



Wisconsin Emerald Ash Borer Status and Management Recommendations - 2009¹

(For area within 12 miles of Infestation in Ozaukee and Washington Counties)

Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP)
Wisconsin Department of Natural Resources (DNR)

Introduction

The Wisconsin Emerald Ash Borer (EAB) Response Plan states that when EAB is detected in the state, the state program will regulate pathways to prevent spread of this insect from the infested area to uninfested areas, provide technical assistance, education and outreach, conduct a delimiting survey to determine the extent of the infestation and subsequently recommend a plan of action to mitigate the impact of the infestation. This document summarizes the findings from delimitation activities, describes the infestation and presents options for mitigating the impact of EAB.

Background

Emerald ash borer was confirmed as being present in Ozaukee and Washington counties in August, 2008 (Figure 1). These counties and neighboring Fond du Lac and Sheboygan counties were placed under quarantine on August 7, 2008. The quarantine prohibits the movement of any ash product that could transport a life stage of EAB and all hardwood firewood. Permission to move these articles outside of the quarantine may be granted with approval by either DATCP or USDA Animal Plant Health Inspection Service (APHIS) through the issue of a regulatory compliance agreement. Since the discovery of EAB in Wisconsin, 15 regulatory compliance agreements have been issued for companies established within the quarantine area or who receive ash material from the area. An Incident Command System (ICS) team was designated to oversee and guide multi-agency activities in the quarantine area. A survey to delimit the infestation was initiated in August, 2008.

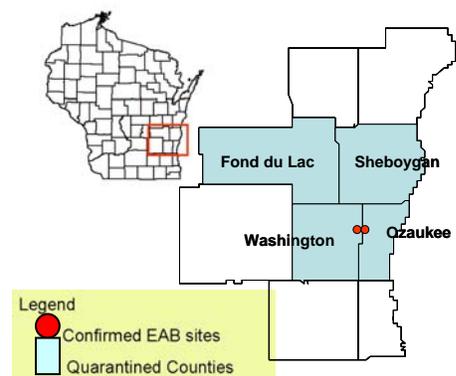


Figure 1. Locations of EAB and quarantined counties, August, 2008.

Survey Results: Statewide and Delimitation

Traps

A total of 257 purple prism traps were set in the quarantine area (127 in Washington County, 53 in Ozaukee County, 49 in Sheboygan and 28 in Fond du Lac County) and an additional 3,368 were deployed statewide. One trap in the Village of Newburg, approximately .5 mile northwest of the first EAB find, contained three adult EAB; all other traps in Wisconsin were negative.

¹ Supplement to the Wisconsin Emerald Ash Borer Response Plan revised July, 2008

Detection Trees

A total of 246 detection trees² in the quarantine area (101 in Washington County, 60 in Ozaukee County, 66 in Sheboygan County and 19 in Fond du Lac County) and an additional 590 statewide were examined. This survey did not find any additional infested trees outside of the generally infested area surrounding the Village of Newburg.

Visual

Since the discovery of EAB in Wisconsin, a number of visual surveys have been conducted in the Newburg area. An aerial survey of the woodlands within approximately 5 miles of the infested area was conducted and groups of dead trees were identified for ground examination. A grid-based survey, where ash trees were examined on a 330' by 330' grid, was conducted within a two mile radius of the Village of Newburg. Visual assessments of ash street trees in all communities located within 10 miles of the infested area and ash trees visible from roadways in the area between 2 and 10 miles from the infestation were conducted. Ash trees in selected private and state campgrounds within 15 miles of the infestation were also assessed. Collectively, these surveys revealed additional areas of infested trees in and around the Newburg area (Figure 2).

Site Evaluation

Key factors have been identified in the EAB response plan that influence the feasibility of control or containment strategies. The following factors have been identified as playing a significant role in influencing management strategies for this infestation.

Age and Size of Infestation

Status: The infestation in Ozaukee and Washington counties covers approximately 3,700 acres and may involve as many as 50,000 ash trees. An analysis of the age of the infestation by Michigan State scientist Dr. Nate Siegert has shown the insect first invaded the area at least 5 years ago (2004). The source of the infestation has not been identified.

Implications: Data from other states have shown that only young infestations (1 to 2 years old) with an identified pathway and known timing of introduction are more likely to be eradicated. Conversely, infestations that have been present for several years have had the opportunity to spread, are difficult to accurately delimit and are unlikely to be effectively eradicated.

Ash density and distribution within and adjacent to the infestation

Status: The three most common timber types in and around the infested area include northern hardwoods, bottomland hardwoods and swamp hardwoods. On average, ash makes up approximately 15% of the trees in northern hardwood stands, 50+ % in bottomland hardwoods and 85+ % in swamp hardwoods. The landscape

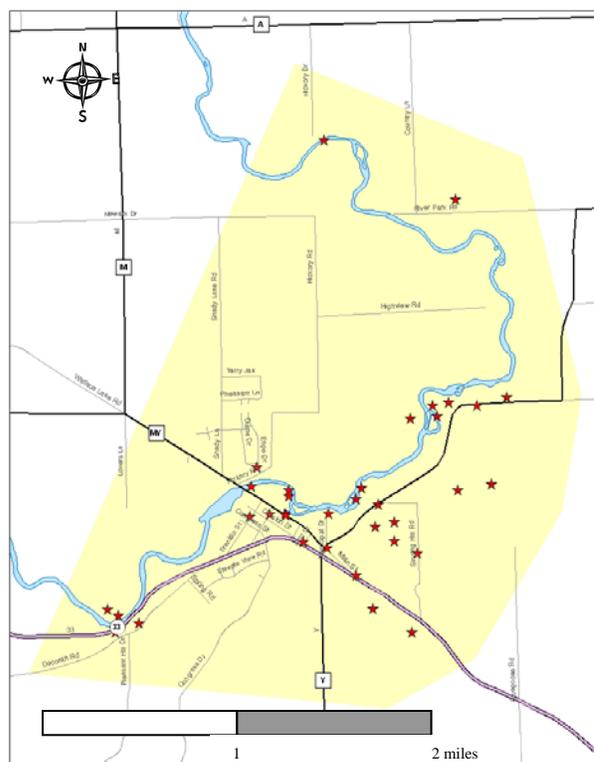
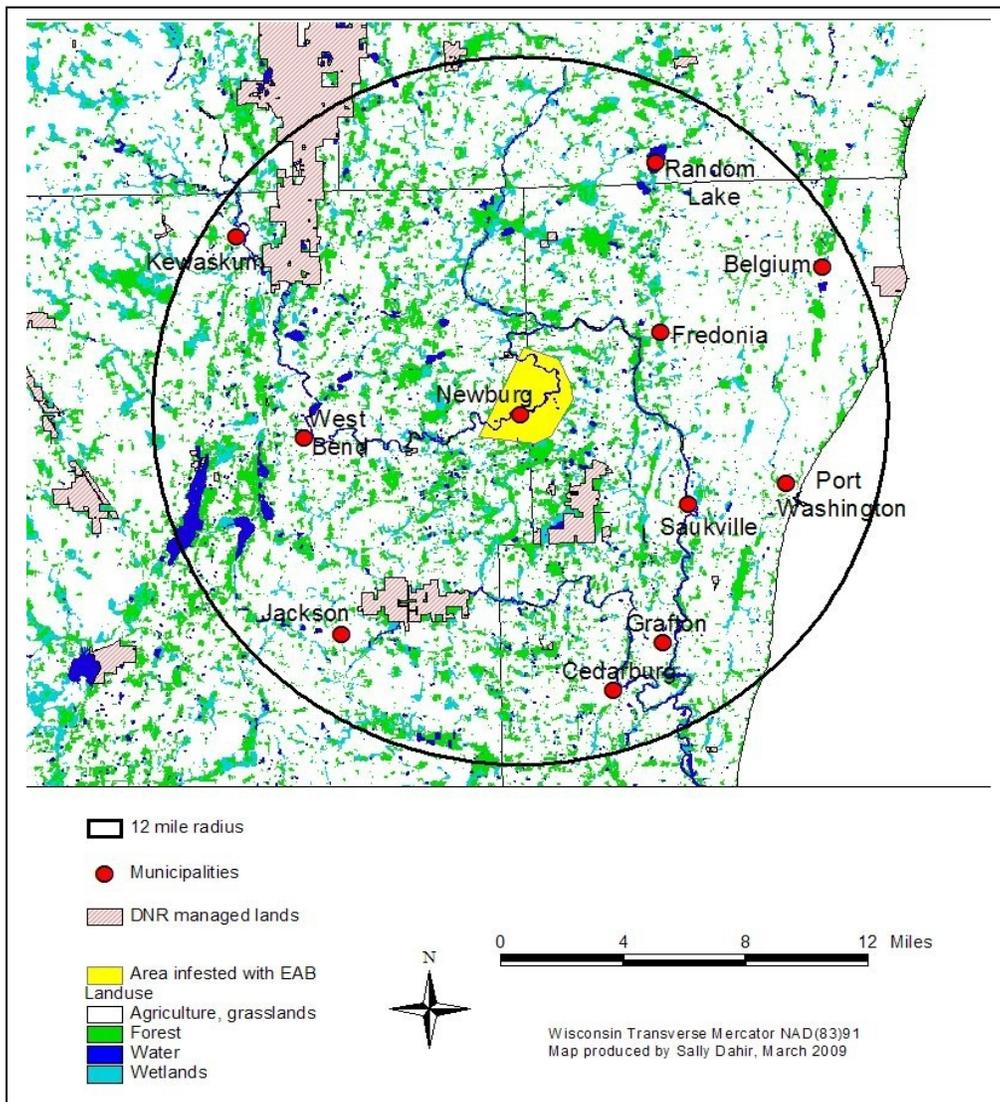


Figure 2. Locations of areas with infested trees 
Approximate area considered to be infested. 

² Trees girdled in the spring to attract EAB and peeled in the fall to examine for the presence of EAB larvae

in and around the infested area is a patchwork of woodlands interspersed with agricultural land and municipalities (Figure 3). Street tree inventories from communities in and around the infestation show 15 – 35% of the trees are ash. This landscape with contiguous ash resource throughout and adjacent to the infestation provides no opportunity to utilize natural barriers, (areas without ash for a minimum distance of 10 miles), to inhibit EAB spread.



Implications: Forest stands containing 20-85+% ash are distributed throughout and adjacent to the infested area and offer significant challenges for containing the infestation. EAB can easily find host material for feeding and breeding. Bottomland and swamp hardwood sites can provide additional challenges for mitigation that involves cutting trees. Soils on these sites typically remain wet for long periods of time, making them inaccessible and highly susceptible to compaction. Scattered throughout this rural forest landscape are communities that have an ash street tree component of 15 – 35%. This urban resource will also provide a significant amount of material for EAB feeding and reproduction.

Presence of natural dispersal corridors

Status: The Milwaukee River runs through the infestation and south to Milwaukee County. Tributaries of the river run north to Sheboygan and Fond du Lac counties. Green ash is a common tree species growing along the banks of the river.

Implications: The Milwaukee River and tributaries provide a natural dispersal corridor or “pest freeway” that provides breeding habitat and food for the insect. Movement along the Milwaukee River corridor is expected to occur as host material is widely available. Harvesting ash along the river may be impractical in many locations.

Summary

The EAB infestation in Ozaukee and Washington counties covers an area of approximately 3,700 acres and contains tens of thousands of ash trees. The insect arrived to the area at least 5 years ago (2004). Infested trees are distributed throughout forest and urban settings. Ash is a common component of forest lands in and adjacent to the infested area. The Milwaukee River and its tributaries provide a corridor for movement of EAB. Eradication is not a viable strategy yet there are management options that may reduce the rate of spread and reduce the impact of EAB on rural and urban landowners and communities.

Recommended Management Actions

Eradication is not a viable option. Given what we currently know about the size, extent and age of the infestation in Ozaukee and Washington counties, the difficulty in precisely delimiting the edges of the infestation and knowledge gained from previous attempts to eradicate EAB in other states, eradicating EAB by removal of all ash trees in the area will not be successful.

Prevention, Early Detection, Integrated Control or Containment

With eradication eliminated as an option, management strategies by state and local governments and public and private property owners must focus on actions that may reduce the rate of spread and impact of EAB on rural and urban landowners and communities (Table 2). Unfortunately, the current state of scientific knowledge of EAB does not yet provide a clear recommendation for a single best method to manage this infestation. However, the state EAB response plan outlines management activities in three categories: 1) prevention, 2) early detection and 3) integrated control or containment – which may help reduce the spread and impact of EAB. These activities are recommended for homeowners, professionals in the tree care industry, communities, forest landowners and businesses in an area within 12 miles of the infestation in Ozaukee and Washington counties (Figure 3).

Technical Resources

Additional information related to EAB may be found by visiting www.emeraldashborer.wi.gov or calling the EAB hotline: 1-800-462-2803. Additional technical resources are available through several agencies and professional experts (Table 1).

Table 1. Additional technical resources

If you are a:	Contact: (refer to www.emeraldashborer.wi.gov for further contact information)
Woodland Owner	1) DNR or professional consulting forester for information on forest inventory, management and harvest activities 2) DNR forest health specialist for information on EAB biology and other forest insect and disease issues
Urban Forest Manager (including arborists and consultants)	DNR urban forester
Homeowner	1) UW-Extension for EAB biology and management 2) DATCP hotline 1-800-462-2803 for reporting suspect EAB
Business handling ash material (logs, firewood, mulch, nursery stock)	1) DATCP for quarantine information and intrastate movement of regulated materials 2) USDA APHIS for interstate movement of regulated materials

Table 2. Management recommendations for an area within 12 miles of the EAB infestation in Ozaukee and Washington counties.

PREVENTION	Home-owner	Community	Forest Landowner	Business³
1. Do not move ash material (firewood, nursery stock, logs) onto property. ⁴	X	X	X	X
2. Inventory the trees on your property to identify your ash resource, determine the potential impact of EAB and develop a plan of action.	X	X	X	
3. Provide education and outreach on preventing movement of EAB on firewood and other infested material and on identification and reporting of EAB.		X		X
4. Ash firewood continues to be a source of long-distance spread of EAB; all species of firewood may contain injurious insects and diseases. Don't move firewood unless certified or treated to kill forest pests.	X	X	X	X
5. Consult with a professional forester or professional arborist to determine your options for minimizing the impact of EAB.	X	X	X	
6. Consider using pesticides to prevent infestation of high value trees.	X	X		
7. Consider replacing landscape and urban ash trees with other species appropriate for the site.	X	X		
EARLY DETECTION				
8. Examine ash trees for signs and symptoms and report infestations to the EAB hotline 1-800-462-2803 or www.emeraldashborer.wi.gov	X	X	X	X
CONTROL OR CONTAINMENT				
9. Within quarantined area, destroy or utilize infested material, following guidelines for managing EAB-infested wood.	X	X	X	X
10. If planning on moving regulated material out of quarantined area, follow quarantine regulations and contact DATCP regulatory staff for intrastate movement and APHIS staff for interstate movement.	X	X	X	X
11. Consider using pesticides to maintain high value trees and reduce EAB populations within the tree.	X	X		
12. Contact a professional forester or professional arborist to review options for implementing management practices that sustain a forest resource on your property.		X	X	

³ Businesses handling ash nursery stock, firewood, logs, mulch or other ash material.

⁴ Some businesses or communities may move material onto lands under their management if the intent is to destroy all life stages of the insect.

Landscape-level Management

Managing EAB on a larger scale requires coordination of multiple landowners and communities. Strategies that may slow the movement of this insect or reduce its population include using one or several options including “sinks”, pesticides and phloem reduction. As these methods are tested, more information will become available that outlines options for implementation.

Sinks, Pesticides, Phloem Reduction

Guidance for landscape-level management is still in development. A pilot project in Michigan is testing an integrated approach of implementing an extensive delimitation and detection survey to better define population levels and locations, and applying management through the use of “sinks”, pesticides and phloem reduction. Stressed trees or “sinks” may be used to draw or attract EAB back into an infested area, slowing its movement away from infested areas. Sinks are created by girdling small clusters of ash trees or one large ash tree in the spring, before April 30. EAB are attracted to and infest these trees during the summer. *Trees used as sinks must be destroyed before the following spring (April 30), following wood waste destruction guidelines.* Following this procedure may not only slow the movement of EAB out of an infested area but may also destroy some of the EAB population through destruction of the infested material. The effectiveness of various pesticides continues to be tested; some products may cause a significant amount of mortality to EAB within individual trees. Details related to length of product efficacy and overall effectiveness of reducing the population are still being determined. Phloem reduction or the removal of ash trees will reduce the amount of material available for EAB feeding. Data is still being gathered on the effects of reducing phloem on EAB population levels and movement.

EAB Program Strategies – 2009

The statewide EAB program includes an EAB Interagency Advisory Group, which provides oversight to operations and communications groups and a science panel and their ad hoc sub-committees. Together these teams develop and implement action plans, gather and assess data, issue press releases and manage media and public relations, provide outreach and education on prevention, preparedness and response options, support or conduct investigations, and manage all state aspects of investigative and response functions. Action plans are reviewed by all participating parties for approval.

The statewide EAB program has developed strategies for 2009 that focus on the infestation in southeast WI and statewide activities. Strategies have been developed for seven program areas, including 1) EAB and ash management, 2) survey, 3) regulatory activities, 4) communication and outreach, 5) utilization and material management, 6) funding and 7) research. For more information on this activities, please see “Wisconsin Emerald Ash Borer Response Activities and Program Strategies – 2009”, available at www.emeraldashborer.wi.gov