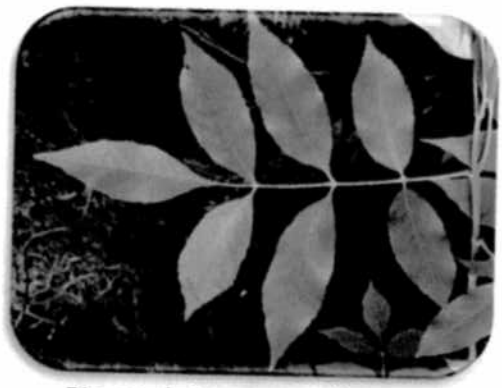

# Ash Tree Identification

## Key Ash Tree Characteristics

Opposite Branch Arrangements
*Buds, Leaves and Branches are directly across from one another*

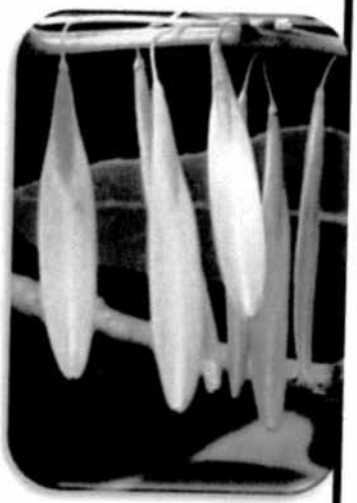


Pinnately Compound Leaves
*Leaf made of leaflets arranged in a line with one terminal leaflet. 5-11 leaflets per leaf*

Diamond Patterned Bark
*Ridges and furrows form diamond shapes in older bark (green & white ash)*

Trees have an Upright, Oval Shape

Stout Twigs support prominent Brown Buds



Single Samara Fruit
*Seed surrounded by a dry, oar shaped wing*

## Some lookalikes and their key differences:

Norway Maple: Simple (not compound) lobed leaves, paired samara
Box Elder: Purplish twigs, lobed terminal leaflet, paired samara
Elderberry: Shrub, purple berries, large, white flowers
Walnut, Hickory, Mountain-Ash: Alternate branching

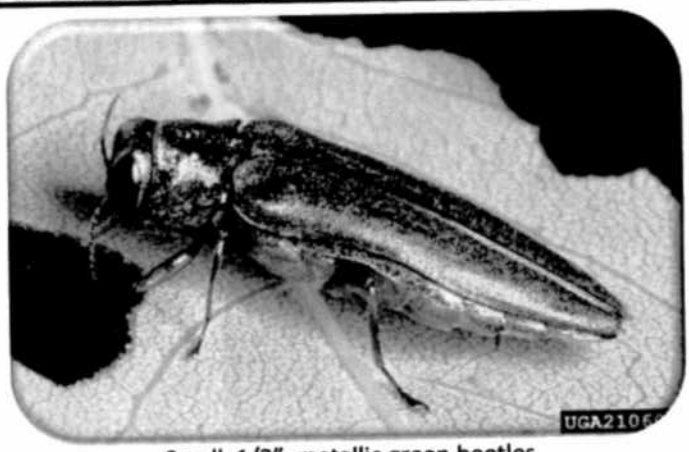
For more Emerald Ash Borer information and links go to http://nyis.info/eab

# Identifying Emerald Ash Borer

What to do if you think you have the ash-killing
Emerald Ash Borer in your ash tree

## Verify the Signs and Symptoms of EAB:

1/8" "D" shaped exit holes



Small, 1/2" metallic green beetles

"S" shaped tunnels under the bark

Thin/dead branches

Trunk sprouts

Bark splitting

Excessive woodpecker activity

**Verify Your Tree:** Emerald Ash Borers only live and feed on ash trees.
Look up the characteristics of ash trees at Cornell's woody plant database.
http://woodyplants.mannlib.cornell.edu/

## Report Your Sighting:

E-mail pictures or bring samples of EAB signs and symptoms to your local
Cornell Cooperative Extension office, http//www.cce.cornell.edu
or Call the NYS DEC EAB Hotline at (866)640-0652

**Educate Yourself:** Find Emerald Ash Borer information and links at

**http://nyis.info/eab**

Photo credits: David Cappaert, Michigan State University; David R. McKay, USDA APHIS PPQ; Joseph O'Brien, USDA Forest Service; Art Wagner, USDA APHIS PPQ; Bugwood.org; Mark Whitmore, Cornell University; and USDA NRCS PLANTS Database / USDA NRCS. *Wetland flora: Field office illustrated guide to plant species*
USDA Natural Resources Conservation Service
February 1, 2012


# Tree Replacement Guidelines and Options

**When it comes time to choose a replacement tree for your landscape there are many options. Help ensure long-term health and value by following a few simple steps.**

- ❑**Conduct a thorough Site Evaluation**
- ❑**Identify the right Tree Characteristics**
- ❑**Purchase a Quality Tree**
- ❑**Plant the tree correctly**

**Site Evaluation.** Put the "Right Tree in the Right Place." Don't waste your money on a tree that won't survive or one that doesn't fit into your landscape.
These are the things to consider before you choose which tree you will purchase.

- ❑Hardiness Zone - Will your tree survive the winter?
- ❑Soil
  - ❑pH - Some trees cannot tolerate high pH, others cannot tolerate very low pH
  - ❑Drainage, texture and compaction - Standing water, droughty areas; trees have different tolerances
  - ❑Size of planting area and depth of soil (tree lawn, backyard, etc.) - Fit your tree to your landscape
- ❑Physical obstructions
  - ❑Overhead wires (Consider short trees or columnar varieties)
  - ❑Proximity to buildings, curbs, and driveways (Fit your tree to your landscape and keep in mind the ultimate size of the tree)

**Tree characteristics.** There is more than just beauty to think about when selecting what your tree should look like.

- ❑Height of the tree- Do you need a short or a tall tree?
- ❑Shape of the canopy- Round, wide spreading, or columnar?
- ❑Evergreen or deciduous?
- ❑Growth rate- One that will grow very fast, or one that takes it time?
- ❑Fruit- Some trees have "messy" fruit (honeylocust, horsechestnut).

Once you have your limitations identified you can narrow down your tree choices and really choose "The Right Tree in the Right Place." A thorough list of tree characteristics and a comprehensive site evaluation worksheet can be found in "Recommended Urban Trees: Site Assessment and Tree Selection for Stress Tolerance" from the Urban Horticulture Institute at Cornell University.
http://www.hort.cornell.edu/uhi/outreach/recurbtree/.
And, check Cornell's Woody Plant Database to see images of your options and to search for trees by different characteristics http://woodyplants.mannlib.cornell.edu/ .

See Table 1 for a list of some trees to consider. Disclaimer- not all trees will work for all sites! Conduct a site evaluation.

**Purchase a quality tree**. Make a list of 3-4 tree choices and shop at a nursery you trust; also remember they may be able to order a variety for you. When choosing the one to take home, select a tree that is free of serious insect and disease problems and physical damage and has proper branch arrangements. Also, choose a tree that has been properly grown and has a good sized root ball that free of weeds.

**Steps to thoughtful planting.** Once you have chosen your high-quality, perfectly suited tree at the nursery, follow these basic tree planting steps.

1. Secure your tree during its ride home. Tie up the canopy, tarp the foliage, or place the trees inside a vehicle. Secure the tree to vehicle so it does not roll during transport.
2. Measure your root ball and dig your hole accordingly. The hole should be only as deep as the roots and 3 times the diameter of the ball/container.
    - Remember: The top of the root system should be just below the surface of the soil and the root system may be buried inside the container/ball. Use a probe to find the depth of the roots inside the root ball and subtract that from the height of the ball.
3. Place the tree in the properly dug hole and then remove as much of the wire basket, burlap, and twine as you can. It may take a long time to degrade, and can hinder root growth. Push any of the wire basket or burlap that you cannot cut off into the bottom of the hole, where it will do less harm
4. Or, carefully remove the tree from its container. Check for circling roots and correct problematic ones.
5. Center the tree and backfill. Water and tamp the soil as you backfill to ensure air pockets are eliminated.
6. Do not place excess soil on top of the root system. The top of root system should be just at or below the soil surface and the trunk flare just above the soil surface.
7. Water the tree thoroughly once hole is backfilled.
8. Place 2-4" of woodchips or mulch around the tree, cover as wide of an area as you can. Be sure to leave a gap between the mulch and the tree's trunk. Woodchips and mulch piled up against the truck can cause disease problems.
9. Deeply water your new tree every few days the first year. Ensure water is penetrating deep into the soil by watering slowly for a long time.
10. Staking trees is usually not necessary. But if you must, use non-damaging material and remove it after one year.

For more information about proper tree planting see:

- ❑ "Recommended Urban Trees" http://www.hort.cornell.edu/uhi/outreach/recurbtree/. The steps are thoroughly described in the back of the book.
- ❑ http://treesaregood.org - Tree care web site from the International Society of Arboriculture

Table 1: Tree Suggestions: Remember- not all of these trees will be successful for you! Conduct a site evaluation and read up on the tree you want. Each tree's common name is followed by the scientific name and the USDA Hardiness Zone.

| Small Trees- under 30' | Medium Trees- under 60' | Tall Trees- over 60' | |
|---|---|---|---|
| Serviceberry<br>*Amelanchier spp.* – 3b | Red Horsechestnut<br>*Aesculus x carnea* – 5a | Catalpa<br>*Catalpa speciosa* - 4a | London Planetree<br>*Platanus x acerifolia* – 5b |
| Hornbeam (Ironwood)<br>*Carpinus caroliniana* – 3b | River Birch<br>*Betula nigra* – 4a | Hackberry<br>*Celtis occidentalis* – 3a | Bur Oak<br>*Quercus macrocarpa* – 3a |
| Eastern Redbud<br>*Cercis canadensis* – 3b | Katsura Tree<br>*Ceradiphyllum japonica* – 5a | Ginkgo<br>*Ginkgo biloba* – 4b | Northern Red Oak<br>*Quercus rubra* – 3b |
| Hawthorn (Washington, Winter King)<br>*Crataegus spp.* – 4a | Turkish Filbert<br>*Corylus columa* – 5a | Honeylocust- thornless<br>*Gleditsia triacanthos inermis* – 4b | Baldcypress<br>*Taxodium distichum* – 5a |
| Hophornbeam<br>*Ostrya virginiana* – 3b; | Hardy Rubber Tree<br>*Eucommia ulmoides* – 5b | Kentucky Coffeetree<br>*Gymnocladus dioicus* – 4a | Basswood<br>*Tilia americana* – 3a |
| Columnar Sargent Cherry<br>*Prunus sargentii 'Columnaris'*– 4a | English Oak<br>*Quercus robur* – 5b | Tulip Poplar<br>*Liriodendron tulipifera* – 5b | Hybrid Elm cultivars (Accolade, Danada Charm)<br>*Ulmus x species* – 3b -5a |
| Japanese Tree Lilac<br>*Syringa reticulata* – 3a | Littleleaf Linden<br>*Tilia cordata* – 3b | Black Tupelo<br>*Nyssa sylvatica* – 5a | Zelkova<br>*Zelkova serrata* – 5b |

*June 17,2011*

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*April 2014*

# Emerald Ash Borer is Here, Now What?

## NEXT STEPS

- **Confirm you have ash.** Ash trees look very similar to species such as walnut, hickory, sumac, box elder and tree of heaven. Even certified arborists can misidentify ash trees. Use a key to make sure your tree is ash. Refer to the ash identification handout.

- **Assess the condition of your tree**. What you do with your tree and when will depend on the health of your tree now. Look for signs of stress like a thinning canopy, sprouts coming from the base of the tree or trunk, woodpecker damage, discolored leaves, and lots of seeds. If you are not comfortable assessing your tree, a certified arborist can help.

- **Decide on your management options (see options below).**

- **Call a certified arborist for tree inspection and removal assistance.** An arborist can inform you about the health of the tree, what treatment options they offer and how much removal may cost. Removal should be done by a certified arborist with liability insurance. Be sure to ask for and check local references.

- **Call a certified applicator and registered pesticide business for pesticide treatment assistance.** Pesticide applications conducted by someone other than the property owner need to be done by a certified pesticide applicator that is employed by a NYS DEC registered business. We also recommend that the tree species is confirmed by an expert before the tree is treated.

## MANAGEMENT OPTIONS

- **If you are within 10 miles of a known infestation, you should decide on and implement your management plan now.**

- **If you are greater than 10 miles away, carefully inspect your trees for signs of EAB and decide on a management plan. Decide whether you want to save your trees or have them removed.**

- **Trees that are healthy: It's important to keep healthy trees in our landscape as long as possible.**
  - **Insecticides aren't as effective in unhealthy trees, but may still help.** Severely damaged and dying trees should be removed. Do not waste money on insecticides that won't work.

- **Soil drenches are not very effective under high pest pressure.** You will need to plan on switching to tree injection application methods once EAB becomes more prevalent, if you want to save your tree indefinitely.

- **Trees that are unhealthy**: Ash trees decay quickly and fall in large chunks, which make a dead ash extra dangerous. Unhealthy trees will need to be removed sooner than later, but trees that are only moderately unhealthy may be kept longer with treatment.

    - Trees that are under stress and unhealthy may still be good candidates for insecticides. Treatments can help keep them alive over the short-term, but should be considered a temporary measure to tide you over until you can remove the tree.

    - If trees are too unhealthy for treatment to be effective, then plan on removing them tree very soon as dead and decaying trees are more expensive to remove because of the hazards involved. If you know you will remove the tree, plan on removing it while it is still alive and sound.

- Talk to your neighbors to see who else will be treating or removing their trees. Companies may offer bulk purchase discounts for neighbors.

- If you decide not to save your tree with an insecticide treatment, and the tree will not harm people, structures, vehicles or infrastructure, there is the option of doing nothing at all.

- Plan to replace your tree!

**Insecticides Legal in New York State for treatment of EAB**

| Active Ingredient | Product Names | Treatment Frequency | Application Method | Timing |
|---|---|---|---|---|
| *Professional Application* | | | | |
| Emamectic benzoate | Tree-Age | Every 2-3 years | Trunk injection | Spring |
| Imidacloprid | Merit<br><br>Xytect<br><br>Ima-jet<br>Imicide | 1-2 times per year | Trunk injection<br><br>Soil injection<br><br>Soil drench | Spring<br><br>Fall or Spring<br><br>Spring: all sizes at 1X rate<br>Fall: trees over 15" at 2X rate |
| Dinotefuran | Safari | Once per year | Basal bark spray | Spring – Fall |
| Azadirachtin | TreeAzin | Once per year | Trunk injection | Spring |
| *Homeowner Application* | | | | |
| Imidacloprid | Bayer Advanced Tree and Shrub | Once per year | Soil drench | Spring – Fall |

Pesticide application information compiled by Mark Whitmore, Cornell University

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**Emerald Ash Borer and Your Municipality: Management Considerations**

April 2014

- Emerald Ash Borer is now in 20 New York State counties, including Onondaga and Cayuga Counties.
- EAB will kill all untreated ash trees.
- Ash trees killed by EAB will fall in large pieces very soon after the tree has died.
    - This poses a significant risk to people and property.
    - Liability concerns should be a consideration for early management.
    - Once trees are dead or severely decayed, removal will be more costly. Some dead trees will not be able to be removed because of site restrictions will prevent large equipment operation.
    - Utility providers in Midwest cities report three days of power outages from windstorms greater than 30 mph.
- Most trees *can* be saved with pesticides.
    - Treatment can be used to save high value trees that are in good condition.
    - Trees can still be treated even if they are moderately infested.
    - Treatment can serve as a short-term solution to provide more time to manage trees on your schedule and budget.
- Not all trees can be saved, and any trees that are not intended to be saved should be removed before the tree becomes a hazard.
- Municipalities may be able to help residents through extension of contract services for removal and pesticide treatments.
- In-house pesticide treatment may be cheaper than hiring a contractor, if you have employees that are already certified pesticide applicators.
- You need to know how many ash you have, the condition they're in, and where they are. Inventory help may be available through Cornell Student Weekend Arborist Team and the DEC Urban and Community Forestry program. Interns and in-house staff may also be qualified to complete inventories.
- Residents will want to know where EAB is located, your community's response to both public and private trees, and how they can find assistance.

NYS Department of Agriculture and Markets regulates the movement of infested wood. You may need to work with NYSDAM to attain compliance agreements to manage municipal yard wastes and debris.

Working with Infested Wood

- Wood waste must be inspected to assess if it's infested.
- Infested wood cannot be moved from a site without a compliance agreement with NYS Department of Agriculture and Markets (NYS DAM).
- To meet compliance, wood can only be moved during Oct 1 – April 30 and must be disposed of to meet compliance standards or disposed of at a facility that is certified as compliant. **Otherwise wood must be left on site.**
- Wood from non-ash species that are mixed (comingled) with infested ash wood must be treated the same as infested ash.

Quarantine Restrictions

- Currently Onondaga County south of I-90 is under quarantine, and everything west of Onondaga is also quarantined north of I-90. The quarantine is expected to change to encompass all of Onondaga since EAB has been detected north of I-90 in Onondaga.
- Wood material can be moved into the quarantine, but no ash or material comingled with ash can be moved out of the quarantine.
- *Non-infested* logs can be freely moved within the quarantine.
- *Regardless of quarantine status, non-heat-treated firewood cannot be moved more than 50 miles from its point of origin.

Management Options

- Know what you have
  - Survey areas that may be in danger if a tree were to fall
  - Prioritize areas for treatment and removal
  - Create a schedule for treatment or removal to avoid emergency removals
- Infested Trees
  - Leave trees that do not pose a threat to roadways, people or property.
  - Remove trees before they die.
    - Leave on site.
    - Chip and leave on site.
    - Chip and remove.
    - Remove for proper disposal elsewhere.

- Treat trees with a pesticide if they are in good condition.
  - This is a good option for difficult or costly removal sites, or for trees that provide other critical values.
  - Plan to treat now to keep the trees alive so you can then remove according to your management plan schedule and budget.

- Non-infested Trees
  - Do nothing with trees that do not pose a threat to roadways, structures or people.
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*According to the NYS Department of Environmental Conservation Statutory Law 192.5 "Firewood" shall mean all wood of any species, cut or not cut, split or not split, regardless of length which is (a) in a form and size appropriate for use as a fuel, or (b) which is destined for use as fuel. Firewood shall not include kiln dried dimensional lumber, and wood that has been chipped to a maximum piece size that is no greater than 1-inch in 2-dimensions. Firewood shall not include logs or wood being transported to or possessed by the following operations and facilities, for use in their primary manufacturing process: (a) sawmill for dimensional lumber, (b) pulp and/or paper mills, (c) wood pellet manufacturing facilities, (d) plywood manufacturing facilities, (e) wood biomass-using refineries or power plants, (f) re-constituted wood or wood composite product manufacturing plants, (g) facilities treating firewood in accordance with subdivision (a)(13).

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Cornell University
Cooperative Extension

# New York State Emerald Ash Borer Community Preparedness Plan Development Workbook

**September 2010**

## Overview

The Emerald Ash Borer (EAB) is an invasive insect recently discovered in several regions of NY. This insect is known to kill ash trees of all species, size and vigor and spreads through flight and by transportation in firewood, logs, and nursery stock. The impact of EAB on communities is profound and comparable to the loss of American elm or American chestnut. Community-level planning is essential to manage the potential for impacts on health, safety, and economics that have occurred in all other communities affected by EAB.

This document will assist your community in developing a plan to prepare for the arrival of the Emerald Ash Borer or to begin dealing with the many issues that are facing communities where it has already become established. EAB Preparedness Plans can help answer the challenging questions that need to be asked to facilitate better decision making for your community as well as identify key players that can help manage the severe financial and aesthetic impacts of this devastating insect.

Why is an EAB Plan important?

- NYS has over 900 million ash trees, comprising 7% of all our trees in the state. Many are located on your streets, in your parks and yards, and in your forests. All of them are vulnerable to the Emerald Ash Borer.
- Once ash trees die, they quickly rot and break apart. Trees will have to be removed as they become public safety issues. This can be a significant expense depending on the number and size of hazardous ash trees in your community.
- Streets, parks, yards and wooded areas will be devoid of the shade trees they once had. Loss of shade trees on streets, yards and parks will negatively impact winter and summer energy consumption, water use, property values, aesthetics, and community morale.

- Ash trees comprise a substantial percentage of New York's urban and rural forests, and their elimination can have a profound effect on local economies including:
    - The cost to treat or remove ash trees in public areas.
    - The cost to replant.
    - The devaluing of homes with ash shade trees.
    - The loss of ash trees in the wood product supply.

- EAB infestations will affect all New Yorkers in some manner, and require collective efforts to "Slow the Spread." Slowing the spread of EAB will allow more time for communities to plan for the eventual arrival of EAB, thereby helping to minimize economic impacts. Time is also needed to research, refine, and implement potential sustainable management options as they become available.

Samples of community plans from other states can be found at: http://emeraldashborer.info/communityplan.cfm.

A Glossary of Terms is included at the end of this document.

## Getting Started

When developing a plan, convene a group of key players within your community. This group could include your mayor/supervisor, your forester (or equivalent), Public Works superintendent, Cornell Cooperative Extension Educator, NYS Dept of Environmental Conservation Forester, private urban forester or consulting forester, forester or liaison from your local power utility, your legal counsel, appropriate governing committee members, or other appropriate personnel, agencies, and community volunteers. This group should consist of people who have the authority to make decisions about your publically owned trees, those who will carry out the decisions outlined in your plan, and citizens who can help educate, execute, and assist with your plan.

Other communities in your region or elsewhere in the state that have similar community characteristics may have solutions for questions that arise during your planning process. Work through the NYS Conference of Mayors, Association of Towns of the State of NY, New York Planning Federation, NYS Association of County Planning Directors, Tribal Council, Society of Municipal Arborists, etc. to share your strategies and questions. Working collaboratively with others that share your issues is an effective and practical approach.

**Documents needed for Plan preparation:**

- Current inventory or similar information of community owned trees (street, park, woodland, etc)
- Ordinances regarding community owned trees
- Maps of town/village streets and community owned areas
- Satellite images of town/village parks and representative streets showing tree cover. Images are available from "Google Earth," the county Soil and Water Conservation District/NRCS office, or your county/municipal Planning Department

If you do not have a current community tree inventory, consider conducting one. There are different levels at which an inventory can be executed:

- 100%: Every tree is identified, measured and evaluated for condition. Great for every community, if you have the time and the funds.
- Ash Only: only ash trees are counted (should include size, condition, and proximity to buildings and human-use areas). Should be considered a must if you don't have the time/funds for the 100% inventory.
- Representative Samples: a percentage of your streets/public areas are surveyed and that number is used as an estimate. This inventory will only be an estimate. Consider only as a first step or if you already have EAB and no inventory. Consider conducting a more thorough one as time and funds permit.

Also, think about what trees you are going to include in the inventory

- Public only
- Public and privately owned trees that can effect public areas
- Public and all privately owned trees

Categorize trees to help streamline management actions and priorities.

- Define trees by their general locations
  - Street
  - Park
  - Right of way
- Risk level of each tree
  - Risk is an evaluation of the condition and health of a tree combined with the tree's proximity to a target (building, parking lot, playground, etc.). See Glossary for definitions of risk levels.

**Where to find help with inventories:**

- Cornell Urban Horticulture Institute Community Forest resources: http://www.hort.cornell.edu/uhi/commfor/
  - Information on developing a Community Forestry Inventory
  - Details on SWAT (Student Weekend Arborist Team) Inventories for smaller communities and neighborhoods
  - Listing of resources to help with in-house inventories: http://www.hort.cornell.edu/commfor/resources/inventories/index.html
- Your local Department of Environmental Conservation Forester: http://www.dec.ny.gov/lands/4957.html (call the Albany office and ask to speak to the urban forestry department and they can help you as well, 518-402-9425)
  - Funding may be available for street tree inventories through the NYS DEC Urban and Community Forestry Grants
    - In the past the DEC has been able to fund grants for municipalities to conduct inventories, but funding has not been available since 2008. Hopefully funding will be available for 2011. Check http://www.dec.ny.gov/lands/5285.html for more information.
- USDA Forest Service iTree Tools: http://itreetools.org/
- Arbor Day Foundation/Street Tree USA: http://www.arborday.org/programs/treeCityUSA/
  - "How to Conduct a Street Tree Inventory," Bulletin #23
  - "How to Manage Community Natural Areas," Bulletin #27
- International Society of Arboriculture, Certified Arborists (consultants): http://www.treesaregood.org/
  - New York State Arborists: http://www.nysarborists.com

# Writing Your Plan

Sample plan elements are outlined below including suggested headings and questions for consideration in your plan. Sample wording for particular answers is provided in quotations.

Some items may not be appropriate, given the size of your community or the urgency of your plan. The following sections should guide, not dictate, the content of your plan.

**Plan Sections:**

| SECTION | PURPOSE OF SECTION |
|---|---|
| Background Elements | Describes the circumstances in your community and the impact that EAB will have on public and private resources. |
| Management Plan | Outlines your management action decisions for specified ash trees or locations of ash trees. |
| Education Plan | Identifies key stakeholders and how they relate to EAB, what they know and need to know, and activities that will help them contribute to the solution. |
| Budget | Details how much your plan will cost to implement. |
| Contacts | Identifies who is responsible for oversight and implementation of this plan. |
| Sources of Information | Places where you or your community members can go for more information about emerald ash borer and its management. |

## *Background Elements*

**Definition of Problem:**

Briefly review and discuss:

- EAB History
- Biology
- Scope of NY problem
    - Information about the EAB can be found at:
        - http://www.nyis.info/insects/EmeraldAshBorer.aspx
        - http://www.dec.ny.gov/animals/7253.html
- Scope of local problem: % of urban and community trees that are ash, number of streets with >50% of trees as ash, park impact, etc.

- Economic considerations particular to your community (e.g., % of ash in your community relative to NYS, high number of ash product users such as ash basket makers in town, local sawmill operation or other wood product facilities, etc.)
- Percentage of ash in forested areas around your community can be found at the USDA Forest Service Forest Inventory and Analysis web site: http://fia.fs.fed.us/tools-data/

**Purpose of Plan:**

What outcomes does the community desire through their response to Emerald Ash Borer? Some goals and outcomes to consider:

- Minimize the economic and social impact, disruption, and costs EAB will have.
- Manage for an urban (community) forest and street trees with improved health, resiliency, maintenance efficiency, and beauty.
- Identify ash related liabilities prior to EAB arrival.
- Reduce public health hazard. Reinforce the urgency for infested/dead ash tree removal: Ash trees die relatively quickly and soon begin falling apart. In public and human-use areas, dead ash trees are high risk and high liability.
- Determine property ownership and who is responsible for which trees. (This can be a problem especially in private ownerships where boundary lines may be in dispute.) See "Tree Ownership and Liability" section under *Notes* below.
- Explore opportunities for inter-municipal cooperation (marshalling yards, chipping equipment, tree care crews, utilization of ash materials – e.g., chip marketing).
- Outline an educational strategy.

**Scope of the Plan:**

What trees will this plan address and for how long? What basic management techniques will be used? Create a mission statement for your plan.

Example "The Village of Treeton EAB Preparedness Plan addresses all ash trees located on public properties within the Village limits and all ash trees considered high risk adjacent to public land for a period of 10 years. The Treeton Parks Department has oversight of plan implementation and will use staff and contractors to conduct the work."

**Community Specific Information:**

Describe your community in the terms of EAB and its impact

- How many public trees/ acres are in your community?
- How many of these are ash trees?
- What percentage of large ash trees is considered high risk? (see Inventory section)
- Areas where public ash trees can be found: generally or specifically if only a few- streets, parks, wooded or natural areas, etc.
    - See "Tree Ownership and Liability" section in *Notes* below
- Other potential impacts of EAB on your community

**Plan Oversight, Implementation, and Communication:**

Describe the key people or positions involved in this plan, and how information about the plan and its progress will be communicated. Keep in mind that many people have strong emotional attachments to trees. Be prepared to work with people who do not want to part with infested, or soon to be infested, trees.

- Who is responsible for creating this plan?
- How will the plan be reviewed and authorized?
- Who is responsible for implementing this plan?
- What is the communication method your community will use to relay decisions and updates with your citizens? (newspaper, radio, web, public meeting, etc.) Consider drafting a press release or article about the completion of your Preparedness Plan or management actions.
- Will there be a regular schedule of updates/informational releases and how will these releases be distributed?

## *Management Plan*

This section refers to the resources to be managed, resources needed for management, and the steps needed to enact that management.

**Management of Ash on Community/Public Property:**

**1) Inventory**

Define in detail the resource to be managed.

- What is the ash resource in your community and where are those trees located?
- Identify criteria for determining priorities, then identify priority areas/high risk trees or locations
- Do you want to categorize trees for removal?
    - *High Risk* (see Glossary)
    - *Low Risk*
    - *No Risk*
    - Size/*DBH*
    - General location (street, park, etc.)
- Identify significant ash trees, those that may be protected or need a public meeting to discuss their fate. Ash trees might be considered significant if they have historic notoriety or they are located at a high-profile public building or facility.
- May want to include a statement similar to: "Community recognizes that some ash trees may have been missed in the inventory and some non-ash trees may have been inadvertently included."

**2) Ash Tree Management**

Management Decisions

How will you manage your existing ash trees to mitigate the effects of EAB? Outline your decisions and the criteria for your decisions in this section.

- Are you considering any pre-emptive removals: "Community will remove/replace X% of ash trees each year."
- Will you use insecticides to prevent EAB infestation in specific trees?
- Will you use herbicides to prevent cut ash trees from sprouting?
- Will you notify adjacent property owners of ash management efforts?
    - If so, how will that notification take place?
- Will you manage all ash, or only those considered *high risk*?
- Will the community manage ash trees in wooded/natural areas? Or, will these be left alone?
- Do any current ordinances refer to the management of trees on publically held land or right-of-ways? Reference or include them in your plan.
- Read management options at: http://www.emeraldashborer.info/
- Read insecticide options at: http://nyis.info/insects/EAB_EducationalResources.aspx

Management Implementation.

Who will do the work outlined above? What are their qualifications?

- Who will conduct the removals? Staff or contractors?
- If contractors will be used for removals, how will you screen for arborist certifications? The International Society of Arboriculture (ISA) has a Certified Arborist program. You can verify certification at: http://www.treesaregood.org.
- If staff will be used, do they have adequate training and equipment to safely complete the tasks? ISA also offers training programs and resources for people conducting tree work.
- If staff will be used to conduct management, consider a statement that permits the deferment of regular duties to work on EAB removals.
    - Please read the "Trees and Utilities" section in *Notes* below which outlines rules for tree maintenance around electrical conductors.
- If you are planning to use pesticides, who will conduct the application? Staff, contractors etc.? How will you confirm the applicators have appropriate NYS Pesticide Certifications?
- More information about pesticide certification can be found at the NYS DEC page: http://www.dec.ny.gov/permits/209.html.

**3) Wood disposal/utilization**

- How will the wood/canopy of removed ash trees be disposed of? Where? By whom?
- What are the current legal constraints on the movement and processing of ash? Information on laws and quarantines can be found at: http://www.dec.ny.gov/animals/47761.html
- Do you have a location where ash wood can be stored/disposed? Are there adjacent communities that have appropriate wood disposal locations. These include designated fields, landfills, cogeneration facilities, etc.

- Are there utilization opportunities in your area? Is there an opportunity to create some? Consider meeting with surrounding communities and working together to utilize the high volume of biomass/wood that will be available. (This could be addressed in a separate plan.
    - See the "Wood Utilization" section in *Notes* for more information.
- In some parts of the state there are companies that take municipal wood waste at no charge and turn it into mulch for sale. Check with landscaping firms in your area.

**4) Tree Replacement**

- How will you replace your urban forest?
- Replanting schedule (number of trees per year, general locations)
- Recommendations for replanting
    - No new ash plantings.
    - 10-20-30 rule: Your community's planted forest should consist of no more than 10% of one species, 20% of one genus, 30% of one family (less is even better).
        - For information on Tree Selection for your area check out "Recommended Urban Trees: Site Assessment and Tree Selection for Stress Tolerance," from the Urban Horticulture Institute, http://www.hort.cornell.edu/uhi/outreach/ .
- Does your community have funds for replanting?
    - Potential Sources for tree planting funds.
        - NYS DEC Urban and Community Forestry Grants.
            - In the past the DEC has been able to fund grants for municipal street tree planting, but funding has not been available since 2008. Hopefully funding will be available for 2011. Check http://www.dec.ny.gov/lands/5285.html for more information.
        - Local Foundations.
        - Municipal Budgets.

**<u>Management of Ash Trees on Private Property</u>:**

Privately owned ash trees can affect public areas, so your community may wish to address the management of those trees in this plan. The management of private ash trees can be included in the section above, or in a separate section. Also, consider mentioning the impact of EAB on all privately owned ash trees. Some points to discuss or consider are below.

- Is there an inventory of private ash trees in your community? If so, include the details of that inventory here.
- List any local ordinances that relate to dead/high risk trees on private land.
- Will you be requiring the removal or treatment of private ash trees that affect public areas?
    - If so, who has to pay for it? Do you have the authority to enforce such a determination?

- Sample texts:
  - "The Community encourages home and land owners to monitor their own ash trees and seek information to educate themselves on EAB's biology and management."
  - "Management of infested private ash is at the discretion of the owner. The Community encourages the removal or treatment of *high risk* trees before they become infested. Ash trees die within 3-4 years of infestation, and quickly become brittle and are capable of causing damage as they rot and break apart. It is also more costly to remove dead trees than live trees."
  - "When EAB is located within XX miles of town, The Community encourages the landowner to remove infested trees."
  - "The cost of chemically controlling EAB or sprouts of removed trees is at the discretion of the tree owner/landowner. Success of insecticide is not guaranteed- be wary of claims to that effect."
  - "Removals of yard and specimen trees should be carried out by ISA Certified Arborists who are insured and bonded."

Considerations:

- If your community decides to not treat ash with insecticides, will homeowners be able to pay for the treatment of community owned street trees on their property with insecticides?
  - If so, are there limitations? (permits, fees, etc.)
  - Does a new ordinance need to be drafted?
  - If the attempt to treat is unsuccessful, who will pay for the removal?
  - Insecticides must be applied correctly, by a certified pesticide applicator or by the tree owner (all pesticides must be applied in accordance with the product label). Tree owners should know the details of necessary application frequency and effectiveness of the different insecticides.
    - More information about insecticides can be found at: http://nyis.info/insects/EAB_EducationalResources.aspx
    - More information about certified pesticide applicators can be found at: http://www.dec.ny.gov/permits/209.html.
- If your community cannot keep up with ash tree removal, during an active infestation, or, the tree has been listed as low/no priority, can homeowners pay for the tree's removal if it is on community property?
  - If so, what are the limitations?
  - Do ordinances restricting damage to street trees need to be revised?
- Does your community have a list of arborists licensed to work in the municipality?
  - If so, reference to that list should be made.
  - Provisions to protect homeowners, such as creation of such a list, or requirements for arborists to work within your community could also be included.
- The New York State Arborists has information on steps involved in hiring arborists and other tree care providers at their web site: http://www.nysarborists.com/. Please help your homeowners hire professional, trained, and insured contractors.

## *Educational Plan*

How will you educate your citizens about the EAB and the scope of the EAB problem? Education is essential to help slow the spread, to help citizens make informed decisions about Emerald Ash Borer, and to help citizens constructively contribute to the community.

Educational topics could include:

- Ash tree identification
- EAB biology and symptoms of ash infestation
- Potential safety, economic, and aesthetic impacts of EAB in the community
- Control methods
- Importance of ash trees and wood products
- Don't Move Firewood campaigns
- Importance of planning and preparation
- Recovery plan options

Work with your local office of Cornell Cooperative Extension, or other local agencies, on these potential outreach activities: print a series of articles, hold public meetings, develop a website that references pre-existing materials, host a community "walk and talk" in the town park, demonstrate safe tree removal and processing, demonstrate correct tree planting. See the *Suggested Resources* section for appropriate information web sites and agencies.

## *Budget*

How much will it cost to implement your plan?
How will treatments, removals, disposal, and replanting be paid for?

To determine these costs:

- Obtain a cost estimate to remove a tree of average diameter and multiply by the number of publically managed ash trees. Removal costs will vary greatly by region and by the size, condition and location of the tree being removed.
- Include the cost of labor, tree disposal (chipping, loading, transportation, and tipping fees), pesticides, and other potential costs
- Incorporate forester, staff, arborist, and other personnel costs.
- Use the Purdue University EAB Cost Calculator to get rough cost estimates of different management scenarios. This tool should be used only as a guide, not to develop an actual budget.
  http://extension.entm.purdue.edu/treecomputer/index.php
- Develop an overall budget and budgets for managing trees by priority category (location, risk category, etc.).
- Determine a timeline for conducting management activities and how much will be spent each year. EAB management may be costly to your community, but if your plan is enacted promptly, you can spread those costs out over a number of years.

- Consider working with neighboring municipalities to improve the overall cost of tree removal and material management (for example: log marshalling yards and chipping facilities).

## *Contacts*

To help your community better understand the scope of the EAB problem and this plan, consider including a contact list. At a minimum, contacts for your community should be included.

Your contact list could include:

- Contacts responsible for the writing or implementation of this plan:
  - Education
  - Monitoring
  - Management/Implementation
  - Planning and Finance
  - Communications
- Local Partners/Agencies (where plan authors, government officials and employees, and the community can get more information or help)

## *Sources of Information*

Places you can go for help while preparing and implementing your plan. Include some in your final document for readers to follow up with.

**Emerald Ash Borer**

- Cornell Cooperative Extension Emerald Ash Borer Website- New York State Invasive Species Clearinghouse: http://www.nyis.info
- NYS Department of Environmental Conservation EAB website: http://www.dec.ny.gov/animals/7253.html
  - EAB and Firewood hotline at 1-866-640-0652
- Management and Pesticide Options:
  - http://nyis.info/insects/EAB_EducationalResources.aspx
  - http://www.emeraldashborer.info/
- Don't Move Firewood Campaign: http://www.dontmovefirewood.org/
- Presentations and notes from the USDA Forest Service, Forest Health and Protection 2009 "Coping with the Costs, The Economic, Social and Environmental Impacts of Invasive Insects on Communities" conference can be found at http://na.fs.fed.us/fhp/hottopics/copingwcosts.shtm.

**Urban Forestry - Planning, Inventory, and Management**

- Urban Horticulture Institute: http://www.hort.cornell.edu/uhi/
- Urban and Community Forestry- NYS DEC: http://www.dec.ny.gov/lands/4957.html

**Cooperative Extension and Universities**

- Cornell Cooperative Extension: http://www.cce.cornell.edu
  - Click "Local Offices" at the top for your county
- Cornell University: http://www.cornell.edu
  - CU Department of Natural Resources: http://www.dnr.cornell.edu/
  - CU Rural Woodland and Forest Management: http://www.ForestConnect.info

**State and Federal Agencies**

- NYS Department of Environmental Conservation: http://www.dec.ny.gov
- NYS Agriculture and Markets: http://www.agmkt.state.ny.us/
- APHIS (Animal and Plant Health Inspection Service): http://www.aphis.usda.gov/
- Regional PRISMs (Partnership for Regional Invasive Species Management) groups of regional agencies and collaborators working on invasive species: go to http://www.nyis.info and select your local PRISM from the drop down list at the top of the page.
- USDA Forest Service, Northern Area Forest Health and Protection: http://na.fs.fed.us/fhp/

## Notes:

**New EAB Infestations- Identification and Confirmation**
If you suspect a new (undocumented) EAB infestation, please bring your suspect insect, photos of infested trees, etc. to your local Cornell Cooperative Extension office. They have a standardized protocol to help in the confirmation process. There are a few look-alike insects, so it is important to have a proper identification.

Tips on field identification of the insect or affected trees can be found at: http://www.nyis.info/Insects/EAB_EducationalResources.aspx. Choose "EAB identification, monitoring and detection" in the box on the right.

Suspected insects will be officially identified by Rick Hoebeke, Entomologist at Cornell University. The proximity of EAB to your community may activate some components of your plan.

**Tree Ownership and Liability**
Who owns the trees you need to manage? The ownership of many trees is often in question. Communities may need to establish who owns certain trees through a licensed survey. Include any ordinances referencing tree ownerships in right-of-ways, tree lawns, public grounds, etc. in your plan.

Trees whose ownership is sometimes in question:

- Street trees
- Boundary line (both publically and privately owned trees)
- Right-of-way vegetation

There are several strategies to help property owners follow recommended practices. Education often has a favorable cost:efficiency ratio and builds capacity in the community for communication among different groups. Incentives at the beginning of an initiative, such as a new street tree ordinance, can help initiate momentum for a practice and demonstrate the appropriateness of the practice. Ordinances establish an enforceable law and require community education on the details of the ordinance and enforcement through municipal staff. Information on street tree ordinances is available at http://www.dec.ny.gov/lands/5276.html.

Ownership is sometimes different than liability. Responsibility of liability may need to be defined for some trees, as well as specific management actions (e.g., planting versus removal of trees). New ordinances dictating who is liable for particular groups of trees (e.g., street trees, boundary line trees, etc.) may need to be developed. Make note of any tree ownership issues in your plan.

Your highway superintendent may have all the details about your right of ways and easements.

**Monitoring for new Emerald Ash Borer Infestations**

Should you monitor for EAB in your community? The USDA APHIS has placed survey tools in ash trees across the state in coordination with NYSDEC. These survey tools are not the only way to look for EAB, consider mobilizing volunteers or community members to be on the lookout. Information on detection and reporting can be found at: http://beetledetectives.com/ . Certain areas should be considered higher risk for new EAB establishment due to the high probability of transported infested firewood or logs, these areas could be targeted for monitoring. They include campgrounds, parks, truck stops, recreational centers, log yards, sawmills, and popular vacation routes. At a minimum, be sure to alert the staff and neighbors of such facilities.

**Trees and Utilities**

Anyone, staff or contractors, conducting tree maintenance or removals within 10 feet of an overhead conductor (e.g. electric, cable, or telephone wires) must be "electrically qualified" as per existing OSHA regulations. If they are not, the utility must be notified at least 5 days in advance of the tree work so they can make the situation safe for the work to proceed. The utility may charge for this service. This procedure is detailed in current NYS Department of Labor Regulations "High-Voltage Proximity Act," Code Rule 57; effective 9/30/1992. http://www.labor.ny.gov/

It is highly recommended that you discuss your removal and treatment options with your local utilities before they are conducted. If possible, have a utility representative on your task force.

There are many tree care companies throughout New York with "electrically qualified" employees. Confirm this qualification when awarding the contract.

**Wood Utilization**

EAB presents an opportunity to establish or take advantage of wood utilization facilities near you. Resources for more information include:

- NYS Department of Environmental Conservation Forest Product Utilization and Marketing site: http://www.dec.ny.gov/lands/4963.html which includes directories of forest product users.
- Case Studies by Dovetail, Inc. of Minneapolis/St. Paul Urban Wood Utilization Program: http://www.dovetailinc.org/files/UrbanWoodClustersFinalReport.pdf
- The Minnesota Department of Natural Resources conducted listening sessions about the impending ash wood surplus. A report can be found here: http://www.dnr.state.mn.us/forestry/um/index.html

On-line versions of this document can be found on the Emerald Ash Borer Information and Resources page at the New York Invasive Species Information Website http://www.nyis.info/Insects/EAB_EducationalResources.aspx.



*The EAB Community Preparedness Workbook through the Cornell Cooperative Extension Emerald Ash Borer Extension Program: Impact Reduction through Education, Community Preparation, Early Detection, and Rapid Response, funded through USDA APHIS.*

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*Thank you to all the reviewers.*

# NYS EAB Preparedness Plan Workbook
# Glossary

| Term | Definition | Example |
|---|---|---|
| **Arborist** | Individual with training and experience in tree care maintenance (e.g. pruning, removal or planting) | |
| **CCE** | Cornell Cooperative Extension is a key outreach system of Cornell University with a strong public mission and an extensive local presence that is responsive to needs in New York communities. Includes educators and specialists based at Cornell and in your county. http://www.cce.cornell.edu | |
| **Certified Arborist** | Official certification from the International Society of Arboriculture designating experience and knowledge of arboriculture. http://www.isa-arbor.com | |
| **DBH** | Diameter at Breast Height (4.5' from the ground) Industry Standard height at which tree diameters are taken | |
| **Family** | A taxonomic rank of a group of genera (plural genus) with similar characteristics. | Bold type refers to the family. Green Ash, **Oleaceae** *Fraxinus pennsylvanica* |
| **Forester** | Trained professional responsible for the management of forestland. | |
| **Genus** | A taxonomic rank of a group of species with shared characteristics. | Bold type refers to the genus. Green **Ash**, Oleaceae ***Fraxinus*** *pennsylvanica* |
| **High Risk** | Trees posing great risk to life or property due to condition or proximity to targets | Dying ash tree at a busy street intersection |
| **ISA** | International Society of Arboriculture: Professional Association for arborists and municipal foresters. http://www.isa-arbor.org | |
| **Low Risk** | Trees posing some risk to life or property due to condition or proximity to targets | Healthy ash tree in a park field |
| **No Risk** | Tree posing very little risk to life or property due to condition* or proximity to target | Ash tree in the middle of a seldom used woodlot |
| **NRCS** | Natural Resources Conservation Service- is the Federal agency that works in partnership with the American people to conserve and sustain natural resources on private lands. http://www.nrcs.usda.gov/ | |

| | | |
|---|---|---|
| **NYS DEC** | New York State Department of Environmental Conservation: Department of the state that manages state forest land and provides assistance on private woodlot and community forest management. http://www.dec.ny.gov/lands/309.html | |
| **Pesticide** | Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest. | insecticide- insects; herbicide- plant |
| **Pesticide Certification** | Official NYS certification that permits the holder to purchase and apply restricted use pesticides or apply pesticides on property not owned or operated by him. http://psep.cce.cornell.edu/ | |
| **Species** | Basic taxonomic division identifying a group of organisms with similar characteristics capable of interbreed and producing fertile offspring. Follows *genus.* | Bold type refers to the species. **Green** Ash, Oleaceae *Fraxinus* ***pennsylvanica*** |
| **SWAT** | Student Weekend Arborist Team: a Program of Cornell's Urban Horticulture Institute that may be available to help small communities with their inventory needs. http://www.hort.cornell.edu/uhi/commfor/index.htm | |
| **Tree Condition** | Professional evaluation of the health and structure of a tree. Professionals include Certified Arborists and others who have had specific training. USDA Forest Service Publication "How To Recognize Hazardous Defects in Trees" http://www.na.fs.fed.us/pubs/howto.shtm | |
| **Urban Forester** | Trained professional responsible for the management of urban and community forests (street, park and other community areas). | |