

## NMFS Southwest Fisheries Center Marks 25th Anniversary

The Southwest Fisheries Center, a Federal research facility in NOAA's National Marine Fisheries Service, celebrated its 25th anniversary with a Rededication and Open House for the public on Saturday, 28 October 1989. The Rededication ceremony, with Roger Revelle, former Director of the Scripps Institution of Oceanography as the keynote speaker, began at 10 a.m. John Knauss, U.S. Department of Commerce Under Secretary for Oceans and Atmosphere and the Administrator of NOAA, also spoke at the Rededication.

The Center which is located at 8604 La Jolla Shores Drive, one-quarter mile north of the Scripps Institution of Oceanography, is one of only four such Federal Centers in the United States which are devoted exclusively to fisheries science research. During this Open House visitors to the Center were treated to exhibits and displays illustrating why fisheries research benefits the nation, many presented by the scientists responsible for the research involved. Among these were displays of cleared and stained "see-through" larval fish of important commercial species, models of the principal tuna species studied at the Center, plankton collecting nets and samplers, a live-fish tank, examples of the groundfish species studied, a large porpoise model exhibit, an expendable bathythermograph recorder and probe used to measure deepwater ocean temperatures, a remote-controlled underwater vehicle (ROV), a sportfishing exhibit, a panel describing the 200-mile fishing limit, and many other examples of the specialized gear and equipment used on research survey cruises. During the Open House a slide show explaining the research activities of the Southwest Fisheries Center was also shown at intervals. Videos of research conducted at sea were also seen during the day. Not least among the attractions for visitors was the view of the

Pacific Ocean from the cliff-side Center, 220 feet above the water.

The parent agency of the Southwest Fisheries Center, NOAA, was established in 1970 to expand the use of ocean resources and monitor and predict conditions in the atmosphere, ocean, and space. During its first 19 years, NOAA has become an important environmental science and management agency in the Federal government. The passage of such legislation as the Marine Mammal Protection Act of 1972 and the Magnuson Fishery Conservation and Management Act has given NOAA specific respon-

### NMFS-UH Workshop Eyes Pacific Fisheries Data

Eleven fishery biologists from eight Pacific islands were in Honolulu to attend the Tropical Fisheries Resource Assessment Workshop, which ran 5-26 July 1989, announced George W. Boehlert, Director of the NMFS Southwest Fisheries Center's Honolulu Laboratory. The workshop was convened by NMFS and the University of Hawaii's School of Ocean and Earth Science and Technology, with funding provided by NMFS and the U.S. Agency for International Development.

The workshop is part of a U.S. effort to aid Pacific island nations in assessing and managing their fisheries resources. Participants are from the Cook Islands, Fiji, Kingdom of Tonga, Papua New Guinea, Solomon Islands, Tuvalu, Vanuatu, and Western Samoa.

"The workshop has brought together the best data bases for deepwater snappers in the Pacific," said Jeffrey J. Polovina, a fishery scientist with the Honolulu Laboratory and a coorganizer of the workshop, along with Richard S. Sho-

mura, a UH researcher and former director of the Honolulu Laboratory.

Participants brought with them computer diskettes containing various types of data on the snapper fisheries in their countries. These data types include length, weight, number and species of snappers caught, as well as the amount of time spent fishing. Participants are learning data analysis techniques, many of which were developed by Honolulu Laboratory scientists over the past 5 years. One goal of the workshop was to obtain a Pacific-wide view of the potential for deepwater snapper fisheries, said Polovina.

"The snapper fisheries in some of the participating Pacific island nations are in the early stages of development," Polovina noted. "This is an excellent opportunity to monitor the stages of exploitation and ensure that snapper stocks will not be overexploited and the fisheries will not be overcapitalized."

Snappers captured by the Pacific island fishermen are sold to their local markets and, in some cases, exported to markets in Honolulu and the U.S. mainland. The increasing demand by these export mar-

kets has enabled the development and expansion of the Pacific island fisheries.

Another goal of the workshop was to predict what the maximum sustainable yield will be 5 years from now for the snapper fisheries of each Pacific island nation. (Maximum sustainable yield is how much fish can be captured each year without depleting the population.)

Workshop participants will draft reports on the condition of the snapper stocks, the maximum sustainable yield, and even how many boats should be allowed to participate in the snapper fisheries in their Pacific island nations. These reports will be given to their governments for use in managing snapper resources.

Participants are also learning various stock assessment methods and computer analysis techniques. They are participating in discussions on fishery management for snapper stocks as well as other marine species. Lectures on these topics were presented by Polovina, Shomura, Paul Dalzell from the South Pacific Commission in New Caledonia, and also other Honolulu Laboratory staff. The workshop provides participants with an opportunity to share problems related to their fisheries data collection programs. Techniques learned at the workshop will assist them in making any necessary modifications to ensure that the right kinds of fisheries data are being collected.

Interestingly, the data on bottomfish catches in the Pacific island nations participating in the workshop are generally more comprehensive than the State of Hawaii's. "Most Pacific island nations are in a much better position to manage their snapper resources than Hawaii, whose data collection is limited," said Polovina. The State of Hawaii's fisheries data collection is hampered by the lack of data on recreational fishing. The state also does not know how much time commercial fishermen spend catching snappers particularly in the main Hawaiian Islands. These types of information are crucial to the effective management of fishery resources.

## NOAA Scientists Leave on 4-Month Dolphin Census

Two research vessels belonging to the National Oceanic and Atmospheric Administration (NOAA) left the San Diego, Calif., harbor on 29 July 1989 to begin another 4-month census of porpoise populations in the eastern tropical Pacific (ETP) Ocean. Scientists aboard the NOAA ships *David Starr Jordan* and *McArthur* will be busy 12 hours a day counting dolphins over 5 million square miles of sea, conducting research on dolphin populations, and providing facts that will help resolve issues relating to the incidental take of these marine mammals by the ETP yellowfin tuna fleet.

"Comparison of counts made on this cruise with counts made on other cruises using the same methods, will enable us to determine if dolphin stocks are declining and therefore in need of more protection than now exists under current regulations," says Program Leader Doug DeMaster, of NOAA's Southwest Fisheries Center in La Jolla, California. A 1984 amendment to the Marine Mammal Protection Act gave NOAA the responsibility of monitoring the relative abundance of dolphin stocks in the eastern tropical Pacific.

Because of the vast area to explore, the ships were to crisscross the ocean along different track lines, from off Baja California, Mexico, south to Peru and west to the Hawaiian Islands. The cruise is

organized into four legs and will last from 29 July to 7 December with various stops throughout the Pacific.

Every scientific operation and procedure on the cruise has been carefully preplanned and will be scrupulously followed to maintain the consistency of the data that are gathered. Trained observers will be searching through special 25 × 150 binoculars for signs of dolphins, identifying species and estimating the numbers in each school. A helicopter launched from the *Jordan* will be used to photograph dolphin schools from the air,

to calibrate the observers' estimates of school size. Scientific data on the physical and biological environment will also be collected, to see how environmental factors affect the distribution of dolphins in the sea.

Other "piggyback" research projects will be carried out to get maximum use of precious research vessel time. Information will be gathered on the genetic makeup and vocalization patterns of the different dolphin stocks; on the diet of sea turtles; and on the distribution of flying fish. The scientific party will also be

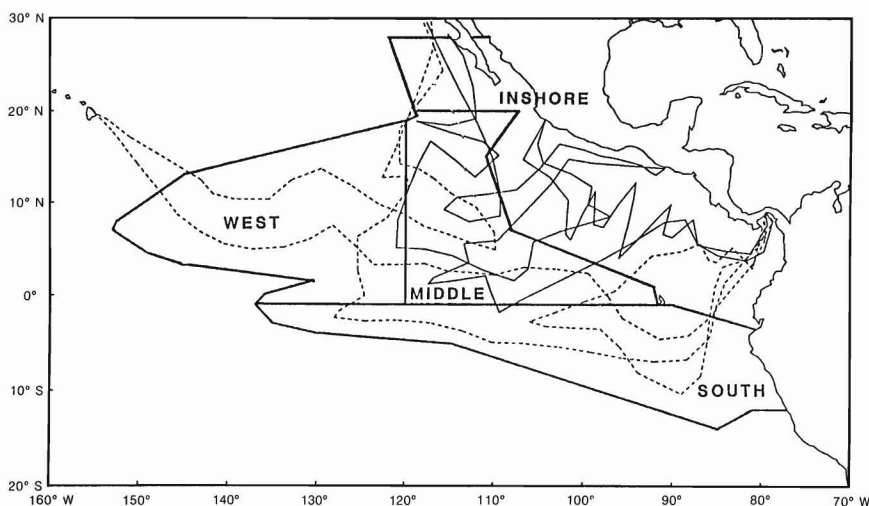


Figure 1.—Tracklines traversed by the NOAA RV *David Starr Jordan* (solid) and the *McArthur* (dashes) during the 1989 dolphin survey. Tracklines were generated using noontime positions.

monitoring populations of seabirds, sea turtles, and sea snakes along the cruise track lines.

Although scientists are impatient for the results of the dolphin monitoring program, reliable estimates of population trends will not be available until 1991. This is because rates of change in these sporadically distributed dolphin populations must be measured over a period of at least 5 years. This is the fourth in a series of six planned cruises, so final results await completion of this and two more cruises.

Certain species of dolphin associate closely with schools of yellowfin tuna, and sometimes become trapped and drown in nets set for tuna, despite fishermen's efforts to free them. Last year, 19,712 dolphins were accidentally killed in the ETP by yellowfin tuna fishermen from the United States. Under Federal law, U.S. fishermen are limited to the incidental take of 20,500 of the mammals annually. Foreign fleets that export tuna to the U.S. are now required by U.S. law to conform to similar restrictions in the mortality rates of dolphin in their catches.

The Southwest Fisheries Center in La Jolla will continue monitoring the status of dolphin populations in the ETP as well as coastal marine mammals of California, producing the most scientifically sound data possible to determine changes in population levels of these valuable living resources. The Center is a regional component of NOAA's National Marine Fisheries Service, under the U.S. Department of Commerce.

## **Cooperative Research Eyes Driftnet Impacts**

An American scientific observer completed 28 days of research aboard a Japanese tuna drift gill-net research vessel on 30 July 1989, announced George W. Boehlert, Director of the NMFS Southwest Fisheries Center's Honolulu Laboratory. The NMFS observer, Donald Hawn, documented the kinds and numbers of animals caught by the *Kaisho Maru* and recorded other pertinent data after joining the vessel on 2 July in Kesennuma, Japan.

The impact of driftnets on high-seas

resources is a topic of increasing interest. In waters north of Hawaii, fleets of fishing boats from Japan, Korea, and Taiwan are using driftnets to catch tuna, salmon, squid, and marlin. Controversy arises because the driftnets also kill marine mammals, seabirds, sea turtles, and other marine animals living in the same area as the targeted species of fish or squid.

To assess the impacts of the high-seas driftnet fleets on resources of interest to the United States, an agreement between the United States and Japan was signed in June in accordance with the 1987 Driftnet Act. The agreement called for a limited amount of cooperative catch monitoring and research during 1989. A more extensive agreement is expected next year, according to Boehlert.

As part of the accord, the United States was invited to place a scientific observer aboard a Japanese tuna driftnet research vessel to document the kinds and numbers of animals caught and to record other pertinent information. According to Hawn, the *Kaisho Maru* used about 6 miles of driftnet each night, with a mesh size ("eye") of about 7 inches, designed to catch albacore. The research vessel operated 1,500-1,900 miles northwest of Honolulu in international waters, where albacore are found near the ocean surface during the summer months.

Besides albacore, the vessel caught a variety of other species. While the vessel was in transit, Hawn and a Japanese scientist identified marine mammals in the fishing area and collected information on marine debris. They also recorded profiles of ocean temperature.

Once the data are processed, a report on the research findings will be prepared, according to Jerry A. Wetherall, a fisheries scientist who heads up the Honolulu Laboratory's Pelagic Resources Investigation as well as the driftnet research program. Wetherall noted that this was the first time the NMFS has had the opportunity to collaborate with a foreign country on a survey of driftnet fishing for tuna. Since 1986, U.S. scientists have regularly participated in research surveys by foreign driftnet vessels fishing for squid. "Because of growing concerns about the high-seas driftnets and the need to better understand their effects on marine ecosystems, more opportu-

nities for cooperative research can be expected," Wetherall said.

## **Fishing Hook Removed From Tagged Monk Seal**

A rather large fishing hook was removed from the mouth of a 1-year-old female Hawaiian monk seal on the south shore of Kauai over the Labor Day weekend, announced George W. Boehlert, Director of the NMFS Southwest Fisheries Center's, Honolulu Laboratory. The hook was removed from the back of the seal's jaw on 3 September 1989, by William G. Gilmartin, leader of the Honolulu Laboratory's Marine Mammals and Endangered Species (MMES) Program. Friends, campers, and fishermen in the area assisted Gilmartin by restraining the seal, which was found asleep on the beach near where she was born last year.

Removal of the hook required a large pair of pliers and a restraint time of about 10 minutes. For a short while after being released, the seal swam near shore, apparently unafraid of the people who had assisted in freeing her of the hook.

"The fishing hook, measuring 2.75 by 1.75 inches, is the size and type used while shore fishing for ulua," said Gilmartin. "The sea may have tried to take the baitfish when it was hooked, since seals commonly eat the smaller reef fishes."

This was the second attempt to remove the hook. Carrie Palama, a resident of Kalaheo, Kauai, originally reported the hooked seal to Gilmartin in mid-August. Gilmartin and Robert Morris, a veterinarian with the Makai Animal Clinic in Kailua, Oahu, flew to Kauai on 18 August to remove the hook. However, they were unable to locate the seal, probably because it was at sea. Monk seals spend most of their time at sea, generally coming to shore only to rest, give birth to their young, and to molt. The monk seal was not sighted again until she was located on 3 September.

The seal was born on Kauai on 7 August 1988, according to its tag, which NOAA scientist Thea C. Johanos had placed on the seal after it had weaned. This was the first monk seal birth re-

ported on the main Hawaiian Islands in about 10 years. Other births of this endangered species have been observed on only the small and uninhabited Northwestern Hawaiian Islands. Yet as the monk seal population in the Northwestern Hawaiian Islands increases, sightings of monk seals around the main Hawaiian Islands may increase as well, according to Gilmartin.

The Hawaiian monk seal was listed as endangered under the Endangered Species Act in 1976. Occasional beach counts of monk seals during the 1960's and 1970's indicated a drastic decline in the monk seal population. The MMES Program of the Honolulu Laboratory has been monitoring the monk seal population in the Northwestern Hawaiian Islands on a regular basis since 1982, and births have been increasing over the past few years.

To assist in the recovery of the monk seal population, the MMES Program initiated a Head Start Project in 1981 to increase first-year survival of female monk seal pups at Kure Atoll, where the monk seal population was on the verge of extinction. The pups, after weaning, are held in a wire mesh enclosure at Kure Atoll until they learn to feed on their own. The enclosure protects them from two sources of mortality: Aggressive adult male seals and tiger sharks, both of which are known to attack weaned pups. Female seals that were "graduates" of the Head Start Project in its early years are now giving birth. With more young females approaching reproductive age, the number of births at Kure Atoll is expected to continue to increase. Ten seals were born at Kure in 1989, compared with a low of only one in 1986.

The Head Start Project also "rehabilitates" abandoned or otherwise prematurely weaned female monk seal pups from French Frigate Shoals, where the monk seal population may be near carrying capacity. Female pups collected from the shoals are flown to Honolulu for rehabilitation and subsequently released at Kure Atoll, after being held in the protective enclosure to ensure they are able to feed on their own. This year, three rehabilitated female seals, originally captured in 1988, were added to the Kure population. They were transported by the

U.S. Coast Guard to Kure Atoll in April and maintained in the protective enclosure until being released in late May.

## **Equal Commercial and Recreational Allocations For Atlantic Group Spanish Mackerel Okayed**

Equal allocations for commercial and recreational harvesters of the Atlantic migratory group of Spanish mackerel have been approved, announced Joseph W. Angelovic, Acting Director, Southeast Region, National Marine Fisheries Service (NMFS). Reallocation procedures are contained in Amendment 4 to the Fisheries Management Plan for Coastal Migratory Pelagic Resources prepared by the South Atlantic and Gulf of Mexico Fishery Management Councils. Resulting regulatory changes become effective 19 October 1989.

According to procedures prescribed in Amendment 4 to attain 50:50 shares of the total allowable catch (TAC), allocations for the 1989-90 fishing year have been adjusted to 3.24 (commercial) and 2.76 (recreational) million pounds. Annual adjustment of allocations for the Atlantic group Spanish mackerel will continue until parity is achieved, or until 1994 when the 50:50 ratio becomes effective automatically. This will be accomplished by prorating yearly increases to TAC above the 1988-89 level of 4.0 million pounds on a 10 percent commercial:90 percent recreational basis. Decreases to TAC will be distributed based on the most current allocation ratio. The adjusted 1989-90 allocations, resulting from a TAC increase from 4.0 to 6.0 million pounds, yield a 54:46 ratio, closely approximating the 50:50 target level. When TAC reaches or exceeds 6.6 million pounds equal shares will result.

The Councils developed Amendment 4 to eliminate early season harvest closures (zero bag limits) that negatively impact the recreational sector and to remove the inequities they perceived to be associated with the previous allocation ratio (76 percent commercial:24 percent recreational). They also expect improved management of the Atlantic group Spanish mackerel to result through in-

creasing state/Federal compatibility. As affirmed by state representatives on the South Atlantic Council, states support this 50:50 reapportionment and will respond by implementing regulations compatible to Federal law.

## **Study Uses Laser to Find, Identify Fish**

James H. Churnside of NOAA's Environmental Research Laboratories is trying to discover if a computer-assisted laser instrument can see fish in a body of water, count them, and identify different species. If his research is successful fishermen might use airborne laser instruments to locate and quantify mature fish for commercial harvest, and immature fish could be identified for management purposes.

Churnside is examining the optical properties of various species, using an argon laser that fires a beam of blue or green light at the fish and records the reflectivity as well as the magnitude and polarization of the light. His theory is that there may be a discernible difference in the optical properties of fish by species and age, and that this could serve as a signature to their identification. The color and texture of a fish's skin would affect the optical properties, the Wave Propagation Laboratory scientist believes. Blue and green laser light passes through water more effectively than other colors and may be able to penetrate deeper into a body of water, reflecting off fish swimming beneath the surface, according to Churnside.

## **"Biosphere Reserve" Is Dedicated in California**

Joseph A. Uravitch, Chief of the NOS Marine and Estuarine Management Division, represented NOAA at the 12 August dedication in San Francisco of the Central California Coast Biosphere Reserve. The West Coast site is the first international biosphere reserve, which encompasses marine, island, coastal, and mainland natural areas. It will provide a valuable link in a 117-country network of such reserves. The California reserve was approved in 1988 by UNESCO.

## Medals Awarded by Commerce Department

In fall 1989 ceremonies, Secretary Robert A. Mosbacher presented the Department of Commerce Gold and Silver Medals to honored employees at the 41st annual honor awards program. Awarded Gold Medals were Mark E. Brown, Director, Office of Budget, Assistant Secretary for Administration; Robert P. Parker, Associate Director for National Economic Accounts, Bureau of Economic Analysis; Gerald F. Cranford, Assistant Director of Automated Data Processing, Bureau of the Census; the team of Joan M. McEntee, Deputy Under Secretary for Export Administration, Maureen R. Smith, Deputy Assistant Secretary, Philip R. Agress, International Trade Specialist, and John Richards, Deputy Assistant Secretary; Richard M. Firestone, Chief Counsel, National Telecommunications and Information Administration; and Richard Lee, Director of Science and Technology Programs, International Trade Administration.

Receiving Gold Medals in the National Institute of Standards and Technology (NIST) were George Birnbaum, Senior Scientist, Institute for Materials Science and Engineering; Lloyd A. Currie, Supervisory Research Chemist, National Measurement Laboratory; the team of Clark A. Hamilton and Richard L. Kautz, Electronics Engineers; Frances L. Lloyd, Physicist; James A. Beal, Electronics Engineer, and Richard E. Harris, Group Leader, all from the National Engineering Laboratory; the team of Donald Wayne Hanson, Supervisory Electronics Engineer; David Allan Howe, Electronics Engineer, and James L. Jespersen, Physicist, NML; Harold E. Nelson, Senior Research Engineer, NEL; Emil Simiu, NIST Fellow, NEL; the team of Barry N. Taylor, Chief, Electricity Division, and Marvin E. Cage, Ronald F. Dziuba, Paul T. Olsen, John Q. Shields and Edwin R. Williams, Phys-

icists, NML; and Joseph Reader, Physicist, NML.

Receiving Gold Medals in the National Oceanic and Atmospheric Administration were James V. Brosh, Chief Engineer, NOAA Corps Operations; William D. Bonner, Director, National Meteorological Center, National Weather Service; J. Michael Hall, Director, Office of Climatic and Atmospheric Research; Stanley P. Hayes, Supervisory Oceanographer, Office of Oceanic and Atmospheric Research; and Susan Solomon, Chief, Middle Atmosphere Studies, Office of Oceanic and Atmospheric Research.

Commerce Department Silver Medals were awarded to Hugh W. Knox, Chief, Regional Economic Division, Bureau of Economic Analysis; Eileen M. Albanese, Director, Special Licensing Division, and Robert F. Kugelman, Bureau of Export Administration.

Census Bureau Silver Medalists included James F. Holmes, Regional Director; Thomas L. Mesenbourg Jr., Chief, Economic Census Staff; Walter C. Odom Jr., Chief, Publication Services Division; Marvin L. Postma, Regional Director; Sylvia D. Quick, Assistant Division Chief, and Phyllis S. Willette, Section Chief.

International Trade Administration Silver Medalists included the Antidumping and Countervailing Duty Regulation Drafting Team; William D. Spittler, Supervisory Trade Specialist; Barbara A. Steinbock, Legislative Coordinator; and Timothy P. Stratford, Commercial Officer.

Silver Medal honorees in the National Oceanic and Atmospheric Administration included Richard G. Bakkala, Supervisory Fishery Biologist, National Marine Fisheries Service; Dennis M. Decker, Meteorologist, National Weather Service; Atef A. Elassal, Chief, Photo-

grammetric Technology Programs; Gary K. Grice, Assistant Chief, Meteorology Services Division; Kenneth W. Howard, Stanley L. Barnes, and Charles A. Dossell III, Meteorologists, Oceanic and Atmospheric Research; Mary M. Hefferman and Edward R. Johnson, Branch Chief, NWS; Milan A. Kravanja, Chief, Foreign Fisheries Analysis Branch, Office of International Affairs, NMFS; Ronald L. Lundstrom, Research Food Technologist, National Marine Fisheries Service; E. Paul McClain, Physical Scientist, National Environmental Satellite, Data, and Information Service; Edward J. McKay, Chief, Vertical Network Branch, NOS; Roy Mendelsohn, Operations Research Analyst, National Marine Fisheries Service; Earl F. Prentice, Supervisory Fishery Biologist, NMFS; Arthur Schwalb, Chief, Space Systems Division; NESDIS; Robert C. Sheets, Director, National Hurricane Center, and Robert A. Case, Gilbert B. Clark, Harold P. Gerrish, James M. Gross, Miles B. Lawrence and B. Max Maxfield, Hurricane Specialists, NWS; Wilbur T. Shigehara, Meteorologist-in-Charge, NWS; and George W. Swearingen, senior electronics technician, NWS.

Earning Silver Medals in the National Telecommunications and Information Administration were Robert T. Adair, Group Chief, and David F. Pech, Electronics Engineer; Dennis R. Connors, Director, Jean E. Adams, Supervisory Electronics Engineer, and Joann C. Anderson and Richard P. Harland, Communication Program Specialists, and James T. Vorhies, Communication Management Specialist. Medalists in the Office of Inspector General were Charles M. Hall, Assistant Inspector General for Inspections and Resource Management; Carl S. Klein, Supervisory Auditor, and Irene E. Lewkowitz, Director, Science and Trade Division. Medalists in the Patent and Trademark Office were Howard N. Golberg, Supervisory Patent Examiner, and Steward J. Levy, Supervisory Patent Examiner.

Silver Medalists in the National Institute of Standards and Technology were the team of Ramon C. Baird, Chief, Electromagnetic Fields Division; Michael H.

Francis, Physicist; Douglas P. Kremer, Supervisory Electronics Technician; Allen C. Newell, Supervisory Physicist, and Andrew G. Repjar and Carl F. Stubenrauch, Electronics Engineers, NEL; Carroll S. Brickenkamp, Supervisory Physical Scientist, Office of the Director; Richard E. de la Menardiere, Chief, Acquisition and Assistance Division, Office of Director of Administration; Dale D. Hoppes, Supervisory Physicist, NNL; Motohisa Kanda, Group Leader, NEL; Yong-Ki Kim, Supervisory Physicist, NML; Roger J. Martin, Supervisory Computer Scientist, National Computer Systems Laboratory; George E. Mattingly, Supervisory Mechanical Engineer, NEL; Bruce R. Miller, Physicist, NEL; Nile M. Oldham, Physicist, NEL; E. Neville Pugh, Chief, Metallurgy Division and Ugo Bertocci, Research Chemist, Institute for Materials Science and Engineering; William P. Reed, Deputy Chief, Office of Standard Reference Material and John A. Norris, Research Chemist, NML; the Reactor Operations Group, Institute for Materials Science and Engineering; and Miles E. Smid, NCSL.

### *Origin of Fish Taken in Sting Operation Determined*

Genetic tests and an examination of scales of steelhead trout taken from Taiwanese driftnet vessels during a recent high-seas "sting" operation prove that the fish came from North America, according to the National Oceanic and Atmospheric Administration (NOAA). The fish were seized by agents of NOAA's National Marine Fisheries Service (NMFS) during the largest covert fisheries operation in U.S. history. The fish were examined by scientists at the NMFS Northwest Fisheries Center and the University of Washington in Seattle to determine their continent of origin.

A Taiwanese businessman, Patrick Lee, has been charged with masterminding the sale of 550 tons of the U.S.-spawned salmon to NOAA undercover agents. Lee was arrested 19 July as he walked out of a Seattle bank vault carrying suitcases holding more than \$1 mil-

lion in cash. Others have since been taken into custody. It is illegal to catch U.S.-spawned salmon in North Pacific driftnet fishing operations.

Results show that three of the four steelhead examined came from North America. Two had their adipose fins clipped, identifying them as North American hatchery fish. Another contained a parasitic flatworm in its kidney that identified its home stream as somewhere between northern California and southern Puget Sound. The origin of the fourth steelhead could not be established. A team of NOAA scientists went to Kaohsiung, Taiwan, to conduct a more extensive sampling of the catches of the two Taiwanese driftnet vessels to determine more accurately the continent of origin of the fish, and their results will be reported later.

### **Sharks to Come Under Management in U.S. Atlantic Ocean Waters**

Shark resources are valuable to many user groups, ranging from consumers of shark meat in the U.S. to consumers of sharkfin soup in the Orient, recreational fishermen who enjoy catching sharks on rod and reel, and medical researchers studying cancer.

"Sharks have existed for over 400 million years but are in trouble in U.S. Atlantic waters, including the Gulf of Mexico and Caribbean Sea," said Joseph Angelovic, Acting Southeast Regional Director, National Fisheries Service, responsible for the development of a shark management plan for the Secretary of Commerce under provisions of the Magnuson Act. "They have been overfished for over 10 years and because of their unique biology we are fearful of a stock collapse."

Sharks are unlike most fish that produce millions of eggs. They grow slowly, take many years to reach maturity, and produce only a few young, generally 2-25 pups, after long reproductive cycles. The maximum sustainable yield from U.S. waters is estimated to be 16,250 metric tons (t) annually. Shark mortality, sharks landed or discarded dead, has surpassed

maximum sustainable yield by about 5,900 t annually over the past 10 years. A draft Secretarial Shark Fishery Management Plan has been prepared for public review and comment. In addition 22 public hearings were scheduled to receive comment on the plan.

The plan would bring 38 species of shark under management. The management measures would: Establish a commercial quota of 5,800 t; establish a recreational bag limit of one shark per person per day in the U.S. Exclusive Economic Zone; establish a procedure for adjusting annual harvest levels for commercial fishermen and bag limits for recreational fishermen; prohibit "finning" by only allowing fins to be landed in proportion to carcasses, i.e., no more than four fins per carcass; prohibit sale of recreational catch; require annual permits for commercial shark fishermen, i.e., fishermen who harvest and sell shark meat and fins; require annual permits for dealers; and require monthly reports by permitted commercial fishermen and dealers, and by persons conducting tournaments. After public comments are considered, the plan will be finalized and if approved by the Secretary of Commerce, may be implemented in July 1990.

### **Ground Broken for New Sandy Hook Laboratory**

A groundbreaking ceremony was held at Sandy Hook, New Jersey, on 11 October 1989 to mark construction of a 36,000-square-foot marine research laboratory to be occupied by scientists from the NMFS Northeast Fisheries Center and from state agencies and academic institutions in New Jersey. The new laboratory, to be completed in about 3 years and named the James J. Howard Marine Sciences Laboratory to honor the late U.S. Representative from New Jersey who strongly supported marine research, is a response to a 21 September 1985 fire which leveled one of the two buildings comprising the old NMFS Sandy Hook Laboratory.

The new laboratory, to be funded by the state with space leased to the Center, will house experimental seawater and

analytical chemistry laboratories. As part of the construction package, the one remaining building of the old Sandy Hook Laboratory (a designated national historic building) will be renovated for library, conference room, and light lab use.

## NMFS Beaufort Laboratory Celebrates 90th Anniversary

The NMFS Southeast Fisheries Center's Beaufort, N.C., Laboratory celebrated its 90th Anniversary during 1989. The lab was established in 1899 by the U.S. Commission of Fish and Fisheries to study the biology and relationship of marine animals and plants, their environment and fisheries potential. The Laboratory is the nation's second oldest Federal Fisheries Laboratory. An open house was held 20 October and a banquet on 17 November. The National Sea Grant representative presented Ford A. Cross, Laboratory Director, a plaque congratulating the Lab on its many accomplishments and acknowledging the close association that exists between the Lab and Sea Grant.

## NOAA, UMass, URI Share Operations

The National Oceanic and Atmospheric Administration (NOAA) and each of the Universities of Massachusetts (UMass) and Rhode Island (URI) have begun a formal program to share scientists and resources for studying timely marine issues. Called the Cooperative Marine Education and Research (CMER) Program in each case, the partnership with UMass is now undertaking five research projects, and with URI two projects, involving NOAA's NMFS Northeast Fisheries Center.

The NOAA/UMass CMER's five fisheries-related projects ultimately seek to: 1) Reduce chances of rancidity in frozen Atlantic mackerel, 2) develop uses for

wastes from mackerel processing, 3) determine if skates out-compete traditional groundfishes (e.g., haddock) for prey during early life stages, 4) understand better the spawning and early development of skates, and 5) relate movements of northern right whales to environmental conditions (e.g., water temperatures).

The NOAA/URI CMER's two fisheries-related projects involve: 1) An economic analysis of the U.S. market for blue mussels and 2) a better understanding of the seasonal and areal changes in abundance of the coastal Gulf of Maine's *Calanus* spp. copepods, a major prey for many of the Gulf's economically important fish species.

## New Genus, Two New Species of Box Crabs

Exploratory trawling with the old Bureau of Commercial Fisheries research vessels *Pelican*, *Combat*, *Silver Bay*, and *Oregon*, and with the NOAA research vessel *Oregon II*, yielded large collections of decapod crustaceans which were stored at the National Museum of Natural History. Recent study of those crustaceans has produced one genus (*Cyclozodion*) and two species of box crabs (family Calappidae) in the Northwest Atlantic new to science. For further information, contact Austin B. Williams, FTS (202) 357-2639 at the NMFS National Systematics Laboratory.

## Cooperative Research Institute Established

NOAA and the University of Michigan have established a new Cooperative Institute for Limnology and Ecosystem Research, to be based at the university in Ann Arbor. Alfred Beeton, Director of NOAA's Great Lakes Environmental Research Laboratories in Ann Arbor, Mich., said the new institute will conduct Great Lakes-related research involving

both university and NOAA scientists. Activities will be in the areas of toxic contaminants and chemical processes, coastal hydrodynamic and sedimentary processes, water quality and lake levels, physical processes, ecosystem dynamics and habitat, and climate and global change.

The institute has been established in cooperation with Michigan State University, and is unique in that it will provide for the participation in the research program of researchers at any Great Lakes Basin institution. The institute is the seventh established by NOAA with universities throughout the United States, and it is the only one with a primary focus on the Great Lakes.

## NOAA Selects Great Bay As a Research Reserve

The National Oceanic and Atmospheric Administration (NOAA) designated 4,471 acres of land and tidal waters in and around Great Bay, N.H., as the Great Bay National Estuarine Research Reserve in October 1989. The new Reserve encompasses all water areas of Great Bay, including 48 miles of shoreline, the bay's tidal waters and mudflats, and the Winnicut, Squamscott, and Lamphrey river channels, plus five key upland areas around the estuary. This is the nation's eighteenth estuarine research reserve.

The National Estuarine Research Reserve System, administered by NOAA's Marine and Estuarine Management Division, includes unique sites representative of biogeographical regions of the country. A state-Federal matching-fund program, establishment of the Reserve makes New Hampshire eligible for financial support from NOAA for estuarine research and development of educational programs for the Great Bay area, and to support management staff. NOAA and New Hampshire also supported acquisition of key land areas to establish the reserve.