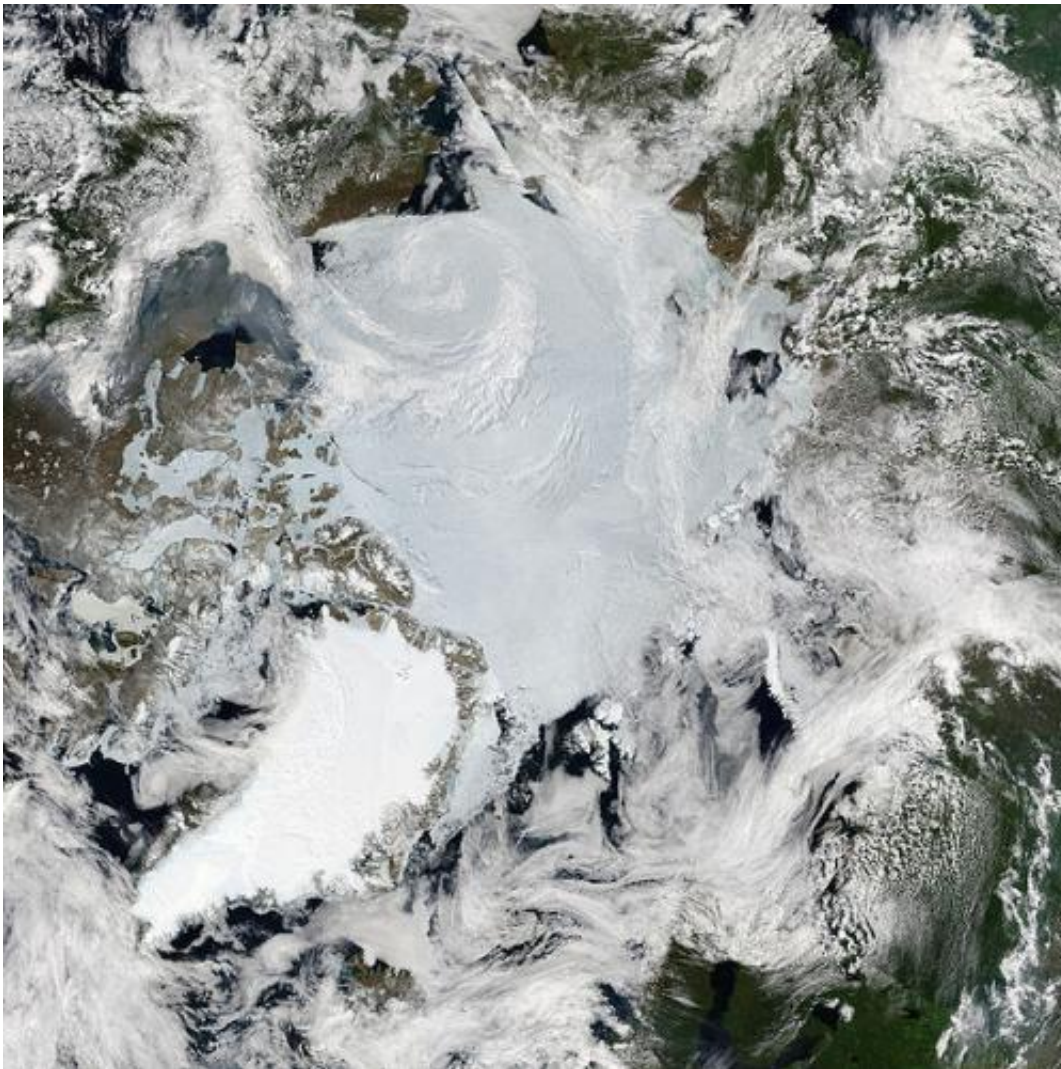


# New records for sea ice loss, greenhouse gas in 2012 (Update 2)

August 6 2013, by Kerry Sheridan

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Mosaic of images of the Arctic by MODIS. Credit: NASA

The world lost record amounts of Arctic sea ice in 2012 and spewed out all-time high levels of greenhouse gases by burning fossil fuels, international climate scientists said Tuesday.

Last year was among the top 10 on record for global land and surface temperature since modern data collection began, said the State of the Climate report issued annually by researchers in Britain and the United States.

"The findings are striking," said Kathryn Sullivan, acting administrator of the National Oceanic and Atmospheric Administration (NOAA).

"Our planet as a whole is becoming a warmer place," she told reporters.

The peer-reviewed report did not go into the causes for the trends but experts said it should serve as a guide for policymakers as they prepare for the effects of rising seas and warming weather on communities and infrastructure.

Furthermore, it points to a new normal in which record-setting events are typical, particularly in the Arctic, where surface temperature rise is fast outpacing the rest of the world.

"It's hard to read the report and not be led to the conclusion that the task of reducing carbon emissions is now more urgent than ever," said Michael Mann, a leading US climatologist at Pennsylvania State University who was not involved in the research.

Globally, according to four independent analyses cited by the study "2012 ranked as the eighth or ninth warmest year since records began in the mid-to-late 1800s.

"The year was 0.14°C-0.17°C above the 1981-2010 average, depending

on the dataset considered," said the report published in the *Bulletin of the American Meteorological Society*.

When it comes to Arctic sea ice, a new record low was observed in September and another all-time low for snow cover was recorded in the Northern Hemisphere, it said.

"Surface temperatures in the Arctic are increasing at a rate about two times faster than the rest of the world," said Jackie Richter-Menge, research civil engineer with the US Army Corps of Engineers.

"In the Arctic, the records or near records being reported from year to year are no longer anomalies or exceptions," she added.

"Really, they have become the rule for us, or the norm that we see in the Arctic and we expect to see for the foreseeable future."

The melt is also contributing to rising sea level. Average global sea level reached a record high in 2012, 1.4 inches (3.5 centimeters) above the 1993 to 2010 average.

"Most recently, over the past seven years or so, it appears that the ice melt is contributing more than twice as much to the global sea level rise compared with warming waters," said Jessica Blunden, climatologist at NOAA's National Climatic Data Center.

Meanwhile, permafrost temperatures reached record highs in northern Alaska and 97 percent of the Greenland ice sheet showed some form of melt, four times greater than the average melt for this time of year.

The amount of carbon dioxide emissions from burning fossil fuels also hit new highs, after a slight decline in recent years that followed the global financial crisis.

"In spring 2012, for the first time, the atmospheric CO<sub>2</sub> concentration exceeded 400 parts per million at seven of the 13 Arctic observation sites," said the report.

Global average carbon dioxide reached 392.6 ppm, a 2.1 ppm increase from 2011, it said.

Droughts and unusual rains struck different parts of the globe last year, with "the worst drought in at least the past three decades for northeastern Brazil," it said.

"The Caribbean observed a very wet dry season and it was the Sahel's wettest rainy season in 50 years."

Sullivan said the findings "caution us, perhaps, to be looking at a likely future where extremes and intensity of some extremes are more frequent and more intense than what we have accounted for in the past."

On a positive note, the climate in Antarctica remained "relatively stable overall" and warm air led to the second smallest ozone hole in the past two decades, the report found.

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