



# noaa week

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## URI Awarded \$1,121,000 Sea Grant

The University of Rhode Island has received a \$1,121,000 Sea Grant to continue its research activities in coastal resources, fisheries, and aquaculture. The grant will be matched by more than \$560,000 from the State and private industry. Under the grant, the school's coastal resources group will begin to apply information from its mathematical models of Narragansett Bay and the Rhode Island-Block Island Sound areas. The models, which use com-

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## 2-Man Research Sub Operating Off N.E. Coast

Studies ranging from the geology of potential offshore oil drilling sites to the ecology of fish and shellfish will be carried on from a two-man research submarine operating off the northeast coast from mid-June to August 1.

Nekton Gamma, the tiny underwater workhorse of General Oceanographics, Inc., will carry scientists to study sites deep in the ocean, under contract with NOAA. The cooperative scientific-exploratory program is being conducted by the U.S. Geologi-

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## Acoustic Fish Finder To Track Sewage Sludge

Like a searchlight illuminating insects in the dark, a silent acoustic fish finder will track sewage sludge particles in murky waters off New York and New Jersey during an experiment in the New York Bight in mid-July.

## OCZM Grants Are Awarded 5 States, P.R.

Several grants, awarded to states by the Office of Coastal Zone Management to assist the states in continuing development of their coastal management programs, have been announced recently.

—A \$500,000 grant to Hawaii, its third from OCZM, will be used to complete the planning stages of its coastal zone program. Upon completion, if the program meets the criteria established by the 1972 Coastal Management Act, the State can receive implementation funds from OCZM.

—The recent \$424,190 grant Puerto Rico received brings to \$1 million the amount it has received from OCZM for development of its program to achieve optimum use of the coastal environment. The latest grant will be used to develop the actual program for Federal approval, and initiate the necessary steps for its adoption and implementation. Puerto Rico has added \$500,000 in territorial matching funds for development of its program.

—Louisiana's recent grant of \$342,000 will be used for data

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The research, conducted by scientists with NOAA and the State University of New York, is part of the Environmental Research Laboratories' Marine Ecosystems Analysis (MESA) New York Bight Project, a comprehensive ecological study of human impact on the marine environment. Dr. Robert A. Young, of ERL's Atlantic Oceanographic and Meteorological Laboratories in Miami, Fla., is chief scientist on the experiment.

The Bight—a 15,000-square-nautical-mile (50,000 square-kilometer) area extending from Cape May, N.J., to Montauk Point, N.Y., and seaward to the edge of the continental Shelf approximately 100 nautical miles (190 kilometers) offshore, is the receptacle of America's largest ocean dumping operation. It must swallow 150 million cubic feet (4,248,000 cubic meters) of sewage sludge—the byproduct of waste water treatment—per year. Until now scientists have not had instruments to tell them how the sludge behaves during the first few hours after dumping, an important element in assessing the effect of sludge dumping on the

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## 928 Foreign Fishing Vessels Sighted Off U.S. During May

The number of foreign fishing and fisheries support vessels sighted during May within 200 miles of the coasts of the U.S. increased sharply to 928 from the 610 sighted during April, according to preliminary reports of the National Marine Fisheries Service. The ships came from 12 foreign nations.

The increase is attributed to a buildup of the Japanese fishing fleet south of the Aleutian Chain. Over 350 vessels joined the Japanese fleet off Alaska on May 20 to begin their annual high seas fishing for salmon. The Japanese also fished for pollock, flounder, black cod, Pacific

ocean perch, and tanner crab off Alaska. The target species of the Soviets in the area were rockfish, Atka mackerel, and pollock. South Korea had a record high of 38 vessels off Alaska.

Three Bulgarian ships were reported off the west coast, the first time that nation has sent ships to the area. The foreign fleet there—90 ships—fished for hake and black cod.

The sightings, which also showed an increase over the 787 vessels off the U.S. coast in May of last year, were made by representatives of NMFS and by personnel of the U.S. Coast Guard

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THE FIRST NOAA CORPS DIVER'S PIN was presented recently to NOAA's Deputy Administrator, Howard W. Pollock (left), by R. Adm. Harley D. Nygren, Director of the NOAA Corps (center). Although regulations specify that the pin is to be worn only by those NOAA Corps officers who are Certified NOAA Divers, the honorary pin was presented to Mr. Pollock because he is a Certified NOAA Diver.

Lt. (j.g.) David H. Peterson (right) received the first Diver's Pin presented to a NOAA Corps officer. He is presently the Assistant NOAA Diving Coordinator, and is assigned to the Manned Undersea Science & Technology Program in the Office of the Associate Administrator for Marine Resources at Rockville, Md.



The NOAA Diving Coordinator is Dr. J. Morgan Wells, Science Coordinator in the MUS&T Program. Of the present 397 Certified NOAA Divers, 119 are officers, and the rest are administrative people, fisheries biologists and technicians, physical scientists, engineers, research technicians, and wage marine employees. Twelve in the group are women.

## International Gulf of Alaska Chart Published

The National Ocean Survey has published an international nautical chart, INT. 500, covering the entire Gulf of Alaska from Dixon Entrance on the east to Unimak Pass in the Aleutian Islands. It is the fourth of five international nautical charts to be issued by the NOS as part of a multination program sponsored by the Monaco-based International Hydrographic Organization (IHO).

The IHO program will provide a standard series of nautical charts of the world's oceans that can be used by all nations. Each IHO member nation is authorized to reprint charts in its own language, but employing the same form of navigational information, such as depth curves, sounding spacing, aids to navigation, and nautical symbols.

Published by the NOS Office of Marine Surveys and Maps, INT. 500 (NOS Chart 500) is 1:3,500,000 scale, and is the fourth metric nautical chart issued by the NOS showing elevations as well as depths in metric units. Loran-C lines of position, for navigation assisted by electronic equipment, are also shown on the chart. It is priced at \$3.25, and may be obtained from the NOS Distribution Division (C44), Riverdale, Md. 20840; NOAA Chart Sales & Control Data, 632 Sixth Avenue, Room 302, Anchorage, Alaska 99501; NOS (CPM14), 1801 Fairview Avenue East, Seattle, Wash. 98102, or from authorized NOS nautical chart sales agents.

## 2-Man Sub Operating Off N.E. Coast

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cal Survey, the U.S. Army Corps of Engineers, and NOAA's Manned Undersea Science and Technology office.

Dr. Richard Cooper of the National Marine Fisheries Service Northeast Fisheries Center in Woods Hole, Mass., is using the submersible this month to conduct ecological studies of areas in Stellwagen Bank and the Gulf of Maine. He is investigating bottom fish and shellfish behavior and distribution, as well as ecological factors affecting survival of the animals in their egg and larval states.

Dr. David Folger of the U.S. Geological Survey, also from Woods Hole, will make bottom geological observations in expected oil drilling areas of Georges Bank and the Baltimore Canyon trough July 1-15, as part of the program.

Biological studies of ocean dumping sites will be carried out during mid-July by Gilbert Chase

## U.S./Grand Cayman Island Government Memorandum of Arrangement Is Signed

During a recent visit to the NOAA facilities in the Washington area, C. E. Berridge, Coordinating Director of the Caribbean Meteorological Organization, signed for his organization a Memorandum of Arrangement between the Grand Cayman Island Government and the United States. Dr. White had previously signed for the United States. The arrangement defines the terms

under which the United States operates the upper air facility on the Island. The Station provides key meteorological surface and upper air data used in forecasting the development and movement of tropical disturbances in and through the Caribbean area. It is one of two stations operated by the NWS Overseas Operations Division in the Caribbean. The other is Isla del Cisne (Swan Island).



(From left) David Smedley, Chief of Technical Assistance Division, Office of International Affairs; Bernard Zavos, Chief of NWS Overseas Operations Division; and Mr. Berridge.

## University of Rhode Island Receives \$1,121,000 Sea Grant (Continued from page 1)

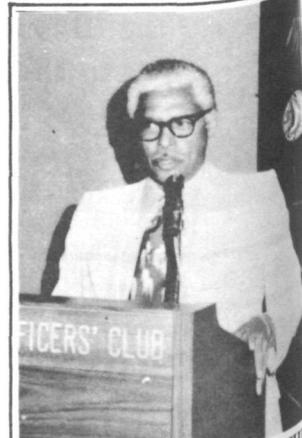
puters to simulate and predict the movements of tides, nutrients, and pollutants, are being expanded to include Buzzards Bay and Long Island Sound. The models can be used to assist State and local agencies in assessing environmental impact statements and in dealing with local pollution control problems.

Other research is aimed at monitoring hydrocarbons on seawater, including a project that last year resulted in a time-saving technique for identifying pollutants still on the surface of the water through the use of laser

beams.

Resource economists and fishery biologists will study the commercial fisheries of New England, including using computer modeling to determine the effect of changes in seawater temperature and intensified harvesting on yellowtail flounder populations. This research may be helpful in predicting yields of the flounder fishery, as well as other commercially valuable fisheries that are affected by man-made or natural changes in the environment.

Several studies under the current grant in the university's salmonid aquaculture program are helping solve problems of removal of waste products—primarily ammonia and nitrate—



GUEST SPEAKER AT THE RECENT EEO AWARENESS DAY LUNCHEON in the Washington, D.C., area was John Buggs (above), Staff Director of the U.S. Commission on Civil Rights. The 400 guests who attended also heard NOAA's commitment to equal employment opportunity reaffirmed by Dr. Robert M. White, NOAA Administrator; Barbara Gaaney, NOAA EEO Officer; and Celso Barrientos, NOAA EEO Committee Chairperson.

of the U.S. Army Corps of Engineers, Waltham, Mass. His work will involve dives on the Brenton Reef ocean dumping site and the Rhode Island Sound shelf area.

Finally, during dives from July 21-August 1, Dr. George Freeland of the Environmental Research Laboratories' Atlantic Oceanographic and Meteorological Laboratories, Miami, Fla., will gather geological and biological information on the seafloor of the New York Bight as part of his ongoing research in the area in connection with ERL's Marine Ecosystem Analysis program.

Nekton Gamma can take a pilot and scientist to depths of 1,000 feet for bottom sampling and photographic and direct observation of conditions on the continental shelf and slope that affect or are caused both by natural events and man's activities.

## Foreign Fishing Ships

(Continued from page 1)

conducting joint fisheries enforcement patrols from Coast Guard aircraft and cutters.

Japan had the largest number of vessels, 596—581 operating off Alaska, 11 off the Mid-Atlantic States, and four off the Gulf coast. Second was the Soviet Union with 233, of which 109 were off Alaska, 74 off the west coast, and 50 off New England. Third was the Republic of Korea, with 51—38 off Alaska, 12 off the west coast, and one off the Mid-Atlantic States.

In addition, vessels from Poland, Denmark, the German Democratic Republic (East Germany), Italy, Ireland, Cuba, Spain, and the Republic of China (Taiwan) were sighted.

No foreign vessels were seized during May.

from fish rearing tanks. A special biological filter has been devised that makes possible a 30 percent reduction in capital costs.

URI's Marine Pathology Laboratory will continue to be the Southern New England community through its fish disease diagnostic center. Other work by the Sea Grant team's marine pathologists includes further investigation of toxins found in paralytic shellfish poison—the so-called "red tide" that has threatened New England's shellfish beds in the past—and research on putting the shell wastes of red crabs processed at a New Bedford, Mass., plant to good economic use.

One of the goals of this latter project is to use the crab wastes as an ingredient in feed for artificially-reared salmon. The red pigment in the crab shells could be especially valuable in helping the salmon maintain their natural pink color.

## noaa week

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NOAA Week reserves the right to make corrections, changes or deletions in submitted copy in conformity with the policies of the paper or the Administration.

Catherine S. Cawley, Editor  
Warren W. Buck, Jr., Art Director



Holmes S. Moore (center), Electronic Engineer in the Office of Environmental Monitoring and Prediction, who recently was elected a Vice President of the American Oceanic Organization, is shown at the June meeting with Congressman James J. Florio of New Jersey (right), and Dr. Richard E. Hallgren, Deputy Director of the National Weather Service and a Director of A.O.O.

Other Directors include Robert J. Shephard, Program Manager of the Marine Advisory Service in the Office of Sea Grant; Elizabeth M. Wallace, immediate past Executive Director of the Marine Technology Society; Senators Ernest F. Hollings of South Carolina and Ted Stevens of Alaska; and Congressmen Bill Alexander of Arkansas, John M. Murphy of New York, and Leo J. Ryan of California.

Edward M. McCutcheon, who retired in 1972 as Special Assistant for Marine Affairs to the Director of the National Ocean Survey, is the President of A.O.O.; and V. Adm. William W. Behrens, Jr., USN (Ret.), who was formerly NOAA's Naval Deputy, is also a Vice President.

The A.O.O. was organized to bring together persons of diverse backgrounds, professions and interests for an open exchange of information and ideas on ocean subjects with the mutual goal of fostering a better understanding and utilization of the oceans' resources and of advancing our Nation's progress in the oceans.

# Swimmers: Learn To Recognize Rip Currents, Avoid Their Dangers

A summer day at the ocean can turn into tragedy because of a little-recognized but extremely dangerous natural hazard, a rip current.

More threatening than sharks—and especially dangerous to swimmers with limited ability—rip currents can be recognized easily and their dangers avoided, says Dr. Harris B. Stewart, Director of the Environmental Research Laboratories' Atlantic Oceanographic and Meteorological Laboratories in Miami, Fla. He has developed simple rules every swimmer who plans to go the seashore should know.

According to Dr. Stewart, rip currents take lives because people caught in them become exhausted and panic—yet escape is easy—if one knows what to do.

A rip current is a strong, narrow outflow, perpendicular to the shore, carrying back to sea the water brought in by waves. Part of a generally circular pattern of water movement found off most long, gently-sloping sand beaches, a rip current can travel at speeds up to two or three miles an hour, constantly changing position. The same beach may have several of these killer currents at one time and then go weeks without any at all.

Once outside the surf zone,

the rip current dies rapidly, spreads out, and often forms a large, sluggish eddy which oceanographers call a "rip head".

Generally, the pattern of the sea surface is one of long lines running parallel to the beach. The rip current breaks up this pattern by forming a criss-cross line perpendicular to the beach. Small choppy waves sometimes form a line out to the surf zone, and often a foam line will indicate the location of a rip current. If there is sediment in the water, a long brownish band of darker water may indicate a rip current.

Usually the surf is lower where a rip current passes through the surf zone causing a break in the line of breakers. If a rip current has been in one place for a while, there is often a short sand spit built out from the beach at the base of the rip.

Dr. Stewart warned that if while swimming, you notice yourself moving faster in one direction along the shore, you should expect rip currents to be developing. If you are walking from the beach into shallow water, and feel a current pulling at your legs, you may be able to see a spot down-current where a rip is moving water seaward. Or look at the end of a jetty, groin, or other solid obstruction to the longshore movement of water, and there will probably be a rip current where the water has been deflected seaward.

You will know when you are in a rip current, Dr. Stewart explained. Your first indication is that your feet touch bottom occasionally and you get the feeling the bottom is moving fast toward shore. When your feet are no longer touching bottom you find you are further out to sea than you had expected, or moving faster than other swimmers near you.

This is when most swimmers make their mistake—they start swimming frantically toward the shore. Instead, they should swim parallel to the beach—since a rip current is seldom more than 10 or 20 feet wide, they would soon be out of it.

An alternative is to relax and let the rip current carry you seaward through the surf zone into the rip head where it slows down. From there, you can have a leisurely swim back to the beach parallel to the rip current.

These simple rules could be life savers:

- Learn to recognize a rip current;
- Look for them every time you go to the beach;
- Point them out to the children and tell them about them;
- Avoid them if possible; but
- If you do get caught in one, swim parallel to the beach, and you will soon be out of it.

# Acoustic Fish Finder To Track Sewage Sludge in N.Y. Bight

(Continued from page 1)  
New York Bight's marine ecosystem.

The underwater detection system being used in the NOAA-SUNY experiment—a system similar to sonar equipment on submarines—will permit scientists to track and map the dispersion of the sewage-sludge cloud as it falls away from the dumping vessel.

The project should provide scientists with their first accurate estimates of how far and how fast sewage sludge spreads horizontally and vertically—a quantity needed to develop predictive models of the sludge dumping process. A detailed chemical sampling program to be carried out with the sludge tracking will identify the important chemical transformations involved in sludge dispersion.

"Our acoustic sounding technique can be used to monitor many different types of activities in the marine environment," says Dr. John R. Proni, the NOAA oceanographer who developed the techniques being tested off New York the week of July 11. Drs. Young and Proni and their colleagues from AOML and the National Marine Fisheries Service Middle Atlantic Coastal Fisheries Center at Sandy Hook, N.J., and biologists from SUNY at Stony Brook will operate two

acoustic sounders designed originally for detecting schools of fish, to guide the NOAA Ship Kelez as she samples dumped sludge. Biologists aboard SUNY's vessel, the Onrust, will sample other parts of the sludge plume. Aboard NOAA's Johnson, a catamaran launch, Dr. Proni will use a similar acoustic system to track sludge dispersion.

The two acoustic sounders will be operated simultaneously at different frequencies during the project in a nine-square mile (22-square kilometer) sludge-dumping area. The site will be closed to dumping for a two-day period by the Environmental Protection Agency to provide a relatively sludge-free background.

As each tanker in the New York City sewage tanker fleet empties its cargo, the Kelez will pass through the created surface slick of material and track the underlying sewage sludge with the acoustic sounding system.

Each acoustic sounder detects the sludge in a different form. The instrument operating at the higher frequency—200,000 cycles per second—detects the sludge as a dark cloud. The fish finder operating at 20,000 cycles per second picks up a distinct biological distribution outlining the sludge four to five minutes after the sewage material is dumped.

"At this point chemists on board the Kelez will lower bottles into the water and obtain samples where the acoustic device says the highest concentration of sludge is located," Dr. Young says. "Until the acoustic sounding technique was used, scientists had no idea where the sludge was concentrated in the water column to obtain representative samples."

While the "brains" of the echo sounders are located on board the Kelez, the instruments' transducers—sound-emitting devices—are towed alongside the ship by short cables. Both instruments are powered by one-to-two kilowatts of energy for each sound pulse and function above the range of human hearing as they track the barge's dumped cargo. A cable attached to each sound transducer carries the returning signals ("echoes") back to the ship where they are recorded on magnetic tape for later computer readout and analysis.

Sludge from several processing plants ringing the Bight will be dumped during the research project by the City of New York sewage sludge dumping fleet and additional barges operated by Pollution Control International, General Marine Transport Corporation, and Modern Transport Corporation.

# notes about people

**Robert V. Ochintero**, Director of the Environmental Data Service's National Oceanographic Data Center, was elected interim Chairman of the UNESCO Intergovernmental Oceanographic Commission's newly established Group of Experts on the Development of a Pilot Program for Re-



ponsible National Oceanographic Data Centers (RNODCs). The Group will develop a program for exchange and processing of automated data that will lead to establishment of an RNODC system by 1980. The purpose of the RNODC system is to provide computer services for the World Data Centers for Oceanography and assist emerging countries with data processing and international exchange.

**Hubert B. Webb**, Weather Service Specialist at Orlando, Fla., has been selected to fill the Official in Charge position at Del Rio, Tex., vacated by **James Little**, who has transferred to Athens, Ga. Mr. Webb entered the Weather Service at Knoxville, Tenn., in 1960 following three years in the Marine Corps, and subsequently served at Rochester, Minn.; Athens, Ga.; and Jacksonville, Fla.



He received a B.S. Degree in Business Management from Jones College (Florida) in 1974.

**Harvey L. Moore**, former Assistant to the Director of the National Marine Fisheries Service Northwest Region in Seattle, Wash., has been appointed to the Oregon State University Extension Service and will serve as Executive Secretary of the Pacific Sea Grant Advisory Program (PASGAP). He will administer the advisory services of the Sea Grant-supported program operated by the directors of marine advisory programs at Oregon State and Humboldt State Universities; the Universities of Alaska, British Columbia, California, Guam, Hawaii, Idaho, Samoa, Southern California, and Washington; and by representatives of the NMFS Alaska, Northwest,



and Southwest Regional Offices. Mr. Moore spent 27 years with NMFS and its predecessor agencies before his recent retirement.

**William B. Hannum, Jr.**, former President and Chairman of the Board of Sea Farms, Inc., Key West, Fla., has been named Staff Assistant in the Living Resources Office of NOAA's Associate Administrator for Marine Resources. He will be responsible for reviewing and evaluating policies and procedures which relate to the seafood industry and to marine environment.



Mr. Hannum founded Sea Farms, Inc., and for more than 10 years guided its activities in operating fishing fleets; producing, processing, and selling sea foods; and developing aquaculture in the United States and Central and South America.

Earlier, while employed as District Manager of *Chemical Week* magazine, he developed a process for raising shrimp that is now in broad use. His many years in the seafood industry and allied areas will support efforts being made by the Department of Commerce in maintaining an ecological balance between marine life and human needs.

He attended Pennsylvania State College and Drexel Institute, and has held numerous offices and memberships in nationally recognized fishery associations. He was a member of the Marine Fisheries Advisory Committee of the National Marine Fisheries Service and of the Coastal Zone Management Advisory Committee.

Several NOAA people participated in the 31st Symposium on Molecular Spectroscopy, sponsored by the Department of Physics of the Graduate School of Ohio State University and the National Science Foundation, and held June 14-18 at Ohio State in Columbus:

—**Dr. W. Charles Braun**, Research Physicist in the Physics Branch of the National Environmental Satellite Service's Satellite

Experiment Laboratory, chaired the session on High Resolution Infrared and Theory (Spherical Top Molecules);

—**Dr. Bernard Fridovich**, also Research Physicist in the same Branch, delivered a paper entitled "NOAA High Resolution Vacuum Infrared Spectrometer," which he co-authored with **Ernest E. Champion**, Electronics Development Technician, and **Gilbert R. Smith**, General Engineer, both also in the same Branch at NESS;

—**Harold W. Yates**, Director of the NESS Office of Research, who was the banquet speaker, spoke on "Tradition, Relevance, Curiosity and Satellites";

—**Dr. Daniel L. Albritton**, Research Physicist in the Environmental Research Laboratories in Boulder, Colo., delivered a paper entitled "An Analysis of the A<sub>2</sub> Sigma-Plus-X<sub>2</sub> Pi-i Band System of OT." The paper's other co-authors were **Dr. A. L. Schmeltekopf**, Chief of the Stratospheric Sampling Program in ERL's Aeronomy Laboratory, and **Dr. Hannah M. Crosswhite** and **Henry M. Crosswhite** of the Argonne National Laboratory; and

—A visiting Guest Scientist at NESS, **Dr. Noelle A. Scott**, of Campus D'Orsay, Orsay, France, also delivered a paper. It was entitled "Transmission Function of Inhomogeneous Gaseous Media: Applications to the Earth's Atmosphere in the Infrared Region of the Spectrum."



**A TOUR OF THE NORTH CAROLINA COASTLINE** in Coast Guard and Marine Corps helicopters by (from left) **Herbert S. Lieb**, Chief of the National Weather Service Disaster Preparedness Staff, and **Dr. Neil L. Frank**, Director of the NWS National Hurricane Center in Miami, Fla., accompanied by **Jay Hull**, Meteorologist in Charge of the NWS Office in Cape Hatteras, afforded them an opportunity to assess the possible effect hurricanes may have on it.

The following day, at a meeting of State, county, and local officials and media representatives in Wilmington, N.C., Dr. Frank outlined the State's vulnerability to a hurricane's most damaging effect—storm surge, and Mr. Lieb offered NWS support to those preparing their communities to deal with a possible disaster.

Previously, Dr. Frank and Mr. Lieb made a similar trip over the New Jersey beaches in an airplane supplied by the National Aviation Facilities Experimental Center at Pomona, N.J., accompanied by **MIC Martin Ross** of the Atlantic City WSO and County Civil Defense Directors.

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## OCZM Grants Announced (Continued from page 1)

gathering and detailed studies of coastal zone boundaries, permissible uses, geographical areas of particular concern, public and intergovernmental involvement, Federal consultation, legal authority, organizational networks, and administration. The State, which is now in its third year of coastal zone planning, will provide an additional matching share of \$171,000 for the program.

—Wisconsin will add \$112,000 to its recent supplemental grant of \$219,800 from OCZM. The State's objective is to develop a preliminary coastal management program by Fall of this year. Its work elements will include developing policies and alternatives for managing coastal resources and controlling shoreline erosion and encouraging aggressive public input on recommended policies and proposals.

—The \$148,000 grant New Hampshire has been awarded recently will be supplemented by

\$74,000 in State funds to aid the third year of its program's development. Technical work during the year will include a precise delineation of the primary coastal boundary, floodplain studies, and the establishment of a coastal monitoring system to review and record public and private plans or events in the State's coastal area.

—A special study of recreational facilities along Lake Superior's North Shore will be conducted by Minnesota under the \$37,000 grant it recently received from OCZM. The State will add \$18,500 for the 12-month study, which will consist of developing a recreation system plan by surveying existing and proposed State parks, waysides, and trails along the North Shore; developing policies for managing the areas; and examining the recreational potential of State-owned lands along U.S. Highway 61 fronting Lake Superior.



# **National Oceanic and Atmospheric Administration**

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