



# School of Forestry & Wildlife Sciences

## EFFECTS OF INVASIVE PLANT SPECIES ON FOREST ECOSYSTEMS IN THE SOUTHEAST

A McIntire-Stennis Supported Project

Degradation of native ecosystems and loss of habitat and wildlife biodiversity in the Gulf of Mexico coastal region have been increasingly threatened by biological invasions. Researchers in the School of Forestry and Wildlife Sciences are using geospatial modeling to evaluate the potential risk of natural disturbances and management activities such as hurricanes, flooding, timber extraction, and prescribed fire to facilitate biological invasion. To design practical and effective methods for controlling and mitigating nonnative invasive species, challenges have been to understand factors driving the invasion processes including individual colonization and establishment, population expansion in native ecosystems, and post-invasion spread in a landscape from an integrated, multi-scale perspective. Spatial modeling tools provide useful information on how to reduce biological invasion in restoring and managing native coastal ecosystems. Post-disturbance surveys in highly susceptible areas will be necessary for early detection of nonnative invasive species. In invaded areas, removal of seed trees to reduce propagule pressure levels can significantly impede seed dispersal and encroachment of post-invasion spread of nonnative invasive species to surrounding areas.



### COLLABORATION

Researchers are collaborating with the Grand Bay National Wildlife Refuge and Mississippi Sandhill Crane National Wildlife Refuge to evaluate how prescribed fire will affect the spread of Chinese tallowtree, a Category I invasive tree classified by the Alabama Invasive Plant Council.

### 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.



### IMPACT



Developed geospatial tools to map biological activity and impacts of noninvasive species across landscapes



3 peer-reviewed journal articles have been published



8 presentations presented to stakeholders in national and regional conferences and workshops



5 graduate students trained in the area of biological invasion