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About the Initiative

The Healthy Trees, Healthy Tennessee Initiative is a program to improve the health of Tennessee city trees by engaging people in early pest detection, healthy tree monitoring, and tree-planting and stewardship.

Spotting & Reporting Pests

When you identify worrisome tree damage or a pest:

- Take a picture and note the location
- Report your findings to officials in Tennessee by calling (615) 837-5520 or emailing Protect.TNForests@tn.gov
- You can also report online at: <http://protecttnforests.org>
- Download the EDDMAPS phone application for iPhone or Android and report your findings: <http://apps.bugwood.org/healthytrees>



Scan this QR code with your smartphone to download the app!

Asian Longhorned Beetle (ALB)



How to Identify

- Large 1 – 1 ½ inch long body, with six legs
- Shiny black with approximately 20 white spots
- Very long white and black striped antennae
- Can have blue-ish feet
- Beetles most often seen in late summer (July and August)
- Larvae are white, about 2 inches long, and found deep in the tree's wood

How to Spot Symptoms

- Dime-sized exit holes chewed into trees
- Eggs are found in small oval depressions chewed in trunks
- Exit holes are easier to find than egg-laying sites
- Damage is easiest to spot in the sun
- Trees usually die back first along the center & top branches
- The rest of the canopy dies as the infestation moves into the outer branches
- Can cause patches of trunk to appear black and covered in sap
- Sawdust may accumulate at the holes, the base of tree or in the branch crotches



Threatened Trees (ordered by threat level)

- | | |
|-------------------------|-------------------------|
| • Maples (most common) | • Ash |
| • Horse Chestnut | • Birch |
| • Box Elder | • Katsura |
| • Buckeye | • London Planetree |
| • Willows (most common) | • European Mountain Ash |
| • Elm | • Poplar (Cottonwood) |
| • Aspen | • Mimosa |



Emerald Ash Borer (EAB)



How to Identify

- Small ½ inch long beetle
- Bright metallic green color . Coppery-red underside
- Larvae are flat, white, and approximately one inch long
- Adults usually emerge during late spring and summer



How to Spot Symptoms

- D-shaped exit holes
- Splits or cracks in bark and larval tunnels under bark (caused by larvae feeding on inner bark)
- Thinning and dead patches in upper third of tree
- Leafy, misplaced sprouts at base of the tree or roots
- Abundant woodpecker activity
- Wilting and yellowing leaves



Threatened Trees

- North American Ash (all)*
- * Mountain ash isn't a true ash and cannot be infested with EAB

Hemlock Woolly Adelgid (HWA)



How to Identify

- Eggs look like small cottony masses
- Adults sometimes produce white wool-like covering
- After hatching, nymphs feed on twigs near base of needles

How to Spot Symptoms

- White woolly mass at base of tree's needles (or underside of needles)
- "Wool" is easier to spot in low light, shady or overcast days
- Look for "wool" or nymphs on trees with graying and dying branches
- Reddish-brown nymphs can be found on twigs at the base of needles during hot months



Threatened Trees

- Eastern and Carolina Hemlock

Gypsy Moth



How to Identify

- Eggs are buff-colored velvety masses
- Caterpillars are 1 ½-2 ½ inches long with dark tufts of hair on each segment and blue and red dots on backs
- Male moths have 1 ½ inch wingspread with light tan to brown wings with dark wavy bands
- Female moths have a 2 ½ inch wingspan and are off white (they are flightless despite their wings)



How to Spot Symptoms

- Eggs can be found stuck to outdoor objects such has rocks, trees, cars, etc.
- Up to 1,000 eggs can hatch in April or May
- Small holes in leaves chewed by young larvae
- Older larvae consume entire leaves except for larger veins and midribs
- Whole tree may be defoliated

Threatened Trees (ordered by threat level)

- | | |
|---|---|
| <ul style="list-style-type: none">• Oak• Apple• Alder• Basswood• Birch• Poplar | <ul style="list-style-type: none">• Sweet Gum• Willow• Hawthorn• (Less favored – hickory, maple, cherry, cottonwood, elm, black gum, larch, sassafras, hornbeam, white pine) |
|---|---|



Thousand Cankers Disease



How to Identify

- The three major symptoms of this disease are branch mortality, numerous small cankers on branches and the bole, and evidence of tiny bark beetles.
- The earliest symptom is yellowing foliage that progresses rapidly to brown wilted foliage, then finally branch mortality.
- Numerous tiny bark beetle entrance and exit holes are visible on dead and dying branches and bark beetle galleries are often found within the cankers.
- In the final stages of disease, even the main stem has beetle attacks and cankers.



How to Spot Symptoms

- Yellow leaves high on the tree, progresses to brown and wilted, and then the whole branch dies
- Look for dead or sickly branches
- New leafy branches may sprout on the base of the trunk
- Numerous tiny bark beetle holes on dead and dying branches
- Black walnut trees die in approximately 3 years

Threatened Trees (ordered by threat level)

- Black Walnut
- Walnut Hybrids
- Butternut



image credit: Karen Snover-Clift, Cornell University, Bugwood.org

Sudden Oak Death



How to Identify

- The most useful diagnostic symptom is the development of cankers on the trunk.
- Cankers have red-brown to black discoloration and seep dark black to red or amber sap and usually develop 1 to 2 meters off of the ground.
- In later stages, the bark can fracture and exudation occurs both through broken and intact bark.
- Complete browning of the crown usually takes place after an extended period of disease and perhaps more than two years from the onset of infection.



How to Spot Symptoms

- Infested oaks develop cankers on trunk with red-brown to black discoloration or oozing, usually 3 – 6 feet off of the ground
- Rapid browning of leaves
- Shrubs and non-oak trees are affected differently
 - Leaf browning
 - Twig and stem dieback

Threatened Trees (ordered by threat level)

- White Oak
- Northern Red Oak
- Chestnut Oak
- Sassafras
- Redbud
- Dogwood
- Red Maple

Threatened Shrubs

- Viburnum
- Common Lilac
- Camelia



image credit: Joseph O'Brien, Cornell University, Bugwood.org

image credit: Paul Tooley, USDA Agriculture Research Service