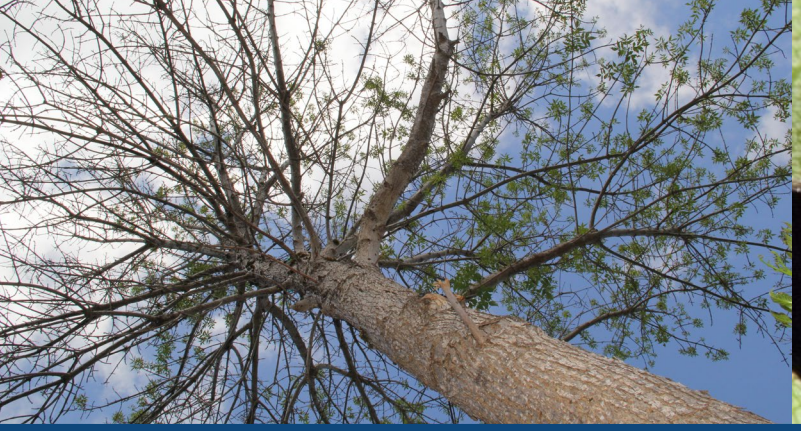

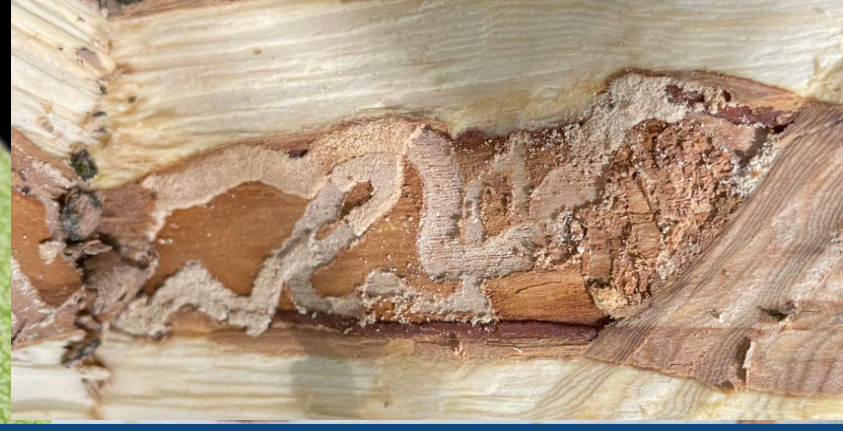

Emerald Ash Borer: Managing a New Threat to Oregon's Trees

Oregon Department of Forestry (ODF)

Urban & Community Forestry Program

Lilah Gonen | Community Assistance Forester

Washington County
Master Gardener Association
March 4, 2025

Agenda

- Emerald Ash Borer: Introduction + History
- Oregon's Response
- Ash Tree ID + Importance
- EAB Signs + Symptoms
- Management Options
- Resources for Master Gardeners

Emerald Ash Borer (*Agrilus planipennis*)

- **Invasive and highly destructive woodboring beetle that kills ash trees (*Fraxinus* spp.).**

Emerald Ash Borer (*Agrilus planipennis*)

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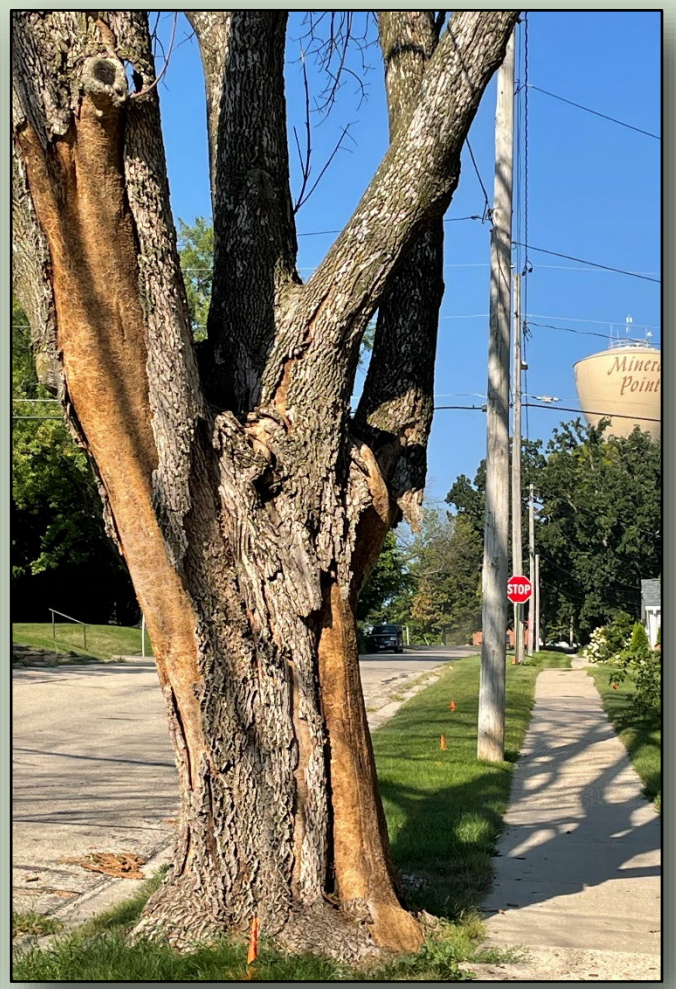
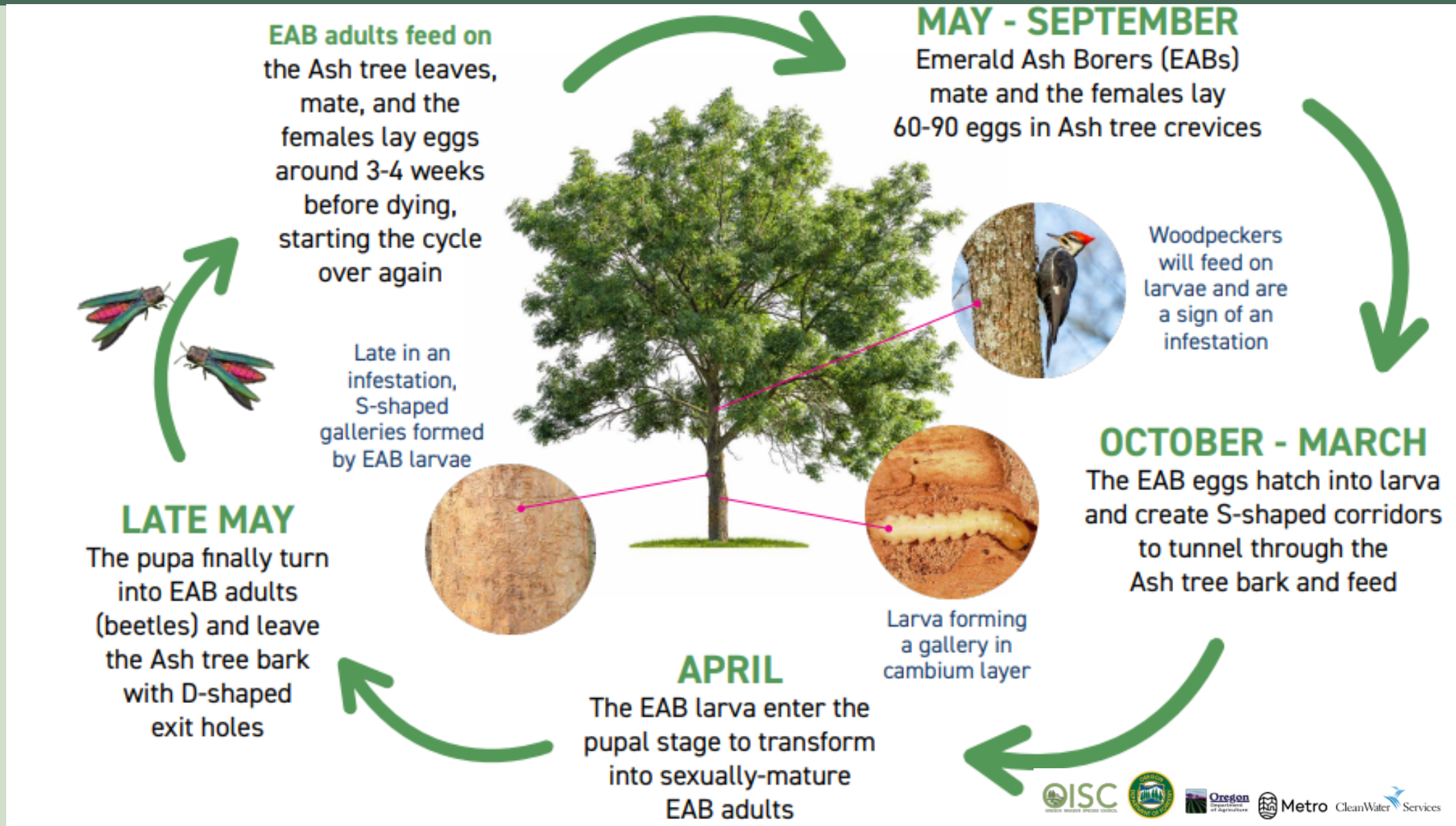
  - **Also infests olive (*Olea europaea*) and white fringetree (*Chionanthus virginicus*)**

Emerald Ash Borer (*Agrilus planipennis*)

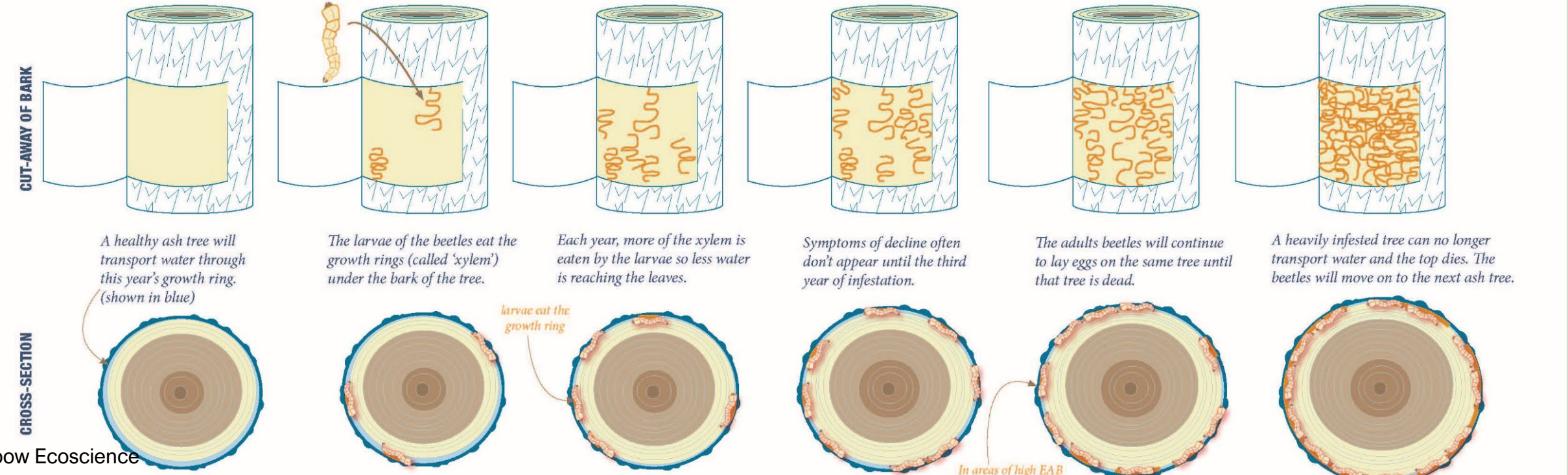
- Invasive and highly destructive woodboring beetle that kills ash trees (*Fraxinus* spp.).
    - Also infests olive (*Olea europaea*) and white fringetree (*Chionanthus virginicus*)
- **Larvae feed beneath bark, eventually girdling and killing the tree.**



EAB Life Cycle



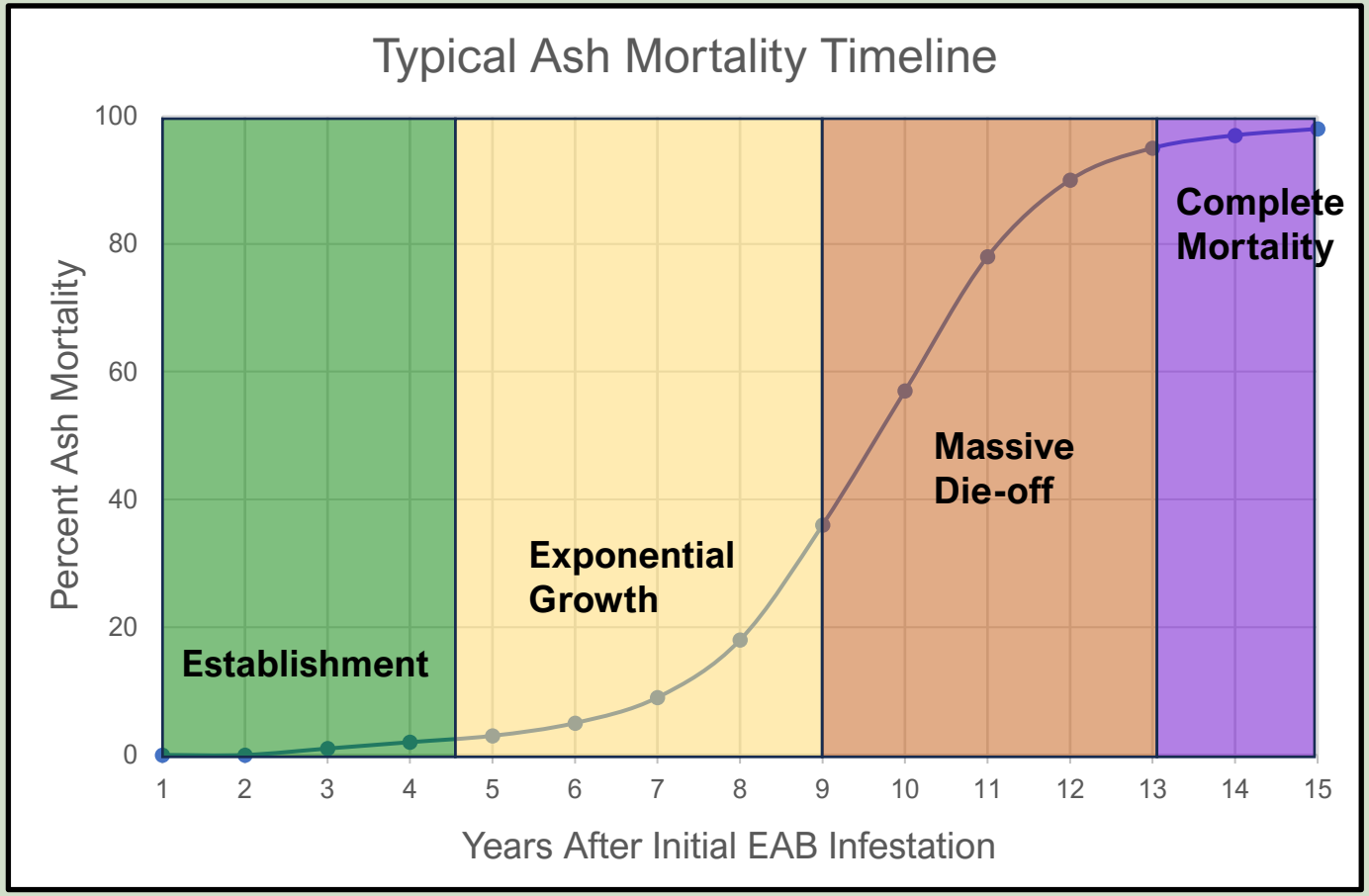
Infestation Timeline – Tree Scale



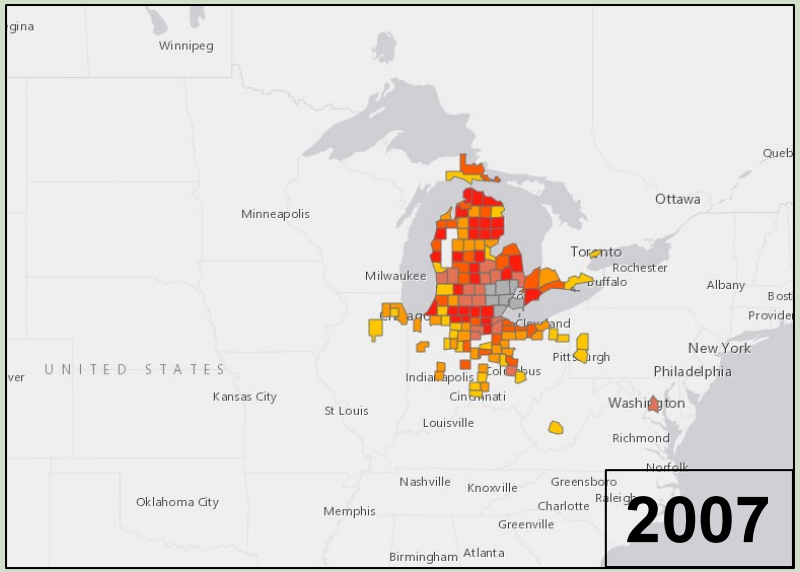
Rainbow Ecoscience

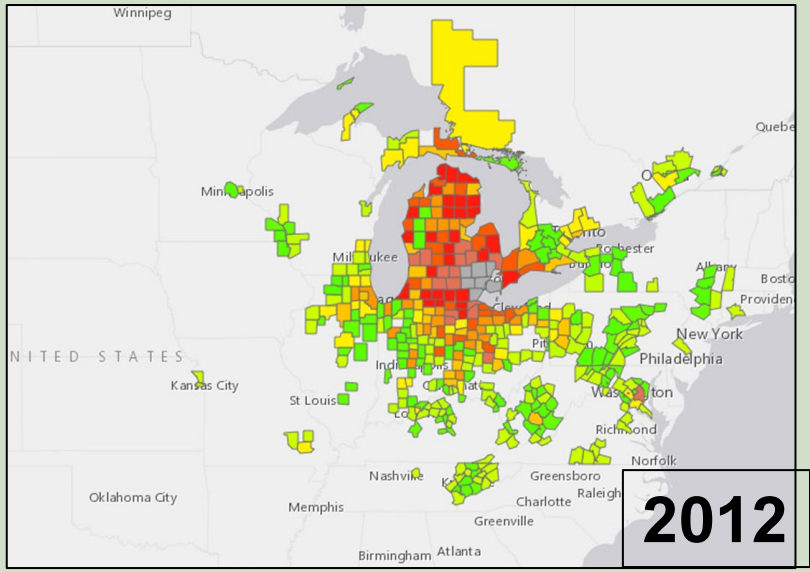
Infestation Timeline – Community Scale

The rate of ash mortality may outpace a community's ability to deal with dead/dying trees.

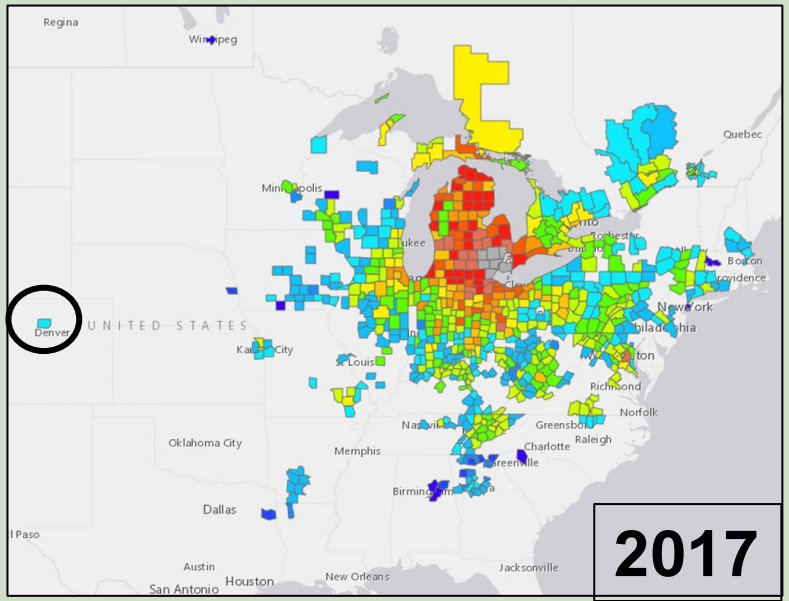


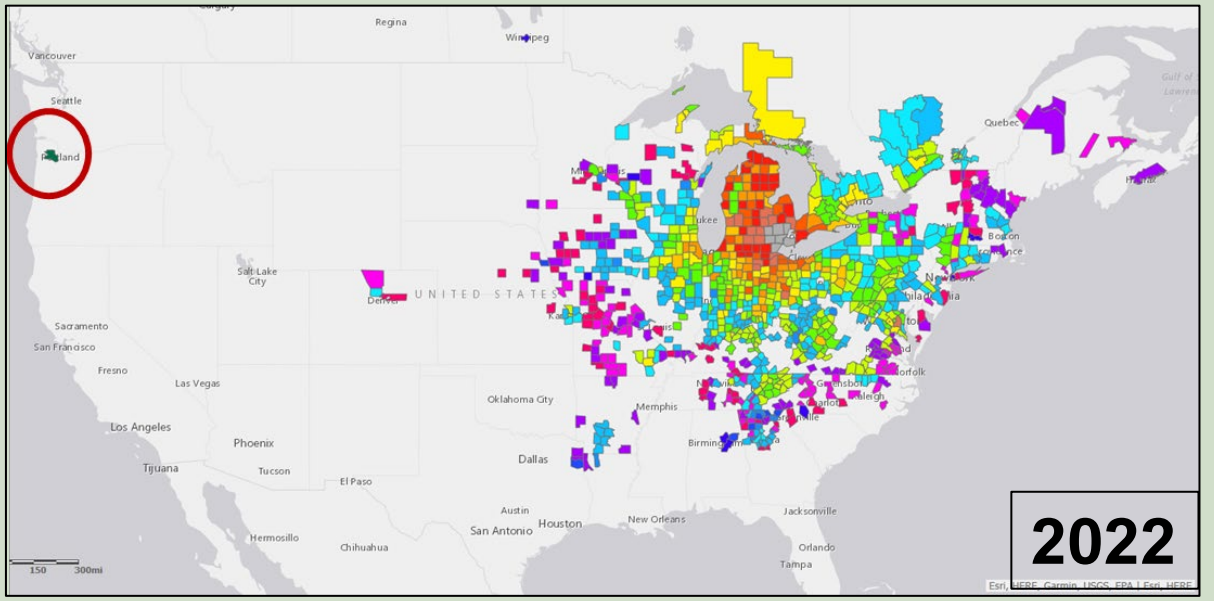
EAB: History in the US





- **Found in Michigan in 2002, now in 37 states and 6 providences.**
- **Detected in Forest Grove, Oregon in June 2022.**



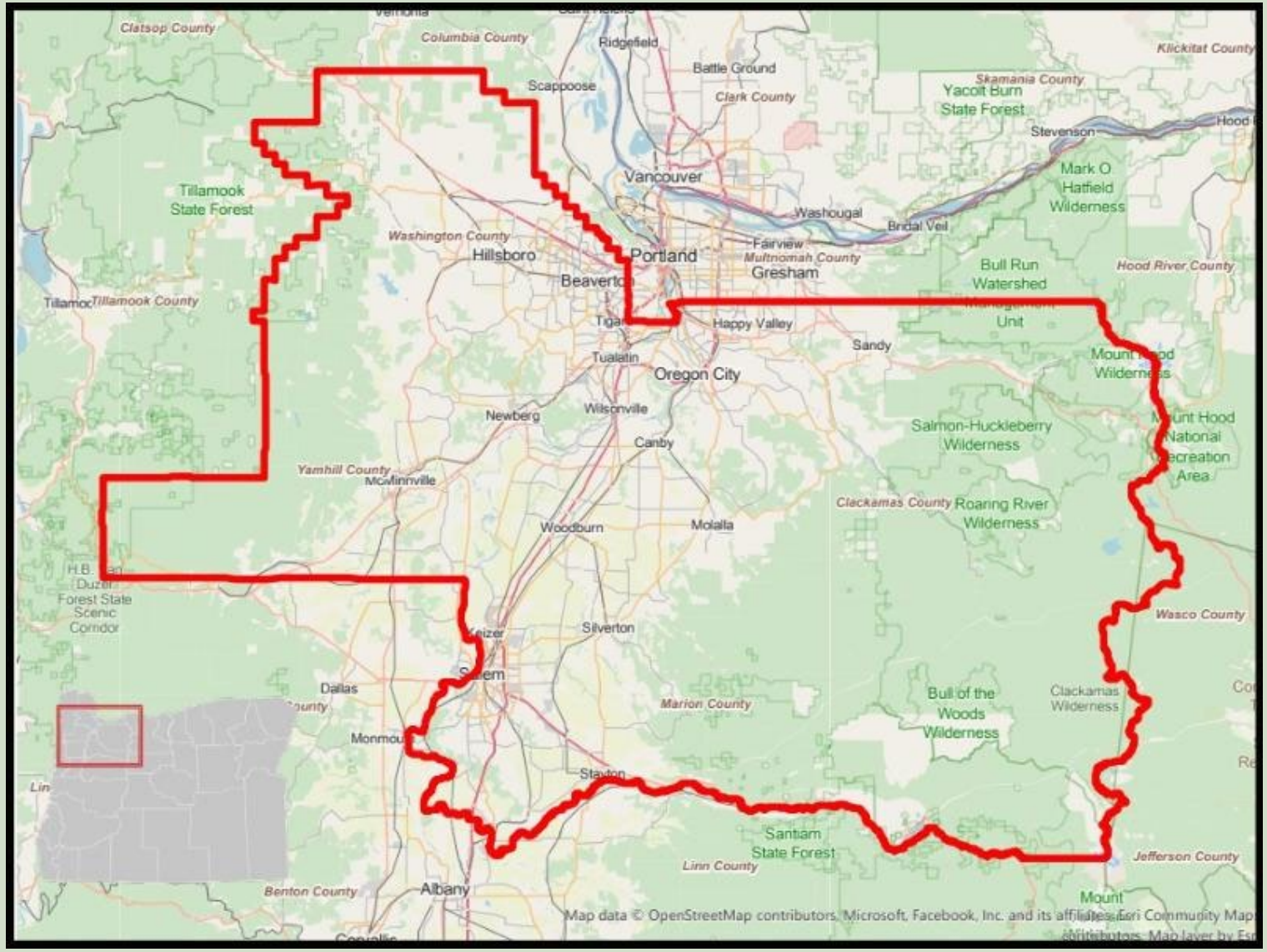


EAB in Oregon: Updates

Counties currently under quarantine:

- Washington (2022)
- Yamhill (2024)
- Clackamas (2024)
- Marion (2024)

Quarantine automatically expands when EAB is confirmed in a new county



Oregon's Response: Agencies

- Community education
- Scientific research
- Advising landowners via Extension

OSU

USDA APHIS

- Surveying & monitoring partner
- Biocontrol supply
- Confirms new positive counties

Oregon Dept of Forestry

- Surveying & monitoring partner
- Education
- Outreach materials and kits
- Inventory: TreePlotter
- Management advice and planning
- Forest Health

Oregon Department of Agriculture

- Entomologists
- Reporting Hotline
- Biocontrol manager for Oregon
- Slowing Ash Mortality (SLAM), 2022-2024
- Visual surveying
- Quarantine authority

All:

- State Task Force and other subcommittees
- Communication

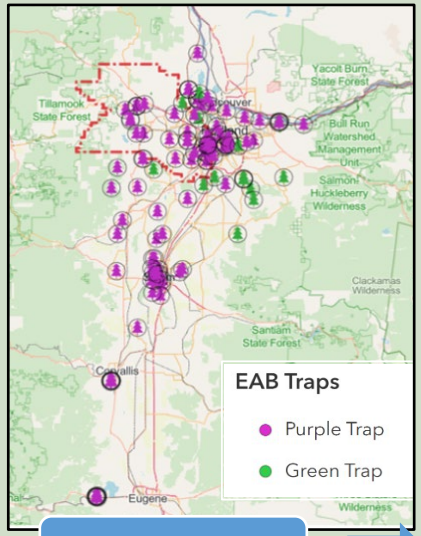
Local partners:

- Education + outreach for community and members of the public
- Landowner for biocontrol release plots
- Connection to wood use groups

Local efforts:

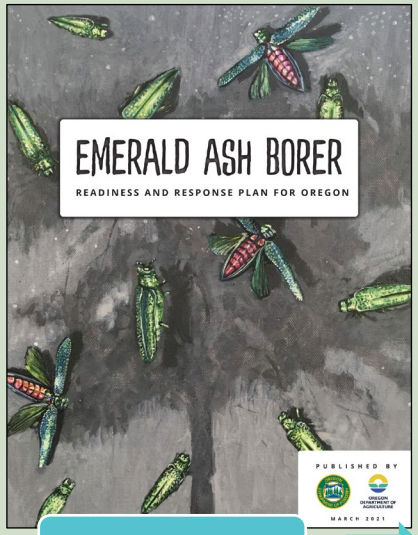
- Surveying and detection on owned land
- Management activities

Oregon's EAB Response



Prior to 2013

- Trapping throughout state
- Federal and state cooperation



2018

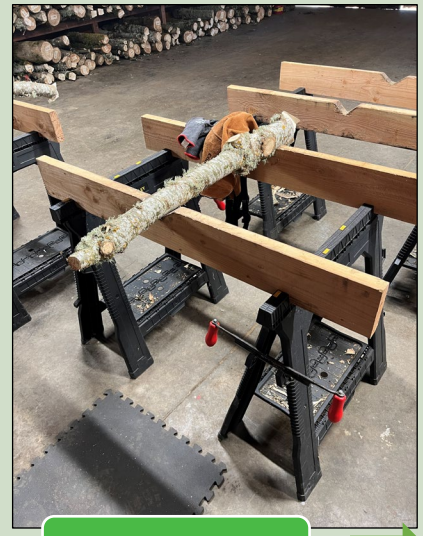
- Created EAB Readiness and Response Plan

2019

- Oregon Ash Seed Collection begins

2022

- First detection in Oregon
- Statewide taskforces created



2023

- Visual surveying + trapping increases
- **SLAM** begins
- Biocontrol release

2024

- New infestations discovered
- Ongoing:
  - SLAM
  - Biocontrol
  - State Task Force
  - Education

Forest Grove, OR
April 2024

January 2025

Dying ash are dangerous

An 80-foot ash tree crashed into a building at Hobby World in Adams, causing significant damage

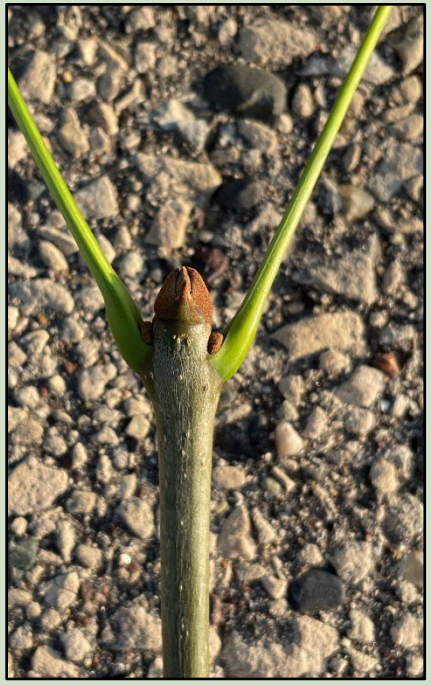
By Stan Spinella, The Berkshire Eagle Sep 25, 2024 1 min to read

Ash in Oregon: Identification

Furrowed Gray Bark

Fuzzy, Brown & Pointy Buds

Pinnately Compound Leaves



Opposite Branching

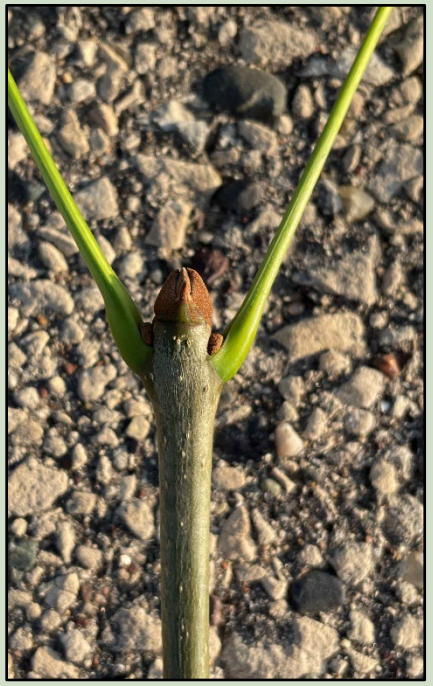
Single-Wing Samaras

Ash in Oregon: Identification

Furrowed Gray Bark

Fuzzy, Brown & Pointy Buds

Pinnately Compound Leaves



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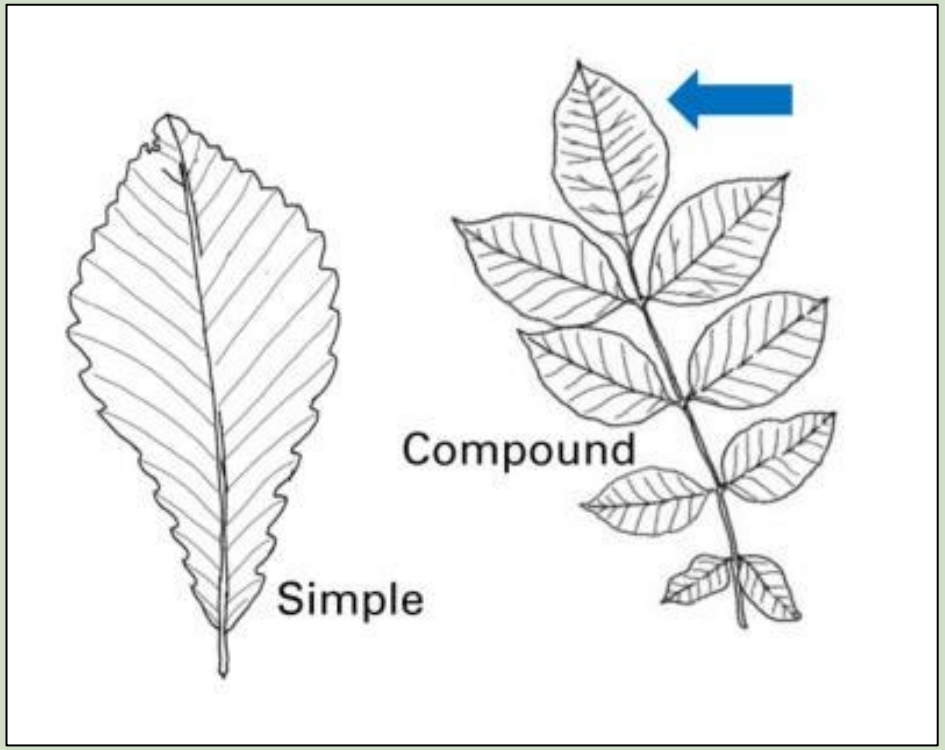
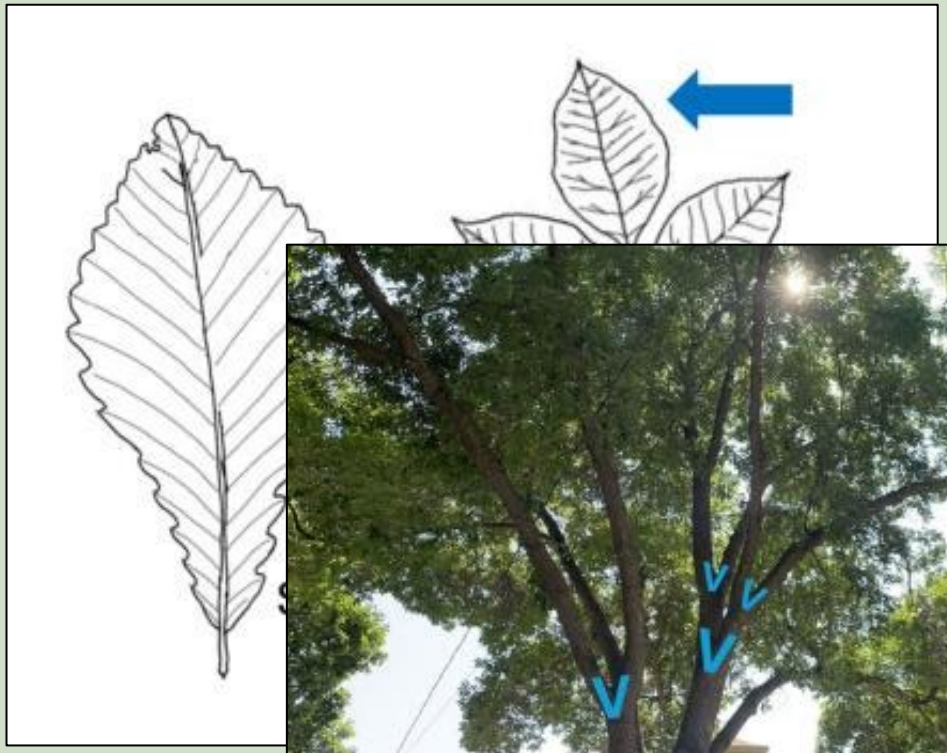
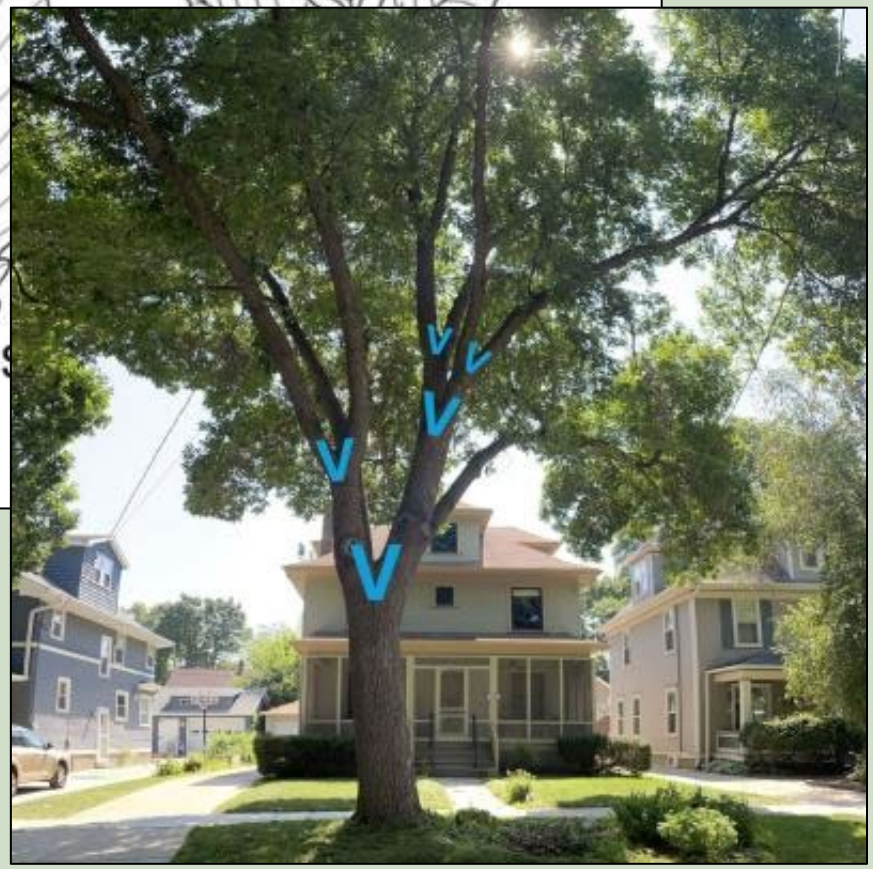


Ash in Oregon: Identification





Ash in Oregon: Identification

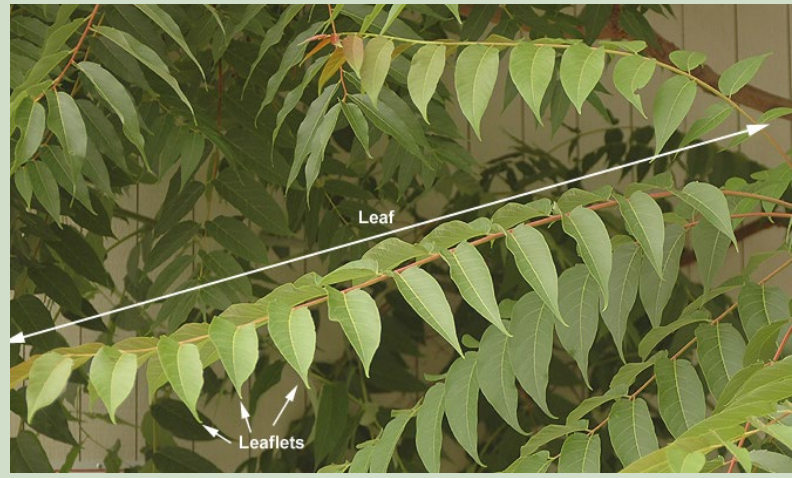
Commonly mistaken trees

Mountain-ash, aka Rowan (*Sorbus* spp.)

- ID clues: bright red berries, **alternate branching**, leaflets are serrate, not a true ash

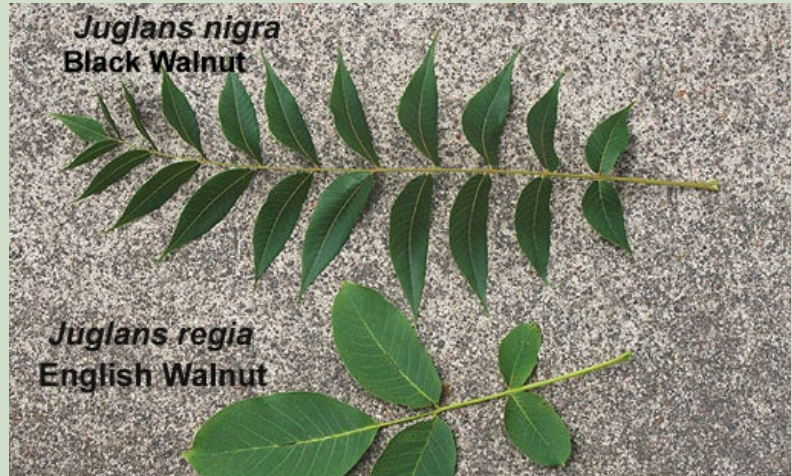
Tree of Heaven (*Ailanthus altissima)*

- ID clues: too many leaflets, **alternate branching**, bad smell

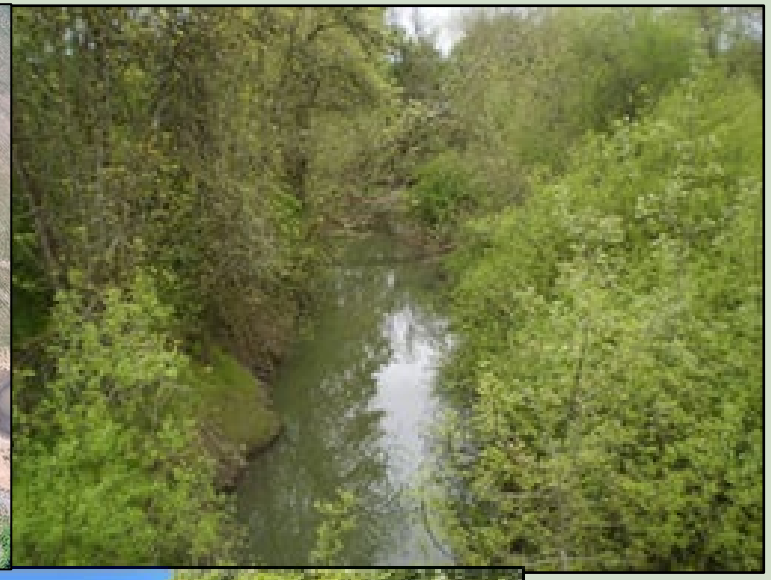


Walnuts (*Juglans* spp.)

- ID clues: too many leaflets (Black Walnut), **alternate branching**, nuts not samara



Ash Trees in Oregon



Wildland Urban Interfaces (WUI) sites

Natural Areas

- Riparian Corridors
- Wetlands

Urban Areas

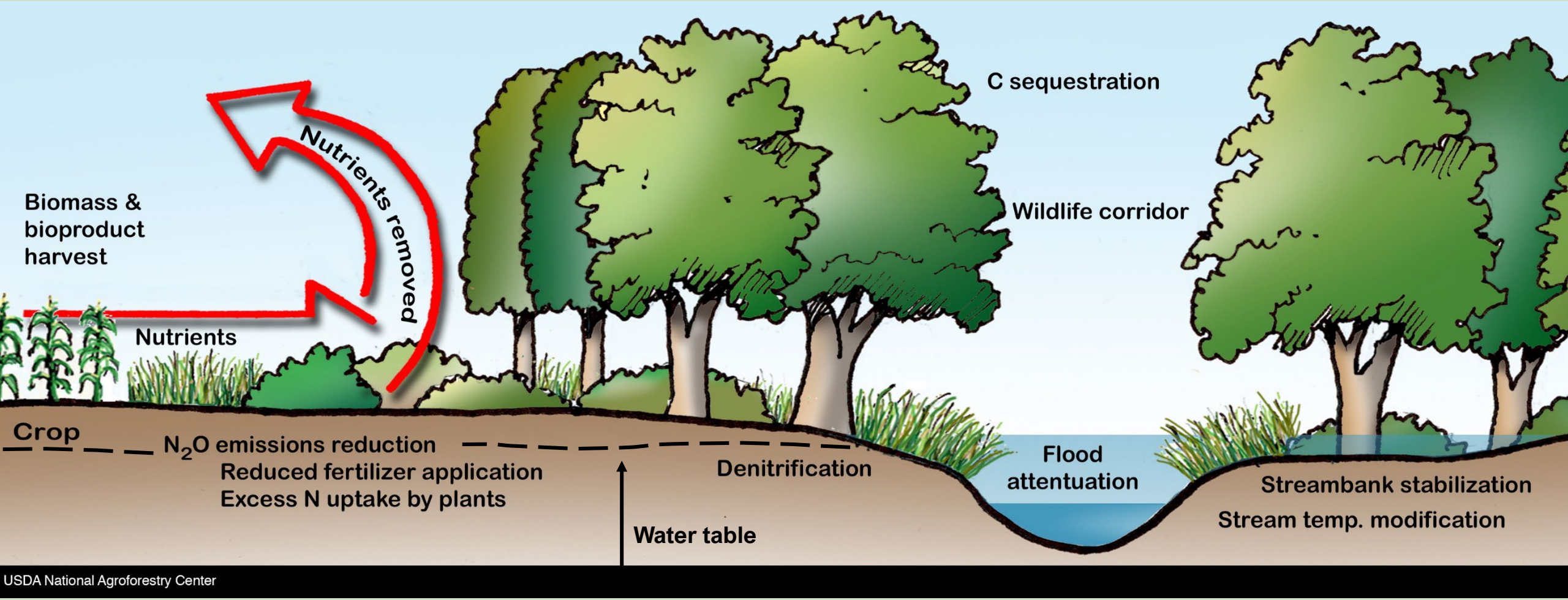
- Streets
- Yards
- Parks

Ash in Riparian Corridors

<u>Oregon Ash</u> *(Fraxinus latifolia):* Oregon's only native ash tree

- Important riparian and wetland tree
- Fragmented and altered landscape
- Critical habitat for threatened and endangered species
- Important cultural resource to Indigenous peoples

Ecosystem of Riparian Areas



USDA National Agroforestry Center

Ash in Urban Areas

Various ash species are common along streets, in parks, and on private property

Essential green infrastructure that provides multiple benefits

- Stormwater retention
- Air pollution removal
- Canopy/Shade to reduce urban heat
- Safety/Health benefits
- Equity impacts

EAB Signs & Symptoms

Thinning crown and canopy decline

Epicormic sprouting or shoots

Woodpecker damage

EAB Signs & Symptoms

Thinning crown and canopy decline

Epicormic shoots

Woodpecker damage

EAB Signs & Symptoms

Bark splits

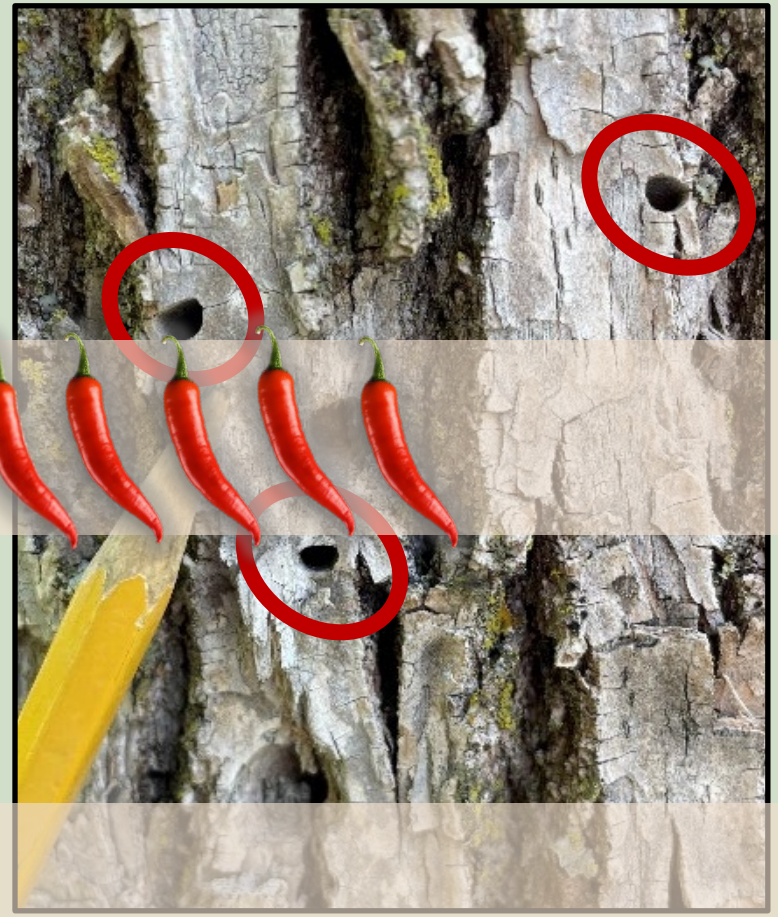
Serpentine galleries (S-shaped)

D – shaped exit holes

EAB Signs & Symptoms

Bark splits

Serpentine galleries



D – shaped exit holes

Alarm level

Report at

www.oregoninvasiveshotline.org

Damage not caused by EAB

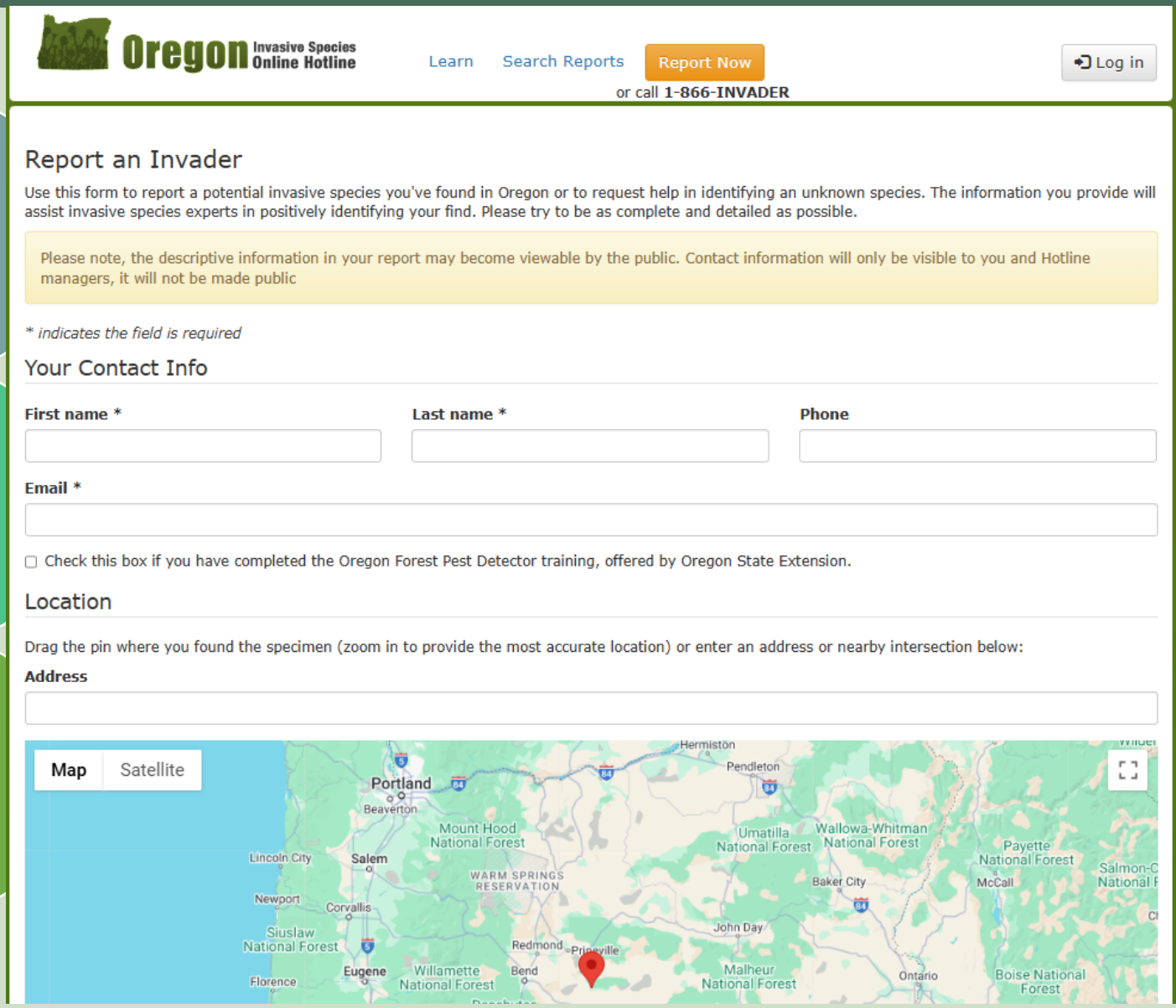
All images from OSU's [Oregon Ash: Insects, Pathogens, and Tree Health]

Report Suspected Infestations

Report using Oregon Invasive Species Hotline

Take photos of symptoms

Tree location



Case Study: Marion & Clackamas Detection

Jul 30 purple trap

Tree survey

Hotline report

Tree survey

Clackamas/ Marion County line

Pudding River

5 miles

Butte Cr.

Woodburn
N Front St
Hardcastle Ave
Mill Creek
E Lincoln Rd
214
Brown St
Union School Rd NE
Highway 211
211
Elliott Prairie
S Schneide
99E
Wilco Hwy NE
McKee School Rd
Oaklawn
Kahut Ln NE
Miller Rd NE
Monitor McKee Rd NE
Woodburn Monitor Rd NE
Monitor
Zollner Creek
Bochsler Creek
Butte Creek
Dominic Rd NE
Boehmer Rd NE
E Marquam St
E Marquam Rd NE
Mount Angel

Managing EAB: Slow the Spread & Prepare

Slowing the spread of EAB will minimize its impact and give communities more time to prepare

- Don’t move firewood!
  - Buy or collect it within 10 miles
- Follow the quarantine
- Stop planting ash trees
- Consult with an ISA-certified arborist about any ash trees you manage

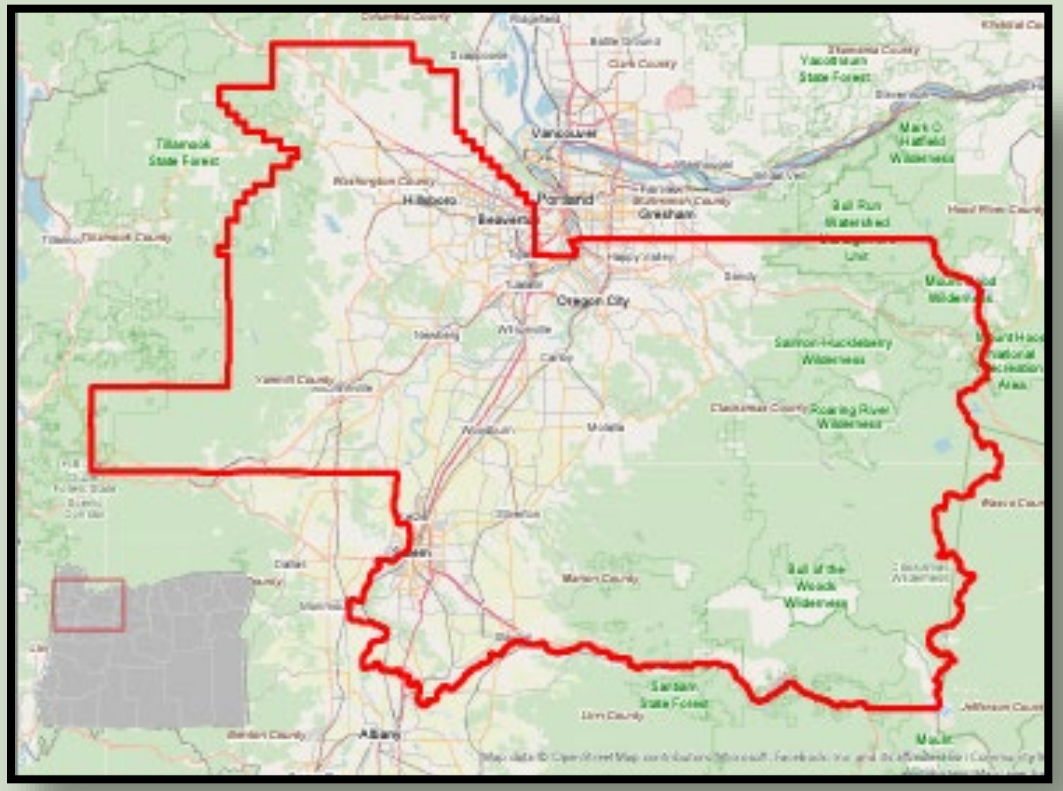
Troy Kimoto, Bugwood.org

Managing EAB: Active Quarantine

EMERALD ASH BORER QUARANTINE ALERT

OREGON DEPARTMENT OF AGRICULTURE

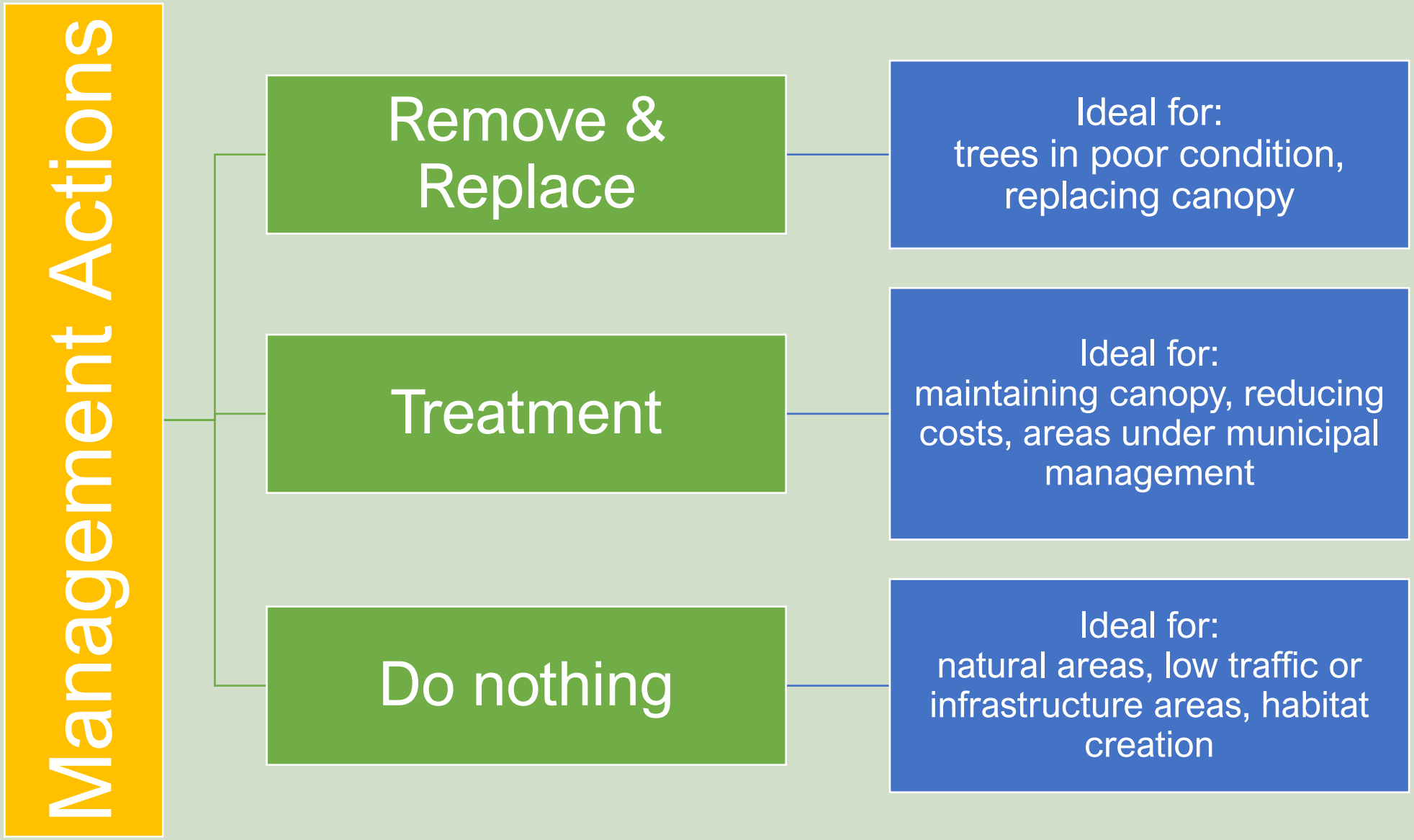
WASHINGTON, YAMHILL, MARION, CLACKAMAS COUNTIES, OREGON



1. Restricts movement of ash material (e.g., logs, nursery stock, chips, etc.)
2. Requires treatment (e.g. chip < 1”) and compliance agreement to move material outside quarantine
3. Limits ash tree removal and pruning to October 1 – April 30

ODA EAB Quarantine Website

EAB Management Options



Remove and Replace

Remove

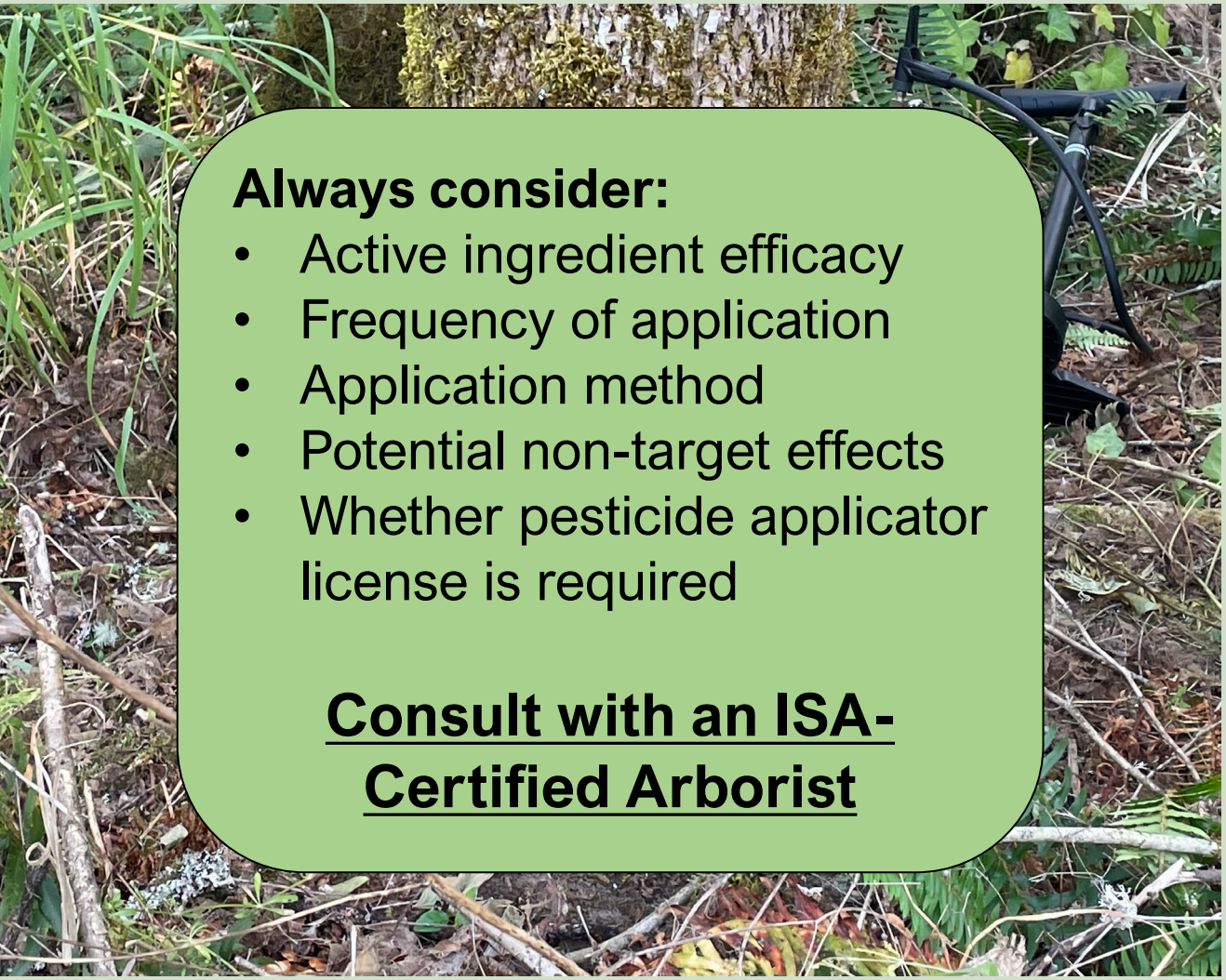
- Small trees - minimize cost and canopy loss
- High risk trees – defective, dying, poorly sited
- Trees you can't treat
- **When:** while trees are still alive

Replace

- Diverse selection of species
- Mitigate tree loss issues

Cost: Expensive but risk is controlled

Treatment



Always consider:

- Active ingredient efficacy
- Frequency of application
- Application method
- Potential non-target effects
- Whether pesticide applicator license is required

<u>Consult with an ISA-Certified Arborist</u>

Oregon Dept of Forestry

Up to 95% effective, depending on treatment type and proper application

Which trees:

- Healthy, good condition trees
- Medium to large diameter
- Not feasible across entire landscape

When

- Must be repeated every 1-3 years

Cost: Typically cheaper than R&R, lowest risk

Treatment Options

Application Method	Active Ingredient	Application Frequency/ Timing	Effectiveness	Nontarget Species Impact	Pesticide Applicator License Required?
Systemic Trunk Injection	**Emamectin benzoate**	**Once every 2-3 years in spring[+]**	**Excellent, most effective treatment option**	**Low, if properly applied**	**Yes**
	Azadirachtin	Once every 1-2 years in spring[+]	Very good, varies by pest pressure	Low, if properly applied	No
	Imidacloprid (N)	Once every 1-2 years in spring[+]	Inconsistent	Low, if properly applied	Yes
Trunk Spray	Dinotefuran (N)	Once per year in spring[1+]	Very good	Low to moderate if properly applied	No
Soil Injection/ Drench	Dinotefuran (N)	Once per year in spring[1+]	Inconsistent	Moderate to high	No
	Imidacloprid (N)	Once per year in spring[1+]	Inconsistent	Moderate to high	Yes
Cover Spray	Bifenthrin, Spinosad, Cyfluthrin	Two applications 4 weeks apart in late spring*	Fair	Moderate to high	Yes - Bifenthrin and Spinosad No - Cyfluthrin

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Consult with an ISA-Certified Arborist

Emamectin Benzoate trunk injection

- **Efficacy:** Excellent
- **Application method & frequency:** Systemic trunk injection, once a year every 2-3 years
- **Non-target effects:** Low
- **Should be administered by a licensed pesticide applicator**

ODF EAB Insecticide Treatment Fact Sheet

Do Nothing

What happens:

- Ash tree die-off leads to increased risk
- Ecosystem impacts
    - Decreased shade, increased soil erosion
- Loss of community benefits including air quality, heat, mental health

Cost: Potentially the most expensive option in the long term

Appropriate for trees that are:

- Low risk, low target, in natural areas

EAB Resources – OregonEAB.com

State Resources

- Oregon's EAB Readiness and Response Plan
- ODF Forest Health Website
- Biological Control for EAB

Identification and Fact Sheets

- Ash Identification
- EAB Look-Alikes
- EAB Fact Sheet
- ⭐ EAB Quarantine

⭐ OSU EAB Resources

- Oregon Ash: Insects, Pathogens, and Tree Health
- OR Forest Pest Detector Training
- Alternatives to Ash in Western Oregon
- Recommendations for Tree Protection Against EAB

Management Resources

- 10 Recommendations for Managing Ash
- Managing Northeastern Forests Threatened by EAB
- EAB Management Review
- ⭐ EAB Insecticide Treatment Fact Sheet

Wood Use

- Resource Directory of Wood Waste Professionals
- What To Do with Ash Wood

Other Forest Management

- ⭐ Find an Arborist
- Tree Risk Management

Report Invasive Species

- Reporting Potential EAB Insects or Infestations

OregonEAB.com

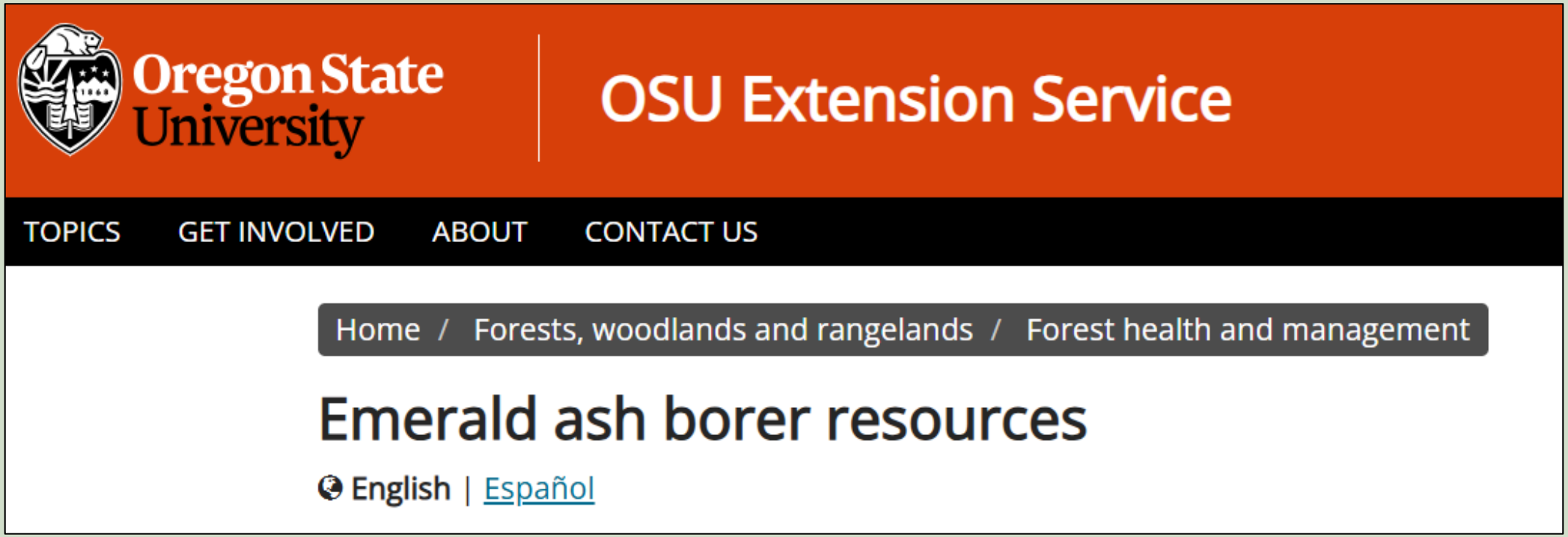
About Resources Local Information Oregon EAB Map Report EAB

Emerald Ash Borer (EAB) in Oregon

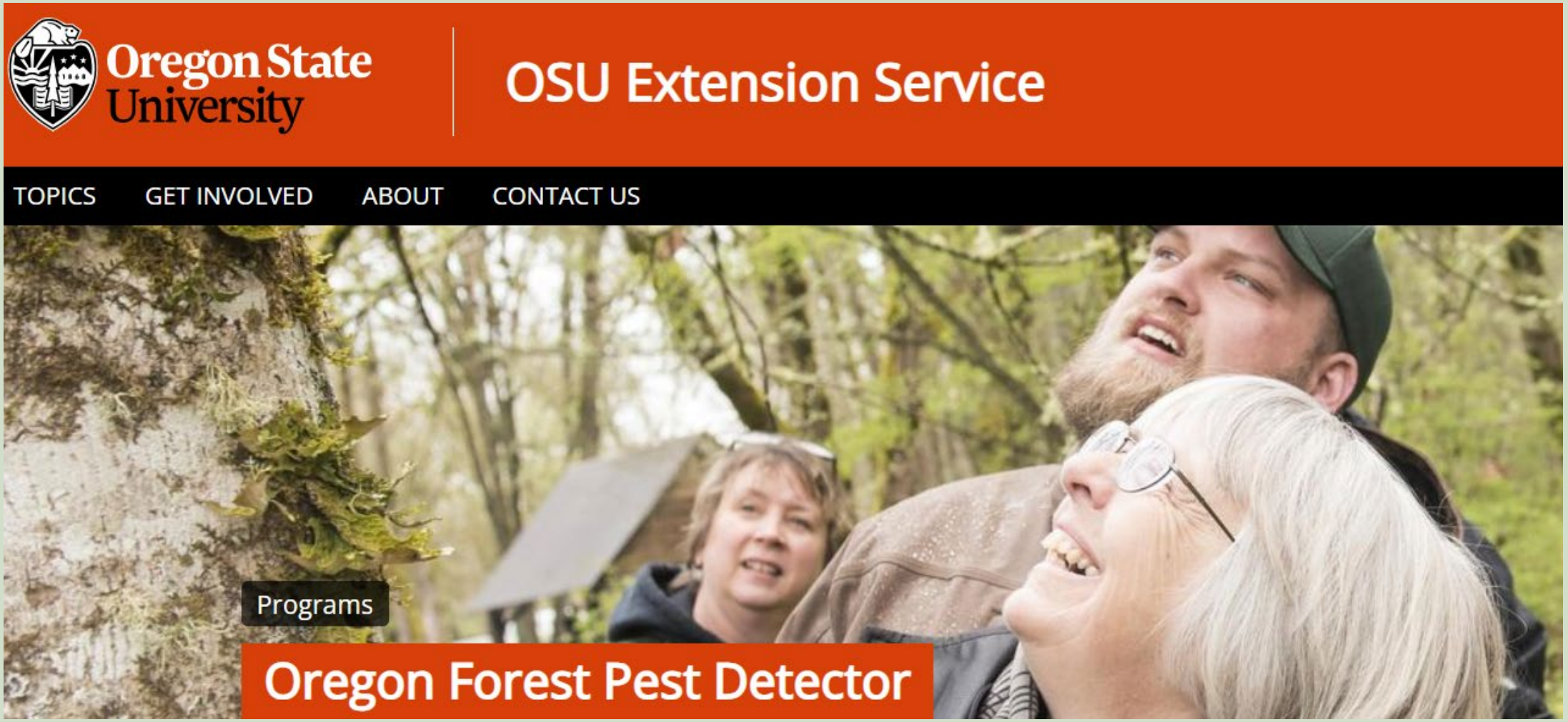
Emerald ash borer (*Agrilus planipennis*) – commonly called EAB – is a destructive, invasive beetle that infests and kills ash trees (*Fraxinus* species). EAB has spread across North America since it was first detected in Michigan in 2002, killing hundreds of millions of ash trees. EAB was confirmed in Oregon in 2022, the first known case on the West Coast. Once EAB arrives in an area, it cannot be eradicated –which means it doesn't go away. Even though EAB will kill many ash trees in Oregon, there are steps we can take to slow its spread and limit its impacts.

Adult emerald ash borer beetle | David Cappaert

OSU EAB Resources



OR Forest Pest Detector Training



Treatment Fact Sheet (ODF)

TREATMENT OVERVIEW

The emerald ash borer (EAB) is a destructive, invasive beetle that infests and kills ash trees (*Fraxinus spp.*). EAB adults lay their eggs on ash trees, and after hatching, the larvae burrow under the bark to feed on the tree, eventually cutting off its supply of water and nutrients. EAB has spread to many U.S. states since it was first detected in Michigan in 2002, killing nearly all ash trees in its path. Unfortunately, EAB cannot be eradicated; once it arrives in an area, it doesn't go away. EAB was confirmed in Forest Grove, Oregon in June 2022, the first known case on the West Coast. Because ash trees are common in parks, streets, yards, wetlands, and along waterways, their loss will have wide-reaching effects on health, environment, and economy. Properly treating individual ash trees with insecticides is the only way to protect them from an EAB infestation.

EAB Quarantine

EMERALD ASH BORER QUARANTINE ALERT

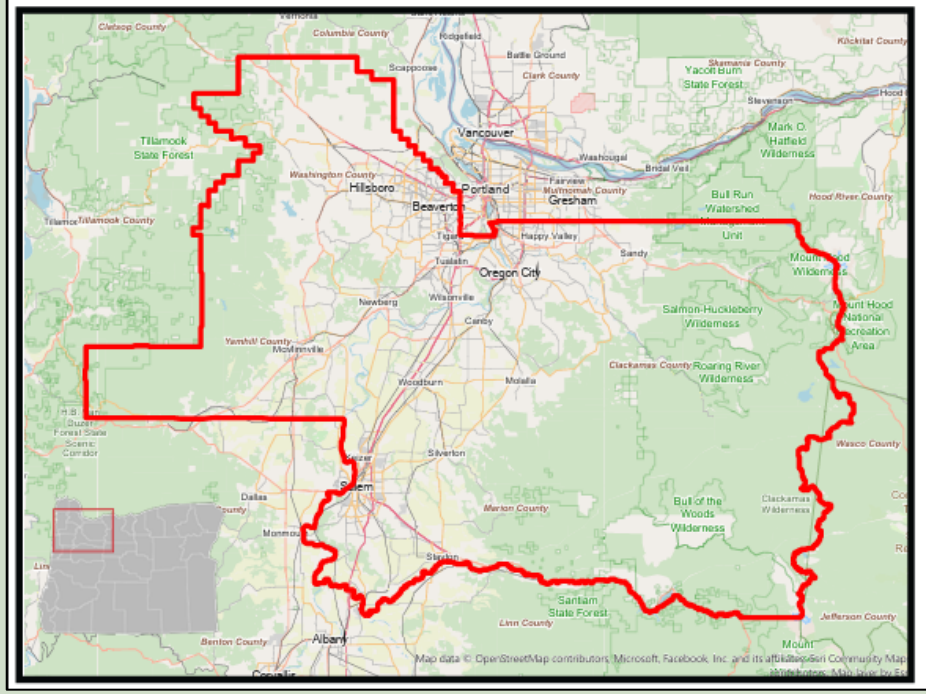
OREGON DEPARTMENT OF AGRICULTURE

WASHINGTON, YAMHILL, MARION, CLACKAMAS COUNTIES, OREGON

A permanent quarantine is now in effect. Emerald ash borer (EAB) has been confirmed in three new counties, triggering an expansion of the quarantine. Tree materials of ash, olive, and white fringe tree, must remain within quarantined counties (Washington, Yamhill, Marion, Clackamas). Wood waste must be processed accordingly and disposed of.

Actual Size

1/2 inch



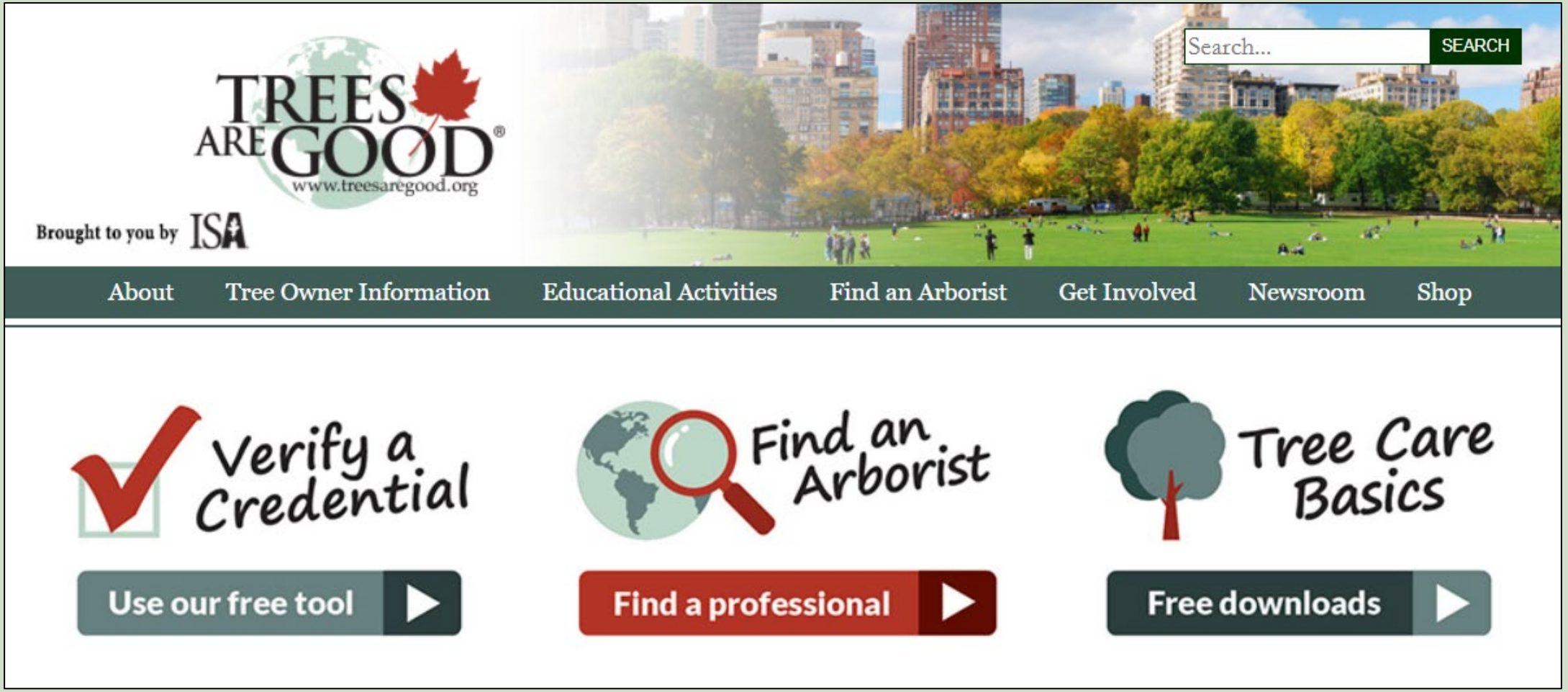
Regulated Ash, Olive, & White Fringe Tree Materials

- Nursery stock
- Scion wood
- Bud wood
- Logs
- Roots and branches
- Stumps
- Green lumber
- Chips and mulch
- Firewood of hardwood species

Quarantine Exceptions

- Nurseries or groups that have a formal compliance agreement with ODA
- Seeds and leaves
- Processed lumber kiln dried, free of bark and material 1 inch below bark.
- Finished wood products without bark, including furniture, baskets,

Find an ISA-Certified Arborist



www.TreesAreGood.org

Thank you!

Lilah Gonen
Community Assistance Forester

Oregon Department of Forestry
Urban & Community Forestry

EAB Contact:
InvasivePests@odf.oregon.gov

Rich Hoeg