

# Melting polar ice could release old viruses

December 12 2012, by John Platt

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In 1999, Russian scientists famously dug a long-dead frozen woolly mammoth out of the Siberian permafrost. Other things lurking in the frozen earth may be more alive - and more dangerous. Scientists warn that global warming could release ancient bacteria, viruses and fungi from frozen lakes, glaciers and permafrost. If this happens, humans could become exposed to viruses and diseases they have not encountered in thousands of years.

As Montana State University professor John Prisco told Scientific American and Daily Climate earlier this year, ice is a perfect storehouse for microorganisms. "You put something on the surface of the ice and a million years later it comes back out."

Scientists around the world have been studying Arctic and Antarctic ice for years. One 2009 study of Antarctica's frozen [freshwater lakes](#) revealed DNA from nearly 10,000 species of viruses, including many that had not previously been identified by science.

Frozen viruses may have been making their way back into the environment for centuries, even without global warming. Scientists theorize that periodically melting Arctic lakes release previously frozen [influenza viruses](#), which are picked up by [migrating birds](#) and transported toward [human populations](#). One virus seems to have reappeared in the 1930s, the 1960s and, most recently, in 2006, when a Siberian lake melted, a [biological warfare](#) researcher told Wired in 2009. "This phenomenon may take place regularly, far beyond what we witness," said Dany Shoham of Israel's Bar-Ilan University.

Many viruses won't remain viable after freezing, but others are more adaptable. Influenza, for example, has the properties that would allow it to survive the ice and the ability to transfer between animals and humans once it is out," Shoham told The Independent in 2005.

Ice isn't the only repository for diseases. Many are also carried by insects, some of which are expanding their range due to warming climates. Humans won't be the only ones affected. Climate change will stress out some organisms, such as coral, leaving them more vulnerable to new viruses. "It's really a double whammy. Not only does the host become more stressed and susceptible, but also the pathogens are growing faster," Drew Harvell of Cornell University told LiveScience earlier this year. "That's the key to why a warmer world can be a sicker world."

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