

PEST ALERT

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Florida Department of Agriculture and Consumer Services Division of Plant Industry

Yellow-Legged Hornet, *Vespa velutina*

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INTRODUCTION

In August 2023, the presence of two live specimens of *Vespa velutina*, known as the yellow-legged hornet (YLH) and formerly Asian hornet, was reported near Savannah, Georgia (<https://agr.georgia.gov/yellow-legged-hornet>), approximately 100 miles from the northern border of Florida. In 2024, additional nests were found in the Savannah area and in the neighboring part of South Carolina. The Florida Department of Agriculture and Consumer Services, Division of Plant Industry (FDACS-DPI), is actively surveying for YLH along Florida's northern border. This hornet is known to preferentially prey on honey bees (*Apis mellifera*) and other pollinator species. As such, they pose a significant threat to the pollinator fauna that benefits Florida agriculture. These hornets typically establish hunting territories above honey bee hives and patrol those areas for returning bees. Due to honey bees' lack of exposure and co-evolution with this hornet, they fail to adequately defend their colonies from this threat, become easy prey, and ultimately display foraging paralysis where the number of foragers leaving and returning to the colony precipitously drops.

DESCRIPTION

The yellow-legged hornet (Figs. 1-2) belongs to the subfamily Vespinae (Hymenoptera: Vespidae), that includes yellow jackets and hornets. This group can generally be identified by the combination of two characters: the wings are longitudinally folded at rest and the anterior end of the abdomen has a blocky shape. In Florida, there are three native species of Vespinae: the southern yellow jacket (*Vespula squamosa*), the eastern yellow jacket (*Vespula maculifrons*), and the bald-faced hornet (*Dolichovespula maculata*). In some cases, the color forms of some species of vespine wasps can be variable. For example, *Vespa maculifrons* is typically yellow and black, but in Florida can be pink and black. Yellow-legged hornets are large, about 1 inch long. Queens and workers are about the same size.

CHARACTERISTIC BEHAVIOR

When hunting honey bees, yellow-legged hornets display "hawking" behavior, in which they hover near the entrance of a hive for up to 20 minutes to prey on bees (Figures 3-5) as they come and go. This behavior is often conspicuous, made more so when bees cluster around the entrance instead of leaving the hive to forage.

BIOLOGY

Nests of the yellow-legged hornet are built on an annual cycle, and each spring, a single queen starts a nest from scratch. The nests grow rapidly during the warmer months, and at the end of fall, new queens mate and disperse, seeking small, insulated crevices for hibernation, including underneath tree bark and inside beetle galleries in trees. This makes locating and destroying nests prior to the dispersal of potential foundresses a priority.

NEST

The yellow-legged hornet builds paper nests in trees, shrubs and human-made structures. The foundress queen builds a primary nest (Fig. 6) early in the season, which may be as large as a cantaloupe. Once the nest has reached sufficient size, the workers build a secondary nest (Figs. 7-8) that is typically at a higher location, either in tree branches or under the eaves of a tall roof. These nests can grow to be 4 feet in diameter. The nests of the yellow-legged hornet are enclosed in a layer of dried, chewed wood pulp with a single entrance, and are similar to the nests of the closely related bald-faced hornet (*Dolichovespula maculata*) and European



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hornet (*Vespa crabro*), both present in Florida. Hornet nests can be differentiated from those of paper wasps (Vespidae: Polistinae) because the latter has open, visible cells, not surrounded by an enclosure.

DISTRIBUTION

The yellow-legged hornet is native to southeast Asia and became an invasive pest in Europe during the past two decades.

SURVEY

The yellow-legged hornet can sting. Please use caution when collecting or approaching wasps. Specimens must be sent to FDACS-DPI's Entomology section for positive identification and documentation. Live specimens should be photographed before collection. Specimens should be placed in 70-95 percent alcohol. Suspect nests should be photographed and GPS coordinates collected. Forms and instructions for sample submission can be found at www.FDACS.gov/DPIsamples.

REFERENCES

Ashman, K., Keller, O., and Jack, C. (2020). Yellow-Legged Hornet, *Vespa velutina* (Lepeletier, 1836) (Insecta: Hymenoptera: Vespidae). UF IFAS Featured Creatures. Hosted by UF IFAS. Available at https://entnemdept.ufl.edu/creatures/MISC/BEES/Vespa_velutina.html (Accessed August 24, 2023)

Monceau, K., Bonnard, O. and Thiéry, D. (2014). *Vespa velutina*: a new invasive predator of honeybees in Europe. *J Pest Sci* 87, 1–16. <https://doi.org/10.1007/s10340-013-0537-3>



Figures 1–2. *Vespa velutina*, worker. Fig. 1. Lateral view. Fig. 2. Dorsal view. Photos by Jonathan S. Bremer, FDACS-DPI



Figures 3–5. Yellow-legged hornet “hawking” behavior. Photos by Kaitlin Deutsch, University of Florida



Figures 6–8. Nests of the yellow-legged hornet. Fig. 6. Primary nest. Photo by William Grandordy Figs. 7–8. Secondary nest. Photo by Marie-Lan Taÿ Pamart (Fig. 7) and Paula Jorge (Fig. 8)