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## **U.S. government report: Climate change is real and our fault**

By Associated Press, adapted by Newsela staff

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WASHINGTON, D.C. — A massive U.S. government report has concluded the evidence of global warming is stronger than ever.

This new report contradicts a favorite talking point of top Trump administration officials, who downplay humans' role in climate change.

The report, which was released November 3, is one of two scientific assessments required every four years. A draft showing how warming affects the U.S. was also published.

Some scientists and environmental advocates feared there would be political interference or censoring of the 477-page report. However, David Fahey of the National Oceanic and Atmospheric Administration and several authors said that was not the case.

### **"More Serious Than We Think"**

"A lot of what we've been learning over the last four years suggests the possibility that things may have been more serious than we think," said Robert Kopp of Rutgers University. He's one of dozens of scientists, both inside and outside the government, who wrote the reports.

Since 1900, the Earth has warmed by 1.8 degrees Fahrenheit (1 degree Celsius) and sea levels have risen by 8 inches. Heat waves, downpours, and wildfires have become much more frequent.

### **Report Contradicts Trump Officials**

Energy Secretary Rick Perry and Environmental Protection Agency chief Scott Pruitt have said carbon dioxide isn't the main contributor to global warming.

It's "extremely likely" — meaning with 95 to 100 percent certainty — that global warming is man-made, scientists concluded. This is mostly due to the spewing of carbon dioxide into the atmosphere from the burning of coal, oil and natural gas.

"Over the last century, there are no convincing alternative explanations," the report said.

Scientists calculated that human contribution to warming since 1950 is between 92 percent and 123 percent. It's more than 100 percent on one end, because some natural forces — such as volcanoes and orbital cycle — are working to cool Earth. However, these are being overwhelmed by the effects of greenhouse gases, said study co-author Katharine Hayhoe of Texas Tech.

"This period is now the warmest in the history of modern civilization," she said.

### **"Tipping Points" Highlighted**

For the first time, scientists highlighted a dozen "tipping points" of potential dangers that could happen from warming, things that Hayhoe said "keep me up at night."

They include the slowing down of the giant Atlantic Ocean circulation system that could dramatically warp weather worldwide and cause much stronger El Niño events. El Niño is an event when the ocean warms, which causes weather changes. Another risk of global warming is a major decrease in ice sheets in Greenland and Antarctica. This would spike a rise in sea level, and cause massive release of methane and carbon dioxide from thawing permafrost, which could then turbo-charge warming.

Researchers did not provide an estimate of how likely it is that these tipping points would occur. Still, "there is certainly some chance of some of these things happening," Fahey said.

The report also documented how different climate change-caused events can interact in a complex way to make life worse. Such events include the recent California wildfires and Superstorm Sandy, which hit the East Coast of the United States five years ago.

### **A "Triple Threat" To Oceans**

The world's oceans are under a "triple threat." The water is getting warmer, more acidic and seeing a drop in oxygen levels, Hayhoe said.

In a 1,504-page draft report on the impacts of climate change, scientists detailed dozens of ways global warming is already affecting parts of the United States.

Scientists said global warming is already sickening, injuring and killing Americans because it is changing weather, food, air and water, as well as impacting how diseases spread. It's expected to get worse, hurting the economy, wildlife and energy supply.

### **Dire Warnings From Scientists**

"Risks range from the inconvenient, such as increasing high tide flooding along the East Coast related to sea level rise, to ... the forced relocation of coastal communities in Alaska and along the Gulf Coast," the draft report said.

Outside experts said the reports are the most up-to-date summary of climate science.

"It shows that if anything the findings of scientists have become more dire" since 2013, Zeke Hausfather said. He is a climate scientist at the University of California, Berkeley, and did not work on the report.

**1. Summarize this article:**

**2. Is global warming an issue we should be concerned about?**

**3. Why?**