



'Global Cooling': How The Pavlof Volcano Eruptions Could Decrease Worldwide Temperatures

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The eruption of the Pavlof Volcano in Alaska's Aleutian Islands, which led to the release of volcanic ash 20,000 feet into the air along with minor earthquakes, could cause a "global cooling" that leads to a drop in temperatures around the world.

The Pavlof Volcano is "is one of the most consistently active volcanoes in the Aleutian arc" and has had 40 known eruptions since 1762, according to the United States Geological Survey. The large amounts of ash and gases released from the volcano could slow global warming by blocking out the sun. In fact, since 2000, volcanoes have cooled the Earth by approximately 0.05 to 0.12 degrees Celsius.

"Large, explosive volcano eruptions, especially those in the tropics, can inject large amounts of particulate matter into the stratosphere, where it remains for several years giving it time to spread out through the global stratosphere," said Chip Knappenberger, a climate scientist at the Cato Institute. "These particulates reflect away incoming sunlight and thus contribute a cooling pressure of the earth's climate that may result in a temperature drop of a couple of tenths of degree Celsius for a couple of years."

In addition, when small eruptions occur repeatedly, they can have a cumulative impact, with research suggesting that small volcanic eruptions are responsible for up to one-third of the slowdown in global warming that has been observed in recent years. This finding runs contrary to previous beliefs that small eruptions were unable to affect climate in a significant manner.

"The fact that these volcanic signatures are apparent in multiple independently measured climate variables really supports the idea that they are influencing climate in spite of their moderate size," said Mark Zelinka, a climate scientist at Lawrence Livermore National Laboratory who conducted a study on the effects of small volcano eruptions on global warming.

Despite the cooling effect of eruptions, the Pavlof Volcano likely won't impact the global climate in a significant way due to the short-lived nature of its eruptions and its geographical location.

"The volcano that erupted over the weekend was located in Alaska's Aleutian Islands - a high latitude location, and a region where volcanic eruptions are not particularly uncommon," Knappenberger said. "Preliminarily, the eruption does not seem to be large enough or well positioned such as to induce a large-scale climate impact, but data is still being collected as to the magnitude and duration of the eruption."