

Climate scientists: Australian uranium mining pollutes Antarctic

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Credit: University of Maine

Uranium mining in Australia is polluting the Antarctic, about 6,000 nautical miles away.

University of Maine climate scientists made the discovery during the first high-resolution continuous examination of a northern Antarctic Peninsula [ice core](#).

Ice core data reveal a significant increase in [uranium](#) concentration that coincides with open pit mining in the Southern Hemisphere, most notably Australia, says lead researcher Mariusz Potocki, a doctoral candidate and research assistant with the Climate Change Institute.

"The Southern Hemisphere is impacted by human activities more than we thought," says Potocki.

Understanding airborne distribution of uranium is important because exposure to the radioactive element can result in kidney toxicity, genetic mutations, mental development challenges and cancer.

Uranium concentrations in the ice core increased by as much as 102 between the 1980s and 2000s, accompanied by increased variability in recent years, says Potocki, a glaciochemist.

Until World War II, most of the uranium input to the atmosphere was from natural sources, says the research team.

But since 1945, increases in Southern Hemisphere uranium levels have been attributed to industrial sources, including uranium mining in Australia, South Africa and Namibia.

Since other land-source dust elements don't show similar large increases in the ice core, and since the increased uranium concentrations are enriched above levels in the Earth's crust, the source of uranium is attributed to human activities rather atmospheric circulation changes.

In 2007, a Brazilian-Chilean-U.S. team retrieved the ice core from the Detroit Plateau on the northern Antarctic Peninsula, which is one of the most rapidly changing regions on Earth.

More information: Mariusz Potocki et al. Recent increase in

Antarctic Peninsula ice core uranium concentrations, *Atmospheric Environment* (2016). [DOI: 10.1016/j.atmosenv.2016.06.010](https://doi.org/10.1016/j.atmosenv.2016.06.010)

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