

Community Scientists and AI Team Up To Observe Bird Behavior During Total Solar Eclipse

Published in Scientific Reports, Haikubox Study Highlights the Scientific Potential of a New Backyard Birding Tool

ST. PETERSBURG, FL, UNITED STATES, April 8, 2025 /EINPresswire.com/ -- Community scientists equipped with modern technology are transforming how we study the natural world. A study published this week in Scientific Reports used data from Haikuboxes – AI-enabled devices that help backyard birdwatchers identify birds using their songs and chirps. Thanks to hundreds of [Haikubox](#) users across North

America, researchers found that birds became quiet during the peak of the [eclipse](#), but only at locations where the moon covered more than 99% of the sun. This innovative approach demonstrates how modern technology and community-driven research can tackle large-scale ecological questions.



"As the sky darkened, I noticed an unusual visitor—an Inca Dove—perhaps looking for a safe spot before 'bedtime,'" said Ginny Lindzey, a Haikubox owner who witnessed totality during the 2024 solar eclipse. "Just before totality, my Lesser Goldfinches and Red-Bellied Woodpecker were busy eating, almost like a last snack before settling in. But as the last bit of light faded, they all suddenly left the feeders and headed for the trees—mainly the pecan tree, which had just started leafing out. Once they roosted, everything went completely silent, as if night had suddenly fallen. Then, just as quickly, when the light returned, it was like morning again—birds singing, returning to their feeders, and picking up right where they left off."

Lindzey's experience matches the observations of the larger Haikubox study. "People who experience a total solar eclipse have noticed that birds fall silent or exhibit nighttime behaviors during a total solar eclipse," said David Mann, PhD, lead author of the study and researcher at Loggerhead Instruments. "Our study shows that on average, birds do get quiet during and just

after totality, but only at those locations that experienced totality."

Mann also noted that human behavior during an eclipse also likely affects bird behavior. "Our first, quick look at Haikubox data showed a large dip in bird vocalizations around the time of peak totality," said Mann. "People were pretty excited about the total solar eclipse, and their celebrations likely affected the birds' reactions, because we found a much more complicated story when we removed any sites where humans may have influenced the birds' behaviors."

Haikuboxes automatically identify bird sounds 24/7, providing researchers with unbiased data on bird behavior, including during rare events like solar eclipses. "This research showcases the incredible potential of combining community science with artificial intelligence," said Mann. "We were able to gather data across a wide geographic and time scale that would have been impossible just a few years ago."

The Haikubox network is a passive acoustic monitoring system that uses machine learning to detect and classify bird vocalizations in real time. By hosting a Haikubox device in their backyard or local area, users join a growing network of listening stations that contribute valuable data for scientific research, thus becoming community scientists.

The study, published April 8, 2025, is titled "Continental-scale behavioral response of birds to a total solar eclipse." In addition to Mann, it is co-authored by Austin Anderson, Amy Donner and Michael Hall of Loggerhead Instruments, the company that developed Haikubox; and Stefan Kahl and Holger Klinck of the K. Lisa Yang Center for Conservation Bioacoustics at the Cornell Lab of Ornithology. Haikubox was developed with support from the National Science Foundation (NSF)'s Small Business Innovation Research (SBIR) program. Researchers from Loggerhead Instruments, Inc. and the K. Lisa Yang Center for Conservation Bioacoustics at the Cornell Lab of Ornithology analyzed data from 344 Haikuboxes (community-based acoustic monitoring devices) for this study.

"This is just the beginning," said Mann. "As our network grows, we'll be able to study everything from migration patterns to the effects of climate change on bird populations."

For those interested in joining the Haikubox community or learning more about its technology, visit www.haikubox.com.

About Haikubox:

Created by Loggerhead Instruments, Inc., Haikubox is an AI-enabled Wi-Fi-connected device that helps birdwatchers "bird by ear" by automatically identifying birds through their unique sounds, while also contributing valuable data to a community science network for ecological research. By fostering a deeper connection with nature through technology, Haikubox empowers users to effortlessly observe and record the beauty and seasonality of birds in their environment.

About the Cornell Lab of Ornithology:

The Cornell Lab of Ornithology is a world leader in the study and conservation of birds; its K. Lisa Yang Center for Conservation Bioacoustics uses sounds in nature to inform and advance the conservation of wildlife habitats.

About David Mann, Ph.D/Founder of Haikubox:

David Mann, Haikubox founder, was a young birder who spent hours in his neighborhood and at nearby Sapsucker Woods at Cornell University searching for birds. He later studied biology at Cornell and earned a PhD focused on bioacoustics from MIT and the Woods Hole Oceanographic Institution. When David and long-time colleague Holger Klinck, PhD, Director of the K. Lisa Yang Center for Conservation Bioacoustics at the Cornell Lab of Ornithology, realized they shared a common interest and the technical skills to develop an automatic [birdsong](#) identification tool, Haikubox was hatched.

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