

# Arkansas Forestry Commission

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## IPS BARK BEETLES

**IMPORTANCE:** Pines of all ages and sizes are attacked by *Ips* beetles (*Ips grandicollis*, *I. calligraphus* and *I. avulsus*). They usually attack injured, dying or recently felled trees, and logging debris. They often kill only a few trees in a given spot, but under certain conditions become epidemic. Damage is very high and compounded by the blue-stain fungus they carry that lowers the value of lumber from infested trees.

**IDENTIFICATION:** *Ips* beetles are easily recognized by a scooped out rear end surrounded by spines. Black to reddish brown adults vary in size from 3/32 to 1/4 inch in length. Generally, *Ips avulsus* is the smallest of the three and *I. calligraphus* is the largest. Adults that have recently matured under the bark are usually yellowish to light brown. Fully-grown larvae and pupae are yellowish white and vary from 3/32 to 3/16 of an inch in length. Eggs are very small and white.

**SIGNS OF ATTACK:** Infested trees usually have numerous white to reddish brown pitch tubes, about the size of a wad of gum, on the bark. In trees of low vigor, pitch tubes may be lacking and the earliest signs will be reddish boring dust found in bark crevices and at the tree's base.

**HABITS:** Adult beetles are attracted to weakened trees and chew round holes through the outer bark into the cambium layer. "Y" or "H" shaped egg tunnels are in the phloem and soft inner bark parallel with the grain of the wood, and are generally free of boring dust. The distinct gallery pattern is used for identification purposes even when larvae and adults are absent. Eggs are laid singularly in small egg niches cut along the main tunnel. Larval feeding tunnels, perpendicular to the egg gallery, are usually filled with frass, a mixture of fecal matter and boring dust. The life-cycle from egg to adult is 25 to 40 days, depending on the temperature. There are multiple generations per year, and *Ips avulsus*, with the shortest lifespan, may have as many as 10 or more generations per year.

**CONTROL:** Predators, parasites, diseases and competition for resources take a toll on *Ips* beetles, but usually not until the tree is beyond saving. These factors, changes in weather conditions, and proper harvesting practices can reduce *Ips* attacks and timber losses. Outbreaks occur periodically and may be expected following a period of dry weather. Salvage cutting and good forest management are the most practical control measures.



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