Global warming's record-setting pace

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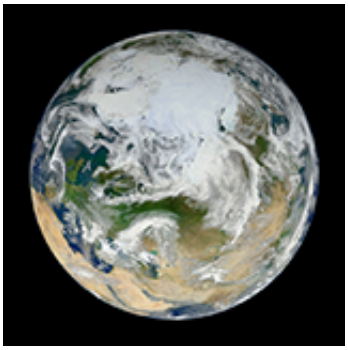

Credit: Norman Kuring, NASA/GSFC/Suomi NPP

The pace of global warming over the last century has been about twice as rapid over land than over the oceans and will continue to be more dramatic going forward if emissions are not curbed. According to an analysis of 27 climate models by Carnegie's Chris Field, if we continue along the current emissions trajectory, we are likely facing the most rapid large climate change in the last 65 million years. This will clearly pose great challenges for a variety of terrestrial ecosystems.

Field, director of Carnegie's Department of Global Ecology, discussed his work on the pace of climate change at a news briefing during the AAAS annual meeting on February 13 and also during a panel on the state of climate science the following day. Climate science is poised to make major headlines this year with the release of some major international reports. As we move forward to the next stage of climate research, the panelists will discuss the state of the risk and emerging

challenges.

Field conducted a detailed review of climate change literature, including the aspects of climate change that drive biological response, comparisons of the pace and magnitude of past and predicted-future climate change, and the way the physics of the atmosphere and oceans respond to changes in concentrations of greenhouse gases.

He found that if unchecked, the mean yearly rate of 21st century global warming could exceed 3.6 °F (2 °C) over most terrestrial regions during the period spanning from 2046 to 2065 and then increase to 7.2 °F (4 °C) during the period spanning 2081 to 2100.

Provided by Carnegie Institution for Science