

# Warming Trends: The Cacophony of the Deep Blue Sea, Microbes in the Atmosphere and a Podcast about ‘Just How High the Stakes Are’

A column highlighting climate-related studies, innovations, books, cultural events and other developments from the global warming frontier.



By Katelyn Weisbrod 

February 19, 2022

# Life Forms in the Atmosphere

Ecological communities floating in the atmosphere are far less studied than marine and terrestrial ecosystems. These communities of fungi and bacteria swept up into the air by gusts of wind are so small that the laws of gravity don't apply to them. They float in the sky until they're knocked to the ground by a raindrop or attached to a settling piece of dust.

But novel techniques used in a recent study of the fungi and bacteria living up to two miles high in the sky found that temperature is the No. 1 factor determining the composition of microbes in the atmosphere.

As global warming drives temperature changes, species composition and distribution of airborne microbes will also change, the study authors project.

Studying life forms in the atmosphere has evolved over the last century from collecting samples on adhesive surfaces on the sides of early 20th century airplanes, to sophisticated air samplers taking simultaneous

“This is a super precise, super high resolution biological sensor that, for the first time, lets you read the biological output as it changes in response to temperature,” said lead author Stephan Schuster of Nanyang Technological University in Singapore.



Schuster and other researchers from Singapore Centre for Environmental Life Sciences Engineering found that higher temperatures may allow microbes to distribute more widely, possibly globally, increasing the distribution of pathogens that could be potentially harmful to human health and agriculture as the planet warms. Their **findings** were published this month in the journal Proceedings of the National Academy of Sciences (PNAS).

However, much is still unknown about what the ramifications of a warming climate will be for these communities, Schuster said.

“This is not like fear mongering,” he said. “What we are saying is that we now understand the mechanisms of how this can work.”

---



## Katelyn Weisbrod

Web Producer, St. Paul

Katelyn Weisbrod is a reporter and web producer for Inside Climate News based in Minnesota. She writes ICN’s weekly [Warming Trends](#) column highlighting climate-related studies, innovations, books, cultural events and other developments from the global warming frontier. She joined the team in January 2020 after graduating from the University of Iowa with Bachelor’s degrees in journalism and environmental science. Katelyn previously reported from Kerala, India, as a Pulitzer Center student fellow, and worked for over four years at the University of Iowa’s student newspaper, The Daily Iowan.

