



Community Options for Emerald Ash Borer Infestations

Almost every community in South Dakota has a large component of ash trees within its community forest. Trees in parks and, in some communities, trees within right-of-ways are a public responsibility. Trees on private property are the property owner's responsibility. Ash make up about 1/3 of the trees on public property in most South Dakota communities, but in some places comprise up to half of the trees.

When emerald ash borer (EAB) is found within 15 miles of a community, the leadership of the community should start making some decisions. Communities which have prepared an EAB community response plan will have a framework for decision making, have disposal sites identified, and already have steps in place to manage infested trees. This document will provide options to decision makers, and some pros and cons associated with those options. The South Dakota Department of Agriculture can help communities develop an EAB response plan.

It takes about four or five years for EAB to kill an ash tree. During those years, while the insect population grows, it re-infests the same tree year after year and expands out to nearby ash trees. In the first four years EAB is difficult to detect. By year seven ash mortality in a community will significantly increase, and by year 14 almost all ash trees in the community will be dead. Ash trees killed by EAB are very brittle and unstable; they can fall with little or no warning posing great risk for people and property. For this reason, dead trees are much more expensive to remove than live infested trees.

Considerations under any tree removal option

- Requires qualified people who can properly identify EAB infested trees.
- Trees should be removed between September 1 and April 1. Removing trees outside of this time – during active flight – can increase the rate of spread of the infestation.
- Infested trees must be disposed of by May 1 to prevent emergence of EAB.
- Treatments of infested trees include
 - All material down to 1 inch diameter branches must be treated.
 - Burn entire tree including main stem and branches
 - Chip to a woodchip size no greater than 1 inch on two sides;
 - Debark material ≥ 9 inches in diameter to a depth of 1 inch below the bark. Cutting the bark off in slabs is not effective as the beetle can survive in the intact phloem tissue.
 - Infested wood that is intended to be moved outside of a quarantine zone must meet APHIS processing standards and all required permits must be obtained.
- Disposal sites must be located and meet quarantine guidelines.

- Publicize the local disposal site to the affected communities so private landowners know where to dispose of infested trees.
- Identify the local disposal site as close to the origin as possible, within the quarantine area.

Adopt Slow Ash Mortality (SLAM) Principles – The purpose is to reduce EAB population expansion from isolated infestations. This principle involves four steps: 1) Establishment of infestation date; 2) Survey of surrounding ash to determine EAB distribution; 3) Survey of ash density and distribution; 4) Suppression of EAB population.

Pros –

- Slows the spread of the EAB infestation making the costs more manageable.
- Provides the most information to the community leadership in terms of the extent and progression of the infestation.

Cons –

- Without private landowner participation, effectiveness to slow the spread of EAB will be compromised. The majority of ash trees in a community are on private property.
- Involves removal and insecticide treatment expenses.

Considerations -

- Steps 2 and 3 are not necessary in small communities.

Remove infested trees from public property as they are found

Pros –

- Can slow the spread of EAB.
- Initially spreads out the cost of removing to EAB infested trees. Removes the trees before they become high risk.

Cons –

- Infested trees on private lands will allow the EAB population to expand regardless of what is done on public property.
- Beginning about year seven of the infestation, ash tree mortality will greatly increase. By year 14, almost all ash trees in the community will be dead.

Insecticide Treatments (Always read and follow the label.)

Pros -

- Trunk injections can effectively control EAB within a tree if done before the tree exhibits >30% canopy decline.
- Trunk injection can manage EAB for up to two years. Trees can often tolerate one year of infestation, so treatments may be extended to every three years 10 or so years after the infestation is discovered in the community.
- Soil and systemic bark sprays may also be effective for small trees, those less than 10 inches in diameter.
- Can save “legacy” or other high value ash trees.

Cons -

- Treatment cost is about \$200 per tree.

- Trunk injection treatments must be done every other year, or in some cases every three years.
- Soil treatments must be done every year and are not effective in trees already infested by EAB.
- Soil treatments can affect non-target species and should not be used within 100 feet of water bodies, or where pollinating plants can absorb the insecticide.
- Soil treatments are less effective on trees larger than 10" diameter at 4.5' above the ground.
- Systemic bark sprays must be applied every year and protect trees from becoming infested. They are not effective in trees already infested by EAB.

Considerations -

- All insecticide treatments must be completed in the spring after the tree has come out of dormancy but before EAB eggs have hatched.

Ordinances that require removal or treatment of infested trees regardless of ownership

Pros -

- Provides the community greater control in slowing the spread of EAB.

Cons -

- Requires enforcement – if the landowner doesn't take action, the community must take action on private land
- Some people will resist.
- Requires qualified people to regularly inspect ash trees for EAB infestation, regardless of ownership.

Considerations -

- Update Dutch elm disease ordinances to address EAB.
- Require EAB infested trees to be removed or treated by insecticide according to established protocols.

Subsidies for private landowners

Pros -

- Encourages private landowners to treat or remove infested trees early in the infestation.
- Contributes to slowing the spread of EAB, spreading the cost over time.

Cons -

- Costs of treatments and removals will not stop until all ash are gone from a community.
- Adds to the community's cost of treating trees in right-of-ways and parks.
- Subsidy programs can be viewed negatively as "social program" using taxpayer funds to help select landowners.
- Dedicated funds may run out before all affected landowners receive assistance resulting in help for some landowners and no help for others.

Considerations -

- Insecticide treatments must continue for the life of the tree. Consider limiting subsidies for insecticide treatments to medium or high quality trees, only those within ½ mile of an infestation, and for a limited time.
- Requires a good knowledge of the number of ash trees on private land to accurately project costs.
- Probability of eradication of EAB is very low. If it found its way into the community once, it will do it again.

Remove decadent ash trees and replace with different genera ahead of the infestation

Pros –

- Reduces the population of ash trees to be removed later.
- There are more disposal options if the trees removed are outside of a quarantine area.
- Improves the species diversity of the community forest.
- Spreads the cost of removal over a greater time period.
- Reduces the impact on the community's tree canopy by giving new trees a chance to become established before EAB arrives.

Cons –

- Doesn't slow or stop the spread of EAB.
- Removes some mature tree canopy.
- Requires an investment before EAB arrives.

Considerations -

- Should focus on decadent trees, trees growing in the wrong locations (under power lines), or other hazard trees that pose high or moderate risk of failure.
- Replacement trees should be a variety of genera to establish diversity in the community forest.

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