

Asian Longhorned Beetle: A Threat to Texas' Forests **Second of the "Dirty Dozen"**

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Editor's Note: An introductory article discussing exotic invasive pests that could threaten forest resources in Texas was included in the June 2005 issue of *Texas Forestry*. As a follow-up to that article, a series of 12 short articles about specific exotic pests that are either present in Texas or are at our doorstep is planned. The authors (Joe Pase, Ron Billings, and Kim Camilli) are calling this series the "Dirty Dozen." Last month, Joe described the emerald ash borer, the first invasive pest in the series. The Asian longhorned beetle is the second exotic pest to be presented. Although not presently known to exist in Texas, this large wood-boring beetle is a potential forest pest in our state.

In its native country of China, the **Asian Longhorned Beetle (ALB)**, *Anoplophora glabripennis*, is known as the "starry sky beetle" due to the distinctive white spots that cover its black body. There, it is considered a major pest of hardwood trees in many parts of the country. Its hosts of choice in Asia are maple (*Acer*), poplar (*Populus*), and willow (*Salix*), although horse chestnut (*Aesculus*), birch (*Betula*), elm (*Ulmus*), sycamore (*Platanus*), hackberry (*Celtis*), and silk tree mimosa (*Albizia*) also are attacked.

The first reports of this beetle becoming established outside its native range were from the cities of Brooklyn and Amityville, New York in 1996. In the summer of 1998, three additional infestations of ALB were discovered around Chicago. More recently, an infestation was found in Jersey City, New Jersey (October 2002) and another in Vaughan, Ontario, Canada (September 2003). Quarantine and eradication programs, which continue today, were quickly established to address all of these new invasions. A couple of years ago, a live ALB adult was discovered in a warehouse in Houston. The insect presumably arrived in infested wood packing material from Asia. Fortunately, further inspections and monitoring by the U S Animal and Plant Health Inspection Service (APHIS) failed to detect any established infestations in this city.

In New York, an intensive effort is being carried out to eradicate the unwanted, immigrant beetles before they spread. A total of 6,238 infested trees have been located, cut down, chipped and burned since the first tree was discovered. Infestation levels reached a peak in 2000, when 1,640 new trees were detected and destroyed. Sugar maples in Central Park, valued for their spectacular fall colors, were particularly threatened by this voracious pest.

ALB inspectors utilize many methods and resources to conduct tree surveys. Aerial tree inspections are performed by trained professionals using bucket trucks to peer into trees from above. Forest Service and State smokejumpers are being employed to climb trees in otherwise inaccessible areas to scrupulously search for signs of an infestation. Many interest groups and organizations voluntarily assist inspectors by searching trees from the ground.

The good news is that eradication efforts, although costly, are proving effective. Since May 2004, only 6 attacked trees have been located in all infested New York neighborhoods combined. Results in Chicago have been even more impressive. The number of infested trees reached a peak in 1999, when over 900 trees were detected and destroyed. Since 2003, no new infested trees have been found in Chicago, suggesting that the population of invaders has been eliminated from this city. Only time will tell for sure and monitoring efforts are continuing.

The ALB is a serious threat to U.S. trees. Damage from infestations in the U.S. has cost state and federal governments in excess of \$168 million since the discovery of the infestations in 1996. If the ALB were to expand beyond the current quarantined areas of New York, Illinois, and New Jersey, APHIS estimates that this pest may wreak havoc nationwide. By directly impacting such industries as lumber, maple syrup, nurseries, and tourism, the ALB could cause more than \$40 billion in losses.

The success of eradication programs is dependent on early detection, before infestations become well established and wide spread. We need to keep an eye out for ALB in Texas, since many of its preferred hosts grow here. The adults are large bluish-black beetles (1 – 1½ inches long), with white spots and very long antennae. Don't confuse the ALB with our native cottonwood borer. The latter is about the same size, but has a white body with black spots (see photo). The antennae of ALB have alternating bands of black and white, whereas the antennae of the cottonwood borer are all black in color.

The first sign of an ALB attack on a host tree are oval wounds in the bark, often dripping with sap. Piles of coarse sawdust around the base of the infested tree and in branch axils are another sign of ALB infestation. Unlike many native wood-boring beetles, ALB is capable of attacking and killing healthy trees.

On average, the female beetle will live 40 days and during that period will lay 25-40 eggs. Upon hatching, the young larvae feed in the inner bark, eventually entering the wood as they grow. They create tunnels in the sapwood and heartwood that increase in size as the larvae mature. Full-grown larvae can reach 2 inches in length and are white, except for a brown head capsule. The larvae eventually transform into pupae inside the tree and emerge as new adults through large round exit holes that average ½ - 5/8 inches in diameter. Upon emerging from infested trees in late spring, adult beetles may fly several hundred yards in search of a host. However, they tend to attack the same tree from which they emerged, eventually killing it. This beetle may have one or two generations per year, depending on geographical location.

Like the emerald ash borer described last month, the Asian longhorned beetle is an exotic forest pest we definitely do not want in Texas. If you detect an insect in Texas that you think might be the ALB, contact TFS Forest Pest Management in Lufkin (Phone: 936-639-8170) or e-mail jpase@tfs.tamu.edu.



The adult Asian longhorned beetle (left) looks somewhat like the native cottonwood borer (right). To avoid confusing them, note the differences in color pattern on the main body and the antennae (Photo by H. A. Pase III).