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Arctic ice melting rapidly, study says



By SETH BORENSTEIN, AP Science Writer

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Arctic sea ice in winter is melting far faster than before, two new NASA studies reported Wednesday, a new and alarming trend that researchers say threatens the ocean's delicate ecosystem.

Scientists point to the sudden and rapid melting as a sure sign of man-made global warming.

"It has never occurred before in the past," said NASA senior research scientist Josefino Comiso in a phone interview. "It is alarming... This winter ice provides the kind of evidence that it is indeed associated with the greenhouse effect."

Scientists have long worried about melting Arcticsea ice in the summer, but they had not seen a big winter drop in sea ice, even though they expected it.

For more than 25 years Arctic sea ice has slowly diminished in winter by about 1.5 percent per decade. But in the past two years the melting has occurred at rates 10 to 15 times faster. From 2004 to 2005, the amount of ice dropped 2.3 percent; and over the past year, it's declined by another 1.9 percent, according to Comiso.

A second NASA study by other researchers found the winter sea ice melt in one region of the eastern Arctic has shrunk about 40 percent in just the past two years. This is partly because of local weather but also partly because of global warming, Comiso said.

The loss of winter ice is bad news for the ocean because this type of ice, when it melts in summer, provides a crucial breeding ground for plankton, Comiso said. Plankton are the bottom rung of the ocean's food chain.

"If the winter ice melt continues, the effect would be very profound especially for marine mammals," Comiso said in a NASA telephone press conference.

The ice is melting even in subfreezing winter temperatures because the water is warmer and summer ice covers less area and is shorter-lived, Comiso said. Thus, the winter ice season shortens every year and warmer water melts at the edges of the winter ice more every year.

Scientists and climate models have long predicted a drop in winter sea ice, but it has been slow to happen. Global warming skeptics have pointed to the lack of ice melt as a flaw in global warming theory.

The latest findings are "coming more in line with what we expected to find," said Mark Serreze, a senior research scientist at the National Snow and Ice Data Center in Boulder, Colo. "We're starting to see a much more coherent and firm picture occurring."

"I hate to say we told you so, but we told you so," he added.

Serreze said only five years ago he was "a fence-sitter" on the issue of whether man-made global warming was happening and a threat, but he said recent evidence in the Arctic has him convinced.

Summer sea ice also has dramatically melted and shrunk over the years, setting a record low last year. This year's measurements are not as bad, but will be close to the record, Serreze said.

Equally disturbing is a large mass of water — melted sea ice — in the interior of a giant patch of ice north of Alaska, Serreze said. It's called a polynya, and while those show up from time to time, this one is large — about the size of the state of Maryland — and in an unexpected place.

"I for one, after having studied this for 20 years, have never seen anything like this before," Serreze said.

The loss of summer sea ice is pushing polar bears more onto land in northern Canada and Alaska, making it seem like there are more polar bears when there are not, said NASA scientist Claire Parkinson, who studies the bears.

The polar bear population in the Hudson Bay area has dropped from 1,200 in 1989 to 950 in 2004 and the bears that are around are 22 percent smaller than they used to be, she said.

On the Net:

http://www.nasa.gov/centers/goddard/news/topstory/2006/seaice meltdown.html

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