

# Arctic sea ice is at or close to new record low, scientists say

Lauren Morello, Environment & Energy Publishing, 9-15-11

Has the Arctic's sea ice cover dipped to a historic low? That depends on whom you ask.

Scientists at Germany's University of Bremen said last week that sea ice extent had shrunk to its lowest level since satellite record-keeping began in 1979. But researchers at the National Snow and Ice Data Center in Boulder, Colo., say this year's thaw falls just short of the record-setting 2007 melt.

For NSIDC scientist Walt Meier, the distinction between a record year and second place is academic.

"This further continues the long-term downward trend," Meier said. "We're in a 'new normal' in a lot of ways."

Arctic sea ice thaws in spring and summer, as temperatures rise and sunlight reaches the far north, and normally hits its annual low sometime in September. The sea ice begins to reform in fall, as temperatures drop and sunlight dwindles.

But over the past half-decade, the annual minimum sea ice extent has dropped well below the average recorded by scientists since satellites began tracking sea ice cover in 1979.

"It used to be the minimum would be on the order of 6.5 million square kilometers," Meier said. "We haven't been close to 6.5 million square kilometers for several years -- really, for all of the last decade. We've been barely close to 5 million square kilometers for the past five years."

Researchers were shocked in 2007 when the minimum sea ice extent dipped to just 4.17 million square kilometers, 40 percent below the 30-year average.

Now, depending on which team of scientists you believe, the Arctic's sea ice extent is close to or below that record minimum set in 2007 -- a development that Meier called "remarkable."

"In 2007, the situation was a bit different," he said, describing a "perfect storm" of wind patterns, unusually sunny days, and exceptionally warm air and ocean conditions that produced that year's record-shattering minimum sea ice extent.

"It was almost like an underdog pulling a big upset," Meier said. "2007 really shocked a lot of people because it just went so much lower than anything else we had seen."

## 'Just average year' may beat 2007

In contrast, this year's conditions are "just average," he said, but sea ice cover is close to (or below) the 2007 minimum.

"It was kind of a fluke in 2007, but it's not really a fluke anymore," Meier said. "This really is an indication that ice cover is weaker than it was in 2007."

Another indication, Meier said, is the conclusion by scientists at the University of Washington that Arctic sea ice volume has hit a record low this summer.

The NSIDC team isn't sure that the area covered by sea ice has hit its annual low this year, however. Determining when ice cover reaches its yearly minimum is tricky, and scientists generally wait to declare a minimum until they've observed ice extent increasing for three to four days, Meier said. He anticipates NSIDC will declare a retroactive minimum for this year sometime next week.

NSIDC's latest sea ice report, issued Tuesday, shows sea ice extent hovering at 4.34 million square kilometers on Sept. 10, just above the 4.17-million-square-kilometer minimum extent set in 2007.

That squares with a separate analysis by researchers at Japan's space agency, JAXA, and the University of Alaska, Fairbanks, which also concludes that sea ice extent is just above the 2007 record.

The research team at the University of Bremen, which said last week that Arctic sea ice extent set a new record low on Sept. 8, uses higher-resolution data from a sensor aboard a NASA satellite. (NSIDC draws its data from a sensor aboard a satellite flown by the Defense Department.)

Those higher-resolution data allow the German team to detect small open-water areas within the Arctic ice pack, which Meier said could explain the difference of opinion between sea ice trackers at NSIDC and in Bremen.

"This year, there are a lot of little small ice floes and small patches of open water in the ice, and those are getting detected in the Bremen data, where we see that as all ice cover," he said.