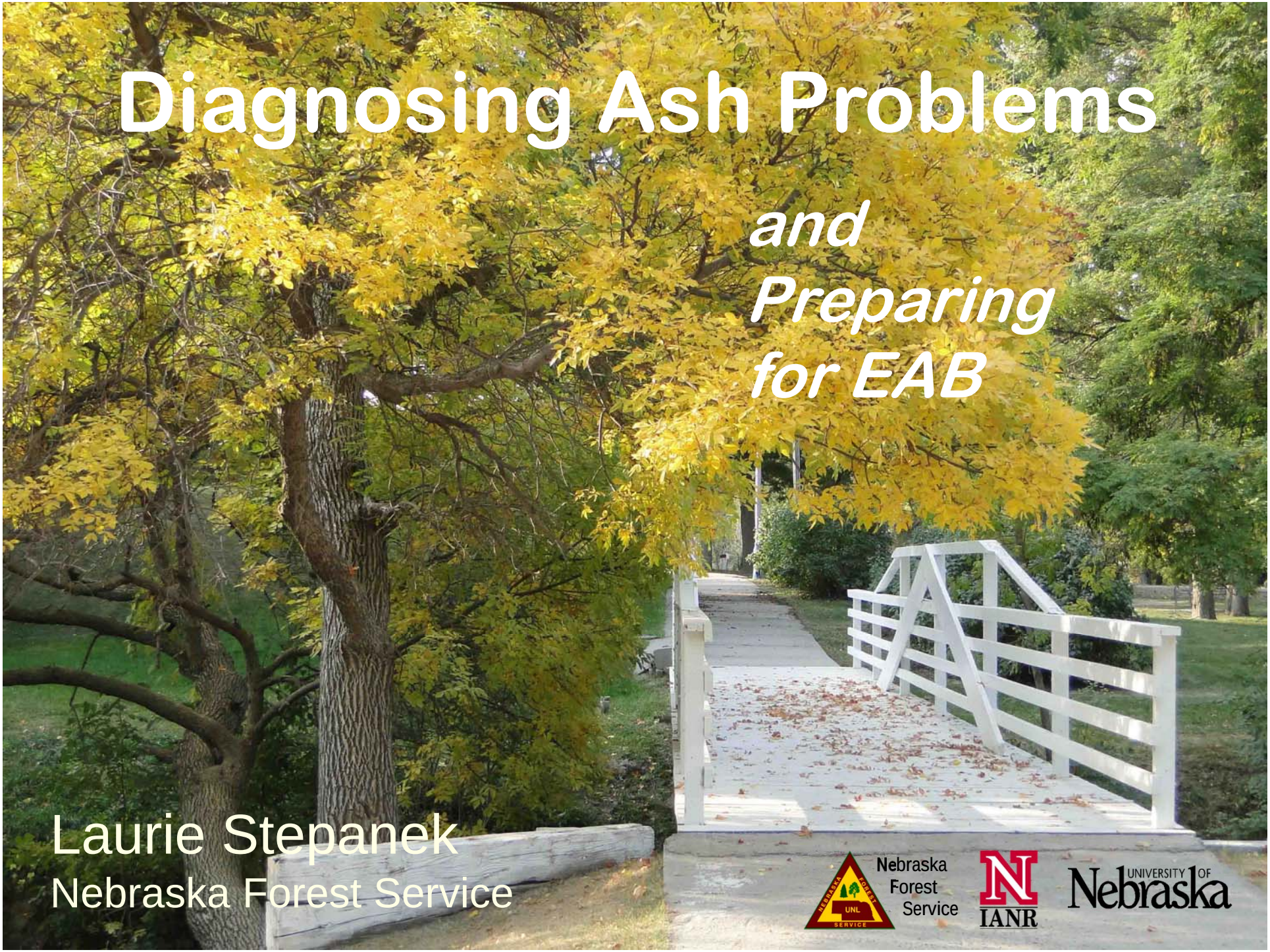
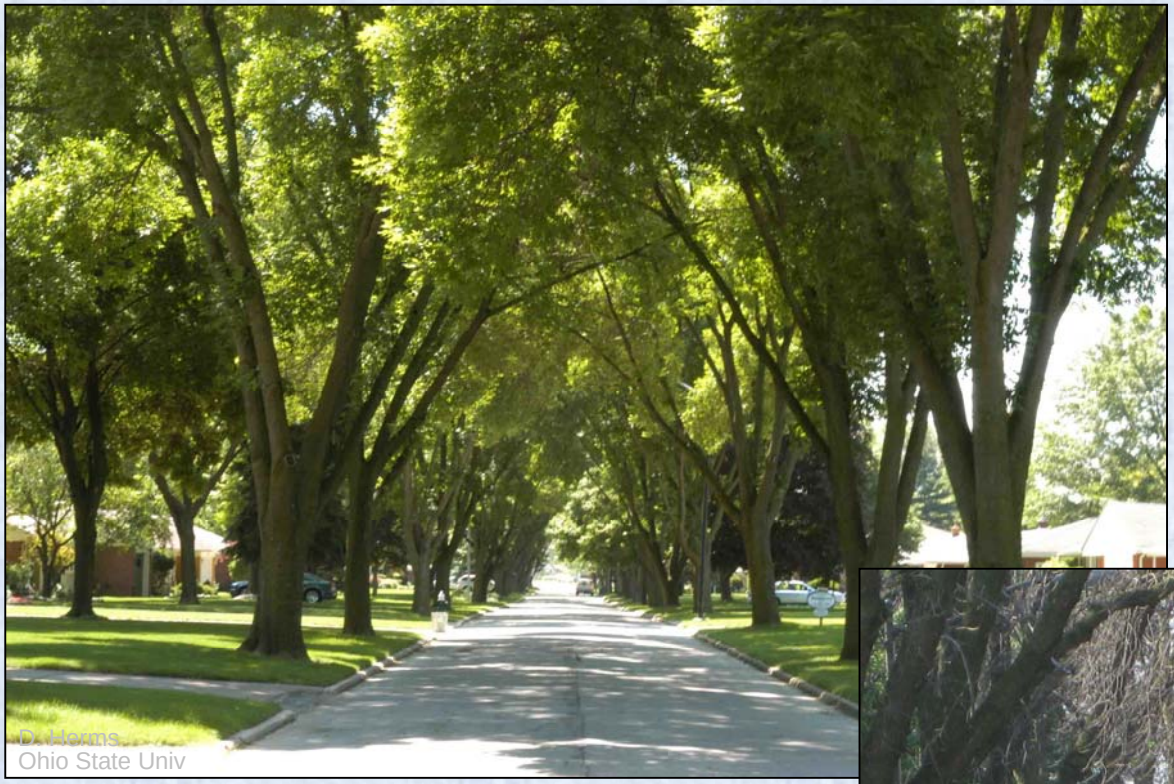

Diagnosing Ash Problems
and
Preparing
for EAB
Laurie Stepanek
Nebraska Forest Service
Nebraska
Forest
Service
IANR
University of
Nebraska

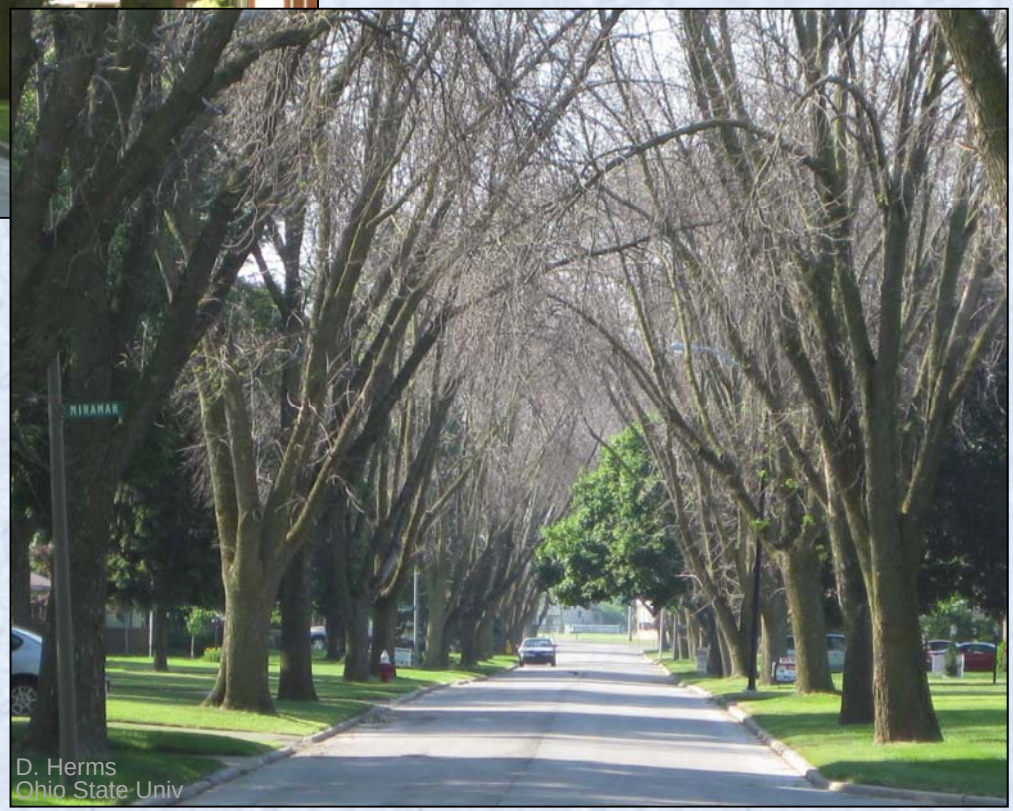
Emerald Ash Borer (EAB)

- Aggressive killer
- Exotic species from Asia
- All native ash susceptible
- Easily transported in firewood

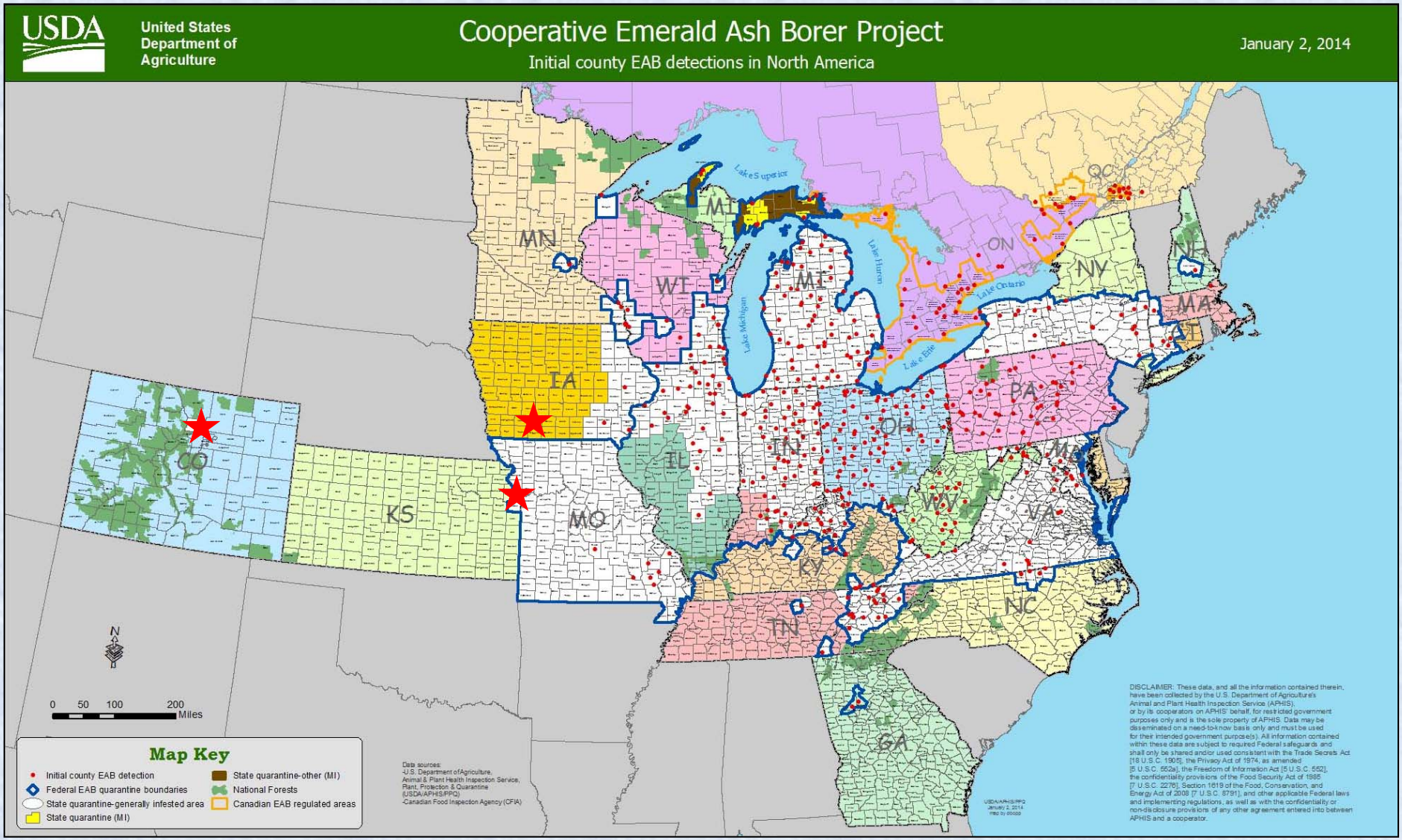
EAB: aggressive tree killer



Ash-lined street



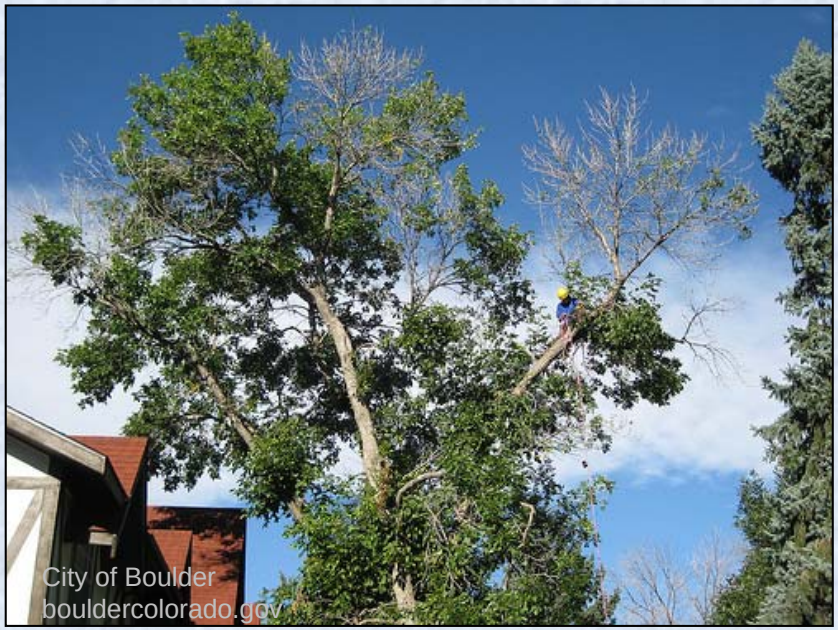
3 years later



★ **Boulder, CO**
★ **Creston, IA**
★ **Kansas City**

Emerald Ash Borer in Colorado

- Discovered in Boulder September 2013
- City survey underway
- Detected in multiple locations in Boulder

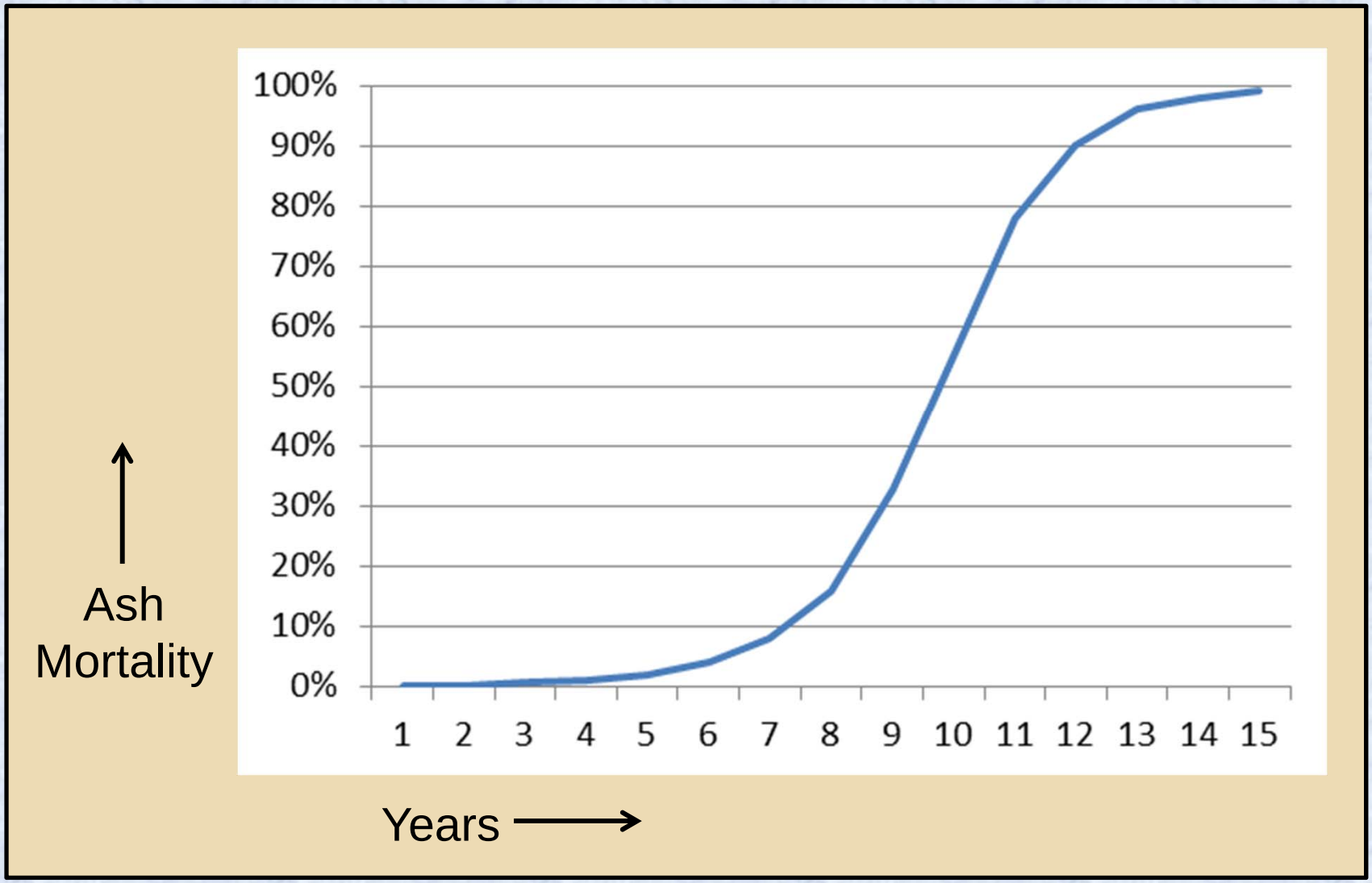


Boulder:

No EAB Management Plan

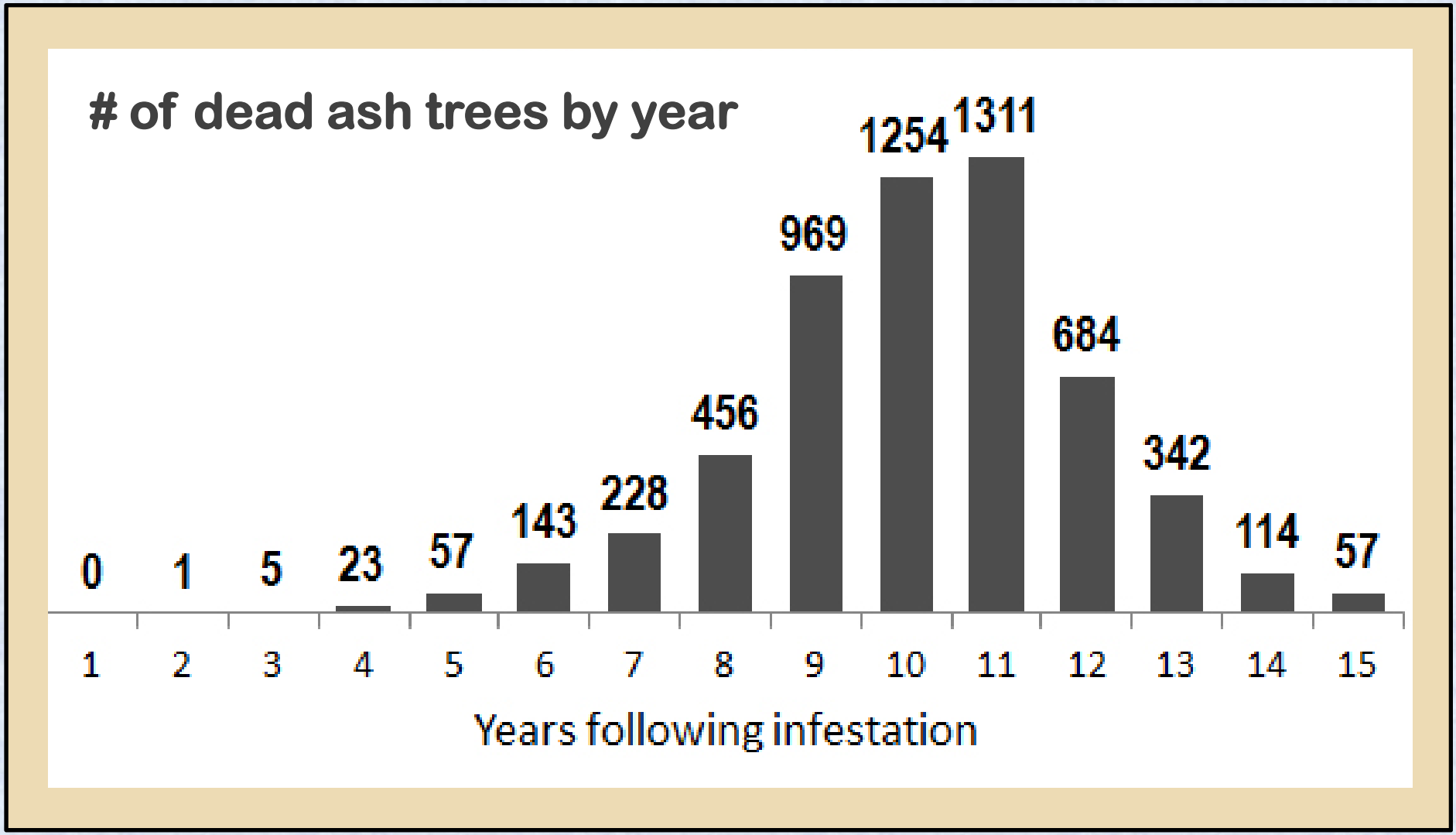
98,000 ash trees
5,700 public ash

Ash Death Curve



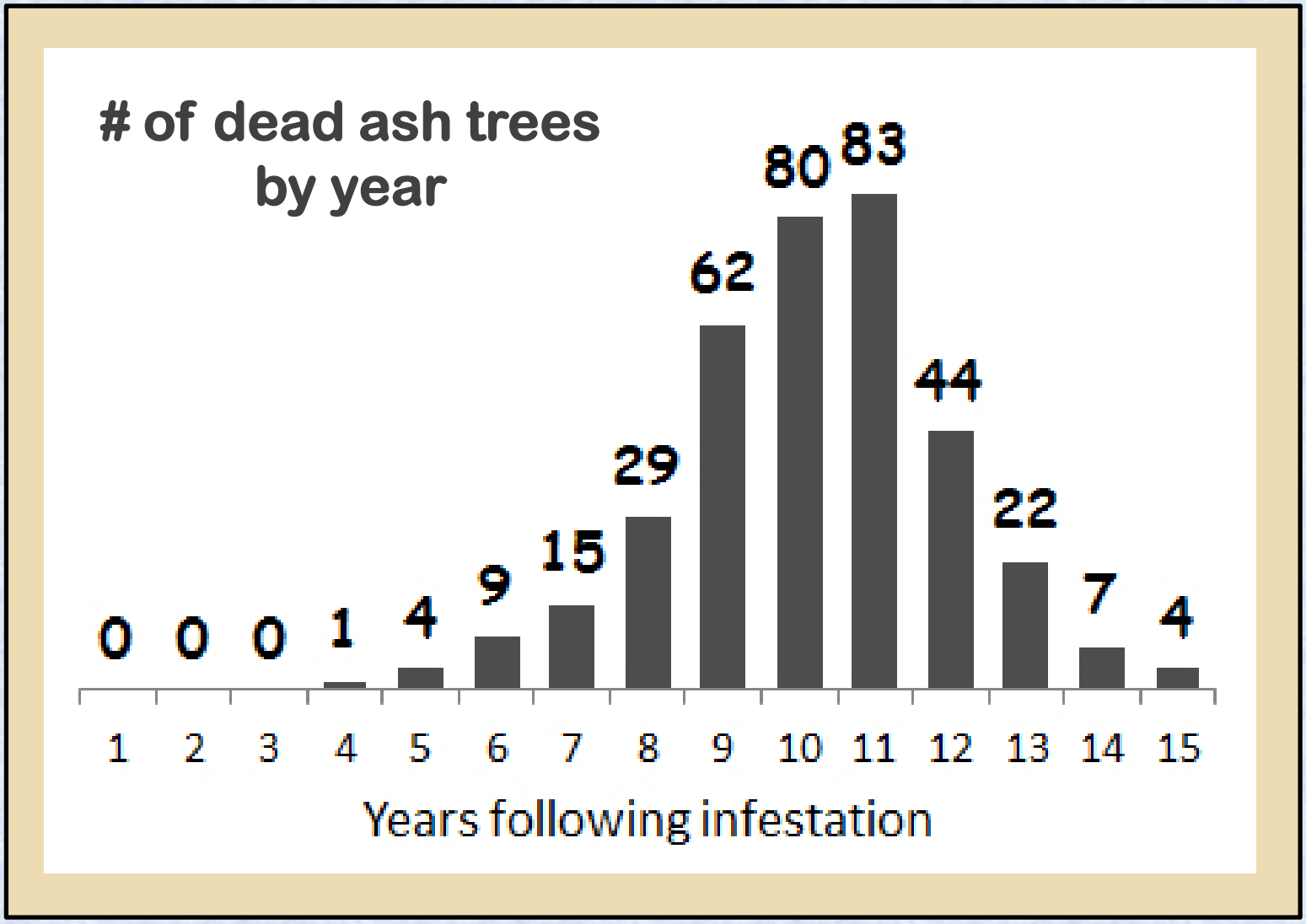
Boulder

Public Ash Tree Population: 5700



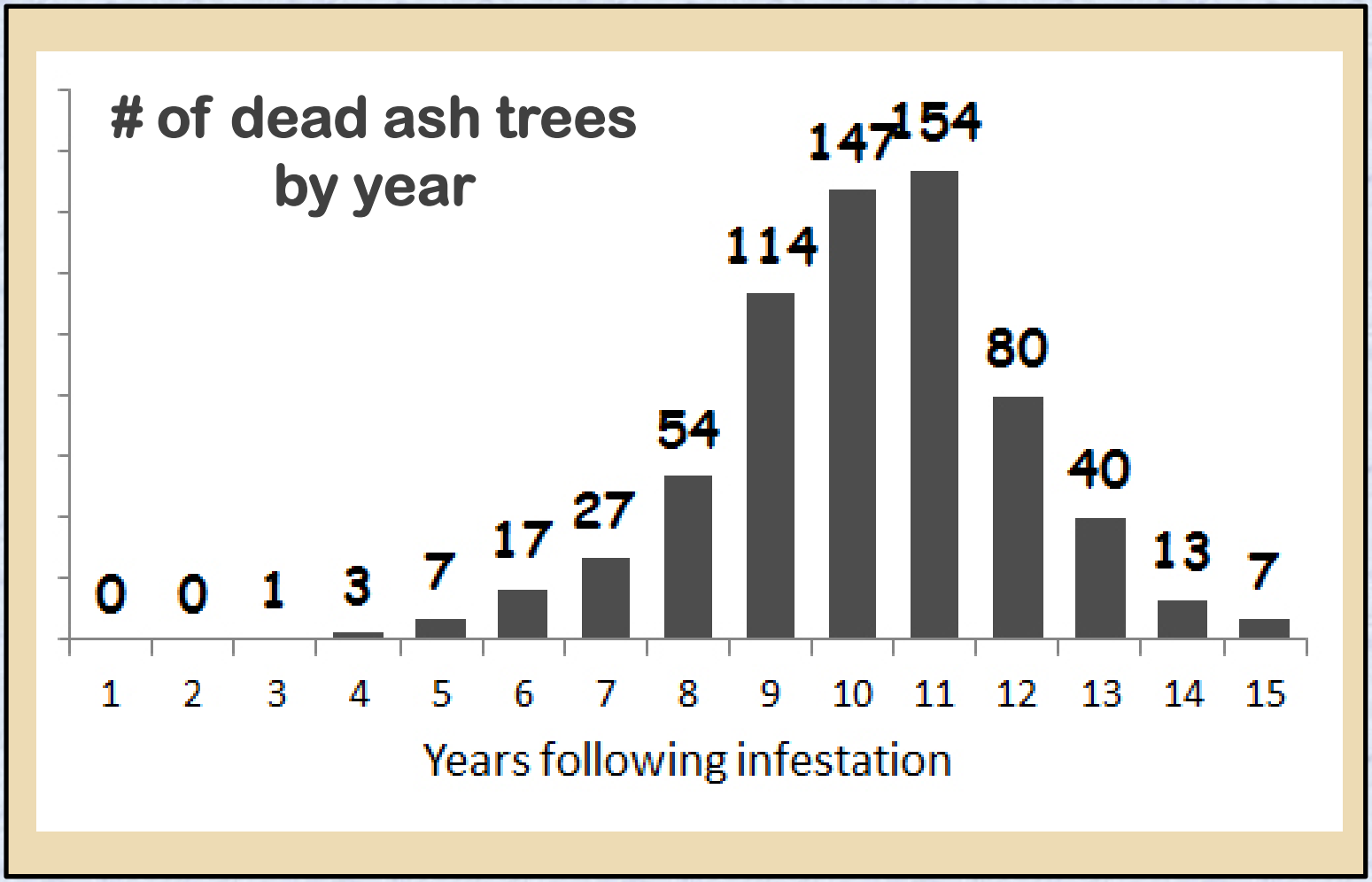
McCook

Public Ash Tree Population: 363



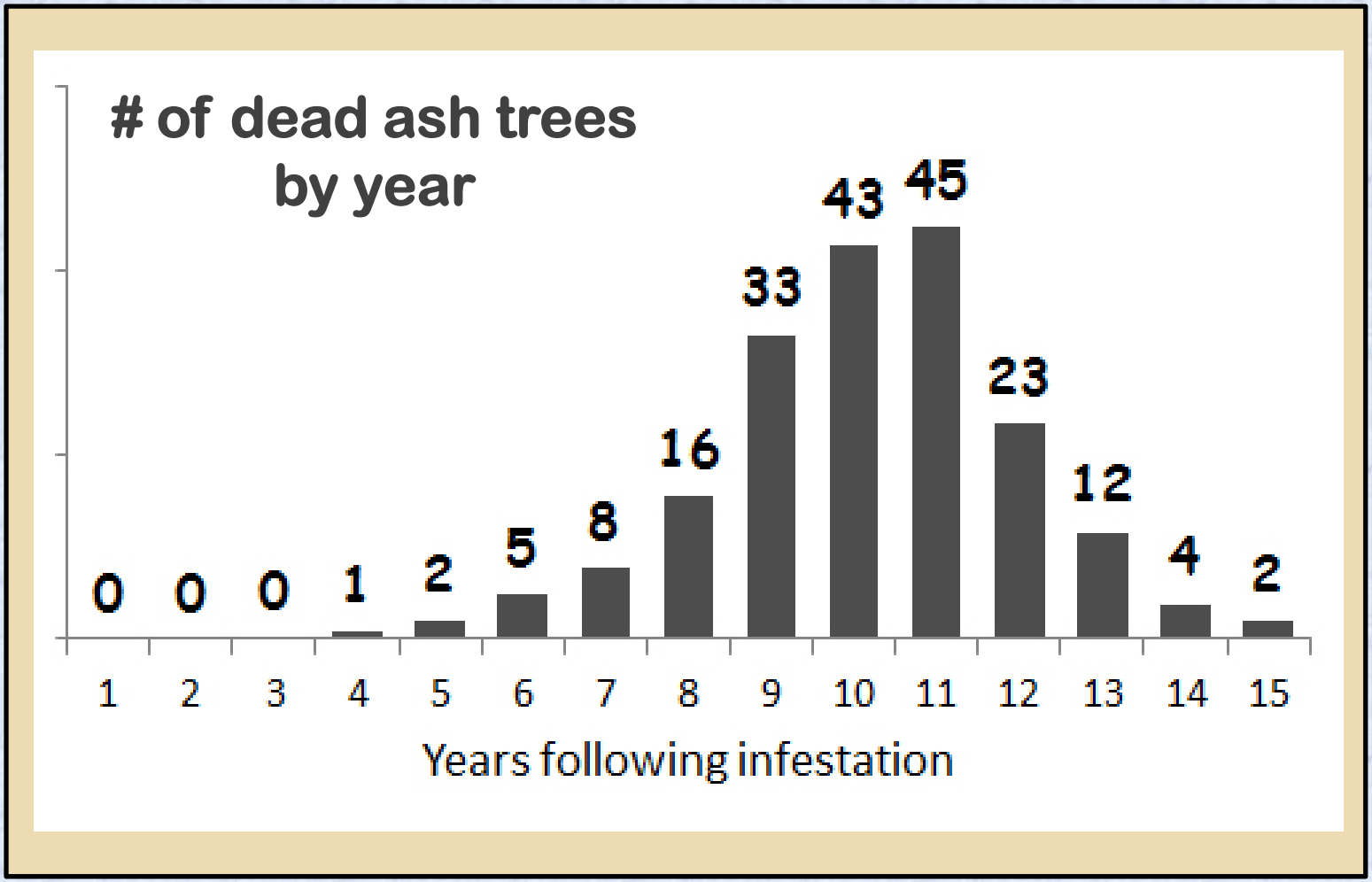
Dead Ash Trees by Year

North Platte public ash population: 670



Dead Ash Trees by Year

Lexington public ash population: 195



Readiness Planning

What can we do?

- Remove marginal trees
- Check ash trees as they are pruned or removed
- Plant a diversity of trees
- Public awareness to gain citizen support

Fairbury, NE

- More than 200 ash in park
- Comprises over 40% of the trees

What about treatments?

- within 15 miles
- high-value
- good condition
- good location
- good size
- environment

Metallic-green beetle

½ inch long

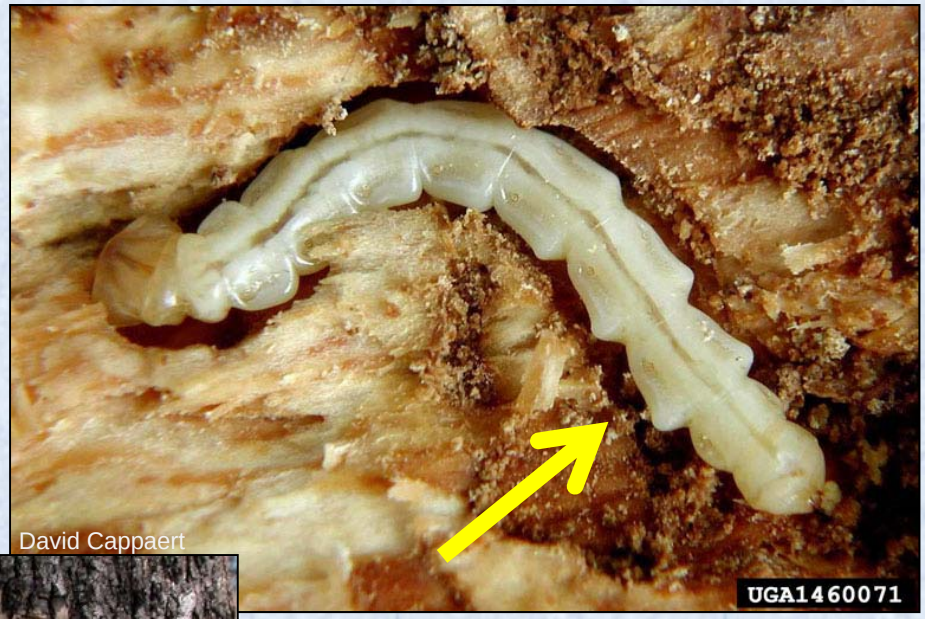
Begin emerging late spring (May-August)

Feeds on ash leaves

Creamy white larva

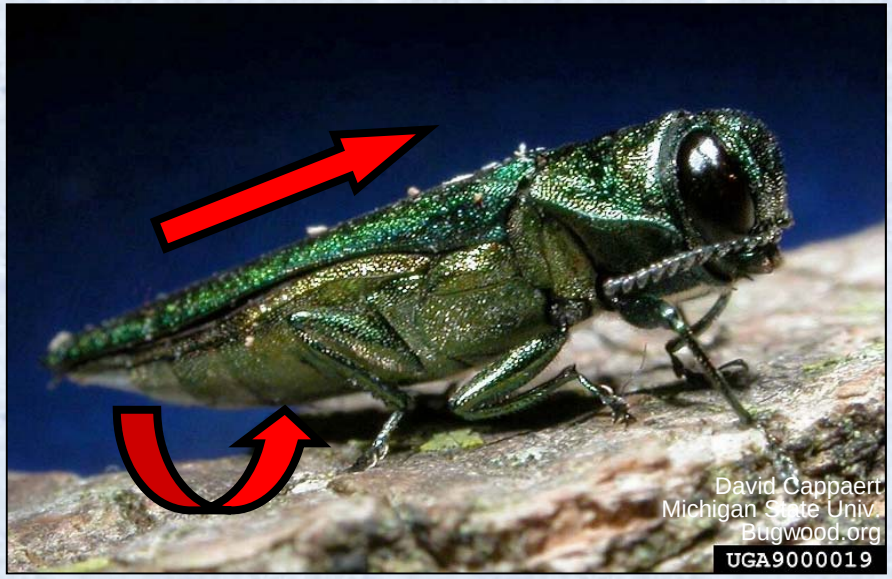
"Small tapeworm"

Bell-shaped segments

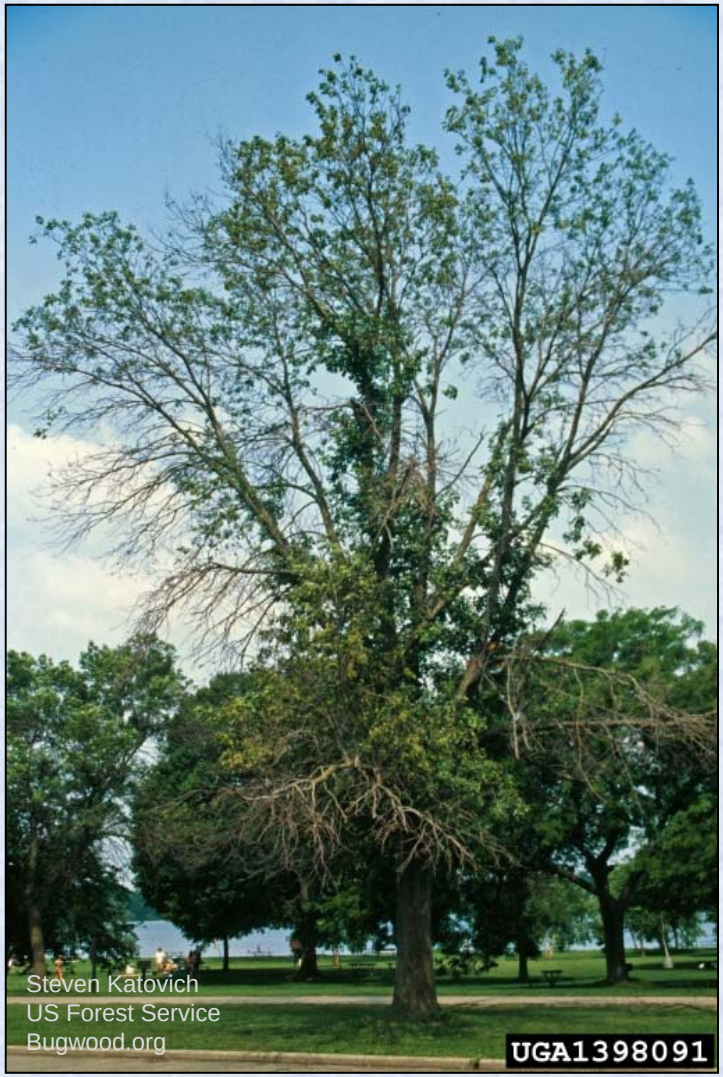


Winding tunnels beneath bark

D-shaped exit holes
1/8 inch



Sparse foliage
Branch dieback



Infested firewood


BUY IT WHERE
YOU BURN IT.
dontmovefirewood.org

EAB Purple Traps

- campgrounds
- parks
- nurseries
- rest areas
- green waste sites

Visual Surveys

Tree Pest Detectors

Reporting EAB

Nebraska Forest Service: **402-472-2944**

Nebraska Dept of Agriculture: **402-471-2394**

EAB & Look-alikes

EAB

Gold dust buprestid

Tiger beetle

Dogbane beetle

Leafhopper

Not EAB !

Not EAB !

Nebraska Forest Service

Decline in Ash Trees: Borers and Bark Beetles

An Identification Guide


Sparse foliage


Branch dieback


Woodpecker bark stripping

Declining ash with borers or bark beetles may have sparse foliage, dying branches, broken branches or trunks, and woodpecker activity such as bark stripping and irregular holes in bark.

Many borers and bark beetles contribute to

Nebraska Forest Service

Decline in Ash Trees: Diseases and Environmental Stresses

An Identification Guide


e foliage


Epicormic shoots

vmptoms of decline

- Dying branches
- Epicormic shoots (water sprouts, suckers)–shoots sprouting directly from the trunk or maj

Emerald Ash Borer

Bell-shaped segments

Zig-zag tunnels

Just below bark

D-shaped
1/8 inch

Lilac Borer

Cylindrical with amber head

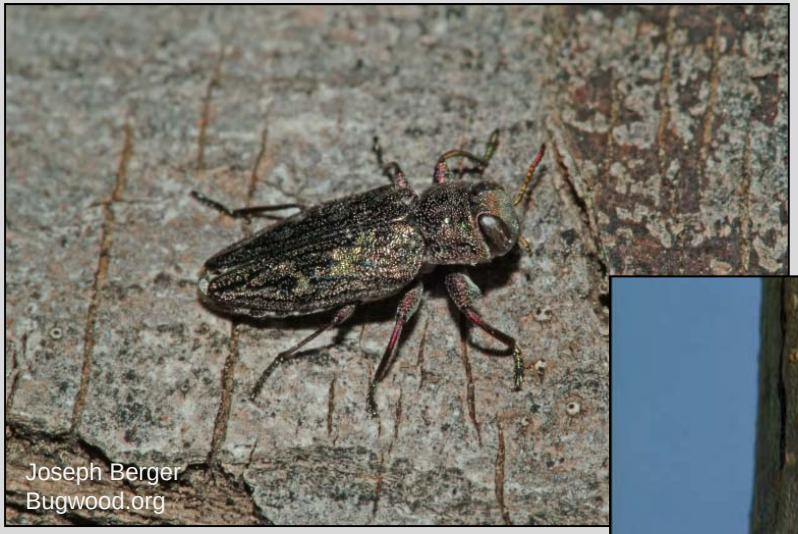
Tunnels extend deep into wood

Lilac Borer

Round
3/16 - 1/4 inch

Pupal skin in exit hole

Chrysobothris Borers



Flatheaded apple tree borer & related species

Chrysobothris Borers

Irregular winding tunnels at surface of wood

Pupates in wood

Oval
3/16 inch

Carpenterworm

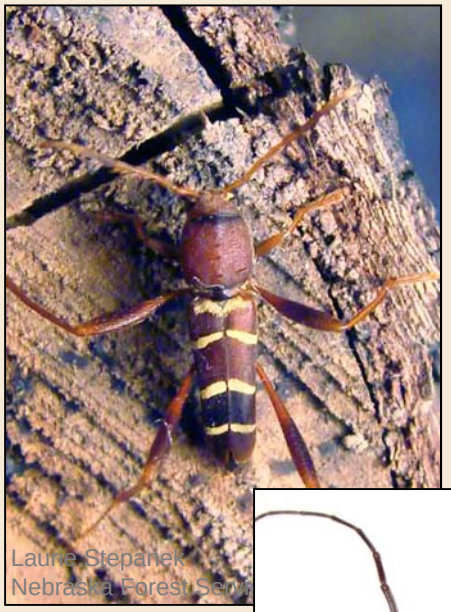
Large, up to 3 inches long

Pinkish red to creamy white

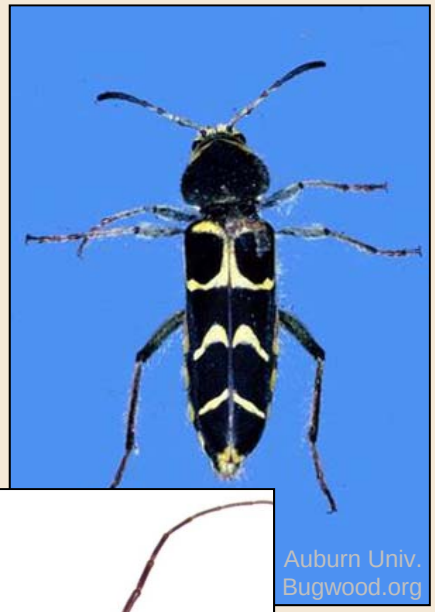
Carpenterworm

Round
1/2 inch

Roundheaded Borers
aka: Longhorned Beetles



Laurie Stepanek
Nebraska Forest Serv



Auburn Univ.
Bugwood.org

bugwood.org
Pennsylvania Dept of Conserv. & Nat. Res

Steven Katovich
US Forest Service
Bugwood.org

Cylindrical

redheaded ash borer
banded ash borer
ash and privet borer

Roundheaded Borers
aka: Longhorned Beetles

Tunnel deep
in wood

Round
1/8 inch +

Firewood

Ash Bark Beetles

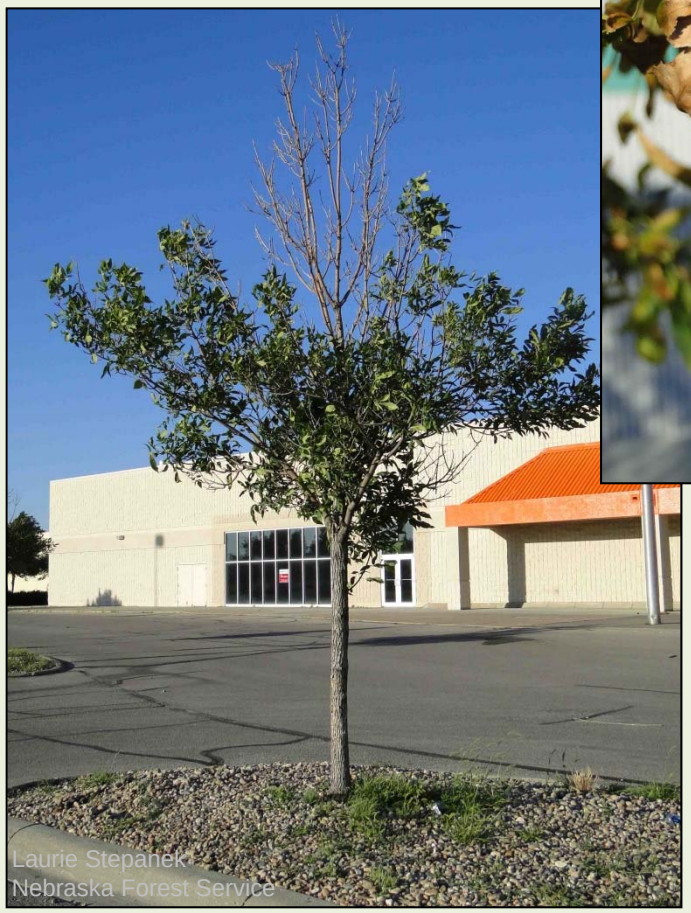
Narrow horizontal and narrower vertical tunnels

Poor Sites and Drought

- ✓ Ash naturally grow near streams
- ✓ Ash in landscapes/windbreaks often in hot, dry sites
- ✓ Proper watering and mulching can help alleviate stress

drought

Poor Sites and Drought



Concrete

Rock
Weed barrier

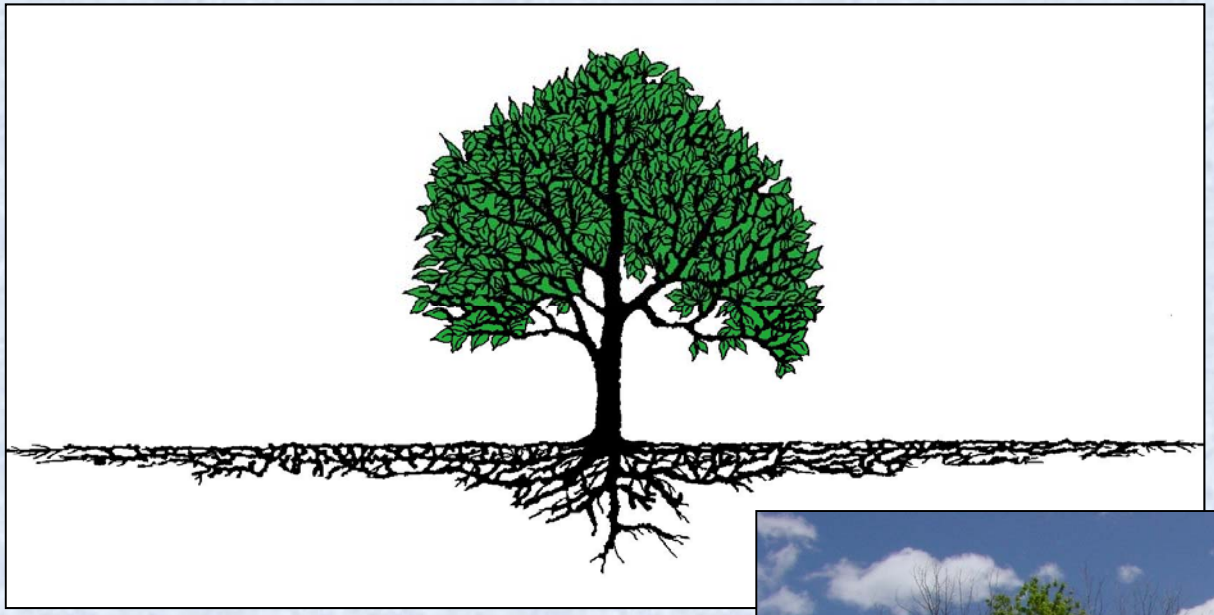
Herbicide Injury

- ✓ **Symptoms:**
  - twisted, cupped, curled, stunted leaves
  - defoliation
  - branch dieback
  - tree death

Herbicide Injury

Look for the source!

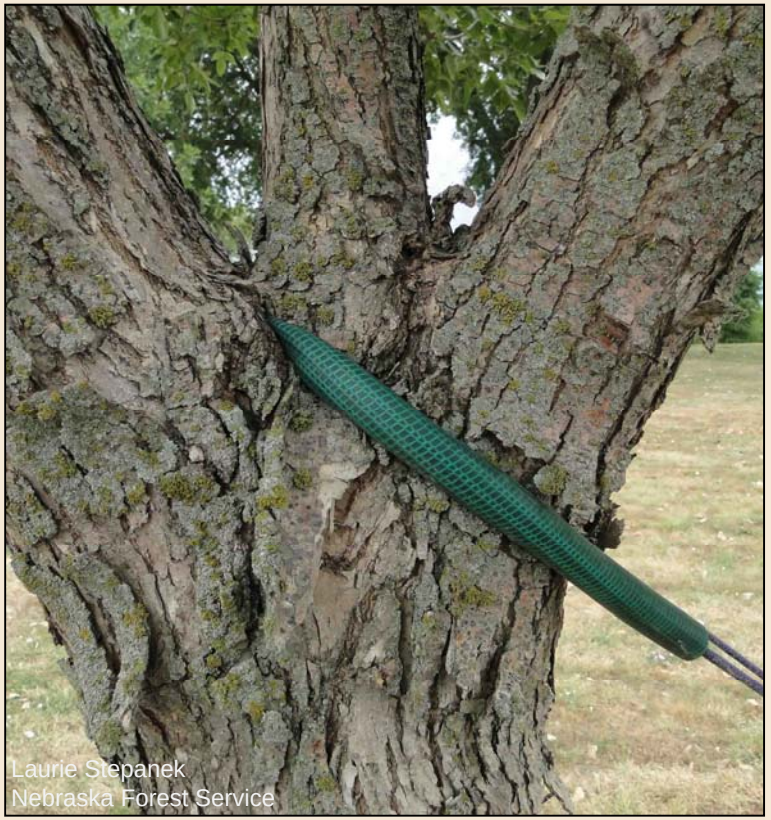
fencelines
driveways, sidewalks
utility boxes and poles
buildings



Some roots extend
2-3x height of tree

Girdling Injury

- ✓ Girdling restricts flow of water, nutrients, sugars



Girdling Injury

girdling roots

Girdling Injury

Girdling Injury

“mower blight”

Vascular Diseases

- ✓ Not easy to diagnose

slow growth	scorching
sparse foliage	defoliation
wilting	branch dieback
yellowing	tree death

verticillium wilt

ash yellows

Decays and Cankers

white
mottled
heart rot

Decays and Cankers

sulfur mushroom

Decays and Cankers

hollow stems

pruning cuts

Minor Ash Pests

ash anthracnose

ash rust

ash flower gall

Minor Ash Pests

ash leaf curl aphid

ash plant bug

Questions?

Laurie Stepanek
Nebraska Forest Service