



March 4, 1991

Models' Accuracy Still Unknown

Decades Before Drought Trends Confirmed?

NOAA scientists say it may take decades to verify the accuracy of models predicting that an enhanced greenhouse effect will make the central U.S. more drought-prone by the year 2030.

The research, conducted by Thomas Karl, Richard Helm Jr. and Robert G. Quayle, scientists in NOAA's National Climatic Data Center, was reported in *Science* magazine.

Currently, historical records confirm some computer-predicted climate trends as accurate, others not.

The models predict that by the year 2030, accumulations of greenhouse gases like carbon dioxide may cut precipitation in summer by 5 percent to 10 percent, and increase it up to 14 percent in winter. They also project temperature increases of about 4 to 7 degrees Fahrenheit.

Records vs. Predictions

The NOAA team set out to

evaluate the consistency between observed changes and regional projections from these global climate models. The group used statistical analyses of historical temperature and

precipitation records to determine if predicted changes are now being detected, and if not, when they may be expected.

The researchers concluded that the natural variability of precipitation is so large it may take another 40 years to verify or dismiss all the model projec-

continued on page 2

Budget Shows 'Strong Commitment to Marine Science,' Knauss Tells Hill

NOAA's budget for Fiscal Year 1992 "continues this Administration's strong commitment to marine science and to the preservation and protection of the coastal, ocean and Great Lakes environments and their associated living marine resources," according to NOAA Administrator Dr. John Knauss.

Knauss presented the 1992 NOAA budget for coastal, ocean and Great Lakes programs as part of his testimony before a House subcommittee last week.

Knauss stressed three NOAA programs before the subcommittee—Climate and Global Change, Coastal Ocean and Coastal America—as "cross-cut" programs which would see a number of NOAA divisions working together.

'A Major Effort'

"Over the past few years," Knauss testified, "NOAA has undertaken a major effort to develop programs that cut across traditional organizational lines for the purpose of improving our strategic ability

to address environmental issues. We believe that the improvements we have been able to achieve in coordinating these efforts will lead to improved program efficiency.

continued on page 2

ERL Researchers Win Kudos

Two Environmental Research Laboratories scientists have received American Meteorological Society awards, presented at the society's recent meeting in New Orleans.

Dr. Susan Solomon of the Aeronomy Laboratory in Boulder, Colo., an atmospheric

continued on page 2

Coming Events

- Risk reduction orientation/briefing for Deputy Assistant Administrators and Regional Directors in Norman & Tulsa, Okla.; Amarillo, Tex., Mar. 6-8.
- Intergovernmental Oceanographic Commission Executive Council Assembly meeting, in Paris, March. 7-22.

NASA to Launch in 1994

NOAA Joins U.S.-Canada Satellite Mission

NOAA has joined with NASA and the Canadian Space Agency to participate in a five-year Earth observation satellite mission.

The Canadian-provided satellite, Radarsat, is expected to be launched by NASA in June 1994. NOAA will ensure that data collected by the satellite will be available to

U.S. government agencies and the private sector.

The satellite's state-of-the-art radar will be able to pene-

trate cloud cover and darkness, scanning the Earth 24 hours a day in 50- to 500-kilometer

continued on page 3

Budget Stresses 'Cross Cut' Programs

continued from page 1

"As a result," he continued, "we have enhanced our ability to reflect national, and even global, earth and environ-

mental science program goals as well as management goals. In addition, we have improved our environmental observation, monitoring, prediction and management capabilities in order to meet those objectives."

NOAA's total Fiscal Year 1992 budget request of nearly \$1.6 billion is up \$118 million over the 1991 figure and represents an 11.4 per cent increase over last year. (See *NOAA Report*, Jan. 22, 1991, page 1.) ☺

ERL Scientists Honored

continued from page 1

chemist, received the Henry G. Houghton Award for research achievement in physical meteorology including atmospheric chemistry. The award recognized her research into ozone deterioration and her significant contributions to understanding the Antarctic ozone hole.

Dr. Kikuro Miyakoda, a senior research scientist with the Geophysical Fluid Dynamics Laboratory in Princeton, N.J., was presented the Carl-Gustaf Rossby Research Medal, awarded for "outstanding contributions to Man's understanding of the structure or behavior of the atmosphere." Miyakoda's work has contributed significantly to extending the range of numerical weather prediction to weeks, months and seasons. ☺

Models, Records Show Few Common Results

continued from page 1

tions for the central U.S. They believe however, that if the high range of projected temperature changes was correct, they should have occurred by now. For the lower range, the number of years in the historical time series is too few, and it will take another 15-20 years to verify or dismiss the model projections.

Comparison of global climate models with the historical record shows mixed results.

Although winter precipitation is projected to increase, it has actually fallen so far at a rate slightly greater than four percent per century. Summer precipitation shows a slight decrease, less than one percent per century, in contrast to predictions of 5- to 10-percent decrease by 2030. The ratio of winter-to-summer precipitation is projected to increase over this region, but it has decreased at a rate of nearly four percent per century.

The direction of average temperature change in winter and summer is less than that predicted by the models (increasing by 0.4 degrees and 0.8 degrees Fahrenheit per century, respectively).

Trends Not Significant

The researchers, however, found the trends in the historical record not statistically significant.

They did find statistically significant trends associated with changes in the daily low temperature. Average daily minimum temperatures are increasing at a rate significantly faster than the average daily maximum temperature. This may be related to increased cloudiness, but models do not now provide sufficient detail to explain this effect.

This doesn't mean that the models are invalid, NOAA researchers say. Modelers attach more significance to their global and hemispheric-scale projections than to the regional-scale projections. ☺

South Sees Rare February Floods

Although February is not known for its severe floods, it has concluded with flooding in parts of the southern United States.

The hardest hit states were Tennessee, Louisiana, Mississippi and Alabama, although the most severely hit of these areas were sparsely populated

and only a few scattered evacuations were necessary. Some streams rose more than ten feet above their normal levels.

The February pattern of rain accumulation in this region of the United States is in direct contrast to the continuing scarcity of precipitation in many of the drought ridden areas in the West. A recent

NOAA study has predicted below average potential for flooding in the far West, mainly due to the region's five year drought (see *NOAA Report*, Feb. 25, 1991, p.1). Even with the recent flooding occurring in the south central region, the average flooding potential in most of the nation is still below average, the study noted. ☺

High Bycatch Pares Chinook Schools

Schools of Chinook salmon have been decreasing in size, possibly due to the vast increase in bycatch of the species found at the Bering Sea Trawl Fishery in Alaska.

Domestic fishery observers reported that the chinook salmon bycatch of 14,310 caught within the first week of January 1991 surpassed the total amount reported for all of 1990. Reports for February show that these figures have nearly doubled. The amount of

observer coverage in January and February 1991 is greater than in the past year due to the implementation of a new observer program.

The increasing numbers of Chinook salmon bycatch has captured the attention of Alaskan State Officials. This issue will be addressed by the North Pacific Fishery Management Council at their April meeting in Kodiak, Alaska. The consideration of a salmon bycatch limit may delay the opening of the trawl season. ☺

U.S., Canada to Share Data from Joint Project

continued from page 2

sections. The satellite will collect valuable scientific data on ice and ocean surveillance and natural resource management, enhancing the understanding of global change. It will also be used for looking at natural disasters such as floods, droughts, and forest fires.

The heads of the three agencies, including NOAA Administrator Dr. John Knauss, signed the memorandum of understanding last week in Washington. ☺

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National Oceanic and Atmospheric Administration

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