

# To hear the cicadas sing, enthusiasts travel from near and far

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During an afternoon stroll around Morton Arboretum, near Chicago, Maria Malayter's Apple Watch buzzed twice with an unusual notification. The screen warned her of a "loud environment" with sound

levels reaching 90 decibels as cicadas chorused on the treetops.

Exposure to such levels for over 30 minutes can cause permanent hearing damage, hence the watch notification. Yet Malayter, and many others, have visited the arboretum in recent weeks seeking the cicada songs, and a reminder of childhood.

"Cicada concert!" she said gleefully. "And it's a loud day, I heard."

The mating calls, which in unison can reach decibels comparable to a jet engine or lawnmower, are perhaps one of the insects' most recognizable features. For some, it's overwhelming, and annoying.

But others find the din from this spring's historic emergence to be a soothing lullaby, an offbeat jam session or a scientific peculiarity worth traveling to hear firsthand. From downstate Illinois to Lake County, enthusiasts, artists and researchers have spread out far and wide to immerse themselves in the intense and diverse songs of cicadas.

The Northern Illinois Brood emerges every 17 years, and the Great Southern Brood comes out every 13 years. In central Illinois, both broods have emerged adjacent to one another for the first time since 1803, presenting a unique opportunity to compare their tunes.

Malayter had been hoping to hear them closer to home in her Aurora backyard. But the city cut down her trees as part of a strategic removal program to curb the spread of emerald ash borers, an invasive and destructive beetle species.

"I was wondering if I'd see any (cicadas), and there were none," she said. So she grabbed a friend and headed east. "I started driving, and I could hear them through my car windows."

People from neighboring and faraway states, even from other countries and continents, have also traveled to Illinois to hear cicadas sing. In and around Springfield, tourists hailed from Japan, Belgium and Ireland, according to the city's travel and tourism office.

Visitors at the Morton Arboretum in Lisle, about 25 miles west of downtown Chicago, have come from Wisconsin, Pennsylvania, Florida, California, Germany and Canada. A father-daughter duo road-tripping from Madison was delighted to catch the midafternoon cacophony at the arboretum after an earlier pit stop in Lake Geneva, where they said cicadas were only about half as loud.

"It was too close to pass up," said Ali Kane, a real estate agent who studied entomology in college, with her father Patrick in tow.

"We're playing it by ear," said Kane, who was wearing iridescent, dangly cicada earrings.

## **Mechanics of cicada songs**

Insects, unlike humans and some birds, don't have voice boxes. They use their body parts as instruments to produce sound.

Male cicadas have a membrane with ridges called a tymbal, which Katie Dana, an affiliate with the Illinois Natural History Survey, said will buckle and produce loud sounds. She said it works almost like a flexible straw—the expanding and contracting of the plastic makes the characteristic crackling noise.

The abdomens of male cicadas are also hollow, Dana said, which helps amplify the volume.

They can employ either their "song" or "alarm" call, she said. If they're

grabbed by a predator—say a fish or a raccoon—they'll let out a sound Dana described as "screaming." Their song to attract females is a bit different, and takes the form of a call and response, she said.

"It's kind of a little dance where the males will sing, and the females will hear that and fly in closer to the males," Dana said.

Female cicadas then flick their wings, which she said produces a song in response to the males. The more calls and responses, the closer the females get to the males until they mate.

When [periodical cicadas](#) emerge from their shells, Dana said they're quite soft and squishy. It takes a few days for the males to fully harden and start singing. As more cicadas join the ranks, they get louder and louder, particularly in "chorus centers."

There are no firm rules for what makes a good chorus center—when adults congregate to mate, leading to concentrated song and activity—Dana said, but cicadas tend to prefer older neighborhoods with undisturbed soil and trees, which is why they aren't seen as often in the city. Males often gather on one tree to amplify their signal, causing a louder noise in certain places.

"If you take an individual (periodical) cicada and listen to it, it's pretty quiet ... but a brood can sound over 100 decibels," Dana said. "The reason they're that loud is there's so many of them singing at the same time."

## **A last hurrah**

The country roads from a Monticello gas station to Springfield are lined by a tranquil sea of agricultural fields, punctuated by dense, old woodlands that have been trilling and buzzing with the songs of

periodical cicadas in recent weeks. The Springfield area is the epicenter of the cicada emergence this year because it is the only place in the country where both broods are coming out in the same region.

At Sangchris Lake State Park, a few minutes southeast of Springfield, Stephen Bradley, a former professor of visual arts, carried a green-lidded critter keeper toward his cabin. A sound like pattering rain accompanied the loudly chorusing treetop cicadas.

Summer humidity hung in the air, but the sky was clear.

The sound was coming from other cicadas that Bradley was catching and placing gingerly onto a makeshift drum. As they crawled around and buzzed, their movements vibrated through the drum and a contact mic, playing gentle beats over an amplifier.

"I'm also an experimental musician, looking at collaboration with critters," he said.

"I've been here by myself, pretty much just absorbing, inventing things, interacting with the cicadas," he said. It was a final artistic indulgence, a last intellectual hurrah, after his recent retirement and upcoming move to North Carolina.

After a week and a half, leaving the [state park](#) would be bittersweet, he said.

"(I've been) taking naps here every day. I'll leave my door open," he said. "And I travel with the cicadas as they're singing, doing their chorus. I find it very relaxing."

From the park's west-facing Hickory Point campsite, Bradley broadcasted a live feed of the singing cicadas between noon and dusk

one day as part of his project Calling All Ears Collective, a platform for entomologists, sound artists and the curious to connect with the acoustic intricacies of this year's cicadas. After his visit, Bradley will share his field recordings with artists and use his sound compositions to create a curated show with a percussionist friend for Wave Farm Radio.

"Our time here is very brief, and we need to do everything we can to protect our critters," he chuckled as a cicada landed on his shirt, "and love and appreciate them. ... I want people to be able to listen to the cicadas and know that this is a real rare moment."

## **All roads lead to Illinois**

Karen Power has traveled from her hometown of Cork, Ireland, to remote locations in the Amazon jungle, Antarctica, the Namib Desert and more, to escape human noise and make music blended with natural soundscapes.

This month, her art brought her to Illinois.

At Illinois State University in Normal, Power organized a walk to hear from local residents about how cicada sounds were altering their environment and to hear how the insects' calls bleed into other noises.

"Nothing exists in isolation," she said, adding that listening carefully is a way of acknowledging, respecting and learning from other forms of life.

Power said she feels there is no distinction between music and other sounds. And folks annoyed or worried by the volume of cicada choruses, might not think twice about attending a loud concert or going clubbing.

"(I'm) offering people the time and space to change their perspective and to kind of lean into what it is they're hearing and allow themselves to be

shaped by it, rather than repelled by it," she told the Tribune a few days before her trip.

While at the university, Power said she planned to put on a musical performance using field recordings from other parts of the world and to record cicada songs for pieces she wants to compose with other musicians.

"I'm just hoping to be changed by this experience. And I hope that my mic survives ... I can't wait to be overwhelmed," she said.

"I would love it if more species would do this, try and put us in our place a little bit," Power said. "There are all kinds of relationships on this planet. We're just one tiny and insignificant part of that."

At the state capital's Lincoln Memorial Garden and Nature Center, Matthew Wolkow pressed play on an online recording of an individual courtship song from a *Magicicada septendecim*—one of the three species of 17-year cicadas from the Northern Illinois Brood.

Close by, a female cicada responded with a "wing flick" signal. Wolkow pointed to a tree a few feet away, where the responding insect must have been perched. He had an amused smile on his face.

"This tree is very magical," said Wolkow, a Canadian filmmaker from Montreal and Bradley's project co-coordinator, as sound designer and mixer Alex Lane held what looked like a boom mic up to the tree.

That's because distinct calls from a few different species and maybe even both the 17-year and 13-year broods were coming from its branches, they said, adding they'd need confirmation from scientists.

Before the cicadas emerged in late May, many scientists said they



expected the broods to be adjacent but not overlap in Illinois. Even if there are some areas of overlap, Wolkow was told, it would be hard to find them because they would be small areas.

And it can get so loud it becomes hard to separate the choruses and calls of different species.

"When it gets to about 90 (decibels), there's a point where your brain is oversaturated with information," Wolkow said. "Here, it rarely even reaches 80 decibels, but with the variety, the diversity and the thickness of sound, so far, it's like the best place."

## **Listening closely**

For his documentary on this year's double periodical cicada emergence, Wolkow asked scientists and artists he interviewed: "What will it sound like in 221 years?"

The question invites reflection on how humans are shaping the environment around them as they build, expand and remove trees under which cicadas spend most of their lifetimes. Scientific data on periodical cicadas is limited to their 13- and 17-year cycles, Lane said, so there are gaps in distribution maps that must be accounted for. Did they move since their previous emergence? Or were they just not documented in certain places last time?

By encouraging careful listening, Negin Almassi, resource management training specialist at the Forest Preserves of Cook County, is leading a volunteer effort to map the range and abundance of 17-year periodical cicadas across the county based on the intensity of their sounds.

"What's special about them is that the cicadas we're hearing this year are giving us a window into what's happened in the last 17," Almassi said.



"That means that (conditions) aligned for them in these places."

For instance, cicadas will have emerged where trees have remained healthy and soil undisturbed. The soundmap project has also asked volunteers to pay attention to other sounds, such as how other animals might have changed the frequency of their signaling while cicadas chorus loudly. That attentiveness has also attuned them to human noise pollution.

"One of the first things that this project has shown me is how much I tune out airplanes, and how ubiquitous and loud they actually are," Almassi said. "You get used to your acoustic environment."

The environmental educator also recently led a few "Cicada Soundwalks" near the Sagawau Environmental Learning Center in Lemont alongside the Midwest Society for Acoustic Ecology. Like the listening session that Power led at Illinois State, sound walks are meant to help folks slow down and tune in to the sounds of nature they often ignore.

"Figuring out what to identify as music versus noise, that's the question," Almassi said.

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