

MOUNTAINS

The cicada-pocalypse is nigh



Word from the Smokies

Will Kuhn
Columnist

Be on the lookout for a rare natural history event that's unfolding right now! This month through mid-July, billions of 17-year periodical cicadas are expected to emerge across a wide swath of the eastern U.S., including in Great Smoky Mountains National Park and possibly the Asheville area. And it might get a little loud.

Periodical cicadas comprise a group of species that don't emerge yearly, like their more familiar kin, the annual cicadas. Instead, they emerge in 13- and 17-year cycles.

"We're already getting reports of periodical cicadas emerging around Knoxville," said Becky Nichols, entomologist for Great Smoky Mountains National Park. "We expect to find them on the western side of the Smokies from Look Rock to Cades Cove, but we're not exactly sure. We have several park volunteers keeping eyes and ears out for them."

Across the eastern and central U.S., these emergences are roughly organized into 27 or so "broods," most consisting of multiple species of periodical cicadas. This summer's cluster of emerging cicadas is called Brood X, which includes the pharaoh cicada (*Magicicada septendecim*), the dwarf periodical cicada (*M. cassinii*) and the decula periodical cicada (*M. septendecula*).

Unlike the black and green annual cicadas that emerge later in the summer, periodical cicadas are predominantly black with amber colored wings and beautiful red eyes. Subtle characteristics on the underside help to distinguish the different species.

Right now, cicada nymphs are digging their way out of underground burrows, where they've been feeding on sap from tree roots for the last 17 years. Each nymph crawls up the side of a tree or other nearby structure and begins to molt. After a few hours, the newly emerged adult is ready to fly and leaves its empty brown exoskeleton behind.

"Looking for 'cicada shells' is one of the best ways to tell if you've got cicadas



A few days after emerging, males of Brood X begin to sing from nearby trees to entice females to mate. As more and more individuals emerge and start to sing, their chorus can reach 100 decibels – as loud as a rock concert.

COURTESY OF KEN-ICHI UEDA

around you," said Todd Witcher, executive director for Discover Life in America, a Smokies nonprofit partner organization. "And right now, you know they're periodical cicadas because those are the only ones emerging this early."

After a few days, the males will begin to sing from nearby trees. As more and more individuals emerge and start to sing, their chorus can reach 100 decibels – louder than a lawn mower.

Why all the ruckus? These cicada males have an audience: cicada

females. Males sing to entice females to mate. Each of the three Brood X species has a distinctive, chattering call to help them sort each other out.

Once mated, each female makes slits in tree twigs, which doesn't cause long-term damage to the tree, and deposits around two dozen eggs into each slit. In all, she can lay up to 600 eggs. After a few weeks, nymphs hatch from the eggs and drop to the ground, burrowing down to find tree roots. There, they'll feed and grow until the next mass emer-

"Cicadas are harmless – they don't bite or sting or harm trees, people, or pets, and they're an important source of nutrients for the many animals that eat them."

Becky Nichols, entomologist for Great Smoky Mountains National Park

gence of Brood X in 2038.

Adult cicadas live for only a few weeks – just enough time to sing, mate and lay eggs. By June to mid-July the forest floor will be covered with their lifeless bodies, which will slowly break down and nourish the trees that will feed their progeny.

"The thought of a bunch of flying, buzzing bugs may be frightening to some," said Nichols, "but there is nothing to fear. Cicadas are harmless – they don't bite or sting or harm trees, people, or pets, and they're an important source of nutrients for the many animals that eat them."

According to detailed records compiled by John Cooley at the University of Connecticut, Brood X spans several large, disjunct patches from eastern Illinois to southern New York, down into northern Georgia and possibly as far north as Michigan. In North Carolina, Cooley reports a small cluster of Brood X cicadas near Elgin and spurious records scattered across the western half of the state. In east Tennessee, the brood has been recorded in the valley from Lenoir City to Kingsport.

It will be tremendously helpful if you report any 17-year cicada sightings through several community science platforms, including iNaturalist (inaturalist.org) and Cicada Safari (cicadasafari.org). These records help scientists like Cooley and Nichols better understand the distribution of periodical cicadas so these noisy yet charismatic insects can be protected for future generations to enjoy.

"We're so excited to witness this natural event," said Witcher. "I hope folks will take this opportunity to appreciate how incredible the natural world can be!"

Will Kuhn is the Director of Science and Research at Discover Life in America, which seeks to discover, understand and conserve the biodiversity of Great Smoky Mountains National Park. Learn more at dlia.org and reach the author at will@dlia.org.

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