

NOAA Report



August 27, 1990

COMING UP

National Climatic Data Center Seminar in Asheville, N.C., Aug. 29.

International Geosphere/Biosphere Program Meeting in Paris, France, Sept. 3-7.

Next Generation Weather Radar (NEXRAD) Program Council Meeting in Rockville, Md., Sept. 4.

National Research Council's NWS Modernization Committee Meeting in Washington, D.C., Sept. 4

World Meteorological Organization Working Group Meeting in Geneva, Switzerland, Sept. 10.

National Marine Fisheries Service Board of Directors Meeting in La Jolla, Calif., Sept. 11-13.

NOAA Lends Hand in Iraq Crisis:--NOAA's Charting and Geodetic Services is printing the new maps and charts needed by U.S. defense forces in the Persian Gulf. The Defense Mapping Agency (DMA) is using the presses for an additional daily shift and an extra full day a week to print the large requirement of crisis maps on an emergency basis for 30 days. NOAA chart and map printing production will not decrease, and DMA is fully funding this additional work.

Greenhouse Gases Show Modest Four-Year Increase:--Atmospheric concentrations of the five gases primarily responsible for global warming of the Earth through the greenhouse effect have increased modestly in the past four years, according to a NOAA update of global trace gas trends.

NOAA conducts long-term monitoring of the gases--carbon dioxide, methane, nitrous oxide, and two chlorofluorocarbon species, CFC-11 and CFC-12--through its Climate Monitoring and Diagnostics Laboratory in Boulder, Colo. All five gases are emitted into the atmosphere as a result of human activities.

During the last four years, the monitoring program shows:

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Carbon dioxide concentration has increased by an average of 0.5 percent (1.71 parts per million) a year. The growth rate varied considerably during the four-year period, however, according to Dr. Pieter Tans of the laboratory's Carbon Cycle Group. In late 1987, as the El Nino event in the Pacific Ocean occurred, concentrations were rising at an annual rate of almost 1 percent (2.5 parts per million) per year, he explained. (An El Nino event is marked by an eastward movement of warm water in the Pacific along the Equator, which affects climate, sometimes world-wide).

Methane concentration has increased by about 0.8 percent (12 parts per billion) per year. However, Tans pointed out, there is some suggestion in the four-year record that the growth rate may have decreased slightly, recently.

Nitrous oxide concentration has increased at a rate of about 0.25 percent (0.7 parts per billion) per year, Dr. James Elkins of the Nitrous Oxide and Halocarbons Group reported.

Both CFC-11 and CFC-12 concentrations have been increasing at a rate of about 4 percent per year, Elkins said; CFC-11 about 10 parts per trillion, and CFC-12 at 16 parts per trillion. Elkins noted that emissions of both the CFC gases and nitrous oxide are responsible, also, for destruction of ozone in the stratosphere.

The NOAA laboratory conducts on-going, long-term monitoring of trace gases from baseline observatories at Barrow, Alaska; Hilo, Hawaii; Pago Pago, American Samoa; and South Pole Station, Antarctica.

Scalpel, Forceps...Lobster?--Two University of Delaware scientists, working under the NOAA-funded Sea Grant College Program, have been awarded a patent for a process that eventually turns the exoskeletons of insects and crustaceans into protective dressings for wounds.

Charles Albisetti and John Castle received the patent for their development of technique that disperses chitin--a substance commonly found in the hard outside shells of insects, shrimp, lobster, and crab, among others--as a first step in shaping it into sheets used to dress wounds. The dressings are doubly effective, since chitin and its derivative chitosan not only protect the wound but promote healing as well. Previous methods of dispersing chitin were either too expensive or used harsh chemicals that destroyed it.

Soviet-American Joint Research to Study Biology of Western Arctic--Two joint research cruises from the U.S. and U.S.S.R. this summer will study the physical processes which control the biology of the Western Arctic.

The cruises involve scientists from NOAA's Pacific Marine Environmental Laboratory in Seattle, the State Committee for Hydrometeorology's Arctic and Antarctic Research Institute in Leningrad, and a number of U.S. university laboratories. The investigation's emphasis is on how shelf circulation controls the distribution of ice, nutrients and other biological substances in the Arctic.

As part of the project, the Soviet research vessel Professor *Khromov* took on American scientists and their equipment in Seward, Alaska last week for a month-long cruise northward through the Bering Strait. This will be followed by a second cruise to the same area aboard the NOAA ship *Surveyor*, departing Dutch Harbor, Alaska, late next month.

Fifteen instrumented oceanographic moorings will be deployed in the project for a year. In addition, each cruise will provide extensive mapping of water properties, including nutrients and trace substances. Satellite-tracked surface buoys will determine ice drift and meteorological forcing.

This joint research program will provide the first comprehensive measurements of a vital Arctic shelf area, which has one of the largest biological production rates in the world and plays a pivotal role in the climatology of the Arctic Ocean. This field effort is the starting point for the new Ice Edge Ecosystem Study under the Coastal Ocean Program, and is conducted under the auspices of the recently signed U.S.-U.S.S.R. Ocean Studies Agreement.

Red Snapper Quota Proposed:--The directed red snapper quota in the Gulf of Mexico will drop from 3.1 million pounds to one million under a new proposal by the Gulf of Mexico Fishery Management Council. The limit for recreational fishermen would also drop from seven to two fish per day under the plan.

In addition, the council has recommended a shrimp trawling closed season in the Gulf from May 1 through July 31, beginning in 1991, with either additional closures or requirements for trawl gear modifications in 1993 to reduce the bycatch of red snapper.

The council will convene public hearings on the regulatory amendment, which is scheduled to take effect in 1991, and considerable public comment is expected.

High Grade Surimi Produced from Pacific Whiting:--A new substance, taken from a common variety of potato, will let scientists at the Northwest Fisheries Center produce high grade surimi, a seafood substitute, from Pacific whiting, increasing domestic fishing industry interest in the fish.

Previously, whiting could not be used, because protease enzymes in the fish would cause irreversible softening of it after death. However, a protease inhibitor, found in potatoes, prevents

the softening. The Center has received a patent for the process, and is licensing its commercial application to industry. The process may also work with arrowtooth flounder found in the northeast Pacific and the Bering Sea.

About 200,000 metric tons of Pacific whiting is currently harvested per year, mainly by joint venture processors selling to foreign markets.

Turtles Sent Packing:--NOAA has released 1,850 Kemp's ridley turtles into the Gulf of Mexico 75 miles off Galveston, Tex., as part of the Fisheries Service's Operation Head Start.

The program is part of a joint U.S.-Mexico Kemp's ridley Recovery Program, designed to increase the population of the critically endangered sea turtle. Since the program began in 1978, more than 600,000 hatchlings have been released into the sea.

The turtles nest on a beach near Rancho Nuevo, Mexico. Each year during the nesting season, 2,000 eggs are collected, incubated and hatched, transferred to a NOAA laboratory in Galveston, and finally tagged and released into the Gulf. The story received extensive coverage over network television and wire services. Despite the release conditions--some at three in the morning--the operation was fully covered by NOAA cameras, including undersea footage.

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