Volume 11, Number 3
May-June 2005

A voluntary partnership with private landowners

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Plans are underway for the 3rd National Grazing Conference in St. Louis.

Photo courtesy of Natural Resources Conservation Service.

Combining Trees, Forage & Livestock

Called silvopasture, integrating timber resources with forage and livestock on the same land can offer value added opportunities for producers.

By Kindra Gordon

At first, the thought of grazing livestock among a timber operation may sound taboo. But when you consider the large forage area surrounding trees, the potential to graze that land and have income from both timber and livestock production becomes apparent.

Sid Brantly, a grazing specialist with the Natural Resource Conservation Service (NRCS), calls this type of dual enterprise management a "win-win situation."

Brantly reports that he is seeing growing popularity in integrating timber production and livestock grazing on the same land. It's a management practice called silvopasture, and it works in regions like the Southeast or Pacific Northwest where livestock producers may also have good timber growing and marketing potential.

Brantly says, "Often a landowner may have both enterprises - timber and livestock, but he runs them on separate land. By merging the two enterprises together and grazing land used for timber production, the efficiency of both enterprises can be increased over what it was when managed as two separate enterprises."

Jim Robinson, a NRCS agroforester based in Fort Worth, TX, echoes Brantly's comments, saying research has shown that with proper management, the economics are there to make such dual systems work. Robinson cites a Louisiana study that reported a 12% boost in rate of return on a silvopasture system compared to a timber site and pasture grazing system that were each operated separately.

But Robinson emphasizes that intensive management is required to make silvopasture successful."Just grazing your cattle in the woods is opportunistic grazing. Silvopasture needs

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Combining Trees, Forage & Livestock

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to be planned grazing with a rotational system that manages for the forage, the timber and the livestock."

In addition to the economic benefits, Robinson points out that a properly managed silvopasture system can also produce environmental attributes. For instance, establishing forages among the timber can reduce weed infestations and reduce soil erosion.

Moreover, silvopastures provide an attractive landscape with an aesthetically pleasing "park like" setting and may also help reduce fuel loads that contribute to fire concerns as well as improve wildlife habitat. "By managing the livestock to produce the desired under story composition, landowners can attract quail, turkey or deer and other wildlife to their silvopasture," he says.

WILL IT WORK FOR YOU?

If silvopasture piques your interest, the first consideration is to determine if a market exists for the trees. Silvopasture systems can work with conifers and some select hardwoods raised for timber, or even Christmas trees and nut and fruit orchards. Robinson says pine is a popular species to use in the South, and Douglas fir and Ponderosa pine are common candidates for silvopasture systems in the Northwest. In the Midwest, pecan and black walnut plantings have also been used.

When establishing trees for a silvopasture system, Robinson recommends about 200 to 400 trees per acre for conifers, and only about 100 trees per acre for hardwoods. While these plantings are less dense than systems managed solely for timber, they allow for that dual component of income from eventual timber production with short-term cash from livestock grazing.

Typical planting arrangements include the block planting of equally spaced trees to optimize growing space and light for both trees and forage; or the linear planting comprised of one or two rows or closely spaced trees with a wider area or alley for the primary forage production. Both systems will work and are generally applied based on landowner preference, Robinson says.

Trees will also need to be pruned regularly to increase light penetration to the forages in the under story and to produce quality wood products. "Silvopasture is a management intensive system, and the objective is to keep both trees and forages producing, so some thinning will be necessary," Robinson says. He advises trimming trees to a 25-45% canopy cover for warm season forages in the under story and a canopy cover of 35-60% for cool season forages. "Cool season forages can tolerate a denser canopy because of their growing time and shade tolerance," Robinson says.

As the tree seedlings get established, livestock grazing will need to be deferred. "As a guideline, we recommend waiting to graze a timber area until the terminal bud on the tree is above what the grazing animal can reach," says Brantly – depending on tree species that may be 2 to 6 years or more. But he adds if trees are planted in wide rows or group plantings, the forage can be hayed to produce some value while waiting for the tree species to grow.

Once tree species are well established," Brantly and Robinson say, "cattle will usually leave the trees alone. If good forage is available, cattle, especially mature cows, won't browse the trees," says Robinson.

But they caution that yearling heifers, stockers or bulls may do more damage to seedlings. Robinson says, "Observation is key to a lot of management. If silvopasture is a new system for the livestock, watch them closely when you first introduce them to a combined forage and timber area. Make sure they are adapting to it, and the trees aren't being damaged."

"Consider scheduling grazing on timber areas before or after the breeding season when bulls are not with the herd," Brantly suggests.

Robinson adds, "With good management, silvopasture works. You still need proper stocking rates and a planned rotation system that keeps the animals, forage and trees in good condition. Obviously, if you just dump the cows in and graze it until the forage species is damaged, you'll damage the trees too."

Brantly suggests producers try it on a small scale to start. "I've seen several producers thin a timbered area, seed forages and graze it. Pretty soon it's a standard practice and they are silvopasturists."

He adds, "Silvopasture does require more management and more knowledge, but it is yet an untapped potential. Producers may not maximize both timber and livestock production with this system, but because they have multiple enterprises, they are getting more economic and environmental return out of two than they would from one."

For more information on silvopasture, visit the National Agroforestry Center's website at www.unl.edu/nac/silvopasture.html.

Upcoming Grazing Events

June 11-15 *American Forage & Grasslands Council Conference, Bloomington, IL*

July 29-Aug. 4 *Soil & Water Conservation Society Conference, Rochester, NY*

Aug. 8-9 *Nebraska Grazing Conference, Kearney, NE, www.grassland.unl.edu/grazeconf.htm*

Nutritional Wisdom: What's For Lunch?

Observations about Herbivore Plant Selections

By Mark Moseley,
Texas State GLCI Coordinator

There is a story about a man with his nose bandaged up. When questioned about what happened, he replied, "I broke my nose in three places." "What did you do?" was the obvious next question. He replied, "Well, I just don't go into those places anymore!"

An interesting exchange, but this no doubt represents one of the many ways by which animals learn to select or avoid certain plants. Simply put: "Consequences influence behavior."

Anyone who has ever watched cattle turned out into a new pasture has witnessed how cattle will immediately put their head down and start sniffing and snipping at the fresh forage they find. Some plants they will heartily consume, while passing up other seemingly similar plants.

To gain a more scientific insight as to how animals make eating choices, the Texas Coalition of the GLCI sponsored Dr. Fred Provenza, of the Department of Forest, Range and Wildlife Sciences at Utah State University, to present a workshop to examine the complex interrelationships of plants, people, and herbivores. This three-day workshop was held in San Angelo, Texas in cooperation with Dr. Cody Scott, of Angelo State University (ASU). Together, they provided this workshop to NRCS, ranchers, Extension, and University of Texas personnel. Each day was punctuated by going to the ASU ranch to observe first-hand sheep changing their preferences for different feeds.

In addition to Dr. Provenza and Dr. Scott, the participants heard presentations by Rob Cook and Wayne Dunston, NRCS Rangeland Management Specialists, who earned their masters degrees at ASU. Cook's topic addressed using goats to consume mesquite beans as a method of seedling reduction. Dunston's topic involved goats eating redberry juniper for suppression.

The following are some key points taken from the workshop:

√ Wild and domestic animals moved to unfamiliar environments suffer more from predation, malnutrition, and ingestion of poisonous plants than animals familiar with the environment.

√ Nearly all plants contain toxins, but that can be a good thing for the plant. One role of toxins is to cause animals to limit their intake thus shifting their preference to other plants. This prevents overgrazing of the toxin-containing plant as long as other choices are available.

√ All creatures perform best when they "want to" rather than "have to."

√ There is a social aspect of nutritional wisdom as well as a forage quality side.

√ A combination of positive reinforcement and punishment may be the most effective way to change behavior. For example, to move cattle out of riparian areas, it is ineffective for the rider to simply scatter the cattle out of the bottom because they will quickly return. However, if the rider moves the cows as a social group to a new area with high quality water and forages they are more likely to stay.

√ Animals will learn to avoid plants that make them sick, provided that other nutritious choices are available.

√ Learning about foods begins before birth as young animals experience their mother's diet in the womb. Once born, they learn which foods to eat by mimicking mother and remember these foods for years. Despite mother's influence, young animals do not continue to eat foods that make them sick, even if mom likes it.

√ Animals experiment with new foods. If the new food rewards the animal with a pleasant experience in the stomach then, through biological feedback, the animal associates the taste, odor and texture with that pleasant feeling and continues to select the plant.

√ Different animals have different coping physiology for toxin levels that can be found in certain plants. For example tannins produced in plants such as oak and Sericea lespedeza can be toxic to cattle. However, goats have the ability to process tannins in forages that cattle won't eat.

√ A diversity of forages allows animals to regulate and balance the intake of nutrients and toxins. The right dose of toxins can even be therapeutic.

The bottom line:

√ Match animals to their environment,

√ Manage for a diversity of plants,

√ Recognize the value of social forces in grazing animals,

√ Animals learn via experiences: both positive and negative.

√ The economic performance of grazing land management systems depends upon an understanding of these factors.

Editor's Note: *This article is only an "appetizer." For more of a "full meal" catch Dr. Provenza at one of his workshops or presentations. The website http://www.behave.net/ has ample valuable information relative to grazing behavior.*

THE CHAIR'S CORNER

Bob Drake

The National GLCI Steering Committee completed their spring meeting mid-March in Washington D.C. This is always an important opportunity to share grazing issues for private lands with our nation's leadership and decision makers.

Michael Hall has been named GLCI Grazing Lands Specialist for the National Technology Support Center in Greensboro, NC. He is currently on active duty with his Guard Unit. Michael comes from South Carolina where he worked as a grazing lands specialist.

Work is underway for the next National Grazing Conference. The National Steering Committee has formed working committees for the upcoming 3rd National Grazing Conference December 10-13, 2006 in St. Louis, MO. Mark your calendars and start getting people excited to attend.

Bob Drake, Chairman
National GLCI Steering Committee

To have your GLCI activities or upcoming events highlighted in this newsletter, contact Kindra Gordon at phone 605-722-7699 or kindras@gordonresources.com

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