AP Was There: The age of climate change begins

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On June 23, 1988, a top NASA scientist told Congress and the world that global warming had arrived. NASA scientist James Hansen predicted that 1988 would be the world's hottest year on record, thanks to the burning of fossil fuels that released heat-trapping gases.

The Associated Press is republishing a version of its report on the testimony to mark the 30th anniversary.

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WASHINGTON (AP)—The "greenhouse effect" global warming of the earth is here, but the current drought and heat wave over much of the United States can't be blamed on it, a scientist told a Senate panel Thursday.

However, similar heat waves and droughts can be expected much more often as a result of future warming, said James E. Hansen, a climatologist at the National Aeronautics and Space Administration's Goddard Institute for Space Studies in New York City.

Hansen told the Senate Energy and Natural Resources Committee there is only a 1 percent chance that he is wrong in blaming rising temperatures around the world on the buildup of manmade gases in the atmosphere.

For unknown reasons, the earth has been getting warmer for more than a

century, though with cooler intervals. The four warmest years on record have been recorded in the 1980s—and without what Hansen called an improbable cooling for the rest of the year, 1988 will break all records.

Though there has been much speculation by scientists around the world that the warming resulted from the greenhouse effect, Hansen's statement is the most definite yet.

Syukuro Manabe, soil specialist at the Geophysical Fluid Dynamics Laboratory of the National Oceanic and Atmospheric Administration, said it was more likely that the current drought was the result of natural fluctuations than the greenhouse warming.

"It is an example of the kind of drought that will occur more frequently as the global warming become larger," he said.

Many studies have said global warming could bring drastic changes in weather, including more rainfall at low and high latitudes and more drought in between, with drastic shifts in possible crop patterns.

A major report from the World Meteorological Organization and the United Nations Environment Program earlier this month concluded that without a major effort to fight warming, global temperatures could increase by 0.54 degrees Fahrenheit per decade until the middle of the next century, and sea levels could rise by a foot.

Tropical temperatures wouldn't change much at all, but in Canada the change could be two or three times as large as the average.

Extreme temperatures would occur more often. Hansen earlier calculated that instead of the typical one day a year with temperatures above 100 degrees Fahrenheit in Washington—it reached 101 on Wednesday—the year 2030 could see 12 days. Dallas would see 78 such

days instead of 19.

Gases emitted by modern civilization—notably carbon dioxide from the burning of fossil fuels but also methane, nitrous oxide and the chlorofluorcarbon gases that major nations agreed last year to reduce—trap heat from the earth's surface that normally would be radiated out to space just as the glass over a greenhouse traps the sun's heat inside.

Carbon dioxide concentrations in the atmosphere are 10 percent above 1958 levels and 25 percent above concentrations believed to prevail in 1790, when the industrial revolution brought the first widespread burning of coal in industry to fire the new steam engines.

"If we could magically reduce (annual) emissions (of carbon) by about 3 billion tons, we could stabilize the content of the atmosphere," said George M. Woodwell, director of the Woods Hole Research Center in Massachusetts. "It is well within reach, no question about that."

"The problem ... has the potential for turning the world into a form of chaos not greatly different from that produced by global war," he said.

Sen. Wendell Ford, D-Ky., concerned about his state's coal industry, asked physical chemist William R. Moomaw of the World Resources Institute, a Washington-based policy research organization, if technology could not reduce the harmful emissions.

"I'm trying to find a way to use a resource we have," Ford said.

Moomaw replied, "I would argue the resource we have in most abundance is the potential for using fossil fuels more efficiently at much lower cost than building any form of power generation."