

Emerald Ash Borer Key Points and Recommendations
Nebraska Emerald Ash Borer Working Group
February 2016

Description

- Adult is a metallic green beetle, slender, 1/2 inch long.
- Larva is white, legless, somewhat flattened, up to 1¼ inches long.
- Exit hole in bark is D-shaped, 1/8 inch in diameter.
- In early-stage infestations in healthy trees, EAB may overwinter as a full-grown larva or a young larva and have a 2-year life cycle.
- In older established infestations, EAB usually overwinters as a full-grown larva and has a 1-year life cycle.
- Adults are typically present from May through August.

Origin and spread

- EAB is from Asia and was discovered in the US in 2002 in the Detroit area.
- It can be spread easily by the movement of larvae and adults in ash wood, such as firewood.
- It can fly up to 6 miles but normally does not fly far from where it emerges.
- **Recommendation: Do not move firewood. Buy and use locally.**
- Information about quarantines: Go to www.emeraldashborer.info and select “Moving Firewood.”

Trees attacked

- **All species of ash (*Fraxinus* spp.) native to North America are susceptible.**
- EAB does not attack other trees except rarely. The only other known host is white fringe tree (*Chionanthus virginicus*).
- Mountain-ash (*Sorbus* spp.) is not a true ash and is not susceptible.

Current locations

- **EAB has not yet been found in Nebraska.**
- It is currently known to be present in 25 states, including the neighboring states of IA, MO, KS, and CO.
- It is closest to Nebraska in the east and south near Red Oak, IA (30 mi.) and in St Joseph, MO (30 mi.). It is closest in the west in Boulder, CO (95 mi.). Map - www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/MultiState.pdf

Prognosis

- Given enough time, EAB will kill nearly all unprotected native ash trees over most of North America.
- **Within a community, if nothing is done to manage EAB, about 10% of ash trees are typically killed in the first 4 years after EAB is discovered; about 70% of ash trees are typically killed in the next 4 years—80% in 8 years.**
- EAB is normally in an area for 3 to 4 years before being discovered.
- Eradication of EAB has been tried and proven to be unsuccessful.
- A continuous program of insecticide treatments can protect trees, but not indefinitely. Tree life span likely will be shortened because of treatment-induced injury or variability in treatment effectiveness. Also, not all trees are valuable enough to justify the cost, tree injury, health risks and harmful environmental impacts of the treatments.
- Nebraska has approximately 44 million ash trees; about 1 million are in communities.
- Ash comprises about 9% of the total number of trees in Nebraska and about 27% of the total number of trees in communities.

Community recommendations

- Communities should gain an understanding of their ash tree resource: number of trees, locations, sizes, conditions.
- Develop a management and response plan to include the removal, utilization and replanting of the community forest.
- **Consider removing ash trees in advance of EAB arrival, especially those that are in poor health or in poor locations, to spread personnel workload and removal costs over more years.**
- When EAB is within 15 miles of your community, consider treatments to protect high value trees in good condition.
- Consider treating a percentage of the trees that are targeted for future removal to delay their mortality, allowing workload and costs to be spread over more years.
- Increase tree diversity when replacing lost ash, with a goal of no more than 10% of any one species. See this website for tree suggestions: Nebraska Statewide Arboretum publications- arboretum.unl.edu/nsa-publications.

Homeowner recommendations

- **No treatment for EAB is recommended at this time**, because it has not been found in Nebraska or close enough to justify the cost, tree injury, health risks and harmful environmental impacts of the treatments.
- After EAB is discovered within 15 miles of your home, consider treatments to protect high value trees in good condition.
- If treating or removing a tree, hire a certified arborist, especially for large trees (NAA certified arborists: www.nearborists.org, select “Find an Arborist;” ISA certified arborists: www.isa-arbor.com, select “Find an Arborist”).

Treatments—general

- **Treatments should be considered for valuable trees in good condition only when EAB is known to be present within 15 miles.**
- Treatments are currently not recommended in Nebraska, because EAB is not known to be present within 15 miles.
- If treatments are used, they will be needed every 1 or 2 years, depending on the product, through the remaining life of the tree.

- Trees with early infestations of EAB, causing leaf canopy thinning of less than 30%, can usually be treated effectively and usually recover from the EAB damage.
- Trees with leaf canopy thinning of 30% or more often do not respond well to treatments because of the greater amount of damage inside the tree.
- Trees have typically been attacked by EAB for 3 to 4 years before leaf canopy thinning or beetle exit holes in the bark are noticed.
- **All treatments have costs beyond financial costs that should be considered before treatments are applied, including injury to the tree and potential harm to people, pets, wildlife and other organisms in the environment.**

Treatment options

- Trunk injections, implants, basal trunk sprays, and bark and foliage sprays can protect trees of all sizes.
- Soil drenches and granules are most effective on small trees, generally less than 15 inches in diameter.
- Soil drenches and granules are effective on large trees at higher rates if the label allows it.
- Foliage sprays only improve control and are not recommended to be used alone.
- Trunk injections and dinotefuran basal trunk sprays are applied only by professionals.
- **Average cost of a treatment applied by an arborist to an average-size tree (20-inch DBH) is around \$100 per year.**
- Homeowners can apply soil drenches and granules, bark and foliage sprays, and trunk implants.

Common professional products available in Nebraska (no endorsement is implied; other products may be available)

- Trunk injections: **Emamectin benzoate** (ArborMectin, TREE-äge) and **imidacloprid** (IMA-jet, Imicide, Pointer)
- Soil drenches, granules and systemic basal trunk sprays: **Dinotefuran** (Safari, Transtect, Zylam) and **imidacloprid** (Criterion, Lesco Bandit, Merit, Xytect)
- Residual bark and foliage sprays: **Bifenthrin** (Onyx), **cyfluthrin** (Tempo) and **permethrin** (Astro)

Common homeowner products available in Nebraska (no endorsement is implied; other products may be available)

- Soil drenches and granules: **Dinotefuran** (Green Light Tree & Shrub Insect Control with Safari; Ortho Tree & Shrub Insect Control Granules), and **imidacloprid** (Bayer Advanced 12 Month Tree & Shrub Insect Control; Compare N Save Systemic Tree & Shrub Insect Drench; Merit)
- Residual bark and foliage sprays: **Permethrin** (Hi-Yield 38 Plus Turf, Termite and Ornamental Insect Control) and **spinosad** (Ferti-lome Borer, Bagworm, Tent Caterpillar & Leafminer Spray)
- Trunk implants: **Acephate** (Acecaph)

Treatment timing

- Trunk injections and implants should be applied in mid-May through early June.
- Basal trunk sprays with dinotefuran should be applied in mid-May through early June.
- Bark sprays with bifenthrin, cyfluthrin or permethrin should be applied in mid-May.
- Soil drenches with imidacloprid should be applied in April (or fall, but not as effective).
- Soil drenches with dinotefuran should be applied in mid-May through early June.

Reporting suspected EAB locations and specimens

- Nebraska Department of Agriculture: 402-471-2351
- USDA APHIS, Lincoln office: 402-434-2345
- USDA APHIS, national hotline: 866-322-4512
- Nebraska Forest Service: 402-472-2944

Local contacts for more EAB information

- Nebraska Forest Service district offices: **Chadron** 308-432-3255, **Scottsbluff** 308-633-1173, **North Platte** 308-696-6718, **Ord** 308-728-3221, **Clay Center** 402-762-3536, **Wayne** 402-375-0101, **Omaha** 402-444-7875, **Lincoln** 402-472-2944

Nebraska publications

- Emerald Ash Borer Look-Alikes - nfs.unl.edu/documents/EAB/EABLookAlikesChart.jpg
- Emerald Ash Borer: Frequently Asked Questions - nfs.unl.edu/documents/foresthealth/EAB_FAQs_web_May_2014.pdf
- Emerald Ash Borer: Guidelines for Nebraska Homeowners
nfs.unl.edu/documents/EAB/EABhomeownerfullsheet2012Oct.pdf
- Emerald Ash Borer: Readiness Planning for Nebraska Communities
nfs.unl.edu/documents/foresthealth/EABCommunityReadinessFullSheet.pdf
- Emerald Ash Borer: Treatment Options - nfs.unl.edu/documents/foresthealth/EABTmtOptions.pdf
- Decline in Ash Trees: Borers and Bark Beetles - An Identification Guide
nfs.unl.edu/documents/EAB/ashdeclineborersnotyetEABfullsheet.pdf
- Decline in Ash Trees: Diseases & Environmental Stresses - An Identification Guide
nfs.unl.edu/documents/EAB/ashdeclinediseasesfullsheetfinal.pdf
- Misconceptions Regarding Emerald Ash Borer Treatments
nfs.unl.edu/documents/EAB/MisconceptionsEABTrtsfullsheetMay2015.pdf
- Ash Tree Identification Guide - nfs.unl.edu/Ash_Tree_Identification6.5.2015Final.pdf
- Selecting Trees for Emerald Ash Borer Treatments - nfs.unl.edu/Selecting_ash_trifold_2015_June_9_.pdf

Nebraska EAB websites

- Nebraska Forest Service: nfs.unl.edu/emerald-ash-borer
- Nebraska Department of Agriculture: www.nda.nebraska.gov/plant/entomology/eab/index.html