The Regenerative Ag Movement's Human Element

5 Examples of Farmer-to-Farmer Information Flow

By Brian DeVore

What are the critical elements to creating a regenerative farming system? Is it taking a cue from nature when it comes to managing soil? Building climate resiliency and mending the broken link between animals and the land? Reforming the food system so that it rewards those practices that support rural communities while leaving the landscape better than we found it? Making certain that everyone, no matter the color of their skin or their background, has the opportunity to thrive within the food and farming system?

All of the above, and more. And it has to be orchestrated in a way that these and other elements operate in a holistic, interconnected manner. For example, building soil health isn't "sustainable" in the long run if the people who are doing the building don't have an economic incentive to take the extra care with the biome beneath our feet. So what kind of glue holds these and other regenerative elements together? Well, as we outline on pages 8, 10, and 12 of this *Land Stewardship Letter*, public policy can be an important binding agent. But an even more critical connection is people. Or more specifically, farmers talking to farmers — sharing ideas, grappling with problems, and cheering each other on. Such relationship building can open people up to new ideas and make it okay to take on the kind of innovation that gets talked about in not-so-kindly terms at the local coffee shop. On the next few pages are reports from five LSP-related events held the past few months where these farmer-to-farmer connections were on full display.

1) Soil, ROI, IRA, Training Wheels

Gary Zimmer says he's 80. Spend any time with him, and one can't help but wonder, "Is he referring to his age or the speed at which he talks at?" "I speak as fast I think," he likes to say. And the so-called "father of biological farming" thinks a lot about how to create a farming operation that's viable long into the future. His overall message during a Land Stewardship Project workshop on soil health economics held in March: you have to regenerate a farm before it's sustainable, and that regeneration starts and ends with the soil.

Zimmer has been preaching that gospel for over 50 years. He is the founder of Midwestern BioAg, which offers various services for farmers hoping to tap into their soil's homegrown biology. He also owns Otter Creek Organic Farms, a 1,000-acre certified organic cropping operation in southwestern Wisconsin. During the workshop, which was held in the northeastern Iowa town of Ridgeway, he shared with the roughly 80 participants examples of farm ground he's regenerated utilizing cover crops, composting, and the addition of key minerals and other elements. Such a strategy often requires shucking old methods, as well as old ideas.

Farmers share ideas for building soil health during an LSP workshop in Ridgeway, Iowa. "There are times when the training wheels are off and you're ready to go hotdogging it down the road," says farmer Josh Nelson. (*LSP Photo*)

"The biggest compaction on a farm is between your ears," said Zimmer with a smile, before speeding along to more topics.

Jerome Fulsaas, who raises crops, cattle, and hogs just a few miles from Ridgeway, provided the workshop participants a local perspective on the benefits of breaking up compaction — above the neck as well as beneath the feet. In 1998, he started experimenting with no-till production, and in 2010 began dabbling around with cover crops. Since the 1990s, the farmer has seen his soil's organic matter levels roughly double. His hilly fields are not only soaking up and storing water better, but his crop yields have increased and Fulsaas is spending less money on inputs such as fertilizer. He explained that while methods like cover cropping produce short-term benefits such as inexpensive grazing for his cow herd, along with erosion control and a lower chemical input bill, he also sees the building of soil health as a long-term investment. For example, by increasing water holding capacity, his operation is better able to weather periods of drought and is more resilient in the face of extreme weather overall.

That's why he compares building soil health to investing in an individual retirement account, or IRA: there are times when that IRA is worth less at the end of the year than it was at the beginning, but that doesn't mean one stops paying into it. It's a long-term investment in something that's building

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Give it a Listen

On LSP's *Ear to the Ground* episode 336, Gary Zimmer talks about why before a farm can be sustainable, it has to be regenerated — and that starts with the soil: landstewardshipproject.org/podcast/ear-to-the-ground-336-biology-booster.

Episode 337 features Josh Nelson describing how his approach to farming means looking beyond the next corn crop and building the kind of soil that generates long-term return on investment: landstewardshipproject.org/podcast/ear-to-the-ground-337-roi-riding-a-bike.

On episode 338, Jerome Fulsaas describes building an IRA based on a living soil bank, not dead dirt: landstewardshipproject.org/podcast/ear-to-the-ground-338-microbial-ira.

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overall value.

"I see the same thing with my soils over time," said Fulsaas. "Some years we have setbacks because of Mother Nature, but we're still on the trajectory of improving soils overall."

Josh Nelson agrees that healthy soil is building his farm's return on investment — even the nonmonetary aspects of it, like protecting the environment and giving him more time to spend with his children. Such a big picture, systems approach has given the young farmer a more nuanced view of what true profitability is. For example, high yields are often equated with high profits, but what are the costs of obtaining those few extra bushels? "I would love to harvest 200-bushel corn someday," the north-central Iowa crop and livestock farmer told the workshop participants. "But are you just searching for yield, or are you searching to be a profitable business?"

However, he warned, too often farmers who get excited about regenerative farming think the way to a sustainable ROI is to start dropping inputs cold turkey. As Zimmer made it clear, for a farm to be sustainable, first it has to have its soil regenerated, otherwise one can be set up for agronomic, ecological, and economic disasters. That means not being afraid to ask "dumb questions," checking in with other farmers who have already tried some of these practices, and taking a cue from them when it's time to jump in headfirst, said Nelson. He compared it to when he taught his son to ride a bike.

"He was going down the bike trail and didn't even realize I had stopped following him," recalled Nelson. "There are times when the training wheels are off and you're ready to go hotdogging it down the road."

Later, workshop participants took the words of Zimmer, Fulsaas, and Nelson to heart as they broke up into small groups and discussed ways of making soil health practices more prevalent in their communities. They discussed practical ideas such as reforming crop insurance so it would stop incentivizing systems that harm conservation. They also talked about developing more local markets for small grains. But there was a more philosophical angle to the discussions as well. Concluded more than one group: You have to be okay with being different. ◆

For details on LSP's work to help farmers build soil profitably, see landstewardshipproject.org/soil-health or contact Alex Romano at aromano@landstewardshipproject.org.

2) Climate & Community

When it comes to farming, climate change plays no favorites, whether you're raising protein or produce. "Be ready for anything," said vegetable farmer Joan Olson, as she showed two photos: one of her two children kayaking in a flooded field and the other of her plots broiling in droughty conditions.

Yes, be ready for anything, including an entire season getting canceled. "Springtime doesn't feel like springtime anymore. It feels like a tug-of-war between winter and summer," said beef farmer Tyler Carlson.

In January, Olson and Carlson presented at an LSP-University of Minnesota Extension climate resiliency workshop in Saint Cloud, Minn. They described to the mix of produce and livestock farmers that attended what adaptations they've made in recent years and what short-term as well as long-term changes are coming for their farms down the road.

"Be ready for anything," says vegetable farmer Joan Olson. The flooded fields pictured on her farm here have also been parched as a result of extreme weather. (*Photo courtesy of Prairie Drifter Farm*)

Olson, along with her husband Nick, owns and operates Prairie Drifter Farm, a 150-member Community Supported Agriculture (CSA) enterprise in Meeker County. They also sell vegetables to two local food co-ops and three area schools.

Prairie Drifter has installed three high tunnels, which allows the farmers to extend the growing season and protect plants from intense rains as well as disease outbreaks. They use shade cloth inside the high tunnels and have adjusted when they grow certain crops. Broccoli is difficult to grow in today's climate, so the Olsons have been experimenting with broccolini. They are also leaning more into heat-loving crops like sweet corn and sweet potatoes. The Olsons have adjusted work schedules for themselves and their employees to avoid the hottest part of the day and have cut back the number of CSA shares they provide.

"Listen to your body," said Joan.

A solar array and back-up generator provide piece-of-mind when power outages occur — something that's more prevalent with climate change — threatening the farm's ability to cool produce and irrigate.

Carlson, along with his wife, Kate, operates a grass-fed beef operation called Early Boots Farm near Sauk Center, Minn. A cornerstone of their operation is silvopasturing, which blends wooded habitat with rotationally grazed pastures (*see page 20*). They direct-market the meat they raise.

The dappled shade provided by the wooded acres provides relief for the animals and increases their productivity, so the farmers save the grazing of those acres for heat waves. In fact, during recent hot spells, open pastures were at 10% to 20% of their productive capacity, while silvopastured acres retained 75% of theirs. Carlson focuses on grazing taller forages and leaving plenty behind with each rotation, which helps the paddocks develop deeper roots and more litter to protect the soil from hot, dry conditions.

As far as long-term adaptations, Carlson is looking into cattle with lighter-colored coats and establishing more silvopasture acres and heat-tolerant forages. Olson said Prairie Drifter has added a second well for irrigation and they are considering a variable speed irrigation pump.

Both farmers agree on one way to build climate resiliency: develop tighter community connections with other farmers weathering the same difficulties. Olson

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Give it a Listen

On *Ear to the Ground* podcast episode 329, Joan Olson and Tyler Carlson talk about how climate change may impact a vegetable producer and a livestock farmer in different ways, but the results are the same: uncertainty, stress, and a deeper desire to connect with community: landstewardshipproject.org/podcast/ear-to-the-ground-329-weather-whiplash.

Ear to the Ground 299 features regenerative agriculture expert and author Laura Lengnick talking about why, if farms are to survive (and thrive) in the age of climate change, we need to remember it's not just about soil and water — it's also about people: landstewardshipproject.org/podcast/ear-to-the-ground-299-road-to-resilience.

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has a "phone-a-friend" strategy to feel less isolated and to compare notes when disaster strikes. As the weather becomes more unpredictable, such human connections are only going to grow in importance, said Carlson.

"One thing Kate and I are thinking about is how to deepen our social connections in our community. That's one of the best things we can do for climate resilience." ◆

For more on LSP's climate resiliency cohorts, contact organizer Nick Olson at nicko@landstewardshipproject.org.

3) Land, Livestock, Linkages

In an out-of-the way attic-like room in the heart of the University of Minnesota's Saint Paul agriculture campus, right next to the College of Veterinary Medicine and near the Animal Science Department, down the street from the Cargill Building for Microbial and Plant Genomics, a group of farmers, scientists, graduate students, and natural resource experts got together on a Friday in April to discuss a system of farming that's quite different from the one being promoted via land grant laboratories, classrooms, test plots, and research barns. That latter system is based on removing animals from the landscape and crowding them into concentrated animal feeding operations, otherwise known as CAFOs, where feed is shipped in and manure hauled out in quantities that pose threats to the soil, water, and climate.

"The whole system of livestock is quite wrong at the moment," Azadeh Farajpour Javazmi, founder of betterSoil, an international initiative to improve soil quality for climate resilience and sustainable food production, told the participants via an online link during one of the sessions of "Regenerative Livestock Systems Symposium: The Role of Livestock in Restoring Natural Resources and Agroecosystems." The event was organized by the Sustainable Animal Ag Study Group, which was created by graduate students in the U of M's Animal Science Department who have a strong interest in animal welfare and sustainable farming research and outreach. Sponsors included the Land Stewardship Project, Grazing Lands Conservation Association, and Green Lands Blue Waters, among others. As the title and sponsors imply, this event was centered on discussing how to reconnect livestock and the land in a way that animal welfare, soil, water, the climate, farmers, and rural communities benefit.

At the core of that reconnection is covering the soil with living plants as much of the year as possible. Nicholas Jordan, a U of M professor of agronomy and plant genetics, had some good news to share: research he and others have done through initiatives such as Forever Green show the tremendously positive environmental impact that results from having continuous living cover on the landscape in the form of perennials such as grasses, forbs, and trees. That continuous living cover can also take the form of annual cover crops that are grown in-between the corn and soybean seasons.

And livestock, particularly in the Midwest, can give farmers an economic incentive to establish and grow that continuous living cover, maintained numerous presenters, which included not only scientists, graduate students, and natural resource professionals, but, perhaps most importantly, farmers who are implementing perennially-based livestock farming day-in and day-out.

"There's a saying that with nature you pull a string and it's all connected," says grass-based dairy farmer Derek Schmitz. "I think that's very true." (*LSP Photo*)

Presenters included cow-calf producers who have converted row crop land to grass or are grazing marginal land that formerly was overgrown and all but abandoned, dairy farmers who are tapping into markets that reward the use of regenerative grazing systems, and a poultry producer who is replicating a system long used by indigenous people. The common theme: how do we strike that balance of doing right by the land, the animals, and bank accounts?

"It was the environmentally right thing to do because it's near moving water," said Dave Evans, who farms near the Minnesota River and has converted all of his row crops to grass, which he rotationally grazes a beef herd on. "But I also wanted to increase my carrying capacity."

Diane Christofore, executive director of the Regenerative Agriculture Alliance, described how her group is working with farmers in the region to re-create the poultry production system founder Rejinaldo Haslett-Marroquin grew up with in his native Guatemala: raising chickens under trees.

"We are creating jungles here in the Midwest," she said, describing how they are planting a mix of hazelnuts and elderberries, and will eventually add sugar maples.

An important theme of the symposium was the importance of making sure innovations in regenerative livestock production are part of a multi-directional system of communication involving scientists, farmers, government agency staff, and policymakers. Such connections are not always available through the traditional land grant research/education/extension infrastructure.

"If there are faculty members in the room, you might be really sad to learn that a lot of farmers don't read your papers," said Jane Grimsbo-Jewett, a farmer and associate director of the Minnesota Institute for Sustainable Agriculture.

Another message: corn and soybeans aren't going away anytime soon, and creating a regenerative livestock infrastructure does not require replacing all row crops with perennial grasses and forbs.

George Boody, of SoilCarbon LLC, described a study he did of Minnesota farmers who were integrating livestock into cropping operations. The farmers he interviewed for the study described how they were blending livestock and crops by, among other things, grazing marginal land unsuitable for corn and soybeans, or grazing cover crops and small grains that were part of the cash crop system. Boody said his analysis showed that not all farmers must own animals to cre-

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Give it a Listen

On *Ear to the Ground* podcast episode 330, milk producer Derek Schmitz talks about how linking cows, ecology, and economics gives him a reason to be optimistic despite dire times in the dairy industry: landstewardshipproject.org/podcast/ear-to-the-ground-330-string-theory.

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ate a regenerative livestock system overall — there are opportunities to connect row crop farmers who may have cover crops or pasture remnants to graze with livestock producers who need access to low-cost forage. Twenty percent of corn and soybean acres in Minnesota are considered marginal, meaning they don't produce optimal yields. What if those acres were converted to grazing? Boody's analysis shows that there is the potential for shifting 7.5 million acres of Minnesota farmland to a system that integrates ruminants into grazing continuous living cover either in the form of cover crops or perennial pastures. Such a shift, along with utilizing cover cropping and no-till, could help reduce the state's agricultural greenhouse gas emissions by 30%, or the equivalent of taking 2.2 million cars off the road.

Boody said some of the farmers he talked to saw integrating livestock into their cropping systems as a way to make room for the next generation on their enterprise.

"It produces opportunities," he quoted one farmer as saying.

But in order for regenerative livestock production to be sustainable ecologically, it has to pay off economically. Kevin Mahalko, who dairy farms in western Wisconsin's Chippewa County, said he relies on the premium he gets from Organic Valley Cooperative for producing 100% grass-based milk. He showed charts documenting the results of studies showing how grass-based livestock products are consistently higher in Omega-3s, which are beneficial to human health. "I don't think we would be farming without that market," he said of the grass milk certification.

It's not just human health that can provide a marketing boost for regenerative graziers. Sarah Hewitt, a senior conservation manager with the National Audubon Society, described how her organization has developed a certification system for grazing operations that are creating a mosaic of grassland bird habitat while improving livestock health and welfare and protecting riparian areas and water quality. The program thus far has certified livestock operations in 14 states on a total of three million acres, and the initial results are encouraging: grassland birds increased 35% on the first operations that were certified. The eventual goal is that the livestock producers who are certified under this program can use Audubon's seal of approval as a way to market meat and other animal products to eaters who want to support birds on the landscape.

But getting such products to the consumer requires recreating basic infrastructure such as meat processing facilities that can serve local markets. Christofore said the Regenerative Agriculture Alliance has had to invest in a processing facility in Iowa in order the fill the gap between field and fork. "We knew if we were going to have a regenerative system, we weren't going to be successful without a way to process the birds," she said.

Farmer and local food marketing expert Sara George (*purple shirt*) **speaks to farmers and buyers during an LSP "speed-dating" event in Montevideo. George says relationships between the two parties need to be based on a straightforward strategy: "Communicate, communicate, communicate."** (*LSP Photo*)

Several of the farmers who spoke during the day referenced phrases like "farming in nature's image" to describe what guides their livestock production systems. And when it all comes together as an ecological whole, it can be a beautiful thing, said Derek Schmitz, who farms with his wife, Taylor, near Cold Spring in central Minnesota. He milks 70 cows and has a long-term goal of expanding to 120. To put that in context, the average dairy herd size in the United States is now well over 320 cows.

But at a time when massive production is equated with profitability, Derek focuses more on return on investment. In his case, that means keeping expenses to a minimum and not pushing his herd to produce as much milk as possible. In fact, he's estimated that at times his operation is producing milk at about half the cost of other dairies. Schmitz finds such a system not only results in more money in the bank, but is less stressful, and thus more humane, for the cows as well as his family. "The cows are a joy to be around," he said. "It's just enjoyable."

That's why he spends plenty of time observing the connections between a healthy, grass-based ecosystem, healthy cows, and a healthy bottom line — they are all inextricably linked. As he's gone deeper into regenerative grazing, soil health has improved, which has spawned more beneficial insects, which, in turn, has resulted in more wildlife. Meanwhile, the diversity of plants in his pastures is over 100 species.

"There's a saying that with nature you pull a string and it's all connected," said the farmer. "I think that's very true." ◆

For more on regenerative livestock, see LSP's Grazing and Soil Health web page at landstewardshipproject.org/grazing-soil-health or contact Alex Romano at aromano@landstewardshipproject.org.

4) Chasing Food Connections

When it comes to field-to-fork, you name it, and Sara George has been involved with it. Not only does she operate a vegetable and fruit farm in western Wisconsin, but she is the market manager for the Red Wing area farmers' market across the Mississippi River in Minnesota. She's also a food safety trainer for the State of Minnesota, and through a position with the nonprofit group Renewing the Countryside, provides support for farmers throughout the Upper Midwest. But George also has insights on another key aspect of the food business. For nine years, she worked at the Harborview Café, a restaurant in Pepin, Wis., that works to source from local farmers.

That's one reason George is such a valuable source of information for people who make up all the components of the local food equation: restaurateurs, school food service managers, and others seeking locally produced food, as well as the farmers who produce it in the first place.

But often we learn best from our mistakes, or ideally, the mistakes of others. For example, during a recent meeting LSP held for farmers and buyers in Montevideo in western Minnesota, George shared a story about the time she proudly lugged six beautiful flats of heirloom tomatoes she had raised into the Harborview's kitchen. Grinning ear-to-ear, the told the chef that they would be ready to serve once they had sat in a sunny window for 24-to-48 hours."

"He looked at his watch and said, 'I need these for today's lunch service, and that's in about an hour-and-a-half,' " George recalled.

She said that story illustrates the first

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rule of developing a successful marketing relationship based on local food: "Communicate, communicate, communicate."

A lot of communication has been going on between buyers and sellers at a recent series of LSP meetings being held in western Minnesota. These meetings are a follow-up to surveys and other forms of research showing that the region's food system is broken. It's not that there aren't farmers willing to raise product for local markets — there are — or businesses and institutions that want to support a local food economy — there are those too. The problem is that there is not enough of a processing, storage, and distribution infrastructure available to support regional food webs on a consistent basis. Building such an infrastructure will take time and resources. In the meantime, LSP and its allies are working around the gaps by connecting farmers and buyers via community meetings.

One buyer who's been attending such meetings is Beverly Dougherty, who heads up the five-year-old Real Food Hub, which purchases vegetables, eggs, and grains, as well as meat and dairy products, from farmers and delivers them to area consumers and schools via a weekly subscription service. Based out of Willmar in west-central Minnesota, the Real Food Hub delivery van logs around 300 miles a week and in 2023, the hub was able to put around $100,000 straight into farmers' pockets.

And Dougherty expects that figure to grow, thanks to a joint grant she recently received from the Minnesota Department of Agriculture and the USDA that makes it possible for the hub to provide bags of healthy food to Head Start families in the area. Dougherty said such funding allows her to pay farmers what they are asking for while keeping it affordable for eaters.

Ryan Pesch knows firsthand that there is potential to grow more food for local markets in states like Minnesota. As a University of Minnesota Extension direct-marketing specialist and a vegetable farmer himself, he works with other producers who are looking for guidance on how to sell their product straight to eaters in a way that's profitable and sustainable from a quality-of-life point of view. When speaking to farmers at meetings organized by LSP and other groups, Pesch offers up a combination of positivity and frankness when discussing making a living direct marketing farm products.

He sees what he calls the "good food movement" as experiencing a bit of a boom at the moment, something that, along with busts, has happened in the past. But this current surge comes with a twist: there is a general societal interest in building a food system based on local, healthy options.

And policymakers on the state and federal level have responded. LSP and its allies have had success in recent years getting the Minnesota Legislature to provide support for initiatives that build local and regional food systems. Pesch is excited by this influx of support and its ability to prime the pump and create a more consistent, long-term, locally-based food economy.

"Think how much food there is that can come from here," says Beverly Dougherty, who runs the Real Food Hub in Willmar, Minn. (*LSP Photo*)

"Hopefully there are these buying-selling relationships that get created through this start-up funding that live longer than the grant funds," he said.

Such relationships can be sparked in a number of creative ways that maneuver around the marketing, processing, and distribution might of Big Food. In fact, it can start with a simple face-to-face conversation. During the Western Minnesota Local Foods Forum LSP organized in March, a "speed-dating" session held at the Montevideo Community Center connected 10 producers with seven buyers in the region, including institutional buyers and school districts.

These connections were made in light of a striking statistic that was shared by LSP organizer Scott DeMuth at the beginning of the meeting: every year in west-central Minnesota, $240 million is spent on food that originates from outside the region

"That's a huge economic opportunity for this region," said DeMuth. "If you care about healthy communities and more kids in the schools, you should care about this statistic. We don't need to be chasing methane digesters, we don't need to be chasing factory hog farms." ◆

For more on LSP's community-based food systems work, see landstewardshipproject.org/community-food or contact Amy Bacigalupo (amyb@landstewardshipproject.org) or Scott DeMuth (sdemuth@landstewardshipproject.org).

5) Entrepreneurial Equity

Rodrigo Cala believes in the part of the American Dream that has formed the seedbed for many an entrepreneurial enterprise. He also believes that Latinos like him have proven to be hard workers in the farm economy. So why, he asked a couple dozen participants in an LSP workshop on farmland access, can't those two pieces of reality come together to form a third one: a new immigrant who also owns and operates their own farm?

In some ways there was nothing new about this workshop Cala was speaking at — its content was similar to what LSP has presented to prospective beginning farmers for the past eight years during such sessions. Participants are taken through a "values-goals" exercise, the basics of setting up financials for a farm business are covered, ways of connecting with landowners who may have acres to rent or sell are discussed, and resources available through government agencies and nonprofits to help launch

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Give it a Listen

LSP's *Ear to the Ground* podcast episode 331 features direct-marketing expert and farmer Ryan Pesch talking about key questions farmers need to ask before getting into direct marketing: landstewardshipproject.org/podcast/ear-to-the-ground-331-reality-check.

On episode 332, Beverly Dougherty talks about how the Real Food Hub is out to prove that connecting local farmers and local eaters makes sense nutritionally and financially — and is just plain fun: landstewardshipproject.org/podcast/ear-to-the-ground-332-real-food-real-impact.

Sara George provides insights into the barriers, and opportunities, involved with connecting farmers and institutional buyers on episode 335: landstewardshipproject.org/podcast/ear-to-the-ground-335-bumping-elbows.

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and support one's farm business dream are shared. Finally, such workshops consist of a panel of farmers who have utilized creative strategies for accessing that most valuable of ag resources: farmland.

But the 2024 version of the "Land Access: Are You Ready?" workshop, which was held on an overcast Saturday in April at a church in Northfield, Minn., had a different twist: it was presented in Spanish. According to the latest U.S. Census of Agriculture, only 754 Minnesota farmers identified themselves as Latino or Hispanic; over 114,000 identified as white. Spanish-speaking people have long been part of the agricultural economy, serving as seasonal produce harvesters, employees of livestock operations, or workers in food processing facilities.

The past few years, LSP's Farm Beginnings course (*see page 26*) has seen an uptick in enrollment on the part of Latinos, and organizations like the Latino Economic Development Center are seeing an increase in demand for their farmer-related resources. But, just as other beginning farmers have discovered, getting training on the basics of raising crops, produce, or livestock isn't enough — access to land is a major barrier. That's why LSP has been holding land access workshops and otherwise attempting to connect landowners and prospective farmers.

Participants in LSP's "Land Access: Are You Ready?" workshop took part in a "values-goals" exercise. "Latinos are more than hard workers — we are also smart," says farmer Rodrigo Cala. "Why not own our own businesses?" (*LSP Photo*)

At this particular workshop, which was made up of an even mix of men and women of varying ages — some were in their 20s while others were well into their 60s — the excitement around farming was palpable. Alondra Cano, a Farm Beginnings graduate who, after taking this workshop in 2023, bought a farm in western Wisconsin, had the participants share a little about their background and what brought them to the workshop. They had traveled from as far away as northeastern Wisconsin and west-central Minnesota. Many had come from agrarian backgrounds in their home countries and had worked in agriculture here. They were interested in raising vegetables and fruit, as well as livestock. One woman wanted to open a restaurant featuring local food.

After LSP organizer Karen Stettler led them through the values-goals exercise, she said, "Your values are your compass. They are your true north." When people were asked to share back what some of their values and goals were, they spoke about things like producing healthy food for the community and introducing children to a way of life not centered around technology and consumerism. Later, Lee Crawford, who directs the farm loan division of the Minnesota office of the USDA's Farm Service Agency, spoke about the beginning farmer loans available through his agency. "That values-goals exercise Karen went through is very important," he said at one point. "We don't want to set you up to fail."

Aaron Blyth of the Latino Economic Development Center took participants through financial basics like registering a farm as a business, filing a Schedule F for taxes, and separating personal and business accounting. After each presentation, Cano facilitated question-and-answer sessions. How do taxes differ for a business filing? How do you accurately project expenses at a time of rising inflation? How does one take that first step toward finding farmland?

After lunch, Cala shared his own farming journey. He grew up in Mexico and in 1998 had the opportunity to work in a horseshoe factory in New York. One day, while shopping for vegetables for Mexican dishes, he realized the quality was bad and that there was an opportunity to grow good produce. Cala got farming experience through Big River Farms' incubator program in Marine on St. Croix, Minn., and eventually he purchased a farm near Turtle Lake in western Wisconsin that had been abandoned since 1940. Over time, Cala Farm has built up a thriving wholesale vegetable business that became certified organic in 2011.

He also works as a consultant for the Latino Economic Development Center and travels the country helping prospective farmers get started. He asks Latinos like himself the same question: "If they are the people who do the work, why aren't they the people who have the opportunity to handle their own businesses?"

Cala shared what his first purchases as a farmer were — computer, tiller, greenhouse, tractor, truck — and described his decision-making process for determining which enterprises are viable, and which he should drop. He also made it clear that although the demand for Latino foods is growing, marketing can still be a big frustration; in one case a major restaurant chain cut the price it was paying Cala for peppers once it was able to capitalize on the good public relations that came with saying it was "buying from local farmers." Farmers sometimes think raising a good product is enough, but in fact they need to prioritize where that product will be sold.

"You can be a really good farmer, but if you can't sell it, don't have the initiative to sell it, then it doesn't matter how good of a farmer you are," said Cala, adding that, "If I was able to do it, you can too."

The crowd applauded that last statement and asked questions about the availability of Spanish-speaking organic inspectors and ways of getting together to market collaboratively and add value to their products via processing. After the workshop, some of the prospective farmers lingered in the church parking lot under a sky that threatened rain, where they continued talking to each other about all things agriculture. ❐

For more information on accessing farmland, see landstewardshipproject.org/beginning-farmer-resources or contact Karen Stettler (stettler@landstewardshipproject.org) or Robin Moore (rmoore@landstewardshipproject.org).

Give it a Listen

On *Ear to the Ground* podcast episode 340, Farm Beginnings graduate Alondra Cano talks about an LSP interview project she did with Latino farmers and prospective farmers where they talked about the challenges, as well as opportunities, they see in entrepreneurial agriculture: landstewardshipproject.org/podcast/ear-to-the-ground-340-entrepreneurial-equity.

Climate Resilience

Silvopasturing's Silver Lining

The Ecological, Economic & Humane Promise of Mixing Trees, Grass & Animals

By Brian DeVore

Tom Hunter walks across a ridge-top hay field drenched in a July sun and enters the cool shade of a mixed hardwood forest on his farm in southeastern Minnesota's Driftless Region. He passes a few beef cattle grazing amongst the trees, and heads toward a giant bur oak, pulling a tape measurer out of his pocket and stretching it around the trunk. It clocks in at nine-feet, two-inches; Hunter estimates this woodland giant is around two centuries old. Another tree on the property germinated when Thomas Jefferson was President.

Impressive.

But he also points out some recently opened up patches of ground at the feet of the big hardwoods. Those low-lying areas of grasses and forbs, Hunter makes clear, play a key role in keeping the sky-scraping oaks healthy. They could also help keep his 240-acre farm economically viable. The sun-soaked overstory of the oaks may catch one's attention first, but what happens lower down matters as well.

In an example of silvopasture by subtraction, Tom Hunter stands with his cattle herd in a recently cleared-out portion of his farm's woodland. "I just want to get the ecological processes in place," he says. (*LSP Photo*)

Hunter's Tangled Bank Farm is in the midst of a multi-year project that's attempting to strike a balance between reclaiming oak savanna habitat while creating more grazing land for his Shorthorn cow-calf herd. The result he is shooting for is a version of something called "silvopasturing" — in effect growing trees and livestock on the same piece of land.

There are dozens of permutations of silvopasturing, but the end goal is the same: create a habitat that combines trees and grass, livestock and grazing. Striking such a balancing act could provide multiple benefits for the human and ecological community: silvopasturing not only offers farmers a way to make a viable living on marginal farmland, but supports wildlife habitat, builds soil health, and cleans water, all while sequestering carbon. And as Midwestern weather becomes more extreme, it's the kind of land use that may become an increasingly attractive alternative to the corn-soybean duo-culture. In other words, silvopasturing may be the epitome of working lands conservation.

"It wants to be productive," says Hunter, gesturing toward a spot where his herd is grazing a newly opened woodland. "But in order for that to happen, it needs to be utilized by animals. And it will put a lot of carbon into the soil, so I think that's a win-win situation. I just want to get the ecological processes in place."

An Old Concept

Silvopasturing falls under the general land use category of "agroforestry," which encompasses alley cropping (planting crops between rows of trees), riparian buffers, windbreaks, and forest farming (growing high-value crops like mushrooms or ginseng under a forest canopy). Jenn Ripp, an agroforestry educator for the nonprofit Savanna Institute in Wisconsin, says agroforestry in one form or another has been practiced around the world for thousands of years, and traditionally agriculture and forests were intermingled in North America, with Native Americans practicing various forms of this system. However, during the past several decades monocropping of corn and soybeans, for example, has resulted in the removal of vast swaths of trees in the Midwest.

But Gary Wyatt, a University of Minnesota Extension educator who specializes in forestry management, says he's been getting more inquiries in recent years about reintegrating woodland habitat and farmland via silvopasturing.

"We're seeing increased involvement, increased interest, particularly on land that's not tillable," he says.

Each summer and fall, there are numerous field days on farms in Minnesota, Iowa, Wisconsin, and Illinois where blending silvopasturing with everything from fruit and nut production to pollinator and wildlife habitat restoration is featured. Livestock raised under such systems range from beef and dairy cattle to goats and sheep, even pigs. The size of the farms utilizing various forms of silvopasturing or agroforestry in general range from a few acres to 1,000 acres and more. Wyatt says most of the people who approach him about establishing silvopasturing are smaller farmers who have a few acres they are hoping to get economic value out of. It can be of particular interest to beginning farmers who can't afford prime cropping ground, and are farming what's considered "marginal" land — too steep,

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wet, infertile, or otherwise unable to produce consistent yields of row crops.

That has environmental scientists and natural resource professionals excited: silvopasturing can provide an economic incentive to preserve, and bring back, wooded habitat, and that comes with a plethora of benefits. A deep-rooted grassland habitat can sequester significant carbon, helping mitigate climate change and making the land more resilient in the face of extreme weather. But when trees are added to the mix, the sequestration rates skyrocket. According to Project Drawdown, pastures with trees sequester five to 10 times more carbon when compared to their treeless counterparts. (It should be noted that such a carbon sequestration benefit relates to adding trees to the landscape; when a silvopasturing set-up involves thinning out trees, there may be an initial release of carbon as the system gets established.)

The sequestration continues basically until a tree dies, but even when it's cut, it stores carbon in the form of lumber. That's one reason Project Drawdown rates silvopasturing and alley cropping as among its top 10 most effective ways to sequester carbon and help mitigate climate change. In addition, groups like the Xerces Society are helping farmers establish silvopasturing systems in the Driftless Region of southeastern Minnesota and southwestern Wisconsin as a way to support pollinator insect habitat.

Ecologists are particularly intrigued by the potential of silvopasturing to restore the oak savanna habitat that once covered an estimated 50 million acres in a band stretching along the eastern edge of the Great Plains from Texas into southern Canada. At best, 30,000 acres of the habitat remains in the Midwest today, and much of it is in the Driftless Region of southeastern Minnesota, southwestern Wisconsin, and northeastern Iowa. Most of that savanna remnant is on land too steep or otherwise marginal to grow row crops on consistently.

This type of habitat, which is in effect the transition between prairie and woodland and consists of anywhere from 10% to 50% canopy cover set up in a mosaic-like pattern, requires the regular disturbances provided by fire and grazing to remain viable; otherwise, brushy species such as buckthorn take over in a kind of "green glacier" manner.

Silvopasturing & Grazing

Natural resource professionals have traditionally been opposed to mixing livestock and trees — and for good reason. Animals can do major damage to woodland habitat via overgrazing, soil compaction, and the stripping of tree bark.

"Beef cows can be very destructive when it comes to trees," says Eric Mousel, a University of Minnesota beef systems management specialist who works with livestock producers that want to graze woodland habitat. "It's not *if* they're going to destroy something — it's how long it will take."

But adaptive grazing and other forms of rotational grazing allow farmers to control how animals like cattle are utilizing a woodland, and research out of places like the University of Missouri and Cornell University is showing it can be done sustainably.

"I think a lot of foresters have seen a 'turn them loose and overgrazing' type of situation. But now the walls are coming down on the idea that you don't mix agriculture and forestry," says Wyatt. "It's a timing thing — this is not just releasing livestock into the woodlands for the summer."

Zach Knutson, who raises beef cattle near Zumbrota in southeastern Minnesota, is putting in place a silvopasture by addition system on his family's land by planting trees in rows on former crop ground. (*LSP Photo*)

Recent innovations in portable electric fencing and distributed watering systems have made silvopasturing in an ecologically and economically sustainable manner even more viable. "If you're going to have a successful silvopasture system, you're going to have to be very good with temporary fencing," says Mousel.

Livestock producers are even experimenting with utilizing "fenceless" grazing systems that employ global positioning technology, collars, and a smart phone application to control the movement of livestock. Such a system can be particularly useful in rugged terrain where it's difficult to erect even portable fencing.

Rotational grazing and silvopasturing are so interlinked, in fact, that Wisconsin researchers, writing in a 2023 *Frontiers in Sustainable Food Systems* journal article, concluded that, "One important barrier to adoption of silvopasture is that the majority of livestock farms do not practice rotational stocking, a necessary management tool for silvopasture in the Midwest."

Silvopasturing is also intimately connected to building soil health. This system protects the ground from intense sunlight while introducing nutrients in the form of manure and urine. Trees can also draw nutrients and minerals from deep within the soil profile up to the surface. Because a mix of cool and warm season grasses can thrive in a silvopastured system, it can provide more consistent grazing throughout the season.

Add-Subtract

In general, silvopasturing takes on two forms: silvopasturing by addition, which consists of planting trees in an open field and establishing grasses and forbs amongst them, or silvopasture by subtraction — in effect removing smaller trees and invasives to open up spots beneath existing trees, allowing sunlight to pour in and support forage growth.

Tyler Carlson has made both silvopasturing by addition and subtraction an integral part of his grazing-based livestock farm near Sauk Centre, in central Minnesota. As part of a silvopasture by addition strategy, 12 years ago he planted Norway and red pine in an open pasture. Today, the trees are 12-to-16-feet tall.

For 10 years, he fenced the trees off completely to protect them from livestock damage, but these days he grazes beef cattle and sheep amongst the trees now that they are big enough to sustain a little nibbling. The trees are actually established enough to throw a significant shadow, providing a cooling effect for livestock and impacting

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what forages grow near them. In the winter, the trees provide a windbreak from the frigid winds.

"They're getting to where they're really starting to function as a silvopasture," says the farmer.

Carlson, who does silvopasture education for the Sustainable Farming Association, is also using tree thinning to intermingle livestock and woodland. He has a 25-acre patch of mixed hardwoods he's gradually chipping away at by removing the box elder and ironwood, creating a space for the bur oaks, some 200-years-old, to thrive, and opening up the canopy enough to allow grasses and forbs to grow. His cattle can now graze in the established woodland on the hottest days of summer.

"I would say the subtraction method is far more difficult," says Carlson. "Silvopasture by addition is fairly straightforward — you plant trees in straight rows, slap a fence around them and keep the livestock off them."

The Cooling Effect

To be a truly climate-smart farming practice, a system has to help mitigate the problem by sequestering carbon and reducing emissions, for example, as well as make a farm more resilient in the face of the extreme weather that's already a reality. Silvopasturing's ability to help with the latter is becoming increasingly evident. As extreme heat spells brought on by climate change have proliferated, massive livestock die-offs throughout the Midwest have increased. U.S. beef and dairy cattle losses from heat stress already average $1.26 billion annually, according to researchers at Ohio State University and the University of Illinois. In July 2023, as the world recorded its hottest month ever, hundreds of cattle died in Iowa alone from extreme heat and humidity.

Unfortunately, 2023 was not an anomaly — as the planet warms, livestock deaths will jump precipitously, according to *Open Veterinary Journal*. The ideal temperature for beef and dairy cows ranges between 44 and 77 degrees Fahrenheit; above that, milk production and fertility drop. Some farmers have turned to portable artificial shelters to provide shade. But trees on a grazing landscape provide a superior cooling effect compared to barns and other artificial shelters because of the effect of evapotranspiration, better ventilation, and reduced reflection of the sun's rays from the ground.

"It felt like you had walked into a refrigerator," recalls Carlson of a time during a heat spell when he rotated his cows into the wooded part of his farm. As the mix of sun and shade shifts during the day, the livestock tend to move on their own to stay where it's cool, reducing mobbing, overgrazing, and soil compaction. "The cows, they couldn't be happier," adds the farmer.

Tom Hunter also likes how the cooling effect provided by silvopasturing creates a more humane grazing habitat for his herd.

"They always look good when they're in the woods," he says. "They're just relaxed and their hair coats shine — it's just good for them."

Dendrology Dollars

Despite its advantages when it comes to long-term resiliency, there are big reasons silvopasturing isn't more prevalent in the Midwest. One is federal farm policy, which encourages, almost to the exclusion of everything else, the planting of commodity crops like corn and soybeans (*see page 10*).

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"It felt like you had walked into a refrigerator. The cows, they couldn't be happier."

— Silvopasturing farmer Tyler Carlson

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And with row crops, if a drought or flooding wipes a planting out, a farmer can come back next year, or even later in the season, to try again. Federally subsidized crop insurance's bias toward annual commodity crops makes gambling on perennials like trees risky.

"The trouble is with tree crops it just takes time," says the U of M's Wyatt. "It's not like corn and beans — with trees, you don't see income until down the road."

The other big barrier, and this dovetails with the policy issue, is that silvopasturing, and agroforestry in general, require long-term access to acres, something that's becoming more difficult as farmland prices skyrocket and multi-year leases become rarer.

"The root of a lot of these problems is trying to think about farming and agriculture on a multi-year scale," says the Savanna Institute's Jenn Ripp

Carlson says that a silvopasturing by subtraction system can start producing viable grazing land within a year or two. Silvopasture by addition can be on a much longer return on investment schedule. In Carlson's case, those pines he planted in that open field a dozen years ago are just now paying for themselves by providing shade for the animals and grasses.

Omar de Kok-Mercado, who raises goats using silvopasturing in southwestern Wisconsin, says five to seven years, or even 10 years, is a good average period to keep in mind when expecting a return on a new planting of trees in such a system. That return could be in the form of shade, or it could be via production of fruit or chestnuts. Products like walnuts are a 20-to-30-year investment, but the ultimate pay-out can be significant. The journal *Ecological Applications* reported in 2018 on a study showing that in the Midwest, alley cropping involving black walnuts was 17% more profitable than a duo-culture of corn and soybeans. The study showed that such profitability was not only possible on marginal land not suited for high corn yields — it could make money on prime ground as well.

But university extension educators as well as natural resource agency technicians are used to helping farmers with the intricacies of raising row-crops profitably; agroforestry is a whole other beast. De Kok-Mercado recalls that when he was trying to set up a silvopasturing system in an Iowa county that supposedly had an agroforestry plan in place, the USDA's Natural Resources Conservation Service didn't know whether to send a grazing specialist or a forester to his farm. "They sent out both, and then they both pointed at each other and said, 'This is your plan,' " he recalls with a laugh. "So I think there's a little bit of confusion on how to meld the two."

Carlson says an Excel-based decision-making tool he's helping develop estimates that silvopasture by subtraction can be done for $1,500 to $3,000 an acre. To add trees to a farm can vary widely in cost, depending on what kinds of species are planted. It cost Carlson around $120 to buy 500 pine trees he got from the state nursery, and they were planted in three days using a mechanical planter. With labor and everything else figured in, the total cost was around $500 to $600 per acre, he estimates. But a planted acre of a fruit tree like apples or a nut producer like chestnuts will likely be an order of magnitude more, given their higher value and the need for maintenance measures such as tree-tubing.

The good news is that there are more cost-share funds than ever available through government natural resource agencies looking to support climate-friendly farming systems.

Tom Hunter's reclamation project

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involves chain-sawing, forest mowing, burning, and grazing on 31 acres. He estimates the cost is around $2,500 per acre.

That $2,500 is "almost like buying the land again," says the farmer.

Funding through the Natural Resources Conservation Service is helping cover around 75% of the cost through its Environmental Quality Incentives Program, and Hunter has benefited from volunteer labor provided by a group called Prairie Enthusiasts. The farmer also received government cost-share money to set up fencing and watering systems. One expense Hunter has avoided thus far is grass seeding — he's allowing forage species to naturally come back on their own.

Enterprise Mooching

Farmers are also finding ways to use their current enterprises to "subsidize" silvopasturing's set-up while trees get established and grow. Hannah Breckbill and Emily Fagan are utilizing such a strategy on Humble Hands Harvest, a 22-acre worker-owned cooperative farm near Decorah in northeastern Iowa. Their main source of income is the two acres of organic vegetables they raise for a Community Supported Agriculture (CSA) enterprise, as well as sell through a farmers' market, a local food co-op, and to restaurants. They also sell lamb meat.

The farm is in the Driftless Region, less than a mile from the Upper Iowa River, and not surprisingly, it's extremely hilly — the two acres devoted to vegetables are about the only flat land present.

"When we came onto this farm, there was basically no topsoil to be seen," recalls Breckbill. "We've been converting our vegetable field to no-till, and we've been applying a lot of compost, and it is just so wonderful to see the amount of change we can make in the soil with that kind of intensive care for it."

The farmers see perennials as another way to give back to the soil. "It's calling for trees," Fagan says of the land.

So, almost as soon as they moved onto this former corn ground in 2017, Breckbill and Fagan began looking for ways to integrate agroforestry onto the land. In 2018, they began planting chestnuts and hazelnuts on a few acres; they've also established a small fruit orchard. The farmers planted the trees in rows, allowing space in-between for grazing their sheep herd. Eventually, the trees will not only be producing nuts and fruit that can be marketed, but will provide shade for the livestock.

Fagan and Breckbill are excited about the potentially diverse revenue streams agroforestry can add to their farm. But they also know such a system is a long-term investment. It will take years before they have viable product to sell, and even more years before the trees are big enough to provide shade for their sheep, and thus paying for themselves as natural sources of livestock cooling. In the meantime, they are, as they admit, "mooching" income off their thriving vegetable enterprise to help pay for the establishment of the agroforestry enterprise and to provide consistent income in general. The farmers are bringing in an enterprise that is all about long-term delayed gratification, which can be tough for someone who raises an annual cash crop like vegetables, which produces results within months of those seeds being planted.

On a sunny mid-summer day, Breckbill and Fagan provide a tour of a row of hazelnuts planted from seed the year before. The seedlings are a few inches high and surrounded by woven wire cylinders to fend off rabbits and deer. "Calling them trees is an overstatement at this point," jokes Fagan. Breckbill adds, "Everything is still very hypothetical."

A stand of tree-tubed chestnuts are a few yards away; the farmers learned the hard way the value of tubes — mice can easily pass through woven wire cages to feed on seedlings. At one point, the potential of silvopasturing is revealed. A line of hazelnuts planted from seed in 2018 is bushing out nicely and about three-foot-high. Breckbill and Fagan note that if it wasn't for deer damage, the trees would be producing nuts by now, but they are still happy with their progress. A 30-foot wide strip separates the lines of trees, allowing for grazing and haying in-between. In fact, on this day 32 head of Katahdin and Dorper sheep are working their way around chestnuts that have been tubed and caged.

Hannah Breckbill moves fencing for her sheep herd so they can graze around the trees she has planted on Humble Hands Harvest. "I just think about how many more trees could be on the landscape if we had a different system of land ownership and who gets to own land, and what's supported by policy," says Breckbill. (*LSP Photo*)

Breckbill and Fagan have the cost of trees and labor penciled out, as well as how their vegetable and sheep enterprises are helping cover those costs.

"We're getting pretty darned good at growing vegetables and we have a little excess capacity sometimes," says Breckbill. "And that excess capacity we can use, both in terms of finance and in terms of labor, to support our perennial operation."

Subsidizing a tree-based enterprise over a period of several years requires long-term access to farmland. In the case of Humble Hands Harvest, a group of community members helped secure the purchase of the 22 acres when it was threatened with being turned into a location for a large concentrated animal feeding operation.

"Long term land access is a huge challenge," says Breckbill. "I feel lucky that we are able to kind of bypass that challenge in a lot of ways. And I just think about how many more trees could be on the landscape

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if we had a different system of land ownership and who gets to own land, and what's supported by policy."

Silvo Geography

How much Midwestern farmland has the potential to be silvopastured? The U of M's Gary Wyatt estimates half-a-million acres of woodland is grazed or has the potential to be grazed in Minnesota alone. Grazier Omar de Kok-Mercado thinks the potential extends well beyond the rugged terrain of the Driftless Region. After all, besides grazing goats in such a system, he has worked as an agroforestry technical service provider for the Savanna Institute, where he helped farms of all sizes establish silvopasturing systems.

"You're probably asking the wrong guy, because for me, I'd say 100% of acres are viable acres for agroforestry," he says, only half-joking. In reality, various studies have shown that up to 25% of farmed acres could be viably converted to something other than row crops. Perennial systems based on agroforestry could play a key role in such a transition, says de Kok-Mercado.

The U.S. Census of Agriculture doesn't ask farmers about the use of "agroforestry" specifically, but it does ask if they've used key features related to this system such as silvopasturing, riparian buffers, alley cropping, windbreaks, and forest farming. The latest Census reported that 32,717, or 1.72%, of farmers in this country were using one or more of these practices. That figure has consistently gone up since 2012, when .13% of farmers reported using an agroforestry practice. According to the 2023 Iowa Farm and Rural Life Poll, of the 972 farmers who responded, 24% reported that they owned at least one acre of woodland, and 46% who had woodland said they had implemented some sort of "management" on those acres. Of the respondents with woodland on their farms, 29% said they were grazing it.

When looking for guidance on how a landscape changer like silvopasturing can be integrated into a monocultural landscape, de Kok-Mercado considers another hat he wore in the past. For four years, he worked as the project coordinator for a research initiative at Iowa State University that is integrating strips of prairie into corn and soybean fields to control runoff and provide pollinator and wildlife habitat.

"It's been great to use prairie strips as a proxy for perennial agriculture on the whole," he says. "Because if you can do it with prairie, you can pretty much do it with anything. If folks want to do prairie strips, I tell them do savanna strips — add another 30-foot strip to the prairie but add trees to the middle of that."

View from the Sky

Tom Hunter, who raised corn and soybeans in Illinois before buying his southeastern Minnesota farm in 2010, knows well the draw of going for the short-term gain of annual crops.

"I'm too much of an old-fashioned farmer to plant trees in my nice, good cropland," says Hunter, who raises hay on his treeless acres.

But there is something about making trees part of a working landscape that motivates him to take the long view of the land's potential. He began the restoration project in fall of 2021 and has already seen some native grasses come back, and even a few native orchids. The goal is to eliminate, or at least control, species such as buckthorn, red cedar, and honeysuckle, and in the process get as much sunlight to the forest floor as possible, allowing grasses and forbs to thrive in the dappled shade provided by trees such as oaks. He estimates that this "silvopasture by subtraction" endeavor will add about 25 acres of grazing, which would be a roughly 30% increase in land that produces forages.

Adding grazing acres fits nicely with Hunter's production system, which is based on producing 100% grass-fed, organic beef.

Silvopasturing & Grazing Resources

➔ LSP's Grazing and Soil Health" web page: landstewardshipproject.org/grazing-soil-health

➔ Savanna Institute: savannainstitute.org

➔ Sustainable Farming Association agroforestry/silvopasture web page: sfa-mn.org/agroforestry-silvopasture

If native cool season and warm season grasses can get established, that would diversify his grazing to the point where he has forage throughout the growing season, even in the deepest summer.

But it's not only practical considerations that are prompting the farmer to adopt silvopasturing. He has an aerial photo from around 1938 showing his farm's hillsides opened up to the point where one can see individual oak trees. That the landscape could look so different less than 100 years ago impresses Hunter.

As he walks through the woods and the burgeoning oak savanna habitat, the farmer points out butternut and walnut trees, along with the oaks. There's even a wild plum tree and a double-trunked apple tree. Unfortunately, invasives like buckthorn and honeysuckle also like the opened up canopy as well, making it clear that follow-up practices like intensive mob grazing will be needed to keep them in check. At one point he stands in the middle of a purple patch of bee balm. There's also Queen Anne's lace, also known as wild carrot.

"I've had a lot of people ask me, 'Oh, do you do cover crops?' And I'm like, 'No, because cover crops mainly follow row crops,' " says the farmer. "Or I could say, 'Yes! 100% of the time.' In a sense, it's all cover crop." ❐

Tree Talk

Check out LSP's *Ear to the Ground* podcast to hear the stories of farmers who are adopting various forms of silvopasturing in the Upper Midwest: landstewardshipproject.org/series/ear-to-the-ground.

✓ **Episode 329: Weather Whiplash** (Tyler Carlson)

✓ **Episode 311: Mooching Means More** (Hannah Breckbill & Emily Fagan)

✓ **Episode 303: Silvo Savvy** (Tom Hunter)

✓ **Episode 302: Thinking Like a Tree** (Abbie Baldwin & Mitch Hawes)

✓ **Episode 280: Maximum vs. Optimal** (Zach Knutson)

✓ **Episode 262**: **A Silvo Secondary Enterprise** (Rachel Henderson)

✓ **Episode 261**: **Pigs, Pastures & Pollinators** (Dayna Burtness)