

# CARPENTER ANT UPDATE

More than 24 different species of carpenter ants are found in the U.S. Here's an update on their biology and control. By Laurel D. Hansen

**T**houghts of spring in many parts of the country have turned to thoughts of carpenter ants for pest management professionals. These ants, particularly the winged forms, have started an influx of telephone requests as clients demand their demise. If winged forms have overwintered in the structure, males begin crawling out of nesting sites as early as February and females make their appearance later in the spring just before the mating flight. These winged forms emerge in heated structures before their outside counterparts as the flights are synchronized by a combination of photoperiod, temperature, sunlight hours and recent rainfall. Although there is usually one large mating flight, several mating flights may occur in some years.

After the nuptial flights, males die and the females lose their wings and look for nesting sites. The appearance of these large wingless queens as they crawl around in garden areas and on decks is also alarming to homeowners. Carpenter ant activity for the remainder of the season consists of workers moving between foraging sites and nests or the moving of a satellite colony into a structure.

**DIFFERENT SPECIES.** More than 30 different species of ants are found in and around structures in North America. Usually carpenter ants are considered to be one "kind" of ant; however, it is important to note that across the United States and Canada, there are 24 different species of carpenter ants. Each of these species has unique differences in appearance, biology and behavior but all will nest in wood and are considered either structural or nuisance pests due to their choice of nesting sites. The most important species of carpenter ants by area include the following:

Western North America (west of the Great Plains):

- *Camponotus modoc*
- *C. vicinus*
- *C. esigi*



## CARPENTER ANT Q&amp;A

The following information — which has been excerpted from *ANThology: The Best of Stoy Hedges* — examines carpenter ant control by answering common questions pest management professionals may have concerning carpenter ants and their control.

**Q:** Do carpenter ants only nest in wet or moisture-damaged wood?

**A:** A main (or parent) colony of carpenter ants generally needs moist wood to survive. Inside buildings, they infest wood moistened by improper drainage, poor ventilation or leaks. But satellite colonies may infest wood that is relatively dry. A colony may also continue to reside in previously wet wood even after a leak has been repaired. Colonies can survive in relatively dry wood near an area where water is readily available, such as a gutter or a leak.

**Q:** How many satellite colonies can be

present in a typical infestation of carpenter ants?

**A:** Research concerning carpenter ant satellite colonies has primarily been completed on the two major species of carpenter ants. The western species, *C. modoc*, may have as many as 20 or more satellite colonies associated with a single main colony. The eastern species, *C. pennsylvanicus*, has fewer satellite colonies, usually no more than 10 or 12. In most situations the number of satellite colonies present is much fewer than these maximum numbers.

To order *ANThology: The Best of Stoy Hedges*, contact Lori Skala at 800/456-0707 or visit [www.pctonline.com/store](http://www.pctonline.com/store).



Eastern North America (east of the Great Plains):

- *C. pennsylvanicus*
- *C. noveboracensis*
- *C. nearcticus*

In addition to the above, *C. floridanus* is an important species in the southeastern United States. Another carpenter ant that occurs across the northern United States, including Alaska, southern Canada and northern Europe, is *C. herculeanus*.

Older, well-established colonies will include a main colony containing the queen, brood, winged forms and workers plus additional satellite colonies containing workers, older brood and often winged males and females before the next mating flights. The number of satellite colonies will vary with the larger number found in northern latitudes. Main colonies are often found outside the structure where young brood can be reared within a nest with high humidity. Satellite colonies may be found either outside or inside structures and because these ants do not require high moisture levels, they may be found in extremely dry and warm conditions such as under insulation in subfloors or attics.

**CARPENTER ANT MANAGEMENT.** Here are some tips to help with carpenter ant inspection, assessment, treatment and evaluation.

**Inspection and assessment.** Inspection provides information to assess the infestation and to determine treatment protocols. The client or homeowner can often provide valuable information in this process.

**Determine how long ants have been present and in what form?** If ants have been present in the structure for more than one year, if ants are seen during the winter months or if winged ants are present before swarming activity, the pest management professional can assume that either satellite(s) or a main colony is established in the structure. This may require a complete treatment.

If ants are seen only on the exterior and if ants are seen only during the foraging season, the colony is probably located outside the structure. A thorough inspection of the exterior will determine possible outside nesting sites. Location of trails during the foraging season will also help determine nesting sites and the foraging arena. A perimeter spray to protect the structure may be sufficient to keep ants from establishing satellite colonies within the structure.

**Has the structure had any water leaks?** A list of previous water damage should be checked with the homeowner. These might include:

1. Water leaks from appliances such as dishwashers, washing machines or hot water tanks.
2. Plumbing leaks from showers, sinks, pipes or drains.

3. Structural leaks from gutters, the roof, chimneys, windows, skylights or doors.

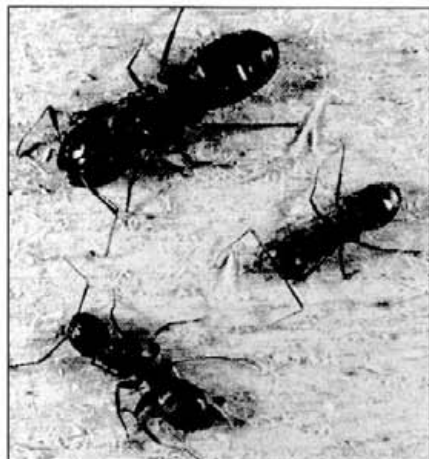
4. Drainage problems, such as water in basements or crawlspaces.

An inspection of the structure should note any stained or water damage to floors, subfloors, roofs, ceilings and walls. Inspections should also look for any wood in contact with soil such as siding, deck and porch pillars or timbers used in landscaping. Wood that has been damaged by water is easier for ants to excavate and is often selected by ants for nesting sites.

**Do trees or other landscaping plants contact the structure?** Plants touching either the sides of the house, roof or deck not only add moisture to the structure, but provide access from the structure by foraging ants. These plants may also be foraging sites for ants. Inquire about the removal of trees and stumps. Wood debris left in the ground after tree removal provides ideal nesting sites. Also inspect wires that connect to the structure, particularly if these wires come into contact with tree limbs.

**Do fences make contact with the structure?** Ants will use fences, particularly wooden fences, to arrive at foraging sites, especially if fences are in contact with the sides of the structure. Also inspect for stacks of firewood, lumber or wood debris near the structure. If these stacks are left for more than a year, they may become sites of carpenter ant activity.

**TREATMENT AND EVALUATION.** The management of carpenter ants has many similarities to management of other ant species, but is often more difficult because of the number of satellite colo-



Three different sizes of *Camponotus modoc* workers.

nics, diversity of carpenter ant species and the diversity of foraging activities.

A complete and accurate assessment of the infestation will help determine management options for carpenter ants at each site. A "menu" of options allows the homeowner to become involved in management decisions (see box at right). This also allows for a range of pricing and a range of guarantees.

The most common practice for a full treatment includes placing chemical in wall voids, attic areas and on sill plates in crawlspaces. A perimeter spray should also be part of this treatment. Chemical, usually as a dust formulation, can be injected into walls by removing electrical switch plates or by drilling into wall voids where ants are active and injecting small amounts of dust. Working around electrical outlets requires caution or turning off the power during the treatment. A perimeter spray includes spraying the sill plate in the crawlspace as well as the exterior perimeter. Treatment in the crawlspace may require loosening the insulation to expose the sill plate. Proper spray placement on the exterior involves directing

## CARPENTER ANT TREATING OPTIONS

1. Full treatment with wall injections and perimeter spray
2. Spot or partial treatment
3. Baiting
4. Protective treatment
5. Exclusion
6. Combinations of the above



An example of a proper spray application beneath the lower edge of siding.

the spray under the lower edge of the siding and around window and door frames. Trails leading away from the structure to foraging sites or to the main colony should also be sprayed. Synthetic pyrethroids provide residual activity against carpenter ants in a perimeter spray application, as well as for void treatments.

A spot or partial treatment may be an option in the case of a new infestation. Satellite colonies move into structures during the month of July in the Pacific Northwest. It is helpful to determine when satellites are established in your area. If a colony is in the process of establishing a satellite, a partial treatment to the structure may be sufficient. The homeowner could be offered this option with a limited guarantee.

Many clients request a treatment without the use of chemicals and will accept the application of baits, even though chemicals are involved. Many homeowners view a baiting program as being more environmentally friendly. It is important that baiting programs are properly presented to homeowners. Baiting may require a longer time and more frequent visits. Continual evaluation of a baiting program is essential and the homeowner may become an active participant by providing observations and evaluation.

Development of a good baiting program for carpenter ants has been difficult for a number of reasons. Their food preferences are diversified because the ants feed on a variety of carbohydrate and protein sources. Protein is essential at certain times for egg production and brood development; however, carbohydrates are required throughout the foraging season. These differences not only occur between different species of carpenter ants but between colonies of the same species in the same locality. Once a colony has established a foraging site, it is difficult to entice the ants to switch from their foraging arena to a bait. Some of these natural foraging sites may need to be eliminated before a baiting

program can be initiated.

At potential baiting sites, offer several types of baits that are marketed for carpenter ants. Different baits are available in solids, gels and liquids. Carpenter ant management has been achieved with all of these formulations and all have been effective at some sites. The challenge with using baits is to determine which bait and which formulation the ants will accept and which bait will be more attractive than their established foraging source.

Obviously, baiting protocols are more effective during the foraging season. During the dormant season (winter), carpenter ants do not normally feed because they live on stored body reserves. Some carpenter ant activity may occur within a structure over winter because of the heating conditions. These ants may be found around water in bathroom and kitchen areas. Though these ants are found on fruit scraps, in empty soda cans or sweets, baiting has had limited success until after the ants become more active during the foraging season.

In many areas where homes are built



The author is shown with a *Camponotus modoc* infestation in railroad ties. Notice the debris between the ties.

in forested areas, carpenter ants are part of the resident ecological community. It is often difficult to prevent main colonies in standing trees from establishing satellite colonies within these structures. To protect homes from infestation by satellite colonies in nearby trees, it may be necessary to apply an annual perimeter spray. Also, in urban areas, a home may require a protective spray when the main colony is located in a standing tree on the homeowner's or on neighboring property.

Exclusion may be a possibility when a tree branch or other landscaping comes

## SPRAY AND BAIT CONSIDERATIONS

The natural foraging arena for carpenter ants is outside, usually in trees, where they feed on honeydew from aphids, caterpillars and other insects. In combining spray applications with a baiting program, all of the following must be considered:

1. Spray carpenter ant trails to discourage their use.
2. Spray bases or trunks of trees used as foraging sites.
3. Do not spray near baits because ants need to be encouraged to frequent baiting sites and synthetic pyrethroid sprays will repel the ants.
4. Do not apply a perimeter spray because ants need to exit the structure to forage at baiting sites.

into contact with a structure and provides an avenue that was not formerly present. Trimming branches in contact with the roof or side of the structure may eliminate the sudden appearance of ants within the structure.

**CONCLUSION.** Goals for pest management professionals in carpenter ant management include knowing the species of

ants in your area and gathering information on their biology and behavior — particularly timing of foraging, swarming and movement of satellite colonies. For your clients, provide a menu of choices for carpenter ant management with a variety of pricing, chemicals, formulations and guarantees. The rapport you establish with your clients will demonstrate your flexibility to provide management options to fit

their budget and their management needs. Become partners with your clients to meet the challenges presented in carpenter ant management. ❁

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