

2021 NATIONAL PRESCRIBED FIRE USE SURVEY REPORT



Technical Report 01-22

Prepared by the Coalition of Prescribed Fire Councils and the National Association of State Foresters based on a survey of prescribed fire use data collected in 2020.



NATIONAL ASSOCIATION OF **STATE FORESTERS**

Since its start in 1920, the National Association of State Foresters (NASF) has served as a leading authority on forest management in the United States. NASF's members are the primary delivery system for forest management activities nationwide. They conserve, enhance, and protect state and private forests, which encompass nearly two-thirds of the nation's forests, and are responsible for wildfire protection on more than 1.5 billion acres. Learn more at www.stateforesters.org.



COALITION OF **PRESCRIBED FIRE COUNCILS, INC.**

The mission of the Coalition of Prescribed Fire Councils (CPFC) is to promote the appropriate use of prescribed fire for enhancing public safety, managing resources, and sustaining environment quality.

The coalition acts on behalf of state prescribed fire councils and four organization. Together, its members work to better meet the challenges of wildland fire in an increasingly development-focused landscape. Learn more at www.prescribedfire.net.

Author:

Mark A. Melvin

Acknowledgements:

Special appreciation is given to all 50 state forestry agencies, the U.S. Department of Agriculture, and the U.S. Department of the Interior for providing the data used in this report. Without their participation, this report would not be possible. Thanks is also owed to the Jones Center at Ichauway for its continued support; Jean Brock for GIS support; Lisa Giencke for data analysis, graphics, and editorial support; and Jessica McCorvey for technical support and report layout.

Executive Summary

The National Association of State Foresters (NASF) and the Coalition of Prescribed Fire Councils (CPFC) worked collaboratively to produce the 2021 National Prescribed Fire Use Survey Report. Compiled triennially since 2012, these reports remain unique among prescribed fire surveys by evaluating state forestry agencies' prescribed fire policies and management of prescribed fire programs. This intelligence helps to track how much and where prescribed fire is implemented and to what effect. It also helps to track progress made toward increasing the scale and pace of prescribed fire to maintain and build resilient landscapes.

This year's survey results revealed 9.4 million acres were treated with prescribed fire in 2020. Although this represents an acreage decrease from 2019, it is the second highest number reported in survey history. The Southeast region continues to lead the nation in annual acres treated with prescribed fire, followed by the West and Northeast-Midwest. Most states (31) saw decreases in prescribed fire implementation compared to their historical average, while 10 states experienced increases and 9 stayed consistent. Missouri implemented prescribed fire on the greatest number of acres in the Northeast region. Florida topped the Southeast, and Kansas led the West.

A notable improvement to this year's report is the inclusion of federal land management agency data. Both the U.S. Department of Agriculture and U.S. Department of the Interior voluntarily provided 2020 prescribed fire activities by state on federal lands, which allows their data to be easily compared at the national and regional scales. The addition of federal activity does not increase 2020 prescribed fire activity over previous years, as states have always reported federal acres on their annual accounting. However, for the first time, this report now shows acres treated by ownership type. During 2020, the Bureau of Indian Affairs, Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and U.S. Forest Service collectively treated 1,471,855 acres with prescribed fire while 7,912,493 acres were treated on state and private lands. This means that 84% of prescribed fire occurred on state and private lands in 2020.

The NASF and the CPFC would like to thank all those agencies that made data contributions to this the 2021 report. This information was gathered and shared in support of the Cohesive Strategy – both in function and in spirit. Only by working together and across jurisdictions can we identify and address wildland fire issues in the U.S. It is the intent of the NASF and the CPFC that the National Prescribed Fire Use Surveys serve as a means to foster partnerships that increase the appropriate use of prescribed fire as a natural resource management tool to enhance forest health while providing for enhanced public health and safety.

Background

Not all that long ago there was little known about prescribed fire use in the United States. Still, the need for a better understanding was great. As a result, in 2012 the Coalition of Prescribed Fire Councils (CPFC) and the National Association of State Foresters (NASF) partnered to produce the first-ever report that investigated national prescribed fire activity. At the time these two organizations felt they were best positioned to approach state forestry agencies for prescribed fire intelligence. The effort garnered 100% support from states; NASF and CPFC have partnered every three years since to produce additional reports. These reports are necessary and critical to understand how much prescribed fire is being implemented and to better track where it is occurring. This information, along with trends in activity, can be useful tools to help guide the efforts of decision makers, researchers, prescribed fire councils, and academia, as well as wildland fire and environmental quality policy. The 2021 report is a continued effort by the CPFC and NASF to acquire and maintain the most relevant and current prescribed fire activity data of its kind.

This 2021 survey follows the same precedent of previous reports by conducting a national evaluation that focuses on the scale of prescribed fire use, state-level supporting programs and requirements, and identifying factors that limit the use of prescribed fire. The survey report is based on 2020 prescribed fire activity and, where applicable, utilizes previous reports to illustrate and describe trends. This report uses the best information available from state forestry agencies and includes completed surveys from all 50 U.S. states. The data presented are intended to inform the fire community by identifying challenges at a national scale, as well as defining key regional and state differences and similarities.

Methods

In spring 2021, all 50 U.S. state forestry agencies received the National Prescribed Fire Use Survey and an invitation to participate. The survey questions centered around prescribed fire activity, state-level programs and requirements, and factors limiting prescribed fire implementation. The collected survey data covered all 2020 federal, state, and private prescribed burning activity that occurred specifically on forestlands and rangelands. NASF geographic regions were used to conduct all regional comparisons and are consistent with the National Cohesive Strategy's geographic boundaries.

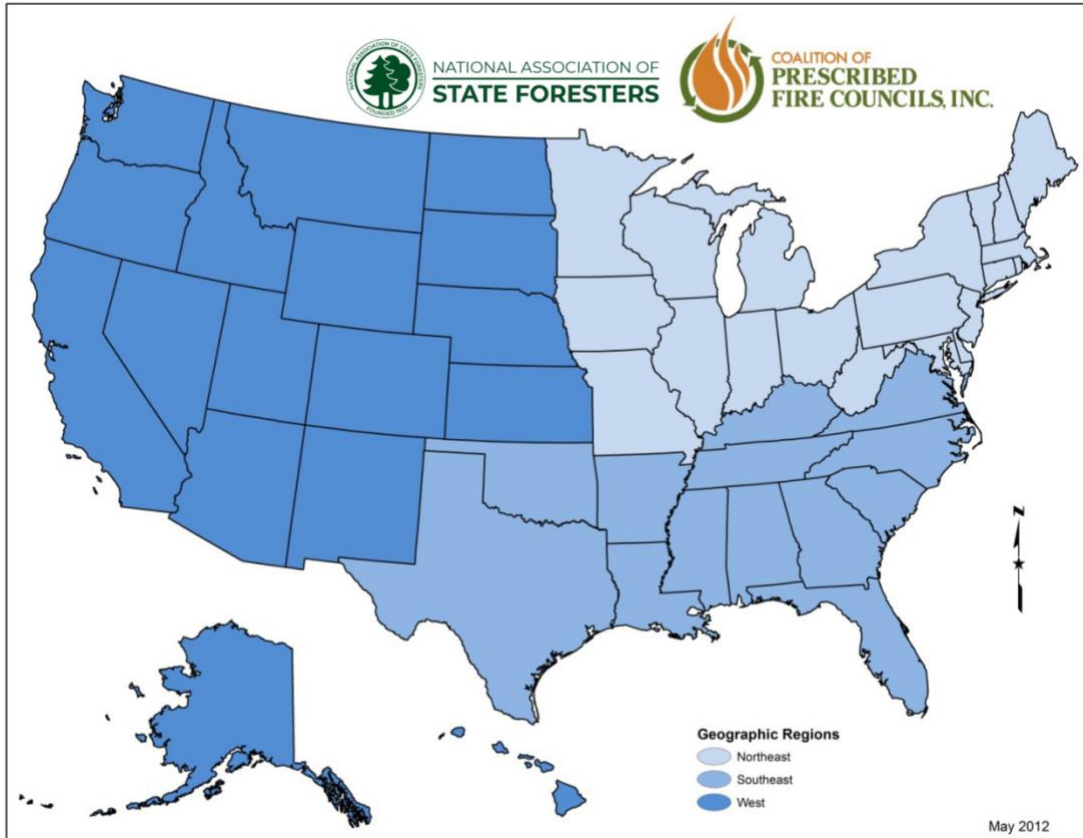


Figure 1 – Geographic regions.

Survey questions were presented as yes/no/sometimes or fill-in-the-blank formats in an effort to avoid any ‘record keeping’ differences that exist between state fire programs and to collect consistent data. Additionally, the impediment categories developed in the 2012 National Prescribed Fire Use Survey Report were also used in an effort to provide consistency among previous survey years and reflect trends, if applicable. Each state agency was asked to identify and rank their top three impediments from the established list (see Table 1).

Table 1 - The nine impediment categories are as follows:

Capacity Concerns	Limited personnel, training, private contractor availability, partnerships, equipment
Weather Concerns	Narrow burn windows, drought, available burn days
Air Quality/Smoke Management Concerns	Visibility, nuisance, emission impacts
Resource Concerns	Limited funding, high implementation costs
Public Perception Concerns	Lack of public understanding/acceptance
Liability/Insurance Concerns	Landowner liability, insurance availability and/or cost
Permitting/Legal Concerns	State law, burn bans, local restrictions, NEPA process, ESA
WUI/Population Growth Concerns	Urbanization, influx of new residents
Low Priority	Agency or landowner priority, too difficult

Results

Prescribed Fire Activity

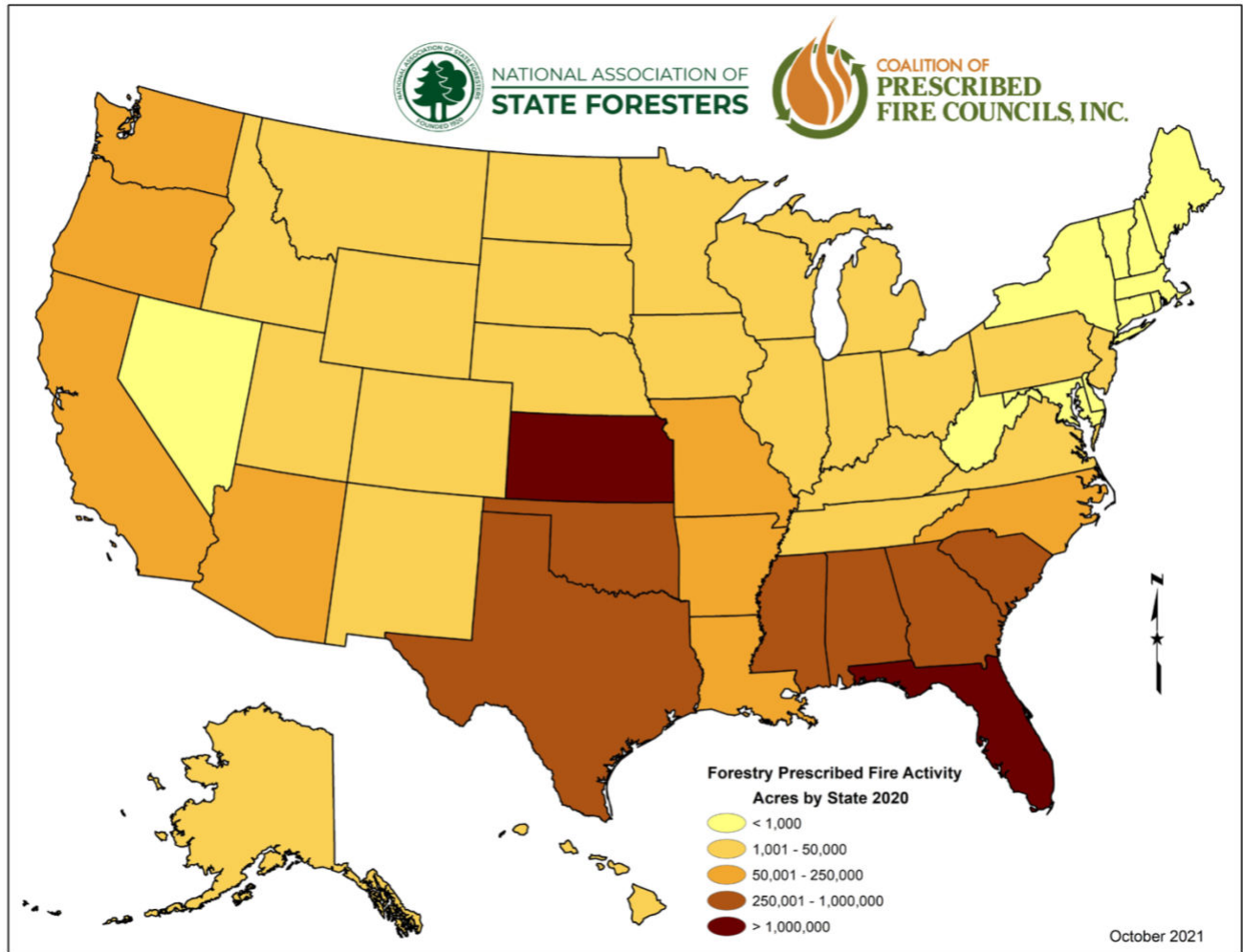


Figure 2 - Acreage of prescribed fire use (including federal, state, and private ownership) for forestry and rangeland objectives by state in 2020. Coarse acreage classes were created using a histogram that determined the most significant breaking points in acres reported.

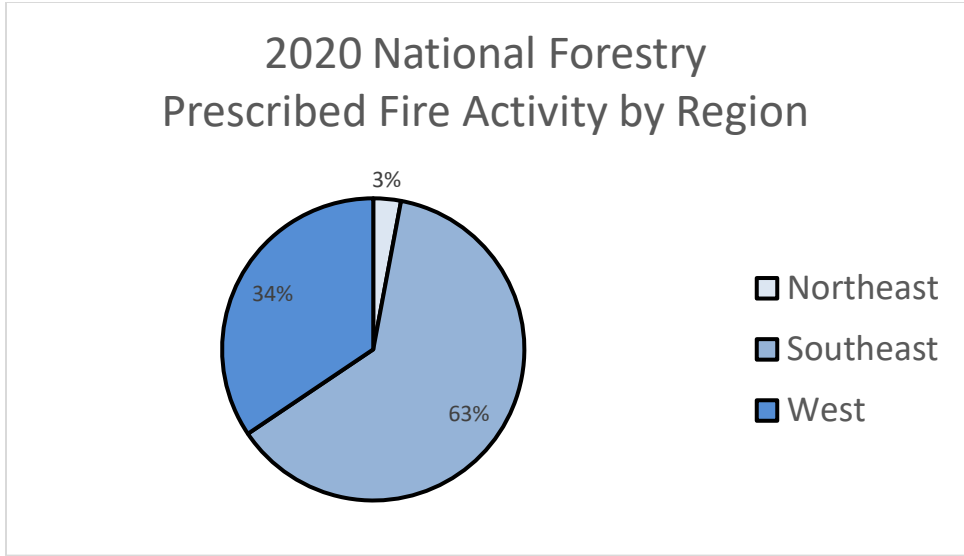


Figure 3 – Percentages of national forestry and rangeland prescribed fire acres (including federal, state, and private ownership) by region in 2020.

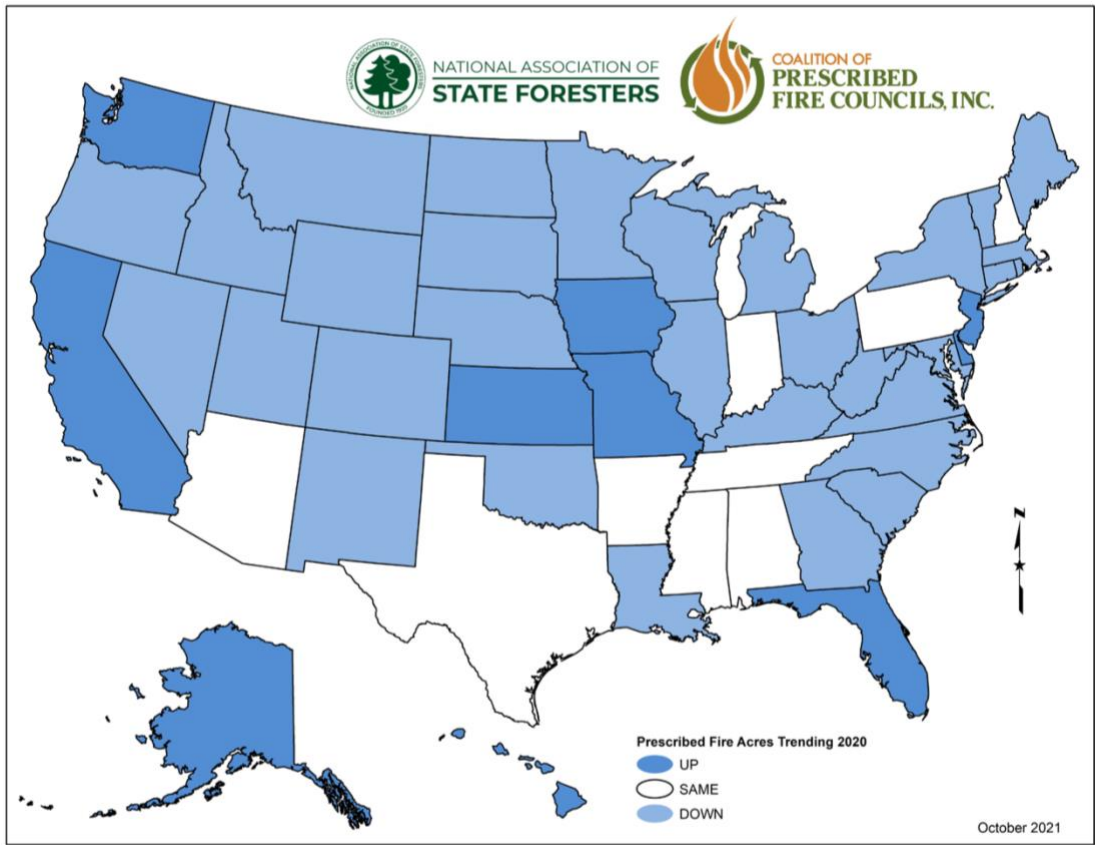


Figure 4 – 2020 prescribed fire acre trend by state compared to the calculated average from previous survey years. “Up” represents a >10% increase in acres reported, “Same” represents 2020 acres that fall within ±10% of the previous surveys’ average, and “Down” represents >10% reduction of acres reported.

State-level Programs

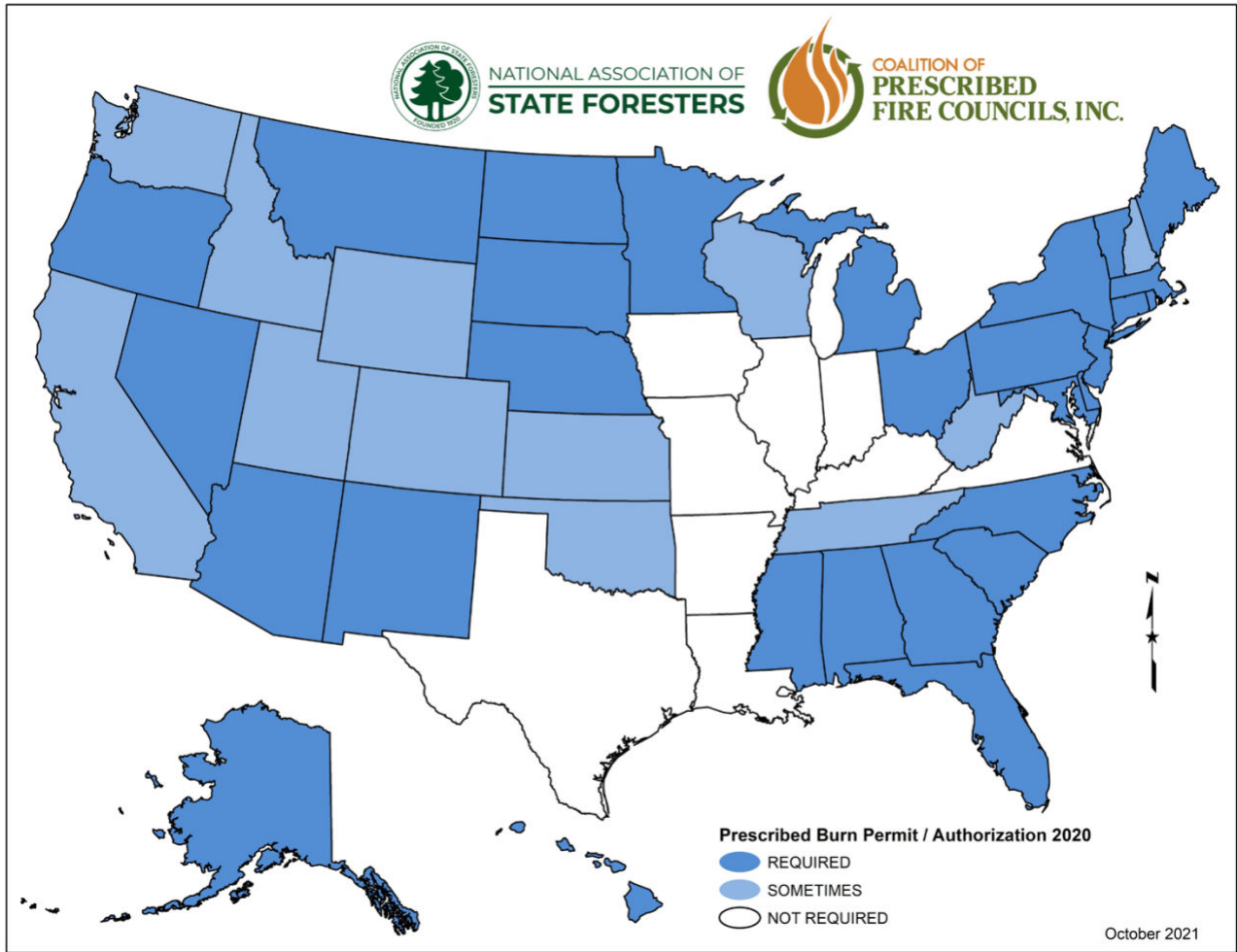


Figure 5 – Forty-one states (82%) always or sometimes require a burn permit/authorization prior to prescribed fire implementation.

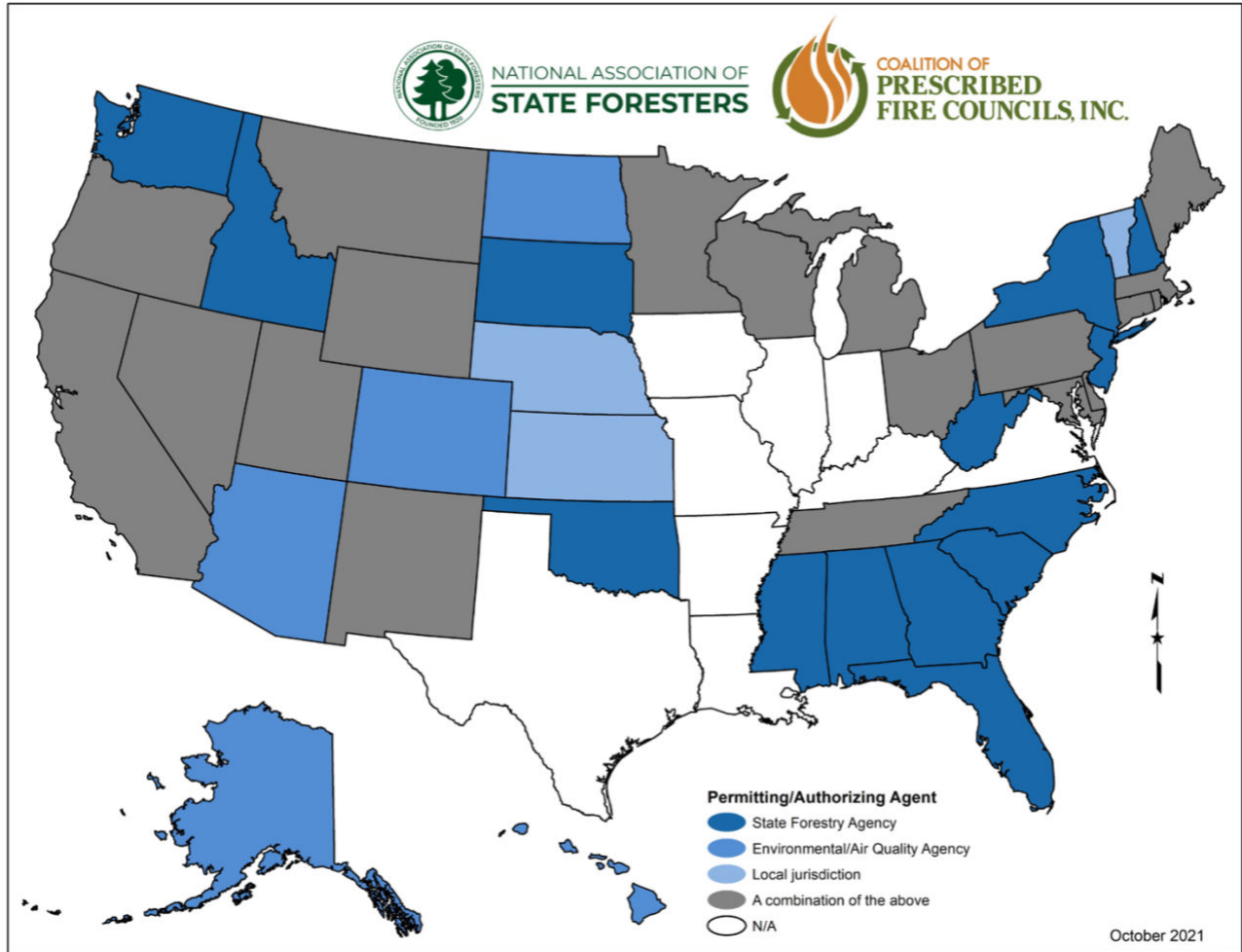


Figure 6 – Nineteen states (38%) issue permits/authorizations through a state agency, while three states (6%) do so through local jurisdictions, and the remaining 19 states (38%) use some combination of the above.

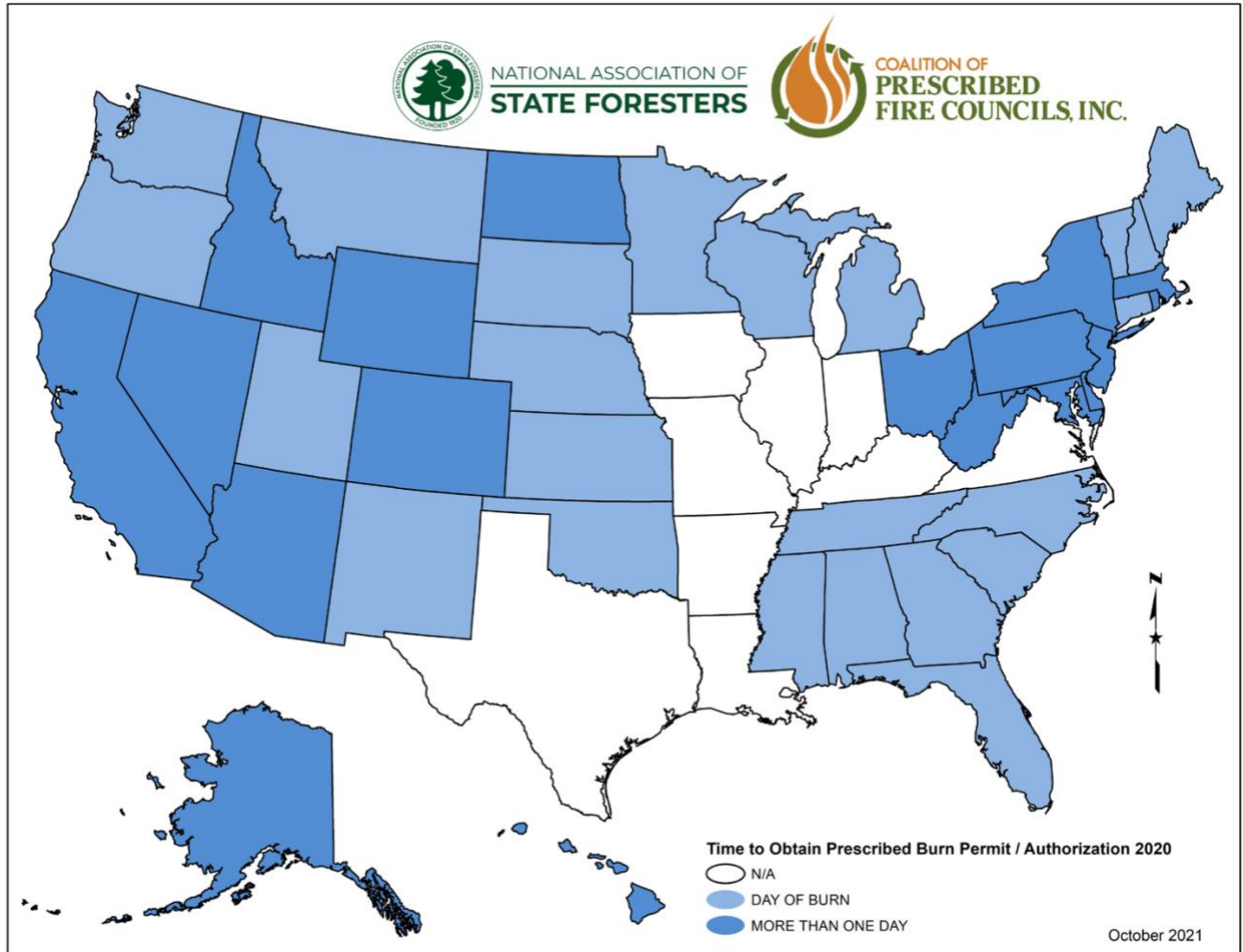


Figure 7 – Prescribed fire authorizations can be obtained the day of the burn in 24 states (48%), but require a longer time period in 17 states (34%).

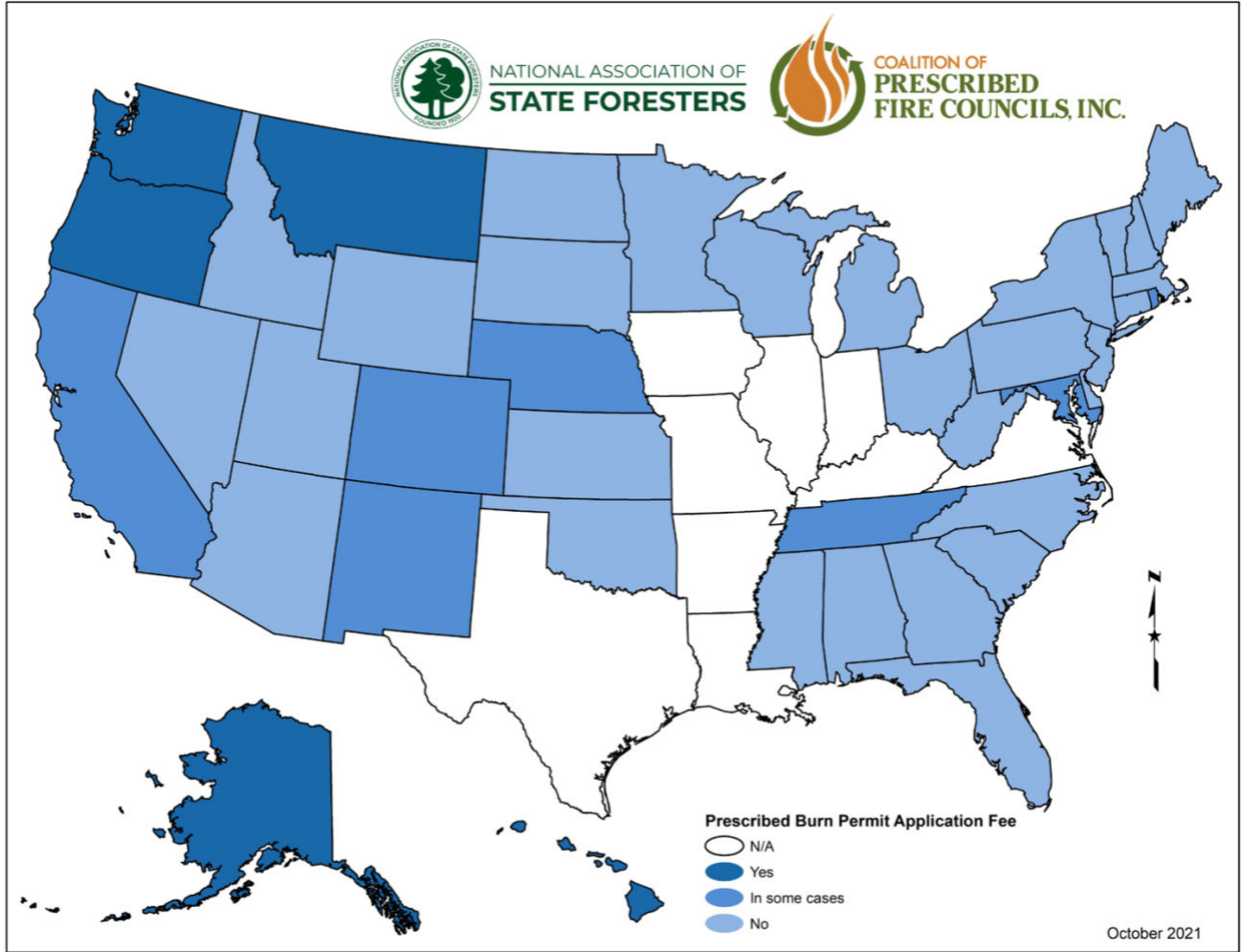


Figure 8 – Twelve states (24%) can have costs associated with the permitting process.

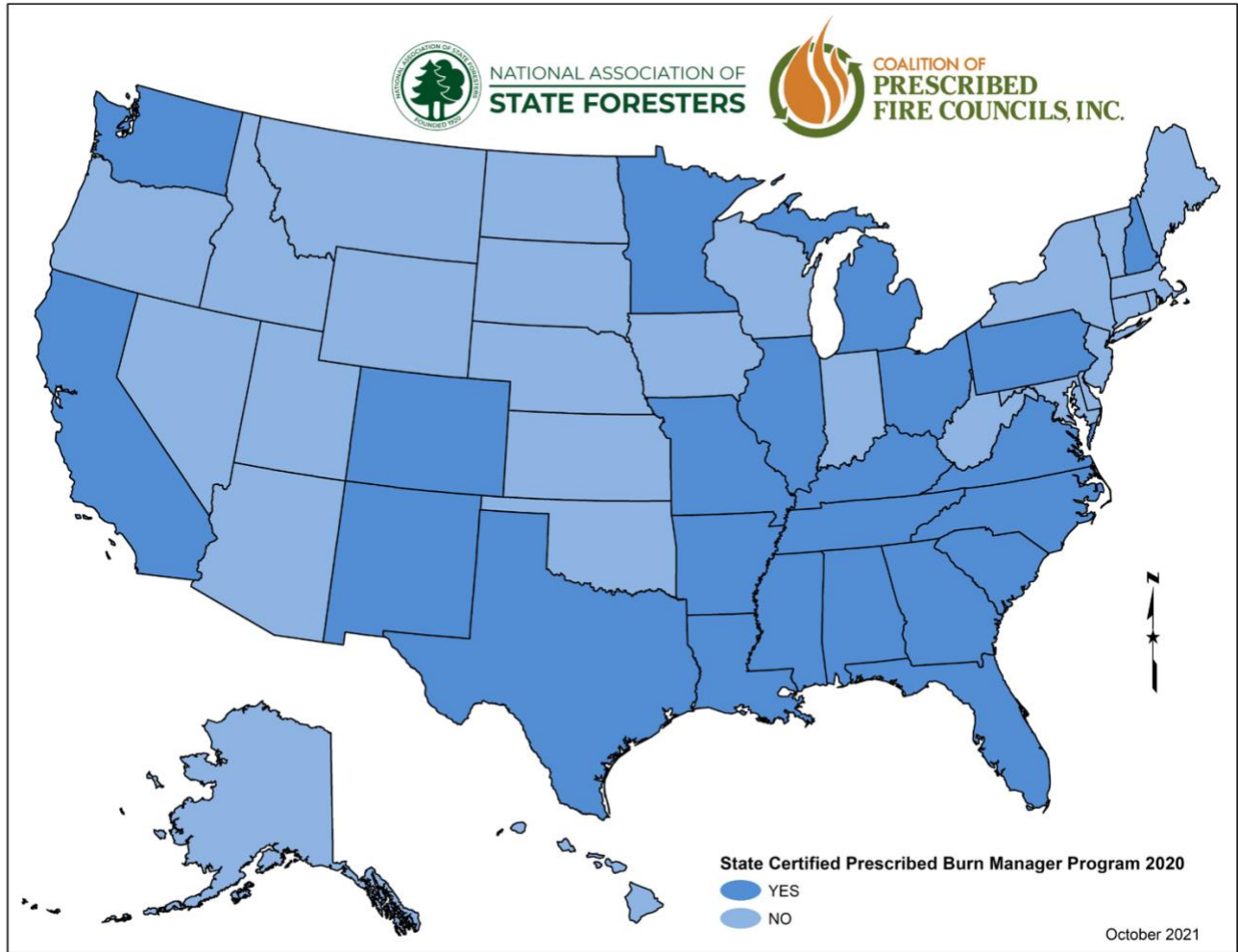


Figure 9 – Twenty-three states (46%) reported offering prescribed burn manager certification courses that are available to federal, state, and private practitioners.

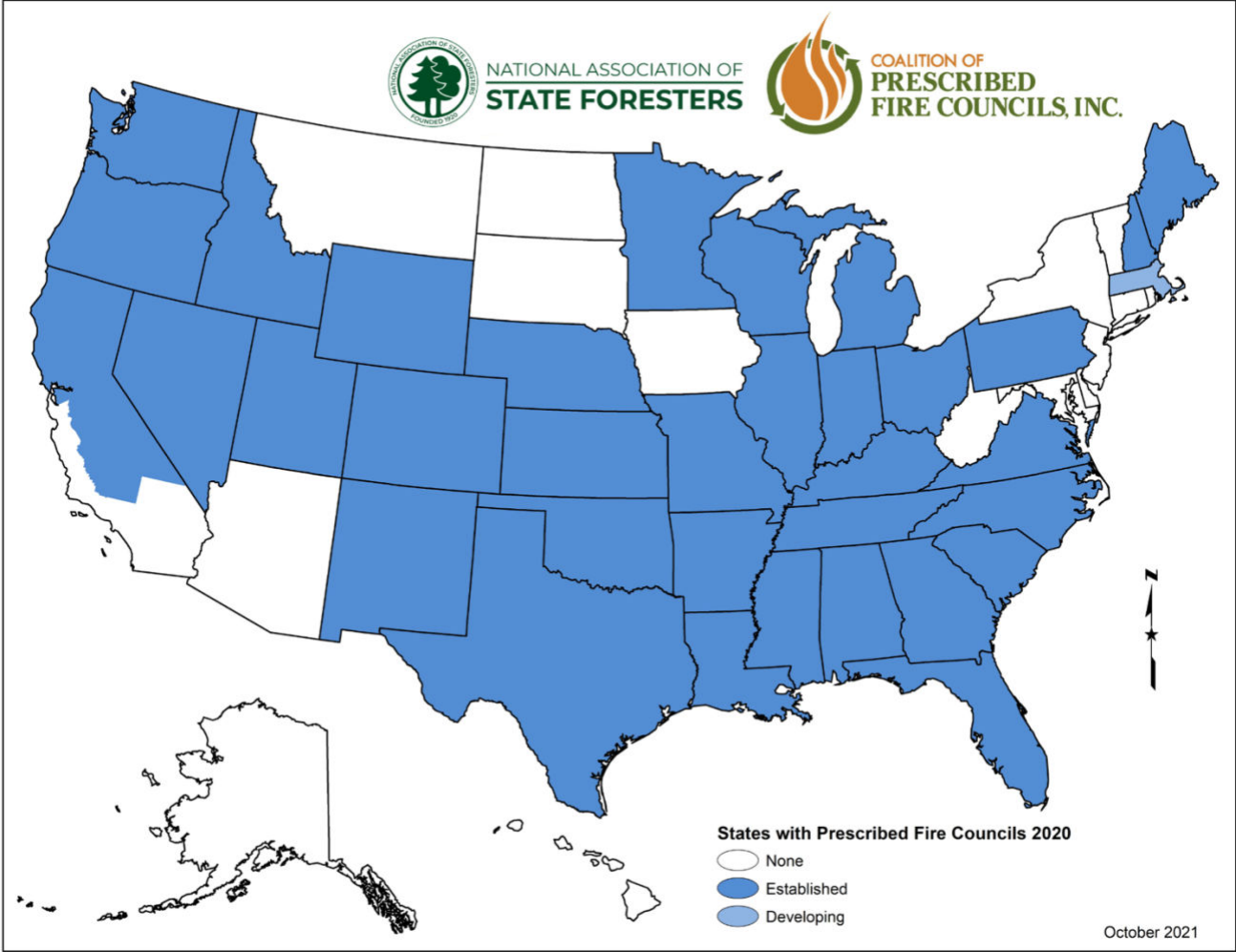


Figure 10 – Thirty-eight prescribed fire councils exist in 34 states (68%), and one is under development.

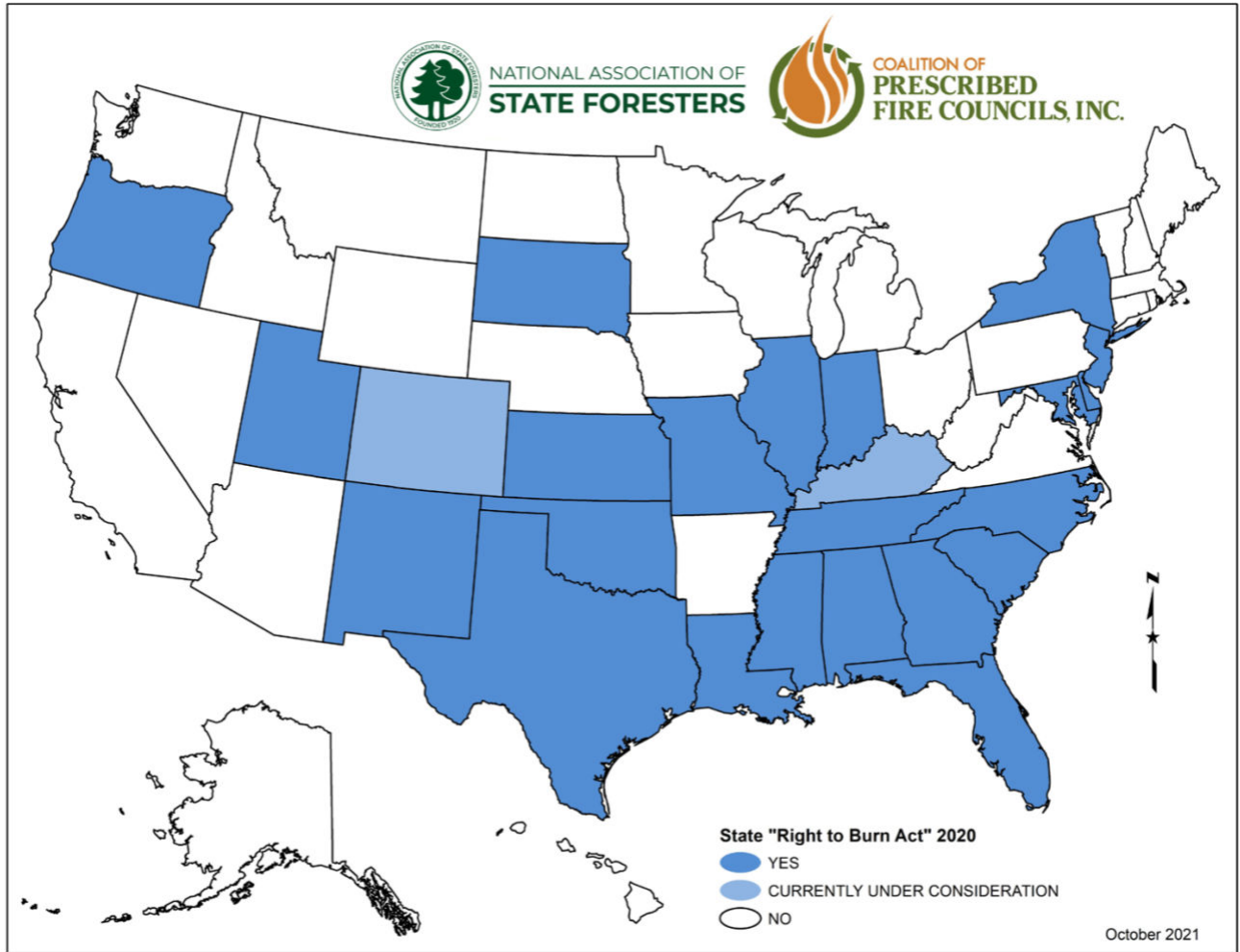


Figure 11 – Twenty-two states (44%) have, and two states (4%) are considering, a prescribed fire right-to-burn act, which grants landowners the legal right to burn on their land.

Federal Land Management Agencies

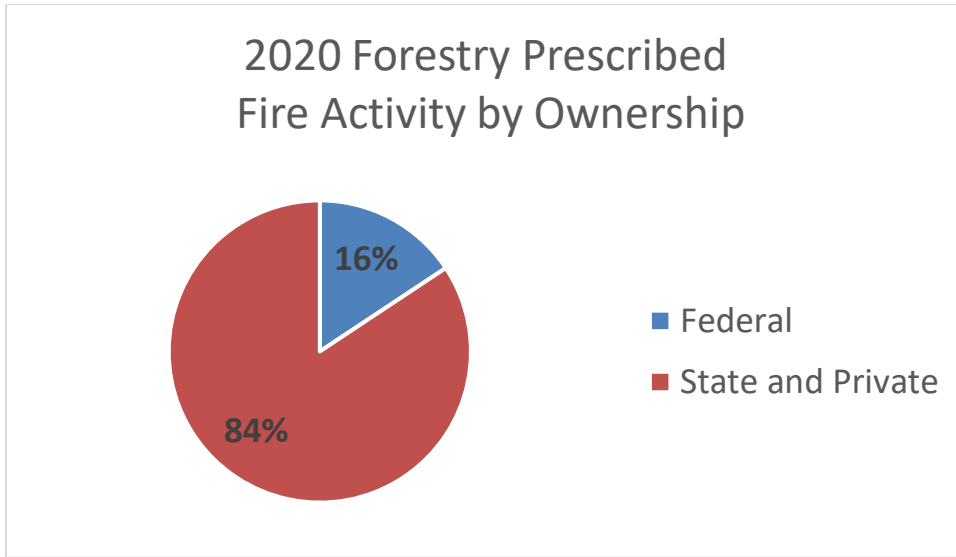


Figure 12 – Collectively, federal land management agencies reported burning 1,471,856 acres (16%), while state and private practitioners were responsible for 7,912,493 acres (84%) of the forestry and rangeland prescribed fire acres in 2020.

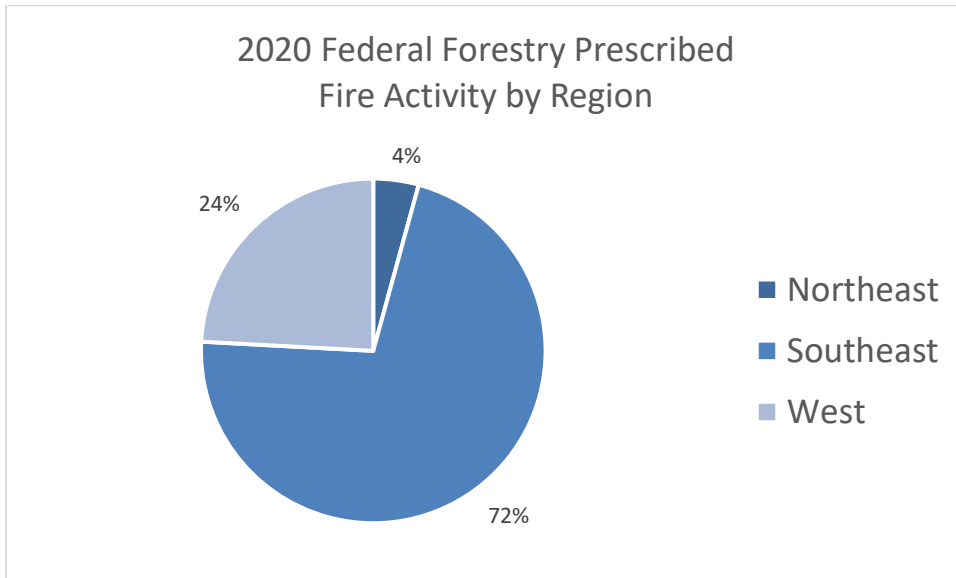


Figure 13 – Collectively, federal land management agencies reported forestry and rangeland prescribed fire activity in 2020 on 62,633 acres in the Northeast-Midwest, 1,053,871 acres in the Southeast, and 355,352 acres in the West.

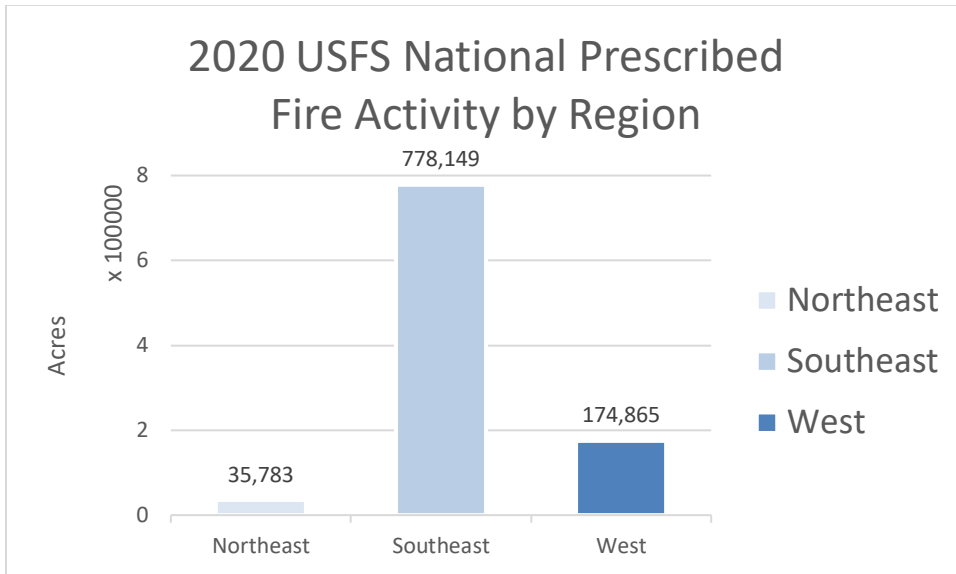


Figure 14 – U.S. Department of Agriculture, U.S. Forest Service national forestry and rangeland prescribed fire activity by region in 2020.

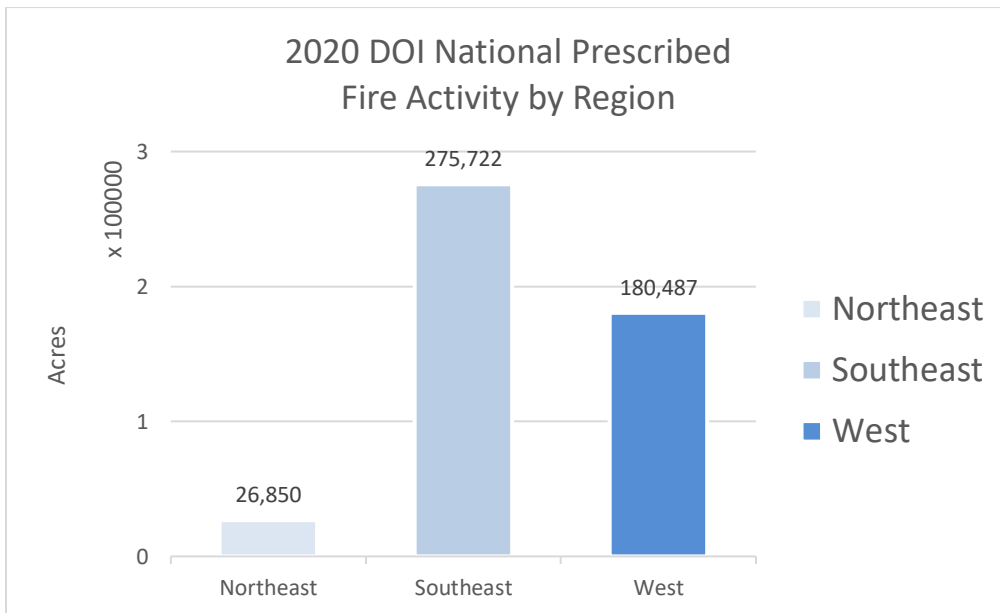


Figure 15 – U.S. Department of the Interior national forestry and rangeland prescribed fire activity by region in 2020.

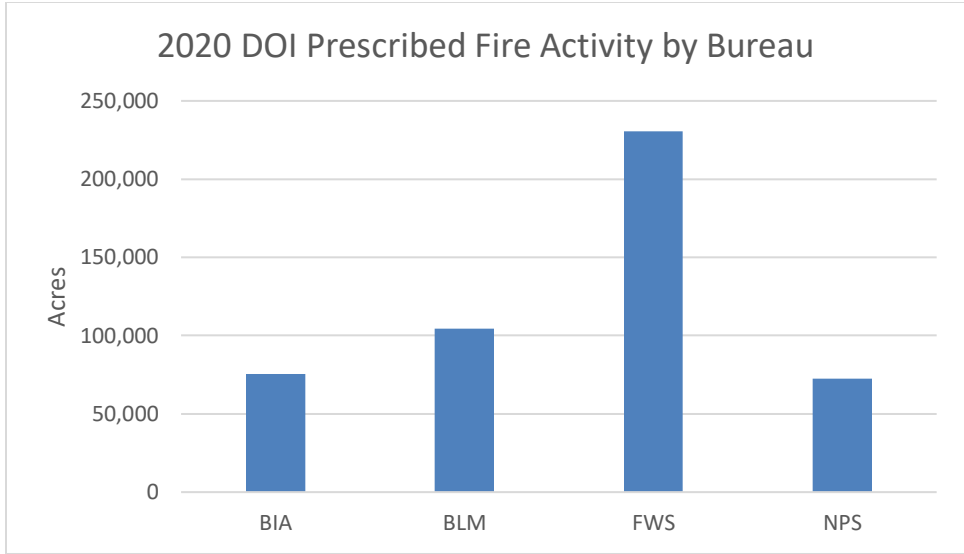


Figure 16 – U.S. Department of the Interior forestry and rangeland national prescribed fire activity by bureau in 2020.

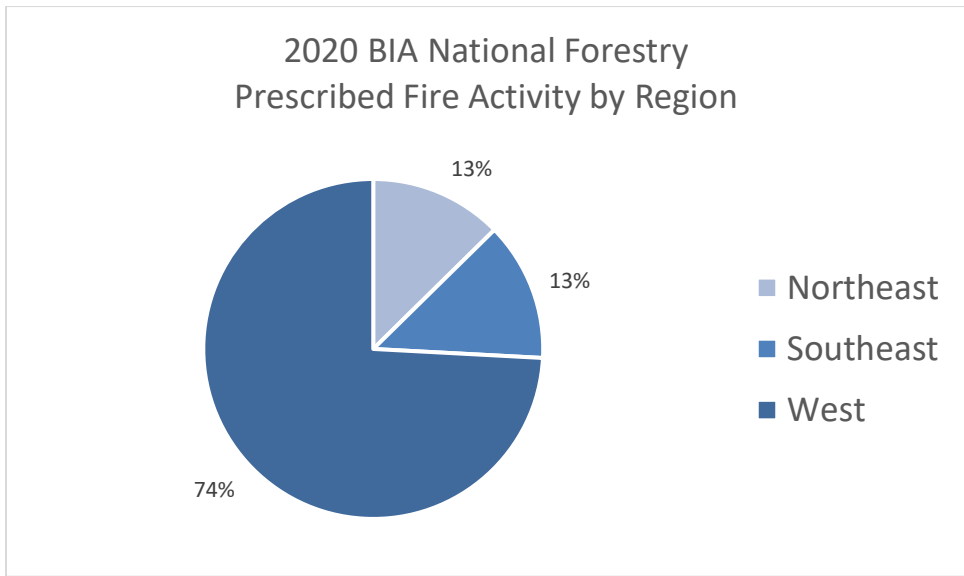


Figure 17 – U.S. DOI, Bureau of Indian Affairs national forestry and rangeland prescribed fire activity by region in 2020.

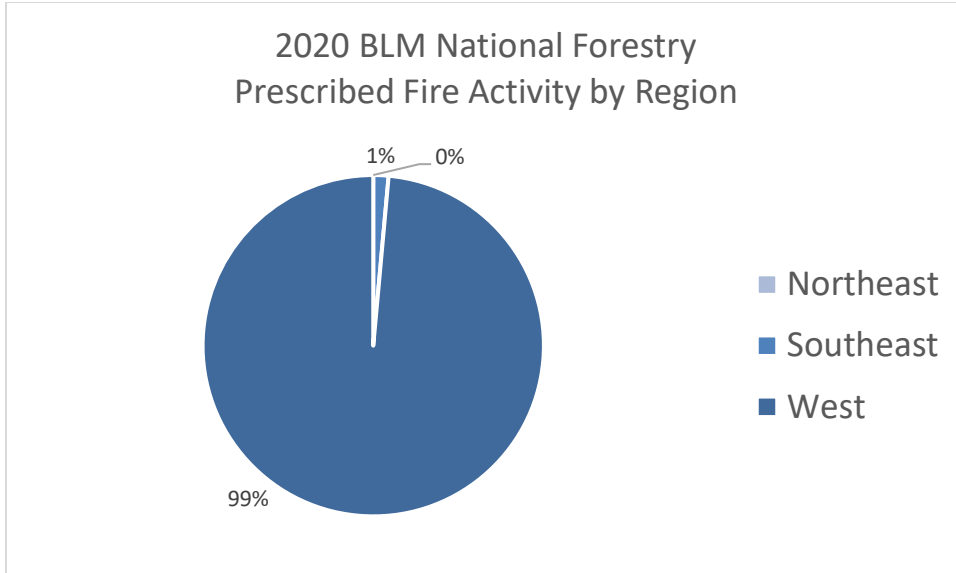


Figure 18 – Bureau of Land Management (U.S. DOI) national forestry and rangeland prescribed fire activity by region in 2020.

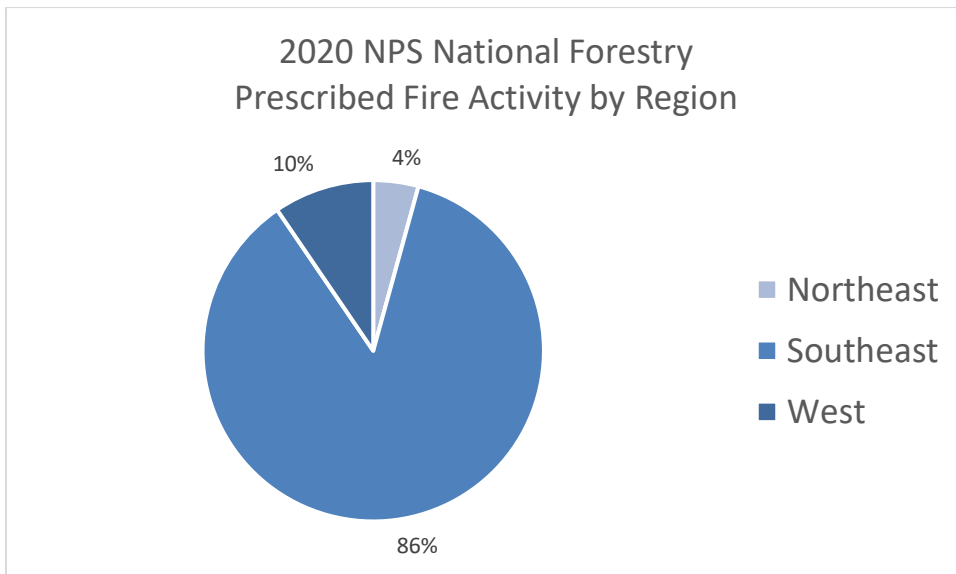


Figure 19 – National Park Service (U.S. DOI) forestry and rangeland prescribed fire activity by region in 2020.

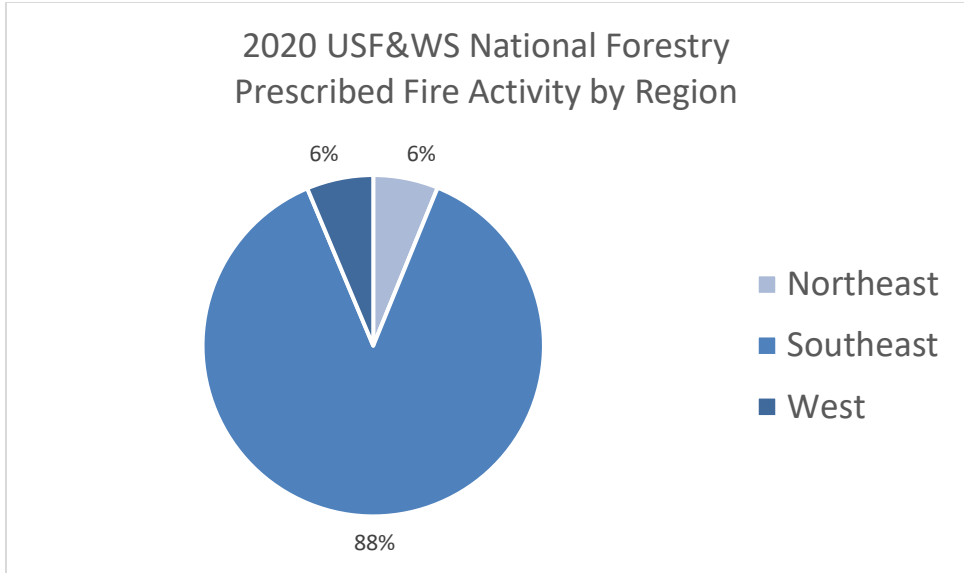


Figure 19 – U.S. Fish and Wildlife Service (U.S. DOI) forestry and rangeland prescribed fire activity by region in 2020.

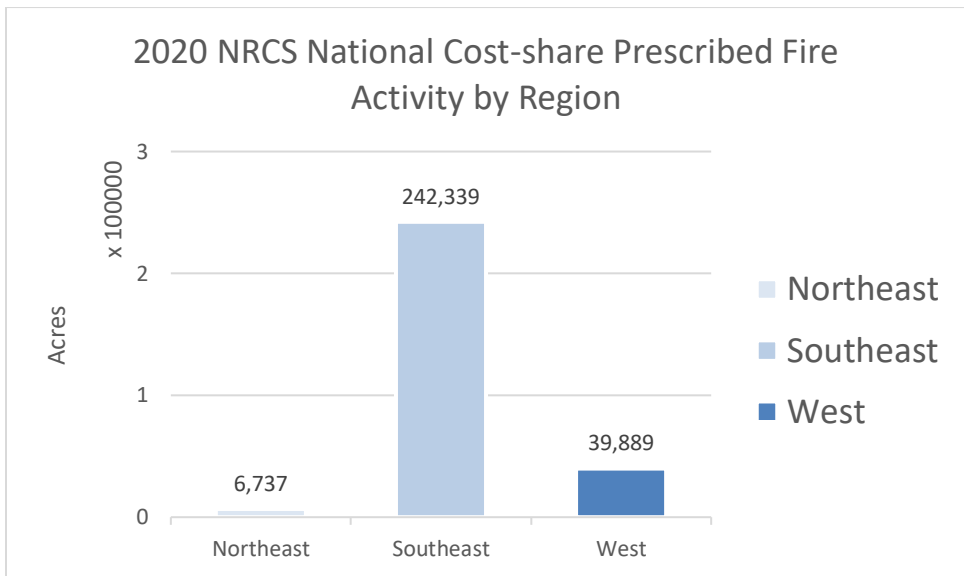


Figure 20 – Forestry and rangeland prescribed fire activity implemented on private land through USDA Natural Resources Conservation Service cost-share programs by region in 2020.

Conclusion

The 2021 National Prescribed Fire Survey shows the continued use of prescribed fire by federal and state governments, tribes, and private burn practitioners across the nation. With over 9.4 million acres treated nationally in 2020—the second greatest total in recent history—it is clear that forest and rangeland owners and managers see significant value in using prescribed fire as a land management and hazardous fuels reduction tool.

However, the national prescribed fire program has many impediments to overcome. In order to sustain the current number of acres treated each year—and certainly to increase the pace and scale of prescribed fire use nationwide—capacity deficits, liability concerns, smoke emissions, and other obstacles must be addressed in meaningful ways. Working together, NASF, CPFC, and prescribed fire practitioners across the U.S. can support national and state-level policies that will help to continue the last ten years of momentum behind prescribed fire use.