

Community **IPM**

Don't Let Carpenter Ants Renovate Your Home!

Carpenter ants are the most common ant pest found in the Northeastern United States. They cause structural damage when they excavate wood for nest sites. Unlike termites, carpenter ants do not eat wood, but rather scavenge on dead insects and collect sugary secretions ("honeydew") produced by other insects such as aphids. Carpenter ants are a nuisance pest when workers are spotted inside foraging for food and when winged swarmers are found inside.

Did You Know ... ?

- **Wood is Not-So-Tasty:** Carpenter ants tunnel through moisture-damaged wood and spit out wood shavings. The resulting waste piles look like sawdust and often include ant body parts.
- **A Numbers Game:** There are approximately 24 species of carpenter ants that are pests in North America; nine of these species are present in the northeast.
- **Hanging Out:** Carpenter ant larvae are clumped together by J-shaped hairs, and cling like Velcro to the roof of their galleries.

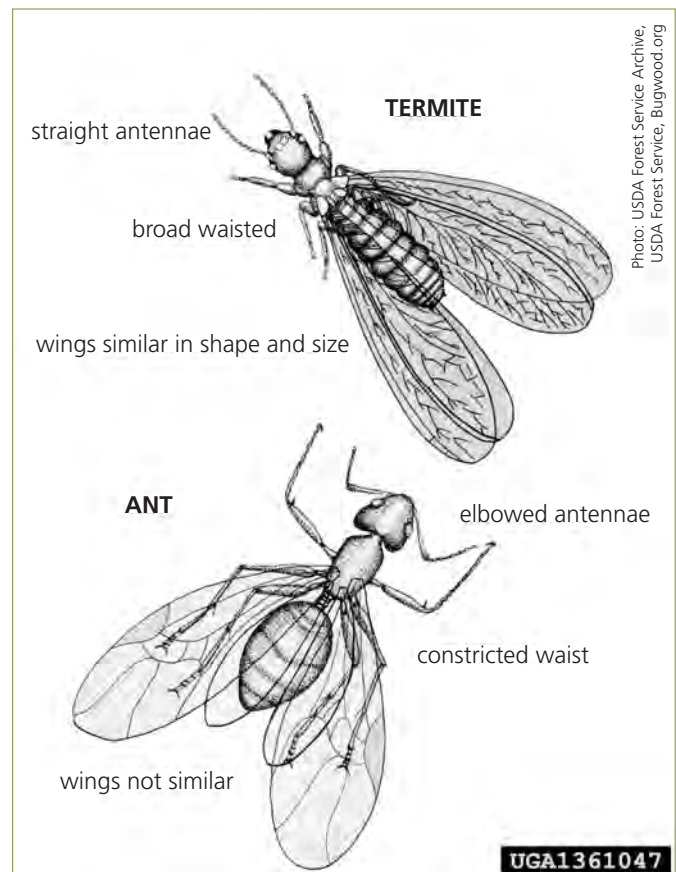
Identification

Carpenter ants from a single colony are polymorphic, meaning that the workers vary in size from small (1/4 inch) to large (1/2 inch), with queens measuring up to 3/4 inch. Smaller workers may resemble other small species of ants, and different carpenter ant species can vary in color from all black, to black and brown or red, yielding a two-toned appearance. Proper identification of your pest species is critical, especially before attempting any form of pest management. Correct identification will help determine the conditions favoring a pest population, and what steps are needed to remove those conditions.

Carpenter ant workers can be found on the floor, on counters and shelves when foraging for food inside homes. On warm days, winged ants may swarm indoors and can be observed near a window attempting to escape towards the light. Termites also swarm indoors, but can be differentiated from ants because termites tend to lose their wings and leave behind a pile of silvery flakes. Ants also have bent antennae and three distinct body parts, whereas termites have straight antennae and two apparent body parts.



Black Carpenter Ant, *Camponotus pennsylvanicus*



Biology

In nature, carpenter ants live primarily in forested areas, where they nest in the dead wood of standing trees, fallen logs, and in stumps. One colony may be composed of the “parent” nest where the queen lays eggs and is cared for by many workers, and several “satellite” nests where additional larvae, pupae and workers live. Carpenter ants play an important ecological role as decomposers that convert wood back into soil. The workers are also significant predators of many small invertebrates including forest pest species, and maintain mutualistic relationships with aphids and other insects that make them highly beneficial organisms. Unfortunately, their wood-dwelling habits pre-adapt them for living in human structures. Only in these situations do carpenter ants become significant pests that require control.

New carpenter ant colonies are formed after the winged reproductive males and females mate in late summer, and the female finds a suitable location to begin egg laying. Nests are built by excavating wood that is either decayed or damaged by other insects. Workers hollow out galleries along the natural grain of the wood, yielding smooth, “sandpapered” walls that are generally free of debris. The coarse shreds of wood, often called frass, are ejected and form piles of sawdust. Pieces of dead carpenter ants and other insect fragments may be mixed with the debris, yielding a characteristic appearance that separates carpenter ant frass from that of other wood-destroying pests.

Carpenter ants forage predominately at night, and use pheromone trails and other cues to navigate their environment. During the spring and early summer when newly produced larvae are hungry, carpenter ants may also forage during the day to acquire additional resources. During the first year of colony development, almost all of the workers are small, minor workers. As colony sizes get larger, both minor and major workers are produced and will forage equally. Colonies are said to be mature when winged (alate) or reproductive ants are formed. This can take between three and five years, and the colony size at that time may be around 3,000 workers. Nests can also split to accommodate different needs of colony members. The parent nest is characterized by high humidity to support the growth of eggs and young larvae, contains the queen, and is usually found outdoors. Satellite nests, on the other hand, do not have any reproducing ants and can be found in dry locations such as attic rafters, bay windows, fascia boards, floor joists, wall voids, hollow doors or columns, or in a ceiling void next to a heat source.



Black Carpenter Ant closeup



Black Carpenter Ant damage

Management

Nest Location

The most important step in managing carpenter ants is to identify the location of parent and satellite nests. This is most easily accomplished by following worker ants on their return trip to the nest. In an area where you have seen ants, place some honey, jam or even a small slice of sandwich meat (wax paper can be used to avoid damage to countertops). Any ants that remove food items will return to the nest, and can be followed. This may be best done at night with a flashlight. Consider using a diagram to record where ants were observed and potential nest sites.

If you are having trouble locating the nest, consider these steps:

- Search for foraging ants by trees and other vegetation close to the home. Returning ants take a more direct route than foraging ants, and their abdomens are often expanded with honeydew.
- Carpenter ants are nocturnal; consider conducting inspections at night.
- Listen for chewing sounds. Carpenter ants make a scraping noise as they excavate wood for their galleries.
- Look for wood debris or sawdust and ant parts that are ejected from the nest.

Conducive Conditions

Carpenter ants can be considered an indicator of structural problems based on their affinity to nest in wood damaged by moisture. Finding carpenter ants in your home requires a thorough inspection to identify the conditions that favor this pest. Here are a few things to look for:

- Tree branches in contact with the building provide access routes for ants, and also increase the humidity due to plant transpiration of water. Landscape plants and branches should be six feet or more from the side of a building.
- Clogged gutters, damaged flashing (chimney, gutter), weathered sealant (skylight, door frame), peeling paint, direct contact of items with the building, and connections between rooflines are outdoor situations that can lead to moisture problems, and consequently ants.
- Moisture-damaged roofs are not always evident; however carpenter ants can create nests beneath roof tiles in wet roofing boards. They gain access from the edge, where damage first occurs.
- Indoors, pipe leaks and improper seals associated with dishwashers, sinks and bathtubs can produce damp wood that is suitable for carpenter ants to nest.
- Parent nests occur outdoors in rotting portions of trees, dead stumps, and in wood landscaping ties. Consider removing wood away from a building and avoid direct contact of structural wood with soil.



Black Carpenter Ants following a trail on a building

Do It Yourself

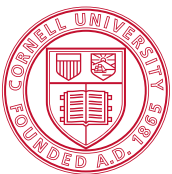
Once you have identified nest locations and/or conditions that favor the presence of carpenter ants, the next steps are to eliminate the ants and address the conditions with structural repairs. Consider the following steps:

- Remove damaged wood, including the ant colony where possible, and replace with pressure treated wood. Discard the ant infested wood off site. To avoid re-infestation, it is critical that physical repairs are made so that new wood is not damaged. Note that carpenter ants may relocate to a new area if the nest is disturbed greatly or if moisture levels change dramatically.
- Use caulking or sealants to eliminate entry points around door and window frames, utility openings, and other spaces that allow ants to enter the building.
- Grade soil away from the house to avoid direct contact with structural wood.
- Clean gutters regularly to remove leaves and debris that can clog the downspout. Water from the downspout should be directed away from the house to prevent moisture from collecting at the foundation.
- Ant colonies can be eliminated with baits labeled specifically for carpenter ant control. Fresh sugary baits that are applied to ant trails are most effective, and are preferred to contact insecticides that kill only some foraging individuals.
- Correcting structural problems that allow moisture to dampen wood represents a permanent solution to carpenter ant problems.

Summary

Carpenter ants are structural pests that nest in rotten or damaged wood. While ants in the kitchen may be a nuisance to homeowners, wood damage caused by ants can lead to structural problems. By following the steps of an integrated pest management program, you can keep ants out of your living or working space for good. Remember to identify the pest species, inspect to locate the parent and satellite colonies, eliminate and repair moisture conditions that favor the pest, remove food sources and use pesticides sparingly.

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Program

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