

FEROCIOUS STORMS AND DROUGHT SEEN

Scientists at Talks Say Global Warming May Spur Winds of Up to 225 M.P.H.

By PHILIP SHABECOFF

Special to The New York Times

WASHINGTON, Dec. 6 — A warming of the planet resulting from pollution of the atmosphere will make drought much more frequent and storms much fiercer, new data presented today at a conference on climate change indicate.

Dr. James E. Hansen, director of the Goddard Institute for Space Studies, who presented recent data compiled from computer models, said that predicted regional effects of global warming show that the chances of summer drought in the low and middle latitudes would be 1 in 3 by the year 2030, as against 1 in 20 in the 1950's.

Speaking at the Climate Institute's Second North American Conference on Preparing for Climate Change, Dr. Hansen said that regional effects of global warming caused by a buildup in the atmosphere of gases produced by human activity "cannot be predicted with any confidence," given the current state of knowledge. Weather patterns like this year's drought can still change from year to year, he said.

But he said results from computer models indicated that if society continued "business as usual" by increasing the amount of carbon dioxide and other gases sent into the atmosphere, it was highly likely that severe droughts would be a frequent occurrence in lower and middle latitudes of the planet in the next century. Like the glass of a greenhouse, these gases trap heat, causing global warming.

Winds of 225 M.P.H.

Dr. Hansen cited a model prepared by another scientist, Dr. Kerry Emmanuel, showing that the global warming trend is likely to intensify the severity of storms. He said the warming of the ocean would speed evaporation, which would cause more active convection currents in the atmosphere. This increased atmospheric activity could produce storms with 40 percent to 50 percent more kinetic energy than the fiercest storms known today. Hurricanes packing winds up to 225 miles an hour are foreseen.

Dr. Hansen, a leading expert on climate, said earlier this year that global temperature readings in the first months of the year suggested that 1988 could be the hottest year on record. Today he said that, because of a cooling trend in the South Pacific caused by a shifting of the El Niño current, 1988 might not end up as the hottest year after all.

The loss of atmospheric ozone this year is less than half of what it was in 1987, said Dr. Robert Watson of the National Aeronautics and Space Administration. But he insisted that these findings did not change the conclusion that chlorofluorocarbons and other industrial chemicals are destroying the earth's protective ozone shield.

In a review of findings disclosed earlier this fall, Dr. Watson referred to observations by Dr. Mark Schoerberl of the space agency that there was a 15 percent depletion of ozone over the Antarctic this year, as against 50 percent observed last October.

At a news conference after the morning session of the climate meeting, Dr. Watson explained the atmosphere over Antarctica was more disturbed this year so that the vortex of still air from which so much ozone was disturbed last year was "less tight." He also said there were fewer clouds over the Antarctic this year and thus less cloud crystal surface on which the chemical reactions that cause the destruction of ozone molecules can take place. But the fact that the seasonal depletion of ozone in Antarctica is not as great this year should not lead to the conclusion that the ozone layer is not being depleted, Dr. Watson cautioned.

Ozone in the upper atmosphere shields the earth's surface from harmful ultraviolet radiation from the sun. Dr. John S. Hoffman, director of the global change program at the Environmental Protection Agency, said that data collected by the agency indicated that for every 1 percent depletion of atmospheric ozone, there would be a 40 percent increase in deaths from skin cancer in the United States alone. While skin cancer from increased radiation would chiefly affect light-skinned people, the radiation would also cause a greatly increased incidence of eye cataracts among all races, Dr. Hoffman said.

He also commented that scientists, while examining the probable effects of global warming and ozone depletion, had not yet studied the possible simultaneous effects of all the stresses that may affect human health and natural systems, including higher temperature, sea level rise, radiation, hurricanes and others.

Dr. Stephen P. Leatherman, director of the University of Maryland's Laboratory for Coastal Research said that coastal erosion caused by rising sea levels "is not something for the future, it is here today."

He noted that the sea level around the world has risen by about a foot over the past century, about half as a result of the warming that has expanded the oceans and about half from a subsidence of the land.