September 28, 2022

MEMORANDUM

TO: Fish & Wildlife Committee

FROM: Cathy P. Kellon, Oregon Fish and Wildlife Policy Analyst

SUBJECT: Emerald Ash Borer arrives in Oregon

BACKGROUND:

Presenter: Chris Benemann, Interim Director, Plant Protection and Conservation Programs, Oregon Department of Agriculture

Summary: Chris Benemann will share information on the invasive, non-native emerald ash borer (EAB) beetle; the relevance of its discovery in Oregon three months ago; and the evolving response by natural resource managers. First found in Michigan in 2002, the EAB is now considered the most destructive and costliest tree insect pest to have been introduced to North America. EAB infestations cannot be prevented or eradicated with current management tools so Pacific Northwest natural resource agencies and tribes are focused on slowing its spread and reducing damages to fish, plant, and wildlife habitat, especially west of the Cascades where most Oregon ash grows, the only native ash tree species in the Pacific Northwest.

Relevance: The areas of the Columbia River basin that are at highest risk to EAB are the Willamette Valley, lower Columbia River, and southwestern Washington, where dense stands of native Oregon ash line valley bottoms and streams, providing critical habitat for listed fish, insect, plant, and wildlife species. The Council’s 2014 Fish and Wildlife Program recognizes the imperative to protect and enhance ecological function in Strategy A, “Ecosystem function” and in sub-strategy 3 to, “Prevent the introduction of non-native and invasive species in the Columbia River Basin, and suppress or eradicate non-native and invasive species.”
**Background:** On June 30, 2022, the emerald ash borer (EAB) was discovered in Forest Grove, Oregon, making it the first confirmed sighting of this invasive beetle on the west coast. Native to Asia, the emerald ash borer’s larvae burrow under the bark of ash trees to eat the sapwood, gradually killing the host tree. In the twenty years since the beetle’s arrival in North America it has spread to 36 states and five Canadian provinces, killing hundreds of millions of ash trees.

There are over a dozen ash tree species native to North America but most ash in urban and residential areas were introduced as ornamentals. The single ash species that is native to the Pacific Northwest (PNW) is the Oregon ash (*Fraxinus latifolia*), which plays an important ecological role throughout its range in lower elevation riparian areas and wetlands west of the Cascades. The most vulnerable areas to EAB in the Columbia River basin are the Willamette Valley, lower Columbia River, and southwestern Washington, where dense stands of Oregon ash line valley bottoms and streams. In fact, large riparian restoration projects on the “west side” have historically included ash plantings and in wetter parts of the Willamette Valley, Oregon ash is the dominant tree species.

Currently there are no means to prevent or eradicate EAB infestations, only to slow its spread and mitigate damage. Experts anticipate that most ash trees in an area where EAB arrives will be dead or dying within the decade. The beetle’s establishment in the PNW has the potential to transform the landscape, not only because of ash’s ubiquity but also because Oregon ash provides direct and indirect ecosystem benefits for so many species of concern.

The loss of Oregon ash in riparian zones will degrade critical aquatic habitat for Endangered Species Act listed Upper Willamette steelhead and Upper Willamette and Lower Columbia chinook and coho, among other aquatic species. Widespread Oregon ash mortality will diminish forested habitat that is vital for listed insect and plant species, as well as birds and wildlife, like the Columbian White-tailed Deer.

In anticipation of EAB’s arrival, Oregon published a coordinated, inter-agency response plan in 2021 that relies on a combination of measures including monitoring, education, banking native Oregon ash seed, and rapid response to EAB detections by removing infected trees and establishing quarantines.

**More Info:**
- Oregon’s [EAB Readiness and Response Plan](#)
- Oregon State University’s [EAB resources list](#)
- [EAB Information Network](#) with links to state-by-state resources
- NPCC Fish and Wildlife Program [2014 Program (see esp., pp.38-48)](#)
Outline

• EAB 101
• Distribution of EAB in the U.S.
• Status in Oregon
• What’s at risk?
• Oregon’s Response Plan
Spread of EAB in the U.S.

- 2002: First detection in Michigan
- 2013: Detected in CO
- 2019: Spread to 33 states
- 2022: Jump to Oregon (#36!)

Quarantines are not bulletproof
Learn more:

- International Standard in Phytosanitary Measures 15 (ISPM 15)
- [www.dontmovefirewood.org](http://www.dontmovefirewood.org)
Status in Oregon
Timeline

- June 30th: ODF notified and ODF visited site and confirmed same day
- July 1st: ODF reported to ODA
- July 2nd: Trees cut down and chipped
- July 5th: ODA, ODF, and USDA held initial response meeting and visited site
- July 11th:
  - Public announcement
  - Oregon received USDA confirmation of identification*
- July 14th: briefed nursery industry
- August: Task Force and Steering Committees formed
Forest Grove- ground zero
- Trees planted in 2012
- Purchased locally from landscaper/nursery in Aloha
- Tree origin unknown
- Estimate 3-5 years
- NO evidence to suggest the trees were source of infestation
“So...what’s at risk?”
Oregon ash (*Fraxinus latifolia*)

- Oregon’s only native ash tree
- Important riparian tree
  - Shading, bank stabilization
- Habitat for T&E species
- Wood products
- Cultural resource
Islands of Oregon ash
Oregon ash in riparian area

80% of Oregon ash occurs below 1,000’
Look to the east for futures to come?

TOLEDO STREET BEFORE AND AFTER EMERALD ASH BORER

BEFORE: JUNE 2006 PHOTO COURTESY OF DAN HERMS, OSU AFTER: AUGUST 2009
Oregon’s Response
How has Oregon prepared?

• ODF has been monitoring for EAB for several years

• Before the 2022 detection, ODA secured federal funds for biocontrol work
  • ODA has applied for continued funds for FY2023
  • This will now be a part of Oregon’s response plan

• ODA performed 2 consecutive years surveying nurseries in the valley for woodboring insects
  • Included EAB
  • Surveyed landscape ash trees

• EAB Response Plan

• Seed collection (ODF) - ongoing
Response as a Continuum

- Actions will come from different groups in different ways
- Surveys
  - determine the spread (ongoing)
  - identify release sites for EAB biocontrol
- Trapping is a tool that can be used to assist monitoring
  - In conjunction with girdled/trapping tree
  - Lures are not specific enough and work best in areas with high levels of infestation
Multi-agency effort to monitor hotline

- Mostly false reports
- No new reports from outside known infested area

https://oregoninvasiveshotline.org
Outreach and Resource sharing

- Updated EAB fact sheets
  - multi-lingual

- Social media***
  - ODF, OSU
  - Urban forestry and small landowners

- Trainings

- Updated State webpages
  - OiSC website as central hub for all EAB-OR resources
< 1% confirmed infested trees, so far…
EAB delimitation/eradication

Delimitation surveys = Hard work!

Eradication = Expensive, ineffective.
Treatments - Chemical

• Tree injections, soil drenches
• Systemic insecticides
  • Emamectin benzoate
• Costly
  • $100-$300 per tree
• Repeat applications
  • every 1-3 years

Not feasible on a large scale
# Reviewed RUP for EAB in Oregon

## Pesticide List for Emerald Ash Borer in Oregon

Information provided by the Oregon Department of Agriculture, July 14, 2022

<table>
<thead>
<tr>
<th>Name</th>
<th>Manufacturer</th>
<th>EPA/State Reg. No.</th>
<th>Intended Use</th>
<th>Ingredients</th>
<th>Concentration</th>
<th>Signal Word</th>
<th>Restricted Use Pesticide (RUP)</th>
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<tr>
<td>12-0-4 CORECTECT</td>
<td>BAYER ENVIRONMENTAL SCIENCE</td>
<td>432-1457</td>
<td>COMMERCIAL</td>
<td>IMIDACLOPRID</td>
<td>20%</td>
<td>CAUTION</td>
<td>NO</td>
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<tr>
<td>2-1-1 BIODAVENTED SBS 12 MONTH TREE &amp; SHRUB PROTECT &amp; FEED CONCENTRATE</td>
<td>SBM LIFE SCIENCE CORP</td>
<td>92564-33</td>
<td>HOME</td>
<td>IMIDACLOPRID</td>
<td>1.47%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>2-1-1 BIODAVENTED SBS 12 MONTH TREE &amp; SHRUB PROTECT &amp; FEED CONCENTRATE II</td>
<td>SBM LIFE SCIENCE CORP</td>
<td>92564-39</td>
<td>HOME</td>
<td>CLOTHIANIDIN; IMIDACLOPRID</td>
<td>0.37%,0.74%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>2-1-1 BIODAVENTED SBS 12 MONTH TREE &amp; SHRUB PROTECT &amp; FEED RTU GRANULES</td>
<td>SBM LIFE SCIENCE CORP</td>
<td>92564-30</td>
<td>HOME</td>
<td>IMIDACLOPRID</td>
<td>1.10%</td>
<td>CAUTION</td>
<td>NO</td>
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<tr>
<td>ACE-JET</td>
<td>ARBORJET INC</td>
<td>74579-2</td>
<td>COMMERCIAL</td>
<td>ACREPHATE (ORGANOPHOSPHATE)</td>
<td>97.40%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>ACECAP SYSTEMIC INSECTICIDE IMPLANTS</td>
<td>CREATIVE SALES INC</td>
<td>39799-1</td>
<td>HOME</td>
<td>ACREPHATE (ORGANOPHOSPHATE)</td>
<td>98.90%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>ALOFT LC O INSECTICIDE</td>
<td>ARYSTA LIFESCIENCE NORTH AMERICA</td>
<td>66339-368</td>
<td>COMMERCIAL</td>
<td>BIFENTHRIN; CLOTHIANIDIN 0.125%,0.25%</td>
<td>CAUTION</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>ARBORMECTIN</td>
<td>ROTAM NORTH AMERICA INC</td>
<td>83100-35-83979</td>
<td>HOME</td>
<td>EMAMECTIN BENZOATE</td>
<td>4.00%</td>
<td>CAUTION</td>
<td>NO</td>
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<tr>
<td>AZAGARD</td>
<td>BIOSAFE SYSTEMS LLC</td>
<td>70299-17</td>
<td>COMMERCIAL</td>
<td>AZADIRACHTIN</td>
<td>3.00%</td>
<td>CAUTION</td>
<td>NO</td>
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<tr>
<td>BASELINE INSECTICIDE</td>
<td>FMC CORPORATION AGRICULTURAL PROD GROUP</td>
<td>279-3177</td>
<td>COMMERCIAL</td>
<td>BIFENTHRIN</td>
<td>23.40%</td>
<td>WARNING</td>
<td>NO</td>
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<tr>
<td>BATTALLION 2EC</td>
<td>ATTICUS LLC</td>
<td>91234-104</td>
<td>COMMERCIAL</td>
<td>BIFENTHRIN</td>
<td>25%</td>
<td>WARNING</td>
<td>YES</td>
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<tr>
<td>BIFEN XT XS INSECTICIDE/TERMITICIDE</td>
<td>CONTROL SOLUTIONS INC</td>
<td>53988-189</td>
<td>COMMERCIAL</td>
<td>BIFENTHRIN</td>
<td>25.10%</td>
<td>WARNING</td>
<td>NO</td>
</tr>
<tr>
<td>BIODAVENTED SBS 12 MONTH TREE &amp; SHRUB INSECT CONTROL CONCENTRATE</td>
<td>SBM LIFE SCIENCE CORP</td>
<td>92564-22</td>
<td>HOME</td>
<td>IMIDACLOPRID</td>
<td>2.94%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>BIODAVENTED SBS 12 MONTH TREE PROTECT &amp; FEED CONCENTRATE II</td>
<td>SBM LIFE SCIENCE CORP</td>
<td>92564-39</td>
<td>HOME</td>
<td>CLOTHIANIDIN; IMIDACLOPRID</td>
<td>0.37%,0.74%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>BIODAVENTED SBS 12 MONTH TREE PROTECT &amp; FEED RTU GRANULES</td>
<td>SBM LIFE SCIENCE CORP</td>
<td>92564-30</td>
<td>HOME</td>
<td>IMIDACLOPRID</td>
<td>1.10%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>BONIDE ANNUAL TREE AND SHRUB INSECT CONTROL WITH SYSTEMAXX</td>
<td>BONIDE PRODUCTS INC</td>
<td>53883-265-4</td>
<td>HOME</td>
<td>IMIDACLOPRID</td>
<td>1.47%</td>
<td>CAUTION</td>
<td>NO</td>
</tr>
<tr>
<td>BONIDE CAPTAIN JACKS DEADBugs BREW</td>
<td>BONIDE PRODUCTS INC</td>
<td>4-471</td>
<td>HOME</td>
<td>SPINOSAD</td>
<td>0.50%</td>
<td>NO SIGNAL WORD</td>
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</tbody>
</table>

[ODA-EAB webpage](https://www.oda.state.or.us/dwes/eab/pubs/pesticides/)
Real-time science

• 4 spp. parasitoid wasps
• Fall/winter survey
  • Spring 2023 release
• Not a one size fit option
• Long term strategy
Regulation

Goal: prevent spread to other states and within Oregon

• County level quarantine, emergency (180 day)
  • host plant nursery stock. *Plants as small as 1 inch DBH can be infested
  • Tree cuttings, green lumber, logs, stumps, mulch, etc. of ash
  • Firewood, hardwood
  • No shipment/movement out of quarantined area (WA County)

• Long term: depends on survey outcomes
  • Fall/winter = surveys, bark peeling
Quarantine Guidelines

May NOT leave the quarantine area:
All hardwood species of firewood
All ash nursery stock
Untreated ash branches

Ash wood that remains in the quarantine area:
• may be utilized for other purposes within the quarantine area.
• may be chipped and left on site.
• may be kept on site to be burned as firewood.
• can be brought to one of three landfill sites:
  1. Republic Landfill off Highway 93.
  2. Front Range Landfill & Denver Regional Landfill in Erie.
  3. Western Disposal in Boulder.

Ash firewood, branches and logs may not leave the quarantine area.

May leave the quarantine area:
Firewood of coniferous species such as pine, spruce and fir
Ash leaves and ash seeds

Ash wood may leave the quarantine area ONLY if:
• the company hired is under compliance agreement with CDA.
• the wood is chipped or mulched into pieces measuring a maximum of 1” x 1” in two of three dimensions.
• the logs or lumber are milled by removing bark and 1/2 inch of inner wood (no edges or corners may have remaining bark).

For more information and a list of companies certified to handle ash wood visit www.EABColorado.com or call 888-248-5535
October is Firewood Month!

SHARE WHAT YOU KNOW

38% of people are aware that invasive insects can move in firewood. With consistent outreach, that number jumps to 96%.

Taking firewood a long distance? You might be moving more than logs - pests like emerald ash borer love to hitch a ride. For National Firewood Month, remember t... See more
Questions?