the Massachusetts State Government, presently serves as its Director of Marine Fisheries, and is Chairman of the New England Fishery Management Council," said Leitzell. "His experience in legislative matters, liaison with industry, and a good background in marine fisheries will enhance our activities in New England."

Robert Hanks, Deputy Regional Director, will serve as Acting Director until Peterson joins the Department of Commerce agency.

In his new position, Peterson will succeed William Gordon who recently

changes."

The study is focusing on these temperature anomalies, on the processes that cause them, and on the processes they trigger in the atmosphere; all in an area stretching from about long.150°W eastward to the coast of South America, and about 15° latitude north and south of the Equator.

In parallel with the field experiment, NOAA scientists are conducting intensive studies of the existing mass of data already available on the equatorial Pacific and its overlying atmosphere. A third element in the study is a program of numerical modelling and analysis. The scientists will incorporate new data from the field experiment and other sources into existing ocean-atmosphere numerical models, with an eye to learning how the sea-surface temperature anomalies connect with atmospheric processes occurring on the time scales of climate.

was appointed Director, Office of Resource Conservation and Management in the Service's headquarters in Washington, D.C.

Peterson, a native of Worcester, Mass., is a graduate of the University of Massachusetts, Amherst, where he received his B.S. degree in Wildlife Management in 1962, and his M.S. degree in Wildlife and Fisheries Biology in 1964. He joined the Massachusetts Department of Fisheries, Wildlife, and Recreational Vehicles in 1964 as an Assistant Fish and Game Biologist and has held progressively responsible positions in the Department.

He is married to the former Joan Fischer, Huntington, N.Y. They live in Sandwich, Mass., with their two children.

Grocery Chain Adopts Seafood DOC Inspection

A voluntary inspection program conducted by the National Marine

Fisheries Service aimed at assuring quality fresh seafood products has been adopted by the largest retailer owned supermarket cooperative in the United States.

Wakefern Food Corporation¹, Elizabeth, N.J., with 186 Shop-Rite stores in Connecticut, Massachusetts, New York, New Jersey, Delaware, and Pennsylvania, will be the first supermarket chain permitted to place a Department of Commerce Inspection mark on its full variety of fresh fish and shellfish. The round mark attests that the "Packed Under Federal Inspection" product has been found to be safe, wholesome, and of good quality at the time it was packed or received by Wakefern for distribution at its 93-acre distribution facility.

Those products that meet the DOC Grade A standards also will bear the mark. DOC seafood inspectors will monitor the product in the stores to assure quality maintenance.

Shop-Rite stores serve some 7½ million people each year. Annual sales of fresh seafood products by the Shop-Rite stores have grown from approxi-

mately 200,000 pounds a year in 1973 to over 3 million pounds representing from \$5 to \$6 million in retail sales in 1978.

NOAA Creates New Oceanography Office

The National Ocean Survey (NOS) has established the Office of Oceanography to assist NOAA and the Department of Commerce to respond effectively to the many and diverse ocean and coastal initiatives over the next decade. Wesley V. Hull of Rockville, Md., was named Acting Director.

The new office assumes the responsibility for all the oceanographic and ocean dumping projects working in close coordination with the NOS Office of Marine Surveys and Maps. The Office collects and evaluates oceanographic and marine navigation data and performs analyses of physical phenomena pertaining to the sea and the Great Lakes, including tides, water levels, currents, the dynamics and physical properties of seawater, and shoreline and bottom configuration, as they affect waves and currents.

The Office also conducts comprehensive engineering surveys, estuarine investigations and studies of the Great Lakes and their outflow rivers, Lake Champlain, portions of the Hudson River, New York State Barge Canal, and Minnesota-Ontario border lakes. It directs the establishment and operation of the network of tide and water level stations, conducts tidal surveys for mapping seaward boundaries, and compiles and provides oceanographic data and tide and current predictions for use in marine navigation, civil engineering, and for solutions of environmental problems.

Hull, of the NOAA Corps, was formerly chief of the Oceanographic Division, NOS Marine Surveys and Maps. His assignments have included photogrammetry and hydrography, and he has served aboard the NOAA ships *Pioneer*, *Lester Jones*, *Oceanographer*, *Bowie*, and *Mt. Mitchell*, having commanded the latter two.

Hull received a B.S. degree in Civil Engineering from Oklahoma State University and a M.S. degree from Cornell. Immediately following graduation, he joined the Commissioned Corps of the U.S. Coast and Geodetic Survey, the predecessor of the NOAA Corps.

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

National Marine Mammal Laboratory Established

A research laboratory designed to serve as the center for national study of marine mammals has been established in Seattle, Wash., by the National Oceanic and Atmospheric Administration (NOAA).

The new facility was created in response to growing national and international concern for the welfare of marine mammals, and to permit research necessary for their conservation.

The National Marine Mammal Laboratory will take the lead in addressing marine mammal prob-

lems of national significance, as well as fulfilling America's commitments under international marine mammal agreements. NOAA scientists there will provide a pool of technical expertise to help in planning and carrying out research on local or regional marine mammal problems.

Establishment of the laboratory in Seattle recognizes the city's longstanding role as a center of Federal marine mammal research in the United States. With the passage of the Marine Mammal Pro-

tection Act of 1972, the Marine Mammal Division of NOAA's Northwest and Alaska Fisheries Center in Seattle assumed responsibility for most of the Department of Commerce's research programs on whales, seals, and sea lions.

The new laboratory will continue to be administered by the Northwest and Alaska Fisheries Center and will participate in the Center's Bering Sea Ecosystem Project, evaluating interactions among marine mammals, fish, and other major elements.

SABLEFISH TAGGING STUDIES PRODUCE RESULTS

In June and July, 1978, the Northwest and Alaska Fisheries Center of the National Marine Fisheries Service, NOAA, tagged sablefish, *Anoplopoma fimbria*, in the coastal waters of southeastern Alaska. These fish were tagged so scientists could study their distribution and migratory movements along the coasts of southeastern Alaska, British Columbia, Washington, Oregon, and California.

The study depends heavily on the cooperation of both domestic and foreign fishermen for the return of tags (Fig. 1) giving information on the sablefish and their capture. Nine tag returns in the first 9 months have provided some interesting preliminary results.

These returns come from three groups of sablefish, 707 fish in all, which were tagged and released at three different sites (Fig. 2). The first group, 217 fish, was released west of Cape Addington. One fish from this release was recovered by trap 28 days later south of Hippa Island, B.C., after a southerly migration of 136 miles. Another was caught west of Cape Scott, Vancouver Island, B.C., by a Japanese longliner after a movement of 332 miles in 71 days.

The second release of 174 fish occurred off Cape Ommaney. One fish was recovered locally after 27 days and another was captured south of Yakutat Bay, Alaska, by a Japanese longliner after a northwesterly migration of 216 miles in 100 days.

The remaining 316 fish were tagged near Cape Cross. There were five recoveries from this group. Three were recovered locally after 13, 15, and 40 days of freedom and distances traveled of about 4, 7, and 40 miles, respectively. These fish were captured by a U.S. longline vessel, the *Urania*. Two additional tagged fish were taken by the aforementioned Japanese longliner fishing the Yakutat Bay area after being free 75 and 85 days during which they migrated 174 and 110 miles, respectively.

While results based on so few recoveries cannot be conclusive, they do indicate that some sablefish in the study area travel considerable distances

but others move very little. These results suggest that there may be a positive relationship between the length of time a tagged sablefish is free

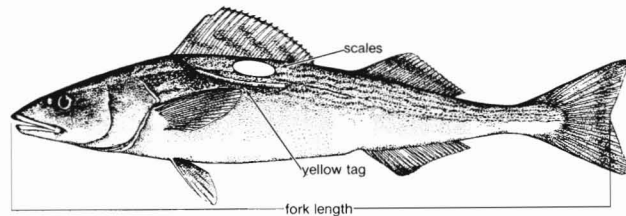


Illustration courtesy of Fisheries and Marine Service Environment Canada

Figure 1.—Tagged sablefish are sought by scientists with the NMFS Northwest and Alaska Fisheries Center, 2725 Montlake Blvd. East, Seattle, WA 98112. Position of the tag is shown, along with scale sampling area and fork length measurement.

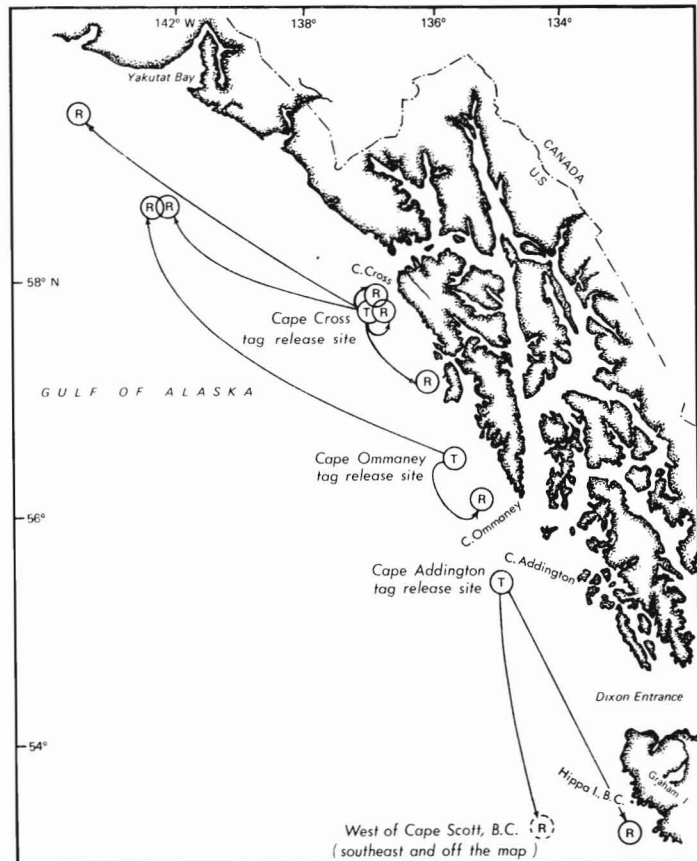


Figure 2.—Sites where tagged sablefish were released and subsequently recovered during 1978. The lines show the direction, but not necessarily the path of migration of the captured and tagged sablefish. A circled "T" represents tagging sites and a circled "R" indicates the recovery sites.

and the distance traveled. While this may be the case, the results of previous sablefish tagging studies have failed to demonstrate such a relationship. More tag returns are expected from the 1978 releases and these, combined with a continuation of the tagging program this year, should provide considerably more insight on the migrational behavior of sablefish in Alaska waters.

Sea Grant Launches International Effort

The National Oceanic and Atmospheric Administration (NOAA) has announced a program of international cooperation in marine research with a number of developing nations to aid their efforts and to promote exchange of information on oceanic and coastal resources. Under the program, funded by \$913,400 in grants from NOAA, seven U.S. academic institutions associated with the agency's Sea Grant College Program will undertake cooperative marine programs with counterparts in Chile, Costa Rica, Malaysia, Mexico, Israel, and Colombia.

Primary emphasis will be on education and training, Ned A. Ostenso, Director of the Commerce Department's National Sea Grant College Program, said. Research and advisory service functions will also be included. The program was authorized by legislation in 1976, and is coordinated with the U.S. Department of State.

The University of Delaware Sea Grant College Program received a 2-year, \$303,500 grant for a cooperative marine studies program with the University of Costa Rica; while a \$199,900, 2-year grant was awarded the University of Miami to support a marine resources and environmental sciences training program in cooperation with several educational institutions in Colombia, and coordinated with the Colombian Oceanographic Commission.

The Sea Grant Program at the Virginia Institute of Marine Science (VIMS) is using a \$131,400 grant to train personnel in Israel in wave measurement and modeling techniques and to improve Israeli marine advisory services in wave information and

coastal zone planning. The VIMS project is for a 2-year period.

The University of Rhode Island Sea Grant College Program has received \$95,000 for a 1-year project in Malaysia with the University of Malaya and the University of Pertinian Malaysia. This project will develop academic programs in fisheries management, coastal zone management, and related fields, plan future research projects, and outline a structure for a local marine extension service.

The Oregon State University Sea Grant College Program is assisting Latin American nations in the development of appropriate levels of competence in marine resource conservation with its \$90,000, 1-year grant. Chief participating institution in Latin America is Catholic University of Valparaiso in Chile.

An award of \$72,000 to the New York Sea Grant Institute is strengthening marine science capabilities in Chile. The 2-year project, carried out with the University of Concepcion, concentrates primarily on training faculty members of the Department of Marine Biology and Oceanography in coastal zone management techniques.

The Louisiana State University Sea Grant College Program has been granted \$21,600 for a 1-year project in Mexico. Among the tasks there are identification and quantification of the ecological associations between Terminos Lagoon at Campeche and the fisheries.

New CZ Advisory Group Members Are Selected

Seven new members have been appointed by Commerce Secretary Juanita M. Kreps to serve on the National Coastal Zone Management Advisory Committee.

The new appointees are Joseph Bodovitz, a consultant from Mill Valley, Calif., and formerly executive director of the California Coastal Commission; Ogden Doremus, an environmental attorney from Meter, Ga.; Patrick W. Kelly, head of the American Petroleum Institute's Coastal Zone Management Task

Force, from Dallas; Steven A. McMillan, vice president of Earle, McMillan, and Niemayer, from Bay Minette, Ala.; Michele Perault, coastal coordinator for the Sierra Club, from Berkeley, Calif.; Shirley H. Taylor, chairwoman of the Sierra Club Task Force on Coastal Zone Management, from Tallahassee, Fla.; and Henry Wheatley, president of Ocean Environments, Inc., from St. Thomas, Virgin Islands.

They will join the four other members of the Advisory Committee, which was established by the Coastal Zone Management Act of 1972 to the policy recommendations to the Secretary of Commerce on such matters as proposed legislation, Federal regulations, and the administration of the coastal zone management program.

Caribbean Monk Seal Declared Endangered

The Caribbean monk seal, indiscriminately killed for hides and oil since early Spanish exploration of the western hemisphere, has been listed as an endangered species by the National Oceanic and Atmospheric Administration's National Marine Fisheries Service.

Scientists with the Commerce Department agency fear the animal may already be extinct since surveys and studies have failed to locate any of the mammals in its former habitat in the Gulf of Mexico and Caribbean Sea.

Under the Endangered Species Act of 1973, an endangered species is one that is in danger of becoming extinct throughout all or a significant part of its range and is protected from any contact by man.

Karl W. Kenyon, a noted marine mammalogist, conducted an extensive aerial survey of the Caribbean monk seal's former habitat in the Gulf of Mexico and Caribbean Sea in 1973 and failed to locate any of the seals. This survey and a study by NMFS scientist Dale W. Rice provided the basis for the assumption that the species is extinct.