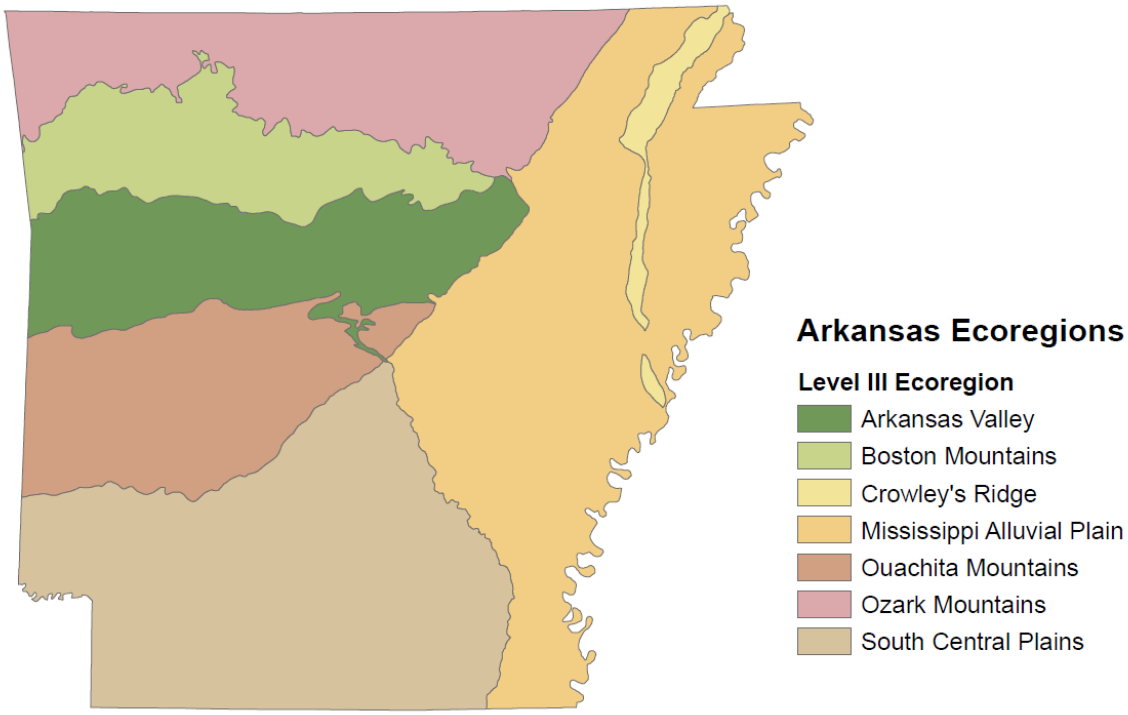
Arkansas

Forest Health Highlights for 2017

Forest Resource Introduction

Arkansas's forests cover 19 million acres, which is more than 56% percent of the state's land area. The majority of the state's forested land, some 13.1 million acres, is in non-industrial private ownership, while approximately 2.5 million acres is national forest. Scenic beauty is showcased in the Ozark, Boston, and Ouachita Mountain ranges. Tourism and outdoor recreation opportunities are plentiful within the state's diverse landscape. Major forest types in the state include oak-hickory, loblolly-shortleaf pine, oak-pine, and bottomland hardwood. Loblolly pine dominates the south central plains and it is the most abundant tree species by volume, and shortleaf pine follows second in statewide volume estimates. The most abundant hardwood species, listed in order of greatest volume, are white oak, sweetgum, post oak, northern red oak, black oak, and southern red oak. According to recent forest inventory estimates, volume growth is exceeding the volume harvested, and this is true for both hardwood and pine volumes. This fact makes Arkansas forests a prime resource for forest wood products.



Aerial Survey Summary

The Arkansas Forestry Commission (AFC) utilized the tablet-based Digital Mobile Sketch-Mapper in 2017 (a system delivered and supported by the Forest Service – Forest Health Assessment & Applied Sciences Team). With this convenient tool, the forest health specialist was able to record forest disturbance data during seven specific aerial surveys. Point and polygon data were easily mapped and shared. A new ability to record forest pests with a grid overlay (instead of drawing individual polygons) proved useful for widespread outbreaks such as Ips bark beetles and jumping oak gall that covered the landscape. AFC encourages the use of this system to document and map forest health disturbances.

Variable Oakleaf Caterpillar

A variable oakleaf caterpillar, *Lochmaeus manteo*, outbreak caused widespread defoliation in central Arkansas. Historically, this pest is a reoccurring nuisance in Arkansas. The last instance of heavy defoliation occurred in summer of 2013. The outbreak in 2017 took place during late summer and early fall months, and it was most noticeable on landscape and urban oak trees, especially in the city of Hot Springs. The observed defoliation is not expected to harm trees due to its late occurrence.

Common Walkingstick

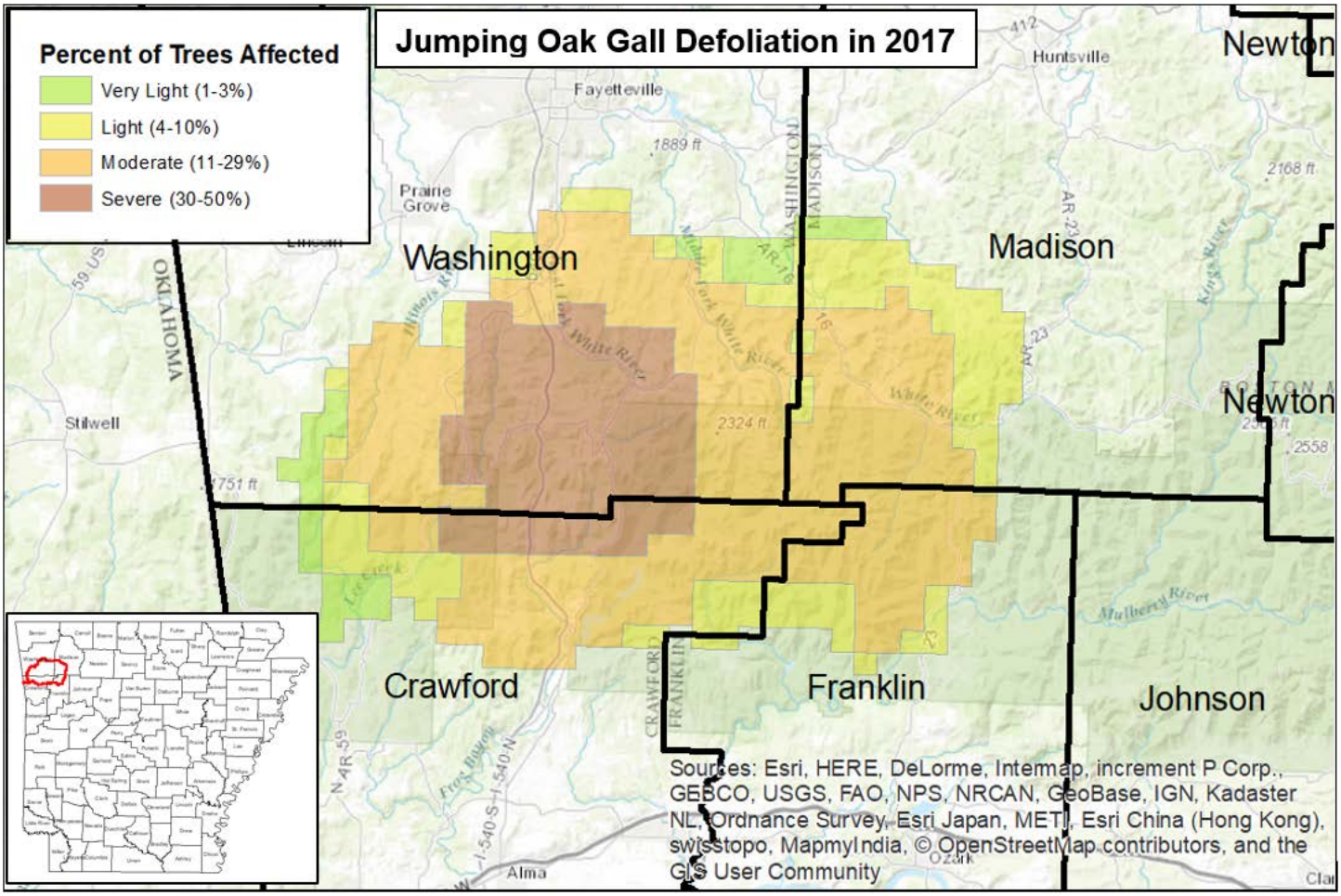
Walkingstick, *Diapheromera femorata,* defoliation was common in the Ozark Mountains, having increased in abundance from the previous year. Several areas were reported with heavy defoliation in September, including the area around White Rock Mountain in the Ozark National Forest and the Arkansas Grand Canyon south of Jasper. Population growth may be attributed to the warm and wet conditions in the previous winter.

Crape Myrtle Bark Scale

Though already well established in several Arkansas cities, the Crape Myrtle Bark Scale (CMBS) (*Eriococcus lagerstroemia*) received increased public attention. This felt scale insect caused much more noticeable black sooty mold than in previous years, which was especially true in Little Rock. Home and business owners took control matters into their own hands under the guidance of extension and horticulture specialists. The typical control strategy included applications of horticultural oil and soil-drenched systemic insecticide. In some cases, the affected crape myrtles were simply removed.

Jumping Oak Gall on White Oak

An outbreak of jumping oak gall, *Neuroterus* sp., occurred throughout much of the Ozark and Boston Mountains. The tiny wasp created pine hole sized galls on the underside of white oak leaves. This insect is normally not considered a pest; however, the unusual abundance of the galls warrant concern. This landscape scale outbreak was also observed in 2015. The galls fully develop in May and symptoms are clearly visible in June. White oaks with brown foliage were noticeable from major roadways and many suffered heavy defoliation. An aerial survey was used to assess the severity of damages in the area south of Fayetteville. In this survey, a total of 691,155 acres contained discolored and defoliated white oaks. However, jumping oak gall was observable to some degree throughout nearly all of the Boston and Ozark Mountains extending into Missouri.



Gypsy Moth Survey

A gypsy moth detection program in Arkansas is a multi-agency effort led by the Arkansas State Plant Board (ASPB). The Arkansas Forestry Commission assisted in 2017 by placing 296 traps (approximately 4 traps per county). Nearly 5,000 traps were placed by all agencies combined. No gypsy moth suspects were captured in AFC traps. However, a suspect moth was trapped in ASPB traps, and additional trapping will occur around this location over the next two years to make sure that a population of gypsy moths has not established.

Southern Pine Beetle (SPB) Survey

A major outbreak of SPB has not occurred in Arkansas or the states west of the Mississippi for nearly two decades. In AR, trap catches trailed off around 2005 and now annual traps rarely have a positive catch. In 2017, the annual SPB survey included 18 traps spread across nine counties. The traps were baited with the aggregation pheromone frontalin, a monoterpenes solution, and a new addition for 2017, a long-ranged attractant called endobrevicomin. Two SPB were captured in Ashley County, which does not come as a total surprise given the new lure and proximity to eastern Louisiana where SPB is still captured.

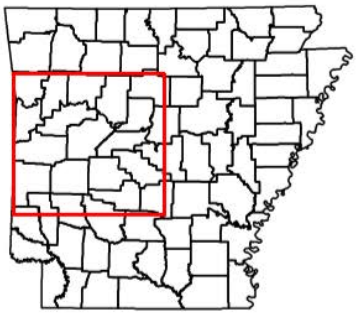
Preparation for future SPB outbreaks is important to the strategic plan of AFC. As such, AFC's aerial survey methods are being modernized to hasten the detection and monitoring of outbreaks, which will lead to faster alerts to both private and public landowners. Communication between AR state agencies and neighboring states will be essential when SPB activity increases. The Forest Health Specialist visited Mississippi on two occasions in 2017 with AFC personnel and specialists from Forest Service – Forest Health Protection to witness the severe SPB outbreaks on Mississippi national forests. The groups observed ground-truthing and cut-and-leave harvesting methods used to lessen the impact.

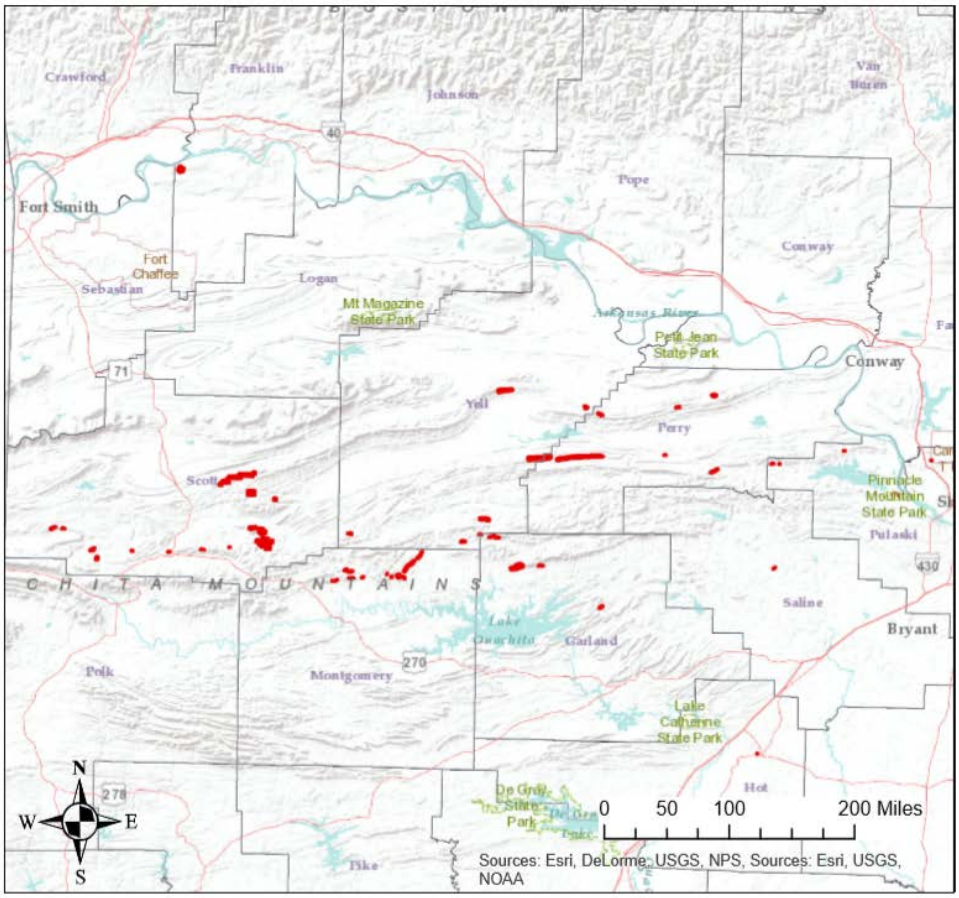
Ips Pine Engraver Beetles

Ips pine engraver beetle damage was minimal in 2017, though some activity could be found in the Ouachita Mountains. The last instance of landscape scale damages occurred after a period of drought in 2015, where the beetles contributed to loblolly pine mortality in southwestern Arkansas near DeQueen Lake. Ips abundance declined in 2016 as regular rainfall improved the growing condition for drought stressed pines. The 2017 damages were limited to ridgetops and a few areas that received prescribed fire in the Ouachita Mountains. The losses were scattered throughout the affected forests, and, generally, the 11,415 acres mapped had experienced less than ten percent mortality. The locations of these small outbreaks are displayed in the following map.

Ips Bark Beetle Activity in the Ouachita Mountain Range in 2017

ARKANSAS FORESTRY COMMISSION

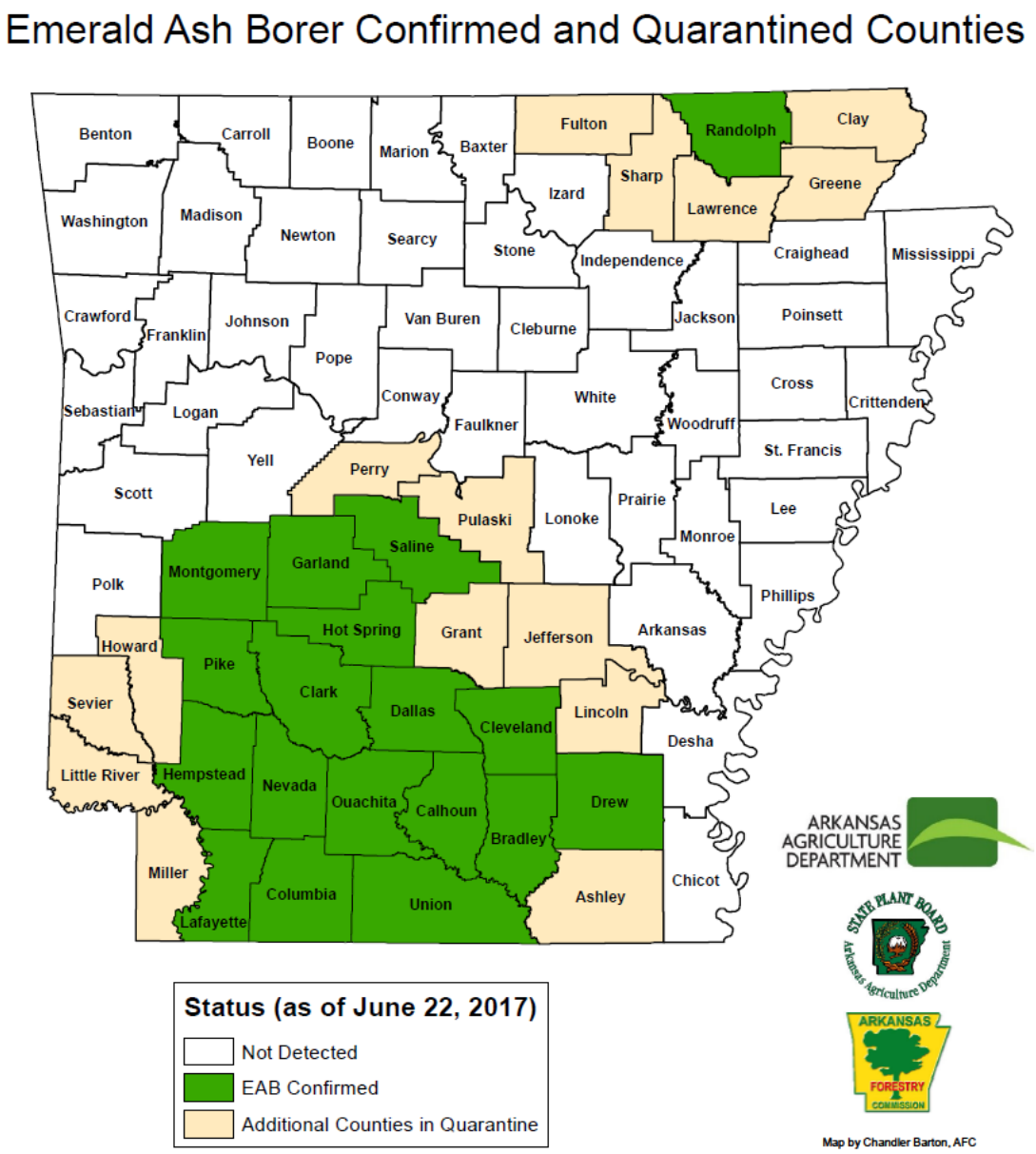




Emerald Ash Borer

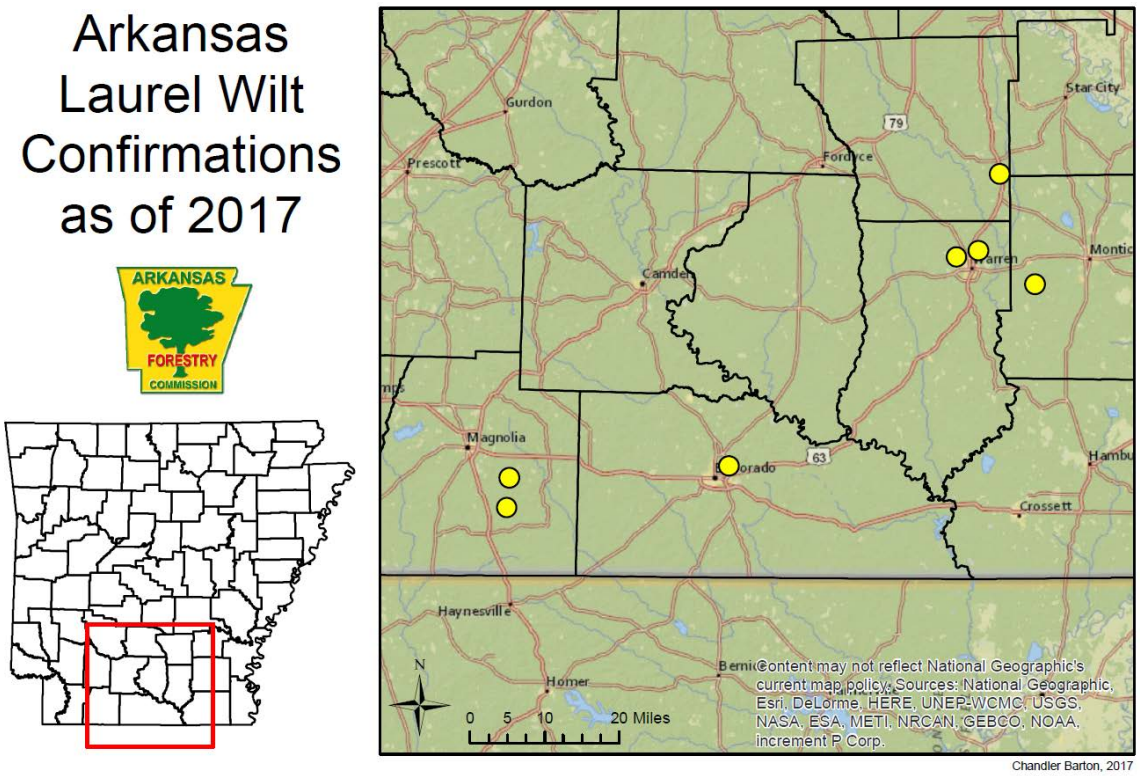
Four new counties were confirmed in 2017, bringing the total to 18 counties in Arkansas. None of the new counties were outside of the established quarantine area, as such, a determination to expand the quarantine was delayed until 2018. In Arkansas the quarantine region is established by the Arkansas State Plant Board (ASPB) and the Animal & Plant Health Inspection Service – Plant Protection & Quarantine (APHIS-PPQ). The choice to include buffer counties in the quarantine was made based on evidence in other states that the beetle is present years before an initial detection.

While the ASPB and APHIS-PPQ are responsible for confirmation and quarantine regulation, multiple agencies are assisting with the detection and monitoring of EAB. AFC investigates reported sightings across the state and uses traps and visual surveys within the quarantined region. University of Arkansas Extension Service also investigates trees reported by landowners, and they provide various outreach efforts across the state. Monitoring and research is conducted by the University of Arkansas Monticello, and their efforts will reveal more information about EAB dispersal and biology in southern states. For example, Arkansas research is affirming that EAB is not capable of multiple generations per year in Arkansas, and a period of winter inactivity may be required for development.



Redbay Ambrosia Beetle and Laurel Wilt Disease

Laurel wilt disease (LWD) was discovered in Arkansas in December of 2015 on symptomatic sassafras trees. The beetle that transmits the fungus, redbay ambrosia beetle (RAB) (*Xyleborus glabratus*), was also identified. First confirmed near Savannah, GA in 2002, LWD and RAB have spread and killed redbay trees across most of their natural range in the United States. Redbay trees are rare in Arkansas, but sassafras is a suitable host for the invasive disease and beetle. Sassafras is infrequent in southern Arkansas (statewide, it makes up less than one percent of tree volume in size classes greater than five inches), however it is common in the Ozark Mountains of northern Arkansas and Missouri. According to Forest Inventory and Analysis estimates, seedling and sapling size sassafras is more abundant in the Ozark highlands than anywhere else in the country. LWD has been confirmed in five Arkansas counties.



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The mission of the Arkansas Forestry Commission is to protect Arkansas's forests, and those who enjoy them, from wildland fire and natural hazards while promoting rural and urban forest health, stewardship, development, and conservation for all generations of Arkansans. To report wildfires, call 1-800-468-8834. To report prescribed burns, call 1-800-830-8015. For more information about the Arkansas Forestry Commission, visit www.forestry.arkansas.gov.