



Emerald Ash Borer and Boston's Urban Forest

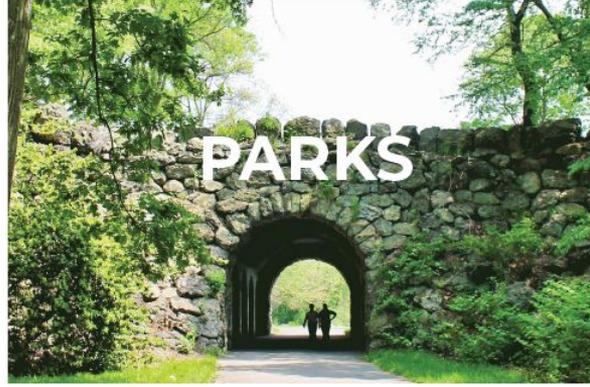
October 2021

OVERVIEW

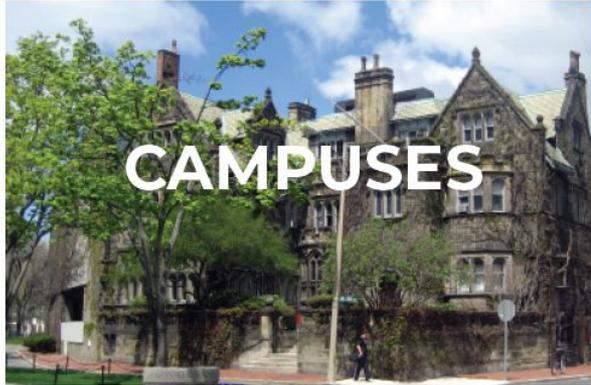
- 1. What is EAB?**
- 2. What we know**
- 3. Detecting and responding to EAB**
- 4. Next steps** - outreach and treatment



A reminder

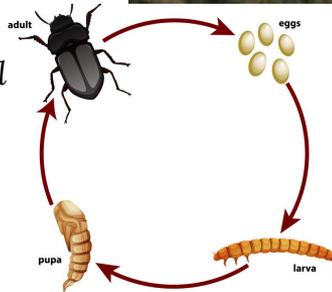


(including Urban Wilds)



What is the Emerald Ash Borer (EAB)?

- Type of beetle first detected in Massachusetts in 2012. Likely arrived in U.S. in mid-1990s.
- Lays eggs under bark, egg hatches a larva that burrows further into tree, killing it
- Why does *this kill the tree*? Burrowing into the tree disrupts its circulatory system. They feed on the tree's flow of sugar and water that occurs in the outer living layers in the tree
 - *Damage from locking bikes to trees can kill a tree by exposing this circulatory system and opening it up to fungal infection.*



What we know

- **Haven't planted ash trees in Boston streets for at least 15 years**
- **EAB has been found in:**
 - Allston-Brighton
 - Dorchester
 - Fenway-Longwood
 - Hyde Park
 - Jamaica Plain
 - Mattapan
 - Roslindale
 - Roxbury
 - West Roxbury
- **And 11 counties**

Other creatures like spotted lanternfly?

- Worcester county- easternmost detection in Massachusetts



What we know

- Approximately 1,817 ash trees in public sidewalks, about 4.3% of the total street tree population. Extent of infestation unknown.
- Emerald Necklace Conservancy has inventoried a portion of its ash trees.
- Do not have have an inventory of parks, other public land, and private property.
- **Unknown how many trees in total on streets, parks, and private property are affected.**



What we know

- Know there will need to be tree removals along Blue Hill Ave and also Washington Street in Roslindale.
- Historically, was common to plant long stretches with the same species (monocultures).
- Nowadays, understand the risk this poses and have been working to improve biodiversity.
- Resulting Urban Forest Plan will make recommendations on planting and maintenance practices, including biodiversity and pest resilience.



Identification

A tree can be infested 3-5 years before showing visible signs.

Can take 3-9 years to kill an ash tree, depending on a host of factors.

- 1.** Pen-sized D-shaped holes
- 2.** Splitting bark
- 3.** Serpentine galleries under bark
- 4.** Thinning canopy, crown dieback
- 5.** Woodpecker "blonding" (particularly visible in winter/spring)
- 6.** Suckers at the base of trunk due to stress
- 7.** Irregular nibbling on leaf edges



Management strategies

Broadly speaking....

- **Do Nothing** - No action taken
- **Preemptive Removals** - Begin removing ash trees ahead of detection
- **Treatment Only** - Treat all trees (may remove poor condition trees)
- **Responsive Removals Only** - Remove trees as they begin to decline/fail
- **Treat and Remove** - Treat high value trees and remove others
- **Treat, Remove, and Do Nothing** - A multi-faceted, tree-by-tree approach



Management strategies

- **Biocontrol:** DCR is working at the state level to develop strategies to control EAB through developing a “biocontrol population” of natural predators that can minimize EAB population to manageable levels and allow ash species to develop resistance.
 - **Limit movement of tree material:** Residents and tree workers can slow the spread by never moving tree material from one place to another.
- **Detection**
 - **Removal**
 - **Treatment**
 - **Biodiversity in new plantings**



Management depends on...

- **Budget**
- **Priorities**
- **Tree condition**
- **Risk tolerance***

**Risk tolerance: not only for infestation but also worker safety - infested trees can be weakened and too dangerous to climb.*



Management strategies: REMOVAL

WHY IT'S IMPORTANT

- Infested ash trees can lose moisture and limbs can become brittle and drop during normal weather.
- Infestation may result in higher branch failure near the branch collar (where branch joins trunk)
- Trees may fail at the base (“ash snaps”)

*Hazardous to people, homes, and vehicles
+
affected trees help spread EAB population*



PHOTOS: Dr. Drew Trlica

Management strategies: REMOVAL

- Can remove if infested or substantially affected by EAB or can be removed pre-emptively
- Removals of affected trees ideally happen in cooler months when insects become dormant (limits their mobility)
- Infested tree material can spread infestation and cannot be reused
- ~1 month after removal, stump is ground to make way for new tree



PHOTOS: Dr. Drew Trlica

Management strategies: TREATMENT

WHAT IT IS:

- Systemic insecticide
- Amount used depends on tree size
- Reapplication about every three years, depending on size, health, and chemical
- Relies on proper method and timing
- Cannot be used to reverse damage
- Tree must have a certain level of health to circulate the insecticide
- Can happen in spring and summer when tree is not in the dormant phase
- May continue to deteriorate after first year and then improve in the second year



Management strategies: TREATMENT

- Injections done by MA-certified pesticide applicators
- Closed injection system - chemical is either in the container or in the tree. Not an aerosolized spray.



To learn more about the use of insecticides for EAB treatment, please see:

[INSECTICIDE OPTIONS FOR PROTECTING ASH TREES FROM EMERALD ASH BORER](#)

Management strategies: BIODIVERSITY

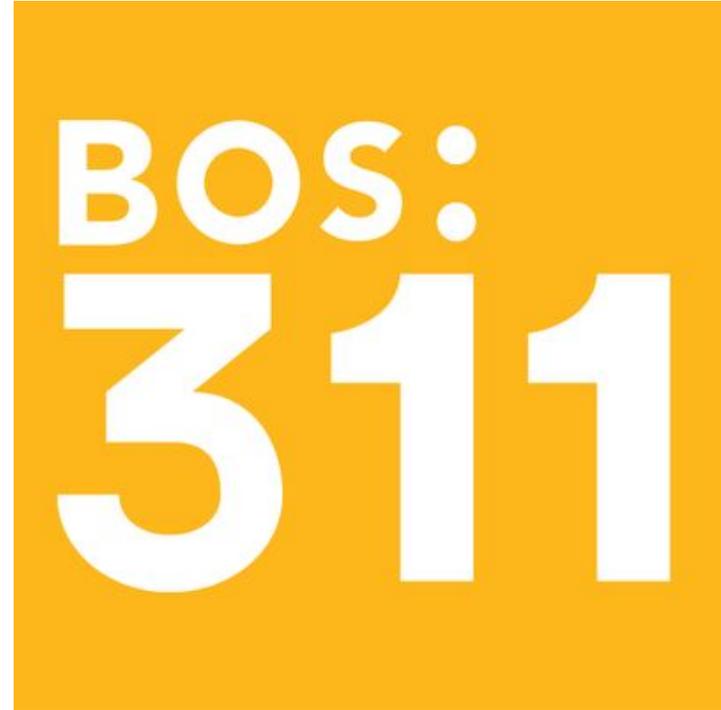
- In other words... Changing the species planted, increase forest diversity to minimize the effects of pests and diseases
 - can replant with trees similar in appearance and size as ash: *e.g.* Kentucky coffee tree, hackberry, honeylocust, pagoda tree (1)
 - List of street tree species online on "Caring for Boston's Urban Forest" page (2)
- Speed of planting is limited by staffing and contracting levels. Not an inconsiderable challenge.



1. http://www.hort.cornell.edu/uhi/outreach/pdfs/visually_compatible_trees.pdf
2. <https://www.boston.gov/departments/parks-and-recreation/caring-bostons-urban-forest>

Management strategies: DETECTION

- If you see EAB...
 - In a park or street tree, use 311.
 - On private property consult a local tree company/certified arborist.
 - On state parkland - Department of Conservation and Recreation has a link to [reporting site](#). If interested in learning more, please visit: <https://www.mass.gov/guides/emerald-ash-borer-in-massachusetts>
 - Unsure of ownership? Report to 311.
 - If public land, will be routed to appropriate dept but 311 cannot redirect reports to most private property owners.



Dial 311, download the app, or go to cityofboston.gov/311

Preliminary treatment and removal strategy

- **What is the best case scenario?** Someday pop EAB is so low, no longer have to treat ash trees for EAB. Can't forecast how long it will take to eradicate EAB from Boston.
- **Who assesses health?** Certified arborist in the Tree Division or a certified arborist contracted by the Tree Division. Utility companies have the right to prune ash trees away from infrastructure. May also remove dead, dying, or dangerous ash trees that threaten utility lines.
- **How will trees be prioritized?** Prioritizing healthiest trees for treatment, most hazardous for removal, "most likely to fail." Trees may not be replanted in exact location if original site is unsuitable (i.e. utility conflicts, sight line issues)
 - Park capital improvement projects already treat trees, including preemptively treating healthy trees
- **How will you detect trees with EAB?** Street tree inspections and 311 reports.
- **What about EAB in parks?** Similar prioritization for removal once detected. Currently no budget to replant in areas not currently undergoing capital improvement projects (i.e. renovations).
- **How does the UFP plan on addressing EAB?** The Urban Forest Plan will be making recommendations on City operational needs. Increased funding and staffing for tree care will make it easier to detect and respond to pests like EAB.
- **Is Boston using the same strategies as other municipalities?** Municipalities use different strategies based on their unique circumstances, capacities, and values.

Recovery: Heat Resilience

- Removals have the potential to worsen the urban heat island effect BUT effects may be less in wooded areas where the surrounding canopy fills in the gaps over a few years.
- *Healthy Places*, and specifically, the *Heat Resilience Study* is looking at cooling...
 - Design ideas
 - Policy recommendations
 - Programming (i.e. Cool Spots at BPL)
 - Modeling



To learn more about the Heat Resilience Study, visit boston.gov/healthy-places

Next steps

Removals: happening in dormant season

Treatments: if funded and staff positions filled, can begin in spring when trees are in leaf

Planting: seasonal planting will continue, removed street trees will be prioritized for replanting

Public announcement: press release, interviews, webinars, presentations to community groups





EMERALD ASH BORER

*Emerald Ash Borer is in Boston.
Learn how the City of Boston is
protecting our ash trees and what
you can do to help.*

[EMERALD ASH BORER INFO](#)

More information at: boston.gov/trees