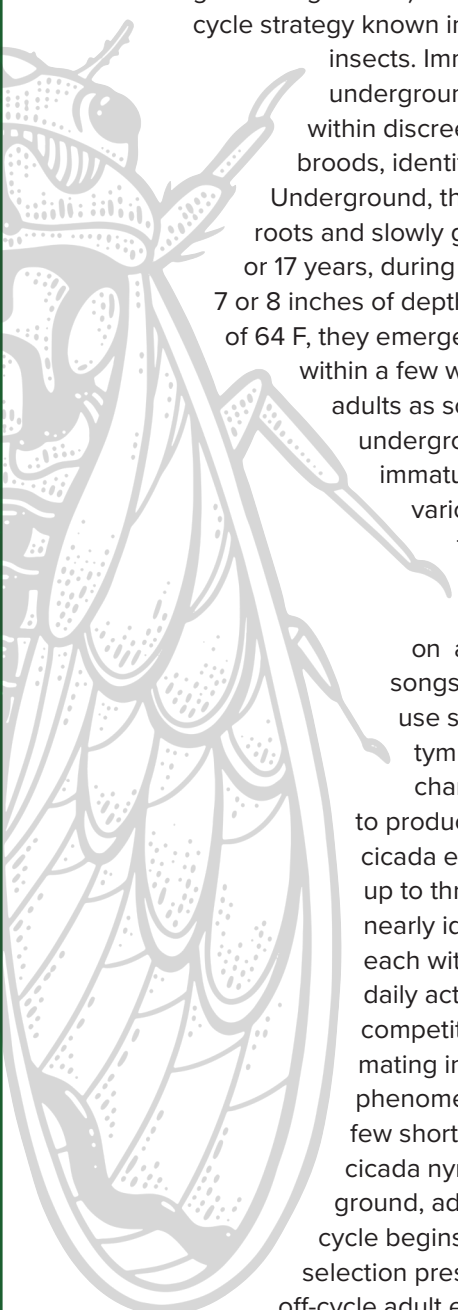


# PERIODICAL CICADAS

## IN LOUISIANA



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Periodical cicadas (order Hemiptera: genus *Magicicada*) employ a remarkable life cycle strategy known in no other group of insects. Immatures (nymphs) remain underground for either 13 or 17 years within discreet populations called broods, identified by Roman numerals. Underground, they feed on sap from tree roots and slowly grow to maturity. After 13 or 17 years, during spring when the soil at 7 or 8 inches of depth reaches a temperature of 64 F, they emerge in mass, mate and die within a few weeks. All cicadas molt to adults as soon as they emerge from underground, leaving their molted immature exoskeletons on various elevated surfaces as familiar reminders of their existence. Adults feed very little, but males put on a spectacular chorus of songs to attract females. They use specialized organs called tymbals and resonating chambers in their abdomens to produce their songs. Periodical cicada emergences include up to three species that are nearly identical in appearance, each with a different song and daily activity pattern, reducing competition and potential failed mating interactions. The entire phenomenon plays out within a few short weeks. Newly hatched cicada nymphs burrow into the ground, adults die and the whole cycle begins again. There is strong selection pressure against occasional off-cycle adult emergence, as they are

quickly consumed by predators and do not have an opportunity to reproduce.

This year, as temperatures rise and summer approaches, Louisianans could potentially witness the emergence of periodical cicadas, as the 13-year cicada Brood XIX is scheduled to make an appearance in northern Louisiana. The emergence will span several states. Historical records indicate the parishes where they may be found are Caddo, Claiborne and Webster. Lack of documentation of the previous emergence in the state has led to concerns about Brood XIX's potential extinction. During 2011, the scheduled emergence of Brood XIX resulted in no reliable records from Louisiana. Factors such as habitat destruction and pesticide use pose threats to periodical cicadas, underscoring the need for conservation efforts, especially without current documented sightings. Amidst uncertainty about the fate of Brood XIX, we call on citizen scientists to aid in documentation efforts. Platforms such as [iNaturalist.org](https://www.inaturalist.org) and [BugGuide.net](https://bugguide.net) provide avenues for enthusiasts to upload observations and location of periodical cicadas which would provide new information on the distribution and survival of the Brood XIX cicada population. Campsites in long-standing recreation areas, such as wildlife management areas and state parks in Caddo, Claiborne, Webster and adjacent parishes, are ideal places to search for periodical cicadas starting early-May through early June. If populations still exist, these records will allow proactive conservation measures to ensure their survival. By keeping their eyes and ears alert for possible occurrences and uploading pictures of periodical cicadas, citizen scientists can play an important part in resolving the question of Brood XIX's continued existence in Louisiana.



***Magicicada tredecim***, a species of periodical cicadas occurring in Louisiana. The dorsal thoraxes of adults are black, and the undersides are caramel colored. They have reddish eyes and golden yellow wing veins. Adults are 1.1 to 1.3 inches in body length. Photo by the Louisiana State Arthropod Museum



***Pacarina puella***, the little mesquite cicada, is one of the smallest cicadas occurring in Louisiana. Adults are variable light and dark gray on the dorsal thorax with green hues. The eyes of *P. puella* are black or gray, and they have light brown wing venation. Adults are 0.8 to 1.0 inch in body length. Photo by the Louisiana State Arthropod Museum



***Megatibicen resh***, the resh cicada, is one of the largest cicadas occurring in Louisiana. The dorsal thoraxes of adults are black, green and brown in a camouflage-like pattern. Wing vein coloration is similar to body color. Eye color is variable, but typically dark gray. Adults are 1.3 to 2.0 inches in body length. Photo by the Louisiana State Arthropod Museum

In addition to the 2024 emergence of Brood XIX, two additional 13-year broods will be emerging during the coming years: Brood XXII during 2027 and Brood XXIII during 2028. Both of these broods cover a large area of eastern Louisiana and have been documented as far south as Baton Rouge. The 17-year broods are more northern in distribution and do not occur in Louisiana.

Periodical cicada emergences are a remarkable natural spectacle. Cicadas also play an important role in the ecosystem, providing a food resource

for wildlife and enriching the soil after mass die-offs following emergences. Periodical cicada broods are distinguished by their dormancy periods of 13 or 17 years. The length of their cycles are prime numbers, which ensures that each brood can emerge in synchrony and maintain separate cycles without genetically disruptive overlaps of emergences. While their loud calls may be annoying, cicadas pose no harm to humans or pets. Adult females deposit eggs in new growth of trees, which may cause temporary minor damage, but this is not considered detrimental, and trees quickly sprout new growth.

Louisiana residents are probably more familiar with the annual emergence of dog day cicadas and several other smaller species. These annual cicadas, commonly encountered throughout Louisiana and beyond, exhibit different life cycles that set them apart from periodical cicadas. While both belong to the family Cicadidae, their emergence patterns and behaviors differ significantly. Annual cicadas, as their name suggests, emerge yearly, with individual species exhibiting variations in their life cycles. Unlike periodical cicadas, which undergo extended dormancy periods of 13 or 17 years, annual cicadas complete their life cycle within one to five years. Annual and periodical cicadas also differ in appearance. The large dog day cicadas are roughly 1 to 2 inches in length, primarily green, with intricate black patterning on their bodies. Several smaller species occur in Louisiana, including the little mesquite cicada (*Pacarina puella*), a tiny, delicate species barely 3/4 of an inch in length. In total 17 species of Louisiana native cicadas are documented in the Louisiana State Arthropod Museum, with seven additional species recorded on iNaturalist.org. The wing venation and eyes of annual cicadas are black or

gray. Periodical cicadas are around an inch in length, primarily black and do not have patterning on their bodies. The wing veins of periodical cicadas are golden yellow, and their eyes are red. While periodical cicadas emerge in synchronized broods, annual cicadas follow an asynchronous emergence pattern, with different populations emerging at varying times throughout the summer months. This asynchronous emergence allows annual cicadas to avoid competition for resources and predators that may target them during emergence in their vulnerable nymphal stage. Though their populations are less dense, annual cicada emergences begin during late spring and extend throughout the summer.

If you are inclined, please visit the parishes in the northern part of the state and be alert for possible periodical cicada emergence during spring 2024 (approximately early May to early June). If you are lucky enough to witness this remarkable natural phenomenon, please take photos as positive documentation of the continued existence of Brood XIX in Louisiana.



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