



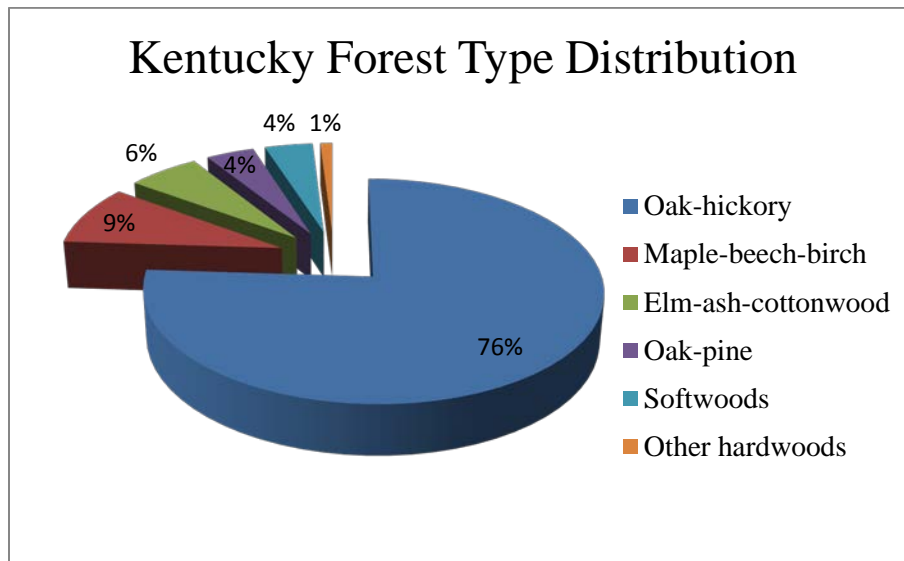
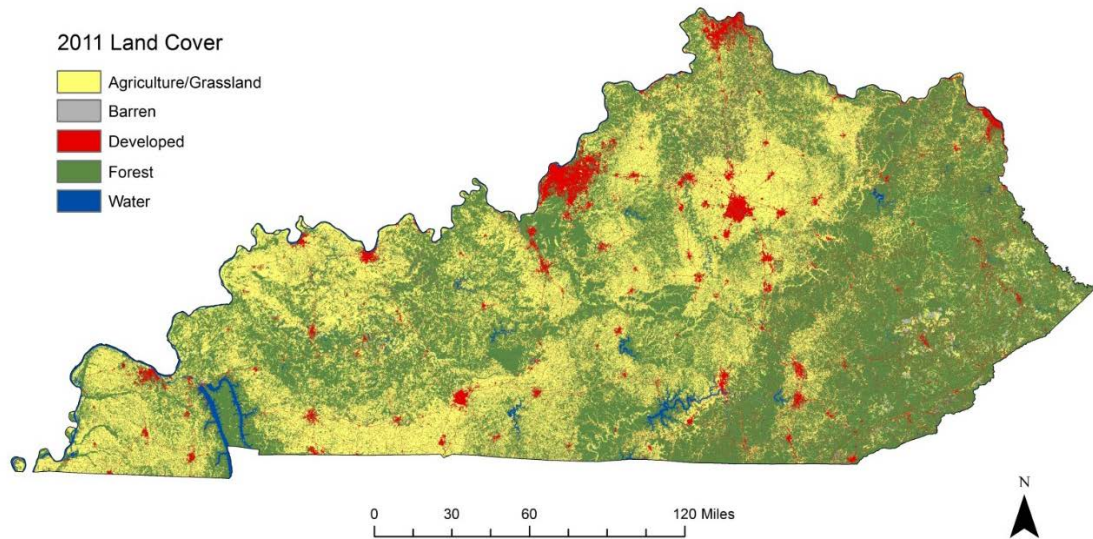
Kentucky

Forest Health Highlights 2017



The Resource

Kentucky's forests cover an estimated 12.4 million acres, nearly 49% of the state's land area. The Cumberland Plateau and the Appalachians in the eastern part of the state represent the most heavily forested areas, with forests covering more than 80% of the land area in many of these counties. The majority of the state's forested land (88.5%) is privately owned. Kentucky's forests are prized for their scenic beauty, supporting tourism and outdoor recreation and providing wildlife habitat from the Appalachian Mountains in the east to the Mississippi Valley in the west. The predominant forest type in Kentucky is oak-hickory, covering nearly 9.5 million acres (76% of the forested land). The most common species based on number of trees across all forest land is red maple, followed by sugar maple and yellow-poplar.

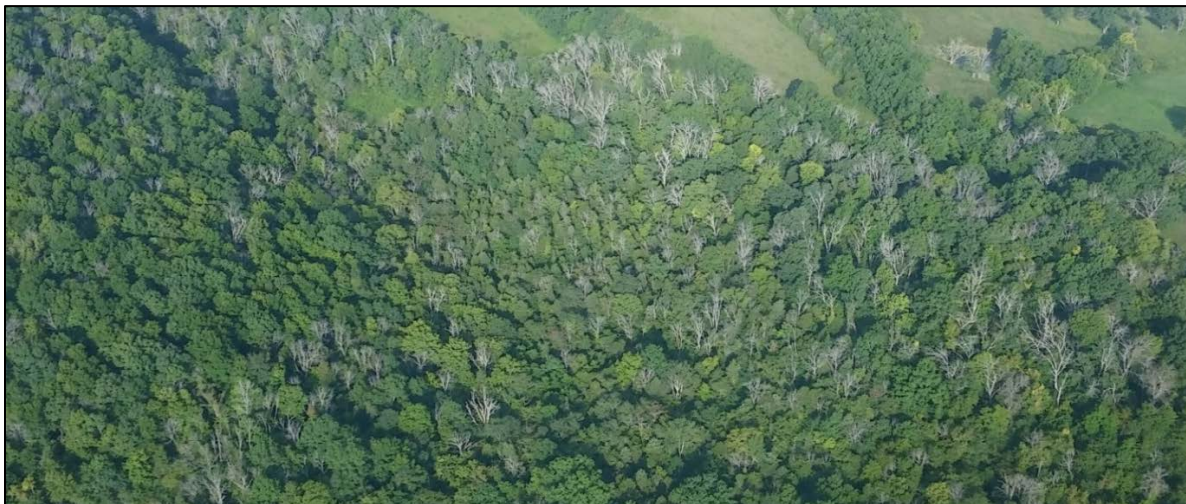
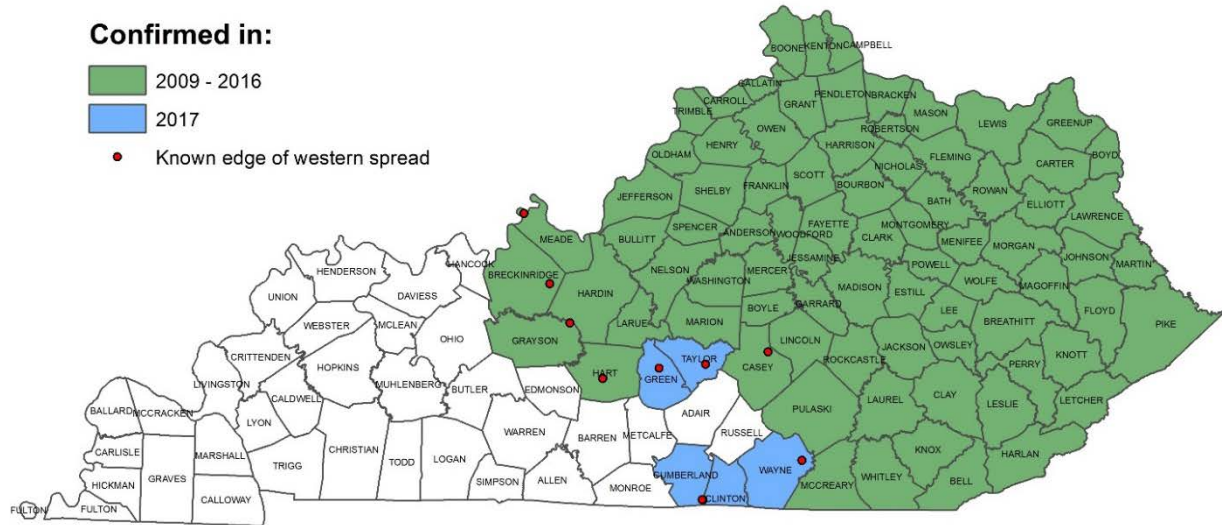


Insects

Emerald Ash Borer

Infestations of the emerald ash borer (EAB) were first confirmed in Kentucky in 2009. An EAB quarantine of 20 counties located in the region between Louisville, Lexington, and northern Kentucky was initially established. In the following years, additional EAB infestations were found in nearby counties and the state quarantine was expanded. In April of 2014, the county quarantine system was rescinded and the entire state was added to the Animal and Plant Health Inspection Service (APHIS) list of regulated areas. Currently, EAB has been confirmed in 85

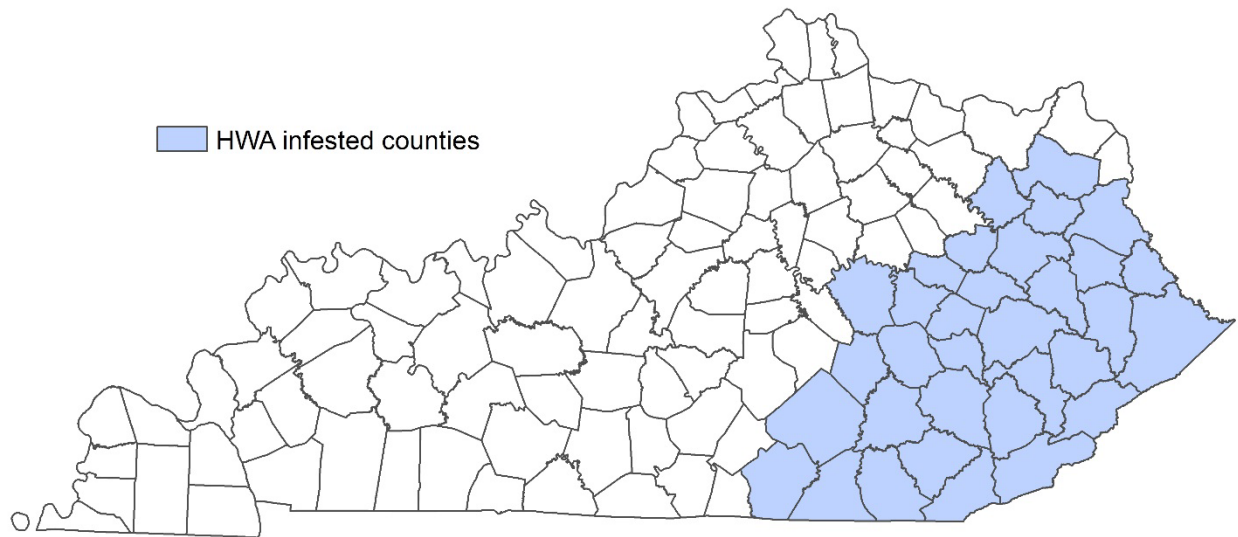
Kentucky counties. In 2017, EAB was confirmed in five new counties: Green, Taylor, Cumberland, Clinton and Wayne. EAB will eventually impact ash resources across the entire state as the infestation continues to spread into western Kentucky.



Hemlock Woolly Adelgid

Hemlock woolly adelgid (HWA) was first discovered in Kentucky in 2006. Approximately 98% of Kentucky's hemlocks are found in the eastern one-third of the state. In this region, infestations currently occur in 33 counties. The counties include Bell, Breathitt, Carter, Clay, Elliott, Estill, Floyd, Harlan, Jackson, Johnson, Knott, Knox, Laurel, Lawrence, Lee, Leslie, Letcher, Madison, Magoffin, Martin, McCreary, Menifee, Morgan, Owsley, Perry, Pike, Powell, Pulaski, Rockcastle, Rowan, Wayne, Whitley and Wolfe.

Kentucky Division of Forestry (KDF) has a crew responsible for treating hemlocks across various ownership boundaries including non-profit, state and federal lands. KDF has treated hemlocks in HWA-priority areas on land including Kentucky State Park property (Carter Caves State Resort Park, Natural Bridge State Resort Park and Cumberland Falls State Resort Park), Daniel Boone National Forest districts, Nature Preserve Commission property (Bad Branch Falls and Blanton Forest) and Eastern Kentucky University property (Lilley Cornett Woods). Since the program began in 2011, KDF has chemically treated over 131,000 hemlock trees.



Shingle Oak Skeletonizers

A complex of moth caterpillar species, collectively termed shingle oak skeletonizers, were found feeding on shingle oak trees across portions of central and western Kentucky. In 2016, large scale defoliation occurred in four counties, while this year's damage was only reported on isolated groups of trees across the state. No major impacts are expected from this native pest.



Japanese Beetle

An increase in the Japanese beetle population across much of Kentucky in 2017 caused problems in some areas as the beetles fed on foliage and ripening fruit. Japanese beetle numbers were above normal, likely due to late summer rains and the mild winter of 2016-2017. From a tree perspective, the Japanese beetle activity was especially heavy on sassafras throughout central Kentucky and *Tilia* species in urban areas. The beetles usually feed in groups, starting at the top of a plant and working downward. Feeding results in a skeletonized leaf that eventually turns brown, giving the plant a scorched appearance.



Diseases

Thousand Cankers Disease and the Walnut Twig Beetle

KDF along with Kentucky's Office of the State Entomologist placed 33 funnel traps in 19 counties across the state to trap for the walnut twig beetle associated with thousand cankers disease (TCD). Kentucky is a neighbor to four states that have confirmed TCD infestations (Indiana, Ohio, Tennessee and Virginia), but to date it has not been found in Kentucky. Trapping for the walnut twig beetle will continue in 2018.



Anthracnose, Bacterial Leaf Scorch and *Guignardia* Leaf Blotch

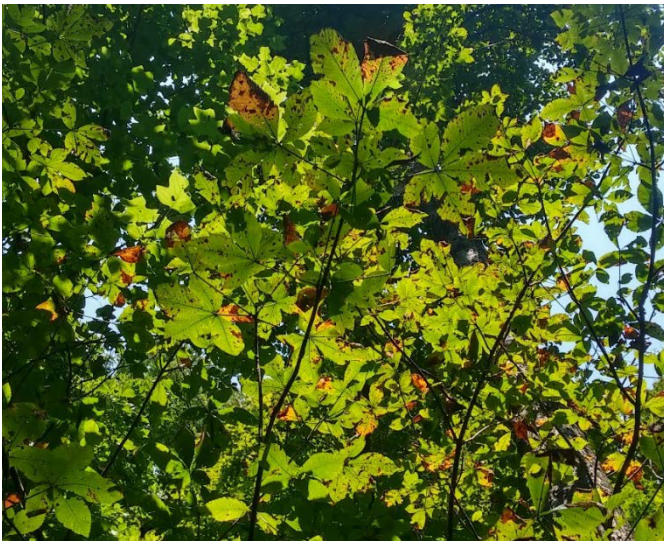
Foliar diseases are common on a number of tree species in Kentucky, especially in years with wet springs. Two of the more damaging diseases that are typically reported on an annual basis are anthracnose and bacterial leaf scorch. Anthracnose is caused by a number of different species of fungi that are associated with specific plants, but all cause similar symptoms. Common tree groups impacted include ash, oak, maple, dogwood and sycamore. Symptoms can be seen in the spring and include irregular brown spots on leaves and leaf distortion.



Bacterial leaf scorch also impacts a number of tree species including elm, maple, oak, and sycamore. Symptoms include a scorched leaf appearance that can begin to appear in July and progressively gets worse through the end of summer. Symptoms occur annually as the disease progresses through the crown. Leaf scorch occurs as a result of a bacteria growing inside the tree's vascular tissue where it blocks water movement. Reduced growth and branch dieback soon follow, resulting in a slow decline and eventual death of the tree. Bacterial leaf scorch is common on red oak species, especially pin oak, in urban areas.



A less severe and not as common foliar disease, *Guignardia* Leaf Blotch, was reported this year on Ohio and yellow buckeye trees. Disease symptoms start as small lesions on leaflets and over time expand into larger dark brown blotches. In 2017, patches of browning trees were reported during an aerial survey over the Knobs Region. Subsequent ground surveys found the culprit to be *Guignardia* Leaf Blotch disease. The disease was impacting buckeye trees growing along streams in the region. This disease was also widely reported in some urban areas of Ohio.



Botryosphaeria Canker of Oak

“Flagging” of branch tips and twigs were widely evident on many urban oak trees, especially pin oak, throughout Kentucky this past year. Upon further inspection it was concluded that the dead twigs and leaves still attached to the oak trees were infested with a *Botryosphaeria* fungus. The cankers created by the fungus appear to cause only minor damage and thus control measures are not necessary. It is not known why there was an increase in *Botryosphaeria* canker occurrence this year.



References:

- [Kentucky's Office of the State Entomologist](#) provided data from their gypsy moth and thousand cankers disease surveys.
- 2011 Land Cover data was obtained from the [National Land Cover Database](#).
- Photos with image numbers taken from Bugwood.org

Forest Health Assistance in Kentucky

Kentucky Division of Forestry
300 Sower Boulevard – 4th Floor

Frankfort, KY 40601
502-564-4496
<http://forestry.ky.gov>

USDA Forest Service
Southern Region, State & Private Forestry
Forest Health Protection
200 W.T. Weaver Road
Asheville, North Carolina 28804
828-257-4320
<http://www.fs.fed.us/r8/foresthealth/>