

# Ten key indicators show global warming "undeniable"

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(Reuters) - Melting glaciers, more humid air and eight other key indicators show that global warming is undeniable, scientists said on Wednesday, citing a new comprehensive review of the last decade of climate data.

Without addressing why this is happening, the researchers said there was no doubt that every decade on Earth since the 1980s has been hotter than the previous one, and that the planet has been warming for the last half-century.

This confirms the findings of the U.N. Intergovernmental Panel on Climate Change, which reported in 2007 with 90 percent certainty that climate change is occurring. The IPCC also said that human activities contribute to this phenomenon.

The new report was released after U.S. Senate Democrats delayed any possible legislation to curb climate change until September at the earliest. Prospects for U.S. climate change legislation this year are considered slim.

Released by the U.S. National Oceanic and Atmospheric Administration as "The 2009 State of the Climate Report," the new report draws on the work of 303 scientists from 48 countries, including data from last year.

The 10 key planet-wide indicators of a warming climate identified by the report are:

-- Higher temperatures over land

- Higher temperatures over oceans
- Higher ocean heat content
- Higher near-surface air temperatures (temperatures in the troposphere, where Earth's weather occurs)
- Higher humidity
- Higher sea surface temperatures
- Higher sea levels
- Less sea ice
- Less snow cover
- Shrinking glaciers

The seven indicators expected to rise in a warming world rose over the last decade, the report said; the three indicators expected to decline did so over that same period.

With an almost daily flood of data on climate change, Peter Thorne of the Cooperative Institute for Climate and Satellites in Asheville, North Carolina, saw the need for a comprehensive look at the information to pick the most obvious signs of planetary warming.

"These are indicators from the top of the atmosphere to the bottom of the ocean that we would expect to be changing in a warming world," Thorne said at a telephone briefing for reporters.

"Each indicator is changing as we would expect if the world truly were warming," he said. "Not a single analysis disagrees that the global climate is changing. The bottom line conclusion that the world's been warming is simply undeniable."

The entire report can be seen online [here](#)

The report is being published in the Bulletin of the American Meteorological Society.

(Editing by [Eric Walsh](#))