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Arctic sea ice cover at record low

Story Highlights

- Ice cover in the Arctic Ocean shattered the all-time low record this summer
- Arctic ice pack equal to just less than half the size of the United States
- Senior research scientist: The decline is "astounding"
- Sea ice loss could alter the Arctic ecology, threatening polar bears and sea life

BOULDER, Colorado (CNN) -- Ice cover in the Arctic Ocean, long held to be an early warning of a changing climate, has shattered the all-time low record this summer, according to scientists from the National Snow and Ice Data Center in Boulder.

Using satellite data and imagery, NSIDC now estimates the Arctic ice pack covers 4.24 million square kilometers (1.63 million square miles) -- equal to just less than half the size of the United States. This figure is about 20 percent less than the previous all-time low record of 5.32 million square kilometers (2.05 million square miles) set in September 2005.



It is possible that Arctic sea ice could decline even further this year before the onset of winter.

Mark Serreze, senior research scientist at NSIDC, termed the decline "astounding."

"It's almost an exclamation point on the pronounced ice loss we've seen in the past 30 years," he said.

Most researchers had anticipated that the complete disappearance of the Arctic ice pack during summer months would happen after the year 2070, he said, but now, "losing summer sea ice cover by 2030 is not unreasonable."

Scores of peer-reviewed scientific studies have documented a steady, worldwide decline in ice cover, from the sea-bound ice covering the North Pole to the vast, land-based ice sheets that cover the Antarctic continent. Glaciers, from Greenland to the Alps to Mount Kilimanjaro near the equator, also have been vanishing.

The loss of land-based ice is predicted to lead to a future rise in sea levels. Most estimates predict a rise ranging from a few inches to a meter or more. A substantial rise in sea level could imperil low-lying areas from Bangladesh to Miami, Florida, to Lower Manhattan, and could magnify the damage from landfalling hurricanes and cyclones.

While the loss of sea ice, like the Arctic ice pack, would not contribute to sea level rise, wildlife experts say it could alter the Arctic ecology, threatening polar bears and other mammals and sea life.

Scientists add that an ice-free Arctic could also accelerate global warming, as white-colored ice tends to deflect heat, while darker-colored water would absorb more heat.

But along with concerns, the melting Arctic also brings possible opportunities on business and political fronts. This summer, both Russia and the United States made efforts to inventory the potential mineral wealth on the ocean floor beneath the declining ice pack. Russia also sent a submarine to the North Pole to stake a symbolic claim to the Arctic as a part of the Russian nation.

The decline in ice also raises the possibility of an ice-free "Northwest Passage," a shipping route north of the Canadian mainland that could provide a shortcut for transit between the Atlantic and Pacific.

It is possible that the Arctic sea ice could decline even further this year before the onset of winter, Serreze said. Ice levels can reach their low point anywhere from mid-September to early October.