

## Reason Blog

### [Climate Catastrophe Called Off?](#)

[Ronald Bailey](#) | November 10, 2011

How much the world will warm as a result of adding greenhouse gases, chiefly carbon dioxide from burning fossil fuels, to the atmosphere depends on climate sensitivity. Climate sensitivity is generally defined as how much the average global surface temperature will increase if there is a doubling of greenhouse gases (expressed as carbon dioxide equivalents) in the air. The most recent report from the U.N.'s Intergovernmental Panel on Climate Change estimates climate sensitivity at 3 degrees Celsius, with a range of uncertainty from 2 to 4.5 degrees. In addition, according to the IPCC there is some non-negligible probability that temperatures could be even higher.

Now there is a new unpublished study by climate researchers at Oregon State University that suggests that the climate is considerably less sensitive to a greenhouse gas doubling than the IPCC estimates. From the [abstract](#) [PDF]:

Assessing impacts of future anthropogenic carbon emissions on Earth's systems and human welfare is impeded by uncertainties in our knowledge of the equilibrium climate sensitivity to a doubling of atmospheric CO<sub>2</sub>. Previous studies suggest 3 K as the best estimate, 2 to 4.5 K as the likely range and non-zero probabilities for much higher values, implying the possibility of unavoidable catastrophic climate changes in the coming decades. Here, using extensive syntheses of land and ocean surface temperature reconstructions from the Last Glacial Maximum in combination with model simulations, we estimate a significantly lower median (2.4 K), reduced uncertainty (1.4-3.5 K likely range), and <5% (0%) chance of sensitivities larger than 4.2 K (6K), suggesting *little possibility of catastrophic climate changes in the immediate future* (emphasis added).

The goal of U.N. negotiations over limiting the emissions of greenhouse gases is to keep any future increase in global average temperatures below 2 degrees Celsius. If this study is correct that the climate is considerably less sensitive to increased greenhouse gases in the air and that catastrophic temperature increases are improbable, this goal will be a lot easier to achieve.

According to the authors, the study is [in press](#) at *Science*. We will see if the new paper survives peer-review. See Cato Institute fellow and climatologist Patrick Michaels' more extensive discussion of this new study [here](#). It will be very interesting to see what happens with this study.

*Note: I will be reporting from the U.N.'s next climate change conference of the parties (COP-17) in Durban, South Africa in early December.*