



Photo courtesy of the USDA Forest Service

## In This Issue

2 Woods Updates

3 From Smokey to  
Science: Fire  
Management in  
Missouri

4 Featured Species

5 Forest Bulletin:  
Trees, Heat, and  
Human Health

6 Take a Hike!

7 Events  
New Members

8 Forestkeepers  
Conference

## From Smokey to Science: Fire Management in Missouri

By Ellen Sulser, Forest ReLeaf Engagement and Volunteer Manager

In the heartland of America, Missouri's woodlands whisper tales of change. For over 80 years, the iconic Smokey Bear has cautioned us with a stern finger and a steadfast gaze, "Only YOU can prevent forest fires." But as our understanding of ecological balance evolves, we're learning that fire isn't just a force to combat—it's a tool to wield.

Missouri's landscapes were once sculpted by flames. Lightning strikes and traditional Native American practices set the stage for a biodiverse theater of prairies, savannas, and woodlands. Fire was the maestro, orchestrating a symphony of growth and renewal. This regime was essential in maintaining woodland glades and enriching our native prairies. But as we sought to protect our properties, we muffled the natural rhythms, leading to overgrown vegetation and a dissonance in our ecosystems.

The "Smokey Bear" campaign, launched in 1944, was a wildfire prevention crusade that swept the nation. It was a response to a time when firefighters were scarce, and the fear of forest fires was as rampant as the fires themselves. Then, in 1950, when a black bear cub was rescued from a burning forest in New Mexico, he was named Smokey and sent to Washington, D.C., where he lived at the National Zoo.

*Continued on page 3*



# Woods Updates



## MDC and Fire Suppression

Smokey has plenty of help in Missouri from MDC and volunteer fire departments. MDC provides grants and surplus federal equipment to volunteer fire departments in rural areas. In the just-completed fiscal year (which ran from July 1, 2023 through June 30, 2024) MDC awarded grants to 113 rural fire departments totaling \$591,111.93 for safety and firefighting gear. The U.S. Forest Service also assisted with many of these grants.

Learn more at:  
<https://mdc.mo.gov/your-property/fire-management>

## Risks of Wildfire

According to MDC, wildfires damage 30,000 to 90,000 acres of Missouri forests every year. Many of these fires are not the result of natural causes. In fact, careless trash burners accidentally start 37 percent of the fires, and arsonists deliberately set 4 percent of the wildfires in Missouri.

Our wildfire season in Missouri tends to be in the spring (and in the fall) when dead vegetation, low humidity, and strong winds are most common. Weather conditions like drought can increase both the risk and the intensity of an ignited burn.



## Missouri Prescribed Fire Council

The Missouri Prescribed Fire Council promotes and protects the responsible use of prescribed fire as a natural resource management tool in Missouri. The “landowner helping landowner” design, not only guarantees enough help on the fire line, but also encourages the sharing of knowledge and camaraderie within the local community. In addition to providing information about best management practices, the group encourages landowners to log their prescribed burn to help move forward our understanding of the safety statistics of prescribed fire.

*Photo courtesy of Jason Pratt*



## From Smokey to Science: Fire Management in Missouri (cont.)

Smokey's message was clear and effective, leading to a significant decline in human-caused wildfires. According to the Smithsonian, in the twenty years after the campaign was launched, the average number of annual wildfires in the United States decreased by over 40,000. By 2011, the average number of acres burned by wildfire each year had dropped from 22 million in 1944 to just 6.6 million. However, this suppression-only approach had unintended consequences for our woodlands. Areas where fires have been prevented for decades have simply been storing "fuel," like underbrush growth and dead standing trees.

Moreover, the lack of fire in our woodlands has shifted the successional pattern of our forested species. When a woodland burns, not only does it bring sunlight to an environment by opening gaps in the tree canopy, but it also prevents the dominance of one species, stimulates the growth of diverse ground vegetation, and filters and sorts species according to light and fire tolerance. With the absence of fire, natural communities have degraded as fire-intolerant plants displace fire-adapted plants. Nowhere is this clearer than in our woodland glades where, if left unchecked, successional species like red cedar will overgrow the natural wildflower and prairie communities, converting this unique habitat type into a covered woodland.

Today, we're stoking the flames of knowledge and embracing prescribed burns as a vital component of our woodland management toolkit. These controlled fires reduce the risk of catastrophic wildfires, recycle nutrients back into the soil, and help fire-adapted species thrive. It's a renaissance of resilience, where fire-intolerant plants step aside, making room for a resurgence of native flora and fauna.

In Missouri, we're not just playing with fire; we're working with detailed burn plans and trained professionals. Prescribed burns are carefully choreographed to ensure the safety of property and people while rejuvenating our landscapes. The Missouri Department of Conservation and other organizations are actively using fire as a management tool for up to 100,000 acres annually, if conditions allow, to maintain the health of our ecosystems. The Conservation Department continually works with landowners to train them on the safe and effective use of prescribed fire through workshops conducted periodically in all parts of the state.

As we look to the future, we see the potential for fire to be both friend and ally. We've come a long way from the days of Smokey, and while his message still holds true—preventing unwanted fires—it's now joined by a chorus that sings the praises of fire management. Government policy has evolved to include the targeted use of controlled burns—"good burning"—in hopes of preventing larger, unplanned fires. And Smokey's official motto changed subtly in 2001 to reflect this. Now he says, "Only you can prevent wildfires"—the idea being that forest fires can be controlled, but wildfires can't.

So, let's tip our hats to Smokey and welcome the new age of fire stewardship, where we use flames in responsible forest management to forge a more vibrant and diverse Missouri.



On August 9th, Smokey Bear celebrates his 80th Anniversary as a symbol of fire protection and prevention for the USDA Forest Service. While the party started with the bear's appearance in the Rose Bowl Parade, events across the country will feature Smokey appearances. An art exhibit featuring iconic posters passed through Springfield in July, and the bear himself made appearances at the Ozark Empire Fair as well as other regional events. Traditionally, the 80th anniversary is associated with the oak tree—a lasting symbol of enduring faithfulness and commitment to growth. Fitting for one of our fiercest forest protectors!



## Featured Species

# Shortleaf Pine

*Pinus echinata*

*Adapted from "Fire Ecology of Shortleaf Forests" by Bill Pickens, Conifer Silviculturist, North Carolina Forest Service.*

Once common throughout the Ozarks in southern Missouri, shortleaf pine and its associated plant communities evolved with fire of varied temperatures and a fire return interval of 2–18 years. Periodic occurrences of fire provide shortleaf a growth advantage; a competitive edge that allows it to both establish and maintain a place in the canopy.

Seedlings and saplings top-killed by fire sprout from reproductive buds located in the basal crook, a unique root feature of shortleaf. The basal crook is positioned at or slightly below the soil where cooler temperatures and insulating properties of the duff layer protects the buds from the heat of a fire. This allows trees to regrow faster compared to other species. On larger trees, the thick platy bark protects the tree's cambium tissues from fire injury, and the abundant seed crops and persistent cones that allows populations to recover after a fire passes through. While pines are often depicted as fuel sources, the shortleaf pine has low needle flammability and doesn't produce large quantities of resin.

Commercially, shortleaf pine has a long history as a valued timber commodity. Missouri's shortleaf pine forests fueled ozark sawmills from 1880-1920, supporting towns like Winona, Bunker and West Eminence. The wood was in demand for use general construction, exterior and interior finishing, and pulpwood. Teas made from pines were once used to treat many ailments.

Extensive logging from 1890 to 1920 devastated the pine woodlands of Missouri. Oaks have since spread into the former pinelands, changing the composition of the forests. Today, some scattered pine populations, mostly on public lands, are being managed to preserve the natural character. Prescribed burns, as well as seedlings grown at the MDC George O White State nursery are a huge driver and contributor towards these efforts.



## Q&A

### How do I tell between shortleaf and longleaf pines?

In addition to up to a 4" difference in the pine needle's length, the two species have distinct barks.

Shortleaf pine's bark is fissured into large, irregularly arranged plates, with a somewhat shaggy and overlapping appearance. It also has resin pockets, small circular pitch or indentations along the surface.



**Did you know:** Shortleaf pine seed has an incredible shelf life- even seed collected at George O. White State nursery over 40 years ago remains viable today.



# FOREST BULLETIN



*Photo courtesy of Flickr user NC in DC*

5

## **Trees: Keeping It Cool in the Heat**

*By Glore Ruiz, Forest ReLeaf Engagement and Volunteer Manager*

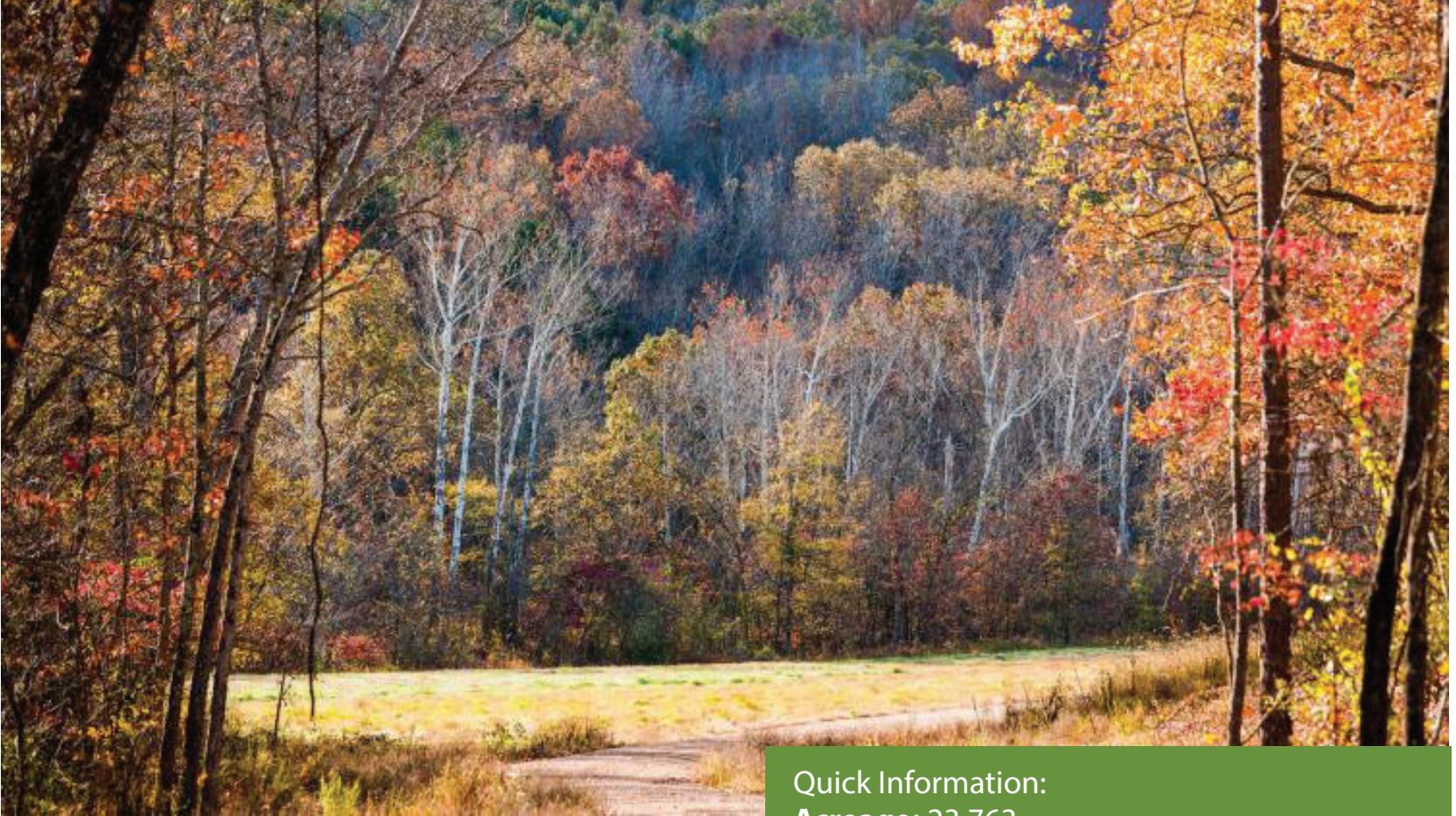
In the rising summer heat, animals of every size find themselves rejoicing in the shade of a tree. The sun's warm rays can quickly go from pleasant to lethal as the summer gets in full swing. Heat related illnesses such as, severe dehydration, severe sunburn, heat exhaustion and heat stroke, can become serious threats without sufficient hydration and UV light protection. Trees are particularly wonderful for mitigating excessive heat because of their canopy; their branches and leaves create shade and UV protection that can lower the temperature up to fifteen degrees. Urban environments tend to have higher risk due to the high concrete densities and lower amounts of trees and green spaces. Concrete absorbs and stores heat so effectively that spaces with concrete will get hotter in the day and hold on to that heat at night.

This phenomenon, called the urban heat island effect, can be mitigated with the addition of greenery in the largely gray, concrete spaces. This landscape difference could potentially protect at-risk residents from severe sunburn or reaching heat exhaustion or heat stroke. However cities are not the only places that need to combat extreme heat. Even in rural landscapes outdoor work or hiking would be safer and more pleasant with the company of some trees. "Heat-related deaths have been increasing in the U.S., with approximately 1,602 occurring in 2021, 1,722 in 2022, and 2,302 in 2023" (HHS). Climate patterns have shown hot places getting hotter and the resulting heat-related illnesses have risen alongside the temperatures. In 2022, twenty-three Missourians died due to heat related illnesses (HSS).

A tree-lined street or neighborhood park space with mature trees could prevent some of these cases by providing a place to cool down a bit while still outdoors. People who don't have reliable shelter, work outdoors, or rely on a walking commute would not be as at risk from summer heat, and the risk of heat illnesses could be notably lessened. As Missourians try to ensure they stay cool on hot summer days, we rejoice not only in the trees we benefit from now but the small trees we plant each fall and spring. The trees we plant may not immediately give shade but the act of planting that tree for future generations to enjoy is a powerful act of hope. And in 10 or 20 years the same walk will be a much cooler place to walk or rest on hot summer days.



# Take a Hike!



*Photo courtesy of MDC*

## Quick Information:

**Acreage:** 23,763

**County:** Northwest Carter County and eastern Shannon County

**Owner:** Missouri Dept. of Conservation

**Directions:** From Winona, take Route H east 5 miles, then continue east on gravel 7 miles to the area in Carter County.

## Peck Ranch Conservation Area *A Fire Management Success Story*

Originally acquired in 1952 for a turkey restoration project, the Peck Ranch Conservation Area features an incredible range of habitat types from old-growth forest in the bottomlands to open glades on the hilltops and woodlands of various successional stages all within a relatively close proximity. MDC has been using prescribed burns as a management tool to protect delicate glade ecosystems from encroachment and encourage robust habitat growth since 1994. In fact, the Peck Ranch Conservation Area was one of the first sites for landscape-sized prescribed burns on the state's diverse terrain. A prescribed fire of this size mimics the area's historic fire pattern and reestablishes the habitats those fires created and maintained. These management practices have resulted in plenty of publications and research on the role and impact of fire on wildlife and restoration efforts in the Ozarks.

Landscape burns helped boost wild turkey populations and other wildlife by thinning forest understory and maintaining the region's characteristic interspersed glades and woodlands. These burns have also been instrumental in the successful restoration of the eastern collared lizard to the area, an indication of just how powerful prescribed burns can be as a tool in habitat restoration.

Candace Davis, former Media Specialist at MDC, put it best; "A visit to Peck Ranch Conservation Area is more than a jaunt on a trail or a quick reconnection to nature. It's a living history lesson in the progress Missouri has made on its promise to protect and manage our state's wildlife."



## Featured Events

### MU Extension Forest and Wildlife Management Workshop

Saturday, September 7th, 8:30 am- 12:30 pm

**Location:** Bill and Margie Haag Property, Portland MO

Participants will learn effective land management strategies for wildlife, sustainable harvesting practices, and how to use prescribed fire to manage different landscapes. Professionals from MDC, the University of Missouri Extension, and Consulting Foresters will be available to answer questions and provide insight on different management practices.

The event is free to the public and lunch is provided. Registration is required and will close Monday, September 2 at 5:00 pm. For questions about the event please contact Brian Schweiss at [schweissb@missouri.edu](mailto:schweissb@missouri.edu) or (573) 882-4775 or Tom Westhoff at [westhoff@windstream.net](mailto:westhoff@windstream.net) or (573) 289-0242.

### Prescribed Burn Workshops

Saturday, September 21st, 9:00 am- 12:30 pm at Schell-Osage Conservation Area

Thursday, September 26th, 1:00 pm -4:00 pm at Carlton House in the Poosey Conservation Area

Prescribed burning can be a valuable tool for managing native plant diversity and controlling undesirable vegetation, but it can be dangerous and ineffective when not used properly. This workshop will provide basic information about how to plan and execute a prescribed burn for grassland management.

Upon registration, participants will be emailed a link to the virtual/online portion of the prescribed burn course. Registrants will need to successfully complete the online course and quiz to attend the field day event. Please bring your certificate of completion and mileage record.

### MU Center for Agroforestry's Chestnut Roast Festival

Saturday, October 19th, 2024, 10:00 am- 3:00pm

**Location:** MU Horticulture and Agroforestry Research Farm, 10 Research Center Road, New Franklin, MO 65274

Returning after a brief hiatus in 2023, this fall festival is a both celebration of perennial agriculture in the lower midwest and a chance to sample the fruits of agroforestry in our region and beyond. This year, the event will feature vendors, exhibitors, presenters, and hands-on demonstrations that highlight tree crops and agroforestry in all its forms. **Learn more at: <https://centerforagroforestry.org/annual-field-days/>**



**Got a community planting project in mind? Apply for free trees for public space at [moreleaf.org/projectcommunitree](https://moreleaf.org/projectcommunitree)**

## Welcome Members!

Jerry Aldon  
Chelsey Aragon  
Krystyn Baker  
Sueanne Cmheil-Warn  
Hunter Davidson  
Victoria Dudgeon  
Sarah Faggetti  
Ben Gazall  
Steven Gee  
Shauna Gholston  
Teresa Hireman  
Amber Turnbough  
Casey Villanueva  
Kacy Wells  
Michael Wilkinson  
Danica Wiser

The Leaflet is produced by the Missouri Forestkeepers Network in partnership with the Missouri Department of Conservation and Forest ReLeaf.

#### EDITORS

Ellen Sulser

#### CONTRIBUTORS

Ellen Sulser

Glore Ruiz

#### CONTACT

314-533-5323

[forestkeepers.org](https://forestkeepers.org)



## Want to help start the forest of the future?

*Collect seed for the George O White State nursery! Visit [forestkeepers.org](http://forestkeepers.org) for a collection guide, or visit MDC's site for information about open seed collection stations and buying prices.*

### The following species will be accepted beginning:

**July 31st:**

Elderberry

**August 14th:**

Vernal witchhazel

**August 28th:**

Spicebush

Hazelnut

**September 11th:**

Flowering Dogwood

Gray dogwood

Roughleaf dogwood

Mixed hickory

Shellbark hickory

Persimmon

Redbud

Paw Paw

**Sept. 25:**

White oak

Chinkapin oak

Post oak

Butternut

Ohio buckeye

Red buckeye

Eastern wahoo

**Oct. 2:**

Black oak

Shumard oak

Northern red oak

Bur oak

Pin Oak

Cherrybark oak

Nuttall Oak

Swamp white oak

Swap Chestnut oak

Overcup oak

Willow oak

Anyone interested in collecting seeds and has questions is encouraged to contact the George O. White State Nursery at 573-674-3229 or email Nursery Manager Mike Fiaoni at [Michael.Fiaoni@mdc.mo.gov](mailto:Michael.Fiaoni@mdc.mo.gov).