

# Longleaf pine restoration, forest disturbance recovery, and the value of land conservation in South Carolina

A McIntire-Stennis supported project



College of  
**AGRICULTURE, FORESTRY  
AND LIFE SCIENCES**  
Clemson University

South Carolina's forests are under pressure. Hurricanes, droughts, sea level rise and development are making it harder for these forests to stay healthy and provide benefits like clean water, wildlife habitat, and timber. Longleaf pine forests once covered much of the Southeast but are now rare. Bringing them back could help forests bounce back from storms and recover from extreme weather events.

A team of Clemson scientists is studying how longleaf pine compares to other southern pines—especially loblolly pine—when it comes to growing in tough conditions, surviving storms, and storing carbon. They are also looking at how forests can help recharge groundwater and improve water quality. The project includes:

- Monitoring restored and mature pine forests using advanced sensors and long-term data.
- Comparing tree growth after ice storms, fires, and hurricanes.
- Measuring how conservation practices like land protection help forests provide clean water and store carbon.



## 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 work will help landowners and policymakers make better choices about which trees to plant and how to manage forests in an everchanging environment. It will also show the dollar value of the clean air, water, and climate benefits that forests provide.

## IMPACT

This project includes partnerships with Clemson Extension, the U.S. Forest Service, conservation nonprofits, private landowners, and regional planners.



**88%**

The percentage of South Carolina timberland that is privately owned.



**\$21 Billion**

Forestry's contribution to SC's economy in 2018.



**100+**

Locations studied for carbon value and conservation potential.