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Quick Discovery Leads to Expected ALB Eradication in Boston

By Joseph M. Smith

On June 10, the US Department of Agriculture Animal Plant Health Inspection Service (USDA-APHIS) announced that it has begun its final visual surveys to determine whether the Asian longhorned beetle (ALB) has been effectively eradicated from Boston, Massachusetts.

APHIS and the Massachusetts Department of Conservation and Recreation are conducting final visual surveys of ALB host trees within the regulated area of Norfolk and Suffolk Counties—a 10-square-mile area that includes the neighborhoods of Jamaica Plain, Roslindale, Roxbury, West Roxbury, and a portion of the town of Brookline.

The beetle was discovered in Boston in July 2010. To date, USDA-APHIS and its partners have removed six infested trees from one property and have conducted multiple inspection surveys of more than 90,000 host trees. By the end of June, the eradication program had completed its third and final cycle of chemical treatment applications on 2,000 host trees. Previous chemical treatments took place in June 2011 and June 2012.

The final inspection surveys, which are expected to confirm the eradication of the beetle from the area, will conclude in early 2014.

“The surveys are done in two different ways. One is by ground surveyors, who inspect the tree from the ground—so they’re standing on the ground, looking at the tree, they have binoculars. Obviously, they’re not going to be able to see every single inch of that tree, but that’s one way that we conduct individual surveys,” said Rhonda Santos, legislative and public affairs specialist with APHIS’s Asian Longhorned Beetle Eradication Program. “The other way is by using tree climbers, and so the tree climbers actually do get up into the canopy of the tree, and they can see the tree obviously much better because they are able to inspect all around and in-between and everywhere.”

Once eradication is confirmed, USDA-APHIS and its cooperators will lift the federal and state regulations pertaining to the designation of quarantine areas and movement of potentially infested material (e.g., firewood, green lumber, and other materials).

“Boston was a very unique situation, probably the most unique situation with ALB, because it was just those 6 trees,” Santos said. “It was found very quickly, within two years of the insect being introduced to that area, so it’s a unique ALB find and detection, which is also why we’re excited that potentially within four years after its being found there, the regulations can be lifted.”

The regulations are part of what USDA-APHIS refers to as an “integrated eradication strategy”—a comprehensive effort that, in addition to regulated boundaries and prohibitions on the move-



Jennifer Forman Orth, Massachusetts Department of Agricultural Resources

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ment of potentially infested material, involves public education efforts, compliance training for businesses, inspections, surveys, and the ALB management strategies deemed appropriate for the location.

Should APHIS officials declare the eradication efforts in Boston a success, the city will join three other locations—Chicago, Illinois; all areas in New Jersey (Hudson, Middlesex, and Union Counties); and Islip, New York—where the beetle has been thwarted. (Portions of Manhattan and Staten Island, New York, are undergoing a survey process that will eventually make them candidates for eradication in 2013 if no signs of infestation are found.)

Five Down, 10 to Go

Yet, declaring Boston free of the ALB will not mean the state of Massachusetts is in the clear. At an August 5 event commemorating the fifth anniversary of the effort against the ALB in Worcester, state, local, and federal officials lauded the work that has been done to stop the beetle’s spread and acknowledged that eradication was still years away.

“We’re still in our delimitation, and I know that’s tough to take at times when we’re just past our five-year anniversary for the onset of operations here in central Massachusetts,” said Clint McFarland, APHIS project manager for the Massachusetts Asian

Longhorned Beetle Program. “The majority of the trees in the neighborhoods in the epicenter got very much impacted. Where that was 15 to 20 years old at the epicenter of the infestation here, where we are finding trees now the level of the infestation is much, much lower. We gauge that on how many egg sites, how many emergence holes, and then with the aging—of counting back from that emergence hole on the growth rings to see the age. What we’re seeing is between two and five years for these isolated pockets. So, positive signs in that regard, but we still have work to do.”

McFarland estimates that work will take about 10 years to complete.

“If we can go to the delimitation next year—really know the boundary of this infestation—after that, removal of infested trees, finding infested trees, should fall off precipitously. After that, we’ll look at all these susceptible host trees again on a couple occasions, which is that 10-year period to look at what’s probably going to come out to be five million host trees,” he said. “We also would then strategically use some chemical treatment applications just to make sure we’re absolute, because we are going after eradication, to compliment around some of these infested pockets where we removed before just to add that added level of security.”

First discovered in the United States in 1996—USDA officials have determined the ALB entered the United States inside solid wood packing material originating from China—the pest has been found in four other states (New York, New Jersey, Illinois, and Ohio) and is implicated in the deaths of more than 85,000 trees.

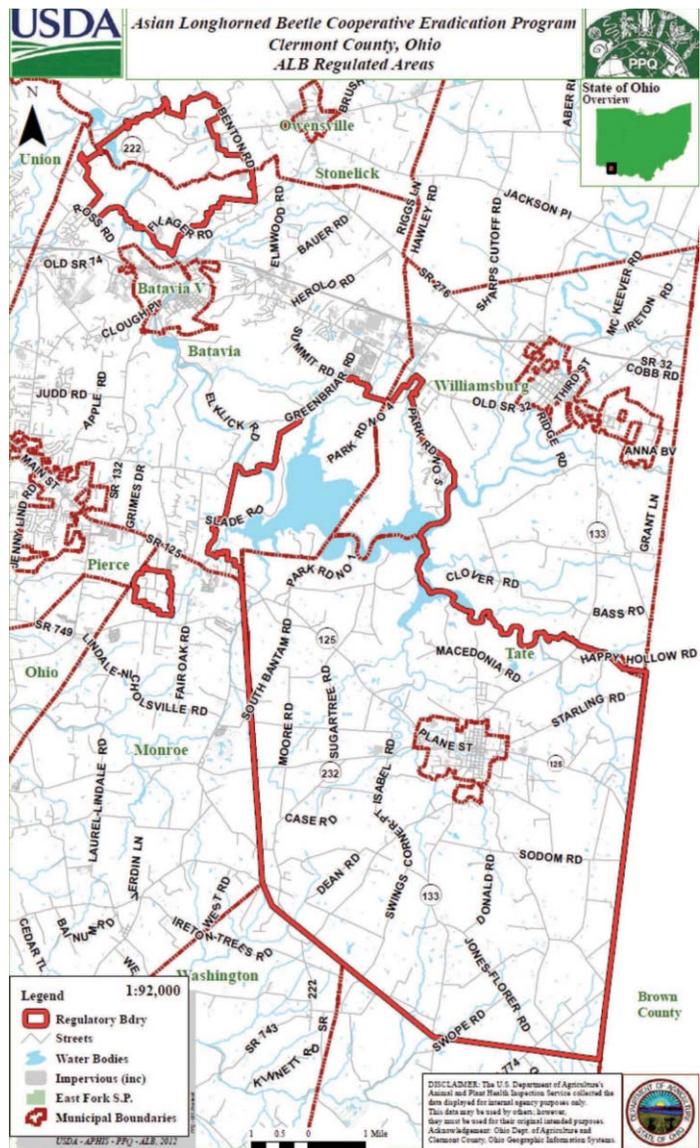
Although the ALB doesn’t kill trees as quickly as other pests, such as the emerald ash borer, it’s not so picky about the trees it attacks. According to the USDA, there are 13 species of host trees deemed to be at high risk of ALB infestation: *Acer spp.* (maple and box elder), *Aesculus spp.* (horse chestnut and buckeye), *Albizia spp.* (mimosa), *Betula spp.* (birch), *Celtis* (hackberry), *Cercidiphyllum spp.* (katsura tree), *Fraxinus spp.* (ash), *Koelreuteria spp.* (golden rain tree), *Platanus spp.* (sycamore and London planetree), *Populus spp.* (poplar), *Salix spp.* (willow), *Sorbus spp.* (mountain ash), and *Ulmus spp.* (elm).

As a result, APHIS believes that the ALB has the potential to cause more damage than Dutch elm disease, chestnut blight, and gypsy moths combined, destroying millions of acres of hardwoods; damaging such industries as lumber, maple syrup, nursery, and tourism; and resulting in more than \$41 billion in losses.

To prevent this worst-case scenario from becoming a reality, USDA-APHIS has been fine-tuning its integrated eradication strategy (online at www.aphis.usda.gov/plant_health/plant_pest_info/asian_lhb/control.shtml), based on what it has learned responding to prior infestations.

“The strategies that we utilize—these tools that we have in our toolbox—are built on the years preceding us with [the Boston] infestation,” Santos said. “Each infestation is different, each state is different, and there are so many different variables that come into play, such as environmental considerations, ecological considerations, municipal considerations, and things like that, which make the determination on how, when, and which strategies we’re going to use.”

Given those differences, considerations, and variables, the agency issues an environmental assessment (EA) that outlines its options for controlling an infestation in a particular area, and then invites public comment.



Quarantine areas in Clermont County, Ohio (61 square miles).

Ohio Eradication Efforts

This past May, the agency issued a finalized EA for its eradication effort in Clermont County, Ohio, where the ALB was discovered in 2011.

Phillip Baldauf, APHIS project manager for the Ohio Asian Longhorned Beetle Eradication Program, said the agency is responding to the infestation in accordance with the preferred alternative outlined in its Clermont County, Ohio, assessment.

“We find an infested tree, it gets marked, [and then] we have a removal contractor take the tree down. The tree is then chipped to a chip size of one inch in two dimensions, which will kill any larvae that may be present in those trees still. In addition to removal of infested trees, we’re also removing high-risk host trees—trees that we haven’t been able to confirm are infested, but that there is a good chance that they’re infested—with property owner permission. In addition to that, we also conducted chemical treatments with imidacloprid injections.”

Specifically, the EA’s preferred alternative calls for:

- Maintaining the current ALB quarantine and adding new areas to the quarantine area where additional ALB-infested trees are discovered;
- Surveys of host trees;

- ▶ Removal of infested trees;
- ▶ Removal or imidacloprid trunk or soil injections of high-risk host trees up to 1/2 mile from infested trees;
- ▶ Stump grinding, application of the herbicide triclopyr to stumps that cannot be removed, or leaving stumps of trees to encourage regrowth in certain cases, or treatment of stumps with a mixture of the herbicides triclopyr, imazapyr, and metsulfuron to prevent resprouting; and,
- ▶ Chipping of cut trees.

The agency also enforces the quarantine borders to ensure there is no movement of regulated material, Baldauf said.

“We have compliance agreements with the industries and the businesses that come in contact with regulated articles, such as any firewood dealers, or municipalities that are trimming trees, landscapers, rubbish removal companies, and so on,” he said. “If

they have a chance of moving regulated materials, we enter into a compliance agreement with them, a component of which is training, so that we have extra eyes out there, but also to document the fact that they are aware of the regulations and will hopefully comply.”

Yet, unlike his colleagues in Worcester, Baldauf says he cannot predict when the beetle might be eradicated in Ohio.

“We find infested trees most every day, so I can’t put a time frame on how soon we’re going to have the problem gone when I don’t really know how large the problem is.”

To read a past article about the Asian longhorned beetle, see “States Battle Emerald Ash Borer, Asian Longhorned Beetle” (September 2009) in the Source archives at www.safnet.org/publications/forestrysource/index.cfm.

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