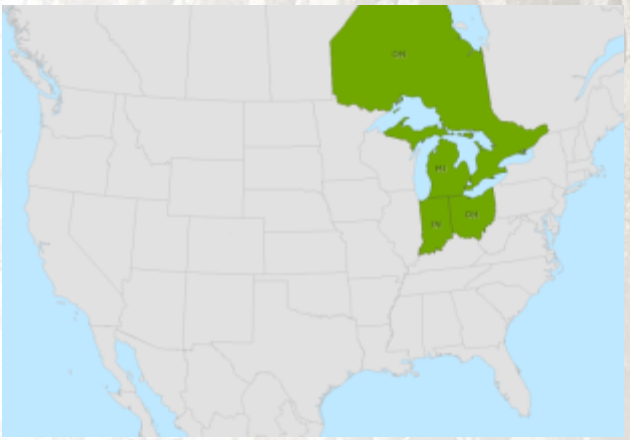
Emerald Ash Borer

in New Jersey

Emerald Ash Borer (EAB)

History of the spread

- First discovered in Michigan in 2002
- Infestation likely to have started in 1990's
- Has killed tens of millions of ash in Michigan alone
- Spread to 24 additional states, killing hundreds of millions of ash



2005

2010

2015

Emerald Ash Borer (EAB)

Background

- Native to Asia
- Primarily infests true ash in North America
- Will infest white fringetree
- Infestations move ≈1 mile per year
- Humans help spread EAB much further

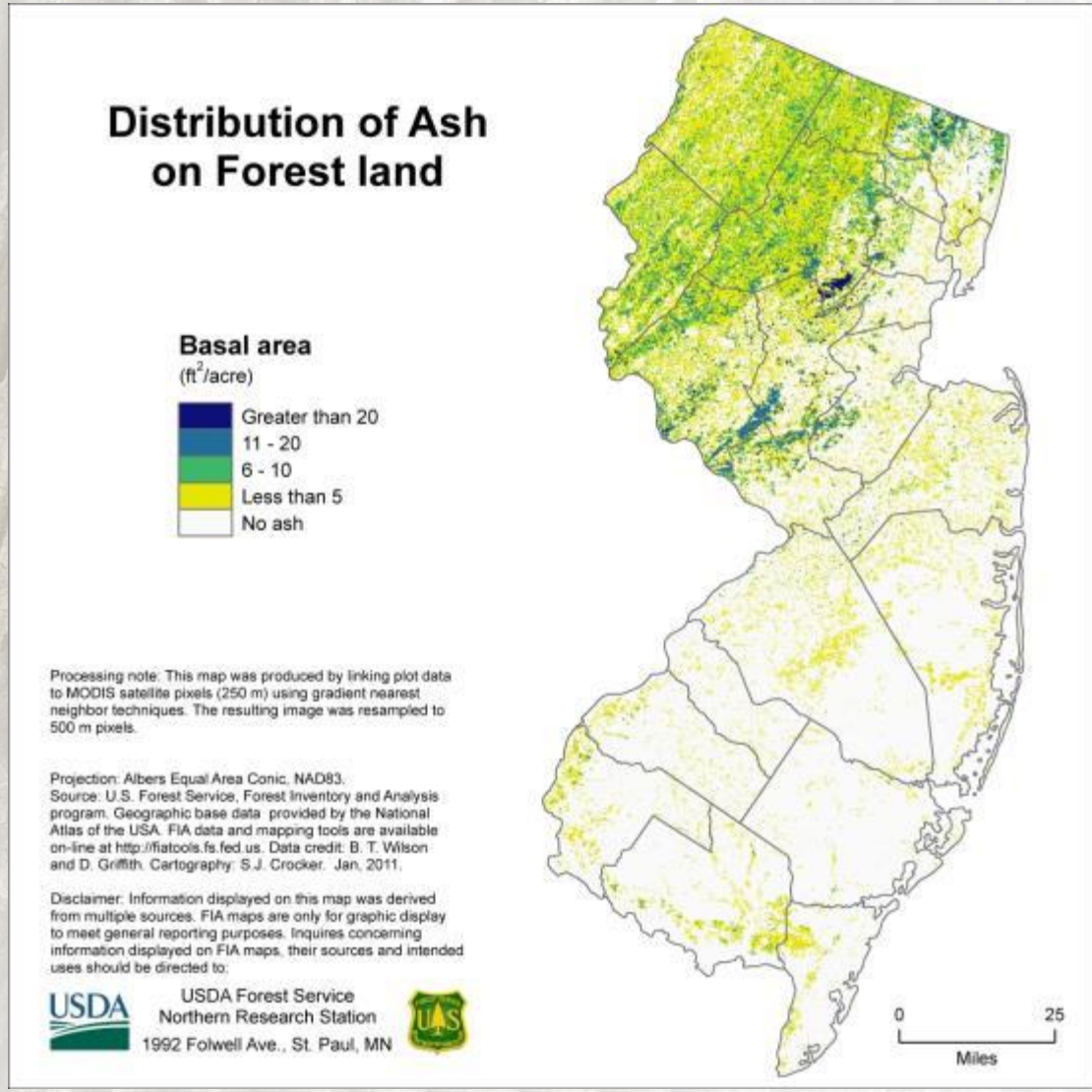
White fringetree

Green ash

Emerald Ash Borer (EAB)

Ash distribution in NJ

- NJ has over 24 million ash trees in forested areas
- Green, White, Black, and Pumpkin ash found in NJ
- Ash is a commonly planted tree



Ash Tree I.D.

***Fraxinus* species**

true ash

- Opposite branching
- Compound leaf
- Paddle-shaped seed

(female trees only)

- Diamond shaped bark

1. Leaves are compound and composed of 5 to 11 leaflets.

2. Seeds on female trees are paddle shaped.

3. Branches and buds are in pairs directly across from each other (opposite branching).

4. Mature bark has diamond-shaped ridges.

Iowa State University - University Extension, SUL21, Jan 2011

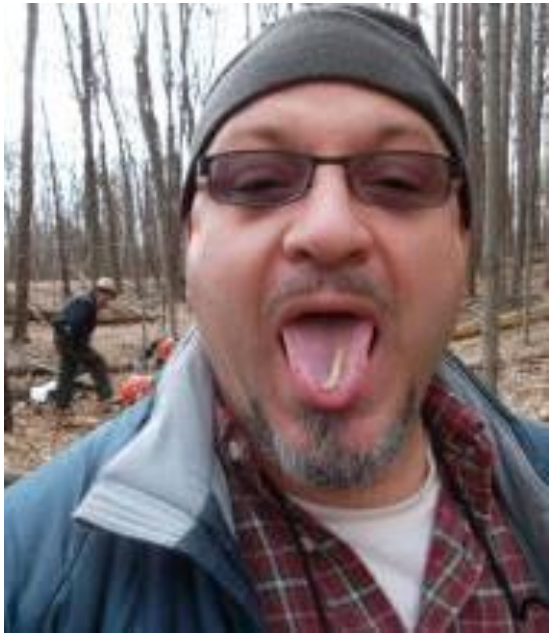
Adult

Active May - August

- Bullet shaped body
- Metallic green in color
- 1/2” long

Larvae

- White/cream color
- Bell-shaped segments
- Up to 1-1.3” long
- 4 larval stages



Bark Flecking

D-shaped exit holes

Galleries

Bark Cracks

Crown Dieback and Epicormic Sprouts

Crown dieback

Epicormic sprouts

Emerald Ash Borer (*Agrilus planipennis*)

Detection Methods

Traps

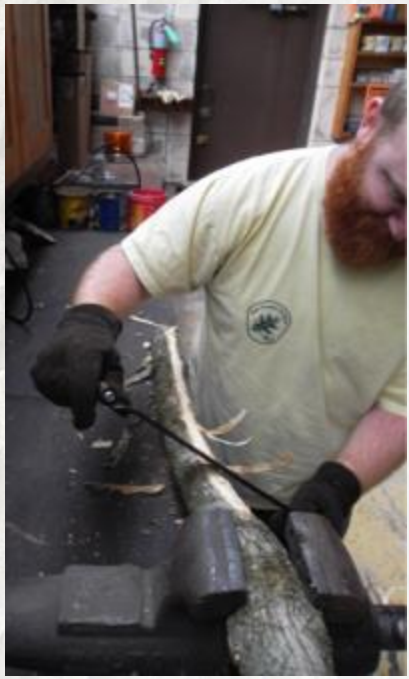
- Purple sticky traps
- Green funnel traps

Visual

- Woodpecker flecking
- Bark cracks

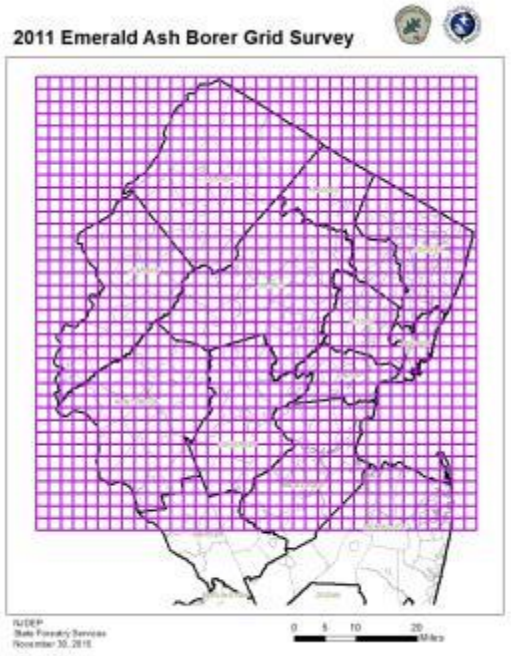
Detection/trap trees

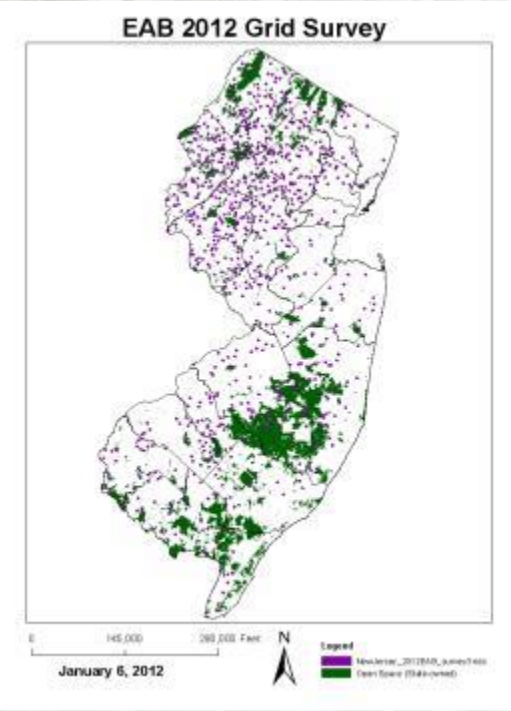
- Girdle in late spring/early summer
- Cut and peel in winter/spring before adults emerge



EAB Survey In NJ

Year	NJ SFS	NJDA/USDA	Total
2015	15 (5 girdled)	66	81
2014	25 (3 girdled)	395	415
2013	24 (2 girdled)	250	274
2012	52	407	459
2011	105	540	645
2010	3	77	80

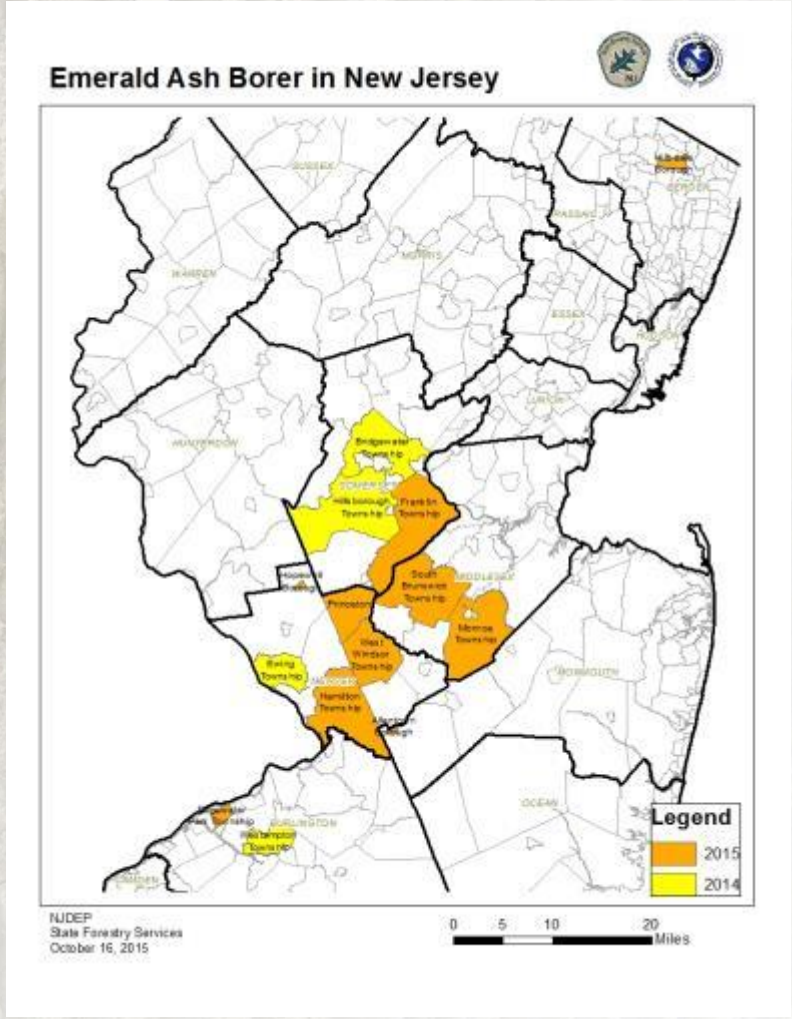




Emerald ash borer in NJ

Detected in 15 municipalities

- First detected in 2014 in Bridgewater and Hillsborough
- Statewide quarantine
- Delimiting Survey
- Develop an EAB Task Force
- NJ specific EAB website



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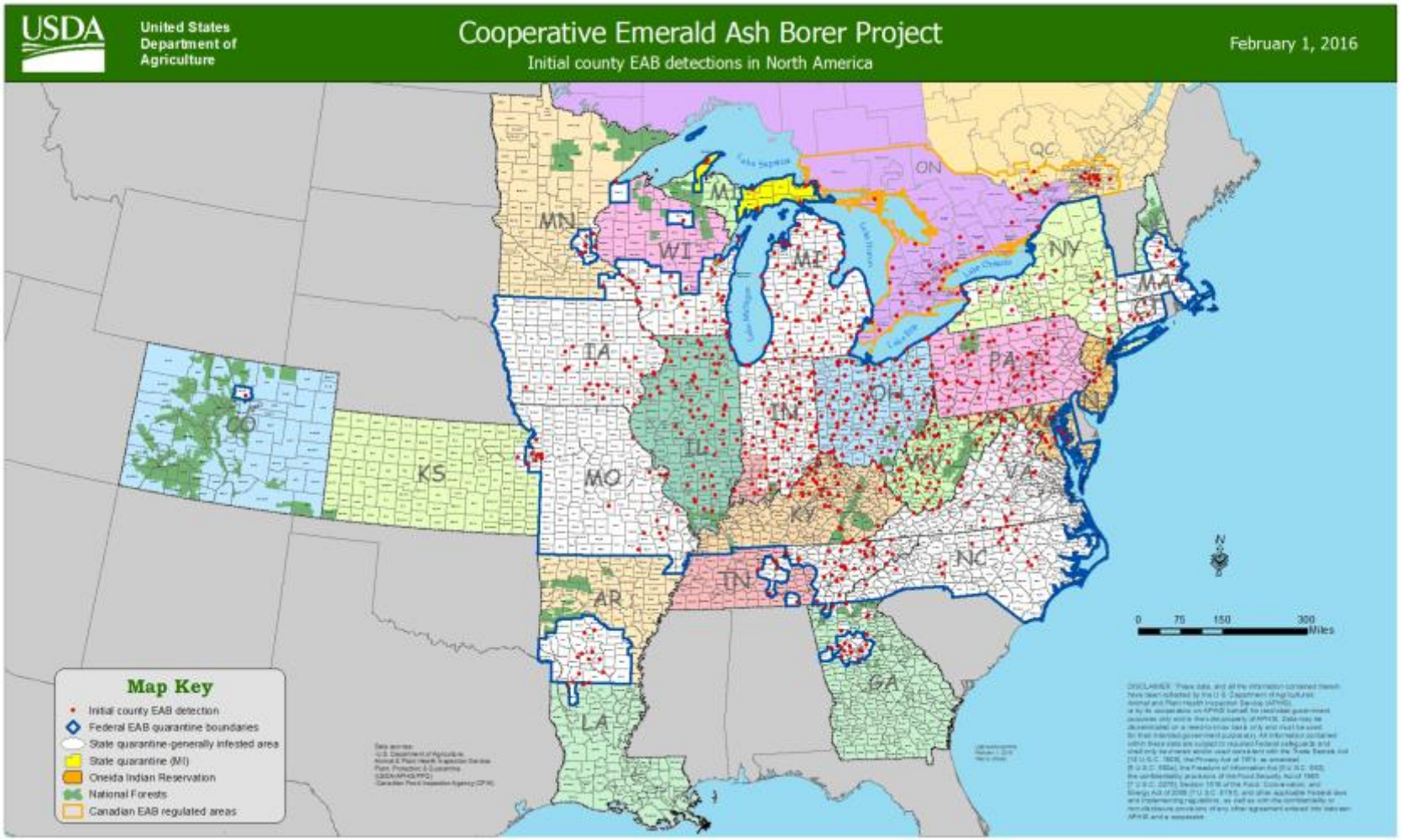
Emerald Ash Borer (*Agrilus planipennis*)

EAB Federal Quarantine



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Emerald Ash Borer (*Agrilus planipennis*)

EAB Response Plan

- Survey
  - Tree removal
  - Insecticide treatments
- Biological Control
- Wood utilization/disposal
- Restoration
- Budget – EAB cost calculator

Survey

Locate and evaluate ash trees

- Location
- Diameter
- Overall health
- Notes
- Select trees for treatment
- Select trees for removal

Liberty State Park in Jersey City, NJ

Survey

Tree Removal

- Already declining/dead ash trees
- Ash in poor planting locations
- Ash that are not being treated that will pose a risk
- Infested trees

Minimize EAB Spread

Perform tree work September/October thru March/April

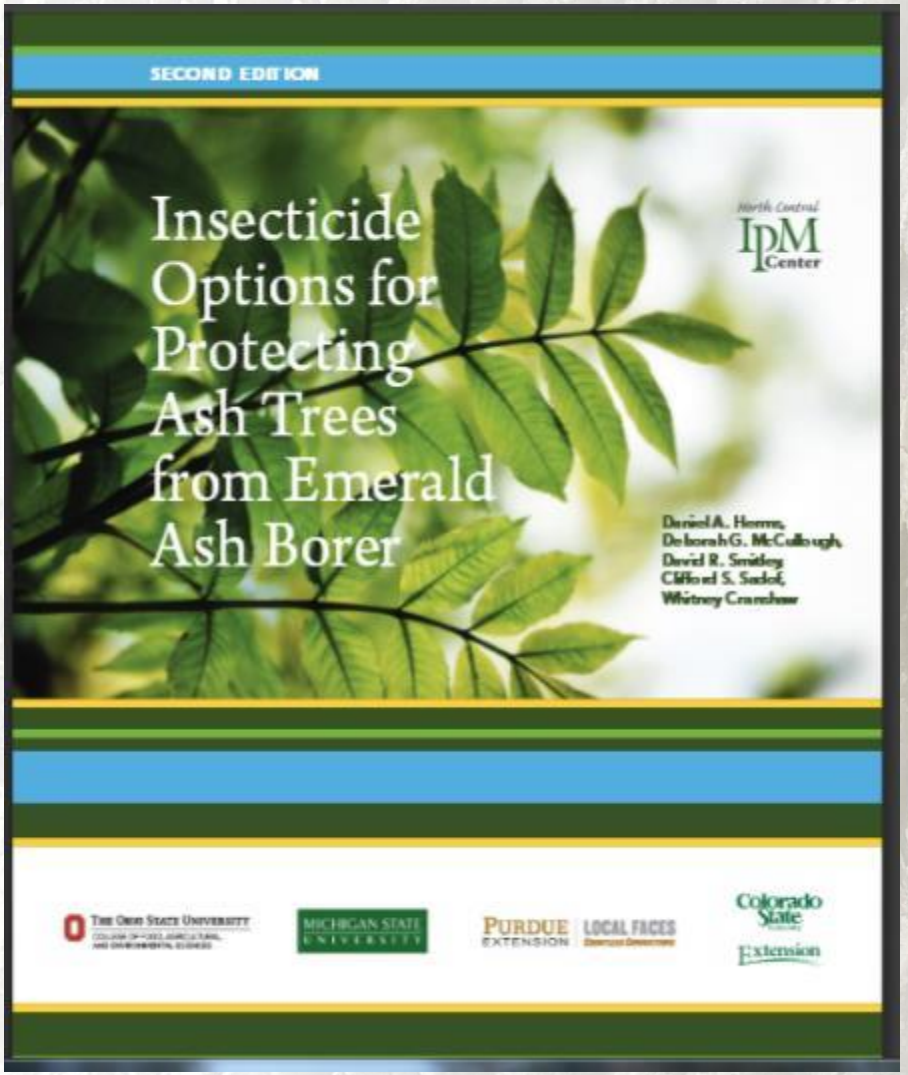
EAB adults present
May – August in NJ

Survey

Insecticide Treatment

- Select high-value ash trees
- Insure ash are relatively healthy (>70% live crown)
- Cooperate with neighbors to increase tree numbers to reduce costs

Insecticide Treatment



Insecticide Formulation	Active Ingredient	Application Method	Recommended Timing
Products Intended for Sale to Professional Applicators			
Merit® (75WP, 75WSP, 2F)	Imidacloprid	Soil injection or drench	Early to mid-spring or mid-fall
Safari™ (20 SG)	Dinotefuran	Soil injection or drench	Mid- to late spring
Transect™ (70WSP)	Dinotefuran	Soil injection or drench	Mid- to late spring
Xylam® Liquid Systemic Insecticide	Dinotefuran	Soil injection or drench	Mid- to late spring
Xytect™ (2F, 75WSP)	Imidacloprid	Soil injection or drench	Early to mid-spring or mid-fall
Azasol™	Azadirachtin	Trunk injection	Mid- to late spring after trees have leafed out
Imicide®	Imidacloprid	Trunk injection	Mid- to late spring after trees have leafed out
TREE-äge™	Emamectin benzoate	Trunk injection	Mid- to late spring after trees have leafed out
TreeAzin®	Azadirachtin	Trunk injection	Mid- to late spring after trees have leafed out
Safari™ (20 SG)	Dinotefuran	Systemic bark spray	Mid- to late spring after trees have leafed out
Transect (70 WSP)	Dinotefuran	Systemic bark spray	Mid- to late spring after trees have leafed out
Zylam® Liquid Systemic Insecticide	Dinotefuran	Systemic bark spray	Mid- to late spring after trees have leafed out
Astro®	Permethrin	Preventive trunk, branch, and foliage cover sprays	Two applications at 4-week intervals; first spray should occur at 450–550 degree days (50°F, Jan.1); coincides with black locust blooming
Onyx™	Bifenthrin		
Tempo®	Cyfluthrin		
Sevin® SL	Carbaryl		
Products Intended for Sale to Homeowners			
Bayer Advanced™ Tree & Shrub Insect Control	Imidacloprid	Soil drench	Early to mid-spring
Optrol™	Imidacloprid	Soil drench	Early to mid-spring
Ortho Tree and Shrub Insect Control Ready to Use Granules®	Dinotefuran	Granules	Mid- to late spring

Posted on our website: www.emeraldashborer.nj.gov

Contact a licensed pesticide applicator for assistance

Biocontrol

Using EAB predators to control/ suppress EAB populations

- Stingless parasitic wasps
  - *Tetrastichus* - larvae parasite
  - *Oobius* - egg parasite
  - *Spathius* – larvae parasitoid

- Criteria:
  - EAB detected in the area
  - 40 + acre tracts
  - >25% ash of various age classes
  - Relatively healthy ash
  - Areas not slated for development, treatments, tree removal

Photos from forestryimages.org

Wood Utilization

- Wood has value!
- Can offset tree removal costs
- Utilize wood to keep it out of landfills/waste

Products can include:

- Lumber
  - Portable sawmill
  - Loggers
- Clean chip
- Mulch
- Pellets

Emerald Ash Borer (*Agrilus planipennis*)

The Facts about EAB

- EAB will kill 99% of ash trees
- NJ has over 24 million ash trees
- Spreading costs over multiple years is easier to manage than paying all at once
- Start planning and activities before EAB is detected
- Areas within 10-15 miles of a known EAB find are at high risk for EAB infestation
- Doing something is better than doing nothing

Questions?

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