

How do cicadas make their signature sound, so eerie and amazingly loud?

June 14 2024, by Seth Borenstein



Water droplets cling to the wings of an adult periodical cicada at Lincoln Memorial Garden and Nature Center on Tuesday, June 4, 2024, in Springfield, Ill. The most noticeable part of the cicada invasion blanketing the central United States is the sound. The songs — only from males — are mating calls. Credit: AP Photo/Carolyn Kaster

The most noticeable part of the cicada invasion blanketing the central United States is the sound—an eerie, amazingly loud song that gets in a person's ears and won't let much else in.

"It's beautiful chaos," said Rebecca Schmidt, a U.S. Department of Agriculture research entomologist. "It does make this kind of symphony."

The songs—only from males—are mating calls. Each [periodical cicada species](#) has its own distinct [song](#), but two stand out: those of the orange-striped decims or pharaoh cicadas, and the cassini [cicada](#), which is smaller and has no orange stripes on its belly.

"The one we're hearing the most is the cassini, a buzzy trail that goes up in a wave and is coming back down," Jennifer Rydzewski, an insect ecologist at DuPage County Forest Preserve, said in an interview in a clearing near a bunch of trees.

"And every time it goes up in a wave and comes back down, you'll see in the treetops a bunch of them start flying out, so they'll make a call and then jump to a new branch and make the call again. So it's actually like different groups that are coming in waves."

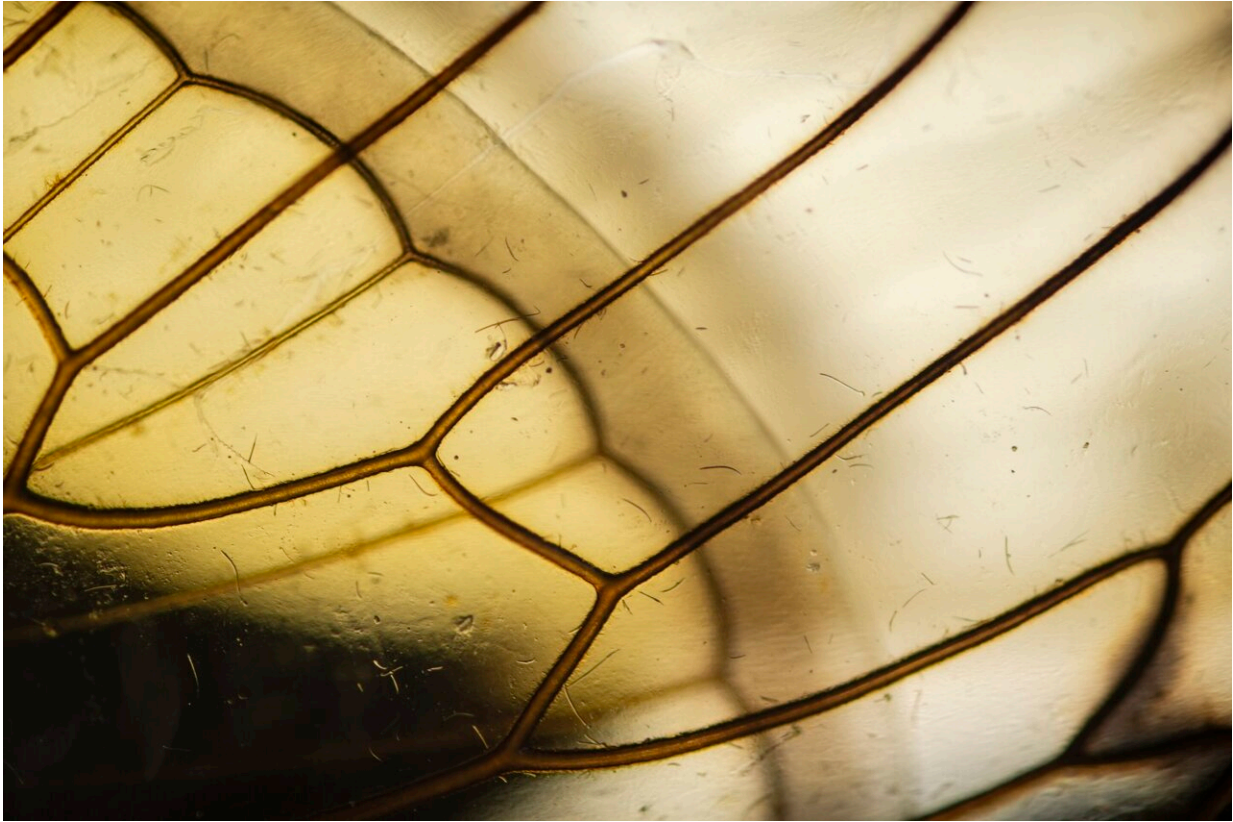
The other one is a "constant whirring hum, which is the pharaoh's staccato" and every now and then an individual call that sounds like "eee-ooo" can be heard, she said. Others have said the sound is more like "fffaaro, fffaaro."



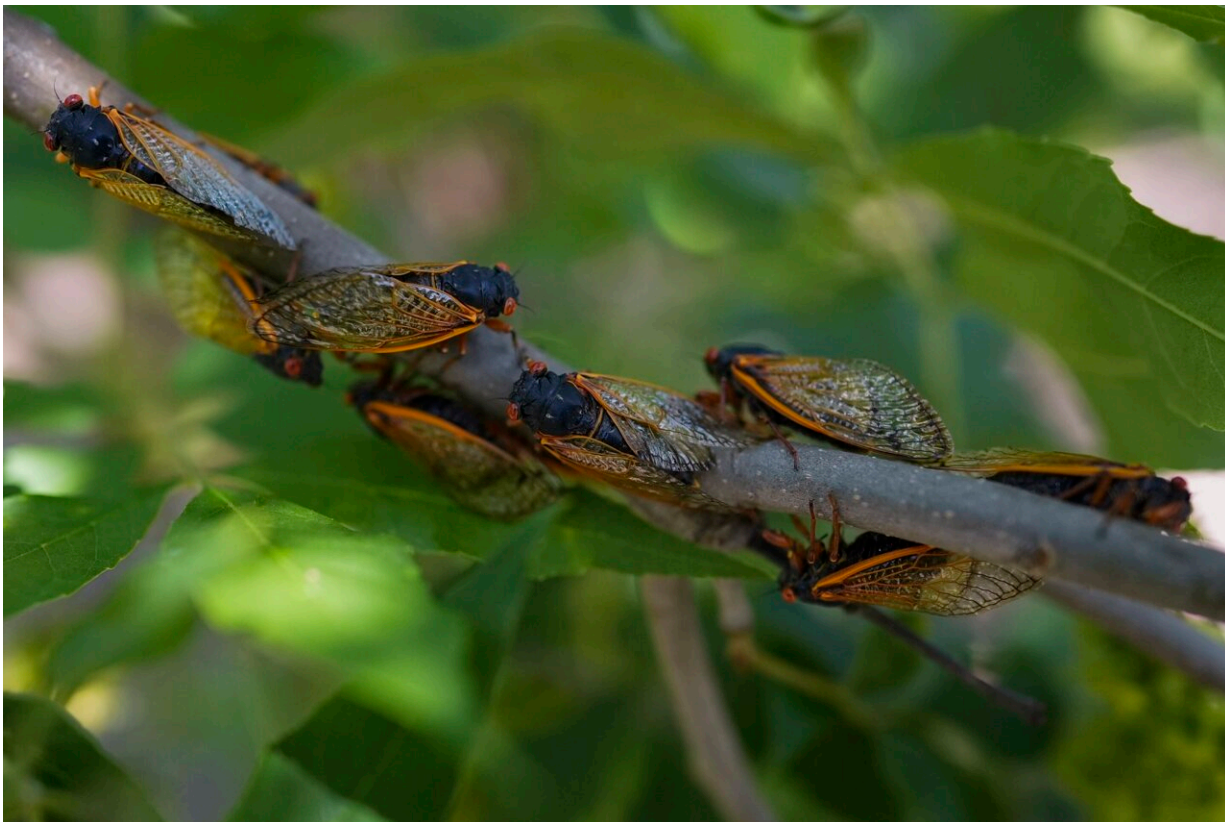
Two adult periodical cicadas mate at Lincoln Memorial Garden and Nature Center on Tuesday, June 4, 2024, in Springfield, Ill. The most noticeable part of the cicada invasion blanketing the central United States is the sound. The songs — only from males — are mating calls. Credit: AP Photo/Carolyn Kaster



The tymbal, a white membrane on a periodical cicada male's midsection used to create sound, is displayed by Jennifer Rydzewski, an insect ecologist for the DuPage Forest Preserve, Wednesday, June 5, 2024, in Wheaton, Ill. The most noticeable part of the cicada invasion blanketing the central United States is the sound. The songs — only from males — are mating calls. Credit: AP Photo/Carolyn Kaster



The translucent wings of a periodical cicada are visible in Cincinnati on Wednesday, May 22, 2024. The most noticeable part of the cicada invasion blanketing the central United States is the sound. The songs — only from males — are mating calls. Credit: AP Photo/Carolyn Kaster



Adult periodical cicadas cling to a tree branch at Morton Arboretum Visitor Center on Thursday, June 6, 2024, in Lisle, Ill. The most noticeable part of the cicada invasion blanketing the central United States is the sound. The songs — only from males — are mating calls. Credit: AP Photo/Carolyn Kaster

The sound comes from a white membrane on the male's midsection that is made to vibrate, Schmidt and Rydzewski said. The area beneath it acts like an echo chamber.

"It's a lot of the same sort of physics as an instrument," Schmidt said. "So if you think about like a drum, you can have a pretty small drum that is being hit by somebody that's not hitting it that hard, and it still makes quite a lot of noise."

© 2024 The Associated Press. All rights reserved. This material may not be published, broadcast, rewritten or redistributed without permission.

Citation: How do cicadas make their signature sound, so eerie and amazingly loud? (2024, June 14) retrieved 19 June 2024 from <https://phys.org/news/2024-06-cicadas-signature-eerie-amazingly-loud.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.