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*National Museum of Natural History*

## **CICADAS, BROOD X, EMERGING SUMMER 2004**

### Brief description – What’s happening during Summer 2004?

The adult periodical cicadas (Brood X) are having a “coming up” party in the Washington D.C. area and beyond from mid-May through mid-June, 2004 -- millions and millions of them. These insects are spread widely over the eastern half of the United States but nowhere else in the world. This particular brood has not appeared since 1987. And after summer 2004, they won’t reappear for another 17 years, until 2021. Brood X is “ten,” not “X.”

### Adult periodical cicadas

Periodical cicadas are insects with reddish-orange eyes and 4 clear wings with orange veins. Adults are black, about 1 ½ to 2 inches long. There are seven species of periodical cicadas -- three with a 17-year life cycle generally found in the north -- and 4 species with a 13-year cycle in the south. They don’t bite. They don’t sting. They don’t exactly sing. They just buzz, click, and sort of roar in a chorus. And they get in the way and underfoot – on sidewalks, on grass, on patios and balconies, and inside the house, if windows are open and unscreened. They are clumsy flyers!

### Cicada life cycle

Adult periodical cicadas molt, mate, lay eggs in trees, and die all within the month that they’re above ground. The female’s blade-like ovipositor (egg-laying device) rips into twigs and fills them with up to 600 eggs. Six or seven weeks later, the young cicadas hatch from the tree branches, fall to the ground, and burrow 18-20 inches into the ground. For the next 13 to 17 years, they tunnel through the ground and draw liquid out of tree roots, their sole source of food.

Some cicadas emerge annually even though they take several years to mature. This year’s cicadas, known as Brood X, work their way above ground every 17 years. Seasonal changes in plants might alert the cicadas when it’s time to surface. They’ll need a few days for their bodies to harden after they wriggle out of their exoskeleton. Then males only will begin a screeching chorus as part of the mating ritual. Females remain silent. The insects will have only 4 to 6 weeks to mate before they die.

### Damage or just a nuisance?

Cicadas usually don’t kill trees, but give them a “natural pruning.” The most serious damage is to young ornamentals and fruit or nut trees. When females lay eggs into small branches and twigs, there may be more damage than newly planted or small trees can bear. Such small trees can be protected by covering them with bird netting, cheesecloth, or similar covers. In the meantime, they may be a nuisance to humans and some animals. Their sounds create a commotion -- annoying homeowners, restaurant owners, pets, joggers, and anyone else within hearing distance. They sometimes drive outdoor events indoors. Adult cicadas also are poor fliers and tend to bump into things – including humans. Most 17-year cicadas are gone by the beginning of July.

### Benefits of periodical cicadas

When cicadas tunnel to the upper levels of the ground, they aerate the soil. When they die, their bodies provide large amounts of nitrogen, which in turn, enriches the soil. Also, they are food for numerous animals, including family pets.

### A Cicada Feast!

A periodical cicada year is a time of feasting for a wide array of creatures. Birds, snakes, small mammals, lizards, bears, and even fish, literally gorge on adult cicadas.

### Cicadas and Early Americans

Periodical cicadas were known by Native Americans 300 years ago. Their ability to emerge by the millions as flying, gregarious adults within hours after spending 13 or 17 years underground as solitary juveniles is unparalleled in the animal kingdom.

Early American colonists had never before seen periodical cicadas. They knew the biblical story of locust plagues in Egypt and Palestine but weren't sure which insect was to blame. The cicada is commonly, but mistakenly, referred to as the "17 Year Locust" but this term applies only to certain species of grasshoppers.

Some Native Americans thought the periodic appearance of cicadas had evil significance.

### Enjoying the spectacle of cicada emergence

Observe cicadas when they crawl from their ground holes onto vertical objects, mainly trees, to witness the change from nymph to adult. This requires some effort, as it occurs at night. When cicadas emerge from their nymphal shells, they are whitish and have a soft exoskeleton. It takes them several hours to harden and darken.

Listen to the three different chorus sounds of the three different species of 17-year cicadas. Sometimes they sing as species groups at different times of the day. Try to detect these different sounds and compare them to the annual cicadas that will sing in July and August.

You can handle adults without any concerns. Females can be easily identified by a large, central ovipositor beneath their abdomens. Males "squawk" when you grab them.

And finally, make a photo record of the stages and activities of the periodical cicadas – from emerging nymphs to adults on shrubbery and young trees.

### One Last Thought

Enjoy these special insects while they are above ground. The time is so short. And there's so much to see!

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