

Carpenter Ants in Alaska

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Additional information on this insect can be obtained from your local Alaska Cooperative Extension office, Alaska State Forestry office, or from:

Forest Health Protection

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Cover Photo: Carpenter ant gallery in the rotted base of a tree. (Photo: Ed Holsten, USDA Forest Service)

Carpenter ants, *Camponotus* spp.

(Hymenoptera: Formicidae), are among the largest members of the ant family in the United States. Under natural conditions, nests can be found in rotting logs, stumps, or occasionally in damp heartwood of live trees. However, they may also construct their nests in house timbers or other manmade structures where wood becomes moist. Occasionally, they are found tunneling into styrofoam insulation. Well established ant colonies may cause structural damage in homes, resulting in the need for extensive repairs. Carpenter ants are also a nuisance when invading homes, crawling over kitchen surfaces and getting into food. *Camponotus* spp. (Figure 1) are not known to occur in Southeast Alaska, however ants in the genus *Lasius* behave similarly to carpenter ants and are found throughout Alaska.

Carpenter ants may be active indoors during spring and summer while foraging for their favored foods including sweet or fatty fare such as syrup or honey. If these are not available, the ants will feed on dead or living insects or other types of organic material. If more than 20 ants are found in a home, especially in the winter months, the infestation is most likely within the home and needs to be treated.

Description and Life History

Carpenter ants are social insects and live in colonies made up of three castes: (1) "swarmers", winged females, up to 3/4-inch long, and much smaller winged males; (2) a wingless queen, which never leaves the nest and spends her entire life laying eggs; and (3) workers, of which there are major workers, about 1/2-inch long, that guard the colony and forage for food, and minor workers, 1/4-

inch long, that care for the queen, eggs, and developing larvae.

Queens are generally black while workers will either have some red or brown on their legs or body. Carpenter ants have a smoothly rounded arched shape to the top of the thorax, elbowed antennae, and constricted waists with a single node between the thorax and abdomen. Workers have a large head and small thorax, while swarmers have a smaller head and larger thorax to accommodate flight muscles. Swarmer wings are long, with the forewing longer than the hindwing, clear or brownish with prominent veins (Figure 3).

Swarmers emerge from mature colonies usually in May and June. Males die after mating but the newly fertilized females, which are mated for life, either reestablish an old colony or establish a new satellite colony in a small cavity in down logs or stumps or in deteriorating moist wood. The new queen loses her wings and lays 15 to 20 eggs over the next 15 days. Eggs are about 1/8-inch long, oval, and cream colored.



Figure 1. *Camponotus* spp. (Photo: Derek Sikes, University of Alaska Museum)

Eggs hatch after 24 days and the larvae emerge. Larvae are legless and grub-like with their size varying according to their ultimate adult form (i.e. swarmer, worker, etc.). Larvae pupate in tough, tan-colored, silken cocoons often erroneously referred to as “ant eggs” (Figure 2). The larval stage is usually completed in 21 days and the pupal stage completed 21 days later. However, cold winter weather may delay the life cycle.

All eggs produced in the first three years become sterile female workers. These workers assume the duties of collecting food, feeding the queen, excavating galleries to enlarge the nest, and tending the eggs, larvae, and pupae of the next generation. Workers are able to forage for food up to 200 yards from the nest and although they do not sting, their bite can be painful. Colonies mature and begin to produce swarmers in three to six years. A mature colony has 2,000 to 4,000 individuals and will produce 200 to 400 winged swarmers each year. There is normally only one functioning wingless queen in a colony, and she generally lives and produces young for up to 15 years.

Damage Caused

Carpenter ants do not eat wood, but excavate galleries to rear their young. They prefer moist (but not wet), deteriorating wood that may be found in existing cavities or void areas in structures. Nests are commonly found in porch pillars, roofs, windowsills, and structural wood in contact with soil. Workers cut galleries in the wood, often extending into adjacent sound wood, expanding the nest size for the enlarging colony. Galleries are irregular, usually excavated with the wood grain (Figure 4a); the walls are smooth and clean with shredded wood fragments (frass) deposited outside of the nest. The clean galleries of carpenter ants are easily distinguished from mud-lined galleries created



Figure 2: *Lasius* sp. tending to a pupa (Photo: Derek Sikes, University of Alaska Museum)

by termites. At present time, termites are not known to exist in Alaska.

All kinds of houses, from the newest to the oldest, may become infested. In cities, carpenter ants are usually found in wooded areas, but may also be found in crowded residential districts as well.

Guidelines for Reducing Damage

The most obvious sign of infestation is the presence of ants inside the house, especially in winter. Carpenter ants may remain active year-round in heated spaces; otherwise they become inactive in the winter. They do most of their foraging at night. Other indications of infestation include piles of the sawdust-like frass expelled from small cracks or openings found in dark closets, under porches, along sills, or at the base of infested timbers (Figure 4b). Carpenter ant frass can be distinguished from regular sawdust by the presence of fragments of ants and other insects mixed with the wood debris.

Prevention is the best control method; measures to prevent structural timbers from becoming wet may protect a house from infestation. Building

sites and adjacent areas should be cleared of stumps and partially decayed logs. If possible, buildings should be positioned on concrete or masonry foundations or on treated timbers. Lumber, firewood, and debris should not be stored next to the house or in basements and crawl spaces. Wood that is stored in or near the house should be kept dry and, if possible, elevated to allow air circulation. Food, including pet food, should be kept in sealed containers.

The most important factor in carpenter ant control is locating the nest. Nest can be located by following foraging worker ants back to their nest, generally between sunset and midnight. Carpenter ants can travel over 100 feet from their nest to feeding sites. Once the nest is found, control may be easy. Sometimes more than one colony is present in a structure or surrounding grounds, so a thorough inspection is very important. Once the nest is located, infested wood can be removed or chemically treated and the causes of moisture damage can be corrected.



Figure 3: Winged female and a much smaller winged male carpenter ant. (Photo: Whitney Cranshaw, Colorado State University, Bugwood.org)

Check with your local Cooperative Extension Service office for insecticides that are currently registered for carpenter ant control.



Figure 4. Left: Advanced carpenter ant damage. **Right:** Frass piles are evidence of carpenter ants. (Photos: Ed Holsten and Richard Warner, USDA Forest Service)

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