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# Study: Arctic might alter Earth's climate



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FAIRBANKS, Alaska, Oct. 15 (UPI) -- U.S. scientists say they've determined the arctic traps up to 25 percent of the net global carbon from atmospheric carbon dioxide.

That, the scientists said, means the arctic might hold the key to Earth's climate since, under current predictions of global warming, the arctic sink, or natural carbon reservoir, could be diminished or reversed, potentially accelerating predicted rates of climate change.

David McGuire of the U.S. Geological Survey and the University of Alaska-Fairbanks, who led the research, said the Arctic has been a carbon sink since the last ice age, accounting for up to 25 percent of the global carbon sink. But, McGuire said, the arctic's rapid rate of climate change, which is about twice that of lower latitudes, could eliminate the sink and possibly make the arctic a source of carbon dioxide.

"In the short term, warming temperatures could expose more arctic carbon to decomposition," McGuire said. "And with permafrost melting, there will be more available carbon to decompose."

The thawing permafrost also could encourage the activity of methane-producing organisms.

"We don't understand methane very well, and its releases to the atmosphere are more episodic than the exchanges of carbon dioxide with the atmosphere," McGuire said. "It's important to pay attention to methane dynamics because of methane's substantial potential to accelerate global warming."

The study's findings are reported in the journal *Ecological Monographs*.

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