

## Asian Longhorned Beetle

By RUDI HEMPE

Economists generally hail the benefits of the global economy but for many woodlot owners, the brisk international shipping of goods has a dark side—the import of damaging pests and diseases which can hitchhike on pallets and plant materials.

From the American chestnut blight that started at the turn of the 20<sup>th</sup> century, to the discovery of the emerald ash borer just eight years ago, U.S. forests have been invaded by scores of pests and diseases and defenses have not always been successful.

While the Asian longhorned beetle (ALB), (*Anoplophora glabripennis*) first detected in 1996, is not the latest pest to cause trouble, the defensive battle against the beetle looks promising, relying on extensive eradication, surveying and vigilance programs under federal and state programs.

So far the pest has not been discovered in the Rhode Island. (An incident that received press in 2009 did not involve the discovery of the beetle in RI; rather, two firms were cited by the USDA for bringing in a small number of ash logs from an ALB quarantined area in Massachusetts to a North Kingstown site. The logs were seized, chipped and burned and the two companies were fined—they are appealing.)

But the fact that the pest has been found in the Worcester area, an area near Boston, and other sites around the country, indicates that the danger of further infestation is real.

Dr. W. Michael Sullivan, former director of the state Department of Environmental Management (RIDEM), and currently back in his old job as an agronomist at URI, says he would not be surprised if the ALB gets into Rhode Island—controlling the flow of firewood across state lines is a difficult challenge and unless there is tremendous vigilance, a Rhode Island infestation is very possible, he said. On the other hand, Sullivan has nothing but praise for the efforts of the USDA's Animal and Plant Health Inspection Service (APHIS) operating in Massachusetts and elsewhere to combat the pest and also the program that RIDEM has ongoing, training scores of volunteers and landowners on how to be on the lookout for signs of the beetle.

The ALB probably stowed away inside some solid wood shipping materials that entered the US in Brooklyn, NY. It has since been found in Chicago, New Jersey and Worcester, MA. over large areas and in several other smaller spots. For Rhode Island woodlot owners, the infestation in and around Worcester poses the most significant concern.

The beetle is not hard to find. It is large (1-1.5 inches long), has a shiny black body with white spots and a pair of spotted antennae that in males are longer than their bodies. The beetles can be spotted during the summer and fall when they emerge from trees through holes that are 3/8ths to 1/2in in diameter. Pockmarks on trees are areas where the females deposit their eggs. The larvae tunnel into the tree right to the heartwood and in the process cut off the essential flows of xylem and phloem in the tree causing decline and death. The beetles prefer poplars but will attack birch, horse chestnut, green ash, box elder, London plane, willow, and several maple species.

Once a tree is infected, there is no control—the recommended response is to fell the tree, chip it up and burn the chips.

Once infected trees are discovered APHIS has a protocol which establishes a quarantine area defined as 1 ½ miles from every infected tree. In the Worcester situation, infestation was not detected until the beetles were well established and the resultant quarantine area is 94 square

miles including all of the City of Worcester, the towns of Boylston and West Boylston, parts of Shrewsbury and Holden. The quarantine area for Suffolk/Norfolk County includes the cities of Brookline and Boston—the Boston area includes parts of Jamaica Plain, Roslindale, West Roxbury and Greater Mattapan.

Jenny L. Hnatiuk, a plant protection and quarantine officer with APHIS, says that residents within a quarantine area have to cooperate in order to allow for tree surveys on personal property—without cooperation, warrants may be necessary. Host trees are routinely surveyed (three times) and if a tree is infested, the APHIS program will remove and chip it. APHIS has a reforestation program that provides free trees to owners in the quarantine area—residents can choose from a list of species and APHIS staffers deliver and plant the trees.

Chemical treatments are also offered in the quarantine area free of charge (see box for details). All host trees within a quarantine area are considered at risk of infestation and the APHIS program recommends chemical treatment or removal of high risk trees but it is not mandated.

The quarantine area involves regulation of host wood material. Host wood is not allowed to leave the quarantine area because firewood and landscaping materials can carry live larvae. Companies that work in quarantine areas are required to attend compliance training. Stickers are issued so that the companies can be identified in the field. Fines are possible for companies not in compliance working in a quarantine area.

An ALB quarantined area must undergo three negative ground surveys (without signs of ALB) followed by a survey where trees are climbed in order to be declared ALB eradicated.

In Rhode Island Liz Lopes-Duguay, state survey coordinator with RIDEM, has been busy with both surveys in the state and an outreach program for the last two years.

Most recently surveys were done in Cranston and Warwick—areas that are potential for ALB infestation because of the number of places where wood and plant products are available.

The idea behind the outreach training program, she said, is to train volunteers who then can go out to their organizations and train more people on the tell-tale signs of ALB infestation (besides the round holes in trees there can be frass, oozing sap and sawdust, the result of burrowing larvae). So far, several hundred volunteers have been trained in Rhode Island, many of them URI Master Gardeners, who not only train others but supply information to the public.

“The hope is that with all these people on the lookout early detection will be the result,” said Lopes-Duguay.

The ALB hotline for Rhode Island is 866-702-9938. The Internet has several sites on ALB—one of them is [www.BeetleBusters.info](http://www.BeetleBusters.info).

## **Chemical Control sidebar**

### Preventing ALB infestation

While nothing can be done with an ALB infested tree except removal, chipping and burning, APHIS officials report they have been successful in preventative treatment programs.

APHIS officials in Massachusetts have been using Imicide HP with 10 percent Imidacloprid.

Treatment is done in the spring. Imicide HP is pressure injected into a 7/32nds hole drilled ¾ inch deep in order to penetrate the cambium layer. The pressure is 200 psi.

Trees that are 2"-23.4" in DBH (diameter at breast height) receive 2 ml per inch. Trees that are 23.5 DBH and above receive 4ml per inch.

The tree takes the treatment up through its vascular system, reaching the canopy in a few weeks (time is dependent on the season and species).

Imidacloprid is a neuro-toxin that affects the adult beetle when it is feeding on the twigs and leaves. Seven ppm in plant tissue is effective for ALB control.

The treatment does not reach larvae developing in the hardwood—therefore once a tree is infested, the only way to stop the progression of the beetle is to remove and destroy the tree. Treatments are only given to trees that are not already infested.

APHIS says that while the procedure cannot guarantee protection from ALB infection, their recommendation is to treat trees for three consecutive years. APHIS officials say that so far in quarantine areas, the treatment has been highly successful—only one tree treated in New York succumbed to ALB and officials suspect that the tree was already dying and that its vascular system did not properly distribute the chemical through the tree.

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