

# Community IPM

## Paper Wasps: Friend or Foe?

Paper wasps are social, stinging insects that build open-comb nests. These nests are often observed on the protected undersides of natural or man-made overhangs. Soft-bodied insects, nectar and honeydew are important food sources for paper wasps. These insects can be a public health concern when they nest near human activity because of their potent sting.

### Identification

Paper wasps are named for their open, comb-like nests constructed of a paper-like material. These nests differ from those created by aerial yellow jackets or bald-faced hornets, which are large, conical and enclosed in a paper envelope that persist on tree limbs through the winter. Paper wasps, measuring  $\frac{3}{4}$  to  $1\frac{1}{4}$  of an inch in length, combine plant fibers with saliva to make water-resistant nests. In flight, these insects dangle their legs below the body, compared to yellow jackets that have much shorter legs tucked tighter. There are 22 species of paper wasps in North America.

One of the two common paper wasp species in the Northeast is the native northern paper wasp, *Polistes fuscatus*. The northern paper wasp is golden brown in color. Larvae are fed insects such as caterpillars, while adults feed on plant nectar. The nest is attached by a thin stalk to the underside of a ledge, and these exposed, aerial nests usually contain a few dozen individuals (up to one hundred in warmer climates). Overwintering queens can sometimes enter buildings in the fall.

The exotic European paper wasp, *Polistes dominulus*, is the second most common paper wasp in the northeast. This wasp was first discovered in the eastern United States in the 1970s, and is considered invasive because it is outcompeting native paper wasps as it expands its range. With yellow and black markings, European paper wasps are sometimes confused with yellow jackets, but they are larger and have folded wings. This species builds large nests behind walls, in attics and in closed spaces that can contain more than one hundred individuals. This wasp is aggressive, and perceives potentially threatening activity from up to 20 feet away.

### Biology

Paper wasp colonies are formed in the spring by mated females that survive the winter. During this time, wasps use their mandibles (jaws) to scrape damp wood on decks, siding or from plants around the home. The fibrous material is combined with saliva to make a nest of only a few cells. Nests may hang like an umbrella or be constructed vertically on a surface. Nests are usually constructed in sunny places. The female will lay eggs, and find food to feed her offspring.



The northern paper wasp, *Polistes fuscatus*. Photo: G. Alpert.



The European paper wasp, *Polistes dominulus*. Photo: G. Alpert.



Vertical European paper wasp nest. Photo: G. Alpert.

Paper wasps are social insects ruled by a queen. In each nest, one queen dominates over all other wasps. As the colony matures in the summer, males and next year's queens are produced. Once these queens are mated in the fall, the males and current queen will die. Queens will overwinter in protected places, sometimes in wall voids of homes, and emerge in the following spring to start the cycle again. For all species except the European paper wasp, nests are made new each year. The European paper wasp, on the other hand, is known to expand nests used in previous years.

Honey bees have barbed stingers and can only sting a victim once before dying. Paper wasps, however, can deliver multiple stings and survive because the stinger is not barbed and, therefore, does not remain in the victim's flesh. In addition to painful venom, sting victims are marked by an alarm pheromone that excites nearby wasps to attack. People with a history of allergies, heart problems, or known sensitivity to stings should be very careful and seek medical advice when stung. Pain from a wasp sting can be reduced by cooling the affected areas with cold water or ice.

## Management

Prevention and early detection are important components of paper wasp management. Wasps from several nests may be attracted to an area based on the presence of food resources, such as other insects. To make an area less attractive, outdoor trash containers that invite insects should be covered, and spilled food items (including grease from a barbecue grill) should be cleaned up immediately. Wasps will not remain in areas where they cannot find food.

In the spring (April to May), a visual inspection of overhangs near your home can identify the start of a nest. Look under eaves, deck railings, play equipment and swing sets, inside fence pipes and protected spaces on other structures around the home. If you observe a paper wasp nest, be sure to keep your distance to avoid being stung, since wasps are aware

of approaching objects and will attack if the nest is threatened. The best time to take action against these nests is at night, when all colony members are present. Knock down the small beginning nests, using caution to not be stung. Red-filtered light can be used to illuminate the area without alerting guards on the nest. A strong jet of water from a garden hose or power washer can be used to knock down a nest. The water will stun wasps, which then need to be killed. By taking down nests in the early part of the season, paper wasps are discouraged from rebuilding and late-season problems will be reduced.

Botanical products that use a foaming agent and have long reach (up to 15 feet) can be helpful to knock down wasps on the nest. Wasps will be temporarily immobilized and can be squished on the ground with proper footwear.

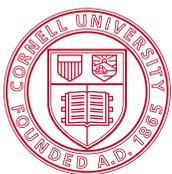
## Summary

Paper wasps feed on a variety of insects, such as caterpillars and other pests that can damage garden or landscape plants. As predators, therefore, paper wasps are an important part of nature. Paper wasp nests that are away from a home can be left alone, while those that pose a threat to human health should be safely removed.



Small nests that are found early in the season can be knocked down. Photo: M. Frye.

Prepared by Gary Alpert, Museum of Comparative Zoology, Harvard University. Updated 2014 by Matt Frye, New York State Integrated Pest Management Program, Cornell University.



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