

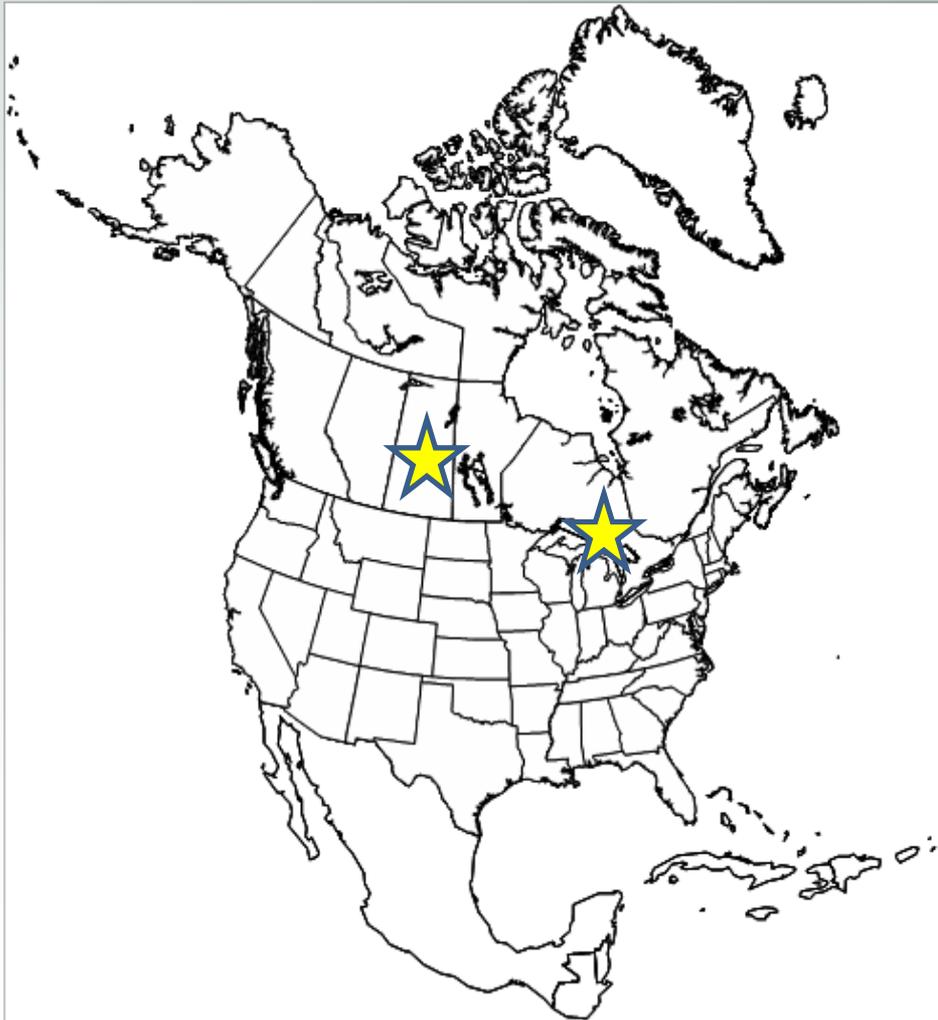
# **Components of an Effective Emerald Ash Borer Management Plan**

**Paul Bolan**

**BioForest Technologies Inc.**



# BioForest Office Locations



**Head Office - Sault Ste. Marie, ON**

**Regional Office – Prince Albert, SK**

**Staff – 11 SSM, 2 PA**

# Who is BioForest?



- Born in 1995 from Canadian Forest Service downsizing
- BioForest principals (Joe Meating & Paul Bolan) were members of the Forest Insect & Disease Survey Unit – Canadian Forest Service

## Expertise:

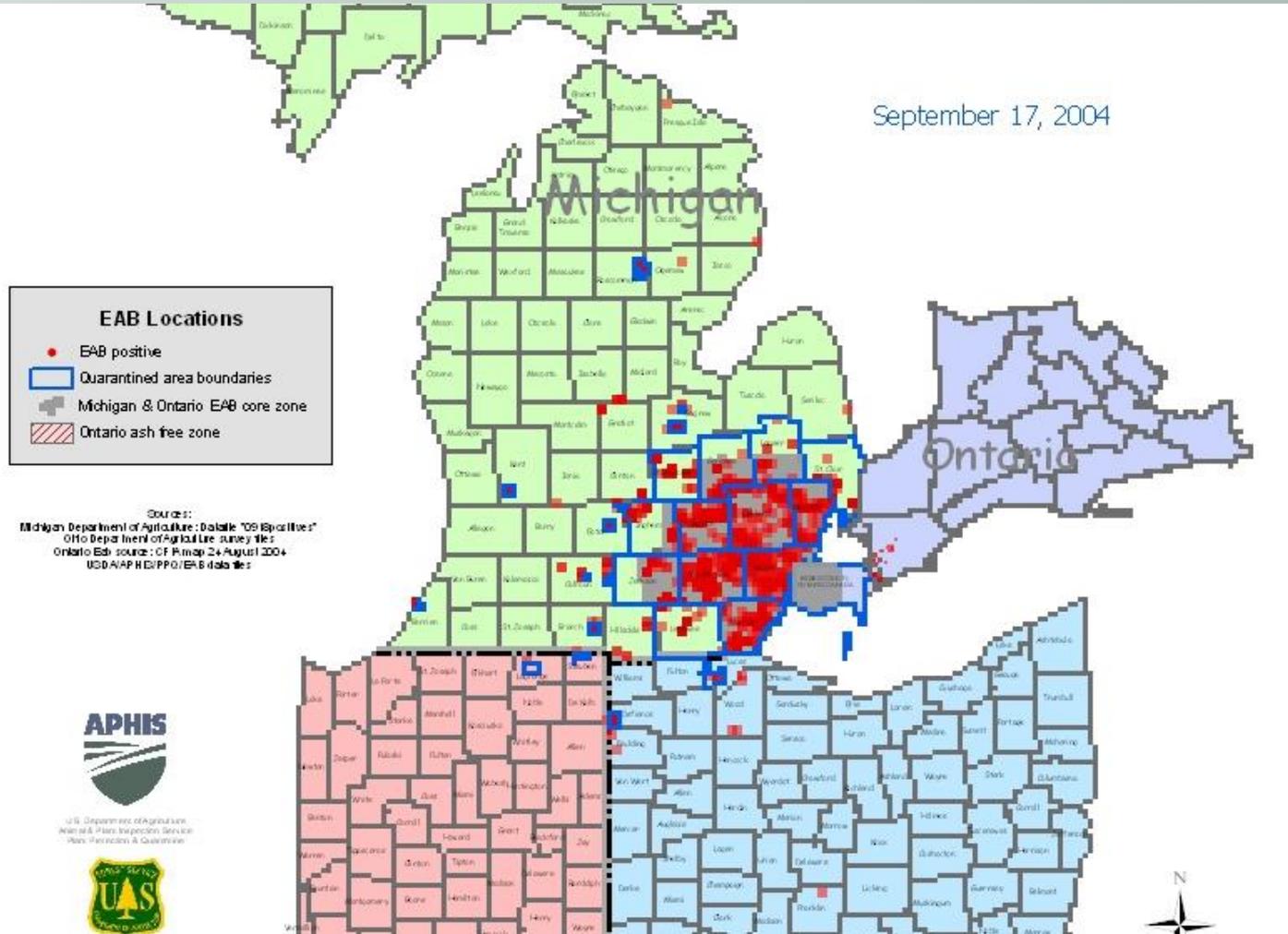
- Commercial & Urban forest surveys
- Commercial & Urban forest pest management
- Tree care product development & distribution - 2008-14

**TreeAzin<sup>®</sup>**

**Arbotect 20-S**

**EcoJect System<sup>®</sup>**

# Emerald Ash Borer



September 2004

# Emerald Ash Borer

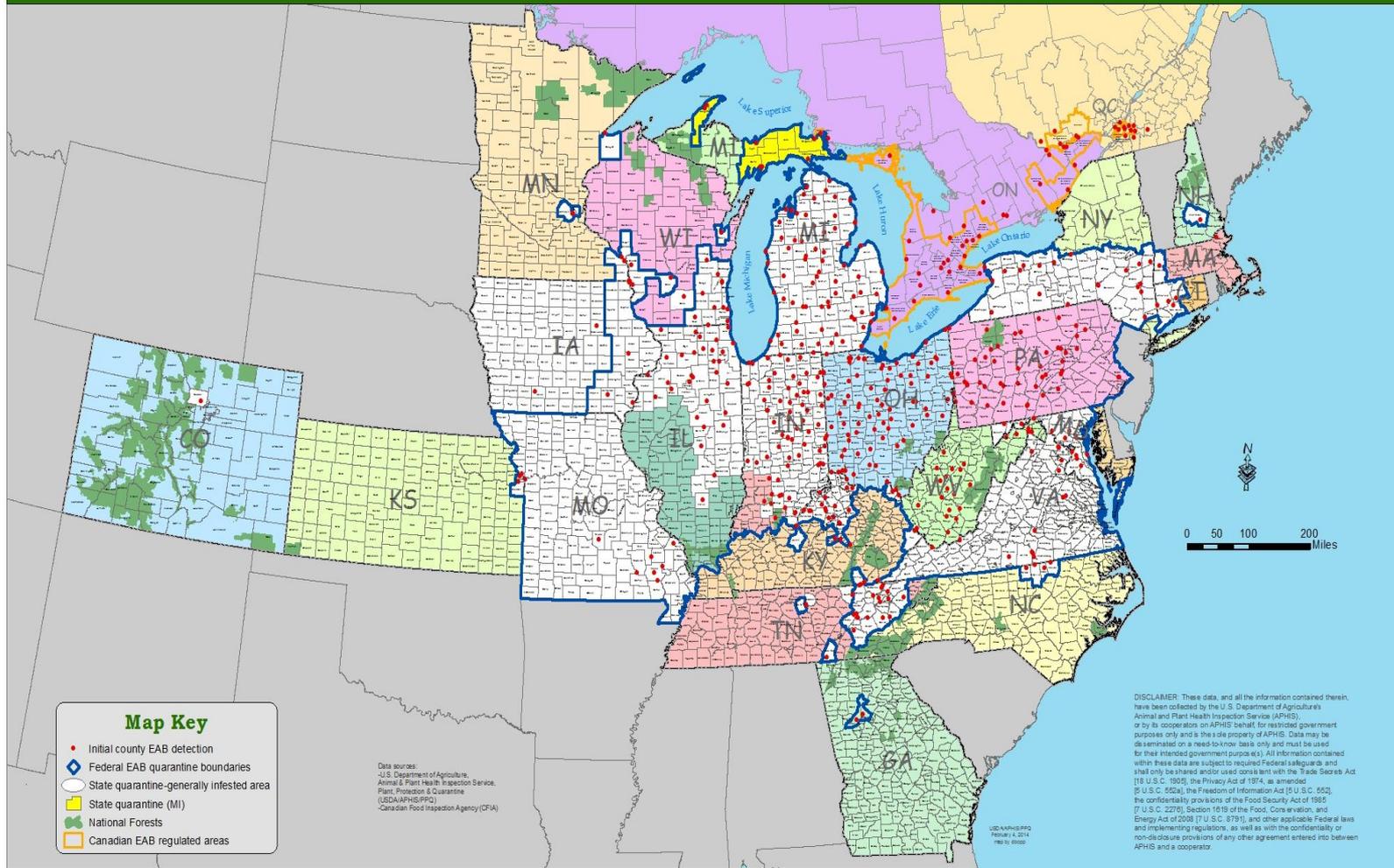


United States  
Department of  
Agriculture

## Cooperative Emerald Ash Borer Project

Initial county EAB detections in North America

February 4, 2014



# **Emerald Ash Borer**



## **EAB Host Preference**

- **EAB are attracted to stressed ash trees**
- **EAB prefers green ash**
- **EAB prefers green ash over white ash when the two species exist together**
- **Black ash is highly preferred and a very vulnerable host**

# Emerald Ash Borer



## Natural dispersal of EAB (*Dr. Deb McCullough – MSU*)

- Large field studies have shown:
  - Most female EAB lay eggs within 100 meters of their emergence point
  - A small portion of females disperse up to 800 metres and a few females probably go further – maybe 3-5 km

*Mercader et al. 2009. For.Ag. Ent.*

*Seigert et al. 2010*

*Mercader et. al. 2011. Pop. Ecol.*

*Mercader et al. 2012. J. Econ. Ent.*

# Emerald Ash Borer



“True EAB distribution is ALWAYS further than we think!”

*(Dr. Deb McCullough – MSU)*

# Emerald Ash Borer



# Emerald Ash Borer



# Emerald Ash Borer



# Emerald Ash Borer



## Management Options:

1. Treat all ash trees with an insecticide(s)
2. Let EAB kill all the ash trees
3. Treat high value ash trees that provide significant benefit, remove low quality ash trees and replant non-ash species

**This is not an option**



# Coalition for Urban Ash Tree Conservation



## Coalition for Urban Ash Tree Conservation - Emerald Ash Borer Management Statement -

[www.emeraldashborer.info/files/conserve\\_ash.pdf](http://www.emeraldashborer.info/files/conserve_ash.pdf)

signed 06 Jan 2011

*We the undersigned strongly endorse ash tree conservation as a fundamental component of integrated programs to manage emerald ash borer (EAB) in residential and municipal landscapes. Cost-effective, environmentally sound EAB treatment protocols are now available that can preserve ash trees through peak EAB outbreaks with healthy canopy intact. Used in association with tree inventories and strategic removal / replacement of unhealthy ash, tree conservation will help retain maximum integrity and value of urban forests. This integrated approach to urban EAB management is supported by university scientists with expertise in EAB management, commercial arborists, municipal foresters, public works officials, and non-governmental organizations (NGOs).*

In summary, urban ash conservation can be less costly than removal, especially when the significant environmental and economic benefits of established trees are considered ([www.treebenefits.com](http://www.treebenefits.com), <http://extension.entm.purdue.edu/treecomputer/>). Furthermore, ash conservation can circumvent the substantial environmental impacts caused by wholesale deforestation of the urban landscape, as well as the documented public safety risks associated with standing dead ash trees and their removal.

# Emerald Ash Borer



Arboriculture & Urban Forestry 38(3): May 2012 81

ISA  
International Society of Arboriculture

Arboriculture & Urban Forestry 2012. 38(3): 81-91

ARBORICULTURE  
URBAN FORESTRY  
Scientific Journal of the  
International Society of Arboriculture

## Estimates of the Potential Cost of Emerald Ash Borer (*Agrilus planipennis* Fairmaire) in Canadian Municipalities

Daniel W. McKenney, John H. Pedlar, Denys Yemshanov, D. Barry Lyons, Kathy L. Campbell,  
and Kevin Lawrence

**Abstract.** Emerald ash borer (EAB) is an invasive phloem-feeding insect causing extensive mortality to ash (*Fraxinus* sp.) in North America. Economic costs associated with EAB-related mortality of street and backyard trees in Canadian urban areas were estimated over a 30-year time horizon.

# Components of an Effective EAB Management Plan



THE CITY OF  
PHILADELPHIA

*EMERALD ASH BORER  
MANAGEMENT PLAN*



*A PLAN DEVELOPED TO PRIORITIZE  
RECOMMENDATIONS FOR THE COST-EFFECTIVE  
MANAGEMENT OF ASH (FRAXINUS SPP.) TREES IN  
THE CITY OF PHILADELPHIA*

2012

# Components of an Effective EAB Management Plan



- **Administration**
- **Authority**
- **Tree Inventory (Protocol and Data Collection)**
- **EAB Detection & Monitoring (Protocol and Data Collection)**
- **Management Options (Insecticides, Removal, Planting)**
- **Wood Movement, Utilization & Disposal**
- **Data Base Management**
- **Cost Benefit Analysis**
- **Funding (15-20 yrs.)**
- **Public Education & Communication**

# Components of an Effective EAB Management Plan



## Tree Inventory

**“Inventory is crucial to effectively managing EAB. Without an inventory of publicly-owned ash trees in the right-of-way, public parks, open spaces, woodlots and forested areas, we will not know their location, distribution, size and condition. Without this information we will not know the City’s potential risk exposure or be able to strategically manage the EAB outbreak.”**

***City of Peterborough, ON***

# Components of an Effective EAB Management Plan



## EAB Detection & Monitoring



Detecting and monitoring emerald ash borer populations

**Branch sampling protocol developed  
by the Canadian Forest Service**



# Components of an Effective EAB Management Plan



## Benefits of using branch sampling

- **Quantify extent and severity of EAB infestation**
  - Identify areas with low-level EAB infestation
  - **Outbreaks often much larger than suspected!**
- **Delimits more accurately the infestation and buys additional time for:**
  - Informed decision making
  - Application of appropriate treatments

# Components of an Effective EAB Management Plan



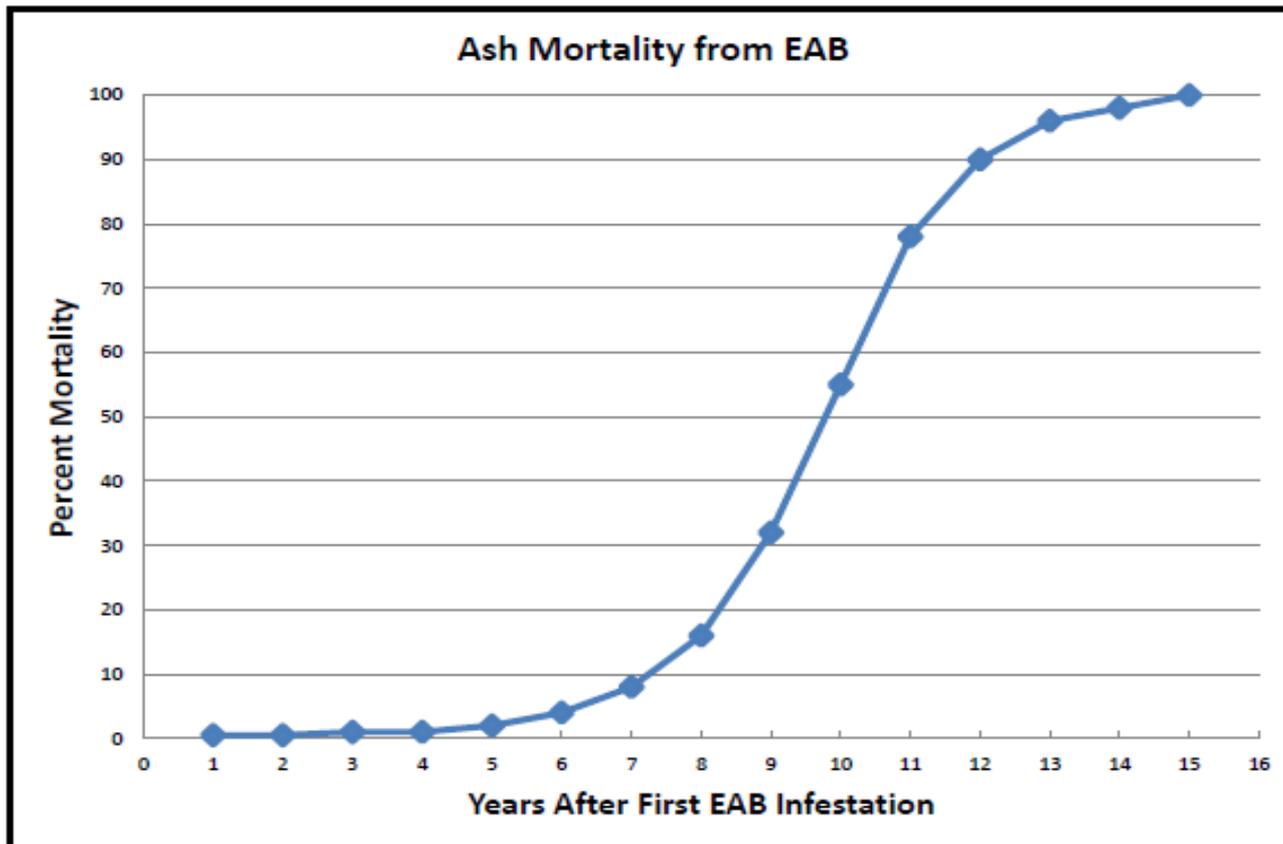
## EAB Detection & Monitoring



# Emerald Ash Borer



## Know Where You Are



# Emerald Ash Borer



## Insecticides Registered in Canada

- **AceCap<sup>®</sup> 97 - Acephate**
- **Confidor<sup>®</sup> 200SL - Imidacloprid**
- **TreeAzin<sup>®</sup> - Azadirachtin**

# Emerald Ash Borer



**EAB is always worse than it appears!**

**Treatments must be initiated ASAP  
following detection of EAB to prevent  
damage to tree vascular tissues**

# Thank You

