With land, fuel, and feed prices continually on the rise for farmers across America, silvopasture, or land devoted to both trees and pasture, offers an important opportunity to make the most of a given piece of land. In fact, for some acreage, silvopasture is truly the best of both worlds: a management strategy that increases the immediate value and productivity of pasture while developing a long-term crop– trees.

The possible benefits of silvopasture are many. Trees within a pasture setting offer shade and a windbreak, allowing for more comfortable animals and grass that suffers less from stress. The trees within silvopasture, though occupying space and demanding their share of nutrients and light, compliment the use of pasture rather than draining its valuable resources.

In July of 2004, I began a silvopasture project on my small farm north of Caribou, Maine. My immediate goal was to expand and improve pasture for the farm's small herd of dairy cows. Fortunately, the farm is comprised of a patchwork of fields and woods, which lends itself to silvopasture. The woods here are diverse and pretty, though they had been logged before my wife and I bought the land. White spruce, fir, tamarack, poplar, and white cedar are the most common trees on the farm, though there are also some stands of birch and maple. The silvopasture area comprises roughly ten acres of land, including edges of fields and wooded areas between fields.

I started the project by going through some of the land that had been previously logged, gathering the leftovers. This process was made productive through two different but essential pieces of technology: teams of oxen trained on the farm and a small portable sawmill. When I started the project in the summer of 2004, I had two teams of oxen– Bill and Red, a team of Dexters, and Finn and Con, a team of Ayrshires. Always handy around the farm for various chores, the oxen proved indispensable to the silvopasture project because of their ability to harvest logs with little or no damage to the land or to young trees. Although harvesting wood with oxen is inevitably slower than it would be with machinery, the slower method preserves the value of land as pasture and preserves small trees that will someday be an important cash crop.

Having a small sawmill on the farm meant that relatively small or damaged logs– logs that would be deemed worthless at a commercial sawmill– were usable. Using the oxen, considerable amounts of firewood and dimensional lumber was harvested from 2004-2007.

To conduct our harvest of firewood and small sawlogs, we first identified the more valuable species in the silvopasture area and on the farm in general. Within the silvopasture area, the more valuable wood (in the near future) is the spruce and fir. Most of these trees are fairly young and have been left, except along the edges of the fields, where they have been thinned to expand the fields, which have grown smaller though years of relative disuse. All of the white and yellow birch and tamarack in the silvopasture area has also been left alone, except for obviously damaged trees.

One advantage of birch within the silvopasture project is that the cows rarely if ever eat the bark of birch trees. They will damage poplar bark, possibly killing small trees and will damage the lower branches of conifers from scratching. In general, our plan has involved grazing the silvopasture area only during the summer, when grass is abundant, thereby limiting the tendency of cows to damage trees.

Rotational grazing is key to the success of a silvopasture project such as the one conducted on O'Meara Family Farm. The farm contains six paddocks, which comprise from two to five acres of land. The cows are currently grazed on a rotational plan where each paddock is grazed for five to seven days, depending on the condition of the forage and the weather. Because the cows are not on any particular paddock for extended periods of time and not in the silvopasture area in the winter, they are often not destructive to trees. Although they have damaged the lower branches of some older spruce trees and have chewed the bark of young poplar trees, they have not damaged many of the trees of value in the silvopasture area. Without rotational grazing, silvopasture would not succeed on this farm.

Rotational grazing works in general because it increases the feed value of a certain amount of pasture. Over time we found that the silvopasture project also increased the productivity of the silvopasture area. This was accomplished partly through the benefits of rotational grazing, partly through applying roughly three tons/acre of compost and manure annually, but also through harvesting enough trees to allow larger amounts of sun to reach the ground. Each weed tree, snag, damaged tree, or blowdown pulled out of the silvopasture area not only gave the farm useful wood products, it also increased the feed value of the pasture. Each trip with Bill and Red or Con and Finn made the land a little more productive.

Within the entire silvopasture area, an average of approximately 75% of sunlight was blocked by the forest canopy when we arrived at this farm in 2004. Some spots were quite open, while others were still nearly completely forested. Our goal is to maintain 50% of the silvopasture area as forested and 50% as grass-producing. Overall, sunlight in the silvopasture area is blocked approximately 50% as of the fall of 2007.

Harvesting those trees took some planning for the future– in fact, the most important part of any silvopasture project is in the planning phase.. With the oxen and the chainsaw idle up by the house, I spent many hours walking around the silvopasture area, in all seasons, deciding which trees should go. Balm of Gilead, a form of poplar, was the somewhat obvious target of thinning, since it is not particularly valuable as firewood or as lumber. Even when sawed into boards on our sawmill, it tends to split and self-destruct. In order to achieve the goal of 50% sunlight, quite a few Balm of Gilead trees were removed from the silvopasture area.

Planning also meant planting some trees that might not reach maturity until my children or grandchildren are adults. In the spring of 2005, we planted approximately twenty sugar maple and twenty black walnut within the silvopasture area. These purchased seedlings were planted on the edges of fields and woods, in areas that will allow the least amount of

cattle traffic while the trees are small. Approximately fifty percent of these trees have survived as of November of 2007.

In the spring of 2006 we planted fifty more black walnut seedlings in the silvopasture area. Although we had planned to use butternut for this planting, seedlings were unavailable. Fifty white oak seedlings were also planted within the silvopasture area. These trees, though slower growing than butternut or black walnut, also are extremely valuable as lumber and will add value to the farm in the long run. Planted oak trees do thrive on our street, though they do not seem to be common in the wild ecosystems here. We have also recently located a few indigenous oak trees within the silvopasture area, which will be protected from the cows.

Tamarack and spruce seedlings from elsewhere on the farm were also planted in the silvopasture area in 2007. In fact, tamarack seems to fit quite well into our overall silvopasture plan, since the cows do not bother it, even when it is left unprotected in the pasture. This project has taught us that tamarack works particularly well in a silvopasture setting, especially in a northern climate. A fast-growing, extremely hardy tree adaptable to a wide variety of soils, tamarack produces durable and rot-resistant wood, which fetches a premium at local sawmills in our region. We would recommend it to other farmers considering a silvopasture project.

Black walnut also works particularly well in a silvopasture setting. Because of its value, it adds to the long-term viability of any project like the one conducted at O'Meara Family Farm. Its slower growth makes it a fit companion to tamarack or other species in silvopasture.

Wood and feed were not the only benefits of the silvopasture project. The cows consistently used the silvopasture as shelter in not infrequent bouts of inclement weather. In summer thunderstorms, in heat, and in cold rains, the cows could often be found comfortably waiting out the weather among the trees left as part of the silvopasture plan.

In general, this agroforestry project has convinced us that silvopasture should be an important part of this particular farm and would likely work well on many farms. Several wood products, including lumber and firewood, offer real potential for profit. With relatively little financial investment involved in the normal development of a silvopasture, gains in productivity come with little risk. Much of the work can be done in the winter, when other farm obligations are often minimal. As more farmers look for ways to stay efficient and economically viable in a difficult marketplace, more land may be converted to two purposes– heathy, productive, pasture and a place where long-term tree crops thrive.

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