



noaa week

National Climatic Center 207
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January 3, 1975

Volume 6 Number 1

SCOPE Survey Completed

The National Ocean Survey completed in two years a survey of a 38,000-square-mile area of coastal waters off the Carolinas, Georgia, and northern Florida which previously had been programmed for completion in 1988. Dubbed SCOPE (Southern Coastal Plains Expedition), the survey will provide marine information on the coastal plain region to aid Federal, state, local and private agencies in making decisions on environmental problems. It also will serve as a prototype for similar concentrated surveys in other major coastal areas as funds and facilities become available.

Processing of the data has been speeded up in order to expedite the release of information for environmental development projects, such as ecology, pollution control and marine engineering, and for nautical charts. Considerable data from the first year's operation are already available and data from last year's survey will be available in about three months. Ordinarily, the processing of the many thousands of miles of data in a survey of this type would take about five years and completion of the field work.

In compressing the 15-year survey into two years, the NOS used the NOAA ships *Whiting*, *Mitchell*, *Peirce* and *Ferrel*, a hydrographic field party, land port units, and an air photo mission. The ships and hydrographic party covered approximately 76,000 miles, equivalent to more than three times around the globe, in carrying out their surveys from Cape Hatteras, N.C., to the vicinity of Cape Sable, Fla., and out to sea as far as 60 miles. The water depths surveyed ranged from the continental shelf to 600 feet.

Included were surveys of the bottom topography, tidal currents, tide measurements and characteristics of the sea's physical properties—such as salt content, water temperatures—along the coast and in the Gulf of Mexico. Aerial photos were taken to delineate the high and low water lines for use in the compilation of nautical charts.

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Quarter Million Dollars Saved Re-Using Radiosondes Last FY

The National Weather Service saved a quarter of a million dollars during the last fiscal year through its program of reconditioning and re-using radiosondes attached to weather balloons. The NWS uses the small data measuring devices to obtain information about the upper atmosphere—data which is vital for preparing forecasts.

Out of about 80,000 radiosondes carried aloft by weather balloons last year, 20,000 or 25 percent were recovered by the public, returned to the NWS, reconditioned, and placed back in service. Although some weather stations averaged less than 14 percent recovery, the top ten averaged more than 60 percent. Bismarck, N.Dak., and Peoria,

Ill., recovered 70 percent.

Each day the NWS launches about 300 radiosondes from a network of 130 stations. Helium-filled balloons lift them to about 90,000 feet (17 miles or 27 kilometers) above the earth. During their rise, instruments inside measure temperature, pressure and humidity at various levels. A tiny radio transmitter coupled with the instruments relays this information to the ground. Wind directions and speeds at different levels are obtained by tracking radiosondes with ground equipment.

When the balloons reach a certain altitude, they burst, a parachute opens, and the radiosondes float gently to earth. Some are never seen again, but about 25 percent are found and returned to the NWS Reconditioning Center in Joliet, Ill., whose staff restores about 80 a day. Reconditioning costs about \$15 and a new radiosonde costs \$27—so the saving is almost 50 percent.

The NWS urges everyone who discovers a radiosonde to return it to the Reconditioning Center, using the postage-paid sack provided for this purpose within the small, white plastic box containing the radiosonde. There's no cash reward—just the satisfaction of being a good citizen and helping the Government save tax dollars during a period when

(Continued on page 2)

New Buoy Anchored In Atlantic

A new 100-ton environmental buoy has been anchored in the Atlantic Ocean about 125 miles east of Norfolk, Va., where it will keep tabs on ocean-spawned storms that could endanger the mid-Atlantic states and New England.

It replaces an earlier buoy which ceased operations last March after almost four years of reporting environmental data required by meteorologists for their daily weather forecasts and for warnings of hurricanes and winter storms.

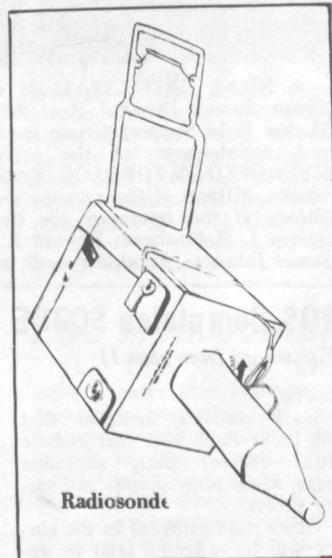
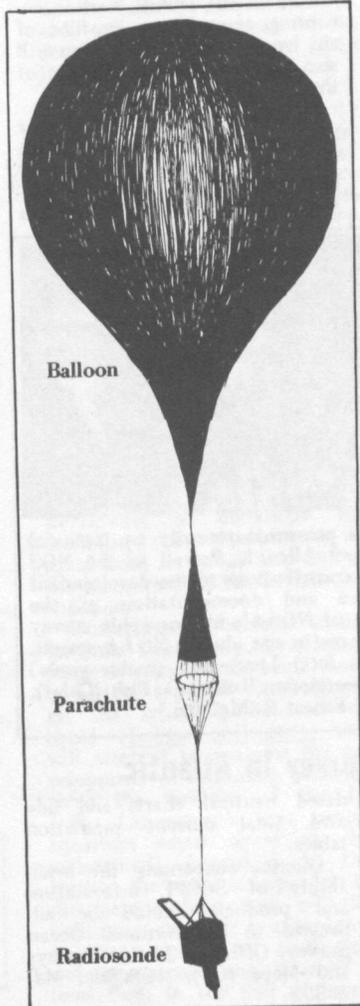
The new automatic data reporting buoy, EB-01, was towed from Gulfport, Miss., by the Coast Guard Cutter *Acushnet*, and deployed by NOAA in the Gulf Stream in 9900 feet of water.

The buoy is one of four large data buoys off the Atlantic coast and in the Gulf of Mexico and Gulf of Alaska that provide environmental data from the deep ocean. The buoys are operated by the NOAA Data Buoy Office, a National Ocean Survey unit at the National Space Technology Laboratories near Bay St. Louis, Miss.

EB-01 transmits environmental data every three hours to a Coast Guard station in Miami, Fla., from there to the National Weather Service, and finally to other users via national and international networks. The buoy is capable of more frequent interrogation on request when needed for following closely the development of storms moving onto the coast.

The sensors on the buoys measure oceanic and atmospheric data, including wind speed and direction, rainfall, air temperature and pressure, dewpoint and surface water temperature, pressure and conductivity. EB-01 also has a wave measurement system designed to give wave heights and period. The sensors are activated automatically on signal from shore via a small computer aboard the buoy.

The large buoys are designed to withstand 150-knot hurricane winds, 60-foot waves and 10-knot currents. High frequency communication with the buoys is provided by the Coast Guard, which also furnishes necessary ship servicing support for the buoys at sea.





Participants in the National Weather Service Operations II Class 24, held recently at the NWS Technical Training Center in Kansas City, Mo., were (front row, from left) Patrick Allard, WSO Williston, N.Dak.; Edward W. Degan, WSO Akron, Ohio; Robert A. Hadler, WSO Walla Walla, Wash.; John P. Welch, WSO Richmond, Va.; Steven P. Benfield, WSO Baton Rouge, La.; Edward A. Price, WSO Pittsburgh, Pa.; Bill B. Anderson, WSO Elko, Nev.; (back row, from

left) Richard Sasan, WSO Lihue, Hawaii; Joe Audsley, Instructor; Larry McEwen, Instructor; Wade English, WSO Mt. Shasta, Calif.; Wantz, Instructor; John W. Hertel, WSO Cold Bay, Alaska; Preston, WSO Huron, S.Dak.; Robert Churchill, Suitland, Md.; R. C. Nelson, WSO Stockton, Calif.; George F. Joseph, WSFO Albany, N.Y.; Albert P. Kosel, WSO Scottsbluff, Nebr.; Frank Dillenkofer, Instructor; and John C. Stokes, WSO Alamosa, Colo.

ERL Awards Lake Ice Growth Research Grant to University of Minnesota

A \$16,450 grant for research on ice growth in the Duluth-Superior Harbor has been given to the University of Minnesota at Duluth by the Environmental Research Laboratories.

The grant recipient is Dr. Michael Sydor, a professor of physics and board member of the Lake Superior Basin Studies Center at the university, who says, "While Duluth ranks second only to New York City in gross shipping tonnage, the harbor is ice bound from December to April, and at times into May or June, depending on the conditions of the ice field in the

extreme western arm of Lake Superior."

"By correlating the ice growth in the harbor and western Lake Superior with the heat budget for the area, our research shows promise in application to ice forecasting for the harbor," he adds.

Dr. Sydor's research team plans to measure water temperature weekly to one-tenth degree Celsius accuracy at two sites—one in the Howard's Bay area where currents are low and typical of shipping slips; and the Superior Bay front channel,

which is typical of the harbor area and within the flow channel of the St. Louis River. The snow and ice depth also will be recorded at each of the stations.

A third station—a continuously recording station—will be set up in the Duluth harbor, recording temperature profiles of air, ice and water. The team will also measure the heat budget of the harbor area.

"These measurements together with routinely available data from the National Weather Service, should be useful in developing a model for ice growth

in terms of heat balance," says Dr. Sydor.

Data from ongoing projects including a remote sensing project at the university sponsored by the National Aeronautics and Space Administration, and experimental harbor bubbler project designed to extend shipping time, sponsored by the U.S. Army Corps of Engineers, will provide supplementary information.

Dr. Frank H. Quinn of the Great Lakes Environmental Research Laboratory in Ann Arbor, Mich., will monitor the project.



CAPTAIN CLINTON D. UPHAM, Manager of the Marine Data Systems Project in the National Ocean Survey Office of Marine Technology, has been awarded a Commerce Department Bronze Medal and a Special Achievement Award for his work with NOAA's Automated Nautical Charting System. The program led to the development of an automated system which enables the NOS to produce "timely and accurate charts" for maritime users. Captain Upham has been named to command the NOAA Ship *Discoverer*, which is being reactivated.



A NOAA UNIT CITATION was presented recently by National Ocean Survey Director Rear Admiral Allen L. Powell to the NOS Marine Field Support Group for its contributions to the development and maintenance of the software and documentation of the HYDROPLOT/HYDROLOG System of NOAA's hydrographic survey vessels. Fifteen of the systems are now in use aboard NOAA vessels. Shown at the ceremony are (from left) Lieutenant (junior grade) Steven J. Hollinshead; Edward E. Bostelman; Robert G. Fish (Chief); James Johnson; Admiral Powell; and Ernest R. McCann.

NOS Completes SCOPE Survey in Atlantic

(Continued from page 1)

charts.

Data available now, or that will be available this year include tidal current data, shoreline maps, aerial photographs and survey sheets.

Other data gathered in the survey will be reflected later in up-

dated nautical charts and tide and tidal current prediction tables.

Queries concerning the availability of SCOPE information and products should be addressed to the National Ocean Survey, Office of Marine Surveys and Maps (C3), Rockville, Md. 20852.

Radiosondes Reconditioned

(Continued from page 1)

every manufactured product used means a saving of energy. Some radiosondes have been returned and re-used as many as seven times, multiplying savings many times over. Since the reconditioning program, begun in 1945, the NWS estimates total savings of nearly \$1 million.

noaa week

Published weekly at Rockville, Md., by the Office of Public Affairs, National Ocean Survey, Department of the Interior, Office of Atmospheric Administration.

Articles to be considered for publication should be submitted at least a week in advance to NOAA Week, Room 2205, Office of Public Affairs, National Ocean Survey, Office of Atmospheric Administration, Rockville, Md. 20852.

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Catherine S. Cawley, Editor
Anna V. Felter, Art Director

Papers Sought for Conference on Pollutants

Papers are being sought among NOAA personnel for the Third Joint Conference on Sensing of Environmental Pollutants to be held November 10-13, 1975, in Las Vegas, Nev.

Papers are solicited in the areas of pollutant measurement and assessment of problems associated with personal exposure monitoring; pollutants of current interest; energy extraction, processing, transport and use; general transportation and other urban activities; agricultural activities; various industrial processes; waste disposal methods; interactions between climate and pollution; long-range global environmental trends; and relationship of data bases and processing to user needs.

Those interested in presenting papers (20-25 minutes) at the conference should submit (a) a short (50-100 word) abstract for the Conference Program and (b) an extended abstract (400-500 words) for the Program Committee in selecting papers for the conference. The abstracts must be received by April 30, 1975, to the Program Chairman, Dr. Henry Freiser, Department of Chemistry, University of Arizona, Tucson, Ariz. 85721. M.E. Ringenbach, Chief of the National Ocean Survey's Engineering Development Laboratory, will represent NOAA and the Institute of Electrical and Electronics Engineers at the conference.

Florida Survey's Final Phase Underway

The final phase of a four-year investigation in Florida of navigational hazards and nautical chart deficiencies between Fort Myers and the Suwannee River is underway in the vicinity of Carbon Springs. The overall survey covers a 180-mile stretch of Florida's west coast.

The investigation, which will continue until about April 1, began in 1971 in the Caloosahatchee River. The final survey will cover about 90 miles of the coast. Eleven nautical charts are subject to revision as a result of the work.

The survey is being carried out by a National Ocean Survey hydrographic field party headed by Ensign Craig Berg.

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A DEPARTMENT OF COMMERCE BRONZE MEDAL was presented recently to William R. Heard (right) of the National Marine Fisheries Service Northwest Fisheries Center Auke Bay (Alaska) Laboratory. The award, presented by Laboratory Director Dr. William A. Smoker, recognized Mr. Heard's timely contributions to salmon aquaculture in Alaska, where research under his direction has allowed the State to substitute saltwater pens for more costly conventional hatchery systems.

Dr. Hurley To Study Squid at NMFS, La. Jolla

Dr. Ann Hurley, animal behaviorist, has received a National Research Council Senior Research Associateship, awarded by the National Academy of Sciences and funded by the National Marine Fisheries Service, and will spend a year at the Southwest Fisheries Center in La Jolla, Calif.

According to Dr. Brian J. Rothschild, Center Director, the annual award at the Center provides an opportunity for postgraduate scientists to work on basic research problems with professional staff at the laboratory.

The first woman to receive a National Research Council Fellowship at the La Jolla Laboratory, Dr. Hurley is a graduate of Stanford University and received her Ph.D. in biological oceanography from the University of California, San Diego, in 1972. Recently, she held a position as a postgraduate research neuroscientist at the University of California, San Diego, where she conducted experiments to determine the feasibility of experiments on squid both on board ship and in the laboratory at the Scripps Institution.

During her 12 months at the La Jolla Laboratory, Dr. Hurley plans to examine the importance of various types of visual stimuli on the schooling behavior of squid (*Loligo opalescens*) and will attempt to examine the development of schooling behavior using the facilities of the La Jolla Laboratory's salt water aquarium where squid can be maintained. According to Dr. Hurley, the squid is important in the pelagic food web off the California coast. It is a predator on many species of small fish and crustaceans and is itself a food item in the diet of larger

fish and marine mammals; the squid also increasingly serves as an abundant and nutritious protein source for man. The squid forms large schools in open water and migrates to shallow water to spawn, often in the vicinity of the La Jolla Laboratory. There is a small commercial fishery for squid in California and most biologists agree that it is presently an underused fisheries resource.

The mechanisms which cause squid to form large schools and maintain their orientation within a school have not been studied in squid, Dr. Hurley said. She thinks that vision probably provides the primary sensory input for schooling behavior and also appears to be important in other social interactions. She also noted that the survival value of schooling in fish has been considered but its use to squid or other pelagic invertebrates is unknown. Schooling in squid may be important as a mechanism to escape predators, or its main function may be to form breeding groups which migrate inshore to spawn. Dr. Hurley hopes that her work on comparisons of schooling in fish and squid may give clues to physiological mechanisms involved in schooling and the ecological importances of schooling to both groups of animals.

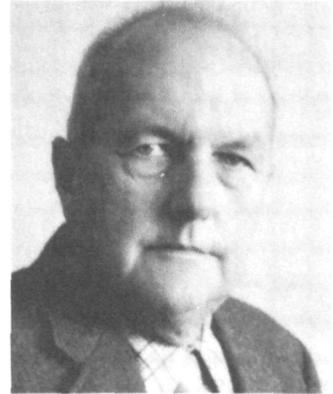
LSC Men Complete Eastern Gage Trip

The Lake Survey Center eastern water level and temperature gage inspection and maintenance trip was recently completed by the Center's Water Level Gaging Section. In spite of severe storms along eastern Lake Erie, engineering technician Charles McWee and Edward

Mayer Fills Executive Post At NWS ERH

John A. Mayer, who for the past five years has been Meteorologist in Charge of the National Weather Service Office at 30 Rockefeller Plaza in New York City, has been named Executive Officer and User Services Representative at NWS Eastern Region Headquarters. He succeeds Gerald L. Shak, who has taken a World Meteorological Organization assignment in Nepal.

Mr. Mayer entered the NWS in 1946, with an assignment in Japan and China. He subsequently served at Regional



John A. Mayer

Headquarters in New York City; the Weather Records Processing Center in Albany, N.Y.; the International Aviation Unit at LaGuardia Airport; and then spent 17 years as MIC at the Weather Service Office in Charleston, W. Va. From 1967-1969 he was in the Operations Division at Eastern Region Headquarters.

Delaware Activities Filmed for TV Show

A TV show, "Food Resources of the World," scheduled to be shown next April, will include a segment on activities of the NOAA Ship *Delaware II*. Lieutenant (junior grade) Theodore C. Kaiser, NOAA Port Captain at Sandy Hook, N.J., where the fisheries research ship is berthed, recently hosted aboard the vessel a film crew from WGBH, Boston, Mass., a public TV station.

Iwasko winterized and ran level lines to 22 water level gages and inspected and calibrated seven temperature gages. The 2400-mile trip covered an area along the shores of Lake Erie, Niagara River, Lake Ontario and St. Lawrence River and took 42 days.

notes about people

Dr. Robert B. Abel, Director of the Office of Sea Grant, and Edward M. MacCutcheon, retired Director of NOS Systems Development, will be featured speakers at the first annual Ocean Science and Engineering Course to be given next July by UCLA Extension's program of Continuing Education in Engineering/Mathematics/Biological and Physical Sciences. Dr. Abel will give the keynote speech on government ocean science and engineering programs. Mr. MacCutcheon will address a plenary session on ocean transport forecasting and also will teach a class in ocean centered transport and logistic systems.



Bruce B. Remsbery

Bruce B. Remsbery has joined the National Ocean Survey's National Oceanographic Instrumentation Center as Chief of its Intercalibration Branch in the Metrology Division. He was previously with Fairchild Space and Electronics Company as Manager of Quality Assurance Laboratories.

A native of London, England, Mr. Remsbery holds a degree in mechanical engineering from the Royal Air Force College. From 1962-1973 he was manager of Measurement Standards, Metrology, at the Space Technology Laboratories in Redondo Beach, Calif. He was formerly a faculty member of San Diego City College; El Camino College, Torrance, Calif.; and more recently of George Washington University, presenting courses in optical alignment over a 12-year period.

Dr. Steven F. Clifford and Gerard R. Ochs, Physicists at the Environmental Research Laboratories' Wave Propagation Laboratory in Boulder, Colo., have been elected Fellows of the Optical Society of America.

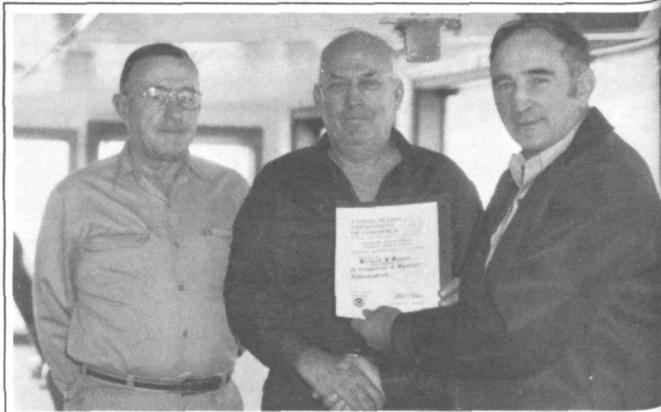
Election to Fellow is bestowed upon selected members of the 6500-member organization who have "served with distinction in the advancement of optics." Although the Society was founded in 1916, only 430 scientists have been elected Fellows by their profession colleagues in its 58-year history.

Dr. Clifford, a project leader in the Optical Propagation Program Area, supervises projects involving experimental and theoretical laser propagation problems including remote probing of the atmospheric boundary layer using optical techniques. He has been with NOAA since 1969. He received his Ph.D. in engineering sciences from Dartmouth College in Hanover, N.H., and his bachelor of science degree in electrical engineering from Northeastern University in Boston.

Mr. Ochs, who is also a project leader in the Optical Propagation Program Area of the Wave Propagation Laboratory, joined the Commerce Department in 1956. His research involves the development of optical instruments for remote measurement of wind and refractive-index turbulence. Currently he is extending these techniques to profile wind and turbulence on both horizontal and vertical paths.

Earlier, Mr. Ochs had been involved in designing and constructing antennas for radio propagation research in the upper atmosphere. Between 1960 and 1962, he lived in Peru as a member of the Jicamarca Scatter Radar Observatory. He holds bachelor of science degrees in electrical engineering from Washington University in St. Louis, Mo., and engineering physics from the University of Colorado.

Leon LaPorte of the Environmental Data Service represented the International Coordinator of the International Cooperative Investigations of the Tropical Atlantic (ICITA) at a meeting in Paris, France, called by the Secretary, Intergovernmental Oceanographic Commission (IOC) of UNESCO, to review the final ICITA Atlas, Volume 2, prior to submission for bids to



A SPECIAL ACHIEVEMENT AWARD was presented recently to Richard I. Frazer (center), 2nd Assistant Engineer aboard the NO Ship Albatross IV, for his handling of an emergency situation when a fire broke out in the vessel's engine room. Acting Captain Joe Miller (right) presented the award, while Chief Engineer Elisha Winslow watched. The research vessel is assigned to the National Marine Fisheries Service Northeast Fisheries Center in Woods Hole, Mass.

printing contractors. After review by Dr. O. Mamayev, Assistant Secretary, IOC; Dr. L. Capurro, Assistant Editor; and Mr. LaPorte, the chemical and biological charts and introductory text were accepted by UNESCO for publication.

Mary Cuddy, Secretary to the Office of Sea Grant's Associate Director for Institutional Support Programs since last June, recently reaped praise for her ability to set the proper priorities and think quickly in an emergency. During a bomb-threat-imposed evacuation of the Pennsylvania Building in Washington, D.C., where the Sea Grant offices are located, she was observed on the street corner proudly clutching the final draft of the Sea Grant five-year plan.



AN "APPRECIATION LUNCHEON" honoring the wives of National Geodetic Survey Party G-19 was hosted recently by the City of Thomaston, Ga., the Upson County Board of Commissioners, the Upson County Hospital Auxiliary, and the American Cancer Society. While the party, headed by Lester H. Williams, conducted triangulation surveys in the area, the wives served as volunteer drivers and office workers and prepared bandages for the Cancer Society, and performed volunteer work at the Red Cross Blood Bank, the Upson County Hospital and the county clinic. The ladies are (front row, from left) Brenda Acres, Judy Hall, Carol Dillon, Nancy Ramsey, (back row, from left) Lillian Williams, Barbara Buck, Bonnie Hansmann, Angela McFarland, Janice Wegner, Alene Osley, and (not in photo), Joyce Kokesh.

Dr. Clarence P. Idyll, NOAA's Office of Marine Resources, has been appointed to the Board on Agriculture, Natural Resources of the National Academy of Sciences National Research Council. Board is one of five which advise the Commission on Natural Resources of the Academy. function of the Board is to advise of developments in agriculture, renewable resources, land and water use, forestry, fisheries, wildlife and rural development. Its current activities centered around the world food problem, include a project



Dr. Clarence P. Idyll is major study on the effects of changing climatic and weather patterns and their effect on agriculture and renewable resources productivity; and study, already underway, on the use of renewable resources in industrial materials.

Dr. Idyll, who coordinates policy studies for the Subcommittee on Ocean Policy Studies of the Interagency Committee on Marine Science Engineering, (ICMSE), will contribute to the Board's work with his background in fisheries and aquaculture.

National Oceanic and Atmospheric Administration

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July 23, 2010