



# NOAA WEEK

U.S. DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration

## ERL Scientist Analyzes Cannikin Seismic Data

Cannikin, the multimegaton nuclear test detonated under the Aleutian Island of Amchitka last November, did not interact with natural earthquake-causing processes in that area, according to Dr. E. R. Engdahl, a research fellow at CIRES, the Cooperative Institute for Research in Environmental Sciences (a joint NOAA-University of Colorado effort) in Boulder. He reports that most of the several hundred "aftershocks" recorded after the underground explosion were actually cavity-collapse events.

Immediately after a high-yield underground nuclear explosion, a high rate of seismic activity begins as the explosion-carved cavity begins to deteriorate, and appears to terminate when cavity-collapse is completed.

"Cannikin," Dr. Engdahl reports, "has provided the first clear picture of this process, which, in the case of larger Nevada tests, has not been readily separable from explosion-related tectonic activity."

A total of 22 tectonic events -- "real" earthquakes produced by minor structural adjustments in the earth's crust -- were

(Continued on page 6)

## Officials Agree on Need For Lobster Management

Fisheries Directors from eleven Atlantic coast states from Maine to North Carolina, meeting with Federal fisheries officials in Baltimore last week, agreed unanimously on the urgent need for a comprehensive management plan to avoid depletion of the American lobster resource.

The meeting followed an announcement by Commerce Secretary Peter G. Peterson that the need for such a program is pressing in order to protect the American lobster, which constitutes the single most important Atlantic coast fishery.

The State and Federal officials agreed to seek uniform laws or regulations, including an increase in the minimum size of legally taken lobsters. The delegates also discussed among other topics, legislative and regulatory changes necessary to implement such an agreement as well as how best to avoid over-exploitation of the resource.

Dr. Robert M. White, NOAA Administrator, emphasized an earlier statement by Secretary Peterson that while additional research is essential for the full development of a resource-wide management plan, the urgency of the situation overshadows the need to await additional basic research.

Dr. White added that the management plan will be a cooperative effort between the National Marine Fisheries Service and the states, and that what the Federal government can do depends to a large extent on how effectively the states can develop and implement a cooperative, comprehensive management plan.

Technical and policy committees were formed with State and Federal representatives to develop further the plans discussed at the Baltimore meeting and discussions with the lobster industry are planned for the near future.

States represented at the planning meeting included: Maine, New Hampshire, Rhode Island, Massachusetts, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, and North Carolina.

### NOAA AWARDS NIGHT

Saturday, September 23

Indian Spring Country Club  
Silver Spring, Maryland

Open bar - 7 p.m.      Dinner - 8 p.m.

Dancing to 1 a.m.

Special attraction: Navy Sea Chanters

\$13.50 per person

Ticket sellers listed in 8-25 NOAA WEEK

## \$464,500 Sea Grant Is Awarded To the University of Georgia

A \$464,500 Sea Grant has been awarded to the University of Georgia, which, along with matching funds from non-Federal sources, will help support Georgia's University System in its work in marine research and advisory services for the state's commercial fisheries. The University of Georgia is one of 28 units within the University System, which includes Georgia Institute of Technology, Georgia State College, and Georgia Southern College.

The major objectives of the state's Sea Grant program are to better understand the basic biological, chemical, geological, and hydrological processes in the estuarine and coastal zone of Georgia, determine the seasonal fluctuations in size, species composition, and abundance of living marine resources, and examine the possibility of commercial aquaculture. Advisory services are also an important part of the Sea Grant program.

An example of the Sea Grant-related studies being carried out by the University of Georgia is a systematic survey of Georgia's offshore waters to determine the composition, distribution, relative seasonal abundance, and size distribution of shrimp and fishes of potential commercial importance. A similar survey for estuarine waters was initiated by Georgia's Game and Fish Commission, supported, in part, by funds from the National Marine Fisheries Service. The Sea Grant survey of offshore fishery resources will be carried out in conjunction with a marine extension service program exploratory fishing program and a proposed survey of minerals in the same general area.

Sea Grant activities are carried out at facilities of the University System of Georgia at the Marine Institute at Sapelo Island, the Institute of Oceanography and the Marine Resources Extension Center at Skidaway Island, and a field office of the Marine Extension Program at Brunswick.

The Georgia University System Sea Grant program is under the general direction of Dr. Edward Chin, Associate Director of the Institute of Natural Resources at the University of Georgia.

## B.L. Spittler Is New OIC at Astoria, Oreg.



Bernard L. Spittler, formerly a Weather Service Specialist in Seattle, Wash., has been selected as Official in Charge of the Weather Service Office in Astoria, Oreg. He was assigned earlier to NWS offices in Omaha, Nebr., Des Moines, Iowa, and Denver, Colo., and also served as an Aerographer's Mate in the U. S. Navy.

## NWS Saves 4.4 Million Dollars By Reconditioning Radiosondes

The half-millionth reconditioned radiosonde emerged from the assembly line at the National Weather Service's Reconditioning Center in Joliet, Ill., on August 22--ready to be used again.

A radiosonde is a small instrument carried aloft by a weather balloon to send back information on the upper-air steering currents used in making weather forecasts. The NWS' network of stations launches 300 of them each day.

Since the Joliet facility opened in 1945 with Glenn M. Miller as its head, a saving of \$4.4 million has been realized from the repair and re-use of radiosondes. Mr. Miller and his staff of 11 technicians in the radiosonde section recondition them at the rate of 80 instruments a day. The current saving is approximately \$11 for each radiosonde, when the cost of overhead, parts, and labor is subtracted from the purchase price of a new one. Cooperating citizens throughout the U.S. who have returned the instruments have contributed to this achievement.

As the hydrogen- or helium-filled balloons lift the boxes of specially designed instruments as high as 18 miles above the earth, temperature, pressure, and humidity are measured at various levels. Radio transmitters send the information back to ground-receiving sets, where it is printed on recorder charts. Wind directions and speeds are obtained by tracking the paths of the radiosondes with direction-finding equipment on the ground.

The radiosondes float back to earth on miniature parachutes after the balloons burst at about 90,000 feet. Approximately 25 percent of the radiosondes fall in populated areas where they are easily found and subsequently returned to Joliet in the postage-paid, pre-addressed mailing sacks provided inside each instrument box. Some radiosondes make as many as seven flights, multiplying the saving many times over.

## Accountability Clearance Form 55-1 Due for All Employees, Including Summer

This is a reminder that the 'Clearance of Employee Accountability' (NOAA Form 55-1) must be submitted to the Payroll Section (AD562) on each employee to be separated, including Summer Aids who will be leaving after their summer employment. The 'Time and Attendance Card' (NOAA Form 34-8) of each employee to be separated, must be annotated with the separation date and submitted in advance of the other 'Time and Attendance Cards' that are sent to the Payroll Section at the end of each payroll period. Any 'Time and Attendance Card' received after the date of the employee's separation must be annotated with the date of separation and forwarded to the Payroll Section.

## New Fisheries Laboratory To Be Dedicated in Florida

A new marine science facility, a unit of the Gulf Coastal Fisheries Center, will become operative when the National Marine Fisheries Service laboratory opens at Panama City, Fla., this month. The fisheries laboratory is the first to be completed by NOAA since it was designated the parent organization of NMFS late in 1970.

Built to accommodate a 50-member professional and support staff, the laboratory is headed by biologist Eugene L. Nakamura. Studies will focus on the biology and ecology of coastal marine fishes--with emphasis on sport species--and the ecology of estuaries. The area's many visiting and resident sport fishermen are expected to be the major beneficiaries of the research.

Participants in dedication ceremonies, scheduled for September 23, will include Florida Congressman Robert L. F. Sikes, NOAA Deputy Administrator Howard W. Pollock, and NMFS Director Philip M. Roedel.

The laboratory building covers 13,400 square feet and is situated on 12 acres of land donated by the Committee of 100, Panama City Chamber of Commerce. The laboratory operates the research cruiser RACHEL CARSON, a 43-footer, donated in 1967 by Mr. and Mrs. E. Del Guercio of Marathon, Fla.

Biological research at the new facility will center on identifying resident fish species, their abundance and distribution, habitat factors, and possible constraints on quantities and dispersal of fish. Ecological studies will be devoted to collecting salient data on estuaries to permit evaluations of modification or change, and to determining the significance of estuaries to marine fishery resources.

## Jack J. Schnabel Is Named OIC at Abilene

Jack J. Schnabel, who has been a Weather Service Specialist at El Paso, Tex., since 1965, has been selected Official in Charge at the Weather Service Office in Abilene, Tex. His assignments since beginning his Weather Service career at El Paso in 1959 included a detail to Swan Island and a four-year tour of duty at the Austin Weather Service Office.



## Massachusetts Fishing Industry Described

A booklet prepared by Salem State College, as part of the Massachusetts Seafood Council's consumer education program, describes the Massachusetts fishing industry, past and present. Designed for use by elementary school teachers, the booklet includes sections on fishermen, the history of the Massachusetts fishing industry today, and international problems. Funds for the booklet were made available under Public Law 88-309, the Commercial Fisheries Research and Development Act.

## Robert Lynde and Charles Pierce Receive Commerce Awards



Robert E. Lynde (left), Marine Forecasting Specialist at the Boston Weather Service Forecast Office since 1964, and Charles H. Pierce (right), Supervising Forecaster at the station since 1953, recently received Commerce awards from Acting Meteorologist in Charge Louis Goldman (center).

Mr. Lynde received a Bronze Medal in recognition of his contributions in the field of storm-surge and marine weather forecasting along and near the New England coast.

Mr. Pierce received the Eastern Region's NWS Professionalism Award for actively fostering both improved forecasts and applied research, and for encouraging and supporting valuable forecast studies at Boston, which helped maintain a fine meteorological program at the station.

## California Institute of Technology Is Awarded \$140,000 Sea Grant

The California Institute of Technology has been awarded a \$140,000 Sea Grant for the development of mass-culture techniques for seaweed.

The Sea Grant, along with matching funds from non-federal sources, will be used mainly for the restoration and propagation of the giant kelp, *Macrocystis*. Many of the techniques developed, however, may be applied to other species of marine algae.

The giant kelp is harvested off the shores of California for a colloid extract called algin. Widely used in food processing as an emulsifier, stabilizer, gelling agent, or thickener, this product is a \$10 million-a-year industry in California.

According to university scientists, locating reliable and economic sources of giant kelp has become a real problem. Over-harvesting and pollution are two major factors in the gradual decline of this natural resource. A remarkable scientific and conservation project begun in the mid-50's in California has led to the recovery of many of the large kelp beds that were rapidly disappearing at the time.

The Caltech Sea Grant project, led by Dr. Wheeler J. North, will now focus on demonstrating the use of kelp plant embryos for seeding certain areas in which kelp is to be initiated or expanded. Additional efforts may be needed to protect young kelp plants from grazing animals such as the sea urchin.

## The Merit Promotion Program

After candidates for promotion consideration have been located (See Personnel Perspective August 4, 1972), these qualifications are measured against the requirements of the job vacancy.

The minimum qualifications requirements used in evaluating candidates are those published by the U.S. Civil Service Commission. The basic manual in which these appear is CSC Handbook X-118, which is available for review at all personnel offices and at offices of the Civil Service Commission.

It is not enough to be basically eligible for promotion. As the Civil Service Commission states it:

"...The cornerstone of merit promotion of those who are best qualified. Here, job-related requirements above those set in minimum qualification standards are to be used in differentiating among basically eligible candidates...."

Eligible candidates are evaluated on

the basis of experience and training, supervisory appraisals, suitability, potential, merit (commendations, awards, past performance, etc.), and, other factors being equal, seniority. As a general rule, written tests results are not used in NOAA; if used, they must be approved in advance by the Civil Service Commission.

The Personnel Office reviews and evaluates all eligible candidates and tentatively groups them in two categories, "highly qualified" and "qualified."

These tentative evaluations are reviewed by the appropriate Manpower Utilization Council which makes a final group determination as to whether an eligible candidate is rated "highly qualified". The MUC also will identify at least three candidates--if there are sufficient eligibles--which are thought to be "best qualified." These candidates are placed on the Merit Promotion Program Certificate in alphabetical order.

## Public Service Careers Program

In June, 1970, the Public Service Careers Program (PSC) was launched on a nation-wide basis. This program is designed to improve opportunities for employing the disadvantaged and to upgrade lower level employees in Federal, State, county, and local governments.

The PSC Program has two components:

(1) entry component, in which employment is restricted to disadvantaged workers who have special employment problems, such as limited education and skills, physical or other handicaps, minority group status, or age; (2) upgrading component, in which lower level employees in positions with limited advancement opportunities are offered training for positions with more potential for advancement.

Participating agencies are partially reimbursed to help defray part of the training and supportive costs of the PSC Program. In addition, PSC trainees will not be charged to agency personnel ceilings during the first year of training unless they receive more than two promotions within this period. After the first year of training, the PSC trainee must be incorporated into the agency's regular work force and charged against the personnel ceiling.

To be eligible for this program, an applicant must have qualified under the Worker Trainee examination (GS-1, WG-1-2, PFS-1-3). Program participants receive continuing on-site counseling and advisory services, with emphasis on job related personnel problems as well as career development. Training is provided during

the participant's regular work-hours, and, whenever possible, employees are released to participate in classroom training and educational activities.

Since the beginning of this program, NOAA has had more than 90 participants at various headquarters and field facilities. Approximately 75% of the participants have been women and 45% have been minority group members.

## Cartographer Career Management Program

The Career Management Program for the Cartographer Field is now operational. Informational sessions have been held with the supervisors in organizations employing cartographers. At these meetings, the supervisors were given copies of the program, along with Form CD 253, Qualification Record to distribute to their employees.

Effective September 15, 1972, Vacancy Announcements will no longer be used to publicize vacant positions in the Cartographer Series. These vacancies will be filled primarily from a list of eligibles who have registered in the program by completing and forwarding Form CD 253 to the NOS/NMFS Personnel Section (AD 412). Eligibles must be registered in this program to receive promotional and other career-oriented vacancy consideration in NOAA.

## Equal Employment Opportunity

Recently the NOAA EEO Committee, which has representation from the major line components and staff offices, made a number of suggestions to the Administrator for strengthening programs to assure equal employment opportunity. Principal recommendations were:

1. Provide adequate resources to positively administer the program; establish EEO coordinators in NWS, NMFS, NOS and in the Administrator's Office.
2. Expand the recruitment and hiring programs so as to recruit candidates from sources such as business colleges, technical schools, etc., in addition to colleges.
3. Fully utilize the present skills of employees and improve and maximally utilize employee potential to enhance upward mobility; conduct positive programs of occupational analysis, job redesign and job restructuring; train minority group employees for upper level management and administrative positions at the GS-11 through GS-13 grades.
4. Train and advise supervisors to assure understanding of the Executive Order; evaluate supervisors on their EEO performance.
5. Participate in community efforts to improve conditions which affect employability.
6. Implement a system for periodically evaluating the effectiveness with which the policy of the order is being carried out; furnish data to the committee relative to the work of EEO counselors and statistics concerning minority group employment.
7. Establish as a goal that an equitable percentage of all future hires and newly established positions at all levels be given to qualified minority group members.
8. General:
  - a. Publish statistical data in NOAA Week.
  - b. Schedule a NOAA EEO Awareness Day.
  - c. Evaluate the hiring of minority group secretaries.
  - d. Regional Directors establish EEO representation.
  - e. Establish observers to monitor hiring practices in MUC meetings.
  - f. Include NOAA EEO Committee in drafting the NOAA EEO Affirmative Action Plan.

In response to the Chairman of the Committee, the Administrator reiterated his policy that effective program action is the responsibility of top managers and that each MLC Director would be asked to assign specific immediate direction and monitoring to his deputy who would

be expected to utilize the staff assistance of the Personnel Division and receive counsel and advice from the EEO Committee. In terms of specific actions the Administrator:

1. Established a full-time EEO Officer position on his staff to act upon EEO complaints and to maintain contact with EEO counselors.
2. Authorized additional professional staff for the Personnel Division.
3. Requested that work go forward with interested minority group schools in setting up courses and majors in which NOAA is interested, possibly using NOAA employees as instructors under the Inter-governmental Personnel Act; also, a pilot program designed to enhance opportunities for physical science majors in NWS is to be initiated.
4. Designated two occupational areas, (a) certain wage grade positions and (b) secretarial and clerical positions, to receive prompt study in terms of the upward mobility program.
5. Reported that expansion of the supervisory and EEO training programs is underway, both in the Washington metropolitan area and throughout the field service, that continuing attention is being given to community activities, and that comprehensive analyses of the EEO program have been initiated with appropriate statistics to appear in NOAA Week.
6. Is asking each POE to give special attention to recruiting minorities for any new positions provided in the FY 73 appropriations. In requesting the authority to recruit for the new positions anticipated in FY 73, each POE Head will be requested to submit a specific plan that will assure that Minorities and Women receive full and equitable consideration for these vacancies.

Concerning the general recommendations made by the Committee, the Administrator responded that a NOAA EEO Awareness Day is scheduled for November 1972, that increased attention will be given to the secretarial problems and that all Regional Directors have established or are expected to establish mechanisms for advice and consultation on EEO matters at the Regional level. As to observers being present at MUC meetings, this proposal was not accepted inasmuch as Manpower Utilization Councils are management groups consisting of top level managers and it is NOAA's established policy that no visitors or observers attend the sessions. The Committee was assured, however, that it would be involved in the drafting of the revised Affirmative Action Plan as soon as further word is received from the Department of Commerce.

## Earth Tides and Geyser Activity Linked by Dr. John S. Rinehart

There is a tide in the affairs of geysers, which, taken at the flood, does much to influence the rate and type of their eruptions, according to Dr. John S. Rinehart, senior research fellow at the Environmental Research Laboratories.

Writing in the journal, *SCIENCE*, Dr. Rinehart reports that one component of earth tides--the 18.6-year tidal component--appears to exercise significant influence on the behavior of geysers in Yellowstone National Park, Wyo.

"The variations in geyser activity," Dr. Rinehart reports, "are attributed to mechanical straining by the tidal forces of the geothermal area in which the geyser is located. Such strains could be expected to influence the rate of heat flow to the geyser. Further examination of the Yellowstone records shows that at least two geysers, Grand and Steamboat, respond dramatically to the 18.6-year component."

Dr. Rinehart's analysis of records kept from 1927 through 1969 for Grand Geyser showed "strong correlations between frequency of eruption and variation in earth tidal force." In periods of high tidal force--1930, 1955, 1970--Grand Geyser erupted several times daily, but became almost dormant in 1943 and 1960, when tidal force was least.

Steamboat Geyser, for which only six years' (1963-1969) records are available, showed an opposite reaction, becoming most active during periods of low tidal force.

The difference in response from one geyser to another appears to be a function of geothermal setting.

Tidal forces are produced by gravitational combinations between the earth, moon, and sun, causing the familiar phenomenon of ocean tides and the less familiar one of earth tides--a deformation of the solid portions of the planet that varies with changes in tidal forces and is of the order of one part in 10 million, or about an inch in 160 miles. These changes are generally periodic, having semidiurnal, diurnal, fortnightly, semiannual, 8.8-year, 18.6-year, and 20,900-year frequency components. The 18.6-year component arises from the five-degree inclination of the orbital planes of the earth and sun and causes about a 10 percent change in the average tidal force over an 18.6-year period.

Because the effect of the 18.6-year component is masked by wave action and other oceanic "noise," its effect on the ocean tides has not been observable. Apparently, the geyser connection is the first observed correlation between this tidal component and a geophysical process.

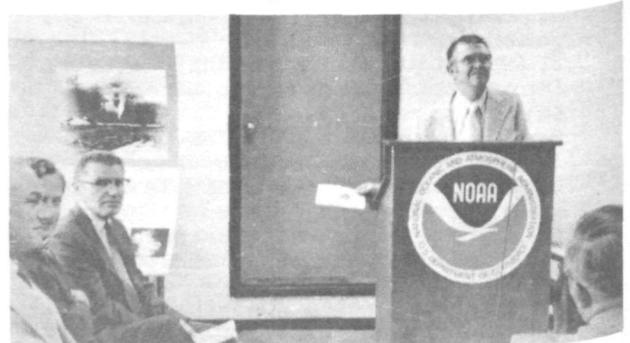
It also represents another step toward understanding geothermal forces and the processes which influence them, in a time when geothermal power is being seriously considered as an alternative energy source.

## NWS Dedicates 44th WSFO In Louisville, Kentucky

More than 80 people attended the dedication of the 44th Weather Service Forecast Office in Louisville, Ky., on July 14, hosted by Meteorologist in Charge John R. Burke and his Principal Assistant Doyle Cook. Dr. Carroll L. Witten, Vice Mayor of Louisville welcomed the gathering to the city, and Major General Richard Frymire, Adjutant General of Kentucky, represented Governor Wendell H. Ford. Senator Marlow W. Cook and Congressman Romano L. Mazzoli were represented by their field Administrative Assistants, and numerous other Federal, state, and local officials attended.

Dr. Harry P. Foltz, Chief, Weather Analysis and Prediction Division, spoke on "The purpose of State Forecast Offices." NWS Central Region Headquarters was represented by Charles Woffinden, Chief of its Operations Division, and Robert G. Beebe, User Services Representative.

NWS personnel from other offices who attended included MIC Glen V. Sachse, WSFO, Indianapolis, Ind.; MIC Charles E. Hardy, WSO, Lexington, Ky.; State Climatologist A. B. Elam, Jr.; and Agricultural Advisory Meteorologist Jerry Hill.



(From left) Airport Manager James Gagnon, Dr. Witten, and Mr. Woffinden listen as Mr. Burke speaks to the group.

## Cannikin Data (Continued from page 1)

linked to the test, all but one occurring within 23 days of detonation. The largest (Richter magnitude 3.5) occurred more than seven days after detonation; the last occurred nearly three months after Cannikin.

According to Dr. Engdahl, these explosion-stimulated tectonic tremors were surficial and isolated when viewed against the region's background of natural earthquake activity, which is concentrated in what appears to be a downgoing lithospheric plate deep below the seismically "quiet" island proper.

He reports his findings in "Seismic Effects of the Milrow and Cannikin Nuclear Explosions," to be published in a special issue of the Bulletin of the Seismological Society of America later this year.



# notes about people...

Dr. Aharon Eviatar of the Department of Environmental Sciences at Tel-Aviv University has completed a three-week visit at the Environmental Research Laboratories' Space Environment Laboratory. During his stay he worked with Dr. Donald J. Williams, Director of SEL, on fundamental plasma instabilities observed by instruments aboard the National Aeronautics and Space Administration's Small Scientific Satellite (S<sup>3</sup>) and other geocentric satellites. He also participated, with Dr. Murray Dryer, in the real-time tracking of interplanetary shock waves from the recent series of solar flares in August.



Five Department of Commerce Junior Fellows were employed at the Environmental Data Service's National Climatic Center in Asheville, N.C. this past summer. They were (from left) David A. Roberson and Loretta K. Parks, seniors at the University of North Carolina, Chapel Hill; Charles A. Tipton, freshman at North Carolina State University; Audrey D. Byrd, junior, and Jane L. Langford, freshman, at the University of North Carolina, Asheville.

Dr. Hyman Orlin, Special Assistant for Earth Sciences to the Director of National Ocean Survey will be the chairman for the first in a series of Geodesy/Solid Earth and Ocean Physics Research Conferences. This conference on "Solid Earth and Ocean Tides" will be held Oct. 26-27 at Ohio State University.

## NGS Completes Survey Along Kansas Highways

A five-month geodetic survey made by the National Geodetic Survey along 115 miles of Interstate Highway 35 and U.S. Highway 50 in Kansas has been completed. The survey, estimated to cost \$80,000, was conducted for the Kansas State Highway Commission for use in highway planning.

The NGS field party headed by Ivan L. Crabbe surveyed over 90 geographic positions and elevations along I-35 from McPherson through Newton to Wichita and on U.S. 50 from Hutchinson through Newton to Florence.

Douglas E. Conklin, who will complete the requirements for his Ph.D. in biology at New York University this month, recently received the first National Research Council Research Associateship awarded by the National Marine Fisheries Service. He will attempt to develop and test a laboratory-prepared microencapsulated food for northern anchovy larvae. In his project, some of the small anchovy larvae now being reared in the experimental aquarium at the NMFS Southwest Fisheries Center Laboratory in La Jolla, Calif., may grow to adulthood without ever eating any of the small planktonic crustaceans which form the natural food of their wild cousins in the ocean. Availability of man-made food particles which are buoyant, nutritious, and sized for the small mouths of first-feeding larvae, will free laboratory scientists from the necessity of capturing and culturing planktonic organisms and will open up a vast area of study into the nutrition and development of many marine fishes which have historically been difficult to maintain in the laboratory or in hatcheries.



Mr. Conklin

Dr. Brian Rothschild, Director of the Center, said the annual award will go to postgraduate scientists and engineers for work on basic research problems with professional laboratory staff at the Center.

Dr. Joanne Simpson, Director of the Experimental Meteorology Laboratory in Miami, Fla., was interviewed about weather modification by Frank Magee on NBC's TODAY show on August 25.

On the same show, her husband, Dr. Robert H. Simpson, Director of the National Hurricane Center in Miami, discussed hurricanes.

Milan Kravanja, foreign fisheries officer with the National Marine Fisheries Service, has authored a chapter on Soviet and Cuban fisheries in the Caribbean for the book, "Soviet Seapower in the Caribbean: Political and Strategic Implications." Edited by James D. Theberge, the book was printed by Praeger Publishers of New York, Washington, and London, in cooperation with the Center for Strategic and International Studies of Georgetown University.

## Walter L. Newman Appointed Fort Smith OIC

Walter L. Newman, Weather Service Specialist at the Fort Smith, Ark., Weather Service Office, has been appointed Official in Charge of that office. His 26 years of Weather Service began in Corpus Christi, Tex., in 1946, and in 1949 he transferred to Little Rock, Ark. He has been assigned to the WSO in Fort Smith since 1962.



## Class at La Jolla Laboratory Will Aid MARMAP Biologists

Dr. E. H. Ahlstrom, Senior Scientist at the National Marine Fisheries Service Southwest Fisheries Center Laboratory in La Jolla, Calif., recently conducted a class in identification of marine fish eggs and larvae. Students included 18 biologists and technicians from NMFS fisheries centers, as well as representatives of the Mexican National Institute of Fisheries, Oregon State University, and the University of Hawaii. The course covered early life histories of over 300 species of fish found off the Atlantic and Pacific coasts, with emphasis on fisheries of commercial importance, and fisheries of importance in the oceanic food web.

A major purpose of the course is to aid biologists in identification of the extensive plankton and neuston samples which will be collected in the current MARMAP (Marine Resource Monitoring, Assessment and Prediction) operation, a major national program to assess living marine resources. Presently in pre-operational stages, this program will integrate biological and physical data to provide an understanding of factors influencing fish abundance and distribution so that fishery resources can be managed more adequately.

Participants in the class were:

(Front row, from left)

John Butler, Smithsonian Institution, La Jolla, Calif.; Edmond Metsiger, NMFS, Miami, Fla.; Chester Mattson, NMFS, Auke Bay, Alaska; Thomas Kazama, NMFS, Honolulu, Hawaii; and R. Gregory Lough, Oregon State University, Corvallis, Oreg. (Second row, from left) Dr. H. Geoffrey Moser and Elaine Sandknop, NMFS, La Jolla; Barbara Sumida, University of Hawaii, Kaneohe, Hawaii; Thalia Castro, Instituto Nacional de Pesca, Mexico City, Mexico; Dr. Sally L. Richardson, Oregon State University; Sara Guzman, Instituto Nacional de Pesca; and Elizabeth Steves, NMFS, La Jolla. (Back row from left) Dr. Ahlstrom; Kenneth Waldron, NMFS, Seattle, Wash.; John Finucane, NMFS, St. Petersburg Beach, Fla.; Mary Ka-



## Lake Ontario's Water Level Recovering From Hurricane Agnes

Captain Kenneth A. MacDonald, Director of the Lake Survey Center, this week released information that was good news to Lake Ontario shoreline property owners: "The water level of Lake Ontario has passed its peak and is now starting to decline." (High lake levels by themselves are not especially damaging, but when combined with strong winds, beach-punishing waves are formed and serious erosion problems can result.)

Like the other Great Lakes, Lake Ontario fluctuates seasonally from highs in summer, normally reaching its highest level in early June, to lows in winter. This year, however, above normal precipitation during the preceding six months had caused a rapid rise in the Lake's level in April and May, and it was not until late in June that the level started to go down. Then Hurricane Agnes arrived, raising to 6.05 inches the June rainfall total for the Lake and its basin, which normally receive 3.02 inches. Since the Lake's outlet, the St. Lawrence River, could not handle this tremendous excess of water, the levels rose and did not peak until late July.

Agnes had a similar effect on Lake Erie levels, but not quite as dramatic as on Ontario, whose problems were compounded by an increased flow from Lake Erie.

lin, NMFS, La Jolla; Anne Naplin, NMFS, Seattle; Thomas Potthoff, NMFS, Miami; Karl Niggol, NMFS, Seattle; Richard Haight, NMFS, Auke Bay; and Ruth Stoddard, NMFS, Narragansett, R. I.

Items to be considered for publication in NOAA WEEK should be submitted to:  
Office of Public Affairs, NOAA, Room 221, Bldg. 5, Rockville, Md. 20852. Phone (301) 496-8243.

# **National Oceanic and Atmospheric Administration**

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