



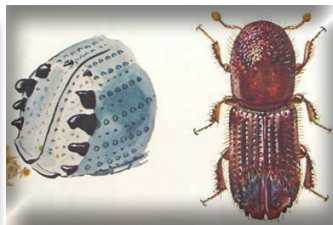
# TEXAS A&M FOREST SERVICE

## Forest Health: Ips Bark Beetle

All species of pine in the eastern half of Texas may be attacked by Ips bark beetles (*Ips grandicollis*, *I. avulsus*, *I. calligraphus*). Trees greater than 4-5 years old that have been injured, stressed, or recently felled are subject to attack. Ips beetles often kill only a few trees in a given area, but under certain conditions (e.g. severe drought) they may become epidemic and destroy hundreds of trees. The beetles inoculate trees with a blue-stain fungus they carry on their bodies. This fungus discolors the wood making the lumber from Ips-killed trees less valuable.

### Identification:

Ips beetles are cylindrical, black to reddish brown in color, and vary in size from 3/32" to 1/4" in length. Despite their small size, they can be identified by a scooped out rear end surrounded by spines. Immature adults, found 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" in length. Eggs are very small and white. All life stages (eggs, larvae, pupae, and adults) occur under the bark. They do not bore into the wood.



### 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 of attack will be reddish boring dust in bark crevices at eye level.

### 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 (galleries) are constructed in the soft inner bark parallel with the grain of the wood, and are mostly free of boring dust. The distinct gallery pattern is used for identification purposes even when larvae and adults are absent. Eggs are laid singularly along the side of the egg gallery. Larva feed perpendicular to the egg gallery by constructing a gallery filled with boring dust. Larval galleries increase in width as the larva grows in size. Egg galleries are a constant width because the adult beetles never increase in size. Larvae mature, pupate, and transform to adults in 25 to 40 days, depending on the temperature. Emerging adults may or may not attack nearby trees.

### Control:

Predators, parasites, diseases, and starvation take a toll on Ips beetles, but usually not until the tree is beyond saving. These factors, plus changes in weather conditions, and proper harvesting practices can reduce Ips attacks and timber losses. Salvage cutting and good forest management are the most practical control measures. High value trees can be sprayed with an approved insecticide, but the entire bark surface must be covered for control to be effective. Spraying to prevent attacks also can be effective.