

**Minnesota Emerald Ash Borer Science Advisory Group**  
**Recommendations on Preparing for Emerald Ash Borer in Minnesota**

**March 21, 2008**

Contents	Page
Ash Planting Recommendations	2
Ash Removal Recommendations	3
Ash Insecticide Treatment Recommendations	4
References	5
Science Advisory Group Members	6



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March 21, 2008  
Minnesota EAB Science Advisory Group

***Ash Planting Recommendations***

**Question:** Should resource managers in Minnesota plant or recommend planting ash (*Fraxinus* spp.) trees in communities, rights-of-way, woodlots or forests?

**Key research findings:**

- Native North American ash species (*Fraxinus*) appear to be highly susceptible to emerald ash borer (EAB) attack. To date, no evidence of resistance against EAB attack has been found in any native North American ash populations.
- In areas where EAB has become established in North America, ash tree mortality rates approach 100% (Knight et al. 2007, Ghandi et al. 2007).

**Relevant information:**

- Emerald ash borer is not known from any location in Minnesota at this time. The closest infestations to Minnesota are currently known to exist in Michigan's eastern Upper Peninsula and northern tip of lower Michigan and in the Chicago metropolitan area.
- Long-distance spread via infested firewood, logs or nursery material has been documented and could result in infestations in Minnesota within the near future.
- Ash makes up a large percentage of the urban tree resource in many Minnesota communities.
- Large numbers of native ash are presently found in Minnesota forests.

**Science Advisory Group conclusions:**

EAB arrival, establishment and spread appear very likely. Minnesota communities and forests have an abundance of ash trees, and in many cases the large preponderance of ash creates a high vulnerability to EAB damage once the beetle arrives in the state. Therefore, the EAB Science Advisory Group does not recommend planting ash trees in the vast majority of cases. It should be assumed that continuing to plant ash trees in the state will only serve to provide EAB with additional food sources and thereby aid spread rates and intensify levels of damage in future years.

**Recommendations:**

- Local and State agencies and developers: Evaluate planting recommendations along road corridors, specifically the use of ash. Roadways with corridors of ash trees extending across the landscape could serve as dispersal pathways for EAB.
- University of Minnesota Extension Service, forestry and nursery-related industries: Develop lists and sources of alternative tree species to plant. This is especially important in parts of the state where ash is one of only a few species that thrive.
- Private forest landowners: Contact a forester to design or re-assess the forest management plan if ash is mixed with other species. Long-term harvest and conversion options can be planned to reduce the amount of ash. Develop a plan for regeneration before harvest and implement before or as part of the harvest.

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*Ash Removal Recommendations*

**Question:** Should Minnesota's communities, homeowners or woodland owners preemptively remove healthy, vigorous ash trees at this time?

**Key research findings:**

- Native North American ash species appear to be highly susceptible to EAB attack. To date, no evidence of resistance against EAB attack has been found in any native North American ash populations.
- In areas where EAB has become established in North America, ash tree mortality rates approach 100%.
- Insecticide treatments are available that can, in some situations, protect individual trees from emerald ash borer attack. As new products are developed and tested, the chance of tree recovery and survival may increase. Timing is critical to any treatments and trees that are already infested may not survive (McCullough et al. 2007, Smitley et al. 2007, Cappaert et al. 2007).

**Relevant information:**

- Emerald ash borer is not known from any location in Minnesota at this time. The closest infestations to Minnesota are currently known to exist in Michigan's eastern Upper Peninsula and northern tip of lower Michigan and in the Chicago metropolitan area.
- Long-distance spread via infested firewood, logs or nursery material has been documented and could result in Minnesota infestations within the near future.
- Minnesota has an existing EAB survey program intended to locate infestations of EAB soon after its arrival, allowing time for a management response that reduces local spread and slows impact.
- Ash makes up a large percentage of the urban tree resource in many Minnesota communities.
- Large numbers of native ash are currently found in Minnesota forests.
- Many Michigan and Ohio communities have been overwhelmed with dead and dying trees creating hazards along streets, near homes and in parks. Removal of infested trees has strained budgets and staff resources.
- New and existing insecticides are being tested and registered and may be useful in protecting individual trees.

**Science Advisory Group conclusions:**

Some selective ash tree removal may be warranted, particularly already declining ash trees, but the imminent threat of EAB does not exist to support widespread ash removal at this time. The risk of widespread tree mortality in Minnesota from EAB in the short term is not great. Existing surveys and education/outreach efforts may help locate infestations early and allow for a timely management response in most communities. However, EAB will eventually become established in Minnesota, and it should be assumed that ash tree mortality will be widespread after beetle establishment. Strategies to reduce the ash component and create more diverse urban landscapes and forests will lessen the impact of EAB.

**Recommendations:**

- Local units of government: Survey the urban and community tree resource and develop plans to diversify that resource, especially if ash trees are abundant.
- Private forest landowners: In forests that contain ash, modify harvest plans to reduce the volume of ash.
- Forest management agencies: Develop and make available management guidelines for woodland owners and land managers that can be used to manage the extensive ash resource in the state. The overall goal of the guides should be to reduce site and landscape vulnerability to EAB.

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***Ash Insecticide Treatment Recommendations***

**Question:** Should insecticide applications be recommended for emerald ash borer control in Minnesota?

**Key research findings:**

- Insecticide treatments are available that can, in some situations, protect individual trees from emerald ash borer attack. However, results to date have not been overwhelmingly positive for treatment of any trees infested with EAB larvae prior to treatment (McCullough et al. 2007, Cappaert et al. 2007, Smitley et al. 2007).
- Greater likelihood of success is related to treatments occurring prior to infestation.
- Most of the effective products are systemic insecticides that can be introduced into tree tissues relatively quickly via stem injections or soil applications.
- In ash trees, the systemic insecticides currently registered concentrate in leaf tissue. Adult beetles that feed on leaves prior to egg-laying will be killed, but larvae feeding in cambial and phloem tissue are often not affected. Further, some beetles may lay eggs on a tree without feeding on the leaves of that tree (Tanis et al. 2007, Mota-Sanchez et al. 2007).
- EAB kills trees over a period of 2-4 years (Gandhi et al. 2007).

**Relevant information:**

- Emerald ash borer is not currently known from any location in Minnesota.
- It is not known how long we have before EAB enters Minnesota either through natural or human-assisted spread.
- Minnesota has an existing EAB survey program intended to locate infestations of EAB soon after its arrival, allowing time for a management response that reduces local spread and slows impact.

**Science Advisory Group conclusions:**

EAB is not known to be in Minnesota, and treatments for a pest that is not present are unwarranted. If the use of insecticides is an option, resources will be needed when the pest becomes locally established.

**Recommendations:**

The Science Advisory Group along with the Minnesota Department of Agriculture and cooperating agencies will continue to monitor for EAB in and around Minnesota. When appropriate, recommendations on registered insecticide options for managing EAB will be provided.

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March 21, 2008  
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