

NOAA Announces Marine Research Projects

A variety of undersea scientific projects, all involving submersible research vehicles and concerned with such matters as ocean floor pollution, cosmic radiation, and land slides along the continental shelf, have been scheduled by the National Oceanic and Atmospheric Administration (NOAA) for the oceans around the United States during summer and fall 1978.

Richard A. Frank, NOAA Administrator, said the Commerce Department agency is sponsoring investigations under the sea along parts of the Atlantic Coast, off Alaska, and in the Grand Bahamas.

The DSRV (Deep Submergence Research Vehicle) *Alvin*, the diver lock-out submersible *Johnson-Sea-Link*, and several shallow water submersibles will all be used in the investigations, Frank said.

Alexander Malahoff of NOAA is concluding a series of 10 dives in the Baltimore Canyon area of the east coast, attempting to learn what causes masses of soft sediment to slide down canyon walls or slopes, and the effect this may have upon the continental shelf oil lease areas. He is using the *Alvin* in his work.

Another project involving that submersible was scheduled for September when Richard Cooper, also of NOAA, investigates the geological and ecological features of the deeper regions of the Oceanographer submarine canyon, an area about 100 miles southeast of Cape Cod, Mass. Diving in the *Alvin* to depths of almost 6,000 feet (1,800 m), Cooper will be examining the distribution and behavior of lobsters and two types of potentially commercial crabs. *Alvin* operations are supported by the

National Science Foundation and the U.S. Navy, in addition to NOAA.

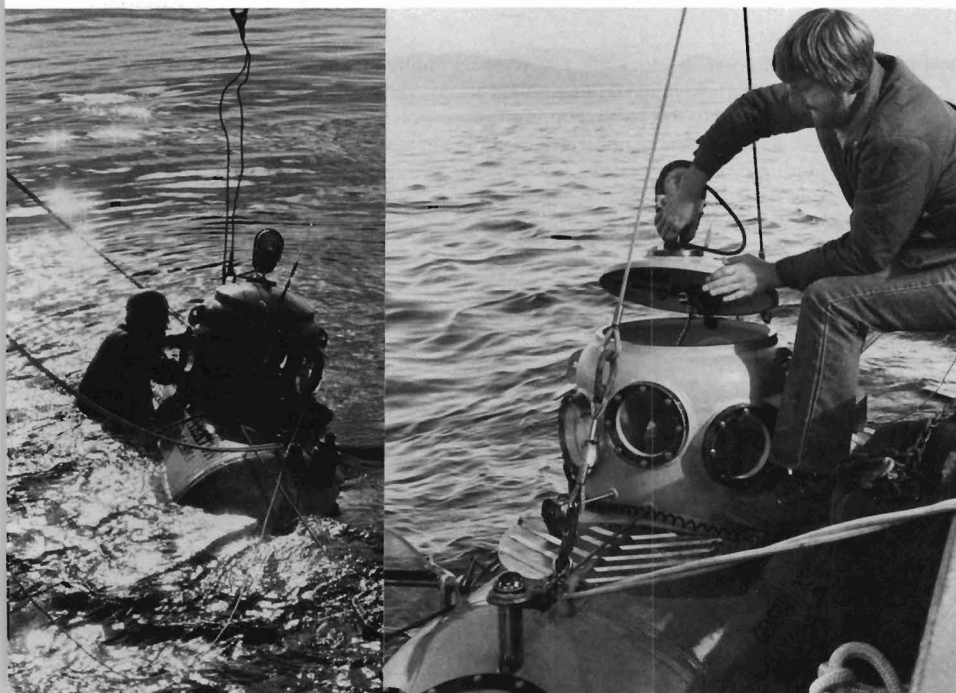
A variety of shallow-water submersibles capable of operating to depths of almost 1,000 feet (300 m) will be used in research projects beginning in July with a 10-day cruise by scientists of NOAA's Atlantic Oceanographic and Meteorological Laboratories, Miami, Fla.

George L. Freeland is chief scientist of a group that will make dives on the Atlantic continental shelf edge from Block Canyon off Woods Hole, Mass., to Baltimore Canyon off Cape May, N.J. The geologists will gather information on the depth, nature, and rate of change of bottom sediments along the continental shelf break. Cruise efforts will be devoted to answering questions about water mass processes that cause rapid sediment variations between shallow and deeper energy zones.

Cooper, of NOAA's Northeast Fisheries Center, Woods Hole, Mass., complemented his deeper *Alvin* dives by leading a scientific team on a 10-day shallow-water submersible cruise in July, to continue work on the geology and ecology of the Mid-Atlantic Bight Submarine Canyons. This cruise began at Cape May and ended at Woods Hole. The submarine canyons contain numerous bottom-dwelling crustaceans—for example lobsters, Jonah crabs, and red crabs—of present or potential commercial value. Information on them is required by the regional fishery management councils to make decisions about management of the species.

Scientific investigations of Alaska's southeast coast took place from 15 July through 6 August, in areas from Lisianski Inlet to Boca de Quadra Inlet. William High of the Northwest and Alaska Fisheries Center was scientific leader of the investigations, which examined four types of problems: 1) Bottom-dwelling fish communities and precious corals in deep rocky coastal areas, and the efficiency of fishing gear design and deployment; 2) ecology of fish, crab, and shrimp in relation to logged and inlogged shore areas; 3) sedentary fishing gear (traps, pots, longlines) behavior and efficiency; and

Securing the hatch and releasing the submersible *Nekton Gamma* prior to diving off Southeastern Alaska. Photographs by William High, Northwest and Alaska Fisheries Center, NMFS, NOAA, Seattle, Wash.



4) distribution, abundance, and response of king crabs to fishing gear. In addition to National Marine Fisheries Service and Sea Grant scientists, investigators from the Alaska Department of Fish and Game, University of Alaska, and University of Hawaii took part.

The *Johnson-Sea-Link* lockout submersible was scheduled for two projects under this NOAA schedule. From

26 to 30 June, N. Wogman of Battelle-Northwest and R. Jones of Harbor Branch Foundation assessed X-ray fluorescence technology for mapping trace metal pollutants on the sea floor. Measurements of the pollutant element concentrations of sediments over substantial distances of ocean floor could produce information on such concentrations in continental shelf regions, es-

tuaries, and freshwater areas.

Finally, Peter Kotzer, of Western Washington University, and Kurt Stehling, of NOAA's Office of Ocean Engineering, were slated to use the *Johnson-Sea-Link* to retrieve a photo-emulsion cosmic radiation detector previously placed on the ocean floor near Grand Bahama Island, and prepare and put in place additional detectors.

Seafood Landings Hit Record Value in 1977

The value of fish and shellfish landed by U.S. commercial fishermen during 1977 reached an all time high of more than \$1.6 billion, although the amount landed was down slightly from 1976, Terry L. Leitzell, Assistant Administrator for Fisheries of the National Oceanic and Atmospheric Administration (NOAA), has announced. The total value of U.S. production of processed fishery products, edible and industrial, also rose—an 11 percent increase—to \$3.9 billion, the Commerce Department official said.

U.S. fishermen landed 5.3 billion pounds at ports in the United States, Puerto Rico, and American Samoa, a 4 percent decrease in amount, but 12 percent increase in value over 1976. The decrease in landings was largely due to a drop in landings of industrial (nonedible) fish.

"Commercial landings of edible species," Leitzell said, "were about 3 billion pounds, valued at \$1.4 billion. This a 5 percent increase in quantity, considerably above the average for the previous 5 years, and an 11 percent increase in value." Shrimp, tuna, crab, salmon, and flounder landings accounted for a large share of the increase.

Per capita consumption of fish in the U.S. in 1977 was 12.8 pounds per person, down slightly from the record 13 pounds in 1976.

Details of these and other preliminary data dealing with U.S. fisheries are included in "Fisheries of the United States, 1977." Single copies may be ordered from User Services Branch

D822, Environmental Data Service, NOAA, Rockville, MD 20852, telephone (301) 443-8330.

The amounts and values of the 1977 fisheries and percent change from 1976.

Item	1977	Change
All fish and shellfish		
Amount (billion lb)	5.3	-4%
Value (billion \$)	1.6	+12%
Edible		
Amount (billion lb)	3	+5%
Value (billion \$)		
Industrial and (non-edible)		
Amount (billion lb)	2.3	-11%
Value (million \$)	111	+25%

Webster Heads R&D at NOAA

Ferris Webster, Associate Director for Research at the Woods Hole Oceanographic Institution, Woods Hole, Mass., has been named Assistant Administrator, Office of Research and Development, of the National Oceanic and Atmospheric Administration (NOAA). NOAA Administrator Richard A. Frank, in announcing the appointment to the newly created position, said Webster's educational and professional backgrounds highly qualify him for the responsibility of coordinating and supervising NOAA's broad research and development activities.

A native of St. Boniface, Manitoba, Webster was educated at the University of Alberta, receiving BS and MS de-

The 1977 top 10 ports' commercial landings in millions of pounds and value in millions in terms of dollars.

Port	Landings
San Pedro, Calif.	519.5
Cameron, La.	306.7
Pascagoula-Moss Point, Miss.	272.2
Empire, La.	190.5
Kodiak, Alaska	179.6
Dulac-Chauvin, La.	153.7
Gloucester, Mass.	150.9
San Diego, Calif.	124.1
Beaufort-Morehead City, N.C.	100.7
Dutch Harbor, Alaska	100.5

Port	Value
San Pedro, Calif.	\$109.1
Kodiak, Alaska	72.5
Dutch Harbor, Alaska	61.4
San Diego, Calif.	43.4
New Bedford, Mass.	43.2
Brownsville-Port Isabel, Tex.	42.0
Aransas Pass-Rockport, Tex.	39.0
Dulac-Chauvin, La.	33.1
Freeport, Tex.	26.0
Bayou LaBatre, Ala.	25.7

¹Data for some ports are estimated and for some ports are not included to avoid disclosure of private enterprise.

grees in physics, and at Massachusetts Institute of Technology (MIT) where he received his doctorate in geophysics. He has been with Woods Hole since 1959, joining the Oceanographic Institution as a Research Assistant. Appointed a Senior Scientist in 1970, Webster became Chairman of the Department of Physical Oceanography in 1971, and Associate Director for Research in 1973. From 1966 through 1968, while at Woods Hole, he also was Assistant Professor of Oceanography at MIT.

Webster has served on a number of commissions, committees, and groups, including chairing two Intergovernmental Oceanographic Commission groups. Currently he is chairman of the Ocean Sciences Board of the National Research Council and member of the Climate Research

Board. He also is Vice Chairman of the University-National Oceanographic Laboratory System, and Members' Representative to the University Corporation for Atmospheric Research.

President of the Oceanography Section of the American Geophysical Union, 1974-76, Webster also was Chairman of the Steering Committee for the National Academy of Sciences/National Research Council's review of NOAA oceanic research and development, 1975-77.

He is the author or co-author of 20 scientific publications and former editor of several professional journals. His research interests are in time-dependent ocean currents, oceanic variability, time-series analysis, and oceanographic data processing.

U.S., France Sign Amoco Cadiz Research Agreement

American scientists will participate in a long-term scientific study of the ecological consequences of the *Amoco Cadiz* oil spill, under terms of an agreement signed in mid-summer at the French Embassy in Washington, D.C., by Richard A. Frank, Administrator of the Commerce Department's National Oceanic and Atmospheric Administration (NOAA), and Gerard Piketty, Director-General and President of France's National Center for the Exploitation of the Oceans (CNEXO).

The signing highlighted a mid-term review of the U.S.-French Cooperative Program in Oceanography carried out by Piketty and Frank during a visit by the new head of CNEXO to become acquainted with his American colleagues in oceanography. Immediately following the *Amoco Cadiz* spill, at the invitation of CNEXO, scientists from the United States, working with NOAA's Spilled Oil Research team, participated with French scientists in the preliminary scientific research on the short term consequences and on early clean-up efforts.

The two leaders pointed to the increased need for international cooperation in oceanic research as such prob-

lems as major oil spills become increasingly international in scope. They expressed satisfaction at the work being done under the U.S.-French program, and at the opportunities for closer collaboration provided by the new agreement.

Under that agreement, a joint CNEXO-NOAA scientific commission will be established to prepare and carry out a research plan complementary to the French scientific program, and to define and oversee the uses of a special \$2,000,000 fund contributed by Amoco Transport Co., a subsidiary of Standard Oil of Indiana, and administered by NOAA. The commission will consist of five French and five U.S. delegates, with a French chairman and U.S. co-chairman. U.S. members will be scientists designated by NOAA, primarily from the academic community and research institutions.

The agreement becomes part of a joint program on marine environmental research carried out by the two nations

under the U.S.-French Cooperative Program. Other projects include tests of equipment designed to reduce oil pollution at sea, remote sensing, and uses of dispersants and bacteria. In addition, the two leaders reviewed progress in the eight other areas comprising the overall program. These consist of data exchange, instrumentation, shelf and coastal sediment dynamics, aquaculture, marine pollution control, buoy technology, marine geology and geophysics, and man in the sea projects.

The U.S.-French program has been under way since 1970. Joint meetings for scientific review and planning are held at about 18-month intervals, and briefer, mid-term reviews are conducted to receive progress reports and identify any problems that may have arisen. The last scientific planning meeting was held in Bandol, France, in September 1977, and the next is scheduled for the United States early next year.

Wisconsin: First Great Lakes Coast Management Program Wins Approval

Approval of Wisconsin's Coastal Zone Management Program, and award of a grant of \$1.3 million to the State to put the program into effect, have been announced by Secretary of Commerce Juanita M. Kreps. Wisconsin is the first Great Lakes State to receive Federal approval for its coastal zone management program. The Federal grant will augment nearly \$500,000 in State funds for the program.

"Approval of Wisconsin's program is an important step in assuring wise management of the State's 620 miles of Great Lakes shoreline," Secretary Kreps said. "Now, for the first time, Wisconsin has a program to focus State attention upon the problems and opportunities that are unique to its lakeside."

Wisconsin's 15 coastal counties include 6.5 million acres of two of the largest bodies of freshwater in the world, Lake Superior and Lake Michigan. About 41 percent of the State's population lives in these counties.

Planning grants from the National Oceanic and Atmospheric Administration (NOAA) over the past 4 years have enabled Wisconsin to complete major planning tasks that led to program approval. Included have been inventories of the State's land and water uses, and studies of port development, energy facility siting, erosion, recreation, and public access to the shoreline.

Under the NOAA grant, State authorities will concentrate on the following objectives: 1) Streamlining the regulation process, including training personnel and providing technical and financial assistance to local governments; 2) Strengthening the role of local governments to help them manage their own coastal resources; 3) Improving urban waterfront areas and public access to those areas; 4) Increasing the public's participation in decisions affecting the Great Lakes; and 5) Identifying new opportunities and markets for Wisconsin's Great Lakes ports.