

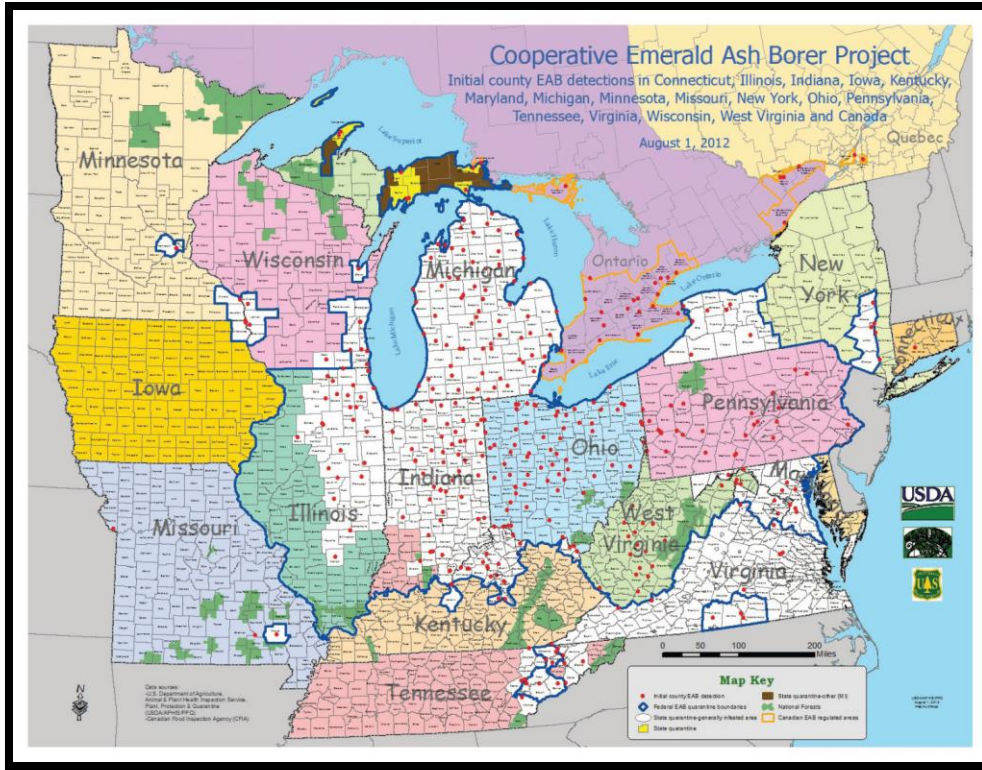
# EAB Management Options vs. the “Ash Mortality Curve”

Jim Zwack, M.S.  
The Davey Institute

# Components of EAB Management

- Education
  - Of public officials, decision makers, private citizens
- Inventory/Assessment
  - Define the scope of problem
  - Establish an economic conversation
- Management Plan/Decision Making
- Treatments
  - To save trees
  - To stage removals for later budget cycles
- Removals
- Replacement

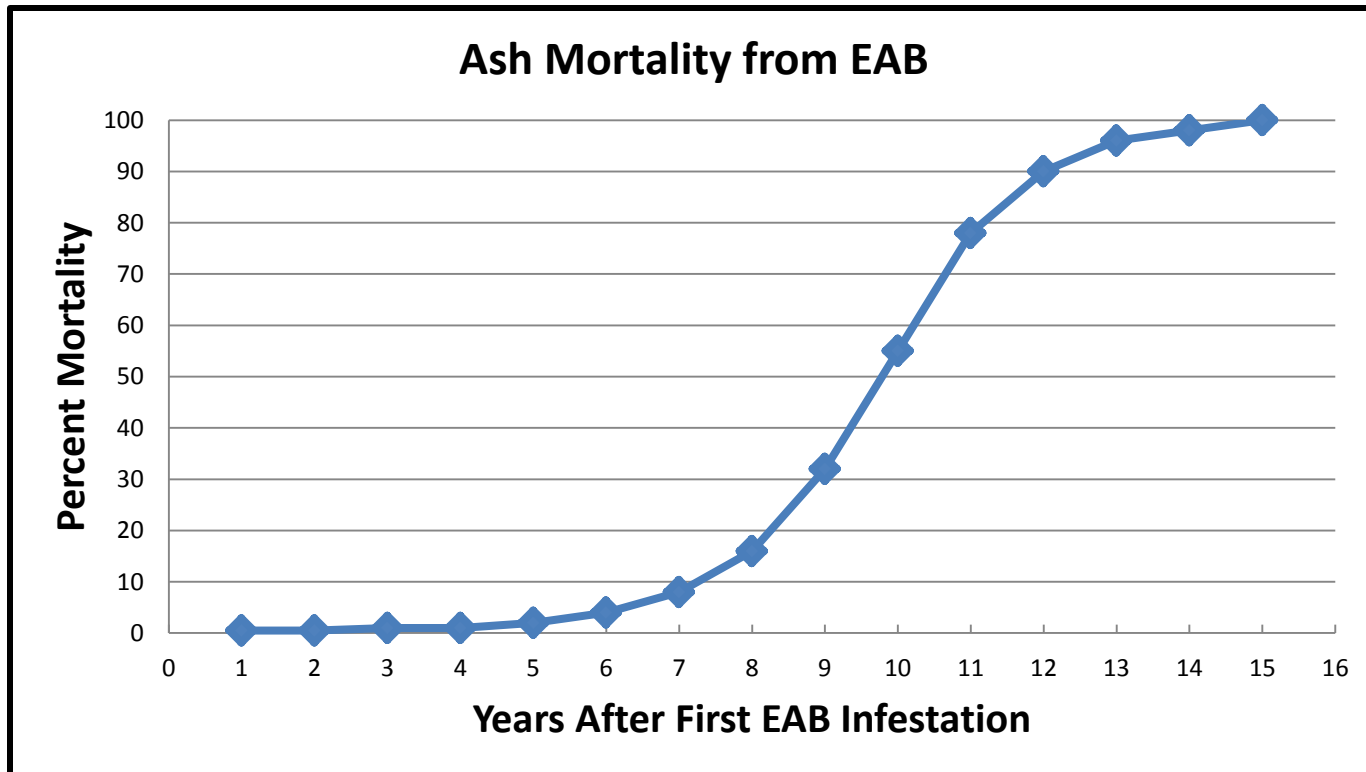
# A Diverse Audience = A Broad View



- We will work the problem backwards...

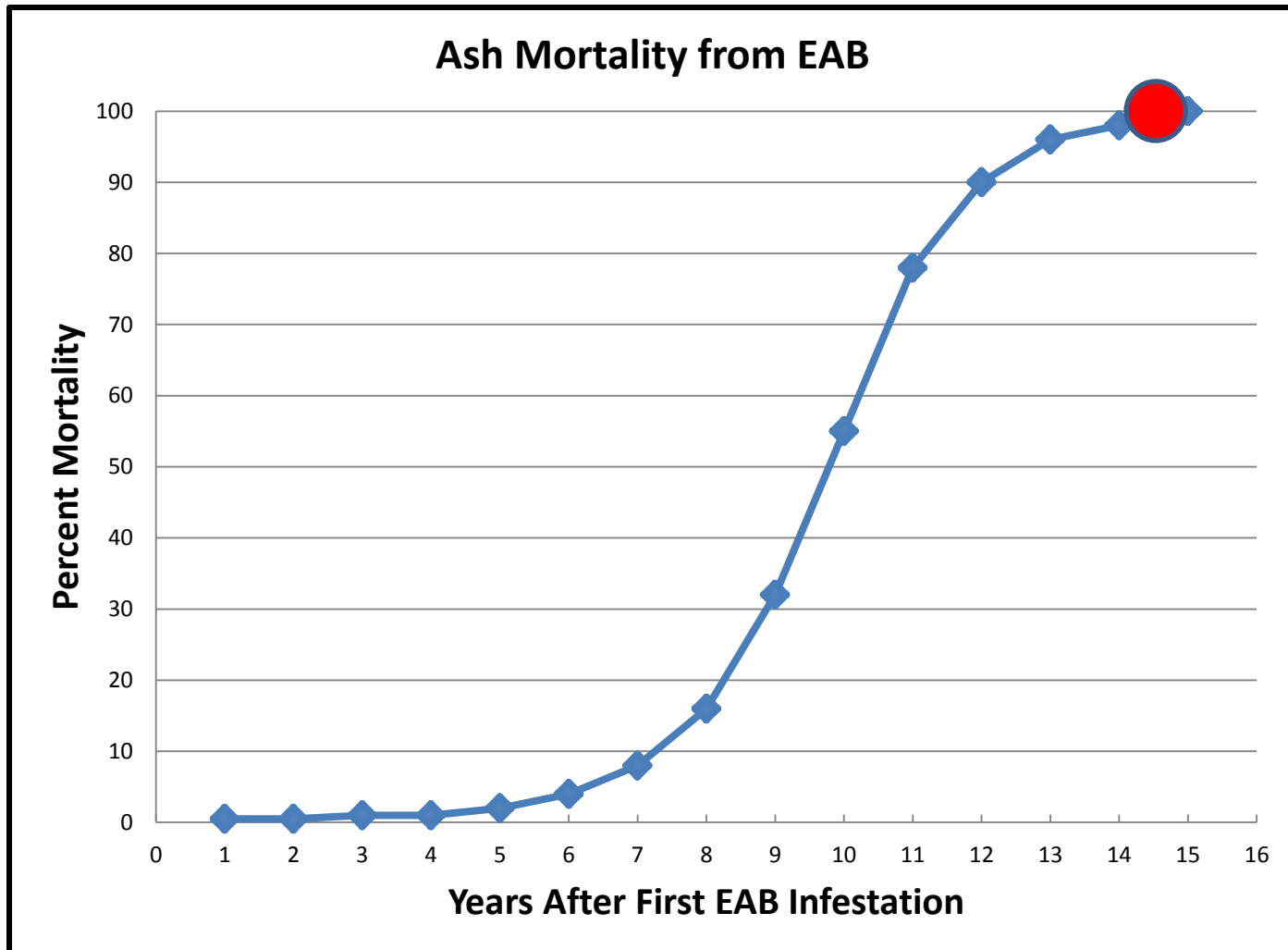
# What Tools to Use?

- The pattern of tree losses caused by EAB is the key driver of your management options
- Where are you at on the curve?



# Detroit – Epicenter of EAB

## What just hit us???



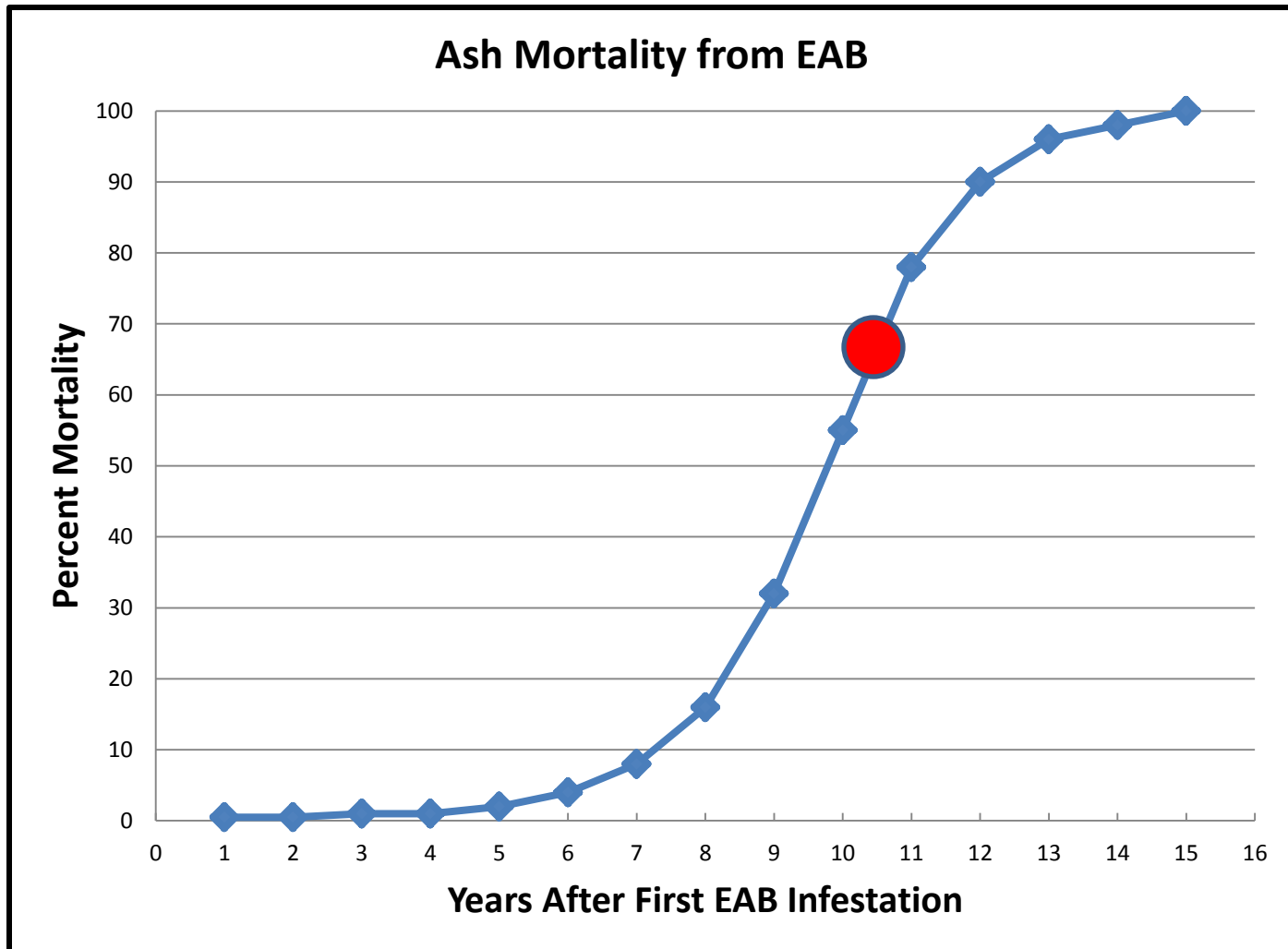
# Detroit – Epicenter of EAB

- Discovered in 2002
- Virtually all ash in Detroit are gone except for those that have been treated
  - Treatments were essentially experimental
- ***Management Options that Remain:***
- Replanting
  - Species diversification



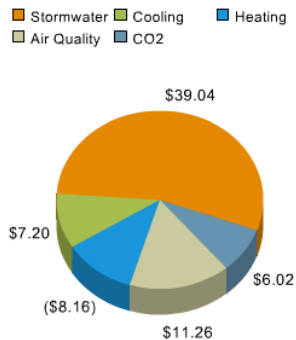
# Fort Wayne, IN

## Actively Engaged in the Worst of EAB

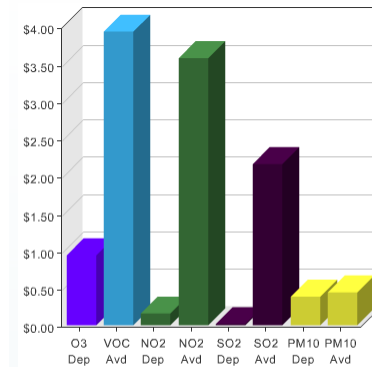
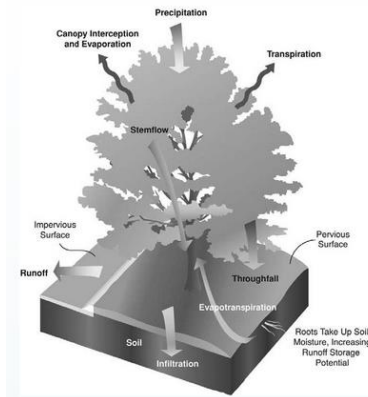


# Fort Wayne, IN

- Discovered in 2006
- Performed an inventory and tree assessment
  - At the onset of EAB Fort Wayne had about 16,000 municipal ash trees
  - These trees provided an annual green benefit of approximately \$1.2 million (i-Tree)



Breakdown of your tree's benefits



"Dep" stands for deposition. This is your tree absorbing or intercepting pollutants. "Avd" stands for avoided. This is your tree lessening the need for creation of these pollutants in the first place by reducing energy production needs.



# Fort Wayne, IN

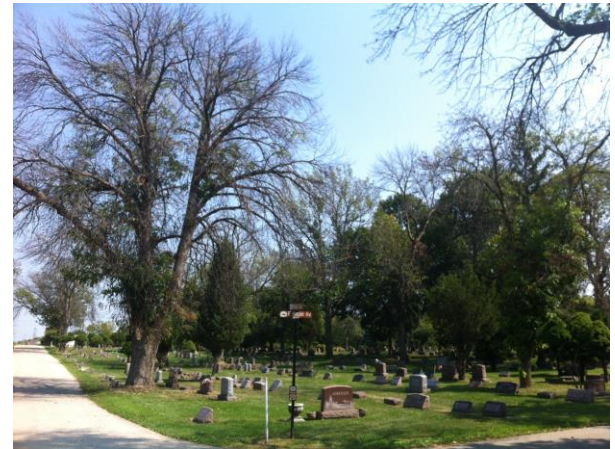
- By 2011 there were 11,500 ash left
  - About 3,700 removals in 2011
  - About 5,000 slated for removal in 2012
- 10,000 trees treated for 1 year – lost funding
  - Good sense of “what” to do
  - Little support to get traction
- Treating approximately 1,000 trees annually



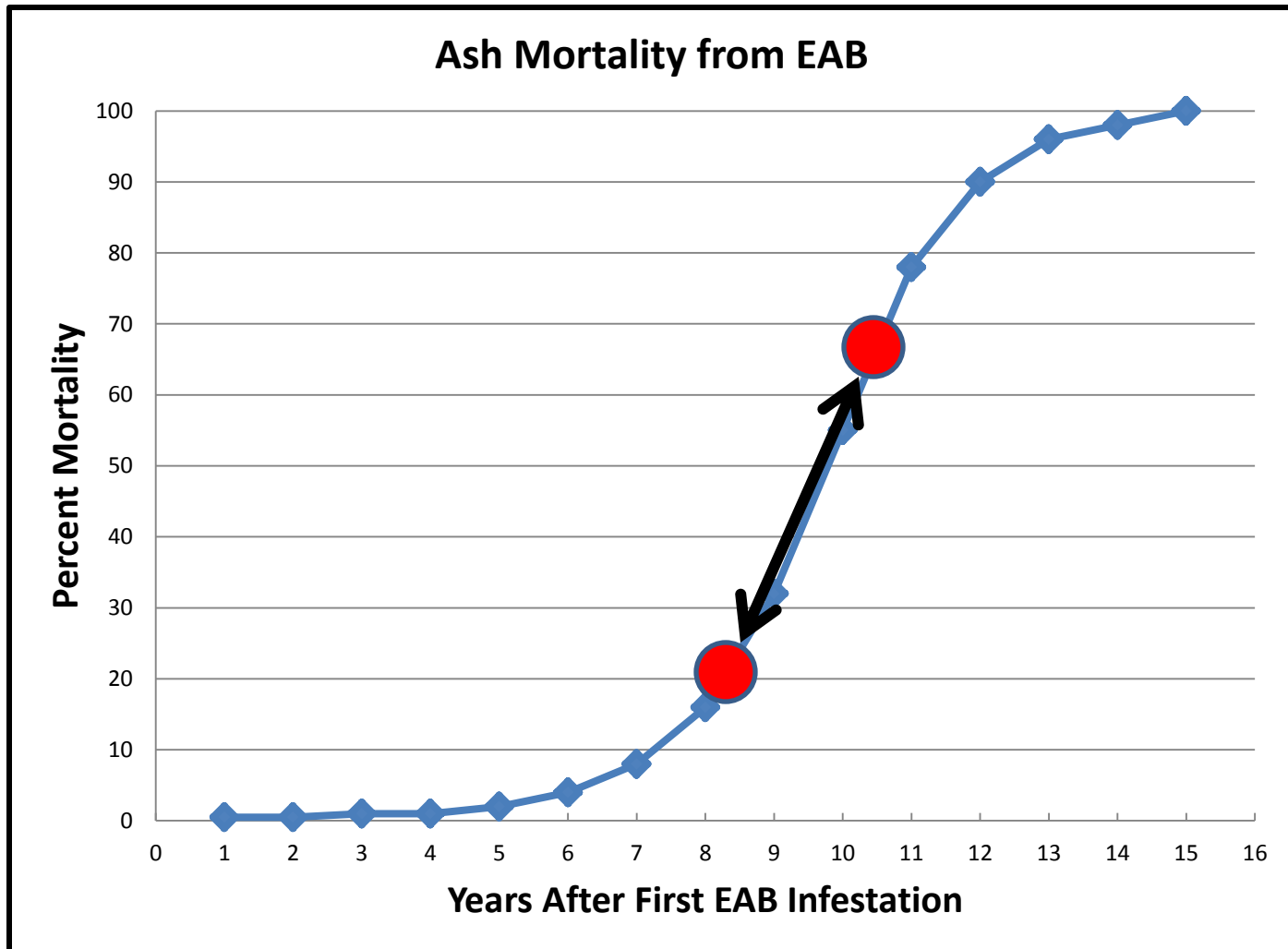
# Fort Wayne, IN

## *Management Options that Remain:*

- Replacement with an eye for diversity
  - Risk prevention threatens replacement budgets
  - The risk of lawsuits from falling limbs is real
- Removal
  - Several thousand standing dead trees
  - Several thousand more next year
- Treatment
  - Continue preservation on about 1000 important trees
- Public awareness/education

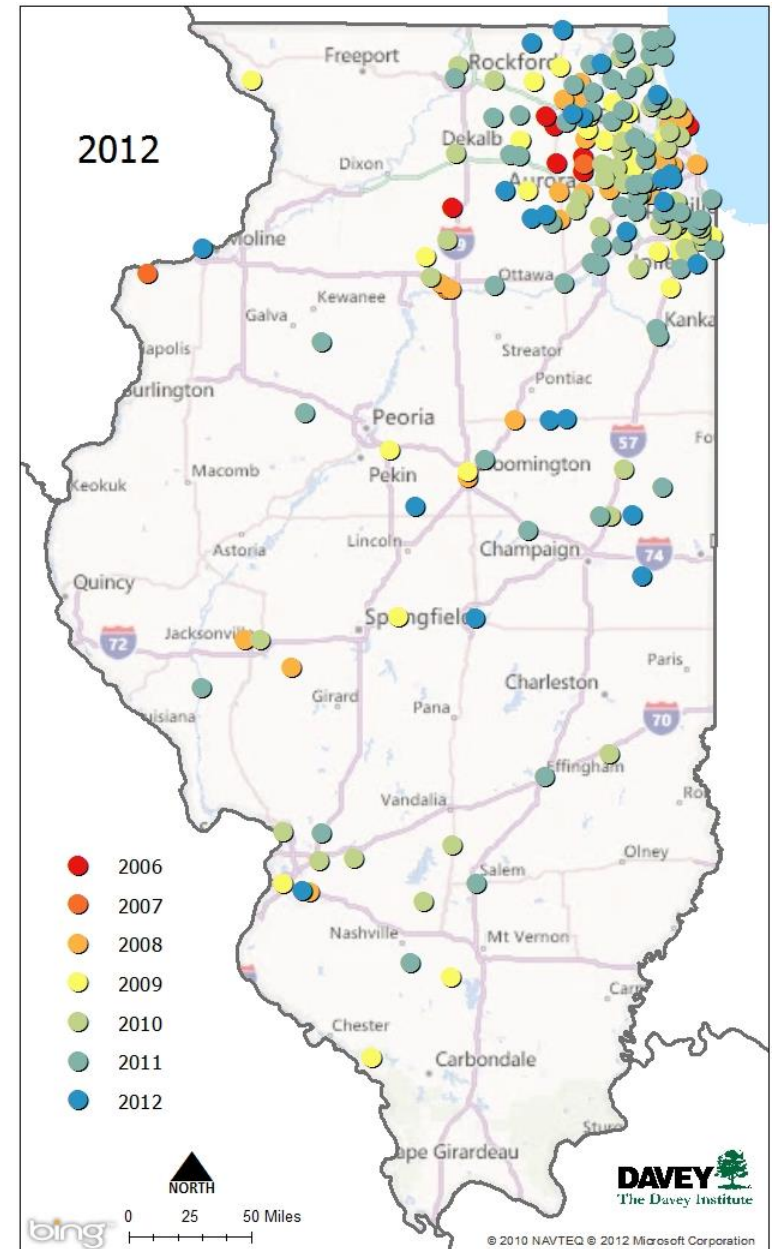


# Chicagoland A Range of Pressure

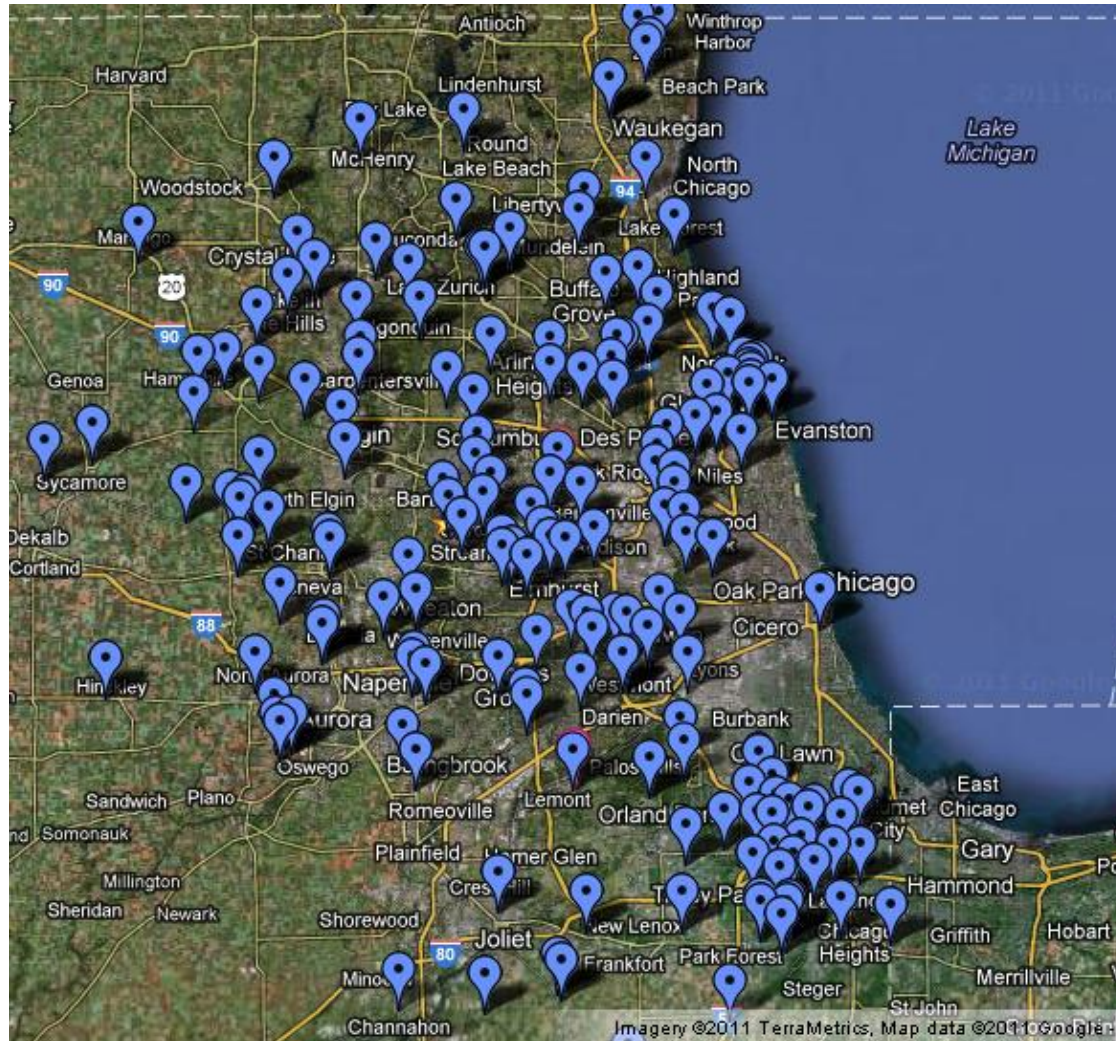


# EAB discovered in Illinois in 2006

- Evanston
- Wilmette
- Winnetka
- Batavia
- Elburn
- St. Charles
- Lilly Lake



# Chicago EAB – Present Day



# Chicago EAB History - 2006

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- **Discovered in June of 2006**
  - » Found ~15-20 infested trees in a Far West suburb
    - State contemplated a large clear cut
  - » Month later: Found in 2 Near North suburbs
  - » Trap Tree study initiated
  - » Found other infested suburbs
  - » Arborist mass marketing mailings not well received by State
- **Very High Media Interest**
- **Not sure what would happen**

# Chicago EAB History - 2007

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- **More infestations found**
  - » **Outside original planned clear-cut zone**
  - » **Other distant communities infested**
- **Lots of media interest**
- **State recommends 15 mile treatment radius**
- **TCOT: Began “quietly” making soil applications of imidacloprid**

# Chicago EAB History - 2008

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- EAB popping up everywhere
- TREE-age begins getting press “silver bullet”
  - » 4 different rates
  - » Multiple application techniques
  - » Confusing
- Media still following new finds
- TCOT: ramping up soil applications of imidacloprid



# Chicago EAB History - 2009

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- **New communities with EAB commonplace**
- **Media beginning to lose interest**
- **TCOT: Recommend treating all ash trees**
  - » **Mostly soil applications with imidacloprid**
  - » **First TREE-äge applications**
    - **Rather complicated chart based on dbh and length of desired residual**

# Chicago EAB History - 2010

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- EAB showing up everywhere
  - » Significant tree death in original find areas
- Media beginning to lose interest
  - » Becoming more local interest news
- TCOT: imidacloprid still primary method
  - » Adding in dinotefuran on more frequent basis
  - » Arbor-Jet fine tunes TREE-äge dosage
  - » Results in more TREE-äge applications sold
    - Begins to replace imidacloprid where injections used
    - Began to see limitations of passive system
      - Variable uptake speed

# Chicago EAB History - 2011

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- Presence of EAB more common than its absence
- Media becoming numb to presence
  - » Still locally popular
  - » Many new finds not even reported
- TCOT: TREE-äge becoming major player
  - » Purchased 10 hydraulic units during year
  - » Replacing soil applications in higher pressure areas
    - Dinotefuran and imidacloprid often used together

# Chicago EAB History - 2012

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- **Ash disappearing in some communities**
  - » **Major impact in most communities**
  - » **Just beginning in others**
- **Local media providing updates**
- **Tree-age a major treatment option**
  - » **Purchased five more hydraulic units**
- **Soil applied still popular**
  - » **Used in off-year of Tree-age**

# What Does this History Teach Us?

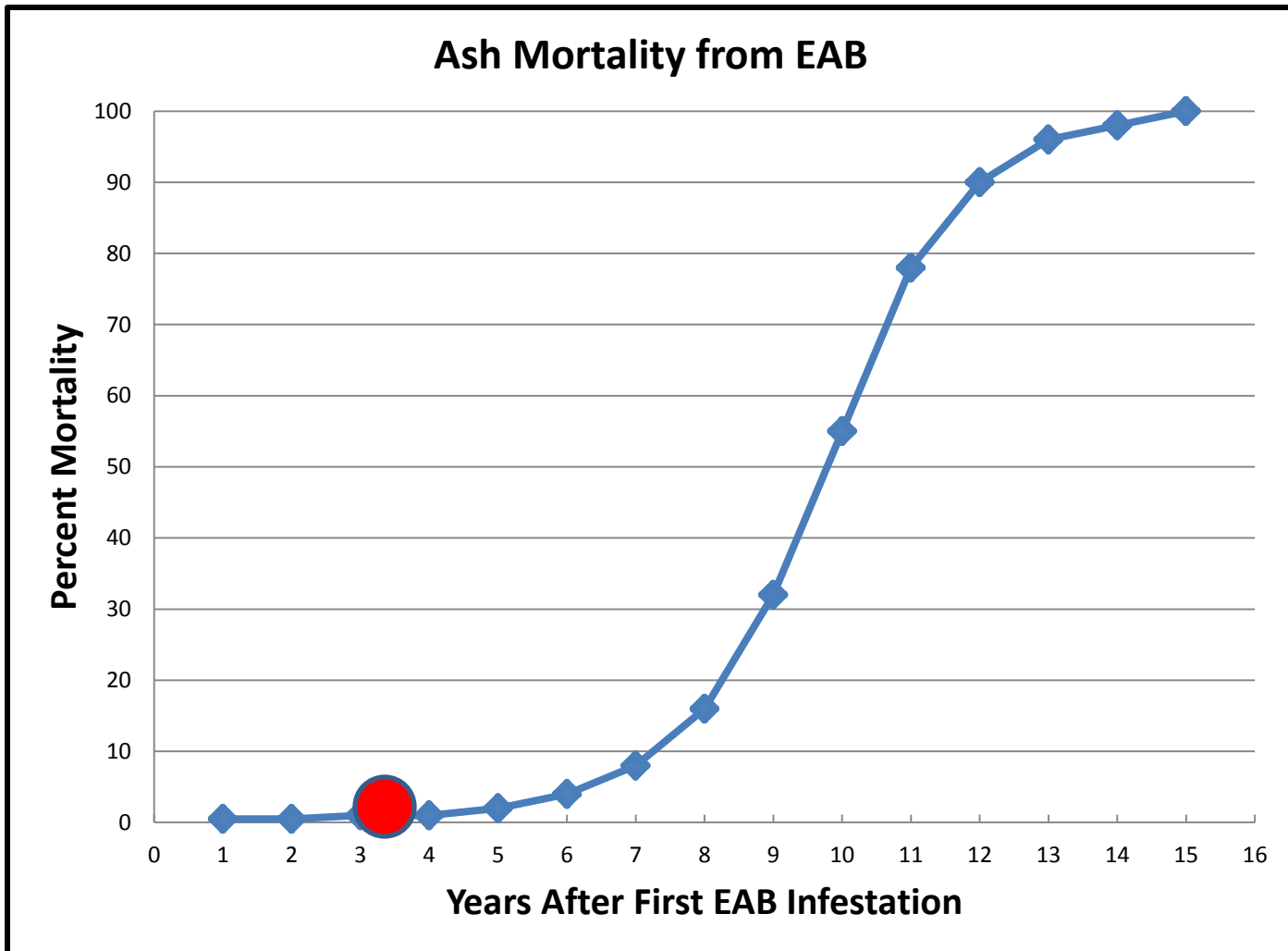
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- **Knowledge evolves**
- **Perceptions change**
- **Plans change**
- **Stay nimble**

# Moving Up the Interstate...



# Minneapolis/St. Paul

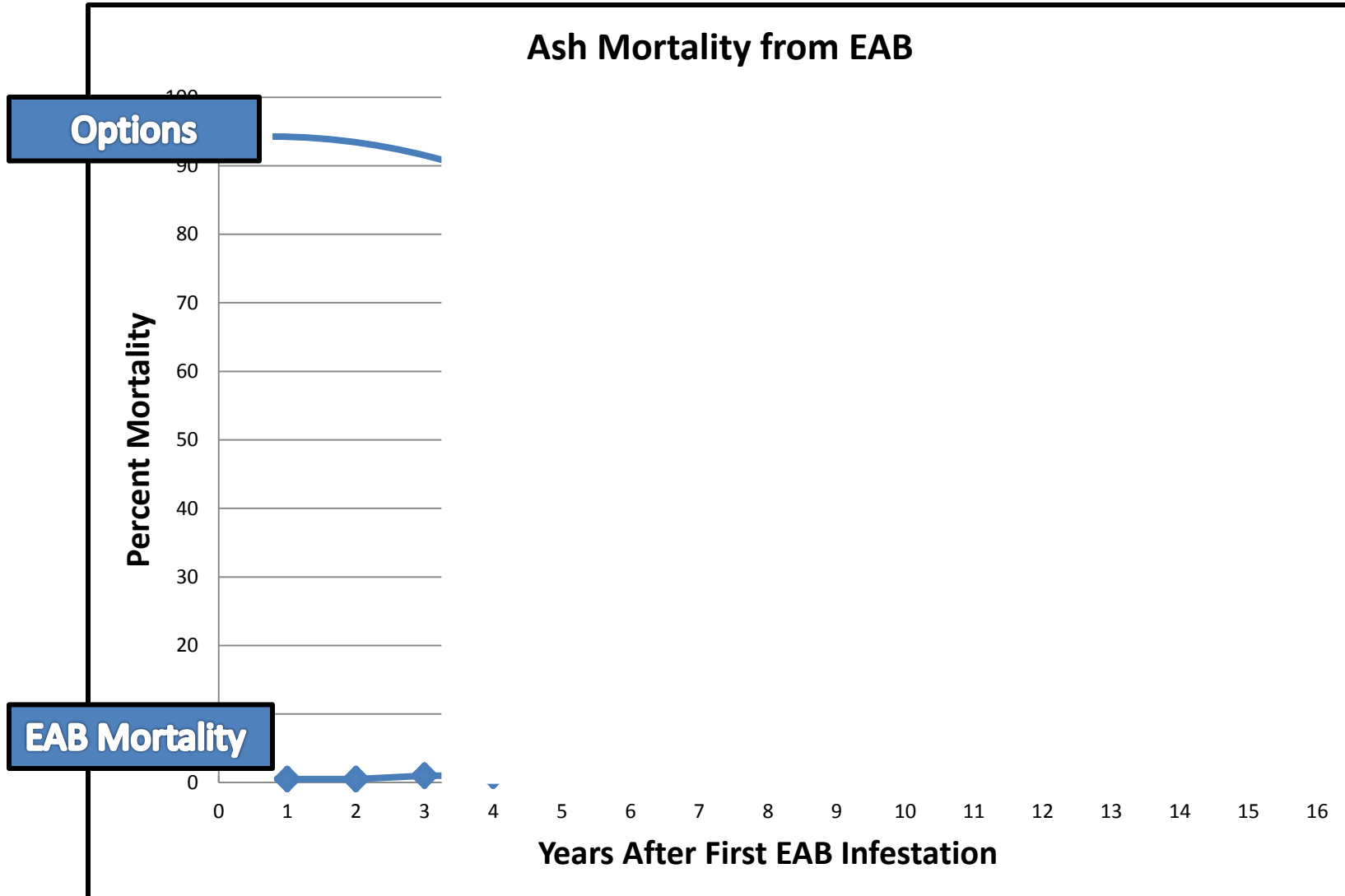


# What Tools to Use?

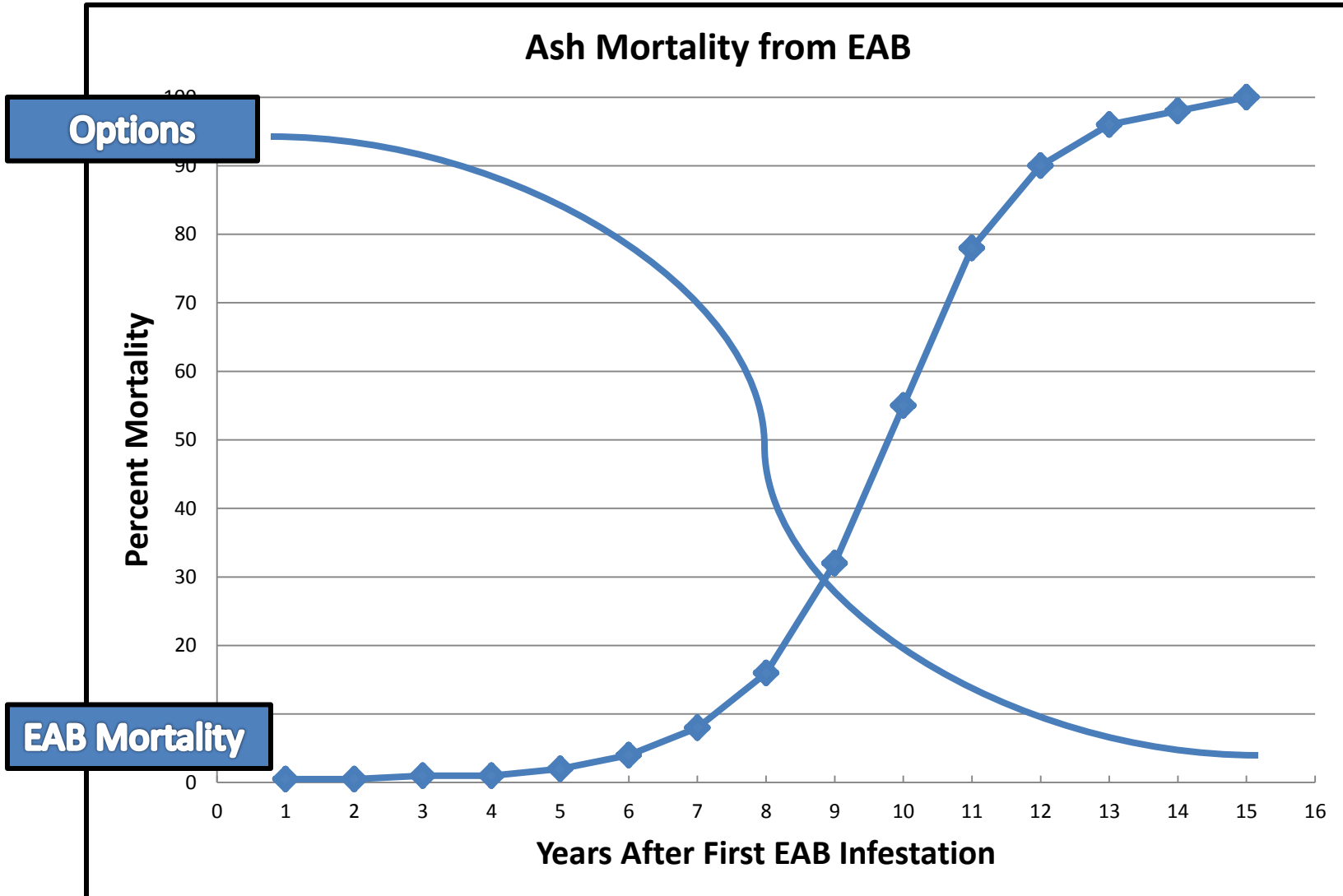
- Ask yourself a series of questions:
  - How many ash do I have?
  - When EAB is “all over with”, what do you want to be left with?
  - Do I have community canopy initiatives?
  - What does the public want?
  - What is the motivation of the Council? Mayor? CFO?
- Your goals drive your decision making
- Your place on the curve drives decision making
  - The further along the curve, the fewer choices



# An Inverse Relationship



# An Inverse Relationship



# What Tools to Use?

- Education
  - Of public officials, decision makers, private citizens
- Inventory/Assessment
  - Define the scope of problem
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  - To save trees
  - To stage removals for later budget cycles
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# Cost Effective Treatments that Work

- What are the options?
- Three active ingredients have held up to the most scrutiny of peer-reviewed research:
  - Imidacloprid
  - Dinotefuran
  - Emamectin benzoate
- *“When applied using formulations, products, and protocols documented as effective by university research, these treatments can provide environmentally sound control of EAB, sufficient to maintain a functional and aesthetically pleasing ash canopy.”*

<http://www.emeraldashborer.info/files/conservesh.pdf>

# Outcome = Consensus Document

- “We the undersigned strongly endorse ash tree conservation as a critical component of integrated programs to manage emerald ash borer (EAB) in residential and municipal landscapes.
- Cost-effective and environmentally sound EAB treatment protocols are now available that can bring healthy ash through peak pest pressure with full, functioning canopy.



*Untreated ash trees after EAB peak, Belvedere Dr., Toledo, OH, June 2009.*

# Cost Effective Treatments that Work

- Situations to consider treatments
  - Mature trees (deliver the most benefits)
  - Prominent locations
  - Historical value
  - Where removal is inefficient
  - Urban canopy initiatives
  - To stage removals



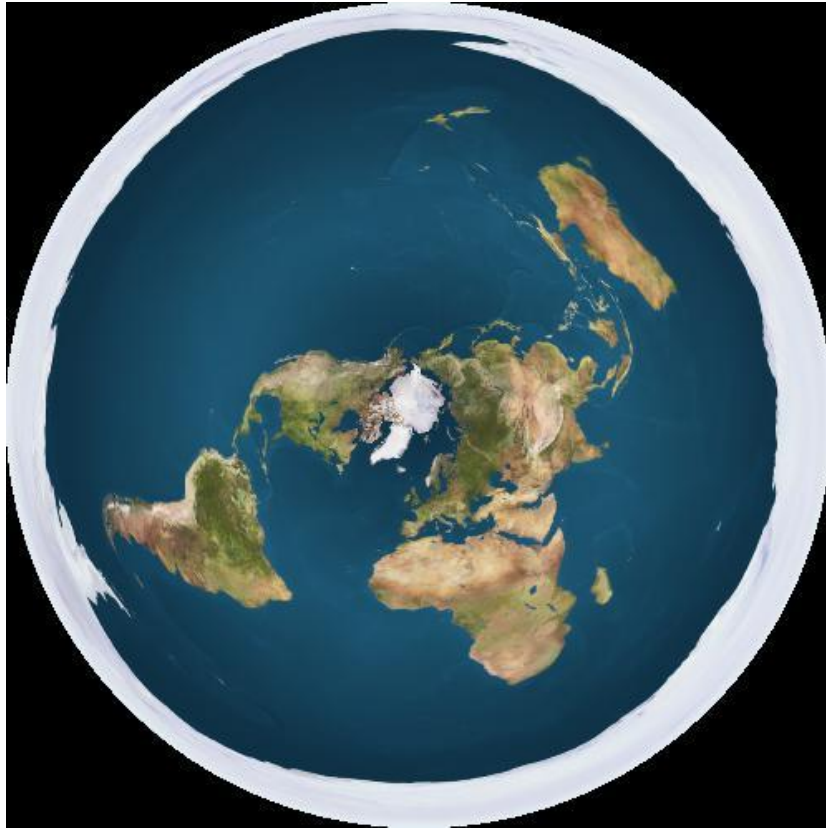
# EAB Treatment Overview

- Focus on protecting healthy trees
- Set expectations that treatments will be needed for many years.
  - Lapses in treatments may compromise the level of protection/success.
- Trees infested by EAB will decline, get brittle, break apart, and present safety risks.
- Certain infested trees may be candidates for therapeutic treatments, but client expectations must be carefully managed.
  - Prevention is highly preferable.

# Take Away Messages

- EAB is a pest of historical significance
- It will require significant time, energy, and \$\$\$
- There is industry alignment around:
  - Selective removals
  - Assessment and inventory tools
  - Treatments protect trees and preserve canopy
  - Treatments help you stage removals
- Our knowledge is evolving
  - Stay current...





# Questions?

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