

*This article appeared in The Ohio Woodland Journal, Vol. 18, No. 3 (Summer 2011), the official publication of the Ohio Tree Farm System. Call 888. 388. 7337 for subscriptions.*

## **Focus on Forest Health**

### **The Story Unfolds: Asian Longhorned Beetle Found in Ohio Trees**

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It was May 26, 2011 and I had just received an interesting email with four attached photographs from one of our Division of Forestry service foresters. The photos were part of a property-owner inquiry and revealed damaged maple trees. The property owner noticed that large pieces had broken out of the upper canopy of his maples and had fallen to the ground. After viewing the pictures, it seemed clear that these were some kind of wood-boring insect, and quite large ones by the look of the larval galleries.

The email was forwarded on to four colleagues, representing three different agencies, for their opinion. I decided to obtain the broken tree pieces from the landowner because it might still be possible to extract some insect life stages from them for identification.

The broken pieces were transported by the Division of Forestry to the Ohio Department of Agriculture (ODA) headquarters in Reynoldsburg, which is also the location of the C. Wayne Ellett Plant & Pest Diagnostic Clinic. The samples were split, and several very large larvae and pupae were collected. Samples of the life stages were sent out to the US Department of Agriculture (USDA) Animal Plant Health Inspection Service (APHIS) lab for identification.

The results of the initial investigation were so significant that they warranted a site visit. The ODA State Entomologist and I met with the Clermont County property owner. He directed us to the maple trees in an open lawn area. There were three Freeman maples planted in close proximity. Freeman maples are a hybrid between silver maple and red maple. These trees measured around 11 inches in diameter and were somewhat upright in habit. We inspected the three trees, each having various types of damage, and noticed some cracks in the upright lead branches. This could account for the limb failures, but we needed to determine the cause. We accessed the canopy of the tree and noticed several areas where woodpecker damage masked the true shape of some of the normally 3/8 to 1/2 inch diameter exit holes. There were dark depressions, which were actually old oviposition sites. Many of the branch crotches were filled with old and newer frass, which are wood shavings and sawdust produced by larvae feeding and tunneling in the tree. Whatever it was, it was not just from one year's damage.

While at the site, we also inspected several other trees on the landowner's property. We used binoculars that day, but we knew that a closer look would be necessary to reveal more. Later that same week, USDA APHIS staff and a Division of Forestry forester went to revisit the site to take a look around.

In the meantime, we received word back from the USDA lab scientists. It was determined that the specimens were definitely *Anoplophora*, the genus of exotic beetles that contains the exotic Asian longhorned beetle. We learned that for it to be an official verification there must be an adult found. From the stage of the pupae, the lab identifiers felt that adults may be emerging anytime, so the Freeman maples were closely monitored.

Division of Forestry foresters, USDA APHIS, and Ohio Department of Agriculture (ODA) staff teamed up and a forest health survey was conducted in the surrounding area. The office at the adjacent East Fork State Park was secured as a meeting area. APHIS called in expert tree climbers and a survey team. This was a multi-agency team effort, all trading information and trying to delimit the area of infestation.

On Thursday, June 16<sup>th</sup>, a meeting was set by APHIS at an East Fork State Park conference room to determine this project's goals. One goal was for certain, we had to find an adult beetle. Two Division of Forestry sawyers arrived that morning. We had permission from the property owner to remove one of the Freeman maples at the original site. We all arrived at the property in short order after the meeting – the sawyers with truck and chipper in tow. The tree was dropped, and the team started looking for the adults, inspecting limb by limb. Within minutes, we found the first adult, then another, and then there were eight. I had heard when they first emerge the legs are really blue, then fading to black. Sure enough, these were Asian longhorned beetles (ALB). It was mentioned that ALB come out to the tips of the limbs to sun themselves, and that day the sun was shining. I had a first-hand account of how they are not strong fliers. One adult tried to escape the pile by flying to the next closest maple. Although it really didn't need to go far, the effort was not done with the greatest of ease. The adult was found, and all of them were quickly scooped up and put into vials – quite a bit larger than the ones I am used to using for collecting the invasive emerald ash borer.

**Picture 6-16-11adult**--Adult Asian longhorned beetle (ALB) collected from a Freeman maple in Clermont County. Beetles are large, approximately 1-1½ inches long and are shiny black with random white spots. Their antennae, which are longer than the insect's body, are banded black and white. Their feet are black and sometimes appear with a bluish tint. Adult beetles typically appear in July and continue to be present into the early fall. Photo courtesy of ODNR.

The search continued to surrounding areas to scout for infested trees. The following day at a neighboring location, more than 20 adult beetles were found. The adults were verified by USDA APHIS authorities, and an official news release announcing the discovery went out on Friday, June 17<sup>th</sup>. The expert tree climbers had their work cut out for them. The goal now was to determine the extent of the infestation and where it may have originated. Since the 1990s, there have been Asian longhorned beetles found in

Ohio warehouses. ALB has been known to have been transported here in packing material, a common mode of travel for exotic, invasive insects. The last two warehouse finds in 2007 and 2009 were in southwest Ohio, one near Cincinnati and the other near Mason. Federal and state officials continue to investigate. As of the writing of this article, the mystery of the origin of the infestation has not been solved.

Picture **6\_19\_2011 018** -- Division of Forestry crew member chipping ALB infested maple branches and trunk. Infested trees must be destroyed or burned in order to reduce the risk of pupae, larvae, or adults from spreading to other trees. Chipping is the most proven and cost effective means of controlling the spread of ALB. Photo courtesy of ODNR.

Many of the ALB infestations in the United States have been brought to officials' attention by citizens. This shows the importance of public outreach. In this Ohio discovery, a cooperative effort between the public, the Ohio Department of Natural Resources Division of Forestry, the Ohio Department of Agriculture, the Ohio State University, and USDA APHIS has already made significant strides in getting this infestation under control. As in the Worcester, Massachusetts ALB find, a property owner who was concerned about his trees notified the proper authorities. Measures can now be taken to contain and stop this beetle to minimize the potentially significant environmental and economic impact of this invasive insect.

*If you suspect the presence of Asian longhorned beetle (ALB), contact the Ohio Department of Agriculture toll-free at (855) 252-6450, an ODNR urban or service forester, a community urban forester, private consultant forester, or OSU Extension office. Remember to purchase and burn firewood locally to help prevent the unknowing transport of invasive insects. ALB not only attacks maple, but other tree species such as ash, willow, horsechestnut, buckeye, poplar, hackberry, and elm.*