

Hurricane season could renew global warming debate

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By Michael Christie

MIAMI, May 30 (Reuters) - If hurricanes again pound the United States this summer, their roar is likely to be accompanied by the din of another storm -- an angry debate among U.S. scientists over the impact of global warming.

Last season's \$45 billion devastation, when 15 tropical storms spawned nine hurricanes in the Atlantic and Caribbean, prompted climatologists to warn of a link to warming temperatures.

But hurricane experts say the unusual series of hurricanes, four of which slammed into Florida in a six-week period, was the result of a natural 15- to 40-year cycle in Atlantic cyclone activity.

After a lull between 1970 and the mid-1990s, the number of storms picked up dramatically from 1995 and higher-than-normal activity is expected for the next five to 30 years as a phenomenon known as the "Atlantic multidecadal mode" holds sway.

"Really, for the folks that are doing work on hurricanes, there isn't a debate (about global warming)," said Chris Landsea of the National Oceanic and Atmospheric Administration's hurricane research division in Miami.

Many climatologists disagree. They say the large, decades-long swings in hurricane activity may mask, but do not rule out, longer term climate change trends.

The warmer waters and increased air moisture that global warming is expected to produce are, after all, the primary fuels that hurricanes feed off during the June to November season.

"Global climate change is happening. The environment in which these hurricanes form is clearly changing," said Kevin Trenberth, a climatologist at the National Center for Atmospheric Research in Colorado. He is also a lead author of the next major U.N. report on climate change, due in 2007.

Landsea withdrew from the U.N. Intergovernmental Panel on Climate Change this year after accusing Trenberth of linking current heightened hurricane activity too closely to global warming.

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The public clash highlighted the sensitivity of the climate debate in the United States, which under President George W. Bush dismayed environmentalists by rejecting the Kyoto pact on cutting

greenhouse gas emissions.

Some government scientists, such as James Hansen of NASA's Goddard Institute for Space Studies, have complained they are forced to downplay evidence of climate change, which most scientists link to industrial pollution.

But hurricane experts say their dismissal of global warming in relation to hurricanes is based on science not politics.

According to meteorologist Thomas Knutson of NOAA's Geophysical Fluid Dynamics Laboratory, higher carbon dioxide levels have probably resulted in a 1/7th of a category increase in Atlantic cyclone intensity in the past century, and likely will raise a storm's potential by half a category in 80 years.

Hurricanes are graded under the Saffir-Simpson scale based on wind speeds, with a Category 5, marked by winds higher than 155 mph (249 kph), the strongest and most destructive.

Similarly, studies by Kerry Emanuel, a professor of meteorology at the Massachusetts Institute of Technology, indicate the 2 degree Celsius (3.6 degrees Fahrenheit) increase in sea surface temperatures predicted by the IPCC would raise the upper limit on a storm's intensity by 10 percent.

Landsea said those changes were largely imperceptible given the overall ferocity of hurricanes.

He added that other factors, like the El Nino weather event in the Pacific, and the differences between lower level and upper level winds, called wind shear, play as critical a role as water temperatures in determining whether hurricanes form.

"The folks in the field are unanimous in saying that global warming doesn't have an appreciable impact on hurricanes today and that changes in the future look to be really tiny," Landsea said.

Climatologists take another view, arguing that a 10 percent increase in wind speeds leads to a 20 percent increase in destructive force. They also point out that many researchers are revising upward their original estimates of how much greenhouse gas emissions are affecting world climate.

"We are so far along, this is happening so much faster than we thought it would happen," said Paul Epstein of the Center for Health and the Global Environment at Harvard Medical School.

"I think this summer will portend some really strange weather."

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