

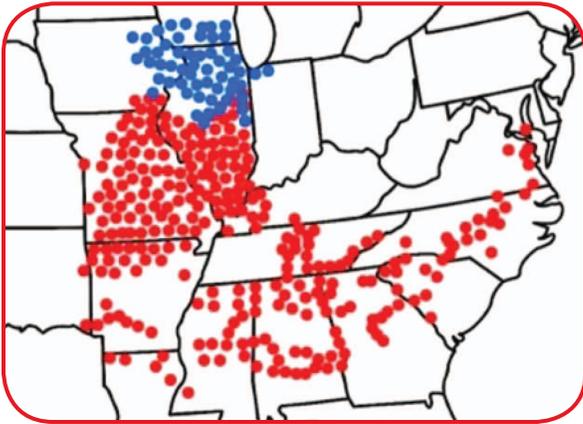
Cicadas to Emerge by the Gazillions in Fourteen States in 2024

Are Your Cooling Systems and Air Handling Units Protected?

Ever wonder about that loud buzzing sound in the trees during summer days? Its source is a widely heard, but rarely seen insect – the cicada. The ones you hear every summer are “non-periodical,” which means they appear annually, while requiring several years to fully develop to adulthood. **“Periodic cicadas” are different; they emerge as adults that can overwhelm everything in their path – cooling towers, condenser coils, fan units and air-handling units.**



You can identify periodic cicadas by the combination of large black bodies, reddish eyes and reddish veins in their wings.



Blue Dots = Brood XIII Red Dots = Brood XIX
Source: Cicada Safari

Periodic cicadas emerge in 13 and 17-year intervals in large and generally non-overlapping geographic regions from the mid-central US, to the mid-Atlantic states, and up through the Northeast. Because of the separation in time and place, their various widespread populations are called “broods.” Fifteen active broods are now recognized in the US, and **in 2024 Broods XIII & XIX will emerge simultaneously resulting in the single largest emergence since 1803.** States that will be affected in 2024 are Wisconsin, Illinois, Indiana, Missouri, Arkansas, Louisiana, Mississippi, Tennessee, Alabama, Georgia, South Carolina, North Carolina, Virginia and Maryland.

If your business is in an affected region, you need to plan now how to deal with this potential problem which can have a drastic impact on your operation if you wait until it is too late.

Cicadas swarming RTU exhaust fan



Is Your System at Risk? The density of the emerging periodic cicada population is enormous and **can exceed one-million per square acre.** If your facility is in a brood-infested region, and your cooling towers, evaporative condensers and air-handling units are near naturally forested areas or surrounded by trees, your system is at significant risk. **These otherwise harmless insects can be sucked into your equipment while flying past the draft zone of the intake opening.** Equipment location will also determine your company’s risk. Units located on rooftops and away from trees or in the middle of a paved area are less likely to encounter cicada-related problems than those near the ground or near trees or woody plants.



Cicadas collecting in a cooling tower basin



The Worst That Can Happen

If your facility is in an affected area, and you do not anticipate emergence of the cicadas, it can impact your annual maintenance budget and have a dramatic economic impact on your business.

As one facility engineer at a Cincinnati manufacturing plant put it, *“The last time the periodic cicadas emerged, we had to clean our cooling tower strainers and blow-down valves several times per day. If we didn’t clean the strainers, we’d lose our chiller due to high-pressure conditions, and it would shut down our cooling system. We had to maintain our cooling towers around-the-clock just to keep our systems operational.”*



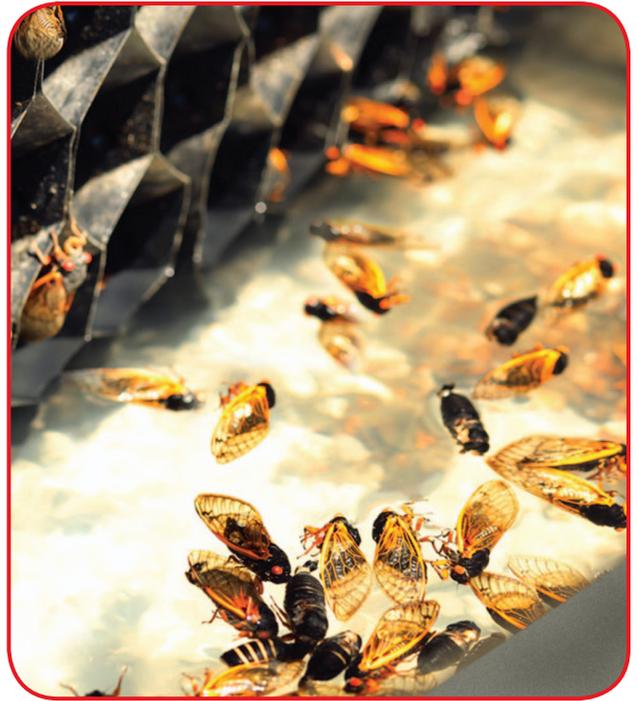
Cicada infiltration of Cooling towers and Evaporative Condensers can...

- Clog cooling tower fill, reducing airflow
- Overwhelm sump water, increasing organic content and bacteria count
- Increase water treatment chemical consumption and associated cost
- Clog strainers, reducing flow rate and chiller efficiency
- Clog open solenoid blowdown valves — increasing makeup water and water treatment chemical consumption
- Clog heat exchangers, reducing flow rate and heat transfer efficiency
- Cause production downtime, lost productivity, missed shipments and higher maintenance costs

Cicada infiltration of Air-handling units can...

- Clog internal filters, increasing the number of filter changes
- Load intake air ducts with insect debris
- Reduce internal air quality
- Cause excessive service and maintenance costs

In short, periodic cicadas can cause real havoc to businesses that are not prepared! Anticipation and prevention are key to combatting cicada infestation. **Determine if you will be affected and develop an action plan NOW.** A preventive approach is usually more cost-effective than simply reacting when the problem occurs; it will not only save you money, but will also prevent down-time and lost productivity.



Cicadas can clog basin strainers and fill on a daily basis.



Cicadas entering motor vents cause fan motor damage.



Dead cicadas under a chiller create a stinky mess.

How to Prevent Serious Trouble

Determine whether or not you're in an affected region. **If YES, identify your most critical cooling and air movement systems and consider reserving extra maintenance dollars for those systems.** Systems that support production or other revenue-generating operations are key. It's imperative to anticipate extra maintenance costs: service, increased water treatment chemical consumption, frequent filter changes, overtime and **investment in preventive solutions.**

Research your alternatives; water filtration and air-intake filtration are two good options. Water filtration (side-stream filtration) will help manage insects and other airborne debris after they enter the cooling tower, but only manages what actually reaches the basin water — it won't protect the fill.

Air-intake filtration systems ("Cottonwood Filter Screens") are typically your best solution because they're engineered for HVAC high volume/velocity air movement and mount to the outside of the cooling tower or any other air-intake openings. (AHUs, RTUs, Intake Louvers, Dry Coolers, etc.) These screens stop the cicadas and other airborne debris at *point of entry*, thus protecting the entire cooling and air movement system.



Cottonwood filter screens effectively stop small insects.



Keep bugs and debris out of cooling tower Intakes.

Take Action NOW

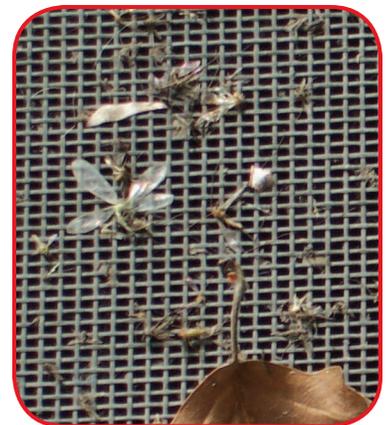
Don't wait to get your solution ordered, or you may not be able to get the filter screens in time to protect your equipment. NEVER use window screen, shade screen, or other media/mesh purchased from a hardware store to cover system air-intake openings. These materials are NOT designed to allow proper airflow and can actually damage equipment by drastically restricting airflow and increasing static pressure. Cottonwood Filter Screens engineered for use on mechanical cooling equipment typically have less than 0.1" w.g. of static pressure and will provide excellent long-term benefits well after the cicadas have gone.



Cottonwood filter/bug Screens are compatible with all RTU and chillers.



Compatible with all cooling towers and evaporative chillers.



Stop insects and debris down to the size of a mosquito.

Contact Air Solution Company for additional information.

Call 1-800-819-2869

or visit www.airsolutioncompany.com.

About Cicadas

Cicadas are approximately the size of your thumb, measuring about 0.5" wide and 1.5-2" long with a 3" wingspan. Three species usually emerge mixed together in the same area.



Their songs are quite different, and they vary in average size.

They are expected to emerge from the soil in early May and June and are active as adults for 30 to 50 days. During their short time above ground, they feed day and night by sucking the sap of trees and other woody plants. They do not chew or bite leaves or people. The songs of males (only the males sing) promote mating. After mating, females lay hundreds of eggs in woody tissue by making slits in the bark of pencil-sized twigs. Shortly after mating and laying eggs, the adult cicadas die, leaving massive numbers of carcasses everywhere.

In about nine weeks, the eggs hatch and pale, ant-sized baby cicadas drop from the twigs to the ground, where they burrow underground and remain there for 17 years, sucking sap from the plant roots as they await their emergence.



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7,323,028 B2 • 7,842,116 B2 • 7,416,577 B2 • 08,726,954 B2 • 9,561,456 • 9,827,521 B2 • 9,827,522 B2 • 10,040,149 B2 • GB2510786B • Other Patents Pending