

NOAA REPORT



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NOAA in Jeopardy?: Who says NOAA doesn't have its share of glamour? Recently, NOAA's National Climatic Data Center in Asheville, N.C. got a call from the question writing staff of Jeopardy!, the popular game show. The Jeopardy staff wanted to check their facts on a particular question—whether the five warmest years in the U.S. in this century had occurred in the 1980s. NCDC set them straight—that the eight warmest years of the century were between 1931 and 1954. The original question was changed.

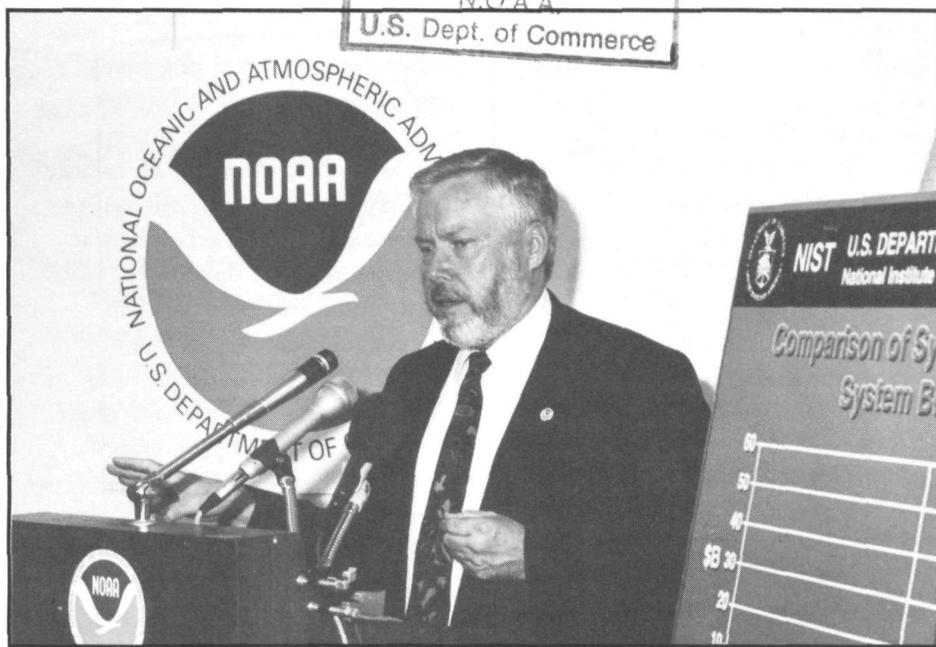
Communications Center Move Called Milestone: The move of the

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NWS Telecommunication Gateway from Suitland, Md., to a new facility at NWS headquarters in nearby Silver Spring is being called a major milestone in NWS modernization. The Telecommunication Gateway, the central hub of data communications for the NWS, processes over 100 million characters of data each day, including weather observations, forecasts, watches and warnings, and over 2,000 facsimile charts. The larger, modern computer systems activated in the new facility have greater capacity and speed than their predecessors. Activation of the new equipment will result in even better service to users of NWS meteorological data and will support a growing need for real-time data throughout the nation.

World's Deepest Diving Research Sub in U.S.-Japan Study: A team of

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NOAA National Weather Service assistant administrator Elbert 'Joe' Friday at a press conference announcing the findings of a National Institute for Standards and Technology study on NWS modernization. The modernization effort should pay for itself in the year 2000, two years after its full implementation, the study said.

Two Year Payback Seen After Modernization's Done

The National Weather Service's \$4.4 billion modernization program will return so many economic benefits to the nation that the entire cost of the program will be recovered within two years of its completion, according to a new study by the Department of Commerce's National Institute of Standards and Technology (NIST).

The year-long study, released last month, found that improvements in forecasting will not only reduce losses from disastrous storms such as Hurricane Andrew, but will minimize losses in many sectors of the national

economy, including agriculture, aviation, construction, communications, power transmission and manufacturing. *continued on page 3*

New Phone Numbers

All telephone numbers at Commerce Department headquarters in Washington have changed. NOAA Public Affairs can now be reached at (202) 482-6090. Our new fax number is (202) 482-3154. Main Commerce information is now (202) 482-2000. □

Making Property Records Accurate

Efforts to improve NOAA's tracking of office property have yielded an 80 percent drop in unaccounted for items.

Called "unreconciled personal property," this can be a big chunk of agency funds. The value of such property, which stood at \$65 million in October 1991, has fallen to \$13 million, according to the NOAA Office of Administration (OA).

Reconciliation matches items to property records and financial records. This ensures that there's always an accurate list of the quantities, descrip-

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tions, conditions and locations, and who uses them.

Effective reconciliation is an on-going team effort. It's equally important to report all major changes in your office's equipment, such as new purchases or the surplussing of old items, OA's Personal Property Staff to keep the record straight and up-to-date.

At the beginning of FY 1992, approximately 23,000 office items were not accounted for, totaling \$65 million. Without accurate records, NOAA risked losing control of substantial assets. To make the records accurate, OA met with property officials of all offices to develop new ways to report reconciliation. As a result, unreconciled personal property has been reduced to a

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'Teacher at Sea' Program Lets NOAA Scientists Share Research With Schools

The midnight to noon shift aboard the NOAA Corps research ship *Miller Freeman* may not sound appealing, but Ken Vandeneuvel, a Seattle high school teacher, felt like a "kid in a candy store" as he worked with NOAA scientists conducting fish surveys.

Vandeneuvel, one of six middle and high school teachers selected to participate in NOAA's Teachers at Sea program, spent three weeks in August doing hake and rockfish surveys aboard one of NOAA's research ships. The three-year-old program, extended to the west coast for the first time this year, gives teachers the opportunity to participate in NOAA's oceanic research, and bring their first-hand experiences back to the classroom. The program also gives teachers the chance to conduct a variety of oceanic and atmospheric research including charting, fish trawling, fish identification and sampling, and global climate change studies.

Vandeneuvel explains that his research crew surveyed pacific whiting, commonly called hake, which are used commercially to make surimi, the major ingredient in imitation crab meat. The 215-foot ship with its crew of about 40 began in northern California, surveying hake along the continental shelf using hydroacoustic gear, equipment which uses sound to detect the fish.

"When we discovered a good group of fish, the scientists would put down trawls, which are large, funnel-shaped nets which bring the fish back up," Vandeneuvel says. "I was involved with measuring length and weight, and determining sexual maturity, age, and contents of the stomach."

The team did all the measurements and computer analyses aboard the ship, except for measuring the

otoliths, tiny inner-ear bones, which, like the rings of a tree, show the fish's age by annual rings in the bone.

Rockfish Research

In addition to conducting the research which will help prevent overharvesting hake, Vandeneuvel and NOAA scientists researched the rockfish, a bottom-water fish.

"We would scoop stuff up to 450 feet deep. Most of it I had never seen before," Vandeneuvel exclaims. "We had to account for everything we brought up in the trawl net—sponges, viper fish, a 30 pound squid. I felt like a kid in a candy store."

Vandeneuvel shares with his second year high school students his enthusiasm for his new deep sea discoveries and for "watching dolphins playing in the bow wake and whales and orcas breaching." He says, "There is so much you bring back personally after an experience like this. That's what turns the kids on."

"The students are anxious to see my slides of the 30-pound squid and King of the Salmon fish," Vandeneuvel continues. He brought back fish for the students to perform similar studies as those conducted at sea. "They will work with the otoliths and also identify the fish using an identification procedure which one of

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Andrew Relief

Contributions are still being accepted to aid NOAA employees affected by Hurricane Andrew. Send your check, payable to "NOVAC—Hurricane Andrew Relief" to: NOVAC, DOC/NOAA, 6010 Executive Boulevard, Rockville, Md. 20852

Study Sees 8-to-1 Return on Modernization

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facturing. The modernization effort also will return nearly eight dollars for every dollar spent, the report reveals.

Strengthens National Economy

The NIST study finds that basic underpinnings of the economy will be strengthened by greatly improved management of the nation's water supplies and reduction of the heavy annual economic drag from storm losses.

The modernization program, scheduled to be completed in 1998, is already underway and showing great benefits. During Hurricane Andrew, two new elements of the modernization program, a Doppler radar 200 miles away at Melbourne, Florida, and advanced numerical modeling techniques to track the storm were combined with high altitude satellite monitoring to give the staff at NOAA's National Hurricane Center, at Coral Gables, the ability to warn of Andrew's approach several days in advance and to accurately predict its path.

Commenting on the NIST report, NOAA Administrator John A. Knauss, said:

"This study helps confirm what many have already perceived: the weather modernization program is an excellent investment. It will expand our capability for emergencies such as Andrew, where warnings were early and accurate. Warnings also will improve for tornadoes, flash floods and localized severe storms. Better forecasts will greatly benefit the whole national economy."

First In-Depth Look

This first in-depth look at the economic value of weather information was conducted by Robert E. Chapman, senior economist with NIST's Office of Quality Programs. The NIST evaluation examines the

costs and benefits of continuing to operate the existing, largely obsolete, system versus the costs and benefits of a modernized system and organization.

vast new quantities of data and imagery in preparing area forecasts, serving as a nerve center for it all.

"The weather modernization program is an excellent investment," said NOAA Administrator John A. Knauss. "Better forecasts will greatly benefit the whole national economy."

New Systems

The proposed modernization includes these new systems:

- ✓ long-range Doppler radars,
- ✓ a greatly improved family of high altitude geostationary satellites,
- ✓ continuous automated weather observing and reporting systems at up to 1700 airports,
- ✓ greatly enhanced numerical forecast capability,
- ✓ a network of interactive computers enabling forecasters to manipulate

Aside from the economic benefits, the NIST study sees a reduction of weather-related deaths coming from the improved forecasting abilities inherent in modernization.

Currently, the average annual death toll from severe weather in the U.S. is 1,000, and more than 8,000 die each year from traffic accidents caused by bad weather. "More reliable forecasts will undoubtedly reduce weather-related fatalities," the report noted. □

Teachers on Research Ships Bring Science Education Back to Students

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the scientists on the cruise developed," he says.

Develop Curriculum

The oceanic research cruises allow teachers to develop an innovative curriculum for their students. In addition to teaching his students about research procedures and equipment, Vandenheuvel will use the fish population data he helped gather to teach his students data analyses. Vandenheuvel also developed a slide presentation to promote careers in NOAA research.

"The slides help show career requirements and what various jobs are like. It's also an opportunity to promote careers for females on NOAA research ships,"

Vandenheuvel says. He has many slides showing female deckhands, survey technicians and yeoman at work. Women make up between 10 and 15 percent of NOAA Corps on-board crew.

The Teachers at Sea program offers six research positions to teachers from around the country. John Brannan, Leo Racich and Deborah Hall, all from Virginia, and Carol Sandison and Douglas Weisman, both from Washington state, also participated on NOAA research cruises in July and August. On the east coast, the program is sponsored by NOAA, the Virginia Marine Science Museum, Mid-Atlantic Marine Educators Association and

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NOAA and Japanese scientists will use the world's deepest-diving scientific submersible, the *Shinkai 6500*, to investigate seafloor geology and organisms near the Mariana Trench in the western Pacific from now through December. The Mariana Trench, off the Mariana Islands, is the world's deepest seafloor depression, with depths measured to 37,800 feet. It lies on the geologically active edge of the Pacific tectonic plate. Investigations will be made in two legs along the Izu-Mariana Island arc and ocean trench system. The *Shinkai 6500* can operate to depths of 20,000 feet (6,500 meters).

Pacific Groundfish Limited Entry Plan Approved: NMFS has approved Amendment 6 to the Pacific Coast Groundfish Fishery Management Plan, limiting entry into the Pacific

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groundfish fishery to offset increasing fleet harvesting capacity. Federal permits for the three major gear types (trawl, longline and fish pot) will account for the majority of the Pacific groundfish harvest. Limited entry permits will be issued to vessels that demonstrated a minimum qualifying level of groundfish landings with limited entry gear between July 11, 1984 and August 1, 1988.

Halon Atmospheric Concentration Increase Slowing: Atmospheric concentrations of halon compounds involved in ozone destruction are increasing at a slower rate than in the recent past, NOAA scientists have found. This could mean that international efforts to reduce production of such chemicals used in fighting fires may be having a positive effect.

James Butler and associates at NOAA's Climate Monitoring and Diagnostics Laboratory in Boulder, Co., reported on a six-year analysis of air samples collected during several Pacific research cruises and at seven climate monitoring stations. □

Sec. Franklin Names Monterey Bay New Marine Sanctuary in Ceremony

More than 5,400 square miles of California's central coastal waters in and around Monterey Bay have been officially designated the nation's 11th and largest national marine sanctuary.

A three-day celebration for the Monterey Bay National Marine Sanctuary, culminating in official designation by Commerce Secretary Barbara Hackman Franklin, took place in Santa Cruz, Ca. and Monterey Sept. 19-21.

"We are committed—through the National Marine Sanctuary Program in general and this sanctuary in particular—to permanently protecting special areas of this nation's coast for ourselves and our children," Secretary Franklin said.

Oil, Gas Development Prohibited

Regulations governing activities in the sanctuary will prohibit oil and gas development within its boundaries and place strict controls on other activities, including sewage discharge and many industrial operations. Sanctuary officials in cooperation with state agencies will also enforce strict coastal water quality measures. An outright ban on new dredge spoil disposal sites within the sanctuary boundaries will be enforced.

The sanctuary, which contains the largest underwater canyon in North America, is home to an expanding population of sea otters, whales, seals, fish and sea birds. The area is considered one of the most

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manageable level in most offices. Since the majority of inventory is outside metro Washington, Administrative Support Center personal property staff members were invaluable in working with field staff to implement the new procedures.

biologically diverse marine environments in North America. Strong public support backed selection of the sanctuary's boundaries.

Fourth in California

Monterey Bay makes the fourth in a chain of sanctuaries down the California coast. The Cordell Bank, Channel Islands and Gulf of the Farallones sanctuaries now cover about 3,400 square miles. □

Teacher at Sea

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Old Dominion University. The west coast missions are sponsored by NOAA, Poulsbo Marine Science Center and the Northwest Aquatic and Marine Educators.

Share With Students, Teachers

The Teachers at Sea program creates a channel for NOAA scientists to share timely, state-of-the-art scientific research with today's students.

Vandenheuvel's eagerness, sparked by the attitudes of NOAA officers and scientists, is sure to spread to his students.

"I saw jobs for all kinds of kids. There are spots for kids who are mechanically inclined and others who are academically inclined. I saw that there is something for everyone on NOAA's research ships," he says.

—Tammy Graham □

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