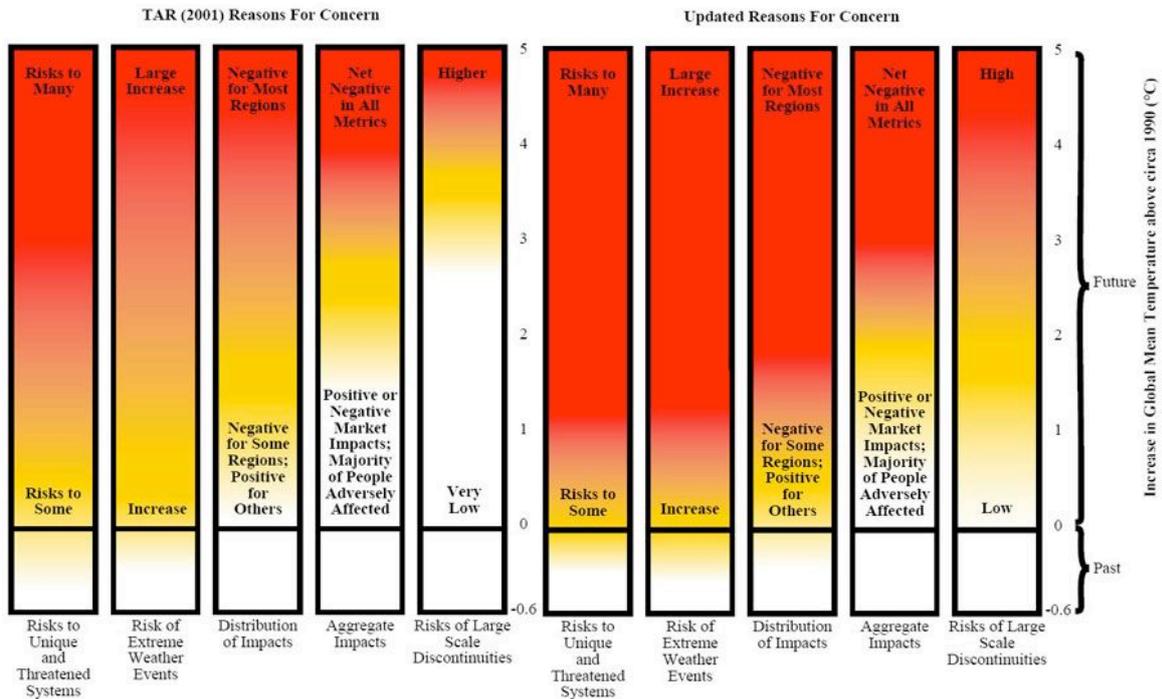


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 Risks of Global Warming Rising: Is It Too Late to Reverse Course?
 The negative impacts of climate change are beginning to appear--and we may soon cross a threshold of significant damage

By David Biello



The risk of catastrophic climate change is getting worse, according to a new study from scientists involved with the United Nations Intergovernmental Panel on Climate Change (IPCC). Threats—ranging from the destruction of coral reefs to more extreme weather events like hurricanes, droughts and floods—are becoming more likely at the temperature change already underway: as little as 1.8 degree Fahrenheit (1 degree Celsius) of warming in global average temperatures.

"Most people thought that the risks were going to be for certain species and poor people. But all of a sudden the European heat wave of 2003 comes along and kills 50,000, [Hurricane] Katrina comes along and there's a lot of data about the increased intensity of droughts and floods. Plus, the dramatic melting of Greenland that nobody can explain certainly has to increase your concern," says climatologist Stephen Schneider of Stanford University, who co-authored the research published this week in the Proceedings of the National Academy of Sciences as well as in several IPCC reports. "Everywhere we looked, there was evidence that what was believed to be likely has happened. Nature has been cooperating with [climate change] theory unfortunately."

Schneider and his colleagues updated a graph, dubbed the "burning embers," that is designed to map the risks of damage from global warming. The initial version of the graph [left] drawn in 2001 had the risks of climate change beginning to appear after 3.6 or 5.4 degrees F (2 to 3 degrees C) of warming, but the years since have shown that climate risks kick in with less warming.

According to the new graph, risks to "unique and threatened systems" such as coral reefs and risks of extreme weather events become likely when temperatures rise by as little as 1.8 degrees F from 1990 levels, which is on course to occur by mid-century given the current concentrations of atmospheric greenhouse gases. In addition, risks of negative consequences such as increased droughts and the complete melting of ice caps in Greenland and Antarctica definitively outweigh any potential positives, such as longer growing seasons in countries such as Canada and Russia.

"We're definitely going to overshoot some of these temperatures where we see these very large vulnerabilities manifest," says economist Gary Yohe of Wesleyan University in Middletown, Conn., another co-author. "We're going to have to learn how to adapt."

Adaptation notwithstanding, Yohe and Schneider say that scientists must also figure out a way to reduce greenhouse gas emissions to reverse the heating trend to prevent further damage.

Several bills pending in Congress would set a so-called cap-and-trade policy under which an overall limit on pollution would be set—and companies with low output could sell their allowances to those that fail to cut emissions as long as the total stays within the total pollution cap. Any such federal policy would put a price on carbon dioxide pollution, which is currently free to vent into the atmosphere, Yohe note. He, however, favors a so-called carbon tax that would set a fixed price for such climate-changing pollution rather than the cap-and-trade proposals favored by the Obama administration. "It's a predictable price, not a thing that bounces around."

But even with such policies in place—not only in the U.S. but across the globe—climate change is a foregone conclusion; global average temperatures have already risen by at least 1.1 degrees Fahrenheit (0.6 degree C) and further warming of at least 0.7 degree F (0.4 degree C) is virtually certain, according to the IPCC. And a host of studies, including a recent one from the Massachusetts Institute of Technology, have shown that global warming is already worse than predicted even a few years ago. The question is: Will it be catastrophic or not? "We've dawdled, and if we dawdle more it will get even worse," Schneider says. "It's time to move."