

UNDERSTANDING THE ROLE OF FIRE IN UPLAND HARDWOOD FORESTS



Forestry and Natural Resources
College of Agriculture, Food and Environment

A McIntire-Stennis supported project

Managers responsible for maintaining the diversity and productivity of central and southern Appalachian forests are increasingly turning to fire as one of several valuable tools for managing upland oak-dominated forests. McIntire-Stennis supported research at the University of Kentucky Department of Forestry and Natural Resources has helped to pioneer our understanding of the multifaceted roles of fire in this region by examining forest response to repeated prescribed fire, the combined use of prescribed fire and other practices in oak woodland restoration, and the impacts of accidental wildfire.



Results from 25 years of research point to the importance of using repeated fire followed by a fire-free interval to allow oak regeneration to establish and grow into saplings that are necessary to maintain oak in future forests and that excluding fire can lead, over time, to an increase in competing tree species that can limit oak regeneration. Research has also informed landowners and managers on the challenges of managing sites burned by wildfire.

About McIntire-Stennis

The McIntire-Stennis program, a unique federal-state partnership, cultivates and delivers forestry and natural resource innovations for a better future. By advancing research and education that increases the understanding of emerging challenges and fosters the development of relevant solutions, the McIntire-Stennis program has ensured healthy resilient forests and communities and an exceptional natural resources workforce since 1962.



COLLABORATION



This research is a long-term collaboration between researchers at the University of Kentucky, Department of Forestry and Natural Resources, USDA Forest Service Daniel Boone National Forest and Bent Creek Experimental Forest, aided by resources from the USDA-USDI Joint Fire Science Program.

IMPACT

This research has informed forest management approaches to the use of fire throughout the central and Appalachian hardwood forest regions by addressing underlying ecological implications of fire, and the absence of fire, as disturbance agents applied to forest ecosystems where fire was used for millennia by Native peoples before being restricted for the past century.



12, 350+ and 100+

The number of graduate students, undergraduate students, and professional foresters trained in science-based understanding of the role of fire in central and Appalachian hardwood.



Leading

the region for 25 years in implementation of ongoing research on the use of prescribed fire in oak dominated upland forests used in management of public and private forests.