

Forest Health Fact Sheet

Periodical Cicada (17-Year Locust)

Magicicada septendecim Linnaeus

The periodical cicada (Figure 1) is a native North American insect that emerges in large numbers after completing a 17-year lifecycle. Often, periodical cicadas are referred to as "17-Year Locusts". This is a name that was used by early American colonists to describe the mass emergence of adult cicadas, which reminded them of Biblical stories of swarms of locusts. The term "locust" (Figure 2) refers to certain types of grasshoppers that swarm in large numbers. There are other species of cicadas, which occur in Pennsylvania, that are different in color and in song, and do not take as long to develop. Many are familiar with the terms "dog day" or "annual" cicada, which are used to describe cicadas from the genus *Tibicen*. Cicadas in this genus do not emerge in mass, and do so late in the summer. Populations of periodical cicadas emerge simultaneously in early summer every 17 or 13 years, depending on the species. Not all populations will emerge during the same year. For ease of reference, populations, or broods, were designated with Roman numerals in 1893. The broods with 17 year lifecycles were assigned the numerals I through XVII. In Pennsylvania, eight different broods emerge in varying locations of the state.



Figure 1: Periodical Cicada



Figure 2: Biblical Locust

Schistocera gregaria (Forsk.) (Orthoptera: Acrididae)
Photo by J. D. Weintraub, Academy of Natural Sciences

Description

Adults are 1-1/2 to 2 inches long, black, with reddish eyes and orange wing veins (Figure 1). Immature cicadas are subterranean but will crawl out of the ground just before molting into an adult, leaving about a 1/2-inch hole in the ground (Figure 3). Immature cicadas can be recognized by their highly modified, raptorial front legs. They will leave their light brown, cast skin behind after emergence.



Figure 3: Cicada Emergence
Holes and Cast Skin

Life History

Larvae of the cicadas live in the soil for 17 years where they feed on sap from the roots of trees. In April of the 17th year, larvae begin to migrate to the near the soil surface. When temperatures in the upper 8 inches of the soil reach 64° Fahrenheit the larvae exit the soil and crawl about one foot up a nearby object. Here they shed their skin, and emerge as an adult. In Pennsylvania emergence is usually in May. For a short period of time after emergence, the cicada will be soft and white in color, or teneral, while its new exoskeleton is hardening.

When its exoskeleton hardens and darkens males begin to "sing" to attract females to mate. About 10 days after emergence adults mate. Females will begin to deposit eggs in twigs or branches of a variety of trees and woody shrubs by slitting the wood with a saw-like ovipositor. Most adults live only three to four weeks. Eggs hatch out in six to seven weeks and larvae exit the slits, drop to the ground, and burrow into the soil where they will feed upon sap from the roots for the next 17 years.

Damage and Control

Most damage done by periodical cicadas results from the slitting of twigs (Figure 4) when laying eggs. Often leaves on the twig may turn brown or the twig may break, resulting in "Flagging" (Figure 5). This generally has little effect on the overall health of the tree. Such damage can lead to secondary infections by pathogens such as *Botryosphaeria* canker. Root feeding by larvae is not considered to be important to the health of host trees.



Figure 4: Slitting



Figure 5: Flagging

Control is not practical on a large scale, but individual trees may be protected. Some strategies for control include delaying planting of new trees/shrubs until after egg laying by the cicadas has ceased, covering individual trees/shrubs with fine netting, or using pesticides specifically labeled for such use.