

noaa week

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67 Weather Modification Projects Are Reported

Rain, snow, fog, and hail were primary targets of weather modification during a recent 14-month period, according to a new NOAA report.

The 67 reported weather modification projects conducted in the United States between November 1, 1972, and December 31, 1973, took place in 19 states; 12 in Oklahoma; 11 in California; six each in North and South Dakota; five in Idaho; four in Washington; three each in Michigan, Texas, and Montana, Oregon, and Wyoming; and one each in Arkansas, Colorado, Illinois,

Nebraska, Nevada, and New York.

Under a law that took effect on November 1, 1972, all non-federally sponsored weather modification activities conducted in the United States and its territories must be reported to the Secretary of Commerce. NOAA administers the reporting program on behalf of the Secretary. Federal agencies began reporting weather modification projects to NOAA on November 1, 1973, a year after the non-federal reporting law was effective. Therefore, only two of the 67 projects

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Puget Sound Could Become Sanctuary for Killer Whales

NOAA will soon begin intensive study of environmental factors in Puget Sound to determine whether the region should be declared a sanctuary for killer whales, which historically occur in large numbers in the Sound.

The authority to create such a sanctuary is contained in the Marine Protection, Research, and Sanctuaries Act of 1972. The Act names the Secretary of Commerce as the individual who may designate a marine sanctuary, after consultation with the Secretaries of State, Defense, the Interior, Transportation, and the Administrator of the Environmental Protection Agency, other interested Federal Agencies, the State(s) involved, and with the approval of the Presi-

dent. The NOAA Administrator exercises the authority of the Secretary of Commerce in actions involving marine sanctuaries.

Proposed operating procedures under the new Act call for consultation with responsible officials of States, the obtaining of gubernatorial consent, the holding of public hearings, and the subsequent issuance of pertinent regulations.

Closely involved in actions related to the conduct of the inquiry will be NOAA's Office of Coastal Zone Management and National Marine Fisheries Service. The latter is responsible for the management and protection of seals, sea lions, porpoises, and whales under the Marine Mammal Protection Act of

(Continued on page 6)

May 24 Designated EEO Awareness Day

Dr. Robert M. White, NOAA Administrator, has designated May 24, 1974, as NOAA EEO Awareness Day in the Washington Metropolitan area. By establishing EEO Awareness Day, Dr. White hopes to create an understanding and awareness on the part of all NOAA employees of equal employment opportunity activities throughout the NOAA community.

EEO Awareness Day will be marked by a series of EEO presentations in the Washington area. In addition, Dr. White has made a video tape presentation which will be sent to selected field activities for incorporation in EEO Awareness Day activities at later dates. The presentations will emphasize

supervisory EEO responsibilities and are designed to inform both NOAA employees and visitors of NOAA's accomplishments and plans in the area of equal opportunity. Times and places for each of the Washington Metropolitan area presentations will be made known to employees who are located in each of the designated areas. All NOAA employees in the Washington Metropolitan area are invited to attend the presentations to be held outdoors. However, if weather conditions are adverse, presentations held indoors will be limited to supervisors in the area and other employees and visitors as space permits.

At each location in the Washington Metropolitan area, Simon Morgan, NOAA EEO Officer, will speak on NOAA's progress in EEO counseling and compliance. He will be followed by the Director and EEO Committee Chairperson of one of NOAA's Major Line Components who will discuss their respective EEO accomplishments and plans. Dr. White will conclude the presentations by discussing NOAA-wide activities in equal employment opportunity.

Pritchard Named To Coastal Zone Regional Post



Paul C. Pritchard

Paul C. Pritchard has been named to fill NOAA's first post as regional coordinator for coastal zone management. His selection was announced by Robert Knecht, Director of the Office of Coastal Zone Management.

As Pacific Region Coordinator, Mr. Pritchard will assist the States of California, Oregon, Washington, Alaska, and Hawaii, and the

(Continued on page 7)

NOAA, University Scientists Study How Snowflakes Form

The lacy, symmetric snowflakes modeled in kindergarten cutouts occur rarely in nature—and for good reason.

Three atmospheric scientists have been studying how and when snowflakes form. They found that snowflakes come in many shapes and sizes, each molded by different cloud conditions and each adapted to extracting the maximum amount of moisture from the parent cloud. The dainty forms most attractive to the human eye are actually not the best producers of precipitation. The real "workhorse" snowflakes that do the essential job of making a cloud drop its burden of water are the spatial, irregular forms.

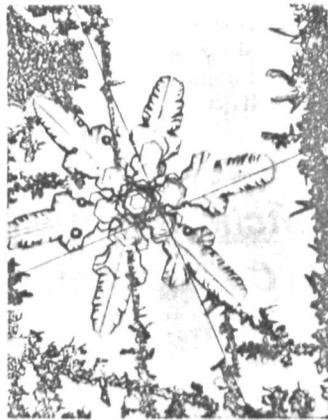
Drs. Helmut K. Weickmann of the Environmental Research Laboratories and J.E. Jiusto of the State University of New York have been studying the different types of snowfall, correlating each with the cloud conditions that breed them.

In the laboratory, Dr. Weickmann, Director of the Atmospheric Physics and Chemistry Laboratory, and Dr. Farn P. Parungo, a re-

searcher at the same facility, simulated snowfalls to watch how crystals take shape.

Scientists have tended to think of the six-pointed star-like snowflake (See A.) as the typical specimen. Dr. Weickmann believes preoccupation with this snowflake stereotype has blinded researchers to the vast array of other forms—forms that play a more important role in precipitation.

Snow may begin as the familiar flat, individual crystals, explain Drs. Weickmann and Jiusto, but most crystals continue to grow after forming within the cloud.

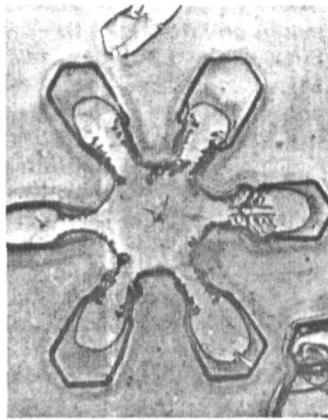


A

The most common type of snowfall in the middle latitudes, report the two meteorologists, is the snowflake aggregate, composed of as many as 100 individual crystals.

At the beginning and end of the winter season when temperatures are mild, or near large bodies of water that supply plenty of moisture, rimed forms occur. These are crystals of various shapes that become "iced up" like an airplane wing when supercooled water droplets freeze onto them.

One form of snowfall that the researchers found surprisingly frequently, was



B

composed of double crystals, sandwiches of two crystals on opposite sides of the same droplet. (See B.)

Traffic jams occur in clouds as well as on the freeway. In vigorous storms, ice crystals often collide and break apart, with fragments sometimes developing into additional, irregular crystals and flakes.

To see how the different ice crystals take shape, Drs. Weickmann and Parungo manufactured crystals under different temperature and humidity conditions by introducing water droplets into a refrigerated chamber. The drops froze and grew into ice crystals which were collected and studied under an electron microscope.

The temperature and size of the water droplet turned out to be strong determinants of the ultimate shape of a crystal.

The results of these studies carry implications for would-be rainmakers. "People have been trying to increase or decrease precipitation without actually understanding how it forms," notes Dr. Weickmann.

Alaskans Study Basic Meteorology II



This is the class picture of Basic Meteorology II, a course given at the National Weather Service Technical Training Center in Kansas City, Mo., April 2-18. (Standing, from left) Larry McEwen, Instructor; Jim Wantz, Instructor; Joseph Pleasant, Unalakleet, Alaska; James Smarz, Nome, Alaska; William Aberle, Kodiak, Alaska; and Bill Winkert, Instructor. (Seated, from left) Harry Johnsen, Jr., Nome, Alaska; Oscar Murray, Barrow, Alaska; Michael L. Williams, Kotzebue, Alaska; Raymond Craig, Valdez, Alaska; and Thomas Barclay, Cold Bay, Alaska.

Turbidity, Precipitation Data for World Published

"Atmospheric Turbidity and Precipitation Chemistry Data for the World—1972" was recently published by the Environmental Data Service's National Climatic Center in Asheville, N.C. This is a World Meteorological Organization-sponsored publication produced jointly with NOAA and the Environmental Protection Agency from data submitted by WMO Regional and Baseline Stations, plus additional worldwide cooperative stations. EPA processes the precipitation chemistry data and supplies it to NCC. NCC processes the atmospheric turbidity data and prints and distributes the joint publication. Before 1972, the data were published separately.

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NOAA Unit Citation Presented To Birmingham WSFO Staff

A NOAA Unit Citation has been presented to the staff of the National Weather Service Forecast Office in Birmingham, Ala., for its outstanding performance during storm warning periods in May 1973, which is credited with curtailing injury and death tolls.

For example, on May 27, when Central and Northern Alabama were hit with the most severe outbreak of tornadoes in over 40 years, eight tornado watch bulletins included some part of Alabama, the WSFO had issued six severe thunderstorm

warnings, 17 tornado warnings and numerous storm reports and statements. The warnings, which were timely, accurate, and based on skillful analysis of radar observations and on-the-scene reports, were credited with holding the death toll to eight persons. One newspaper, comparing the destruction to the outbreak of tornadoes in 1932 when 268 persons lost their lives in Alabama, credited the reduction in loss of life to the effective warning service of the NWS and the dedication to duty and public service of area employees.



Harold S. McCrabb, of NWS Southern Region Headquarters (left), representing the Director of the Southern Region, presented the plaque to Meteorologist in Charge Robert M. Ferry.

Guide to International Data Exchange Through World Data Centres Available

The International Council of Scientific Unions (ICSU) Panel on World Data Centres (Geophysical and Solar) has issued the "Third Consolidated Guide to International Data Exchange Through the World Data Centres." The first Guide was issued in 1957, when the WDC system was inaugurated for the International Geophysical Year, and the second was issued by the International Geophysical Committee in 1963, for the period 1960 onward.

The new 72-page publica-

tion consists of a general section describing the basic procedures for the exchange of data through the World Data Centres, followed by sections explaining procedures for collecting and exchanging data in solar-terrestrial physics, rockets and satellites, oceanography, glaciology, and solar-earth geophysics.

Copies of the Guide are available from the World Data Center A for Solar-Terrestrial Physics, Environmental Data Service, NOAA, Boulder, Colo. 80302.

Two-State Consortium Is Awarded Sea Grant

A \$400,000 Sea Grant has been awarded to a consortium of universities in Mississippi and Alabama for marine-related programs.

The Mississippi-Alabama Sea Grant Consortium, created in 1972, is the first combined effort on the part of two states to seek to ensure the intelligent use of mutual marine resources and to focus the research capabilities of their major universities on problems of the marine environment.

The grant will be used for research in the field of coastal law, pollution, and fisheries development, educational programs in Mississippi, and advisory service programs.

The coastal law studies will attempt to develop and maintain a comprehensive code of marine law for the regulation of Mississippi's coastal zone. Pollution studies include the utilization of seafood processing wastes, an algae control project, and the establishment of water quality standards as

they affect shellfish growing areas.

Fisheries research includes the gathering of biological and economic data on sport fishing, a study of parasites of marine animals in the Gulf, studies of the hydrography and tidal current regime of the Mississippi Sound, and studies of ciguatera fish poison.

The educational program in Mississippi includes courses on law of the coastal zone, marine law and sciences, and interdisciplinary studies on problems of the coastal zone.

Participating in the initial two-state Sea Grant program are Auburn University; the Gulf Coast Research Laboratory; Mississippi State University; Tuskegee Institute; the University of Alabama, Birmingham; University of Alabama, Huntsville; University of Alabama, Tuscaloosa; University of Mississippi; University of South Alabama; and the University of Southern Mississippi.

Buford K. Meade Is Named To Head Control Networks Division of NGS



Buford K. Meade

Buford K. Meade has been named Chief of the National Geodetic Survey's Control Networks Division, which coordinates all geodetic control activities in the National Ocean Survey agency. A veteran of more than 43 years of service with the Survey, he has served as Acting

Chief of the Division since October.

Mr. Meade, a geodesist, has had a distinguished career with the NOS and its predecessor, the Coast and Geodetic Survey. He received a Commerce Silver Medal, served as a delegate of the National Academy of Sciences to the XV General Assembly of the International Union of Geodesy and Geophysics in Moscow in 1971, and in 1972, was selected as a "Fellow" of the American Geophysical Union for his contributions in the field of geodesy. He is a member of the American Congress on Surveying and Mapping, Society of American Military Engineers, Washington Academy of Sciences, and American Geophysical Union.

Current Vacancies in NOAA

To insure that NOAA employees are aware of job possibilities throughout the agency, a list of current NOAA-wide vacancies is published below. Employees interested in

any of the listed vacancies should contact their servicing personnel office for information on where to apply.

| Announcement No. | Position Title | Grade | MLC | Location | Closing Date | Issue Date |
|------------------|------------------------------------|----------|------|---|--------------|------------|
| 613-74 | Oceanographer | GS-14 | HDQS | Rockville, Md. | 5/31/74 | 5/10/74 |
| 618-74 | Supv. Physical Scientist | GS-15 | NESS | Suitland, Md. | 5/31/74 | 5/10/74 |
| 619-74 | Supv. Physical Scientist | GS-15 | NESS | Suitland, Md. | 5/31/74 | 5/10/74 |
| 626-74 | Supv. Meteorologist | GS-14 | ERL | Boulder, Colo. | 5/31/74 | 5/10/74 |
| 627-74 | Asst. Program Manager | GS-14 | SG | Washington, D.C. | 5/31/74 | 5/10/74 |
| 629-74 | Program Analysis Officer | GS-13 | NMFS | St. Petersburg, Fla. | 5/31/74 | 5/10/74 |
| 630-74 | Supv. Meteorologist | GS-14 | NWS | Garden City, N.Y. | 6/1/74 | 5/17/74 |
| 631-74 | Physical Scientist | GS-12 | NWS | Silver Spring, Md. | 6/1/74 | 5/17/74 |
| 633-74 | Meteorologist | GS-11 | NWS | Cheyenne, Wyo. | 6/1/74 | 5/17/74 |
| 634-74 | Administrative Officer | GS-11 | NOS | Detroit, Mich. | 6/1/74 | 5/17/74 |
| 635-74 | Administrative Asst. | GS-5/7 | NMFS | Miami, Fla. | 6/1/74 | 5/17/74 |
| 636-74 | Supv. Hydrologist | GS-14 | NWS | Garden City, N.Y. | 6/1/74 | 5/17/74 |
| 637-74 | Computer Systems Analyst | GS-12 | NESS | Suitland, Md. | 6/1/74 | 5/17/74 |
| 638-74 | Meteorologist (Forecaster) | GS-12 | NWS | Memphis, Tenn. | 6/1/74 | 5/17/74 |
| 639-74 | Electronic Technician | GS-10 | NWS | Fairbanks, Alaska | 6/1/74 | 5/17/74 |
| 640-74 | Meteorologist | GS-13 | NWS | Lubbock, Tex. | 6/1/74 | 5/17/74 |
| 641-74 | Meteorologist | GS-11 | NWS | Jackson, Miss. | 6/1/74 | 5/17/74 |
| 642-74 | Meteorologist | GS-14 | NWS | Salt Lake City, Utah | 6/1/74 | 5/17/74 |
| 643-74 | Meteorological Technician | GS-10 | NWS | Wilmington, Del. | 6/1/74 | 5/17/74 |
| 644-74 | Meteorologist | GS-11 | NWS | Bismarck, N.D. Omaha, Neb. Topeka, Kansas (one at each location) | 6/1/74 | 5/17/74 |
| 645-74 | Meteorological Technician | GS-9/10 | NWS | Detroit, Michigan | 6/1/74 | 5/17/74 |
| 646-74 | Civil Engineer | GS-7 | NOS | Detroit, Michigan | 6/1/74 | 5/17/74 |
| 648-74 | Regional Coordinator | GS-12/13 | HDQS | Rockville, Md. | 6/1/74 | 5/17/74 |
| 649-74 | Fishery Biologist | GS-13 | NMFS | Washington, D.C. | 6/1/74 | 5/17/74 |
| 650-74 | Supv. Meteorological Tech. | GS-12 | NWS | Los Angeles, Calif. | 6/1/74 | 5/17/74 |
| 651-74 | Operations Research Analyst | GS-11 | NMFS | Galveston, Tex. | 6/1/74 | 5/17/74 |
| 652-74 | Meteorologist | GS-13 | NWS | Sterling, Va. | 6/1/74 | 5/17/74 |
| 654-74 | Meteorologist | GS-12 | ERL | Coral Gables, Fla. | 6/1/74 | 5/17/74 |
| 655-74 | Computer Specialist | GS-12 | HDQS | Washington, D.C. | 6/1/74 | 5/17/74 |
| 647-74 | Supv. Electronics Engineer | GS-15 | NWS | Silver Spring, Md. | 6/7/74 | 5/17/74 |
| 653-74 | Construction Representative | GS-10 | NWS | Columbus, Ohio | 6/7/74 | 5/17/74 |
| 632-74 | Ops. Research Analyst | GS-12 | NMFS | LaJolla, Calif. | 6/8/74 | 5/17/74 |
| 656-74 | Supv. Meteorologist | GS-11 | NWS | Rapid City, S.Dak. | 6/1/74 | 5/17/74 |
| 657-74 | Meteorologist (Weather Forecaster) | GS-11 | NWS | Oklahoma City, Okla. | 6/1/74 | 5/17/74 |
| 658-74 | Meteorologist (Leading Forecaster) | GS-13 | NWS | Atlanta, Georgia | 6/1/74 | 5/17/74 |
| 659-74 | Supv. Electronics Technician | GS-12 | NWS | Boston, Mass. | 6/1/74 | 5/17/74 |
| 660-74 | Meteorological Technician | GS-10 | NWS | Beckley, W.Va. | 6/1/74 | 5/17/74 |
| 615-74 | Meteorological Technician | GS-10 | NWS | Vacancy Cancelled | 5/24/74 | 5/10/74 |

Nepotism and the Summer Employment Program

At the beginning of the summer employment period we usually receive a number of questions from employees concerning employment of family members.

Nepotism regulations state that under agency-administered merit plans, children of civilian employees and members of uniformed services may not be appointed in the agency (meaning Department) in which their parents serve. This includes candidates for appointment to grade GS-5 and above, to trades and labor jobs, and to jobs at the GS-1 through 4 levels for which appointments are authorized in the absence of Summer Employment Examination eligibles, or to jobs at GS-1 through 4 levels which are excluded from examination coverage.

The above restrictions do not apply if the child has competed in the Civil Service Commission's "Summer Jobs Examination Announcement No. 414," for grades GS-1 through 4 and are reached for certification for appointment from the register, and only then, provided employment has

first been offered to all other available eligibles with the same or higher scores in the examination. (Veterans are considered to have higher ratings than nonveterans for this purpose.)

Insofar as the \$2.00 per hour summer aid assignments are concerned, applicants must show: (1) that their family is receiving or is eligible to receive financial assistance under a public welfare program or (2) that their parents meet very restrictive monetary criteria, which have been established to provide for employment of disadvantaged families. Under this program, the President has set a quota of hiring at least one economically disadvantaged youth for each forty regular employees on an agency's payroll. NOAA's quota for 1974 is 308. Three categories of employees count toward meeting this quota and all are exempt from ceiling considerations: Summer Aids, Junior Fellows, and Stay-in-School Campaign participants.



Cooperative Education Program

The NOAA Affirmative Action Plan established a goal of employing 90 minority and female college graduates especially in the engineering and physical science disciplines. Because of keen competition from private industry for top minority and female college graduates, recruiting these graduates for jobs in NOAA is no easy task. While we are limited to offering them GS-5 and 7 level starting salaries, private firms may offer them starting salaries in the \$10,000 to \$18,000 range.

Fortunately there are ways of overcoming this problem of recruitment. The NOAA Cooperative Education Program is one option available to NOAA managers and supervisors. This program provides NOAA and its Major Line Components with college and university students who are enrolled in curricula which allow them to alternate periods of academic study leading to a degree, with periods of work experience related to their major field of study. Under this system the student learns to integrate the theory he or she is learning in college with practical on-the-job application. At the same time, the student earns a salary to help pay college expenses and gains experience in his or her chosen career. In addition to the advantages offered a student, the Co-op Program offers advantages to employers also. For example, employing a co-op student provides NOAA with the opportunity to give the student first-hand knowledge of NOAA's various scientific missions. Then, when the co-op student returns to college after a work assignment, the message is carried back to the campus that NOAA is an exciting and challenging place to work. Thus we are able to interest students in an ongoing career with NOAA after graduation.

In 1970, NOAA began its activity in the Cooperative Education Program. So far 291 students have entered the program, 40 percent of whom are minorities and 30 percent of whom are female. Because of its mutual advantages to the student and the employer the program is expanding rapidly across the country. NOAA spends about half a million dollars yearly on this program.

The NOAA Cooperative Education Program operates in the following manner. First of all, NOAA establishes an agreement with colleges which offer cooperative education as part of their academic curriculum. Currently NOAA has agreements with approximately 30 colleges and is seeking to

develop additional agreements with minority colleges which have students majoring in disciplines attractive to NOAA. Once the agreement is signed, students may be employed in any of NOAA's Primary Organization Elements where a co-op position is established. Ideally, two students from the same college fill a single position, each student working for alternate six-month periods. The position is usually set up as a temporary position. Ceiling and salary are provided by the POE. The possibility of having a central source for positions and salary is presently being explored.

Once the position is established, the supervisor determines the particular academic discipline which would be most useful—math, computer science, engineering, accounting, etc.—and informs the Personnel Division, Special Programs Section (AD422).

NOAA Headquarters Co-op Coordinators, Frank Christhill and Elda Inoue, set up a yearly recruiting schedule for visiting colleges with which NOAA has agreements. Often, scientific personnel from MLC's accompany them on recruiting trips to various college campuses. In the field, for the most part, MLC personnel staff do their own recruiting for co-op students. Applications and interview evaluations are delivered to offices and labs interested in co-ops with specific majors. The selecting official makes the final decision as to which students are offered employment. Students pay their own travel expenses and college tuition while in the program. After the students are employed, the Co-op Coordinators counsel individual students as long as they work for NOAA and assist them in securing permanent employment.

Students are usually hired at the beginning of their sophomore year at the GS-3 level. Upon meeting qualification requirements, co-op students may be promoted to the GS-4 and 5 levels when so recommended by their supervisor.

The NOAA Cooperative Education Program offers NOAA managers and supervisors an opportunity to attract and retain top minority and female college graduates for positions in NOAA. It offers the students challenging work assignments as well as providing them with income and valuable work experience. Questions concerning the Co-op Program should be directed to Frank Christhill or Elda Inoue on 301-496-8093.



Merit Promotion Program

This is the second in a series of articles which discusses the NOAA Merit Promotion Program. The first article in this series advised employees on the procedures to follow when applying for vacancies. This article explains what happens to vacancy announcement applications in the personnel office.

An employee indicates interest in a particular vacancy by sending a CD-261, "Merit Promotion Interest Statement," or SF-171, "Personal Qualifications Statement," and NOAA Form 52-18, "Employee Appraisal Form" to the personnel office. These forms are evaluated by personnel specialists. The evaluation is made on criteria previously developed by the personnel office and the operating officials on the basis of the position to be filled and NOAA's future needs.

This criteria includes the quality of job-related experience, job-related training and education, awards, and supervisory evaluations. If the position to be filled is a supervisory position, the applicant is evaluated on his or her EEO efforts and attitudes.

Based on the above evaluation, eligible candidates are tentatively placed in two groups: "Qualified" and "Highly Qualified." Qualified applicants are those who meet minimum requirements including any selective placement factors specified in the vacancy announcement. Highly Qualified applicants are those who, in addition to being basically qualified, have the required knowledge, skills, and

abilities to the extent that they are likely to be highly successful in the position for which they are being considered.

Following this evaluation process, the personnel specialist prepares a Merit Promotion Panel which shows how all of the eligible candidates have been rated. This panel is presented to the Manpower Utilization Council (MUC). The MUC is made up of at least three management officials, one of whom is from an organizational unit other than the one in which the vacancy is located. The role of the MUC is to review the evaluation criteria and the evaluations of each candidate, and to make the final determination as to which candidates are rated Highly Qualified. In its review, the MUC also determines the validity of the criteria in terms of the vacancy announcement and the appropriateness of the importance of the factors used in evaluating the employee's performance. The MUC is also authorized to modify ratings, as appropriate. If there are not enough Highly Qualified applicants, Qualified employees are added to the Merit Promotion Panel. This group—Highly Qualified and Qualified—become the "Best Qualified" applicants available, and their names are placed in alphabetical order on the Promotion Certificate for certification to the selecting official. Normally, from three to five names appear on the Promotion Certificate.



SHRIMP RAREBIT ON ENGLISH MUFFINS

- 2 packages (10 ounces each) frozen breaded shrimp (with or without tails)
- Cooking oil
- 2 tablespoons butter or margarine
- 2 tablespoons flour
- 1 teaspoon salt
- 1/2 teaspoon dry mustard
- Dash cayenne pepper
- 1-1/2 cups milk
- 1 teaspoon Worcestershire sauce
- 2 cups shredded sharp Cheddar cheese
- 6 English muffins, split, toasted, and buttered
- 12 small tomato slices

Dip frozen shrimp in cooking oil. Arrange on shallow baking pan. Broil about 3 inches from heat for 8 to 10 minutes, or until browned and hot, turning once. Melt butter or margarine; stir in flour, salt, mustard, and cayenne pepper. Add milk and Worcestershire sauce; cook, stirring constantly, until sauce is thickened. Add cheese gradually; stir until cheese is melted. Top each muffin half with a tomato slice, and an equal amount of shrimp. Serve with cheese sauce. Makes 6 servings.

Puget Sound Could Become Sanctuary for Killer Whales

(Continued from page 1)
1972.

The Puget Sound project evolved as a result of concern expressed by Senator Warren G. Magnuson of Washington on behalf of a number of his constituents.

NOAA's immediate response was to set in motion an inquiry into all germane elements toward the production of recommendations concerning the Puget Sound sanctuary question as soon as possible.

Scientific knowledge of life cycles, population dynamics, and migration patterns of killer whales is not extensive, though a need for such data has been recognized by marine mammal biologists for some time. It is known that killer whales are found in worldwide distribution, but very little definitive information exists on the total populations or the particular populations of this valuable natural resource that occur in U.S. waters.

Recently a public hearing was held to consider an application for a permit to take four killer whales from waters that include parts of Puget Sound. As a result of the Seattle hearing, held under the Marine Mammal Protection Act, the necessary permit was signed May 3, 1974, by NMFS Director

Robert W. Schoning. Four killer whales may be captured from a carefully delimited area of Puget Sound prior to December 31, 1976, and later will be transported cross-continent to the east coast of Florida, to be added to the roster of marine mammals appearing in living exhibits at the oceanarium owned and operated by Sea World, Inc., in Orlando, Fla.

Conditions of the permit include provision for authorized observers during capture operations to insure humane taking of the whales. Custodial care is subject to continual review and inspection—for the rest of the whales' natural lives—by NMFS personnel.

As a part of the permit awarded to Sea World, Inc., the company is obligated to lend significant assistance to Puget Sound investigations. Thus NOAA may avail itself of the experience of corporation with marine mammals in the region and its familiarity with the Puget Sound environment. Conditions of the permit also require that killer whales used for public exhibition purposes by Sea World, Inc., be made available for scientific research to persons authorized by the NMFS Director.

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Next Week's Best Fish Buys

According to the NMFS National Consumer Educational Services Office in Chicago, the best buys for the next week or so are likely to be pollock and shrimp along the Northeast Seaboard; king mackerel and

shrimp in the Southeast and along the Gulf Coast; turbot and fish sticks in the Midwest; sablefish and tuna in the Northwest; and sea bass and whiting in the Southwest.

Galveston, Tex., WSO Staff Receives NOAA Unit Citation

The staff of the National Weather Service Office in Galveston, Tex., has been awarded a NOAA Unit Citation for its outstanding weather warning service during the winter and spring of 1972-1973. The staff at that time comprised Meteorologist in Charge Davis Benton, Principal Assistant Allen J. Jacoby; Weather Service Specialists Jerry F.

Boudreaux, James M. Burnett, Thomas L. Kirkpatrick, George W. O'Quinn, Ronald P. Stagno, and James N. Stamm (now at West Palm Beach, Fla.); Electronic Technicians John J. Chalupa and Richard R. Cronkwright; and Area Electronics Supervisor Valdon H. Pyeatt.

On the basis of their heavy snow warnings for the Galveston Bay area, on

January 11, 1973, businesses closed, employees were sent home early, and the traffic congestion that could have resulted from the second heaviest snowfall on record was avoided.

Another time, a severe thunderstorm warning issued at 1:40 p.m. was followed from 2:00-3:10 p.m. by the record amount of hail, including some as large as golf balls, which caused extensive damage to autos and plate glass windows. By 5:00 p.m.,

storm tides had reached a height of five to six feet. The WSO's 1:20 p.m. warnings of high tides, probably in excess of five feet, had prompted Texas City to close flood gates and prevent untold flood damage. Rains of up to eight inches caused extensive flooding in Galveston proper from 6:00-8:00 p.m. The flash flood warning issued at 3:00 p.m. was accurate and appropriate and provided for a smooth, orderly evacuation.

Obituaries

Dr. William O. Davis



Dr. William O. Davis

Dr. William O. Davis, Chief of NOAA's Upper Atmosphere and Space Services Office, died May 10. Born in Buffalo, N.Y., he attended New York University and Cambridge University in England (where he was a Carnegie scholar) and after Air Force service during World War II, received his doctorate in Physics from New York University. In the early 1950's, as Vice Chief, then Chief of the Air Force Office of Scientific Research, and later as Deputy Commander of the Air Force Office of Scientific Research, Colonel Davis developed and managed Air Force basic research programs. While Assistant Director of Laboratories at the Wright Air Development Center, Wright-Patterson Air Force Base, in 1957-58, he was responsible for Project Farside, the earliest attempt to obtain radiation and

magnetic data from outer space, by launching a multi-stage rocket from a high-altitude balloon.

After spending eight years in private industry, Dr. Davis returned to the Federal Government in 1966 with the Environmental Science Services Administration, later merged into NOAA, and headed its Plans and Requirements Division, Telecommunications and Space Services Division, and finally the Upper Atmosphere and Space Services Office. In the latter post, he served as a member of the interagency team that planned and coordinated the National Aeronautics and Space Administration's earth resources satellite program.

He is survived by his wife, Virginia, of Route 3, Annapolis, Md., and four children: Charles T., of Fort Lauderdale, Fla.; Mrs. Kay Tohline, of Chattanooga, Tenn.; Michael W., Andrews Air Force Base; and Melanie, of the home address.

Harold E. MacEwen

Harold E. MacEwen, winner of the Coast and Geodetic Survey Sesquicentennial Celebration stamp design contest in 1956, died April 29 in Bethesda, Md. Mr. MacEwen, a cartographer in the Chart Division, retired in 1958 after more than 40 years in government. He is survived by his wife, Ruth, of Silver Spring, Md., two children and five grandchildren.



The plaque was presented to MIC Benton (left) recently by Lawrence R. Mahar, NWS Southern Region Director.

Pritchard Named to Coastal Zone Regional Post

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territories of Guam and American Samoa in carrying out their work under the Coastal Zone Management Act of 1972. His responsibilities will be to work directly with the official designees of the Governors to assist the states in developing coastal zone planning and management programs, and to provide coordination of federal agency activities in coastal zone management with the states and with NOAA.

Before joining NOAA, Mr. Pritchard served as the Chief of the Natural Resource Planning Section, Georgia Department of Natural Resources, in Atlanta. He has also served on the staff of

the Office of Governor Jimmy Carter as State Transportation Coordinator, and with the Middle Georgia Area Planning Commission in Macon. In 1966 and 1967, he was a reporter for the Kansas City Star.

He received a B.A. from the University of Missouri in 1966, and Master of Science in Planning from the University of Tennessee, 1971. He also served as a Captain in the U.S. Army.

The Coastal Zone Management Act of 1972, under which NOAA's Coastal Zone Management Program was established, is intended to provide effective management for the beneficial use, protection, and development along America's sea coasts and Great Lakes shores.

Calendar of events

May 28-June 2
Madison, Wisc.

Sea Grant Communications Workshop, sponsored by the University of Wisconsin. (Ernest Greenwald, National Oceanic and Atmospheric Administration, Office of Sea Grant, Rockville, Md. 20852, 202-967-4788.)

June 6-7,
Columbus, Ohio

Coastal Problems Related to Water Level, Seventh Geodesy/Solid-Earth and Ocean Physics (GEOP) Research Conference, sponsored by American Geophysical Union, Defense Mapping Agency, NASA, NOAA, Ohio State University Department of Geodetic Science, and U.S. Geological Survey. (Cynthia Beadling, AGU, 1707 L St., N.W., Washington, D.C. 20036, 202-293-1144.)

June 11-14,
Rasyp, Va.

Topical Conference on The Electrodynamics of Substorms and Magnetic Storms, sponsored by AGU and NASA. (Cynthia Beadling, AGU, 1707 L St., N.W., Washington, D.C. 20036, 202-293-1144.)

June 17-22
Ottawa, Canada

Annual Meeting of American Society of Ichthyologists and Herpetologists. (Bruce Collette, National Marine Fisheries Service Systematics Laboratory, U.S. National Museum, Washington, D.C. 20560, 202-381-5804.)

Summer 1974
Cambridge, Mass.

Special Summer Program on "Ocean Resource Management: Legal and Policy Aspects," at Massachusetts Institute of Technology Department of Ocean Engineering. Emphasis will be placed on: identification of legal restraints and opportunities, both under

existing law and law in formation; attitudes and policies of U.S. Government toward ocean and coastal zone exploitation; likely outcomes of U.N. Conference on Peaceful Use of the Seabed; and interrelationships between law, technology, and policy formation in ocean resource management. (Director of Summer Session Office, Room E19-356, M.I.T., Cambridge, Mass. 02139.)

August 21-23,
Halifax, Nova Scotia, Canada

Fifth Conference on "Engineering in the Ocean Environment," sponsored by the Canadian Atlantic Section and the Oceanography Coordinating Committee of the Electrical and Electronics Engineers, Inc. (Ocean '74, P.O. Box 1000, Halifax, Nova Scotia, Canada.)

September 9-13,
Santa Barbara, Calif.

Symposium on Atmospheric Diffusion and Air Pollution, co-sponsored by the American Meteorological Society and the World Meteorological Organization. (Chairman of the Program Committee: Dr. S.R. Hanna, Atmospheric Turbulence and Diffusion Laboratory, Environmental Research Laboratories, NOAA, P.O. Box E., Oak Ridge, Tenn. 37830, FTS-615-483-43.)

September 23-25,
Washington, D.C.

10th Annual Marine Technology Society Conference and Exposition, "National Needs and Ocean Solutions." A possible one-day briefing on the June-to-August law of the sea conference is being discussed for September 26. (Mrs. Mary Ann Paturis, MTS, 1730 M St., N.W., Washington, D.C. 20036, 202-659-3251.)

Two Men Rescued by Oregon II

On April 23, the NOAA Ship Oregon II rescued two men from a liferaft to which they had escaped when their sloop began to sink.

According to Richard Adams, Master of the Oregon II, the fisheries research vessel was towing trawls off Key West, Fla., when the First Officer, Mr. Nelson, noted that the Apathy was in trouble. Mr. Adams ordered the fishing gear hauled aboard, and as soon as possible, they headed for the distressed vessel.

The Apathy, which was bound for Miami from Jamaica, sank minutes after Jack Ray and Alex Crawford were rescued from the liferaft.

67 Weather Modification Projects

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summarized in the newly published report were Federally sponsored.

Nearly half of the reported projects were intended to increase precipitation, while about a fourth were conducted to dispel fog. Airlines and airport authorities sponsored operational fog-dispersion programs at airports serving Seattle-Tacoma, Missoula, Spokane, Salt Lake City, Boise, Medford-Jackson, Sacramento, Omaha, Des Moines, Cedar Rapids, Moline, and Reno.

Dry ice was used in many of the fog modification projects. The seeding agent in most of the precipitation projects was silver iodide.

"Weather Modification Activity Reports—November 1, 1972, to December 31, 1973"—by Mason T. Charak and Mary T. DiGiulian of NOAA's Office of Environmental Monitoring and Prediction—describes the projects reported during the period and provides information on their purposes, locations, sponsors, operators, equipment, techniques, and seeding agents.



National Oceanic and Atmospheric Administration

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