



Oklahoma

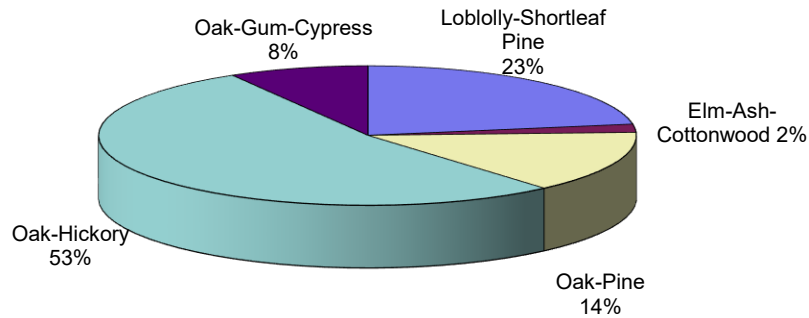
Forest Health Highlights 2024

The Resource

Oklahoma's forests covers over 12 million acres, about 28% of the state's land area. Some 6.9 million acres of the states forested land is in nonindustrial private ownership, while 707,867 acres are in National Forests. Oklahoma's forests are prized for their scenic beauty, supporting tourism and outdoor recreation and providing wildlife habitat throughout the state. Major forest types in the state include oak-hickory, loblolly and shortleaf pine, mixed oak-pine, and oak-gum-cypress.



Table 1: Oklahoma Forest Type Distribution



Forest health monitoring (FHM) activities are cooperative efforts between the USDA Forest Service and the Oklahoma Department of Agriculture Forestry Services. The FHM program in Oklahoma includes regular aerial and ground surveys to detect forest damage.

Special Issues

Key issues which state and federal programs are addressing cooperatively include:

- ✚ Sustainable management of private forest lands
- ✚ Protection and development of urban and community forest resources
- ✚ Increasing participation by underserved citizens in forestry programs
- ✚ Update of Oklahoma's Gypsy Moth and Emerald Ash Borer Action Plans
- ✚ Education efforts on present and potential pests
- ✚ Utilizing the US Forest Service Forest Disturbance Monitor and ForWarn

Forest Influences

Southern pine beetle Aerial Detection:

Oklahoma Forestry Services flew for aerial detection over 800,000 acres in McCurtain, LeFlore, and Pushmataha counties. The purpose of the flight was to monitor the health of the forests as well as look for early indications of any major health problems. Early detection of southern pine beetle is the primary purpose of these flights, but other aspects are monitored as well such as other bark beetles, weather induced mortality, and discoloration of hardwood species. There was no suspected SPB activity recorded from these flights but other bark beetles were observed across the landscape.

Ips engraver beetle:

The 2022 aerial flights showed a large amount of pine mortality across the surveyed area. The 2023 flights showed reduced activity and 2024 followed the trend. Wetter springs were likely the main reason for reduced Ips activity the past two years. Droughts in 2024 did increase through the summer which resulted in more pine mortality later in the growing season, but not as drastic as previous years. Regardless, pine mortality is still seen across the state. A majority of the loblolly pine in Oklahoma is planted outside of its natural range. As a result, climate has always been a stressor for these species. Despite 2024 having minimal drought severity until mid to late summer, multiple years of drought in the past has caused a majority of Oklahoma's pines to be in some state of stress, making them susceptible to bark beetle establishment.

Sudden oak death / ramorum blight

P. ramorum was discovered on Rhododendron's in a nursery as well as stock at a major retailer in Oklahoma in early spring of 2019. Further testing the following summer discovered more instances of *P. ramorum* on roses at the same nursery. Oklahoma Consumer Protective Services continues its monitoring of nursery stock as well as stream surveys to watch for more cases of sudden oak death. As it has not been seen in trees outside of the nursery, it is unlikely to have spread to Oklahoma's native oaks but the State remains vigilant.

Spongy moth:

USDA Animal and Plant Health Inspection Service (APHIS) had no positive samples collected in this year's survey.

Emerald ash borer:

The first positive identification of emerald ash borer occurred in October 2016. The individual was found in a trap in the town of Grove, though to this day no other signs of an established population have been detected.

The past years trapping have detected EAB in two new counties; Pushmataha and Love. This brings the total number of counties with observed populations to five, all in southeastern and southcentral Oklahoma.

Oklahoma Forestry Services continues to manage the emerald ash borer trapping program. With the aid of Oklahoma Consumer Protective Services OFS was able to provide trapping materials to partners throughout the eastern half of the state. Oklahoma's Tree City USA's and Oklahoma Department of Wildlife Conservation worked with OFS to select hang the traps in their cities/Wildlife Management Areas and monitor them throughout the year.

Oklahoma Forestry Services was active in pushing emerald ash borer information in social media, increasing public engagement throughout the trapping season. Invasive species has been a priority topic in a majority of outreach events focusing on the risk invasive species pose to the landscape, the importance of early detection for establishing populations, as well as the "Don't Move Firewood" messaging.

In addition, Oklahoma plans on releasing parasitic wasps in 2025, potentially in each of the counties where EAB was discovered in 2023; McCurtain, Choctaw, and Carter.

Sawmills Map:

Throughout Oklahoma, one of the major factors contributing to poor forest health is the lack of forest management. The forest type most impacted by the lack of management in Oklahoma is the Cross Timbers, but all of the forest types throughout the state suffer to some degree. Environmental factors such as the prolonged drought, winter freezes, high winds, and ice storms have caused the forests that are already overstocked to decline. One of the reasons for lack of management, especially in central Oklahoma and away from the traditional timber markets, is the lack of timber buyers. OFS continues to locate new sawmills throughout the state, update the information on those already on record, and manage an interactive map of their locations in order to provide relevant information to the landowners in an easy to process format.

Landowners are able to view the area around them to find what sawmills exist, to learn what size and species the mills accept, and answer questions such as; will the sawmill purchase timber, cut timber, and pick up timber from site. Since many of these sawmills are small family operations, often times operating out of a barn, their presence was not as apparent as those in areas with traditional markets. The presence of this mills map has put in contact those with wood and those wanting to purchase timber, and as a result has begun to increase management on forests that were previously deemed unproductive.

This project works with multiple programs in Oklahoma Forestry Services including; Urban Forestry, Forest Health, Forest Stewardship, and Sustainable Utilization and Marketing. Recent projects from the Urban Forestry program in urban wood utilization have tied into this project by promoting utilization of single trees that needed to be removed for various reasons.

The map can be found at the following address. <https://bit.ly/3duJLXW>

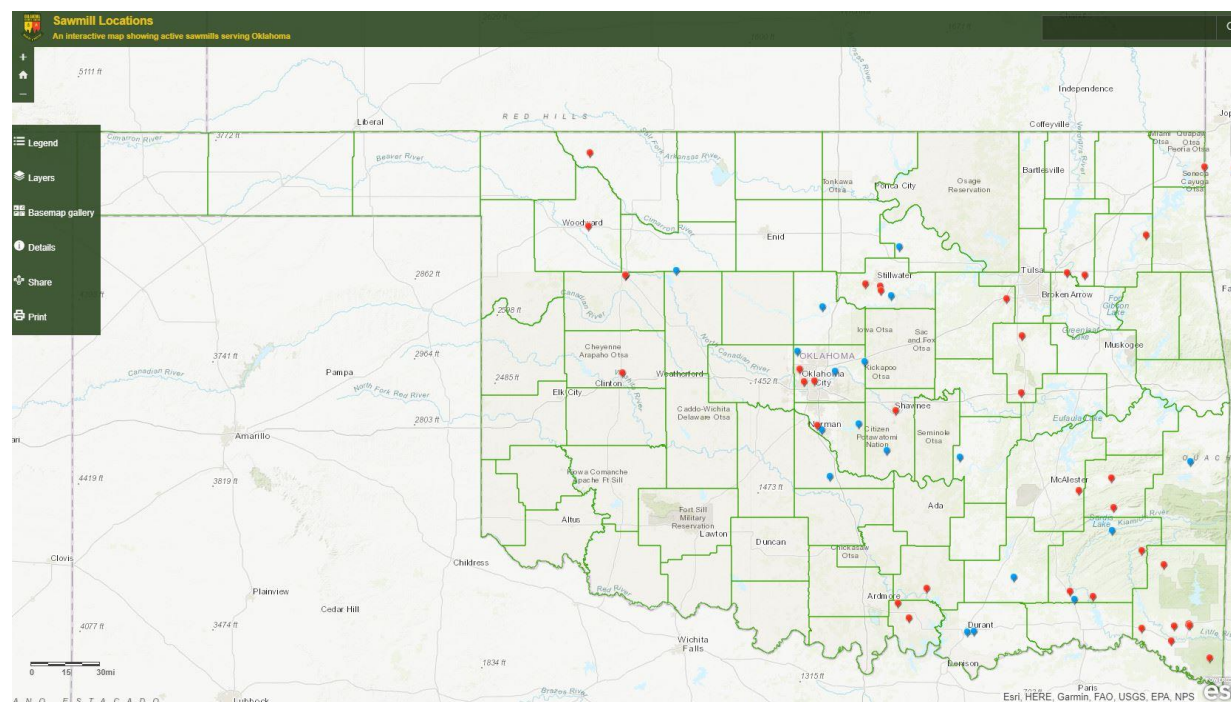


Figure 1: The Sawmills map for Oklahoma

Plant Disease and Diagnostics Lab:

Oklahoma State University runs a diagnostics lab allowing Oklahomans to send in samples of declining trees. Oklahoma Forestry Services works closely with this lab, commending it to landowners and receiving the results to monitor trends across the landscape. The most commonly detected pathogen over the past three years has been *Diplodia corticola*, a pathogen that responds well to drought conditions. A severe ice storm occurred in October of 2020 before trees lost their leaves which resulted in multiple breakages of limbs and twigs. It is hypothesized that the increased amount of exposed wood going into the heavy drought of 2021 and 2022 resulted in ideal conditions for this pathogen.

Most of the trees with *Diplodia* also had evidence of *Discula querina*, the pathogen causing anthracnose. What was different this year was that the pathogen was not frequently seen in leaf stage, instead quickly moving into the twigs causing small branches to die.

Tree mortality from weather conditions:

Drought in Oklahoma continues to be an issue that results in increased rates of secondary pests and pathogens. While the past two years have had less severe droughts, they remain a major stressor for Oklahoma's forests. Repeated droughts over the years have left the trees susceptible to secondary pests and pathogens such as those described previously.

Severe wind events are not uncommon in Oklahoma and cause frequent concerns for the trees. A few storms producing multiple tornados occurred in the spring of 2024. The most heavily impacted forested areas were around Sulphur, Oklahoma. The Chickasaw National Recreation Area was heavily impacted by these April storms, causing the park to close as cleanup occurred. Oklahoma Forestry Services assisted with the response by providing a tree risk assessment to determine the level of damage the trees sustained and recommend which needed pruning, removal, or would recover on their own.

Non-Native insects of concern

- ✚ Emerald Ash Borer
- ✚ Thousand Canker Disease (Walnut twig Beetle)
- ✚ Spongey Moth
- ✚ Asian Long-Horn Beetle
- ✚ Asian Gypsy Moth
- ✚ Mexican soapberry borer
- ✚ Spotted lanternfly

Increased education on forest health:

Oklahoma Forestry Services has put an increased emphasis on forest health education. OFS has used the initial detection of emerald ash borer and the increased public awareness to discuss the transportation of many of the forest pests listed above. Other causes of decline, such as drought induced mortality and overstocked forests have also been a focus when working with landowners, especially when in the Cross Timbers Forests of central Oklahoma.

Demonstration Areas:

Oklahoma Forestry Services have a couple formal demonstration areas scattered throughout the state. The one with the longest history of use is located on the Pushmataha Wildlife Management Area and has been used to demonstrate the effects of forest management in the forms of thinning and burn rotations. The area has multiple parcels of land with signage showing the outcome of different combinations of thinning and burn rotations allowing landowners to make more informed decisions on what practices they need to reach their end goals with the aid of visual representations.

The parcel of land behind the Broken Bow office in South East Oklahoma was established to demonstrate forest management. After ice storms in the early 2000's the area has become inundated with privet. OFS continues to work removing the established privet, preventing young shoots from reestablishing themselves, and utilizing the area to demonstrate invasive species management as well as sustainable forest management.



Figure 2: Management Chief Craig Marquardt pointing out signs of bark beetles at the Broken Bow Demonstration Area

The most recent demonstration area is at Turkey Mountain Urban Wilderness Area. Turkey Mountain is a forested park located in the Tulsa area. A few year ago the land was supposed to be developed. Public outcry saved the natural area and as a result the park was made. Continual support from the public has led to the area being selected for the Leave No Trace program. The community reached out to OFS for help with managing the forest as well as invasive species control. Management on the property began in the fall of 2021. Roughly 80 acres were treated for privet and other invasive species in 2023 and 50 acres were treated for fire risk mitigation, reducing fuel loads. A prescribed fire on 10 acres occurred in the Spring of 2023, bringing in multiple agencies, news teams, and local fire and police departments. The areas previously managed have been revisited in 2024 to remove resprouting privet that survived the first treatment and new areas are being evaluated for removal in 2025. A multiple-resource management plan, including burn plans, has been written for the entire property.

Forest Stewardship Program

There were 26 Stewardship Plans reported covering 8,107 acres and 47 Management Plans covering 6,882 acres, all of which included a section on Forest Health. Forest Health was discussed more in depth with the landowners while the plans were being written.

Oklahoma's Forest Statistics

✚ Of the 50 states, Oklahoma ranks 20th in size, with an area of 43,954,560 acres, over 800,000 acres of which are covered by water and approximately 12,000,000 acres are covered by forests.

Table 2: Eastern Oklahoma, Area of Timberland (productive forest land) by Ownership Group

Area of timberland by forest-type and ownership group, East Oklahoma, 2008						
Forest-type	All ownerships	U.S. Forest		State and local	Forest industry	Nonindustrial private
		Service	Other federal	government		
thousand acres						
Softwood types (Pines and other softwoods)	1096.8	159.2	51.1	28.9	350.6	507.0
Hardwood types (oak, elm, ash, hickory, etc.)	3971.0	98.3	244.0	135.2	214.8	3278.6
Nonstocked	35.3	0.0	1.4	0.0	2.9	31.0
All groups	5103.1	257.5	296.5	164.1	568.3	3816.6

Table 3: Oklahoma Forest and Paper Industry Employment and Annual Payroll Income

Oklahoma Wood-Related Sectors		
Sectors	Employment	Annual Payroll Income
Forestry & Logging	895	\$31,562,000
Wood Products	4,075	\$176,234,000
Pulp & Paper	2,943	\$205,063,000
Furniture	2,788	\$100,377,000
Total	10,701	\$513,236,000

Table 4: Economic Impacts of Oklahoma's privately-Owned Forests

Forestry-Related Industries	All Forests	Privately-owned Forests
Employment	7,982	7,902
Payrolls	\$300,343,142	\$297,339,710
Annual Sales	\$2,758,886,681	\$2,731,297,815
Contribution to the State GDP	\$1,068,876,000	\$1,058,187,240

Source: Forest2Market, National Alliance of Forest Owners, 2009.