

Kansas Forest Health Highlights 2014



Forest Resource Summary

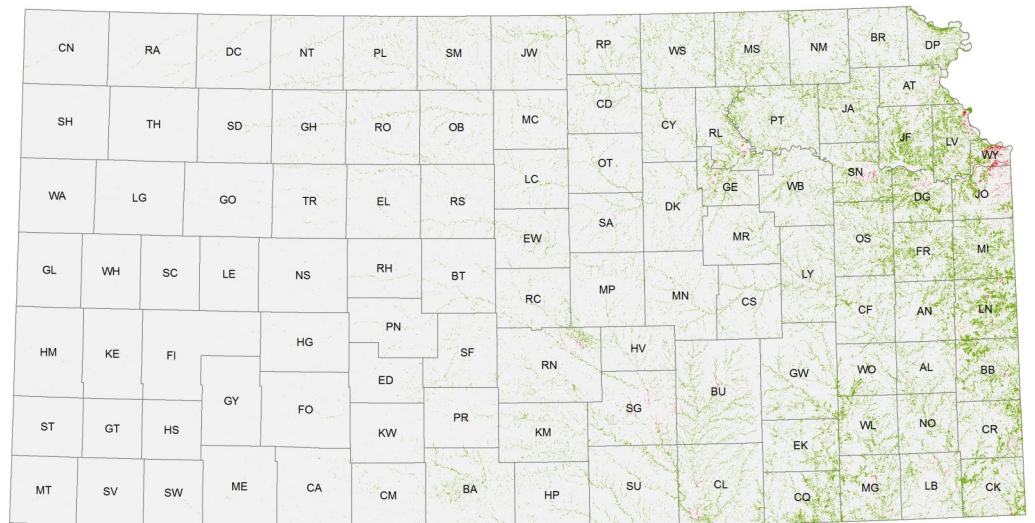
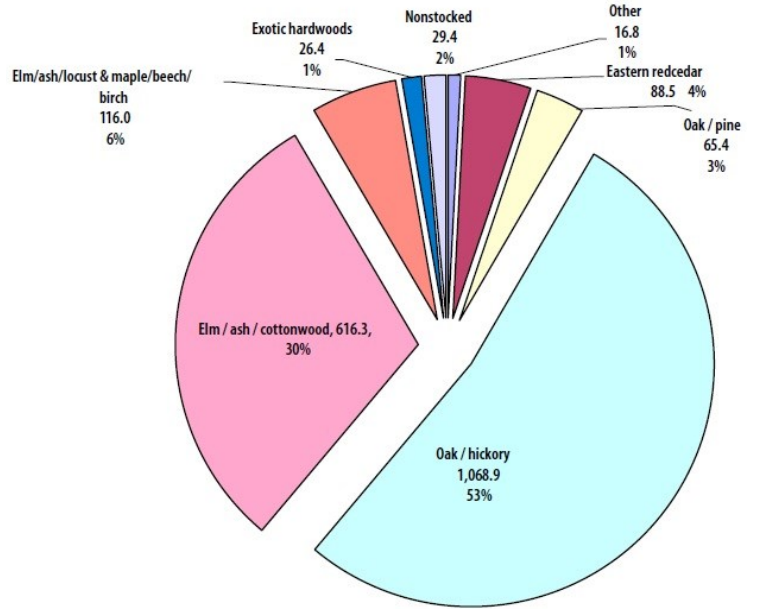
In Kansas, the eastern hardwood forests transition into the prairie of the Great Plains. Forestland accounts for 5.2 million acres, of which over 95% is privately owned. Our forests are productive; local forest products contribute approximately \$1.3 billion annually to the Kansas economy.

Most of the contiguous forestland is located in the eastern third of the state. Much of the Kansas landscape is devoted to agriculture, but forests and trees are prominent components. The majority of the state's woodlands are linear in nature and follow water features along the terrain.

The top tree species, by statewide volume, are hackberry, cottonwood, American elm, green ash, osage-orange, black walnut, mulberry, bur oak, honeylocust, and American sycamore. Oak/Hickory and elm/ash/cottonwood are the two dominant forest types.

Over the past 60 years or so, cottonwood regenerations levels have been low. Re-engineering of riparian environments due to expansion of agriculture, construction of dams, and stream channelization have altered the landscape where cottonwood previously flourished. Unlike cottonwoods, eastern red cedar trees have been very successful as early invaders on grasslands and abandoned range and farmlands.

Even though Kansas's forests are increasing in acreage, the oak component is decreasing in some areas as forest succession favors shade intolerant species, such as hackberry and American elm.



The Woodlands of Kansas

■ Urban Woodland
■ Rural Woodland

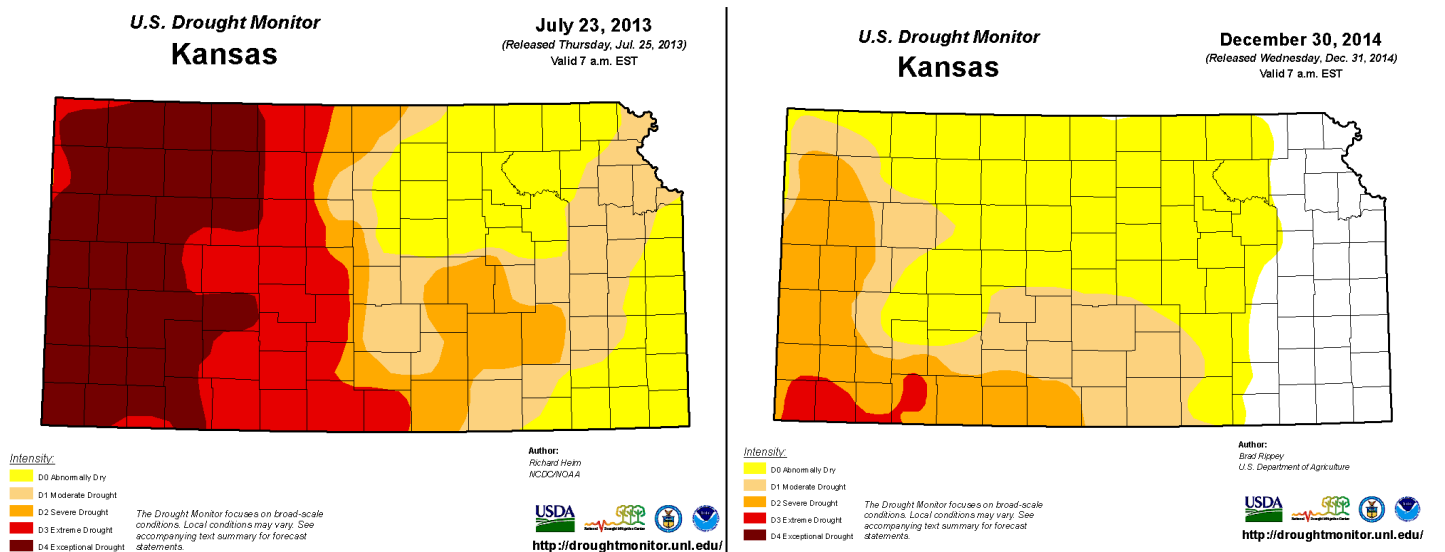
DROUGHT



Urban trees and rural forests saw some relief in 2014 from stress incurred over the previous three years of historic drought conditions. The cumulative effects of a multi-year drought were not totally mitigated by a return to “normal” precipitation levels. It has become common to see windbreaks, riparian forest systems, and large woodlots with significant mortality due to sustained drought and heat stress. As an example, the City of Wichita removed more than 20,000 trees due to drought stress and mortality, with up to a total of 40,000 removals projected in the next two years.

The National Drought Mitigation Center - U. S. Drought Monitor continues to indicate that many Kansas counties remain in at least a "Moderate Drought" (47% of the state), with 34% of Kansas in the "Severe Drought" or worse category.

The continuation of dry weather has taken the toll on our planted pine species, eastern red cedar, native oak species, silver maple, cottonwood, ash, and black walnut. Much decline is seen in mature trees that can not compensate for the additional stress over multiple years. Additionally, natural defenses against damaging insects have been reduced due to drought stress.



URBAN & RURAL FOREST HEALTH ALERTS:

Emerald Ash Borer (EAB)

Agrilus planipennis

All *Fraxinus* spp. susceptible

The Kansas Forest Service is involved in projects to survey and prepare Kansas's urban and rural forestland owners for the threat posed by EAB. Efforts are being made to slow the spread from the initial confirmed infestations.

On August 26, 2012, the Kansas Department of Agriculture (KDA) implemented an EAB Quarantine for Wyandotte County. Johnson County was added to the state's quarantined area on July 5, 2013, after a confirmed EAB specimen was found. A trap tree in Leavenworth County was confirmed to contain EAB in 2014.

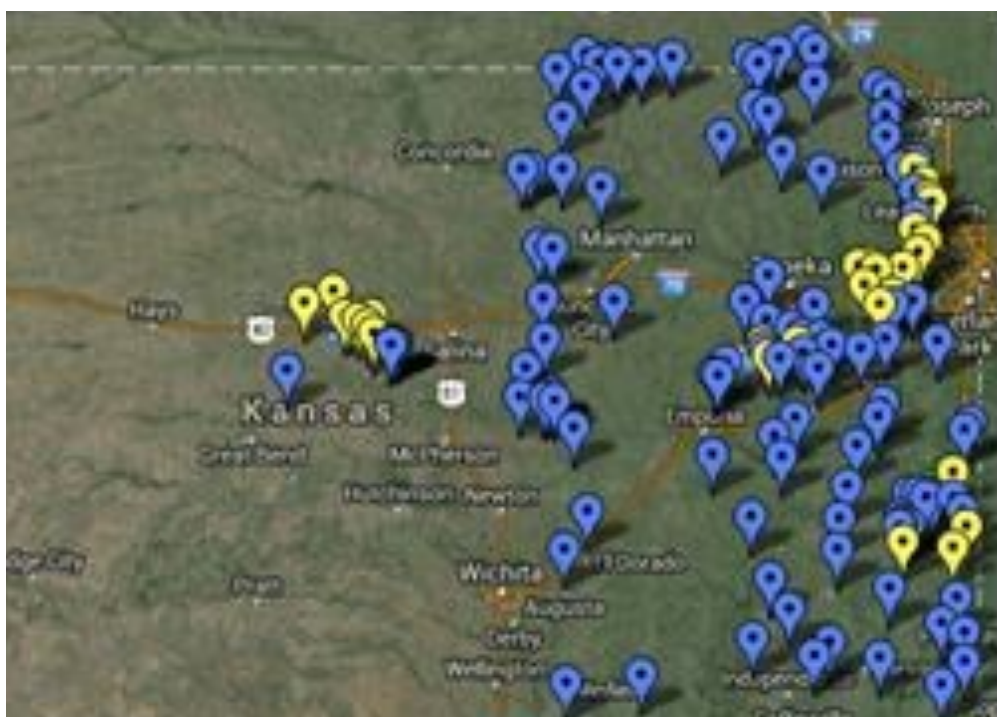
Information sessions with community leaders in Leavenworth, Wyandotte, and Johnson counties have been held to ensure our cities have the necessary information needed for their EAB Strategic Plans.

State survey efforts were made to detect any new populations. Visual surveys will continue in 2015, along with continued deployment of purple prism traps. Traps are placed at near the initial county finds, and at areas of high-risk like heavily-visited state campgrounds in the east, major travel corridors, and sawmills.

Additional Pest Detector Trainings have been offered around the state to increase our detection efforts and keep our citizens informed. Training sessions to municipality leaders have been conducted in the tri-county region of Leavenworth, Wyandotte, and Johnson.



EAB-infested ash tree showing decline



82 EAB Traps set by KDA (Yellow: in grid, Blue: Not in grid)



EAB larva & feeding gallery

Thousand Cankers Disease (TCD)

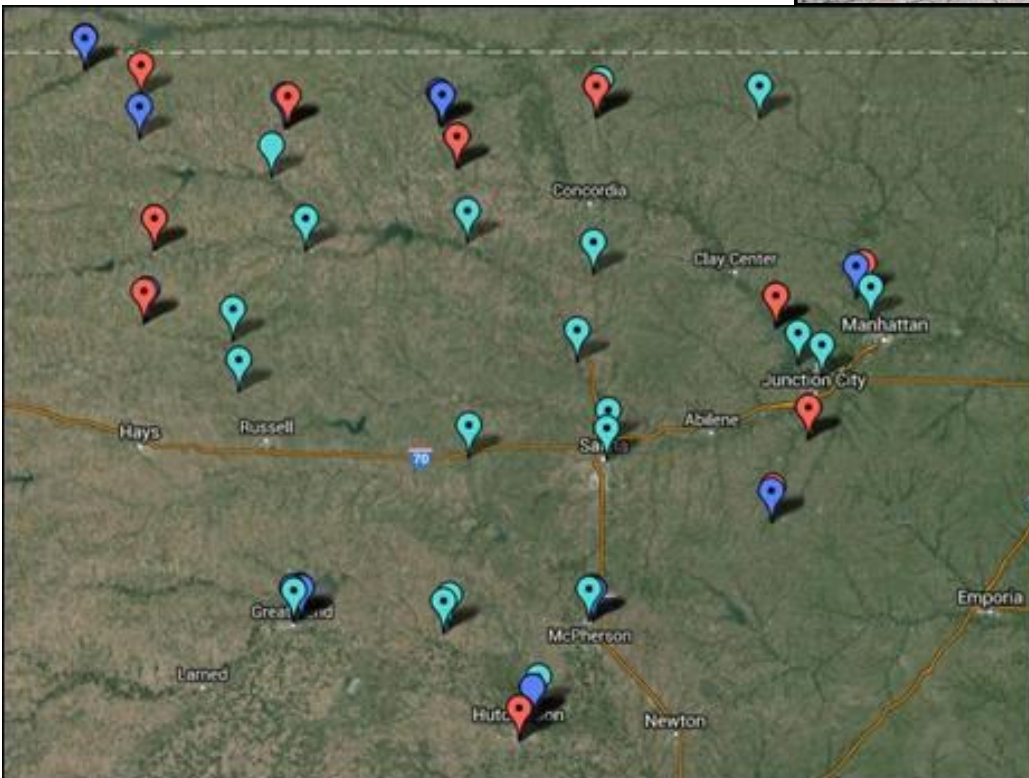
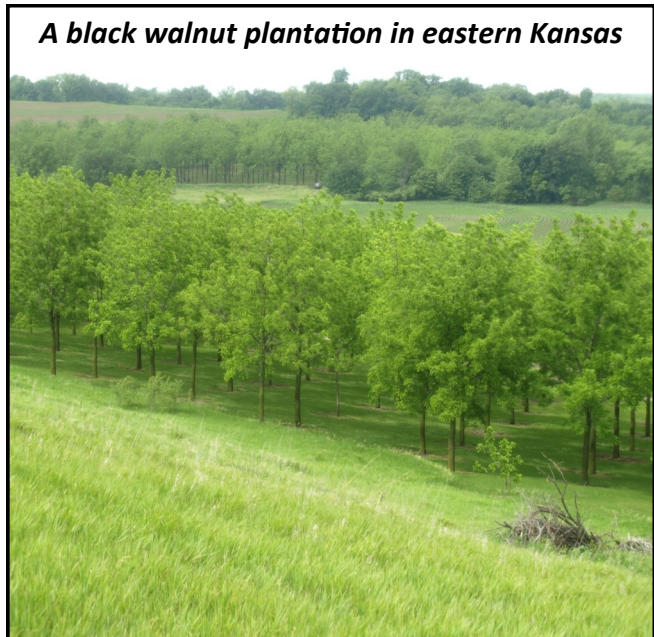
Geosmithia morbida & *Pityophthorous juglandis*
Black walnut most susceptible

This disease has not yet been detected in Kansas. However, Kansas shares a 200-mile border with Colorado, an infested state, increasing the risk of TCD introduction.

Street-side and on-the-ground visual surveys of black walnut have been conducted across the state. Lindgren traps, with lure, were set and monitored by Kansas Department of Agriculture (KDA) at key locations statewide. No walnut twig beetle (WTB) specimens were found.

KDA conducted an Agroforestry Pest survey for WTB, oak ambrosia beetle (*Platypus quercivorus*) and oak processionary moth (*Thaumetopoea procesionea*) at 36 sites across Kansas. These sites were required to have oaks and walnuts both present to be trapped. No pests of concern were found.

TCD trainings occurred throughout the year to arborists, municipalities, and landowners, greatly increasing the detection network and providing further outreach efforts. A new draft of the TCD Strategic Plan was written and adopted, as well.



2014 Survey





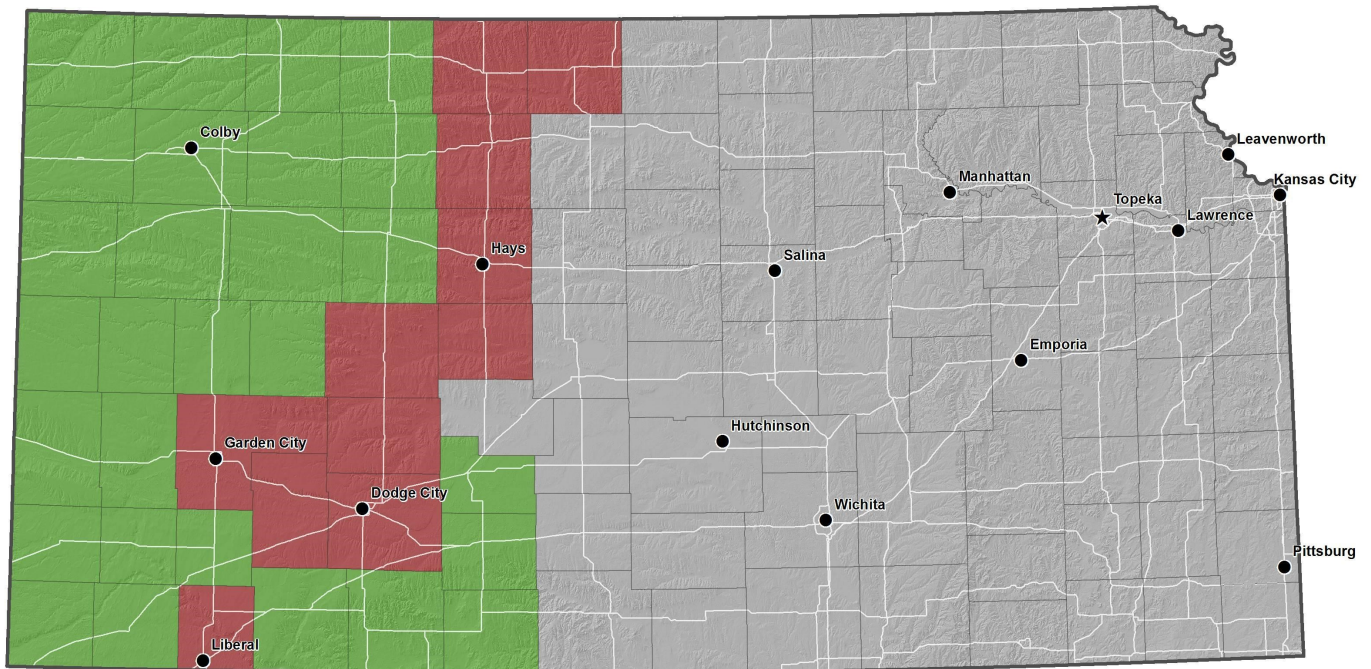
Pine Wilt

Bursaphelenchus xylophilus & *Monochamus* spp.
Scotch, Mugo, Austrian, and White pines

Pine wilt is caused by a plant parasitic nematode called the pine wood nematode, *Bursaphelenchus xylophilus*. The nematode is vectored by the pine-sawyer beetle, a long-horned borer in the genus *Monochamus*. They kill pine trees by feeding and reproducing in the resin canals of the branch and trunk.

In 2014, two new pine wilt detections occurred in Meade County, with eradication ongoing. The city of Hays continues to monitor and eradicate pine wilt amongst several thousand public pines.

This disease is continuing to spread westward, frequently damaging and causing high mortality in windbreaks and conservation plantings containing *Pinus nigra* and *P. sylvestris*.



- Pine Wilt established both in communities and rural settings.
- Pine Wilt present, but limited to one or a few locations. Eradication ongoing.
- Pine Wilt not yet discovered.

Other Forest Health Concerns

Asian Bush Honeysuckle

The non-native bush honeysuckles (*Lonicera maackii*, *L. tatarica*, and *L. x bella*) and their vine counterpart, Japanese honeysuckle (*Lonicera japonica*) have invaded many woodlands, forests, and nature preserves causing declines in species diversity and richness of native ground cover and mid-story vegetation.

Honeysuckle infestation can be ascribed, in part, to their adaptability to a wide variety of habitats and spread as a result of being a prolific producer of seeds (bush honeysuckles primarily) that are easily dispersed by birds.

Asian bush honeysuckle possesses rapid aboveground and belowground growth, is adapted to low-light environments, begins growth earlier and can continue growing later in the growing season than most other woodland species.

Urban woodlands around Wichita, Topeka, and the Kansas City metro area are now getting additional much-needed management to combat these invasive shrubs and vine. New management techniques utilizing backpack mistblowers (see photo above) show much promise with economical, effective control of this forestland invader. This project will need several seasons of control efforts in the prescribed high priority target areas controlled by county parks & recreation, Kansas Dept. of Wildlife, Parks & Tourism, and private stakeholders.

Additionally, a spectral remote-sensing protocol has been developed to detect and delimit infestations, and will eventually aid in strategic decision-making to treat populations and limit the spread of this invasive plant.



For Forest Health assistance and further information on Forest Health in Kansas, please refer to the following.



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USDA Forest Service – Rocky Mountain Region

Forest Health Protection (FHP) – Forest Health Monitor

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www.fs.usda.gov/goto/r2/fh