

\$12 Million Northwest Emergency Aid Package: An aid package of \$12 million for Pacific Northwest fishermen in need of financial assistance following the collapse of salmon fish stocks off the coasts of Washington, Oregon and northern California is now available through the Department of Commerce. The package will also benefit the salmon fishery and industry in the long-term.

Landsat 6 Failure Tied to Ruptured Manifold: A panel of experts reviewing the failure of Landsat 6 has concluded that the satellite did not achieve orbit because of a ruptured hydrazine manifold. Landsat 6, an earth-resources satellite, was launched aboard a Titan II space

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launch vehicle from Vandenberg Air Force Base, Calif., Oct. 5, 1993. Initial indications were that the satellite's ruptured manifold rendered its reaction engine assemblies useless because fuel could not reach the engines. As a consequence, there was a failure to maintain altitude control during the apogee kick motor (AKM) burn. This failure caused the spacecraft to tumble during the AKM burn and not accumulate sufficient energy to attain orbit.

The board recommended a task force to study the best ways to provide hydrazine feed systems that are safe and failure-free.

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Information on helping the families of victims of the Oklahoma City Federal building bombing is on page 7.

Weather Satellite Essential Element of Modernization

GOES-J Set to Go in May

The second in a series of five advanced U.S. weather satellites is being prepared for launch from Cape Canaveral Air Station on May 19.

The Geostationary Operational Environmental Satellite, now called GOES-J, will be renamed GOES-9 once achieving orbit. It is currently being readied for launch at a payload processing facility near Cape Canaveral.

With the launch of the latest GOES satellite, one of the most essential

elements of the National Weather Service's modernization program will be in place. The data gathered by the GOES satellites, combined with data from the new Doppler radars and the automated surface observing system, will greatly aid forecasters in providing better advance warnings of thunderstorms, flash floods, hurricanes and other severe weather—which will save lives, preserve property, and benefit agriculture, marine, aviation and commercial interests across the country. ☺



Earth Week Events Draw Crowds

Last month's Earth Day and Earth Week events brought much attention to NOAA and the environment. NOAA also held a series of events to commemorate the 25th anniversary of Earth Day (and of NOAA, too). Above, children visit the NOAA Science Center as part of an open house in the Silver Spring Metro Center. More photos from the Washington area are on page 3—we'll publish photos of Earth Day across the country in the June issue. ☺

Alaska: A Microcosm of NOAA Issues

The breadth of NOAA issues was brought home to me in many ways in Alaska. In February, I attended the tri-annual Alaska Eskimo Whaling Captains' Convention in Barrow. The whaling activities were the central reason for the trip, but on the way, I was able to see NOAA activities relating to weather, climate monitoring, and coastal ecosystems. In fact, if it hadn't been for canceled flights, which are fairly common in the winter, I could have seen NESDIS and NOS activities—almost the full suite of the

D. JAMES BAKER



strategic plan elements.

Barrow, on the Arctic Ocean, is the northernmost community in the United States. The weather was sunny and cold, about zero degrees, and all

was white: the tundra is covered with snow and the ocean is completely frozen. At this time of year, the sun is up for about eight hours, although it does not get much above the horizon. Barrow is the seat of the North Slope Borough, whose goal is to incorporate the traditional wisdom of the Inupiat natives with modern-day technology and advancements.

This was my first visit to Barrow since 1975, and I was impressed with the progress that the town and Borough have made with the assistance of the property tax base from Prudhoe Bay. And the population has increased substantially, now about 3,500 people. In fact, while we were there, the town turned on its first traffic light. The expansion of the town has caused problems with polar bears, whose track between the Chukchi and Beaufort Seas is being obstructed by the growth of the town. Residents are urged not to feed the bears, who can be fast and aggressive. In 1994, a resident was attacked and killed by a polar bear. Since then, several actions, including relocating a local landfill and requiring garbage to be placed in a container, have helped keep local residents and the bears apart.

The Captain's Convention is sponsored by the Alaska Eskimo Whaling Commission (AEWC), the body that NOAA deals with for issues of subsistence whaling. The management of the bowhead whale population is a model for sustainable development, and has been done in full cooperation with the affected communities; an example of the new way of doing business. The good cooperation that we have is a far cry from the angry confrontation of the late 1970's, when NOAA officials confronted the whalers and tried to stop the hunt. The issues went as far as the Supreme Court before being resolved.

NOAA is the body responsible for whale conservation, and I am the U.S. Commissioner to the International Whaling Commission (IWC). Last

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Born to Burn

A fire, which has so far claimed at least 20,000 acres of forest in the southern New Jersey Pine Barrens area, was seen from one of NOAA's polar orbiting satellites on April 5. The smoke from the fire (headed southeast) and the fire itself (bright spots near the shore) are clearly visible. Darker areas to the west and southwest of the fire are already burned. The satellite resolution is 1.1 km. The image was taken from Advanced Very High Resolution Radiometer (AVHRR) data. ☺

Earth Week 1995: Looking at the Future of the Environment

The week of Earth Day, April 17 through 23, saw a number of NOAA-related and sponsored events.

At right, NOAA Administrator D. James Baker addressed employees in Silver Spring, Md., on the agency's future.



At left, Deputy Assistant Secretary Will Martin, NMFS chief Rollie Schmitt and NMFS senior scientist Michael Sissenwine spoke at a National Press Club workshop on the future of America's fisheries.

At right, visitors attended the NOAA Open House at the Science Center in the Silver Spring Metro Center complex.



At left, noted oceanographer Jean-Michel Cousteau (standing at podium) spoke at the National Press Club in Washington on "The Search for Sustainability." In attendance at the talk were Deputy Assistant Secretary Diana Josephson (not shown) and NOAA Deputy Administrator Doug Hall (far right).

Focus On...

The Birth of NOAA: A Talk With the First Administrator

NOAA's first administrator, Dr. Robert M. White, has had a distinguished career in environmental science and engineering. He served under five Presidents, from 1963 to 1977, first as Chief of the U.S. Weather Bureau, and finally as the first administrator of NOAA. He is credited with bringing about a revolution in the U.S. weather warning system with satellite and computer technology, helping to initiate new approaches to the balanced management of the country's coastal zones, and promoting the rebirth of American fisheries. As U.S. Commissioner of the International Whaling Commission from 1973 to 1977, Dr. White led some of the first efforts to save the world's whale populations. Since 1983, Dr. White has been president of the National Academy of Engineering (NAE).

In a recent interview, Dr. White was asked to recall some of the challenges that he, as the administrator of the Environmental Science Services Administration (NOAA's forerunner), and others faced regarding getting the idea of NOAA off the ground:

NOAA really resulted from a series of gradual realizations both in the executive branch of the country and in the scientific community that there was a need for looking at and studying the environment as a whole, not just in bits and pieces, because different parts of the planet affect each other. You couldn't study the oceans without studying the atmosphere, and [vice versa]...

There was—as there always is when you have major changes in governmental structures—a certain constellation of individuals slotted in the right places who say “let's do something.”

I had been brought to Washington by the first assistant secretary of the Department of Commerce, a fellow named J. Herbert Hollomon, as chief of the weather bureau. I had been president of a small, but probably the first, private corporation providing environmental services in the country—Travis Research Company, a spin-off of Travis Insurance Company, in Hartford, Conn. My interests had always been in the environment as a whole, even though my own professional field was in meteorology, and some oceanography.

We had in the Department of Commerce a group in the Department that studied the upper atmosphere, which



Dr. Robert White, NOAA's first administrator

After a number of discussions, we said, gee, you know, we have here in the Department of Commerce the possibility of forming an organization that would look in a comprehensive way...at the physical environment.

was world renowned—the National Bureau of Standards, which is now NIST; we had the weather bureau, which was principally doing research in the lower atmosphere; and we had the Coast and Geodetic Survey that was the principal ocean and geophysical agency.

After a number of discussions between the heads of the three agencies, we said, gee, you know, we have here in the Department of Commerce the possibility of forming an organization that would look in a comprehensive way at least at the physical environment. It had nothing to do with the

biosphere or fisheries or anything like that. And we took the step of forming it within the Department of Commerce.

Now remember, you're dealing here with two of the oldest scientific agencies in the Federal government. One which was founded in 1807—the Coast and Geodetic Survey. And one which was founded in 1870—the weather bureau.

We took two of the oldest agencies, and said, it's a different world out there. Maybe if we put them together they could do something different. We brought into being the Environmental

Science Services Administration—ESSA. ESSA was a short-lived organization, but its importance was that it was the first organization, again, within the Federal structure, that sought to take a look at the environment as a whole, in this case, the physical.

You have to recall that, around that time, the environmental movement was reaching its peak. People were deeply concerned about all aspects of the environment. So the move to form this organization was certainly in keeping with the times.

Leaving the general feeling—when ESSA was formed, shortly after that, the view in the environmental community, in the Congress, in the scientific community, was that something more was needed. And the Congress, especially, had become deeply concerned, particularly the coastal states, the senators and congressmen, about the oceans. You have to put yourself back in those times. The country was missing a great deal by not developing and exploiting its ocean resources. There was deep concern about the deterioration of the coastal environment. There was deep concern about the deterioration of the fisheries, due to foreign fishing. There was hope that—and it was confirmed later—that the energy resources, oil and gas, in the seabed—resources there were quite vast—would be adequately developed.

And then superimposed upon all these things was this great international move to take a new look at the Law of the Sea. What were the rights and obligations of various nations, regarding passage and access to resources? At that time, people had visions of great wealth—mineral resources, manganese nodules. Who was going to own these things, in the deep seabed? And so the

United Nations called together this conference that lasted some dozen years on the Law of the Sea.

So all these things came together. And

Sea. It made recommendations about what the country needed to do about managing the coastal zones...about living and nonliving resources.

But it worked. Twenty-five years later there's still a NOAA. Obviously, we did something right.

the Congress felt strongly enough, that there ought to be an ocean agency, they felt that the U.S. wasn't developing the oceans enough, there was environmental deterioration.

A Presidential Commission was appointed, to study all these wonderful things...to come up with recommendations.

The Stratton Commission was appointed. Jay Stratton at that time was chairman of the Ford Foundation—he had left the presidency of MIT—a wonderful person. He agreed to chair the Commission. The Commission was peopled by all sorts of interesting people. People like George Reddie, the president's press secretary. Leon Jaworsky. Fine scientists. People interested in aquaculture. Very interesting and stimulating group.

I was asked to become a member of the Commission. John Knauss was asked to. We met for about a year and a half. We did issue a report: *Our Nation and the Sea*, which recommended a number of things. It recommended organizational change in the Federal government, which was what the Congress wanted. It recommended new kinds of programs. It recommended that we really needed to look at the environment as a whole; we couldn't separate the oceans from the atmosphere. It made recommendations about the position the United States ought to take on the Law of the

No one really expected much to come out of the Presidential Commission report. A lot of reports are made and go nowhere. This one was different, in that, because of the interest up on the Hill, and because of the very timely nature of the recommendations—the Law of the Sea was going on—fisheries were being depleted—action was taken, on the Hill. Concurred in by the Executive Branch of the time. Actually, the Commission began with Johnson and ended with Nixon.

Maurice Stans, who was the Secretary of Commerce, was very close to the President. And Maurice Stans, who was one of the best Secretaries of Commerce I worked for—and I worked for 10 of them—and who had been formerly director of OMB—knew the score in the government, and this was an opportunity to build a strong Department of Commerce. And given the relationship between Stans and Nixon, and Stans' desire to build a strong Department of Commerce...and given the fact that most of the ocean buffs up on the Hill were in the Senate Commerce Committee at the time, NOAA ended up in the Department of Commerce.

NOAA was posed as part of what was called Reorganization Plan No. 4 at the time—at the same time the reorganization plan was set up for EPA. Now remember, before you had EPA, you had a water administration

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Climatic Data Play Major Role in Business Decisions

The next time you're driving in the pouring rain in your convertible, you can thank NOAA for your upholstery not getting soaked.

The climate information provided to manufacturers by NOAA's National Climatic Data Center in Asheville, N.C. helps all kinds of businesses and industries tailor their products to meet consumer needs.

One of the recent requests for data the NCDC received this year was from a Japanese automobile manufacturer to

support the design and test plan for a 1996 convertible.

The company's objective was to design the convertible's top to withstand long durations of heavy rainfall without leaking.

Another major automobile manufacturer recently requested data that would be important in the design of a car for the tough North American climate. The center provided data that will be used to replicate the wide range of conditions a car may experience throughout its lifetime.

"Climate data are part of this country's infrastructure," said Kenneth Hadeen, NCDC director. "These data play a major role in decisions that businesses make every day. They are vital to our economy."

Getting Fizzical

As weather plays an important role in

refreshment sales, a soft-drink manufacturer recently contacted the climate center for daily temperature and precipitation data for more than 100 major markets in the United States. The company is studying weekly sales of its products in these markets.

"These are just a few recent examples of ways in which businesses use climate data in their decisions," Hadeen said. "Businesses that overlook climate data might not succeed."

The legal community is a major customer, representing about 30 percent of the center's users. The insurance, engineering and business communities also represent a large segment of users. Most non-commercial users are scientists from government agencies and foreign customers who rely on NCDC data obtained from many sources. ☺

TAO Array Data Available

Data from the newly completed Tropical Atmosphere Ocean (TAO) Array are now available on line.

The TAO Array of 69 moored buoys that measure surface wind, ocean temperature, and currents in the tropical Pacific Ocean is located between 8 degrees N and 8 degrees S and spans the tropical Pacific from near the Galapagos Islands to New Guinea. The array provides NOAA scientists and their colleagues around the world with real-time atmospheric and oceanographic measurements that are used to improve our understanding of how the ocean and atmosphere interact to cause variations in the world's climate on seasonal to interannual time scales. The most notable of these climate variations is the El Niño/Southern Oscillation.

Data from the Array are relayed by NOAA polar-orbiting satellites and then processed and distributed to operational weather centers in real time via the Global Telecommunications System (GTS). Researchers worldwide can access the data on a daily basis over the Internet or GTS. Up-to-date information from the TAO Array can be found on the World Wide Web at <http://www.pmel.noaa.gov/toga-tao/realtime.html>. ☺

25 Years Ago: The Birth of NOAA

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in one place, and an air pollution administration in another place, in what soon became the Department of Health, Education and Welfare. And in Interior, EPA was an attempt again to bring various elements of the environment together. ESSA had already brought certain elements of the environment together.

So, both NOAA and EPA were presented to the Congress as President Nixon's environmental initiative.

Now you have to think back...President Nixon is often castigated for many reasons, but...in the sequence of presidents, he brought in and institutionalized a lot of what we now regard as the mechanisms for dealing with the environment... President Nixon has to be given credit for being an "environmental" President.

So NOAA was formed. ESSA in the DOC had merged its activities. But now suddenly there were things like the Bureau of Commercial Fisheries, over there in Interior, which wasn't

doing very well. Its vessels were in the process of deteriorating.

The industry was behind the forming of NOAA because it got the Bureau of Commercial Fisheries out of Interior and put into Commerce. And there were other bits and pieces—the oceanographic data center was brought over...

Now, we had suddenly brought together organizations of quite different cultures. And we suddenly found ourselves in a mode we had not found ourselves in before—we found ourselves in a regulatory mode.

Regulating fisheries...which was foreign to much of the leadership in the organization, so there was a big learning curve. And so we started out, with how should we structure this thing, and we structured it quite differently than ESSA was structured...and it was also different from the way NOAA is structured today. Institutions have got to evolve and change to meet the changing times.

—Janet Amber ☺

Alaska is a Microcosm for NOAA Activities

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May, our IWC delegation was able to negotiate a quota of bowhead whales for the AEWG that was fully consistent with their needs as documented by studies of nutritional and cultural needs. Since the bowheads are an endangered stock, the IWC has established criteria for quotas that required a growing population even with the take. With excellent sighting and acoustic surveys, the NMFS and AEWG teams were able to document a total number for the stock that supported the take numbers from the studies.

I was invited to attend the convention by George Ahmaogak, Sr., the Mayor of the North Slope Borough, and Burton Rexford, the Chairman of the AEWG. The main purpose of the Captains' Convention is to divide up the quota among the villages. This year, there was one new village, Little Diomedea, making a total of 11 in all. There are also discussions of the status of the stock, the science of the bowheads, and the weapons improvement program. This year, the meeting included a group of Russians who are interested in further developing a hunt for gray whales in their waters. The social events are an important part of this activity; we were treated to a dinner of moose stir-fry and whitefish stew and dances by each of the villages and the Russians.

During my stay in Barrow, I was also pleased to have an opportunity to visit the Barrow Laboratory of the Climate Monitoring and Diagnostic Laboratory, headed by Dan Endres and assisted by Malcolm Gaylord. Dan and Malcolm operate the facility that provides the long-term measurements of carbon dioxide and other atmospheric gases that underlie much of the concern about global change. They also test buoys and other instruments in icy conditions. Dan gave me an interesting tour around Barrow, where

I saw that the high school teams are the Whalers, and an exciting ride out to the laboratory in a specially designed tracked vehicle. The Barrow laboratory is especially important now that the Canadian station, Alert, is closing due to lack of funds.

I also visited with Charlie Evans, who is the Official in Charge of the Barrow Weather Service Office. Charlie has been with the weather service for 36 years, and his warm and friendly manner is typical of the people that I met in Alaska. The Barrow office is the most northerly station operated by the weather service, and provides essential services to the communities of the North Slope. It provides a special local marine weather warning and forecast service during the whaling and resupply season, thus helping the community in its hunt and survival. When my flight out of Barrow was canceled, Dan and Charlie arranged for me to use the temporary housing quarters of the NWS overnight.

Unfortunately, the cancellation of flights made me miss my scheduled visit in Fairbanks with University of

Alaska officials and NOAA's Ted Fathauer of the Fairbanks Weather Service Forecast Office and Charles Jones of the NESDIS Gilmore Creek Facility. However, I was able to have dinner with Gunter Weller, Vera Alexander, and Tom and Susan Royer to talk about NOAA relations with the University of Alaska. We have many joint projects, and are currently discussing the construction of a new building that will house the weather service office as well as related university projects. This is another example, like the one in Raleigh, North Carolina, where collocation will prove fruitful in creating collaborations. We have just signed an agreement on a Joint Institute between the University and OAR, another example of what we can do with partnerships.

The State of Alaska provides a microcosm of the application of NOAA services. The Congressional delegation has strongly supported NOAA and the need for conservation of fisheries. We are looking forward to continuing to work with the State on these issues of sustainable development. ☺

Disaster Relief for Oklahoma City Victims

Several organizations are accepting donations to aid the families of victims of last month's bombing of the Federal building in Oklahoma City. Although no NOAA or Commerce Department employees were involved in the tragedy, and while we can't endorse any specific charities, we're running this list to assist our readers, Federal employees, in helping their colleagues.

Central Oklahoma Combined Federal Campaign
(405) 236-8441

Federal Employee Education and Assistance Fund
(800) 323-4140

Federal Managers Association
OK Fund
1641 Prince Street
Alexandria, Va. 22314-2818

American Federation of Government Employees
Oklahoma Relief Fund
United Bank
Customer Service
4600 Southeast 29th Street
Del City, Okla. 73155

National Association of Retired Federal Employees
Oklahoma Disaster Fund
c/o Frances M. Provine
232 Randall
Midwest City, Okla. 73110 ☺

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Information Pleasers: Twelve NOAA employees were honored jointly by the agency and *Government Computer News* for excellence in information resource management last month in Washington. The honorees were Capt. William Turnbull, Carla Steinburn, Joel Perloth, Eugene McDowell, John Kyler, Ronald Schmied, Patricia Howell, Linda Despres-Patanjo, Nancy Soriede, Michael Fraser, John Ward, and William McCracken.

NOAA Ship Rescues Injured Fisher: The crew of the NOAA Ship ALBATROSS was cited for "superior performance of duty" for its role in the rescue of a seriously injured crewman of a fishing vessel off the Virginia coast. The fishing vessel *Robin Lee* reported the injury on the morning of March 12, and the ALBATROSS was diverted from its mission to as-

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sist; it was the first ship on the scene. "The rapid and professional response of your [crew] demonstrates your unit's outstanding preparedness and is in keeping with the highest traditions of the sea services," said Rear Admiral W.J. Ecker, Coast Guard commandant for the region.

Fish Fry Info: On Wednesday, June 7, the 20th Annual NOAA Fish Fry will be held from 6:00pm-9:30pm in the DOC cafeteria and adjoining courtyards. All NOAA employees are invited to attend. The NOAA Fish Fry promotes seafood as a healthy food choice emphasizing increased consumption of underutilized and aquacultured species.

Tickets are limited and will be available beginning May 8 for \$20 in advance and \$25 at the door. For information call Pete Allen at 202-482-6096.

Ozone Down: Average ozone measurements over the Northern Hemisphere for early 1995 were significantly lower than those recorded during the same months last year, according to NOAA's Northern Hemisphere Winter Summary. ☺

Got a Question? Ask Dr. Science!

Frazzled by fish? Stumped by sanctuaries? Mystified by modernization?

Well, we're from the government, and we're here to help.

In July, NOAA Report will begin a new feature, *Ask Dr. Science*, designed to answer your scientific questions about the environment and NOAA's role in protecting, predicting and assessing the world around us. Send us your questions, and we'll print the answer to at least one every month with information from top NOAA scientists.

Send your questions to:

Ask Dr. Science
NOAA Report
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Room 6013
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You can also e-mail them to drsci@hq.noaa.gov (Internet) or [drsci@pa@noaa](mailto:drsci@pa@noaa.gov) (Banyan). And if we pick your question, you'll get...well, we really can't give you anything except the satisfaction of appearing in the newspaper and getting your question answered. But, really, shouldn't that be enough? ☺

Warning Equipment for Hearing-Impaired May Have Other Uses, Utah Test Shows

A test of special NOAA Weather Radio receivers for the hearing-impaired has shown the equipment has many uses to other communities as well.

The receivers are attached to conventional computer printers. Special beacon lights attached to the equipment alert the hearing-impaired person that important weather emergency information is being sent from the radio to the printer.

The equipment for the test was donated by NWS to hearing-impaired residents of Salt Lake City, Utah.

"The weather service recently tested this equipment, which provides a printed weather service message to the hearing-impaired community in the Salt Lake City area," said Dr. Tom Potter, NWS western region director. "We also found this low-cost equipment could be used to alert other people who may be spending time outdoors and may not be aware of impending changes in the weather." Other applications of the equipment, he added, include construction companies, recreation facilities, school districts and school bus dispatchers, where a radio or television may not be at hand.

The technology used in the test enables NWS to provide weather services in compliance with the Americans with

Disabilities Act, the 1992 law mandating that public entities like the weather service make their services accessible to all Americans.

"We are in the business of providing warnings and forecasts that help save lives and protect property," Potter said. "This new technology helps us bring this service to a very special segment of our population. We are donating this equipment as a gesture of our gratitude to the many people who helped us perform the test." ☺

NOAA Report is a monthly publication for NOAA employees from the Office of Public and Constituent Affairs, Washington.

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