

Scientists: Greenland ice sheet is melting freakishly early

13 April 2016, by By Seth Borenstein



Credit: NASA

Greenland's massive ice sheet this week started melting freakishly early thanks to a weather system that brought unseasonably warm temperatures and rain, scientists say.

While this record early melt is mostly from natural weather on top of overall global warming, scientists say they are concerned about what it means when the melt season kicks in this summer. This however could be temporary.

On Monday and Tuesday, about 12 percent of the [ice sheet](#) surface area—656,000 square miles or 1.7 million square kilometers—showed signs of [melting](#) ice, according to Peter Langen, a climate scientist at the Danish Meteorological Institute. It smashed record for early melting by more than three weeks.

That's normal for late May not mid-April, Langen said.

Normally, no ice should be melting in Greenland at this time of year. Before now, the earliest Greenland had more than 10 percent surface area melting was on May 5, back in 1990. Even in 2012,

when 97 percent of Greenland experienced melt, it didn't have such an early and extensive melt.

Langen said the amount of melt now is not the issue, timing is: "It's nothing for July, it's huge for April."

"It's disturbing," Langen said. "Something like this wipes out all kinds of records, you can't help but go this could be a sign of things we're going to see more often in the future."

What's causing this weeks' unusual melt is a weather system that is bringing warm temperatures to Greenland and funneling lots of warmer-than-normal rain up from the south, Langen said. The rain and the above freezing temperatures help melt the ice.

Greenland's capital, Nuuk, reached 62 degrees (16.6 degrees Celsius) on Monday, smashing the April record high temperature by 6.5 degrees. Inland at Kangerlussuaq, it was 64 degrees (17.8 degrees Celsius), warmer than St. Louis and San Francisco.

Langen and other scientists said this is part of a natural [weather system](#), but man-made climate change has worsened this. Tom Mote of the University of Georgia said had this natural event happened 20 or 30 years ago it wouldn't have been as bad as it is now because the air is warmer overall and carries more rain that melts the ice faster.

"Things are getting more extreme and they're getting more common," said NASA ice scientist Walt Meier. "We're seeing that with Greenland and this is an indication of that."

"This kind of freakish warm spell is another piece in the puzzle," Meier said. "One freakish thing every once in a while you might expect. But we're getting these things more often and that's an indication of

climate change."

Langen said the measurements are based on scores of observations from monitors on the ice fed into a computer simulation. NASA normally measures melt with a satellite, but there are problems with the instruments, Meier said. Still, Mote said the satellite, if correct, showed on Monday conditions similar to what Denmark is reporting.

Greenland ice sheet melting is one of the more visible and key signs of man-made global warming from the burning of fossil fuels because it is causing seas to rise, putting coastal areas at risk, Meier said.

If the entire Greenland ice sheet melted, which would take centuries, it could add 20 feet or more to global sea level, Meier said. But within the next century, Greenland ice melt alone could raise sea level by a couple feet, he said.

"The concern is things are moving faster than we thought," Meier said.

More information: The Danish Meteorological Institute's Polar Portal:
[polarportal.dk/en/nyheder/arki ... eltning-i-groenland/](https://polarportal.dk/en/nyheder/arki...eltning-i-groenland/)

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