

# Community IPM

## Get Rid of Carpenter Bees? Yes, Please!

Carpenter bees are common spring and summer insects in the eastern United States. They first come to attention when males “buzz” or “dive bomb” people passing by and females are seen excavating holes in wooden structures. Like carpenter ants, carpenter bees do not eat wood, but rather use the substrate for nesting. Females excavate tunnels parallel to the grain of the wood to provide a safe place for egg laying. Carpenter bees are solitary insects that do not form colonies, but many females may nest in the same area. They are important pollinators, but can become a nuisance pest of structures.

### Identification

The eastern carpenter bee is similar in appearance to bumble bees and is characterized by a black and yellow body. Whereas bumble bees have fuzzy hairs on their entire body, carpenter bees have a shiny, black abdomen (rear end) without hair. Carpenter bees are robust insects, measuring  $\frac{3}{4}$  to one inch long.

Carpenter bee males can be distinguished from females by a yellow patch on their face and their aggressive behavior in the spring and summer. They can be observed hovering near a female as she excavates a nest for egg laying, and will chase off other males that approach the nest. Males will also mock-attack humans and other potential threats that approach the nest. While they appear threatening, males are not dangerous because they possess no stinger. Females carpenter bees are reluctant to sting, but will do so if threatened or trapped.

Carpenter bees can also be identified by the damage they produce. Females create a smooth, round opening  $\frac{3}{8}$  to  $\frac{1}{2}$  of an inch in diameter, typically on the underside of bare wood. Carpenter bee females exhibit site fidelity, and several holes may be found in an area when successive generations of bees return to nest. The frass below these holes will often contain small quantities of yellow pellets.

### Biology

Male and female carpenter bees overwinter inside their wooden burrows and emerge in the spring to mate. A female will either repair an existing tunnel or excavate a new tunnel to lay her eggs. Galleries vary in length, but on average measure four to six inches long. Because some carpenter bees return to the same site each year, tunnels can extend to a length of up to ten feet when used by several bees.



Eastern Carpenter Bee: *Xylocopa virginica* foraging on pollen.. Photo: G. Alpert.



Carpenter bees (right) differ from bumble bees by having a smooth, hairless abdomen. Photo: M. Frye.



Carpenter bee males (left) have a yellow patch on their face that distinguishes them from females. Photo: M. Frye.

Starting at the back of the gallery, females will lay one egg at a time in cells separated by chewed wood-pulp walls. “Bee bread,” a mixture of pollen and regurgitated nectar, is placed in each cell to nourish developing larvae. Interestingly, the last egg laid at the front of the tunnel is the first egg to hatch. Hatching in reverse order of deposition, but in order of proximity to the nest exit prevents injury to bees at the front of the tunnel. After larval development and pupation, new adult carpenter bees emerge in the fall.

In addition to the potential structural damage caused by carpenter bee tunneling, empty galleries can invite secondary pests such as beetles, moths and scavengers, and even fungal rot when moisture enters openings.

## Management

### Conducive Conditions

Carpenter bee females prefer to build their nests in soft wood that lacks a coating of paint, but are capable of nesting in many kinds of wood protected with various coatings. They will often nest on the under-side of eaves, against wood siding, in wooden fences and even hardwood handles of tools.

Coating all exposed surfaces of wood with paint or stains is recommended to discourage bees from drilling into wood. Small sections of wooden dowel or wood-fill can be placed in nest entrances to prevent future nesting. If holes are blocked after the female exits, she will drill a new hole nearby. Alternatively, a trap piece of wood can also be used to deter carpenter bees from

nesting in structural wood. Place an inexpensive piece of unpainted wood near known nest sites, making sure that this trap wood is oriented in the same direction as structural wood. Bees that nest in this wood will not cause damage to the home, and can be eliminated by carefully removing, destroying, or treating the wood.

### Trapping

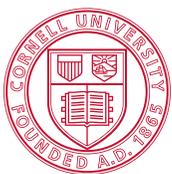
Several designs exist for homemade carpenter bee traps (for example, [www.wikihow.com/Build-a-Carpenter-Bee-Trap](http://www.wikihow.com/Build-a-Carpenter-Bee-Trap)). These traps work by providing carpenter bees with an “existing” nest opening (a hole drilled into wood at an upward angle). When bees attempt to exit the trap, they enter a clear vessel (glass or plastic).

Caution is recommended for “do it yourself” treatments that involve a ladder, especially for nests found in the wood of roof eaves. A professional pest control operator with experience in carpenter bee elimination is a great resource for difficult to access carpenter bee nests.



Female carpenter bee excavating a burrow in a wooden flagpole. Photo: M. Frye.

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