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Arctic sea ice hits record low, scientists say

Juliet Eilperin, August 27

The extent of Arctic sea ice has reached a record low, a historic retreat that scientists said is a stark signal of how climate change is transforming the global landscape.

Scientists at the University of Colorado's National Snow and Ice Data Center and NASA said that, as of Sunday, the Arctic sea ice cover had shrunk to 1.58 million square miles, the smallest area since satellite measurement began in 1979. With the melting season not yet over, the ice will almost certainly contract further in the coming weeks before it begins to re-form.

The previous record low, recorded in September 2007, was 1.61 million square miles.

Walt Meier, a research scientist at the federally funded center, said a long-term warming trend was largely responsible for the sharp reduction in ice, though recent weather conditions, including a strong storm, also contributed. Higher temperatures produced more open water, which, he said, absorbs more heat and makes the ice thinner.

The ice has become "increasingly vulnerable to extreme conditions," Meier told reporters during a telephone conference. He said that "parts of the Arctic have become like a giant slushy" that can melt much more easily than the 10-foot-thick ice that used to compose 20 to 25 percent of the surface of the water. "The Arctic Ocean is really a very different place than it used to be."

The ice's fragility is one reason the storm had such a big impact, he said. Even without the storm, he added, "we were already tracking along the 2007 trajectory," so a record was within reach.

The area covered by Arctic summer sea ice usually reaches its low point around Sept. 13, when the region begins to cool. But the ice melted at an unprecedented 38,600 square miles per day during the first part of August, which is why the low point occurred earlier this year.

The reduction in ice is already transforming the Arctic. On Saturday, a Royal Dutch Shell drill ship, the Noble Discoverer, departed Alaska's Dutch Harbor and headed to the Chukchi Sea off the state's northwest coast in anticipation of final federal approval for oil-exploration activities there. The increase in open water makes oil exploration easier.

‘A profound moment’

The record-low Arctic ice is sure to intensify the debate over whether to curb greenhouse gas emissions linked to global warming. Rafe Pomerance, former deputy assistant secretary of state for environment and development under President Bill Clinton, called the record ice loss “a profound moment that will change the debate” over climate change.

“It is very troubling, because the refrigerator of the Northern Hemisphere has been unplugged, so we will keep warming,” he said.

But the record isn’t likely to convince some global-warming skeptics. Patrick Michaels, director of the Center for the Study of Science at the libertarian Cato Institute, noted that sea ice has been expanding at the South Pole. “The overall loss in sea ice from the planet is less than people often assume,” he said.

Meier, the research scientist, countered that the two poles have different climate systems. Antarctica is land surrounded by ice, while the Arctic is an ice-covered ocean surrounded by land. He said an overall number for global sea ice has little meaning.

“It’s like having flooding in New York City and drought in Texas, and saying it’s an average rainfall year,” he said.

A further reduction in summer sea ice, which has declined 40 percent over the past three decades, would have implications far beyond the Arctic.

Diminished ice means there would be a smaller expanse of white reflecting sunlight back into space. That could accelerate warming in the Arctic, increase sea surface temperatures and lead to the melting of a major ice sheet, such as Greenland’s, which could raise global sea levels.

Between July 11 and 13, the Greenland ice sheet experienced the broadest thaw since 1973, with melt occurring on 97 percent of its surface. Three days later, a chunk of ice twice the size of Manhattan calved off the Petermann glacier, a break researchers attributed to warmer ocean temperatures.

Environmental activists said they will use the shrinking of sea ice in the Arctic — along with one of the worst U.S. drought and wildfire seasons in decades — to press for a cut in the burning of fossil fuels, whose greenhouse gas emissions are linked to climate change.

“Unfortunately, as our natural world cries out ever more loudly, the national conversation about climate change has lowered to a whisper,” said Lou Leonard, managing director of climate change at the World Wildlife Fund.

Less ice, more drilling

At the same time, Arctic warming is helping to speed oil and gas extraction, not curb it. Marine traffic is accelerating as the Northwest Passage and the Northern Sea Route become routinely ice-free in the summer. The Chinese icebreaker Xuelong, or "Snow Dragon," is now exploring a high-latitude route and reached 81 degrees north latitude on Friday.

Meanwhile, Shell appears to be on the verge of starting drilling in Alaska's Chukchi and Beaufort seas, an effort that in the past has been bogged down by federal permitting delays and thicker-than-usual sea ice in some areas.

Shell spokeswoman Kelly op de Weegh wrote in an e-mail that the Discoverer should arrive in the Chukchi by the end of the week, while another vessel, the Kulluk, is halfway through its two-week journey to Shell's Beaufort Sea leases.

"The departure of both the Kulluk and the Discoverer marks the first time working drilling rigs have charted a course for the Beaufort and Chukchi Seas in more than two decades," she wrote, adding that the company will await final permission from the Interior Department before starting exploration.