



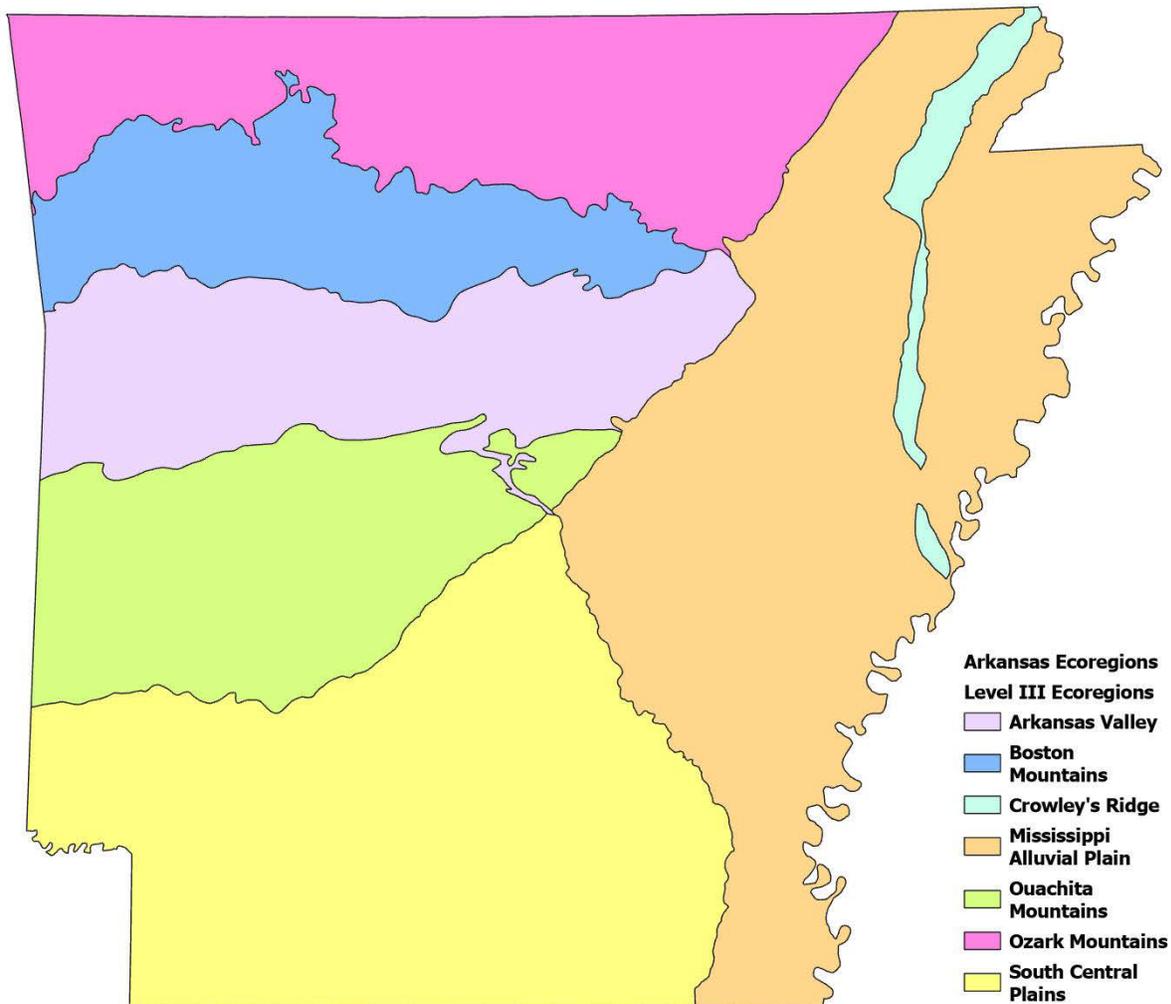
ARKANSAS DEPARTMENT OF AGRICULTURE FORESTRY DIVISION

FOREST HEALTH HIGHLIGHTS FOR 2024

The Arkansas Department of Agriculture – Forestry Division (hereafter simply the Forestry Division) assists private landowners with forest management decisions. Forestry Division field personnel make forest health recommendations and can respond to reports of tree mortality caused by forest disturbances, such as insects and diseases. This report briefly summarizes the forest disturbances and damage agents in Arkansas that were identified during the 2024 calendar year.

Forest Resource Introduction

Arkansas's forests cover 19 million acres, which is approximately 56% percent of the state's land area. Most 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. Major forest types in the state include oak-hickory, loblolly-shortleaf pine, oak-pine, and bottomland hardwood. This report will reference the Level III Ecoregions shown in the map below. Loblolly pine dominates the South-Central Plains ecoregion, and it is the most abundant tree species by volume, and shortleaf pine follows second in statewide volume estimates. Shortleaf pine is abundant in the Ouachita Mountains. 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.



Pine Needle Blight and Mortality Events in Southeastern Arkansas

During 2023, Forestry Division conducted aerial surveys in southeastern Arkansas. In addition to these aerial surveys, on-the-ground observations helped confirm 6,835 acres of tracts with severe discoloration, i.e., most pine trees and their needles were brown. However, the total number of acres that were discolored was believed to be much greater. In 2024, similar symptomology was observed across the same area. Some pine mortality occurred on stands with severe defoliation, particularly in Chicot County. Of note, a large majority of the affected area recovered, and new leaves replaced those that were browned and defoliated.

In cases where severe discoloration occurred and trees recovered, the symptoms were attributed to the needle blight fungi. Through an evolving sampling process, the Forestry Division and contributing partners concluded that potential underlying factors included weather patterns, tree genetics, and site conditions. In addition, contributing factors included needle diseases, insect pests, and/or herbicides.

In 2024, efforts were made again to better understand the widespread browning of pine needles in the southeastern Arkansas. A sampling study was implemented, with assistance from the Plant Industries Division. Symptomatic properties were identified through various means, i.e., private landowners, forestry professionals, industry land, etc. Trees were selected that had symptomology representative of the stand and then felled to allow easy collection of leaves from all sections of the crown. Additionally, trees were selected from within the stand, not on the edges of the properties. These samples were mailed to both Mississippi State University Chemical Laboratory and the U.S. Forest Service Laboratory in Pineville, LA for diagnostic testing. Mississippi State ran testing for chemical residue presence of two compounds, paraquat and dicamba. USFS testing was for presence of brown spot needle blight (BSNB).

The first round of sampling, collected primarily in April through May of 2024, tested for both chemical compounds and BSNB. Of these 28 samples (26 for BSNB), 13 (46%) were positive for paraquat and 7 (25%) positive for dicamba. Of those, two samples tested positive for both paraquat and dicamba. BSNB tests resulted in 12 of 26 (46%) samples testing positive.

On-site visual observations were made in mid-2024 for stand recovery, and positive stand recovery was recorded at every sampling site.

A final round of sampling was conducted in September 2024, coinciding with late-year burndown applications of paraquat. Since all sampled trees appeared green and healthy, BSNB testing was omitted from this round, with chemical residue of paraquat and dicamba being the only testing conducted. Results from this final round of sampling yielded 16 detections of the 24 (67%) remaining sampling sites. Dicamba testing yielded no positive results in all 24 samples.

In conclusion, the predominant issue in this area is believed to be needle blight fungi, but the sampling efforts have also identified the presence of herbicides on pine trees during two periods of the year. It is not known if the presence of these chemicals caused harm to the trees or what levels of contact may cause discoloration or mortality. Most sampled stands recovered to a healthy appearance with minor instances of mortality.



Pine mortality observed in mid-2024, Arkansas County. Photo Credit: D. Blythe

Southern Pine Beetle (SPB) Survey Update

An outbreak of SPB has not occurred in Arkansas or the states west of the Mississippi for over two decades. The Forestry Division uses pheromone traps to detect any increases in SPB abundance, but spring trap catches of SPB have been negligible since 2005. Eighteen traps were set in 2024 in the South Central Plains. The abundance of SPB in those traps continued to be low and no infestations were found.

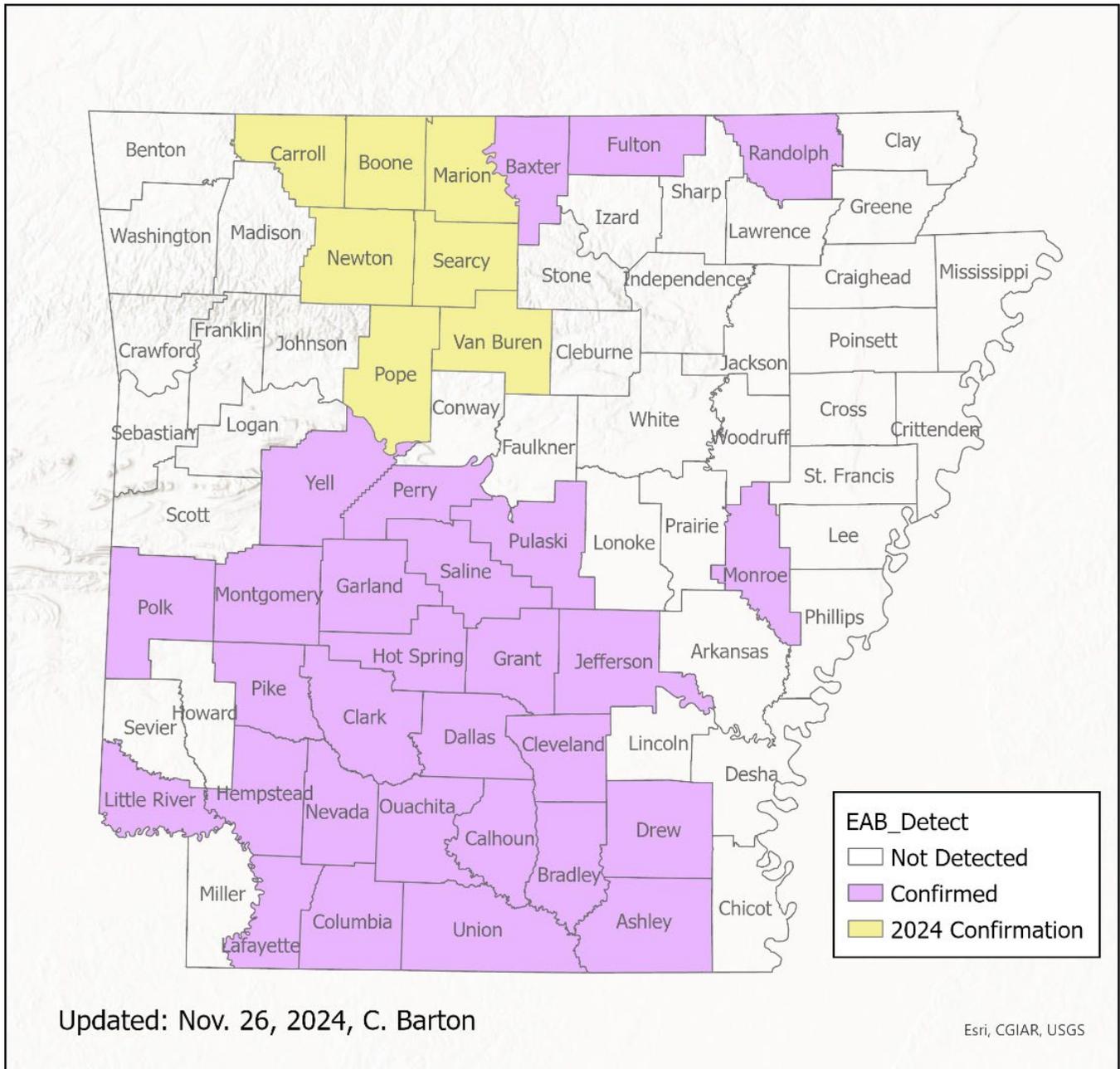
Southern Pine Beetle Prevention Program

The best defense against any future SPB outbreaks is a more resilient forest structure. The Southern Pine Beetle Prevention Program continues to offer monetary incentives to landowners who thin overly dense pine forests. Landowners can apply for the program through local Forestry Division offices. The program currently offers incentives for first commercial thinning, non-commercial thinning, prescribed burns, and in-woods chipping. Logger incentives are also available for thinning harvests on tracts less than 40 acres.

Emerald Ash Borer (EAB) Update

Seven new counties were confirmed in 2024. Ash mortality has stretched into north Arkansas, and the most northwestern counties are expected to soon follow. Damage to ash is apparent throughout the Ozarks National Forest. The Forestry Division investigated reported sightings across the state. After EAB was deregulated in 2021, the Forestry Division is working with Arkansas APHIS-PPQ to make initial county-level confirmations in place of the traditional USDA diagnostic process for regulated pests.

Counties With EAB Confirmed



Walnut Twig Beetle (Thousand Cankers Disease) Trapping

Walnut Twig Beetle (*Pityophthorus juglandis*) is a vector for the fungus *Geosmithia morbida*. This fungus causes cankers to form beneath the bark, which can cause nutrient flow disruption, branch dieback, and mortality. *P. juglandis* has long been a west coast pest, but an outbreak detected in Tennessee in 2010 introduced the pest eastward. Several different species of *Juglans spp.* are affected by this beetle, but the primary host is black walnut (*J. nigra*).

Forest health and county personnel conducted a 4-week trapping study in October focused in the northern area of Arkansas. Stands were identified for presence of black walnut, and traps were placed accordingly. A total of 16 traps were placed, with 12 of the traps being standard “wet” traps, collecting insects using antifreeze. A selection of 4 traps were used for “dry” trapping, in an attempt to catch beetles that would remain viable for a fungal growth study with the University of Arkansas – Monticello. Unfortunately, the dry trapping method used proved to be unfruitful, and no Scolytidae beetles were captured. Trap catch was brought to Little Rock for analyzing, where no suspect beetles were found. This trapping survey will be repeated in summer of 2025.

Defoliators

In 2023, basswood leafminer (*Baliosus nervosus*) was observed on oak species in the Felsenthal National Wildlife Refuge, a 76,000 acre public property in southeastern Arkansas. Unexpectedly, the defoliator made a return in the same area in June and July 2024. Field visits were conducted to landowners in the surrounding area, and a flight mapping the extent of the damage in Felsenthal NWR was conducted in July.

Following the same pattern as last year, afflicted trees suffered from leaf skeletonization and a brown or scorched appearance. No mortality as a direct result of basswood leafminer was observed, and most trees returned to their normal aesthetic following a late season flush of new leaf growth. Forestry personnel in the area will continue to monitor the presence of this insect moving forward.



Basswood Leafminer (*Baliosus nervosus*) on an oak leaf. Photo Credit: D. Blythe.



Defoliation by basswood leafminer, the larger patch of brown is caused by the larval stage. Photo credit: C. Barton.

UA-Monticello Forest Health Education

The University of Arkansas at Monticello (UAM) broke ground on a new research facility, the Arkansas Forest Health Research Center. This facility, set to open in 2026, will be dedicated to addressing threats to Arkansas forest health, such as invasive pests, diseases, and climate stressors.

Once operational, it is expected to significantly enhance forest health research, testing, and workforce development, contributing an estimated \$150 million annually to the state's economy.



An artist rendering of the Arkansas Forest Health Research Center, expected to be completed in 2026.

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The Arkansas Department of Agriculture is dedicated to the development and implementation of policies and programs for Arkansas agriculture and forestry to keep its Farmers and Ranchers competitive in national and international markets while ensuring safe food, fiber, and forest products for the citizens of the state and nation.

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