

Mysterious insect to emerge in parts of Pennsylvania

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Periodical cicadas, sometimes mistakenly called 17-year locusts, are native to North America and exist nowhere else in the world. Credit: Greg Hoover, Penn State College of Agricultural Sciences

(Phys.org) —One of the world's most mysterious insects is about to invade the skies over wooded areas in eastern Pennsylvania and other states, but an expert in Penn State's College of Agricultural Sciences says it's not a cause for alarm.



Residents of 17 Pennsylvania counties soon will see an emergence of periodical <u>cicadas</u>, commonly but mistakenly called 17-year locusts. "We think of them as the Methuselah of the insect world," said Gregory Hoover, senior extension associate in entomology.

"These insects are harmless to people, but they can cause some damage to <u>shade trees</u>, fruit trees and high-value woody ornamental plants."

The periodical cicada is native to North America and exists nowhere else in the world. There are six species of periodical cicada, three with a 17-year cycle and three with a 13-year cycle. Periodical cicada populations—called broods—are identified by Roman numerals. All eight broods that occur in Pennsylvania require 17 years to reach maturity.

The cicadas surfacing this year are members of Brood II, which last was seen in 1996. In Pennsylvania, the distribution of Brood II includes Berks, Bucks, Carbon, Chester, Dauphin, Delaware, Lancaster, Lebanon, Lehigh, Luzerne, Monroe, Montgomery, Northampton, Philadelphia, Pike, Schuylkill and Wyoming counties.

The insects also will emerge in all of Connecticut and New Jersey, and in parts of New York, Maryland, Virginia and North Carolina.

In some affected areas where the ground is damp, Hoover noted, observant homeowners already may have noticed that periodical cicada nymphs have built small earthen turrets over their exit holes to protect their escape routes from too much moisture.

Any damage caused by periodical cicadas occurs during egg-laying. Using the blades of a saw-like device on her abdomen, a female will cut several small pockets in the bark of a twig before depositing 400 to 600 eggs.



This process can cause the foliage on small twigs to wilt and may provide an opening for a plant disease. Adults live only a few weeks, but the twig injury they cause may be apparent for several years. "Periodical cicadas are sometimes called nature's pruners," Hoover said.

Protection methods include covering the crown of valuable trees with a fine mesh, being sure to tie off the covering around the base of the tree to prevent adult females from accessing the crown of the tree. Homeowners and others may elect to delay the planting of trees until fall since adult periodical cicadas are gone by early July.

Although adult cicadas are difficult to control, Hoover suggests that nursery owners or others with trees at risk may want to apply registered insecticides around the time mating starts—about 10 days after they first hear the males singing. If a registered insecticide is used, label instructions should be read and followed carefully.

Hoover emphasized that periodical cicadas do not damage field crops, and residents who live where land has been cleared of trees may not see them.

"Members of Brood II may not be as abundant in Pennsylvania as they were in the past or as other broods—such as Brood X in 2004 and Brood XIV in 2008—in part because of development and habitat loss," he said.

Adult periodical cicadas are about 1 1/2 inches long with reddish eyes and orange wing veins. They are smaller than their cousins, the annual or dog-day cicadas usually seen and heard in the heat of late summer.

Cicada nymphs spend 17 years from 2 to 24 inches underground, sucking nutrients from xylem cells in plant roots. In late April and May, they burrow to within an inch of the soil surface, where they await an undetermined signal for emergence.



"Soil temperatures reaching 64 degrees Fahrenheit and a light precipitation event seem to be prerequisites for cicadas to emerge," Hoover explained.

When the time is right, usually in mid- to late May, the nymphs exit the soil through half-inch holes and climb a foot or more up trees or other objects. Within an hour, they shed their nymphal skins and become adults.

Adult cicadas are clumsy flyers, often colliding with objects in flight. Males begin their constant singing shortly after they emerge, but the females are mostly silent. When heard from a distance, the cicadas' chorus is a whirring monotone, sometimes described as eerie-sounding.

On rare occasions when an adult eats, it sucks fluid from small twigs but does not feed on leaves. Ten days following emergence, mating takes place.

Adults live up to four weeks above ground. Six to seven weeks after the eggs are laid, nymphs hatch and drop to the ground. There, they enter the soil, not to see the light of day for 17 years.

A <u>free fact sheet</u> on <u>periodical cicadas</u> can be found on the Penn State Department of Entomology website.

Provided by Pennsylvania State University

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