## Studying climate change through the sounds of nature

## By Leath Tonino, Outside

Soundscape ecologist Bernie Krause has recorded jaguars in the Amazon, ice in Antarctica, insects in Zimbabwe, rainstorms in Borneo, and orcas in the Pacific. The 77-year-old began studying nature's sounds at age 30, later earning a Ph.D. in creative arts. (This was after two successful decades as a musician and producer.)

He has since traveled to the world's most remote areas to create an audio library that began as an inventory of the intricate symphonies unique to each ecosystem but has become a way to document biodiversity and, most recently, loss.

Krause's archive now consists of 5,000-plus hours of what he calls "whole habitat" field recordings. To get them, he sets up a wind-protected microphone on a tripod, plugs it into a handheld recorder, and captures everything that occurs. More than half of the 3,700 habitats represented in the archive—from Yellowstone to Australia to his own backyard in Glen Ellen—are now either totally silent or severely diminished because of human activities like mining, logging, poaching, real estate development, airplane traffic, warfare, and climate change.

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