

# A REGIONAL SCALE STUDY OF INVASIVE PLANT IMPACTS ON FOREST ECOSYSTEM

A McIntire-Stennis supported project



The Central Hardwood Forest is one of the most important forest ecosystems in the eastern United States, providing valuable economic and recreational opportunities to the citizens of the region.

Invasive exotic plants are moving into these ecosystems, in some places reaching epidemic proportions. The long-term invasion of these plants and other pests can alter the composition and reduce the diversity of these ecosystems, resulting in dramatic declines in the wildlife habitat and diminished economic opportunities for the human inhabitants of these mostly rural regions.

This project seeks to provide understanding of these invasives and their impact on forest ecosystems and on soil organic carbon pools and temperature sensitivity.

Results include the identification of interactions between pests and tree diversity, the impact of forest structural diversity on the prevalence of invasives, and a model predicting invasives impact on a continental scale. This information is being shared with the public as well as the scientific community and natural resources professionals.



## 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

Researchers from five educational institutions - Duke, Florida, NC State, Purdue and UC Davis - as well as from the USDA Forest Service have collaborated on this project.



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These individuals collaborated on five journal articles published in 2019

## IMPACT

Forty percent of the total live biomass in U.S. forests is at risk for invasion by currently established pest species.



255,000

People are employed in forestry-related jobs in the Central Hardwood Forest region of the U.S.



\$1,300

Invasive species cost the American public about \$1,300 per household each year



83

Nonnative pests are recognized to cause noticeable forest damage in the lower 48 states