



Silvopasture

An Opportunity for Additional Income from Your Forestland

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Take a minute to think about why you own land . . . Is it to pass on to your children and grandchildren? Outdoor recreation? Because you enjoy the beauty of nature? Is it part of your farm?

If you answered yes to one or more of these questions, then your land ownership motivations are very similar to most of Alabama's small-scale private landowners – especially for those who own less than 100 acres. These landowners consistently state that their primary reason for owning land is to pass it on to their heirs, with outdoor recreation and scenic beauty often rounding out the top three.

So where is timber production in all this? Surprisingly, it comes in fifth in order of importance for small-scale private landowners. When surveyed, most landowners indicated they would like to generate some revenue from their land, but believe financial benefits are limited.

However, there are ways to combine multiple land management objectives on the same tract to increase financial returns and ecological benefits. One way is through the application of agroforestry techniques, or the intentional combination of crops

with trees. As part of a land management strategy, agroforestry practices have the potential to generate periodic revenue beyond that of traditional forest management, while keeping the land forested. Additional financial and ecological benefits such as native forage establishment, wildlife habitat creation, longleaf pine restoration, and pine straw production may also be achieved with proper management of these systems.

The most common form of agroforestry in the southeastern United States is silvopasture, or managing property for livestock, forage, and timber on the same parcel of land. These systems are designed to produce high quality timber while also providing cash flow opportunities from livestock and forage production.

Silvopasture Basics

Timber establishment and management

Southern pines such as loblolly (*Pinus taeda*), slash (*Pinus elliottii*), and longleaf (*Pinus palustris*) are well suited for use in silvopasture systems. Pine silvopasture may be established on

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existing pasture land by planting single or double rows of trees with forage corridors between them. It may also be established in existing stands of trees by thinning the forest to a desirable level to support forage production, or by the removal of trees to create corridors or alleyways.

As with traditional forest management, thinning can be used to control the stocking level of trees and provide some income from your silvopasture. As trees grow, their crowns begin to close increasing competition for resources such as water, light, and nutrients. Crown closure can lead not only to shading of understory forage, but also reduced timber growth. Thinning your timber to 25-60 percent canopy cover will keep the desired amount of light reaching the understory for optimum forage production, provide some periodic income, and improve your stand by selecting for the best crop trees.

Forage establishment and management

Forage includes grasses and legumes in the understory that are used as hay or food for livestock. While the process of forage establishment in a silvopasture system is similar to accepted practices for open pasture establishment, the most productive forages in agroforestry systems are somewhat shade tolerant. Bahia grass does best in southern and coastal portions of the Southeast. Native grasses may be a good option for many landowners, with such species as big bluestem (*Andropogon gerardii*), little bluestem (*Schizachyrium scoparium*), and eastern gamagrass (*Tripsacum dactaloides*). Among legumes, red and white clover (*Trifolium pratense* and *Trifolium repens*) are well suited to silvopasture systems, as are native legumes such as white prairie clover (*Petalostemon candidum*) and showy tick trefoil (*Desmodium canadense*).

Introduction of Livestock

Both fences and watering facilities must be established prior to livestock introduction. Fencing controls animal movement and



is critical to a successful silvopasture management area. Take time to plan your fence carefully to maximize grazing options. Water for livestock must also be considered during the development of a fence plan. Water tanks can be placed in the fence line so that they are centrally located and serve more than one paddock. This will promote more uniform grazing of the site and limit soil compaction around watering areas.

Choice of livestock will vary based on your objectives, but can range from smaller animals such as poultry, sheep, or goats, to larger species such as cattle and horses. Remember that young trees will be browsed or trampled by livestock, so it is best to delay introduction of any livestock until trees are 10-15 feet tall. Haying operations may be used early in the rotation prior to livestock introduction to promote forage production and produce some early income.

Once introduced, animals must be controlled through stocking levels and rotational grazing to improve efficiency of forage utilization. Rotationally grazed animals are moved among grazing management units to allow time for grazed paddocks to recover for forage re-growth.

Expanding the Benefits

Agroforestry systems have the potential to provide additional financial and environmental services and benefits beyond timber, livestock, and forage production. One potential application is wildlife habitat creation and conservation banking. As wildlife habitat is fragmented or lost, conservation banking allows large parcels of land to be purchased and managed for certain wildlife populations. Most agroforestry systems have the potential to produce high quality wildlife habitat for certain key species, including open pine habitat for species of concern such as the gopher tortoise or Northern bobwhite quail.

There is also long-term potential to restore imperiled longleaf pine forests. Following



European settlement, much of the original longleaf forests were grazed with free-ranging livestock. This fire-maintained forest system was ideal for grazing, as livestock foraged in the open understory of grasses and legumes which were promoted by frequent fire. Today, longleaf pine forests are listed as one of the rarest ecosystems in the United States with less than 5 percent of the original longleaf forest acreage in existence.

As part of the restoration effort, planting agricultural fields in longleaf pine is growing in popularity. Low-density plantings of longleaf (less than 600 trees per acre) are often promoted by cost-share programs to improve wildlife habitat. These low-density stands may be well suited to agroforestry with the potential to use alternative planting strategies that will eventually result in naturally regenerating forested systems.

Finally, there is the added benefit of pine straw production in southern pine silvopasture systems. Sold either by the bale or the acre, income from pine straw can exceed that of any other forestry activity. Silvopastures are ideal for pine straw raking, either by hand or mechanically, because of the clean, open understory and wide row spacing. Stands can usually be raked beginning when the trees are approximately 8 years old and annual production can range from 80 to over 200 bales per acre, depending on tree species and location.

Considering your Options

Because livestock and timber are affected by different market pressures, the use of silvopasture allows landowners to diversify their risk while realizing diverse income-generating possibilities from the same acreage. However, silvopasture may not be for everyone because it requires actively managing livestock and timber on the same acre. It is important that you take into consideration all of your goals for your property when making any land management decision. But for many, it is a way of life that allows them the flexibility to meet not only long-and-short term objectives, but also lifestyle and financial needs that are not addressed with traditional forest management systems.

For more information on implementing silvopasture on your property, an instructional video is now available entitled *Silvopasture: 30 Years of Research and Innovation*. Developed in partnership with Auburn University, Alabama Cooperative Extension System, and the USDA National Agroforestry Center, this video features practical information on the development and management of southern pine silvopasture. A copy of the video can be requested by emailing becky.barlow@auburn.edu or nhammond@fs.fed.us. Additional information is also available at www.unl.edu/nac/silvopasture.htm. 

