



Emerald Ash Borer Guidance for Maine Forest Managers

Maine Forest Service, DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
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Introduction and Management Considerations

Emerald ash borer (EAB) is a non-native beetle that infects and kills ash trees. Native to eastern Asia, it was first detected in North America near Detroit, Michigan, in 2002. **In Maine, an established EAB infestation was detected in 2018 in the towns of Frenchville, Grand Isle, Madawaska, Acton, and Lebanon.** While EAB is expected to eventually become established throughout the state, most ash in



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Maine are years away from being infested. Now is the time however to plan for EAB's arrival, evaluate potential impacts, and develop strategies which capitalize on the remarkable resiliency of Maine's forests. With this in mind, forest management should focus on mitigating potential effects of EAB on ecosystem health and stand productivity. Management should focus on creating a more diverse forest in both structure and species composition, not eliminating ash.

The goals of silvicultural treatments typically include maintaining site quality, protecting water resources, and attending to forest health and productivity. Improving access infrastructure and increasing the ratio of acceptable growing stock basal area to total basal area are common components. Treating an area to reduce exposure to loss by removing ash trees is not a reason to ignore the many other benefits of careful stewardship.

For forest management beyond the immediate vicinity (5-10 miles) of known EAB infested areas, the Maine Forest Service recommends the following long-term management objectives: **1) maintain ash as a component of the forest; 2) promote a diversity of native species; and 3) conserve the economic value of ash.**

See Information Sheet #28 (<http://www.maine.gov/tools/whatsnew/attach.php?id=755210&an=1>) for additional information about EAB for landowners that may be working with consulting foresters in developing or revising forest management plans.

The recommendations in this document were developed with timber management in mind. Even where timber is not a management objective, such as sites with limited access or sensitive natural communities like seepage swamps or floodplain forests, some actions may still be warranted. Control of non-native invasive plants in particular may offer significant benefits to sensitive or unique areas. For more information about appropriate management of these sites, contact your Maine Forest Service, District Forester: http://www.maine.gov/dacf/mfs/policy_management/district_foresters.html

Goal #1 – Maintain ash as a component of the forest.

While substantial ash mortality is anticipated because of the EAB infestation, some ash trees have survived in other infested states. It is possible that future generations of ash – through natural selection

of EAB-tolerant trees and establishment of native and introduced natural enemies – may better withstand EAB infestation.

Choose healthy ash on good sites for retention.

- Focus retention on sites with deeper soils not prone to drought.
- Rapidly growing trees not yet infested with EAB will increase in volume and/or grade.

Where site conditions and landowner objectives allow, encourage ash to regenerate.

- Ash seed is viable in the soil for 2-4 years. Good seed years vary, but are about three years apart.
- Keep some overstory ash trees to continue replenishing the seed bank.
- Plan for canopy opening sizes and associated light regimes that could favor survival of white ash regeneration.



Though there is substantial mortality in states that have been infested with EAB, some ash trees have survived.

Retain ash to provide wildlife benefits.

Consider ash as a seed source and unhealthy ash trees as potential future snags. Dead ash trees quickly fall apart but may be used for nesting, feeding and/or as perch sites. Where practical, and with due consideration of safety, retain ash already functioning as cavity trees. Although beneficial from a wildlife standpoint, EAB-killed trees weaken very quickly and become real hazards. The dead trees are not salvageable for forest products unless harvested immediately. The wood becomes brittle and, within a few months, large branches can become hazardous. Tree service workers have been injured and died taking down dead residential ash trees when large limbs failed unexpectedly. Within a year of tree death, “ash snap” may occur, when wind or weather cause the tree to snap off above the ground. Professional judgement should be used to decide upon the optimum number of snags to be retained. If too many ash are retained, landowners could end up with a lot of downed trees after a few years.

Goal #2 – Promote a diversity of native species.

Many woodlands can benefit from a well-planned harvest in which native tree species diversity is maintained or enhanced. This will promote development of a forest that will remain ecologically resilient and economically productive as ash mortality occurs.

Promote native tree species diversity in all diameter classes.

Base forest management decisions on accurate, up-to-date stand inventories. In areas with pockets of dense ash, reduce the ash component to increase growing space for a variety of species. Ash distribution may be clumped in many stands. The target percentage of residual ash can be higher in enriched pockets.

- Remove low-vigor trees to improve overall stand productivity. Select trees with ash yellows witches’ brooms and other signs of disease or decline symptoms for removal.
- Residual stand basal area targets should be consistent with appropriate silvicultural guidelines. Retain other species in greater numbers if necessary to maintain adequate stocking.
- In Maine, one harvest is usually adequate to reduce the ash component to desired levels in stands, although multiple harvests may be necessary in areas with high concentrations of ash.

Encourage regeneration of a variety of native species.

- Release advanced regeneration of desirable native species under pockets of mature or low-vigor ash.
- Mid-sized canopy gaps, especially those between 120 feet in diameter (1/4 acre) and 235 feet in diameter (1 acre), may favor ash regeneration as well as other intermediate species. Smaller gaps may be short-lived due to ingrowth from other canopy trees, resulting in reduced ash regeneration.

Control non-native invasive plants.

Plants in the understory will respond to additional sunlight reaching the forest floor as ash trees in the overstory die. Focus on establishing desirable species prior to the arrival of EAB. Monitor for invasive plants, like honeysuckle, barberry, and buckthorn, which prefer the rich sites favored by ash. They produce prolific seed and can persist in the understory for many years excluding more desirable native species.

- Survey for invasive plants and incorporate invasive plant management into forest management plans.
- Remove new populations of non-native invasive plants before they spread. Treatment is cheaper and more effective when populations are still small and isolated.
- Where practical, treat invasive plant infestations before and after conducting timber harvest activities when necessary.

For more information on how to recognize and treat invasive plants visit http://www.maine.gov/dacf/mnap/features/invasive_plants/invasives_gallery.htm.

Goal #3 – Conserve the economic value of ash; don't panic.

The threat of EAB makes it riskier to retain larger diameter ash trees intended for timber harvest. However, there may be the potential for increased growth and value gain before EAB arrives. Small sawtimber trees with good form and vigor have the greatest potential to increase in grade and value. This is especially true for stands far from an EAB infestation and if efforts are made to slow the spread of EAB to non-infested areas.

Review diameter objectives at which trees will be considered "economically mature."

- Base diameter objectives on the silvicultural system being used, site quality, stand condition, management objectives, and markets. These diameter objectives should be broad goals to which trees can be grown, not necessarily diameter limits.
- In order to achieve the highest economic value for ash logs, tree dbh must often be 16-20 inches or larger. For many Maine mills, the *minimum* scaling diameter for the top ash sawlog grade is 14-16 inches on the *small* end. Markets and specifications change over time, so be sure to stay in touch with local mills and concentration yards regarding their specifications.
- Reconsider 18- or 20-inch diameter objectives where quick response – easy access, available loggers etc. – to changing ash condition will not be feasible. Given concerns about EAB and other factors affecting ash health, reducing ash diameter objectives to 16 inches may be reasonable.
- Resist setting unnecessarily low targets. Support the capacity of local sawmills to purchase high-quality logs over the long-term.



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- To avoid flooding markets and possibly depressing sawlog prices, minimize unnecessary preemptive salvage harvests. New York State reports that ash sawtimber markets have generally remained robust despite their EAB infestation.

- In states with EAB, regulating agencies have worked with industry to facilitate wood product movement from quarantine zones. For example, compliance agreements have allowed sawmills to accept ash logs during the winter, provided they are debarked and sawn before spring when EAB emerges.
- Initially, EAB attack does little to degrade ash sawlogs in living trees, but quality starts to deteriorate after 1/3 crown dieback.

***Markets and restrictions on movement of ash logs and other ash products.** Currently, there are extensive discussions occurring regarding movement of ash from Maine. It is important to stay informed on current EAB quarantines and regulations, both in the United States and Canada. For the latest available information in Maine, visit www.maine.gov/eab and look under “Maps, Regulations & Quarantine Information” for links to information relevant to Maine and other jurisdictions.

Know when EAB is close.

- EAB doesn't tend to fly very far on its own if ash is present. People move it much faster than it can spread naturally.
- Detection maps are regularly updated at www.maine.gov/eab
- You may also find more detailed maps on state-specific sites such as www.nhbugs.org.

If you think you might have EAB, report it. Collect and/or photograph any suspect insects and photograph and report damaged trees. Collected specimens can be stored in the freezer or in a sealed container in hand sanitizer or rubbing alcohol. To report potential EAB, visit www.maine.gov/eab (click on the green button “Report a Suspect”) or call 1-800-367-0223.

Websites for More Information

Maine DACF Emerald Ash Borer Information Page

www.maine.gov/eab

USDA APHIS Emerald Ash Borer Information Page

<https://www.aphis.usda.gov/aphis/ourfocus/planthealth/plant-pest-and-disease-programs/pests-and-diseases/emerald-ash-borer>

Emerald Ash Borer Information (a collaborative website providing information related to EAB)

<http://www.emeraldashborer.info/index.cfm>

Maine Forest Service Forest Health and Monitoring: This website provides a landing page for the Division of Forest Health & Monitoring, whose mission is to protect the forest, shade and ornamental tree resources of the state from significant insect and disease damage and to provide pest management and damage prevention for homeowners, municipalities, and forest land owners and managers, thereby preserving the overall health of Maine's forest resources.

http://www.maine.gov/dacf/mfs/forest_health/index.htm

For more information, please contact: Maine Forest Service DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY, 22 State House Station Augusta, ME 04333-0022 (207) 287-2791 or 1-800-367-0223

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