

# Wood Wasps (Horntails)

Stinger-like ovipositor drills into wood

## Name and Description—[Hymenoptera: Siricidae]

There are several species of wood wasps, all belonging to the wasp family Siricidae. Adults are medium to large wasps, 1/2-1 1/2 inches (13-38 mm) long, and can be distinguished from common wasps by their thick waists (figs. 1-2). Identification is sometimes difficult due to the large range of the adult size. Adults are colored blue, black, or reddish brown and have red, ivory, or yellow markings. Flying adults make a noisy, buzzing sound. Both sexes possess a short, hornlike process at the end of their bodies. They do not possess a stinger; instead, females have a long stinger-like ovipositor for laying eggs under the bark of trees (fig. 1). Larvae are white, legless grubs similar to bark beetle larvae, except the body shape is elongate (fig. 3). The larva has a small spine at the posterior end of the body.

**Hosts**—All except one western species attack conifers and most will attack trees in several different genera. The one exception, the pigeon tremex, attacks hardwoods.

**Life Cycle**—The life cycle spans 1 to several years, and many species take at least 2 years to complete development. Wood wasp adults attack summer through fall, depending on species. Females lay eggs deep in the wood by inserting their long, flexible ovipositor. Larvae develop under the bark in the cambium and tunnel into the sapwood and heartwood. Most overwinter as larvae under the bark.

**Damage**—Wood wasps most frequently attack weakened, dying, and recently cut or killed trees and can attack freshly cut timber before it is dried. They are particularly attracted to fire-damaged trees. For this reason, they are well-known to wildland firefighters. A female wood wasp will land on the substrate of potential host material and survey the site, using its antennae to determine the suitability of the material. Once an acceptable location is found, she will withdraw the ovipositor from its sheath and begin to “drill” down into the wood. At an acceptable depth, the egg is laid, and the female withdraws the ovipositor to begin the process anew. Larval tunnels in the sapwood and heartwood can frequently damage logs and wood products. Adults aid in wood decomposition by introducing yeasts, bacteria, and wood-rotting fungi that lead to decay and checking in the wood. In some instances, these processes can occur within a couple of years. The most obvious signs of a wood wasp attack are the meandering galleries under the bark packed with fine boring dust and finding larvae that have a spine on the end. Holes that penetrate into the wood are also signs of wood borer larvae. Emerging adults leave round, clean-cut emergence holes where they emerge.

**Management**—Because wood wasps do not attack healthy trees, management is focused on preventing attacks on recently dead or felled trees. Removing and processing wood quickly is the best way to prevent damage.



Figure 1. Adult wood wasp, *Urocerus gigas*. Photo: David Leatherman, Colorado State Forest Service, Bugwood.org.



Figure 2. Adult wood wasp, *Sirex juvencus*. Photo: Sheryl Costello, USDA Forest Service.



Figure 3. Wood wasp larva. Photo: Stanislaw Kinelski, Polish Forest Research Institute, Bugwood.org.

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Management can also be done through proper handling of wood products. Proper handling methods include milling or debarking susceptible logs prior to the attack period and storing logs in an area safe from attack.

**An Introduced Pest**—An exception to the “non-pest” status of siricids is the recent introduction of the European wood wasp, *Sirex noctilio* Fabricius into the eastern United States. This exotic species attacks living hosts, particularly pine trees. These insects have been introduced to a number of important pine-growing regions worldwide, including in Australia, New Zealand, and Brazil, where they have had an economic impact upon commercial softwood production. Although currently confined to the eastern United States, risk assessment studies have indicated that suitable conditions exist throughout the western United States, and several important tree species have been proven acceptable hosts (including lodgepole and ponderosa pine). Forest managers need to be aware of this situation. If siricids are found to be associated with living host trees, samples should be taken for expert identification.

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