

# INFORMING OAK SILVICULTURAL PRACTICE THROUGH STUDY OF GROWTH AND REGENERATION



A McIntire-Stennis supported project

Forestry and Natural Resources  
College of Agriculture, Food and Environment

Oaks are responsible for generating billions of dollars to the economy of Kentucky and surrounding states. Oak is used in a wide range of products, from paper and pallets to bourbon barrels, the latter produced from white oak, a dominant species in the central hardwood region and a focus species of research at the University of Kentucky Department of Forestry and Natural Resources. Unfortunately, inadequacy in the natural regeneration of several oak species, including white oak, are predicted to result in long-term issues with the sustainability of oak forests, the availability of oak timber, and a reduction in a valuable food for wildlife.

McIntire-Stennis supported research aims to develop management (silvicultural) practices to directly enhance the sustainability of oak forests. Our work focuses on foundational stand yield relationships and the development of thinning and regeneration practices. Our science can be applied at key phases of an oak forest's lifecycle to have an immediate impact on stabilizing the growth and drain of our oak resources.



## 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



The work is endorsed by the White Oak Initiative and completed in partnership with the USDA Forest Service Southern Research Station, USDA Forest Service Northern Research Station, USDA Forest Service Daniel Boone National Forest, Forest Health Research and Education Center, Berea College, and the University of Vermont.

## IMPACT

Science has resulted in the development of advanced techniques to culture oaks and is building our foundational understanding of oak regeneration, growth, and development.



### Advanced Practices

developed including gap-based systems and how to apply shelterwood techniques to enhance oak regeneration.



### Leading

long-term evaluation of individual tree and stand response to thinning within the Central Hardwood Region.



### 1,200 acres

annually being managed using scientifically based practices developed or investigated by this project.