

Cornell Expert: World has underestimated climate-change effects

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(PhysOrg.com) -- Professor Charles Greene asserts in the journal *Oceanography* that the world's policymakers have underestimated the potential dangerous impacts that man-made climate change will have on society.

The world's [policymakers](#) have underestimated the potential dangerous impacts that man-made [climate change](#) will have on society, said Charles H. Greene, Cornell professor of earth and atmospheric sciences.

As one of the authors of "A Very Inconvenient Truth," published in the peer-reviewed journal *Oceanography* (March 2010), Greene said that he and his co-authors conclude that the United Nation's Intergovernmental Panel on Climate Change (IPCC) 2007 4th assessment report underestimates the potential dangerous effects that man-made climate change will have on society.

"Even if all man-made [greenhouse gas](#) emissions were stopped tomorrow and carbon-dioxide levels stabilized at today's concentration, by the end of this century the global average temperature would increase by about 4.3 degrees Fahrenheit, or about 2.4 degrees centigrade above pre-industrial levels, which is significantly above the level which scientists and policymakers agree is a threshold for dangerous climate change," Greene said.

"Of course, [greenhouse gas emissions](#) will not stop tomorrow, so the actual temperature increase will likely be significantly larger, resulting in

potentially catastrophic impacts to society unless other steps are taken to reduce the Earth's temperature.

"Furthermore, while the oceans have slowed the amount of warming we would otherwise have seen for the level of greenhouse gases in the atmosphere, the ocean's thermal inertia will also slow the cooling we experience once we finally reduce our greenhouse gas emissions. This means that the temperature rise we see this century will be largely irreversible for the next thousand years.

"Reducing greenhouse gas emissions alone is unlikely to mitigate the risks of dangerous climate change. Society should significantly expand research into geoengineering solutions that remove and sequester greenhouse gases already in the atmosphere. Geoengineering solutions must be in addition to, not replace, dramatic emission reductions if society is to avoid the most dangerous impacts from climate change."

Greene's co-authors are D. James Baker of the William J. Clinton Foundation and Daniel H. Miller of the Roda Group, Berkeley, Calif.

View the full paper (PDF format) [online](#).

Provided by Cornell University

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