A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

October 8, 1971
Volume 2
Number 40

NOAA WEEK

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

A Message From the Administrator

In his memoranda of August 11 and August 20, Assistant Secretary Jobe told you about actions the Department found it necessary to take in order to conform with the President's economic stabilization program.

Within NOAA, we are making every effort to achieve any required reductions in our average GS grade level and in our employment level with the least possible adverse effect on employees and essential services to the public. Nevertheless, we are going to have to consider seriously the deferment of some of our new programs and the curtailment of some existing programs.

To the extent possible, we will utilize turnover to accomplish required reductions. Should this approach not be fully effective, we may have to eliminate some existing positions to reduce our employment level. We will do this only as a last resort.

Should reduction in force become necessary--and I hope it will not--there are special provisions which enable some employees not now eligible for retirement to acquire such eligibility if they would like to retire. Employees who are 50 years of age and have at least 20 years of creditable service, or who are under 50 and have at least 25 years of service may be able to acquire eligibility to retire immediately on a discontinued service annuity if positions are eliminated in their competitive area and if they are requested to resign by NOAA. Your Personnel Officer can give you further information and help you calculate approximate retirement income. Let me make it clear that a decision to elect retirement is solely an employee's decision and should be carefully considered in the light of his personal affairs. To the extent that employees take advantage of retirement, we may be able to ease the task of achieving our employment reduction goals.

We will keep you informed of program and other changes just as rapidly as decisions are made. In the meantime, I know that each of you will continue to do the best job you can during this adjustment period.

Robert M. White
Administrator

Fog Modification Study Underway at Panama Canal

NOAA's weather modification researchers are tackling the problem of disruptive fogs at the Panama Canal, which loses 10 percent of its operating time because it must be closed during some 180 fog episodes per year. Since the canal presently handles about 30 vessels daily--only 60 percent of capability--the disruptions are manageable. However, with capacity traffic expected in the 1980's, the Panama Canal Company faces the prospect of expensive, fogbound shipping jams.

Supported by the canal company, Dr. Lothar H. Ruhnke, a senior scientist at the Atmospheric Physics and Chemistry Laboratory (APCL), Boulder, Colo., has collected information on canal fog in anticipation of running tests on a variety of fog dissipation techniques.

"Our study at the Panama Canal will now proceed along several lines," Dr. Ruhnke said. "First, we are interested in testing several methods of fog dissipation at the canal. This will provide us with a unique testing ground for fog modification concepts as well as give us a general idea of the practicality of attempting to keep the canal open to more traffic. Second, we are developing 'models' of fog formation--computerized pictures of how fog develops--that we will work with in the laboratory to give us the advantage of trying different types of seeding on the same fog conditions. The results of actual seeding at the canal will enhance the accuracy of these computerized fog models. Lastly, we hope that these studies will improve our ability to accurately forecast fog conditions at the canal."

Dr. Ruhnke's measurements of canal fog included careful sampling of the size and type of fog particles. Since different types of fog respond differently to various types of seeding, such detailed information is necessary before modification efforts can be successful in any specific location.

At different locations along the canal, he used a portable counter to measure the condensation nuclei--small, naturally occurring or manmade airborne particles that provide a nucleus around which water vapor in the air condenses to form fog droplets.

To study the size of fog droplets, he collected imprints of fog droplets on glass plates. Much of this information was gathered on the canal itself with Dr. Ruhnke and his meteorological colleagues in a motorboat following along the same path that large ship captains must navigate.

Dr. Ruhnke's results provided good information on conditions at the canal. The background level of small airborne particles over the Panama Canal turned out to be the same as the low 500 per cubic centimeter found over the open ocean. But the Panama Canal has much more traffic than the open ocean, and these background levels have a great deal of manmade additions.

"At the southern end of the canal," Dr. Ruhnke notes, "levels of 500 particles per cubic centimeter in the Pedro Miguel area increase to levels of 5000 particles per cubic centimeter in Gamboa 10 miles northwest. Contaminated air from pollution sources in the neighborhood also produced several distinct plumes which regularly cross the canal."

But the greatest influence may well be the ships themselves, as they produce not only nuclei but water vapor as well from the combustion of hydrocarbons in their power plants. One large ship's exhaust produced a concentration of 30,000 particles per cubic centimeter over a one-mile stretch near Gamboa on one day. Usually these pollution plumes contained concentrations of about 5000 particles per cubic centimeter.

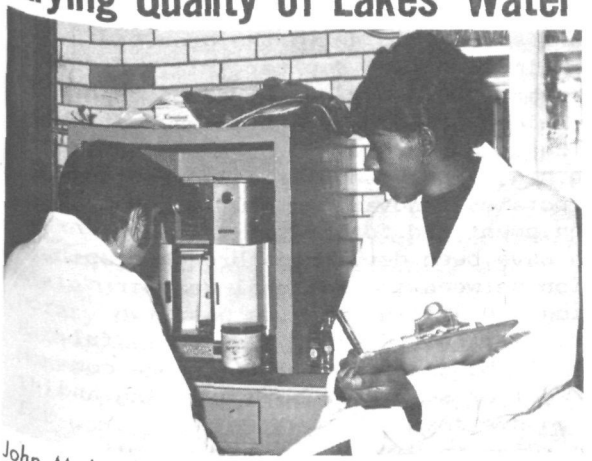
The wind at the canal in the winter blows fairly steadily from the north at about two miles per hour which tends to keep the nuclei spread out. These nuclei concentrations may sound high, but they are actually relatively low in comparison with other populated regions.

Administrative Intern Program Expanded; Deadline for Applications Is October 20

A new Administrative Intern Program brochure has recently been distributed and should be available to all interested NOAA employees. The program has been expanded to include grades GS-4 through GS-9, and assignment may now extend from 12 months to 18 months, depending upon the needs of the trainee. Application for the program may be made by submitting Form CD-261, "Merit Promotion Interest Statement", to the NOAA Headquarters Personnel Division, Rockville, Maryland, Attn: AD47.

Group IV, previously scheduled to begin October 4th, has been rescheduled for December 6th. The deadline for applying for consideration for Group IV is October 20th.

...ke Survey Center Investigates Varying Quality of Lakes' Water



John Malczyk (left) and Marchelle Tift

The Water Characteristics Branch of Lake Survey Center's Limnology Division investigates the quality of the Great Lakes water and the quality variation at different depths, and areas of the same lake with respect to time and changing meteorological conditions. To accomplish this, the Branch has two chemical laboratories--one on the SHENEHON, Lake Survey's research vessel, and one at its offices in Detroit.

Typical site and time-critical measurements are performed in the SHENEHON's floating laboratory, which contains a variety of scientific instrumentation. Tests performed onboard include measuring for such qualities as water temperature and transparency, total and phenolphthalein alkalinity and chloride. The samples are returned as fast as practicable for further analyses to the main laboratory at the Center--sometimes within a week or two--where John Malczyk and his assistant, Marchelle Tift, employ a spectrophotometer to analyze the water samples for the major ions. Studies are also made to determine the content of oil and grease, percentage of solid material, settleability, etc. in the lake's bottom sediment. Currently, investigations are being conducted in the eastern portion of Lake Ontario and in selected harbors.

From these data, scientists can study the short-term variations and long-term trends in quality and properties, as well as factors causing changes. Also, energy and chemical budgets will be developed to analyze evaporation, lake currents and other physical variables. In addition, permanent indicator stations may be established in the Lakes to monitor long-term trends.

NOAA, NASA, and MIT Examine Harbor Currents

Silvery aluminum powder is being dropped from aircraft and red dye spread from launches in and around Boston Harbor to obtain data which will enable authorities to reduce and control pollution in the Boston Harbor area. Three ships and seven or eight aircraft will take part in the two-week program being conducted under the overall control of the National Ocean Survey with the cooperation of the National Aeronautics and Space Administration and the Massachusetts Institute of Technology.

Both the red dye and the aluminum powder are harmless to shellfish, other seafood, and to water craft, dissipate after use,and are not pollutants. The powder does not stick to the hull of a boat and is harmless if passed through an engine intake.

Measurement of their dispersion, and other data taken in the program, will result in a detailed analysis of the water, including temperature, salt content, density and the speed and direction of the currents.

Aerial photographs and special techniques will be used for tracing the tidal currents with red fluorescent dye and aluminum powder. The NOS is furnishing a tidal current survey vessel, the FERREL; a hydrographic survey ship, the PEIRCE; and an aerial photographic mission. NASA has contributed a specially instrumented aircraft from the Houston Manned Spacecraft Center. MIT is providing the vessel R. R. SHROCK and three small boats manned by graduate students. Several leased aircraft will also be used.

The NASA aircraft, equipped with imaging scanners and flying at a height of about two miles, will trace the flow of the tide in and out of the harbor during an entire $12\frac{1}{2}$-hour cycle.

The operating area will be seeded with the aluminum powder from small aircraft and boats, while the dye will be dispersed in the water from the surface. The powder is air dropped in half-pound water soluble plastic bags. The powder and dye enable the NOAA aircraft, flying at an altitude of four miles, to take aerial photos which, when analyzed, make it possible to determine the velocity and direction of the surface currents. The powder, which is used only in small quantities in widely separated locations, appears as a silver paint on the surface of the water.

NOAA Instrument Network Detects Largest Creep

The largest creep event ever recorded was detected July 17 by a dense network of instruments set up by NOAA over the past several years along a branch of California's San Andreas fault.

Observed at four instrument sites along the Hayward-Calaveras fault in and to the north of Hollister, Calif., the record event produced maximum fault movement of nine millimeters (slightly more than a third of an inch), a large amount of motion in view of the annual average fault creep in Hollister of about 10 millimeters.

The July 17 event was the first whose rupture length -- about six kilometers, or about three and three-quarter miles -- was directly measured, the result of installing the relatively dense network of instruments.

The nine-millimeter creep event was one of a cluster of fault creep motions observed during July and early August by the ERL's Earthquake Mechanism Laboratory in San Francisco, California. On July 11, a four-millimeter creep was observed at the northern end of the six-kilometer segment ruptured by the July 17 movement; on July 14, fault creep of 0.2 millimeter was detected at the southern end of that segment. On August 2, movement of 0.8 millimeter was recorded about five kilometers to the north.

During the same period, five other creep events were recorded by instruments deployed over a 60-kilometer (37-mile) segment of the main San Andreas fault immediately to the south of Hollister.

Among the tentative conclusions possible on the basis of present knowledge and data, are:

--The July-August cluster of creep events, especially the nine-millimeter event of July 17, probably relieved significant amounts of strain along the ruptured segment of the fracture zone near Hollister.

--The creep episodes involved both the main San Andreas fault and the Hayward-Calaveras fault near Hollister, where the surficially unconnected fracture zones branch, suggesting some form of interaction between the two faults.

--If this interaction is real, the creep activity observed along the Hayward-Calaveras fault may be relieving stress along the main San Andreas fault north of Hollister, providing a "safety valve" for stresses developing where that fault system cuts through San Francisco.

Phone Weather Service Dedicated Features Ultra Fast, Current Data

A new heavy duty automatic telephone weather service to serve the greater West Palm Beach and Jupiter, Fla., areas was formally dedicated at the Southern Bell Telephone Company office in West Palm Beach on October 4.

The new, highly sophisticated system incorporates innovations and improvements in equipment and forecast matrix designs which have been developed through cooperation between the National Weather Service and AT&T during the past two years. If these designs are successful, they will be used for all telephone company weather services, both existing and planned systems.

According to Harold A. Scott, Public Weather Services, NWSH, "The system is built so that it will handle a routine rate of calls at peak hours, with a substantial safety factor that will allow it to handle twice as many calls during an emergency or during adverse weather conditions. At these times the message will be shortened automatically, giving only weather information for the present and immediate future, rather than an extended forecast for the next day or two.

"Each call is answered after a maximum of one ring; the message for each caller always begins at the start of the tape, and the temperature given is the temperature (in downtown Palm Beach, rather than at an airport) at the instant of the call. NWS personnel tape the forecasts, but all other items (including a sponsor's message) are pre-recorded or inserted automatically by the equipment."

Stream Regulation Aids Salmon Run

Biologists of the National Marine Fisheries Service at Little Port Walter, Sashin Creek Station, Alaska, have learned to regulate the flooding of small remote Alaskan streams to obtain an optimum distribution of pink salmon during their spawning. This has resulted in the survival of eggs well above average. The good run of fry in 1969 and excellent oceanic survival combined to produce in late summer 1971, the largest estuary run recorded since the station was established in the late 1930's. Although the run is not yet fully counted, it is estimated at 100,000 fish. Of these, 37,000 will be allowed to spawn in Sashin Creek. The surplus is being transferred to replenish other streams by the Alaska Department of Fish and Game.

Lake Survey Men Start Annual Water Level Gage Inspection

Two men from the Lake Survey Center's Water Levels Branch have begun its annual "eastern gage trip" to maintain and inspect 27 water level gages on Lake Erie, Lake Ontario, the Niagara River and the St. Lawrence River to Ogdensburg Harbor, New York. In addition, Charles D. McWee, the project leader, and co-op student, Harry A. Lee, a junior at Wayne State University, will remove the temporary gages at Sackets Harbor, Wilson Harbor, and Lackawanna, New York, and Monroe Harbor, Michigan, established this spring to assist in surveying work for updating the Center's charts of the area. Such temporary gages usually stay in position only during the summer season. The men also will investigate possible sites for seven temporary gages on Lake Ontario to be used in connection with the International Field Year for the Great Lakes-1972. Plans are to have these gages operating before April 1, 1972.

An international gage trip from Ogdensburg, New York, to Summerstown, Ontario, was completed between July 13 and 20, 1971. Edward J. Gurche from the Center's Water Levels Branch was joined by William N. Crooke from the Hydro-Electric Power Commission of Ontario at Cornwall and three other Canadian assistants.

Aeronomy and Space Data Center Moves

The Environmental Data Service's Aeronomy and Space Data Center at Boulder, Colo., now occupies new quarters on the east campus of the University of Colorado. The address is 30th and Marine Streets, Research Building 3, Room 619. J. Virginia Lincoln, head of the Data Services Division at the Center, can be reached on FTS 303-447-6323.

Captain Peacock Dies; Was a Member Of Original Commissioned Corps

Captain Frederick L. Peacock, 82, a member of the original commissioned corps of 1917, died Sept. 22 in St. Petersburg, Fla., where he had lived since his retirement in 1948. He was born in Lincoln, N.Y. During his career of more than 35 years with the Coast and Geodetic Survey, predecessor of the National Ocean Survey, he commanded five C&GS vessels; held numerous administrative posts in the States; and conducted hydrographic surveys in the Philippines during his early years.

NMFS Gloucester Lab Keeping Three-Clawed Lobster for Expo

"Ole Mother Nature" continues to keep scientists guessing. Recently a three-clawed American lobster was turned over to the NMFS Atlantic Fishery Products Technology Center, Gloucester, Mass. Taken by a lobsterman about 80 miles offshore from Gloucester, the one-pound specimen is being kept alive in a special refrigerated salt-water tank. If all goes well, it will be displayed at Fish Expo in Boston in October.

Administrative Officers' Course Scheduled

A new course designed for administrative officers with limited experience will be conducted for the first time November 8-19, in Washington, D.C.

Classes are to be conducted in half day increments to permit the administrative officers to keep their fingers on the pulse of their offices. Upon completion of the course administrative officers should be able to participate more effectively in negotiations with others in planning and decision-making activities and contribute to the effectiveness of managers and executives with whom they are associated.

Contact your training office for further information and obtain an application to attend November 8-19 at the Civil Service Commission, 1900 E Street, N.W.

$160,700 Sea Grant Awarded To Humboldt State College

NOAA has awarded Humboldt State College at Arcata, Calif., a $160,700 Sea Grant to support for one year its mariculture, basic biology, and ecological research.

Crab, salmon, trout, and abalone are the major species being studied at Humboldt State. Its researchers have already reported results in reducing cannibalism in crabs (an important deterrent to growing large numbers of these animals under controlled conditions) and in improving holding conditions and diets for cultured crabs. Also under study is the development of an artificial bait for crabbing. Completion of these studies during the grant term will aid in determining the feasibility of culturing crabs commercially.

Combined NOS/NWS Operation Replenishes Food, Maintenance Supplies of Swan Island

The Swan Islands, a tiny U. S. possession in the Caribbean Sea 120 miles northeast of Honduras, have had their food and other supplies replenished in a combined National Ocean Survey-National Weather Service operation. The islands consist of a small island awash in high seas; Little Swan Island; and Great Swan Island--the only inhabited one. Its one-half-by two-mile area is occupied by a Weather Service station, a radio beacon operated by the Federal Aviation Administration, a dock that can accommodate very small inter-island freight boats, a 3800-foot airstrip and 18 natives.

The Miami-based NOAA Ship RESEARCHER under command of Captain Steven L. Hollis, Jr., was detailed from her normal oceanographic operations to carry out the special mission. Edward Otto, Chief of the Logistics Section of the NWS Overseas Operations Division accompanied the 45 tons of supplies which included balloons, batteries, radiosondes, caustic soda and aluminum punchings, staple foods, frozen food, general building and maintenance supplies, and a surplus landing craft.

EDS Renews Cooperative Project

The Solar-Ionospheric Climatology group of EDS' Aeronomy and Space Data Center at Boulder, Colo., has renewed a cooperative project with the National Center for Atmospheric Research on the study of lower stratospheric circulation over North America following a geomagnetic disturbance.

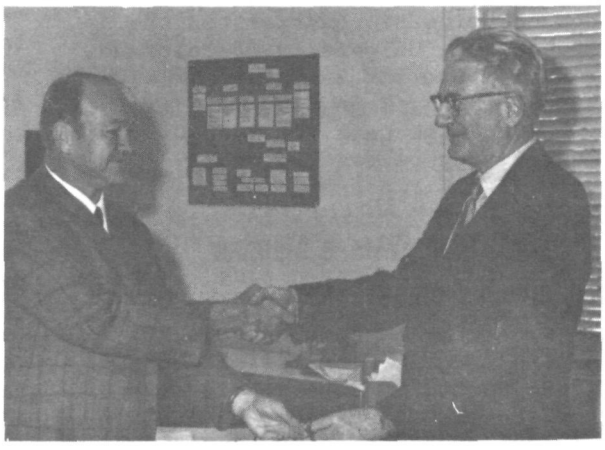
NOAA and AF Agree To Cooperate In Space Environmental Program

NOAA and the Air Force have agreed to a program of cooperative space environmental support activities. The NOAA participant is the Space Environment Laboratory (SEL) of the Environmental Research Laboratories in Boulder, Colorado. Two Air Force groups, both under the Air Weather Service (AWS), are participating: Global Weather Central (GWC), Offutt Air Force Base, Nebraska, and the Aerospace Environmental Support Center (AESC), Ent Air Force Base, Colorado.

Under the terms of the agreement, AWS will accept the solar geophysical data base provided by SEL, and contribute to its maintenance. Two Air Force meteorologists trained in solar physics will be assigned to duties at SEL, in addition to an Air Force liaison officer who has served there since January 1970.

A jointly funded and cooperatively operated computer-to-computer communications link between GWC and SEL, known as the Boulder-Offutt Data Link, is being established for the purpose of exchanging environmental data and "products." The data link and shared data base will make it possible for NOAA and AWS to avoid duplication of efforts and maximize the use of limited resources, to save taxpayers' money, and to improve the effectiveness of U.S. space environmental operations.

Length of Service Award Presented



Maurice E. Stansby, Director of the Pioneer Research Laboratory, in Seattle, Wash. is shown receiving his pin for 40 years of service in the Federal fisheries research field, from Dr. Dayton L. Alverson, Acting Director of the North Pacific Fisheries Research Center.

Forty Attend Eastern Region Secretarial Seminar

Eastern Region Secretarial Seminar participants representing a variety of Eastern Region Stations- Hydro, Climat, AWP, WSO, WSFO, and ERH

National Weather Service Eastern Region Headquarters hosted a Secretarial Seminar on September 16 and 17, 1971, for forty Eastern Region Field Station and Regional Headquarters Secretaries and Clerical Assistants.

The seminar program covered a wide range of topics from effective communication and human relations to NWS forecast and service programs. Guest lecturers from government and industry included Eastern Region Director Silvio G. Simplicio; Robert J. Drummond, Jr., Regional Director, N.Y. Regional Office of the U.S. Civil Service Commission; Mrs. Mary O. Browning, Administrative Assistant, Climatic Information Branch, National Climatic Center, Asheville, N.C.; Mrs. Alma H. Worth, Weather Service Specialist, LaGuardia Field, New York; Industry Representatives from the N.Y. Telephone Company and IBM; Dr. Harry Sherman, consulting psychologist; and a host of Eastern Region Headquarters staff representing each division.

U.S. and Japanese Aquaculture Panels To Hold First Joint Meeting in Tokyo

The first joint meeting of the U.S. and the Japanese Aquaculture Panels of the U.S.-Japanese Conference on Natural Resources (UJNR) is scheduled to be held in Japan this month. NOAA members who will attend the two-day Symposium on Aquaculture in Tokyo and field trip to key aquaculture sites in Japan are: Robert D. Wildman, Program Director, Project Support, National Sea Grant Programs; William N. Shaw, Chief, Marine Extension-Shellfish, National Marine Fisheries Service, Easton, Md., Chairman of the U.S. Panel; John B. Glude, Associate Pacific Northwest Regional Director, NMFS; and Cornelius R. Mock, Fishery Biologist at the NMFS Biological Laboratory at Galveston, Tex.

Dr. Arlene Mazzone, Research Geneticist at the NMFS Biological Laboratory in Milford, Conn., is also a member of the Panel, but is not planning to attend the Tokyo meeting.

The Japanese panel may visit the United States next year.

75 in Earthquake and Geomagnetic Research Will Go To Boulder in ERL Reorganization

The Earth Sciences Laboratories (ESL) of the Environmental Research Laboratories (ERL) will increase its Boulder-based personnel by approximately 75 workers in the field of earthquake and geomagnetic research by the end of next summer, as a result of a major ERL reorganization.

ESL is now responsible for all of NOAA's major seismic programs in the U.S., the operation of all NOAA seismic stations around the world, and the operation of all U.S. geomagnetic observatories.

ESL also will incorporate the Seismological Field Survey in San Francisco, formerly part of the National Ocean Survey.

Check Distribution Unit Has New Routing Code

The routing code for the Check Distribution Unit has changed to AD562. The mailing address is National Oceanic and Atmospheric Administration, Finance Division, Payroll Section, Attn: AD562, Rockville, Maryland, 20852. The phone number remains the same, FTS 301-496-8260 or IDS Code 14-68260.

NOTES ABOUT PEOPLE....

Dr. Donald P. Martineau, NOAA's Deputy Associate Administrator for Marine Resources; Robert Abel, Director of NOAA's National Sea Grant Program; and Dr. Albert K. Sparks, Director of the National Marine Fisheries Gulf Coastal Fisheries Research Center at Galveston, Tex., were panelists this week at the first Student Conference/ Workshop on Marine Affairs co-sponsored by the Link Foundation and the Texas A&M University Sea Grant Program. Seventy students, graduates and upper-level undergraduates from twenty Texas schools and from twelve institutions participating in the National Sea Grant Program, along with national and state leaders in marine affairs, participated in the workshop, which brought together representatives of many disciplines, such as engineering, management, biology, oceanography, chemistry and law--all working with some aspect of the ocean environment.

Eugene Bollay, Program Director for Weather Modification; Paul L. Moore, Chief of the National Weather Service Southern Region Scientific Services Division; and Grover D. Hughes, meteorologist in the Office of International Affairs, are attending the Fourth Session of the U. N. Economic Commission for Asia and the Far East/World Meteorological Organization Typhoon Committee in Tokyo, Japan, this week.

Dr. William O. Davis, Chief of Research Applications in the Office of Environmental Monitoring and Prediction, recently represented NOAA and presented a paper entitled, "Environmental Quality Indices from Remote Sensing Data," at the XXII International Astronautical Congress in Brussels, Belgium. Subsequently,he gave a seminar at the Istituto di Aerodinamico in Naples, Italy, on remote sensing as it relates to environmental problems in Italy.

Newton A. Lieurance, Director of Aviation Affairs, is President of the WMO Commission for Aeronautical Meteorology, which is meeting in Geneva, Switzerland, at this time. Other NOAA men who are U. S. Delegates to the Commission are Ralph P. James, Chief, Aviation Branch, Weather Analysis & Prediction Division; Paul Peridier, meteorologist in the Office of International Affairs; and Frederick G. Finger, Chief, Upper Air Branch, Development Division, National Meteorological Center. Gordon Cartwright, NOAA's Science Officer in Geneva, also is attending the meeting.

Dr. Arthur P. Pinsak, Chief, Water Characteristics Branch of the Lake Survey Center's Limnology Division, represented the Department of Commerce at the recent Great Lakes Basin Commission Planning Conference at Mackinac Island, Michigan. At the same time and in conjunction with their meeting, the Commission co-hosted the second Conference of Great Lakes Governors and Premiers on the Island.

The Commission plans and coordinates programs for water and related land resources in the U. S. portion of the Great Lakes Basin and works closely with other U. S. and Canadian groups for solutions to Great Lakes water quality problems.

Captain Robert E. Williams, Lake Survey Center Director, is a member of the Commission, which comprises Federal and State representatives of organizations involved directly in the research, uses, and preservation of the Lakes.

Norman L. Pease, who as the new NMFS regional fisheries attache (Africa), will be responsible for appraisal and reporting of fisheries developments in Africa, has left for his headquarters post in Abidjan, Ivory Coast. Enroute he will stop in Copenhagen, Denmark, to confer with Salvatore DiPalma, regional fisheries attache (Europe), who formerly served at the Abidjan post.

Dr. Martin A. Kjelson, recently appointed to the staff of the NMFS Atlantic Coastal Fisheries Center on Pivers Island, N.C., will head a project on the ecology of marine fishes, particularly those in nearby estuaries and sounds. Dr. Kjelson recently completed his Ph.D. at the University of California at Davis.

Dr. Thomas S. Austin, Director of the Environmental Data Service; Julius F. Bosen, Chief of EDS' Systems Design Staff; and Robert R. Freeman, Chief, Technical Information Division of the Environmental Science Information Center, attended the Information Planning Meeting on Classification and Cataloging of Meteorological Data and the EC Panel on Collection, Storage, and Retrieval of Data, of the World Meteorological Organization, in Geneva, Switzerland. Mr. Freeman also visited the International Federation for Documentation in The Hague, Netherlands, to consult on its project to compile a worldwide reference guide to abstracting and indexing services.

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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July 23, 2010