

Emerald Ash Borer Overview

ISSUE

This **Issue Review** provides an overview of the problems caused by the Emerald Ash Borer and the related costs to eradicate the insect.

AFFECTED AGENCIES

Department of Agriculture and Land Stewardship, Department of Natural Resources, and Iowa State University Extension

CODE AUTHORITY

Chapters 177A.6 and 456A.24
Chapter 46, Iowa Administrative Code

BACKGROUND

The Emerald Ash Borer (EAB) is a beetle that originated in Asia and was discovered in Canton, Michigan, in June 2002. The insect was probably transported on international wooden shipping containers. The migration has spread and the EAB has been verified in the following states: Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, New York, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and Wisconsin. The EAB has also been detected in the Canadian provinces of Ontario and Quebec. A map detailing the EAB infested areas is available at: http://www.emeraldashborer.info/files/MultiState_EABpos.pdf. The map is also included as the last page of this document.

The EAB emerges from an ash tree in May or June and is active for one month. The insects mate and the females lay eggs on or below the bark of an ash tree that hatch in one or two weeks. The insect is then in the larva stage and bores through the area between the bark and the wood where nutrients are stored and this disrupts the development of the tree. The larva lives in the tree over the winter and passes through four development stages and emerges from the tree in May or June as an adult beetle, and the reproductive process begins again.

To control the spread of EAB, infested trees are removed and replaced with other types of trees. Another method for containing the disease is by quarantining the movement of firewood, lumber,



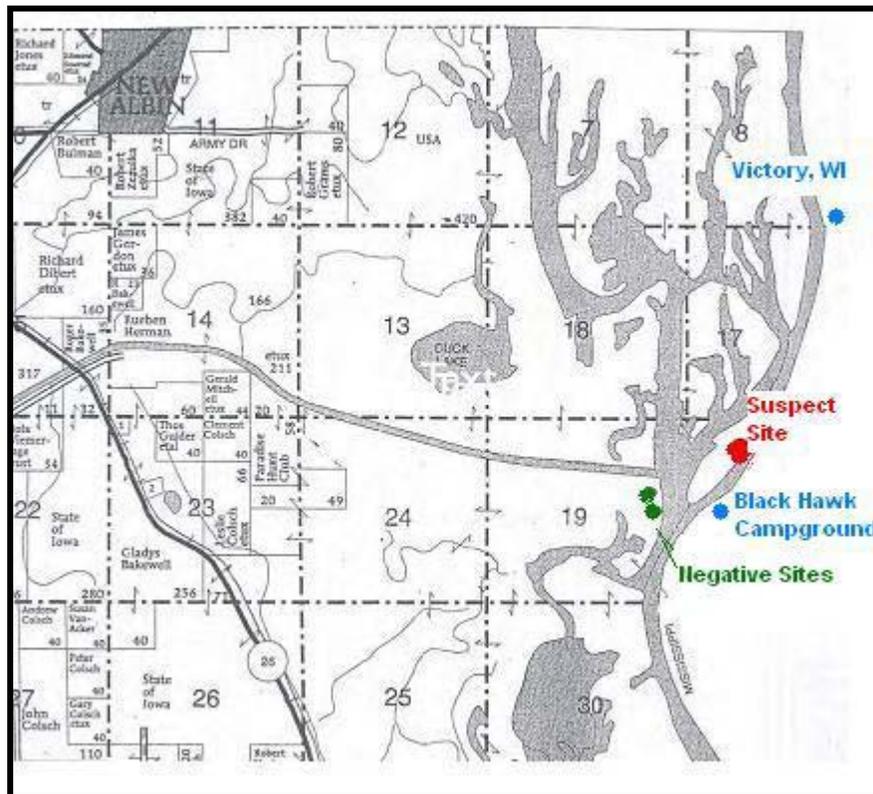
Photo of tree damage from EAB at the Iowa site.

and other products made from ash trees.

CURRENT SITUATION

Emerald Ash Borer in Iowa

On May 14, 2010, it was reported that four EAB larvae were found on one ash tree at Henderson Island near New Albin in Allamakee County in Iowa. The land is owned and managed by the federal Army Corps of Engineers and the federal Fish and Wildlife Service. In 2009, an EAB infestation was confirmed in Victory, Wisconsin, near the Iowa EAB site. The following map details the location of the Iowa EAB site and the EAB site in Victory, Wisconsin.



The Iowa EAB Team consists of members from the Department of Agriculture and Land Stewardship (DALs), the Department of Natural Resources (DNR), Iowa State University, the federal Animal and Plant Health Inspection Service (APHIS)--Plant Protection Quarantine, and the federal Forest Service. The Team has developed an Iowa EAB Readiness Plan that was updated after the confirmation of EAB in Iowa. The Plan details steps to reduce the risk of infestation, the ongoing monitoring program, the procedures used for discovery of an infestation, and the procedures to use when EAB cannot be contained in Iowa.

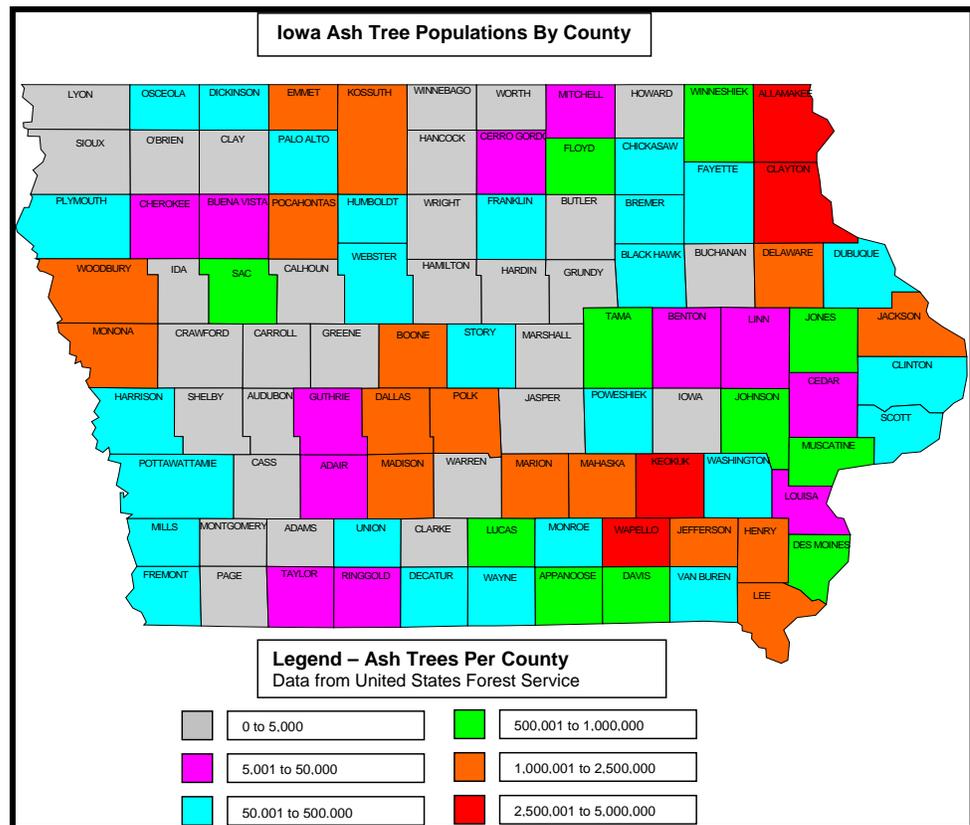
On June 14, 2010, Bill Northey, Iowa's Secretary of Agriculture, announced the quarantine of Allamakee County for the movement of ash tree wood or lumber that originated in the County. Instructions were also given for the movement of ash tree wood or lumber that has originated outside the County. In addition, the Department filed an Administrative Rule amendment requiring all firewood sold or distributed in Iowa, to be identified by the county and state of origin. The rule has been approved and will be effective January 1, 2011.

The EAB team members are in the process of placing 1,800 EAB traps at high-risk areas in the State, including more than 1,500 traps in 10 counties bordering the Mississippi River. The traps are purple and have the scent of a dying ash tree that attracts the EAB. In addition, the DNR has placed 412 trap trees or sentinel trees around Iowa. Trap trees are standing ash trees that are injured or girdled. They are left standing for one year as injured ash trees attract the EAB. After one year the trees are debarked and checked for EAB.

The DNR received a federal grant from the federal Forest Service to develop an EAB Resource Kit that is available online at: <http://www.iowadnr.gov/forestry/eab/index.html>. In addition, the DNR has been working with smaller communities in 12 eastern Iowa counties to complete tree inventories and to develop comprehensive management plans.

Ash Trees in Iowa

It is estimated that there are more than 88.0 million ash trees in Iowa with 58.0 million ash trees in rural areas and 30.0 million ash trees in urban areas. This map estimates the number of ash trees in each Iowa county.



BUDGET IMPACT

Department Funding

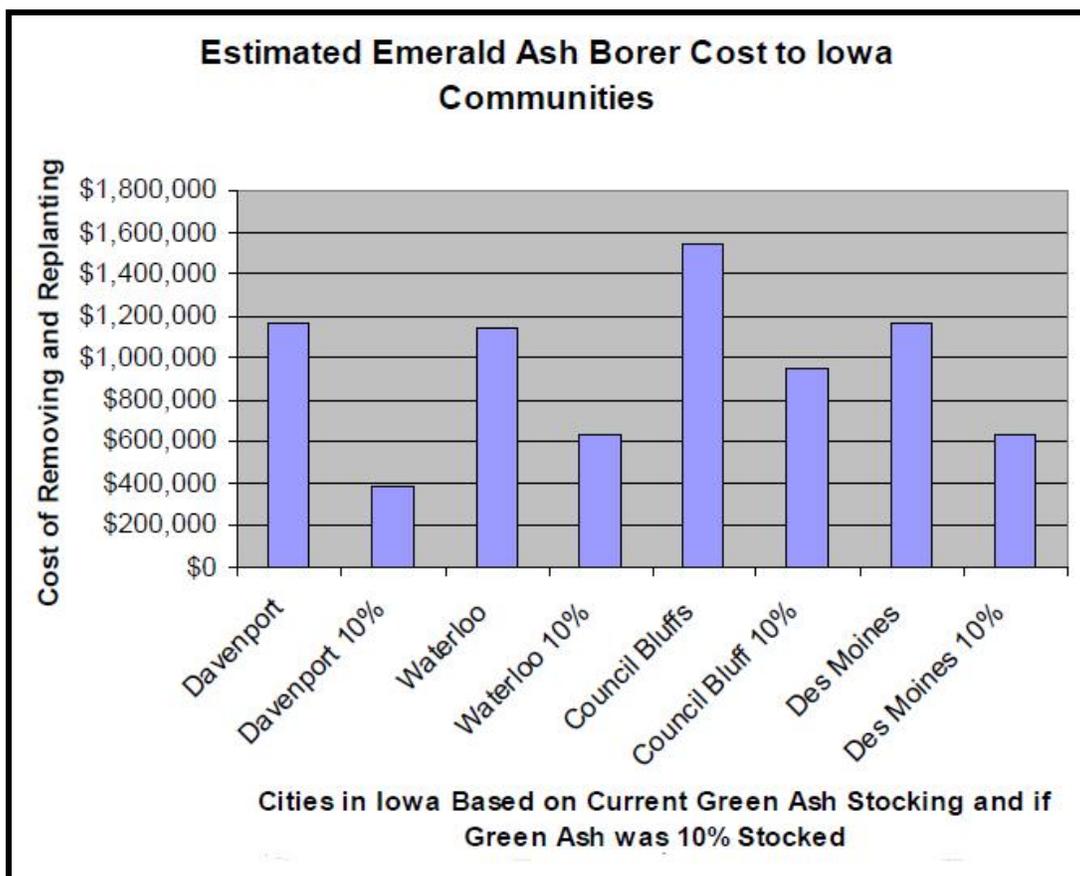
The DALS received a \$50,000 General Fund appropriation each year for FY 2008 and FY 2009 for an EAB Program. The FY 2009 appropriation was reduced to \$49,250 due to budget reductions. Beginning in FY 2010, the DALS received one General Fund appropriation for operations rather than for individual programs, so EAB funding is not a separate line item. The DNR is funded in the same manner, one General Fund appropriation for Department operations. Expenditures related to EAB are included in the Forestry Bureau.

Emerald Ash Borer Cost Calculator

An infestation of the EAB can be very expensive and is comparable to the removal of trees from the infestation of Chestnut Blight and Dutch Elm Disease. National damage estimate comparisons include:¹

- Chestnut Blight infested 3.5 billion chestnut trees.
- Dutch Elm Disease infested 200.0 million elm trees.
- Emerald Ash Borer threatens 7.5 billion ash trees.

Purdue University has developed a website that estimates the cost of an EAB infestation.² The calculator is based on input of the number of ash trees in a community by trunk size to determine the cost of removing the trees and grinding out the stumps. The DNR used the calculator to create the following chart as a sample of the impact to four Iowa communities. The impact shows the total cost of removal and the cost to ensure that green ash does not comprise more than 10% of the community trees



Source: Iowa Department of Natural Resources

http://www.iowadnr.gov/forestry/eab/files/eab_factsheet.pdf

Using the assumption that the cost to replace a tree is \$150, the DNR estimated it would cost \$5,017,878 to remove and replant green ash trees in Davenport, Waterloo, Council Bluffs, and

¹ Wikipedia website: http://en.wikipedia.org/wiki/Emerald_ash_borer

² Purdue website: <http://extension.entm.purdue.edu/treecomputer/>

Des Moines. The cost to remove trees for private landowners could be higher due a number of factors that include size of the tree, difficulty of access, and hazards such as power line locations.

Other states have removed ash trees prior to EAB, however, this did not prove to be an effective management practice. The DNR does suggest that ash trees be properly pruned and maintained and that ash trees in poor health be removed.

Michigan Estimates

The state of Michigan has included in their Emerald Ash Borer Community Preparedness Plan a section on costs to remove ash trees with an average cost of \$625 to remove an 18 inch diameter ash tree.³

Wisconsin Estimates

The state of Wisconsin has a website that includes an EAB tool kit for communities to develop EAB readiness plans.⁴ The estimates include:

- For street trees in cities, the average cost to remove a 12" diameter tree is \$340 (\$270 for tree removal and \$70 for stump removal) and the average cost to plant a 2 inch tree is \$375.
- For private landowners the estimated costs increase to \$460 per tree for removal and \$475 for planting a tree.

Minnesota Estimates

The Minnesota Department of Agriculture informational website on EAB⁵ that estimates the average cost to remove a mature ash tree is \$750. This includes grinding and removing the stump. The website also indicates that costs can vary depending on the size of the tree, accessibility to the tree, and other hazards such as power lines.

ALTERNATIVES

American Recovery and Reinvestment Act Federal Funds

In March 2010, the Michigan Technological University received \$2.2 million in federal stimulus funding from the American Recovery and Reinvestment Act to support a pilot project to reduce ash tree mortality in Michigan's Upper Peninsula. The project is called SLow Ash Mortality or SLAM. The study is being conducted in five counties: Houghton, Keweenaw, Mackinac, Delta, and Schoolcraft.

Treatment of Ash Trees

Ash trees may be treated with insecticides to prevent EAB. The Iowa State University Extension 2009 publication, "Emerald Ash Borer Management Options" discusses the various options for treatment. The report recommends treatments for homeowners and for commercial applicators. The complete text of the Report is available at:
http://www.extension.iastate.edu/pme/EAB_other_forms/PM2084EmeraldAshBorer0609.pdf.

³ Michigan website: http://www.michigan.gov/documents/mda/EAB_preparedness_194302_7.pdf

⁴ Wisconsin website: <http://dnr.wi.gov/forestry/uf/eab/files/TOC.asp>

⁵ Minnesota website: <http://www.mda.state.mn.us/plants/pestmanagement/eab/eabinyourhood.aspx>

Biological Control Research

Research is also being completed on biological control of EAB. Research for EAB natural enemies is being conducted in China by the United States Department of Agriculture (USDA) and the Chinese Academy of Forestry. The research has determined three parasitoids have been approved by the USDA for release as biological control agents of EAB in the United States. Additional information is available at:

http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/EAB-FieldRelease-Guidelines.pdf

Other EAB Websites

Iowa EAB Readiness Plan:

<http://www.extension.iastate.edu/pme/EAB%20other%20forms/IA%20EAB%20Readiness%20Plan%2010MAY2010.pdf>

Iowa State University Extension EAB:

<http://www.extension.iastate.edu/pme/emeraldashborer.html>

Department of Agriculture and Land Stewardship: <http://www.iowatreepests.com/>

USDA – APHIS website:

http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/index.shtml

Emerald Ash Borer website: <http://www.emeraldashborer.info/Research.cfm>

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