

SCIENCE**Study finds permafrost thaw, glacier melt releasing methane**

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By Yereth Rosen

ANCHORAGE, Alaska (Reuters) - Methane from underground reservoirs is streaming from thawing permafrost and receding glaciers, contributing to the greenhouse gas load in the atmosphere, a study led by scientists at the University of Alaska Fairbanks has found.

The study, published online on Sunday in the journal Nature Geoscience, is the first to document leakage of deep geologic methane from warming permafrost and receding glaciers, said its lead author, Katey Walter Anthony.

Release of methane into the atmosphere from any source is troubling because methane has far more potent greenhouse powers than carbon dioxide, climate scientists say. Methane has more than 20 times the heat-trapping power of carbon dioxide, University of Alaska Fairbanks researchers said.

Scientists have speculated about such methane releases and modeling has predicted that it would happen as the cryosphere - the earth's layer of ice and frozen ground - softens and melts, Walter Anthony said in a telephone news conference on Monday.

"But no one had ever shown that it was occurring or that it was a widespread phenomenon," she said. "This paper really is the first time that we see with field evidence that this type of geologic methane is escaping as the cryosphere retreats."

The leaking geologic methane identified by Walter Anthony and her colleagues comes from such sources as underground coal beds and conventional natural gas reservoirs. Those are fossil fuels that energy companies target in drilling operations.

It differs from the methane streaming from decaying plant and animal matter at the bottom of warming Alaska lakes, a phenomenon that Walter Anthony has studied for about a decade.

Walter Anthony said it is too early to estimate how much methane is leaking from underground reservoirs.

The study stems in part from Walter Anthony's observations over the past few winters of lakes in Arctic Alaska that had large patches with no ice, where one could expect to find it.

Ultimately, researchers confirmed that underground methane was venting from two types of sources in Alaska - one of them being 50 lakes in the northernmost region, and the other being along the edges of rapidly receding glaciers in southern Alaska.

In Greenland, they found methane streaming out of areas where the ice sheet had retreated over the past 150 years, Walter Anthony said.

Field work, which included aerial surveys, long winter hiking treks and other tasks, took place from 2008 to 2010, according to the university.

The discoveries of venting methane from below the earth's surface coincide, to some extent, with known petroleum and coal deposits, Walter Anthony said.

The first lake where she and her team found underground methane to be preventing normal winter freezing was near the Inupiat Eskimo village of Atqasuk in northern Alaska, where locals have long known about that area's deep coal deposits and where the village name translates to "the place to dig the rock that burns."

(Editing by Alex Dobuzinskis and Mohammad Zargham)

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