

## Importance of Tree Diversification

Both Emerald Ash Borer and Dutch Elm Disease are conditions that are most easily transferred from tree to tree of the same kind.

However, if there are many different kinds of trees planted it makes it really hard for the condition to be passed on.

Instead of having all the same type of tree in your neighborhood, plant different kinds of trees to keep your neighborhood looking healthy!

Here are some alternatives to Ash and Elm trees:

- ◆ Maple trees
- ◆ Chestnut trees
- ◆ Hackberry
- ◆ Chokecherry
- ◆ Oak
- ◆ Aspen
- ◆ Honey Locust
- ◆ Ohio Buckeye



### For more information:

River Keepers

1120 28th Ave. N. Ste. B

Fargo, ND 58102

[www.riverkeepers.org](http://www.riverkeepers.org)

[http://www.facebook.com/  
RiverKeepersFM](http://www.facebook.com/RiverKeepersFM)

[info@riverkeepers.org](mailto:info@riverkeepers.org)

## Local Tree Diseases and Pests



Dutch Elm Disease



Emerald Ash Borer



# Dutch Elm Disease

## Signs and Symptoms

- ◆ Single branches will start to die
- ◆ In the early summer leaves will turn yellow and brown
- ◆ Sapwood (the soft outside layer of the branch) has streaks in it

## Prevention

- ◆ Sanitation of the trees
  - ◇ Remove infected branches
  - ◇ Remove infected trees
  - ◇ Remove dead trees
- ◆ Disrupt root graft (roots of two trees touching underground)
  - ◇ Dig a trench and break root connections between trees
  - ◇ Emplace a root graft barrier between trees
- ◆ Treat unaffected trees with Arbotect or Alamo
  - ◇ Injected into the tree trunk
  - ◇ For more information: [www.dutchelmdisease.ca/macro-infusion-videos/](http://www.dutchelmdisease.ca/macro-infusion-videos/)

## How does it spread?

- ◆ Bark beetles lay eggs and travel to another tree
- ◆ The fungus passes to another tree by touching roots
- ◆ Transporting infected wood from place to place



Dutch Elm Disease has started to kill the branches in this Elm tree.



Dutch Elm Disease is turning the leaves of this Elm Tree from green to yellow and brown.



Dutch Elm Disease has left brown streaking (seen on the 2 left branches). A healthy branch on the right, with no streaking.



Areas infected with Dutch Elm Disease

# Emerald Ash Borer

## Signs and Symptoms

- ◆ Increased Woodpecker damage and activity on the tree
- ◆ D-shaped 1/8 inch exit holes are made through bark by Ash Borer adults
- ◆ Winding tunnels under the bark, caused by Ash Borer larvae
- ◆ Top branches lose leaves and die

## Prevention

- ◆ Do not import wood from other locations, especially ash wood
- ◆ Multiple insecticides available
  - ◇ Can be purchased at local lawn and garden stores
  - ◇ For more information: [www.emeraldashborer.info/files/multistate\\_EAB\\_Insecticide\\_Fact\\_Sheet.pdf](http://www.emeraldashborer.info/files/multistate_EAB_Insecticide_Fact_Sheet.pdf)

## How Does it Spread?

- ◆ Short distance
  - ◇ Occurs when adult beetles fly from tree to tree
- ◆ Long distance
  - ◇ Occurs when humans transport infected wood



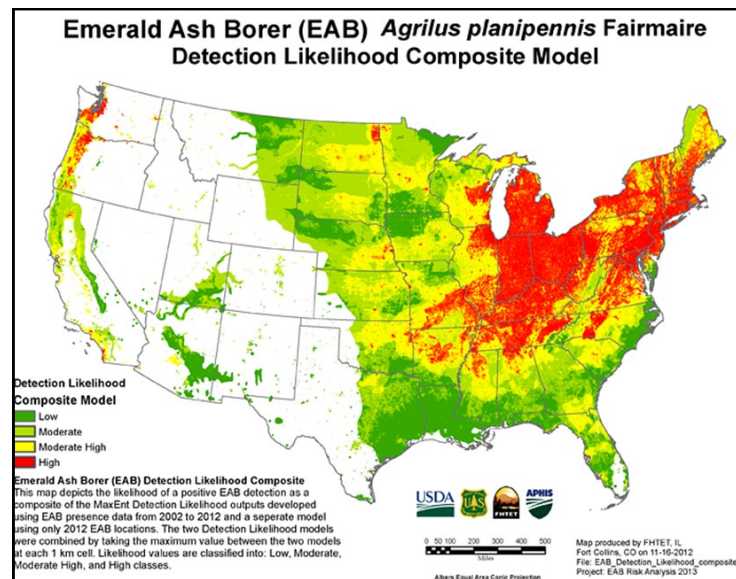
Two Emerald Ash Borers are seen here. Also shown are the exit holes left in the trees where they nest.



Emerald Ash Borer larvae has left trails under the bark.



This tree's canopy is dead from the Ash Borer feeding off of its leaves.



Areas infected with Emerald Ash Borer.