Angus Glen Farm: A Lesson in Silvopastures

New York farm provides inspired innovation for its cattle

By Katie Navarra

In Watkins Glen, New York, Brett Chedzoy and his wife, Maria Jose, are raising grass-fed beef with a twist. The couple has built a viable business with 80 cow/calf pairs of pasture-fed Aberdeen Angus cattle that are grazed in 100 different pastures across 310 acres. Nearly one-third of the pastures are silvopastures, which combines the production of trees, forage and livestock on one parcel of land: an agroforestry practice Brett and Maria Jose learned from Argentinian farmers.

Introduced to agriculture at a young age, Brett spent much of his youth split between his grandparents' farms in Kansas and Upstate New York. In the mid-1980s, his parents, Jim and Rose, purchased a small dairy farm from friends who wanted to retire. The cattle were sold, and the farm was leased to a neighboring dairy for nearly two decades.

Brett attended Cornell University and the State University of New York College of Environmental Science and Forestry (SUNY ESF), and after graduating with degrees in Forestry, he spent two years in central Argentina with the U.S. Peace Corps. During this time, he met and married Maria Jose. While working in Argentina, Brett observed ranchers raising profitable grass-fed beef in

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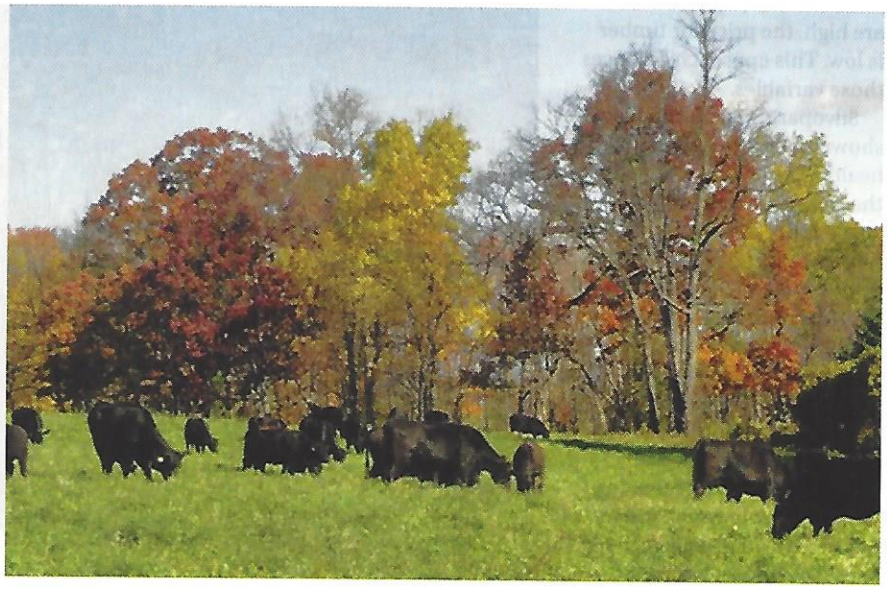

wooded areas while simultaneously sustaining healthy, viable forests and landscapes.

"The innovative ranchers (in Argentina) were successfully increasing the stocking capacity of their ranches by establishing productive plantations on the native rangelands and managing them as silvopastures," he said.

In 2002, the Chedzoys returned to the United States and settled on Brett's parents' farm in central New York, renaming the farm Angus Glen Farms, LLC.

"The name seemed appropriate because we raise black angus cattle and the farm is adjacent to the Watkins Glen State Park Gorge (Glen) the second-most visited park in New York State," he said, "and the original Grand Prix course for car racing also runs through the middle of the farm."

They implemented the technique known as silvopasturing on their ranch in Argentina. Since the practice worked so well there, they decided to manage their farm and livestock in New York using the same principles.

The practice had become taboo in the Northeast over the past 50 years as foresters and conservationists started to educate farmers on the negative effects unmanaged grazing could have on woodlands. Unmanaged livestock grazing can increase soil compaction, injure valuable trees and disrupt a healthy and sustainable forest ecology.

But what Chedzoy learned in Argentina was contrary to what foresters and conservationists had been teaching. Properly managed grazing in woodlands allows trees to rehabilitate degraded soils and the tree cover also provides protection for livestock from extreme weather.

"We adapted the concept to our farm in New York for reasons that include dealing with invasive plants in the wooded portions of the farm; greater animal comfort and performance in the partially shaded silvopastures; and the ability to grow both livestock and quality timber on the same land in a mutually beneficial manner," he added.

What is silvopasturing?

Not to be confused with woodland grazing, which is a passive, low-management system in continuously grazed dense woods, silvopastures are intensively managed with intensive rotational grazing and maintenance schedules.

"The goal is to raise functional trees and livestock on the same land for increased overall production. The goal is also to create synergy, symbiosis and sustainability," he said.

Not only do silvopastures provide multiple income sources, but they generate revenue at different intervals during production to fill in gaps between the harvest of one crop or another. The livestock provide a short-term economic yield, and the timber provides a long-term economic yield as well as multiple other ecological benefits.

The combination of "crops" varies geographically. The first crop, trees, ranges from pine plantations and hardwoods for high quality timber to nut groves and Christmas tree farms. Before these trees are harvested, saleable firewood and other byproducts of routine thinning offer short-term income.

The second crop, livestock, is most often cattle or meat goats. Horses, sheep and even geese have been used in some settings. Geese didn't work as well because they became food for the bobcats or any predator that likes small livestock.

The third crop, forage, potentially provides a cash hay crop and eventually becomes a high-protein feed source for the livestock. The forage also supports soil and pasture health.

Well-managed, dense stands of forage helps control and keep out invasive plant species and the nutrient cycling associated with healthy pastures will also benefit the trees. Silvopastures in the Northeast have been a bit more challenging largely because of the native woody undergrowth. Questions about maintaining the diversity of the plant community still exist.

Although there is much to learn about silvopastures in the Northeast, Brett noted there is a significant opportunity for them to work. "The Northeast has millions of acres of underutilized, degraded farm woodland and plantations and overgrown former pastures that would be suitable for silvopastures," he said. "There are also millions of additional open pasture lands that could be enhanced as silvopastures by feasibly incorporating trees."

Why silvopasture?

Economics is the most attractive benefit of silvopasturing. Combining multiple crops with differing market readiness rates offers land owners balanced income. When timber prices are high, the price for cattle is low. When cattle prices

are high, the price for timber is low. This approach balances those variables.

Silvopastures have also been shown to improve livestock health. The shade provided by the trees' canopy reduces heat stress-induced weight loss. The trees offer natural protection from wind and adverse weather conditions. The managed growth also encourages diverse wildlife and plant species.

Aesthetics are another important benefit. These systems create "park-like" settings. On the timber side of the business, loggers tend to pay more for the wood products because they are typically higher quality than unmanaged timber stands. The well-managed trees are easier to remove without damaging equipment or other trees.

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Grazing management

Rotational grazing is the key to success in combining livestock with trees. "This isn't a good fit for someone who hasn't yet learned the basics of rotational grazing," Chedzoy said.

Livestock are intensively grazed in silvopastures for short durations. Then the livestock are removed, so the pastures can "rest and recover."

The frequency and intensity of grazing livestock must be strategically planned and carefully managed to be successful and avoid overgrazing. "It is important to remember that from a livestock perspective, the silvopasture is only as good as the quality and quantity of food available to them," he said.

Planning is key to transitioning from traditional grass-fed operations to silvopastures. He recommends developing a written start-up plan for your project that outlines where, when, why, how and how much you can spend in terms of time and money.

Traditionally, cattlemen have been warned against grazing cattle among trees to avoid soil compaction and damage to trees. Quite the opposite is true because the cattle are only in one part of the pasture for short periods of time with long periods of rest and recovery in between. The animals' hooves break up the top level of soil and encourage the integration of their manure as a natural fertilizer source.

Preventing cattle from rubbing on the trees is also easily managed. "Damage to trees can be largely eliminated through skilled management of the livestock," he said.

Not all pastures on the property need to be in silvopastures for the approach to work. It's more likely to observe a combination of traditional and silvopastures.

Forestry management

It's equally important that land owners are well versed in forestry management. Trees, unlike most other plants, are slow to show signs of stress, and when they do, it's usually too late to reverse the damage.

> **Rotational grazing is the key to success in combining livestock with trees.**

"The manager has to be careful not to unintentionally damage trees in the silvopasture system because once the signs become visible, it's too late," Chedzoy said.

Thinning, pruning and harvesting schedules vary based on the system itself. Thinnings in silvopastures are usually done more frequently than in areas being managed solely for timber production because sunlight is being managed at the upper tree canopy level as well as at the ground level.

"For example, thinning about every

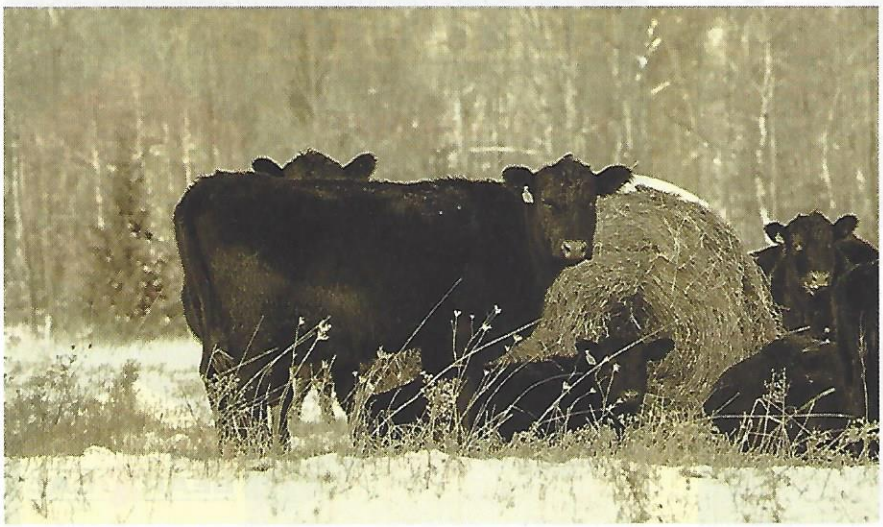
▲ The cattle are rotated every two days through the usual paddocks, which provides them plenty of good hay and even some dry, clean bedding.
▼ Grazing continues year-round at the farm, but forages take a round shape from January to April.

> **Integrating silvopastures, when well managed, can improve the profitability of the land while also providing long-lasting environmental benefits.**

10 years for timber may be sufficient to maintain acceptable levels of competition for sunlight between trees and tree growth," he said. "But lighter, more frequent thinnings may be necessary to allow enough solar energy to reach the ground level to promote good forage growth. Many cool season forages will grow acceptably well in light shade."

Getting started

Start small. Silvopastures require more knowledge and management than traditional systems. Beginning with a small parcel of property allows land owners an opportunity to monitor what is working in the system and what needs additional attention before trying it on a large scale.



Brett Chedzoy & Angus Glen Farm

It's difficult to offer a specific ratio of land and livestock to make a silvopasture work. Researchers are working on determining the economics of scale, but the trees plus livestock increase the profitability of the land compared with raising one single crop.

Chedzoy said, "Silvopasturing can be implemented at any scale if the principles are followed of adequate rest and recovery time in the silvopasture areas."

Grants and or cost-sharing programs may be available through Sustainable Agriculture Research and Education (SARE) grants and or the Natural Resources Conservation Service. The funding source determines which expenses may be eligible and who receives the funding. "With some funding sources you may be eligible for cost sharing on setting up water sources for livestock or for planting trees into an open pasture," Straight said.

Silvopastures in the Northeast

Silvopasturing may well be one of the best-kept secrets. Integrating silvopastures, when well managed, can improve the profitability of the land while also providing long-lasting environmental benefits.

Acreage of intentional and well-managed silvopastures in the Northeast is probably in the few thousands of acres. "The potential is in the millions of acres when looking at farm woodlots and plantations that have suitable characteristics and are in close proximity to existing grazing operations," he said.

Developing new sites into productive and profitable silvopastures is not a rapid process. Farmers want results in one season; foresters expect things to happen over decades.

Agroforestry systems like silvopastures may take years of patient and persistent management to reach the objective.

"Silvopasturing has allowed us to profitably use our entire farm over the past dozen years. It has also been a cost-effective way of rehabilitating our woods into a healthier state and controlling invasive and noxious plants on the farm. Silvopasturing has been good for our land, livestock and livelihood," Chedzoy said.

Learn more about silvopastures by connecting with others using the practice at this online forum: *www.silvopasture.ning.com.* **F**