

LSU AgCenter Hill Farm Research Station

CLAIBORNE PARISH, LOUISIANA



Mixed southern pine silvopastural management, using shortleaf pine

Background

A demonstration site was established at Hill Farm Research Station in the mid-1990s to investigate the adaptability of four southern pine species (loblolly, longleaf, shortleaf, and slash) to silvopastural management in northern Louisiana. In addition to the pine overstory, coastal bermudagrass was established in the understory. Loblolly and shortleaf demonstrated equally exceptional growth overall, with longleaf and slash both damaged by ice.

Restoration Activities

In 1986, a 6-acre long term agricultural field was prepped with prescribed fire and herbicides. Bareroot seedlings of all four southern pines (seedlings from the Western Gulf Tree Improvement Co-op) were then planted at a higher density than needed for a silvopastural system. In the mid-1990s, over ten years later, the site was thinned to 100 trees/ acre and plugged with coastal bermudagrass. The next four years, the site was fertilized with poultry litter (a common waste product and fertilizer in the region) at 2 tons/ acre/ year. Trees were thinned so single rows, spaced approximately 20 feet apart, remained.

From the mid-1990s to 2005, the silvopasture was managed for cow-calf production. The bermudagrass was reported to have successfully supported grazing needs.

In 2005, research objectives for the site changed from silvopastural management to biomass production, using switchgrass. In 2006, cow-calf production ceased, bermudagrass was removed, and all pines were harvested except loblolly. Though loblolly and shortleaf had achieved comparable growth by 2005, more loblolly than shortleaf had survived on the site over the years and a single species was needed for the switchgrass research project.



Introduction of cattle to the silvopasture at LSU AgCenter. Credit: LSU AgCenter Hill Farm Research Station.



Figure 2: Mature pine stand with grazing. Credit: LSU AgCenter



Shortleaf Pine Management Area (SMA) fact sheets highlight regional shortleaf pine management or research projects. Please inquire with project contact/ partners to learn more about a specific management area. For general questions concerning SMAs or the www.shortleafpine.net website, please contact: **Holly Campbell, hcampbell@sref.info**

The Shortleaf Pine Initiative represents a broad range of federal, state, and private agencies and organizations currently working to promote shortleaf pine ecosystem restoration. For more information about shortleaf restoration or the Initiative, please visit: www.shortleafpine.net

The LSU AgCenter observed that the use of shortleaf in silvopastures resulted in less shade to the understory (due to needle length and canopy density) than loblolly, longleaf, and slash. This reduced shading may be an advantage for specific forage species productivity, silvopastural planting configurations, or timber quality.

Project Contact

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*LSU AgCenter silvopasture with switchgrass understory.
Credit: Mike Blazier*



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