

Kansas Forest Health Highlights 2013

Forest Resource Summary

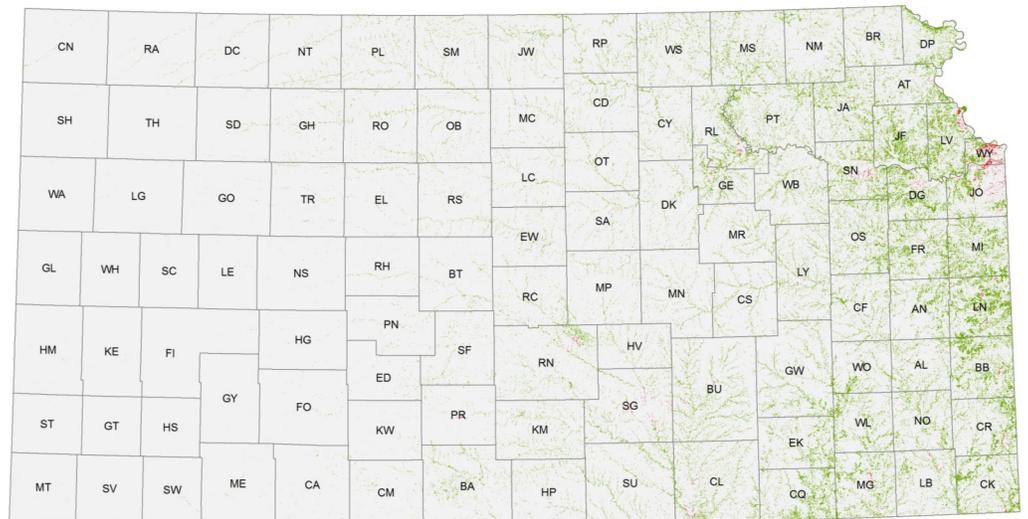
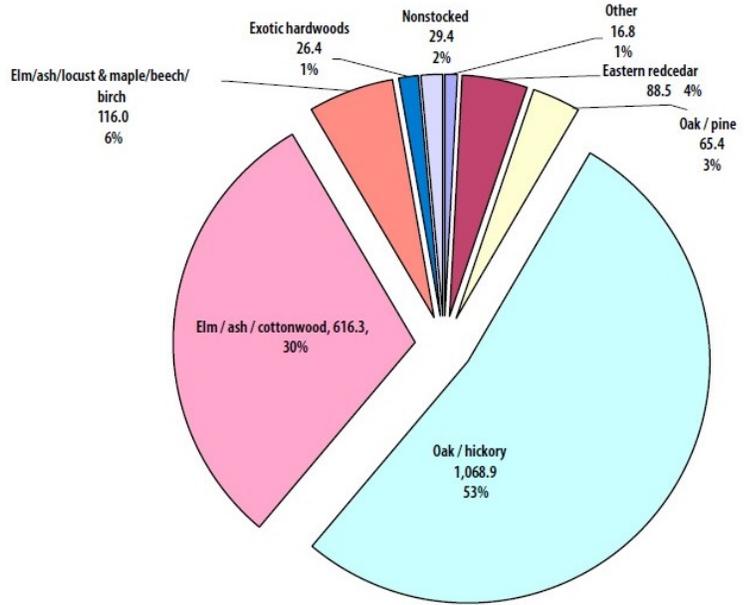
In Kansas, the eastern hardwood forests transition into the prairie of the Great Plains. Forestland accounts for 5.2 million acres, of which over 95% is privately owned. Our forests are productive; local forest products contribute approximately \$1.3 billion annually to the Kansas economy.

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.

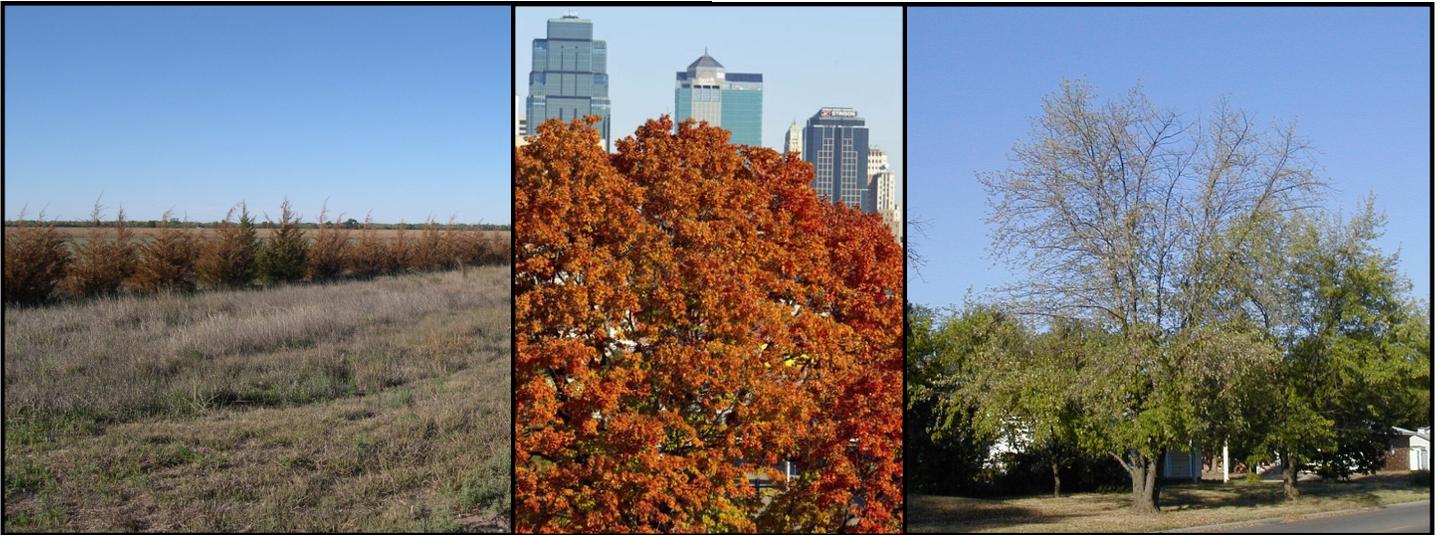
Even though Kansas's forests are increasing in acreage, the oak component is decreasing in some areas as forest succession favors shade intolerant species, such as hackberry and American elm.



The Woodlands of Kansas

- Urban Woodland
- Rural Woodland

DROUGHT



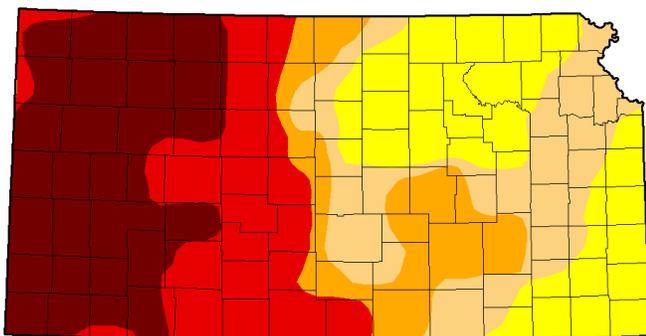
Both urban trees and rural forests were stressed in 2013 as historic drought conditions persisted from the previous two years. Though parts of eastern Kansas received meaningful precipitation in late summer, the cumulative effects of a multi-year drought were not totally mitigated. The fall of 2013 saw a return of drought conditions throughout most of Kansas. It has become increasingly common to see windbreaks, riparian forest systems, and large woodlots with significant mortality due to sustained drought and heat stress.

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 latest U.S. Seasonal Drought Outlook forecast indicates that conditions are expected to continue through the winter into 2014, with an increase in drought severity in western Kansas.

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.

U.S. Drought Monitor Kansas

July 23, 2013
(Released Thursday, Jul. 25, 2013)
Valid 7 a.m. EST



Intensity

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

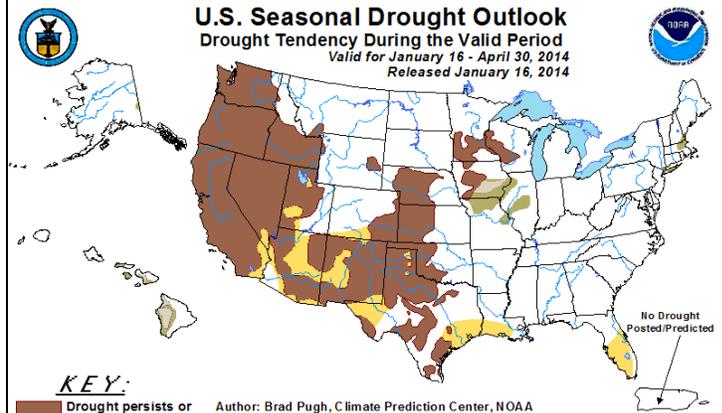
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Heim
NCD/NOAA

<http://droughtmonitor.unl.edu/>

U.S. Seasonal Drought Outlook Drought Tendency During the Valid Period

Valid for January 16 - April 30, 2014
Released January 16, 2014



KEY:

- Drought persists or intensifies
- Drought remains but improves
- Drought removal likely
- Drought development likely

Author: Brad Pugh, Climate Prediction Center, NOAA

http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events — such as individual storms — cannot be accurately forecast more than a few days in advance. Use caution for applications — such as crops — that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity).

For weekly drought updates, see the latest U.S. Drought Monitor.

NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)

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.



EAB-infested ash tree showing decline

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 isolated populations. No new detections were made in non-quarantined counties. Visual surveys will continue in 2014, along with continued deployment of purple prism traps. Traps will be placed at a greater frequency near the initial county finds, and at areas of high-risk like our 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.



65 EAB Traps in 9 Counties set by KDA

EAB larva & feeding gallery



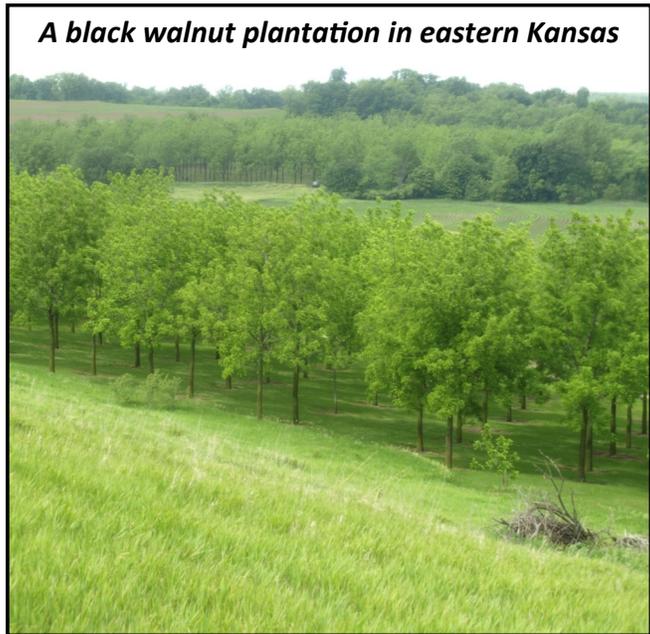
Thousand Cankers Disease (TCD)

Geosmithia morbida & *Pityophthorous juglandis*
Black walnut most susceptible

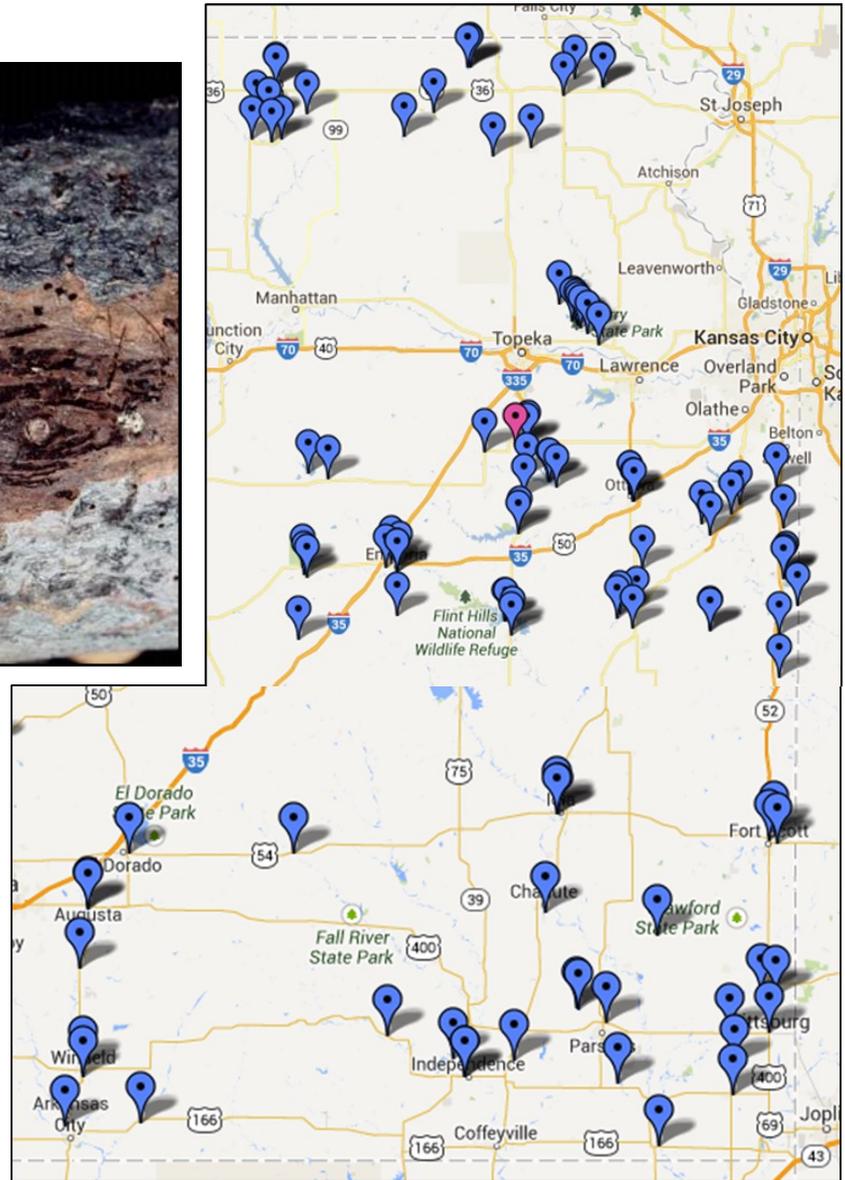
This disease has not yet been detected in Kansas. However, Kansas shares a 200-mile border with Colorado, an infested state, increasing the risk of TCD introduction.

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.

TCD trainings occurred throughout the year to arborists, municipalities, and landowners, greatly increasing the detection network and providing further outreach efforts.



2013 WTB Survey





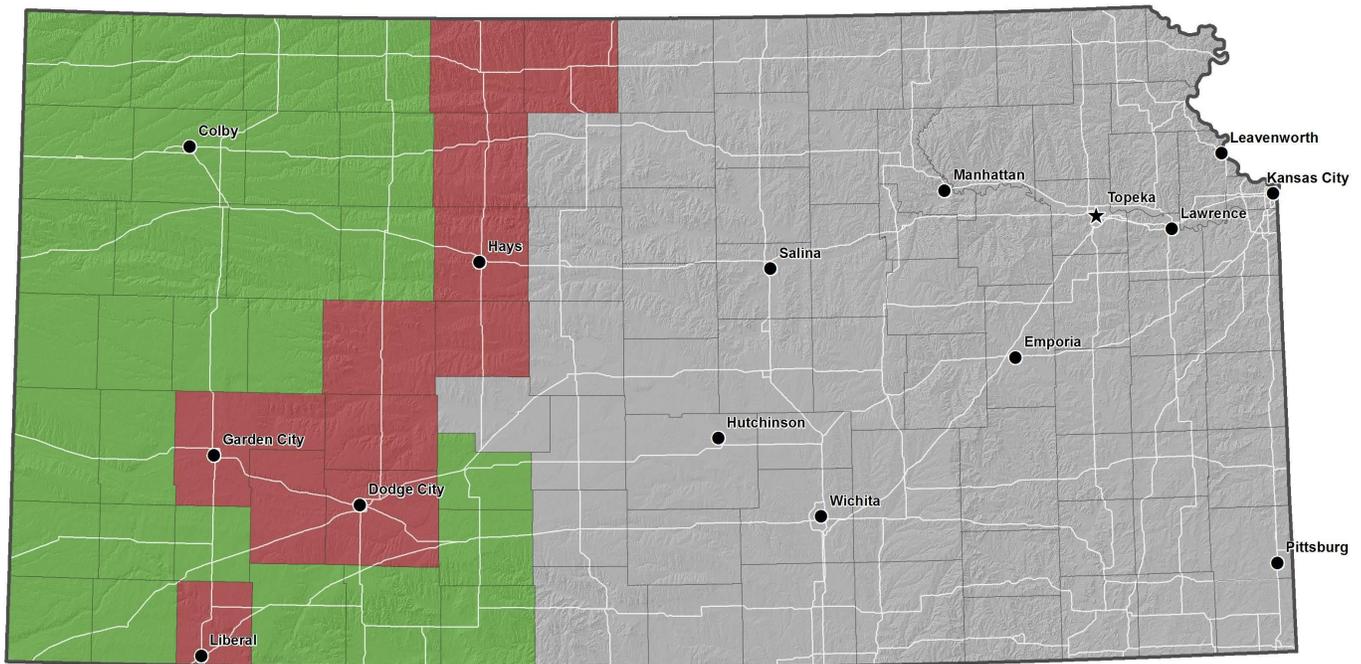
Pine Wilt

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 2011, eleven counties in western Kansas had detections of pine wilt. The disease has not been detected in any additional counties in 2012 or 2013.

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.

The loss of the fine-rooted forbs in the ground cover often has prompted an increase in erosion in these wooded areas, which has negative impacts on downstream aquatic systems. 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.

Our 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 Department of Wildlife, Parks & Tourism, and private stakeholders.



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



Kansas Forest Service

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<http://www.kansasforests.org>



USDA Forest Service – Rocky Mountain Region

Forest Health Protection (FHP) – Forest Health Monitor

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