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Emerging Threats to Kentucky's Woodlands

by Jody Thompson

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Numerous invasive species inhabit Kentucky, and more species are expected to invade in the future. Emerging threats to Kentucky's forests are invasive species that are predicted to be significant threats and are either on Kentucky's border or are expected to invade. Examples include gypsy moth, which can be found in Ohio and Virginia, among other states, and sudden oak death, which is found in ornamental nurseries throughout the Southeast. Gypsy moth and sudden oak death are important, but three other emerging threats deserve attention as well.

Asian Longhorn Beetle

The Asian longhorn beetle (*Anoplophora glabripennis*) is a destructive pest of at least 18 species of hardwoods. It prefers maple but can also be found in poplar, birch, elm, willow, cottonwood, mulberry, cherry, pear, plum, and black locust, among other species. The beetle was discovered in Brooklyn, New York, in 1996 but has also since been found in Massachusetts and New Jersey. It will attack healthy trees and often lay eggs on the tree from which it emerged, which can rapidly increase the number of beetles in a tree and accelerate the time to tree death.

The Asian longhorn beetle can be easily transported to new areas through the movement of parts of a tree that have been infested, including firewood. The only effec-



Left: Asian longhorn beetle adult. Top right: Cottonwood borer. Bottom right: Pine sawyer

Photos courtesy: Left: Michael Bohne, Bugwood.org; top right: Charles T. Bryson, USDA Agricultural Research Service, Bugwood.org; bottom right: Natasha Wright, Florida Department of Agriculture and Consumer Services, Bugwood.org tive methods of managing the beetles are to cut and remove infested trees or treat them with a systemic insecticide.

An adult Asian longhorn beetle is 1 to 1.5 inches long, shiny black, and has scattered white spots on its back. Its antennae are usually longer than its body (which has alternating black and white bands) and its legs can be bluish-white. There are many species of longhorn beetles in Kentucky and throughout the United States, so suspected beetles should be identified by a professional.



Asian longhorn beetle damage with finger pointing at egg laying site and circular exit hole seen in lower right part of photo.

Thousand Cankers Disease

Thousand cankers disease is a relatively new disease that, until now, has been killing walnut trees in the western United States. Recently however, it was discovered in Knoxville, Tennessee. The disease is suspected to have developed through the interaction of a bark beetle (walnut twig beetle) native to the western United States, a fungus of unknown origin, and black walnut trees. This disease is important be-

cause black walnut, which seems to be the most susceptible of the walnut species, is native to the eastern United States.

The walnut twig beetle, which doesn't normally kill its host, carries fungal spores into walnut trees when it bores into them.



Early stage of canker formation at sights of beetle activity beneath the bark of a black walnut tree. Photo courtesy: Whitney Cranshaw, Colorado State University, Bugwood.org

The fungus kills tissue as it spreads throughout the area of the beetle's activity. Tree death occurs when the cankers come together around the tree, cutting off water and nutrient flow.

Cogongrass

Cogongrass (Imperata cylindrica) is considered to be one of world's most invasive weeds. As with many invasive exotic plants, it is native to Asia. However, it is a noxious weed throughout much of the world. It was initially introduced to the United States by way of coastal Alabama in 1912 and has since infested eight other states: Alabama, Florida, Mississippi, Louisiana, Texas, Georgia, South Carolina, and Tennessee. Conservative estimates show cogongrass infesting over 1.25 million acres in Florida, Alabama, and Mississippi alone. Its closest infestation to Kentucky is in Henderson County, Tennessee. Long-distance



Above: Field taken over by cogongrass. Above right: White, fluffy seed head of cogongrass. Right: Leaf blade showing offset, white midrib. Most grasses have a centered midrib.

Photos courtesy: Above: Wilson Faircloth, USDA Agricultural Research Service, Bugwood.org; Above right: Division of Plant Industry Archive, Florida Department of Agriculture and Consumer Services, Bugwood.org Right: Division of Plant Industry Archive, Florida Department of Agriculture and Consumer Services, Bugwood.org

spread throughout the Southeast has been through human activity such as moving soil contaminated with rhizomes



Modified from http://www.cogongrass.org/distribution/index.cfm

Range of cogongrass with the green arrows showing the prominent direction of spread. The map shows cogongrass spreading toward Kentucky. The darker the color the higher the number of infestations reported as of May 2010. and seed, contaminated machinery, and introducing it into landscapes as an ornamental plant. Additionally, the light seed can be blown for miles.

As with many invasive plants, cogongrass becomes established in an area before it is noticed. In southern states, cogongrass has taken over woodlands and pastures, has led to the loss of hunting lands, and is suspected to pose a danger to no-till agricultural lands. Most vegetation cannot compete with cogongrass, and it will grow just about anywhere except deep shade. It is useless as a forage crop; animals will not eat cogongrass due to its high silica content.

Cogongrass typically reaches a height of 2 to 4 feet but can reach 6 feet. The light-green leaf blades are about 1-inch wide and usually have a prominent midrib that is sometimes off-center. The seed heads of cogongrass are 2 to 8 inches long and are seen during spring.

Although cogongrass, Asian longhorn beetle, and thousand cankers disease have not yet made it to Kentucky, each has great potential for introduction. These threats have been very destructive throughout their current ranges. Only three threats were described here, but numerous others are regularly introduced to the United States and have the potential to invade here. To protect Kentucky's woodlands, it is necessary to educate yourself about these threats and their effects.

About the Author:

Jody Thompson is the Forest Health Specialist with the Kentucky Division of Forestry. His responsibilities include monitoring, identification and education for insects, diseases and invasive exotic plants in Kentucky's woodlands.

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Editors Note:

Since this article was written the Kentucky Forest Health Task Force has begun deliberations regarding a quarantine to prevent the introduction into Kentucky of Thousand Cankers Disease (TCD) of Walnut.

This newly discovered disease of walnut is particularly lethal to black walnut, which is a valuable commodity for Kentucky; both for timber and nut production. Currently, the only known location of TCD within the native range of black walnut is in Knox County, Tennessee. Current known pathways of movement for TCD include forest product trade, nursery stock trade, wood crafter hobbyist exchange, research, and firewood movement due to an abundance of dead and dying walnut wood in western states. If Kentucky enacts a quarantine it will likely be similar to the one imposed for the Emerald Ash Borer. For the latest information on Thousand Cankers Disease of Walnut visit <u>www.KyForestHealth.org</u>.