

SPRING 2013

SMALL FARM QUARTERLY

Good Living and Good Farming – Connecting People, Land, and Communities



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SMALL FARM QUARTERLY - SPRING 2013

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Cover photo:

Patty Taylor runs a flower CSA alongside her 200 member vegetable CSA on Devon Point Farm in Connecticut.
Photo by John Suscovich

SMALL FARM QUARTERLY

Good Farming and Good Living —
Connecting People, Land, and Communities

Small Farm Quarterly is for farmers and farm families — including spouses and children - who value the quality of life that smaller farms provide.

OUR GOALS ARE TO:

- Celebrate the Northeast region's smaller farms;
- Inspire and inform farm families and their supporters;
- Help farmers share expertise and opinions with each other;
- Increase awareness of the benefits that small farms contribute to society and the environment;
- Share important research, extension, and other resources.

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Cornell Small Farms Program Update

New! Guide to URBAN Farming in NYS

Are you interested in or currently farming in a city? Do you wonder how to access land, how to reclaim a contaminated site, how to maximize use of a small growing space, or how to most successfully target your urban market? This new 105 page guide published by the Cornell Small Farms Program answers these and many other common questions about farming in urban environ-

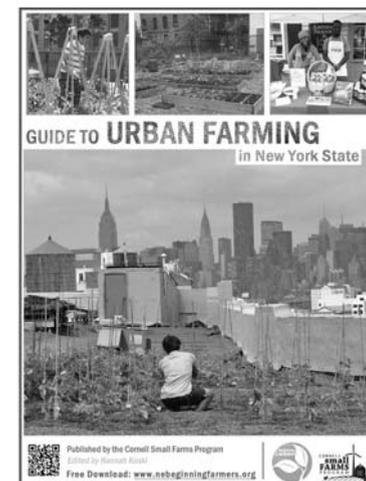
ments. Read the Guide online at <http://nebeginningfarmers.org/publications/urban-farming/>.

New! Need Help with Livestock Processing?

Are you trying to find the nearest slaughter house to your farm? Interested in the rules for on-farm processing or interested in mobile slaughter units? Have questions about licensing and regulations? You're not

alone! The Cornell Small Farms Program has put together a new resource page dedicated to helping you find answers. Please visit <http://smallfarms.cornell.edu/resources/livestock/>.

If you see a resource missing from these pages, please send us an email at smallfarmsprogram@cornell.edu.



Message from Managing Editor

Happy Spring! As I write this message, it's still cold enough outside to put the large pot of leftover stew that won't fit in the fridge on the porch overnight. While some might complain about the lingering cold weather, most of the farmers I know are grateful for the time of rest, reflection, book-keeping and planning for the growing season ahead. As many of you head to the greenhouse to start sowing seeds, be sure to check out our inaugural 'Seed Stories' column in this issue. The column draws attention to seed origin, diversity and tenacity, and provides thoughtful insights into the seeds we buy and plant.

I am also pleased to feature a long-distance story in the Spring Edition, an account of farming in Alaska from Ruby Peck-Hollembaek. Several years ago Ruby wrote to tell me she enjoyed getting the Quarterly in her mailbox at her 2000 acre bison and elk ranch near Delta Junction. I had the pleasure of meeting her last Fall when she made the trip east to tour small farms and take photos and stories back to her community. Local food production and food security is an important concern in Alaska communities and while we have a much longer and warmer growing season in the Northeast, we share many of the same logistical challenges to expanding the small farm move-

ment with our friends in northern climates. Furthermore, we have a lot to learn from Alaskans about creative recipes for rhubarb!

By the way, if you have a creative recipe you'd like to share, a farm photograph, blog entry, reflection, how-to advice, question, or success story, be sure to drop us a line. Meanwhile, best wishes for a gentle transition to Spring!

Violet Stone



Violet Stone

NEW FARMERS

The Dance of Farming

by June Bartos

An earlier version of this article was written in October 2011 for our farm blog. October 2012 marked our second year of life at Rod and Staff Farm. As I re-read it and look around us, I remain amazed by how far we've come in what feels like such a short time. The seasons seem to fly by us, each one as full, as challenging and as rewarding the one before it.

October 15, 2011 marked our one year anniversary at our dream farm. It went by so fast! Last year at this time I was feeling upset and unsettled, surrounded by our things and completely disorganized. We insanely managed to piece things together enough to have a house warming only a week after we moved in. God blessed us with a beautiful and sunny autumn day for the occasion. Last year at this time our barn was cleaned out and filled with fall-colored paper lanterns, tables, food and friends. Our goals for the coming year were just a dream and a huge unknown.

Although I grew up in the country and my uncle was a dairy farmer, hands-on livestock experience was new to me. It was ALL totally new to my husband. I spent all of last fall and winter buried in books, talking to other farmers and researching myself into a state of research paralysis. My husband and I talked and discussed and planned. I made Gantt charts and timelines, lists and calendars.

No one is more stunned than I am that we actually did it. We met and completed our goals for this year. My husband is of course

the manifester of my many visions. He takes all the research and ideas and makes them concrete, three-dimensional and real. I tend to hash out the ideas and think more globally, working out the details as we go. We're an awesome team. And I'm so grateful for that. We framed out stalls, built a solidly engineered chicken coop, purchased our starter stock, built a chicken tractor, hashed out the logistics of feed (where to buy it) and hay (how to get it in the barn), built a small greenhouse, installed fencing; and of course, we made more plans.

What I've learned this year is that farming and working with livestock is so much like learning to dance. When you first walk in the room it seems that everyone is better than you. They all know so much more and you feel overwhelmed. You are bogged down by the sense that it will take a lifetime to learn those steps. Then as you start to learn you feel clumsy and step on a few toes. You are hardly graceful. But the more you practice, the easier it gets and eventually you get into a rhythm. Before you know it, you realize that you are actually dancing and even more so, enjoying it.

The differences are that God and Mother Nature dictate which song is going to be played and missteps can result in more than hurt toes; they can result in losses big and small. You try not to make any, but they are inevitable. In order to know which steps to take you need to be listening as the band is cuing up and watching not only the other dancers, but the creatures and land in your charge.

See Dance page 5

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Half-Moon & Chico, a Shetland ewe and ram.

GRAZING**The Value of Increasing Pasture Numbers**

by Bill Verbeten

Historically, pastures have been seen as low yielding land and little, if anything, was done to increase their productivity. However, in recent years management intensive rotational grazing has done much to change this perspective and high yielding, high quality pastures now form the backbone of many profitable livestock farms. This article describes one of the management practices that has greatly increased pasture yields: managing a larger number of pastures.

Increasing Harvest Efficiency

Farmers that practice rotational grazing manage many paddocks (small pastures 2 to 5 acres in size) instead of a smaller number of large pastures. This practice results in very large increases in harvest efficiency. The traditional pasture typically had cows continuously grazing throughout the whole growing season. Under this system, only 30 percent of the potentially available feed is harvested by the cows. As graziers add pastures, cow harvest efficiency greatly increases — up to 75 percent of available feed when at least 24 pastures/paddocks are grazed in rotation. Figure 1 demonstrates this by using 5 tons DM of available feed per acre for a single growing season, multi-

plied by the appropriate harvest efficiency as pasture numbers increase. Harvest efficiency data was taken from the USDA grazing stick.

Generally, once a pasture is grazed, farmers wait 25-40 days before returning their cows to that pasture. This rest period allows enough regrowth in order for the grass and legume root carbohydrate reserves to be resupplied. Additionally, rotational graziers don't graze their pastures until the soil is bare, but instead tend to "take half and leave half." Leaving at least 4 inches of grass is necessary in most cases to maintain desired species in the pasture. Clipping the pastures once a year helps maintain an even stand without unpalatable clumps of dead plants. In many areas, graziers will harvest a number of their pastures for hay or silage in the spring because often there is more feed than can be grazed. They then feed the spring harvests during the summer or winter in order to supplement or replace the pastures.

Increasing Feed Quality

Increasing pasture numbers not only increases the quantity of pasture that cows eat, but it also increases the quality of the pasture. In management intensive rotational grazing, grasses and legumes are grazed when

they are in the vegetative growth stage. Pastures grazed at this time are more palatable, higher in protein, higher in fiber digestibility, higher in starch and sugar content, and lower in fiber content. Figure 2 outlines how forage quality generally declines with increasing plant maturity. As pasture plants age they lose leaves and gain more stems, resulting in lower forage quality.

Grazing generally begins when the pastures are at least 8 to 12 inches tall. If pastures are grazed too soon in the spring cattle will often get diarrhea and need supplemental fiber from low quality hay. Having many pastures allows for staggered plant maturity across the farm. This allows cows to continuously graze high quality feed. Grass heading date determines how long grass will be in the high quality vegetative growth stage in the spring. Different grass species and different grass varieties have heading dates from a week to a month apart. By planting different grass species and/or varieties with different heading dates in separate pastures, graziers can more effectively maintain pastures in the vegetative growth stage. When using rotational grazing, livestock producers will generally move their animals every one or two days, while dairy farmers will move their animals to new pasture after every milking during the growing season. Maintaining high levels of pasture fertility, selecting proper plant species and varieties, building appropriate fences, supplying adequate water, sheltering animals from extreme weather conditions, and other factors are also necessary in order to have a well-managed, profitable rotational grazing farm.

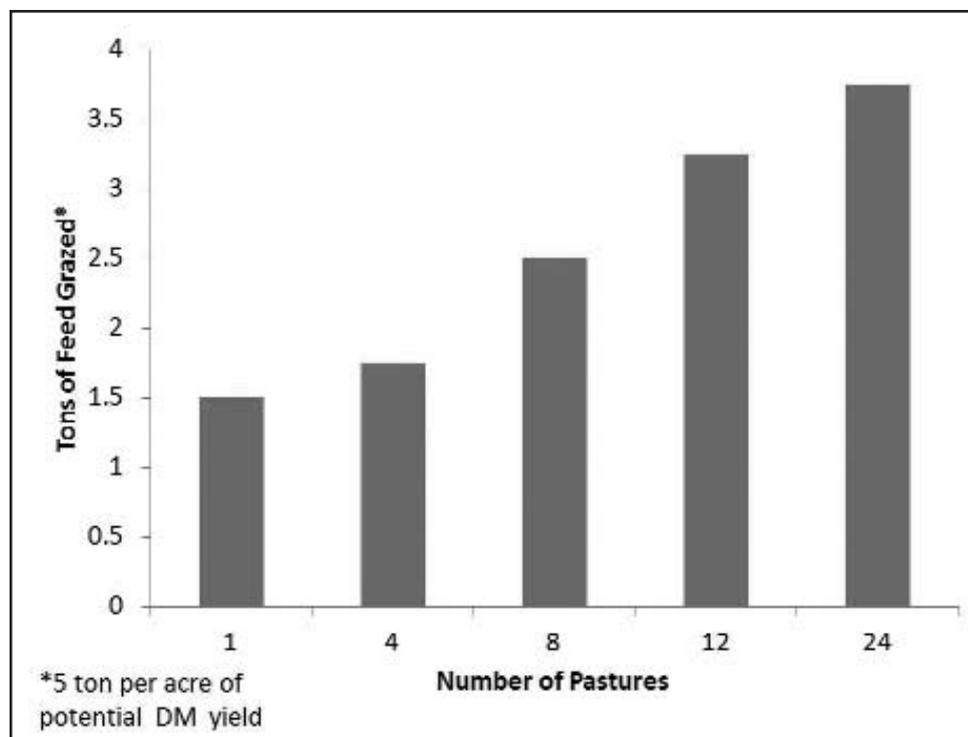


Figure 1 demonstrates this by using 5 tons DM of available feed per acre for a single growing season multiplied by the appropriate harvest efficiency as pasture numbers increase.

The Bottom Line

1. Dividing one large pasture into two dozen or more paddocks can double the amount of feed that cows will be able to graze over the course of growing season.
2. Having many pastures enables graziers to have the highest feeding quality through the growing season, because plants are constantly in the vegetative growth stage.

Bill Verbeten is a Regional Field Crops Specialist for the Northwest NY Dairy, Livestock and Field Crops Team, Cornell University Cooperative Extension. His focus is Forages and Nutrient Management. He can be reached at 585.313.4417, or wdv6@cornell.edu

Additional Grazing Resources

"Understanding Forage Quality" by Don Ball, Mike Collins, Garry Lacefield, Neal Martin, David Mertens, Ken Olson, Dan Putnam, Dan Undersander, and Mike Wolf, available as a PDF at <http://www.uwex.edu/ces/forage/pubs/FQ.pdf>.

"USDA Grazing Stick Availability" by Debra Heleba, University of Vermont Extension, available at <http://www.extension.org/pages/28873/finding-a-pasture-stick-in-your-area-for-your-organic-dairy-farm>.

"USDA Grazing Stick Instructional Video" by Sarah Flack, Sarah Flack Consulting and Amanda Gervais, University of Vermont Extension, available at <http://www.extension.org/pages/28874/video:-calculating-dry-matter-intake-in-organic-pastures-using-a-pasture-stick>.

Bill Verbeten's "Forage Files" blog at <http://billsforagefiles.blogspot.com>.

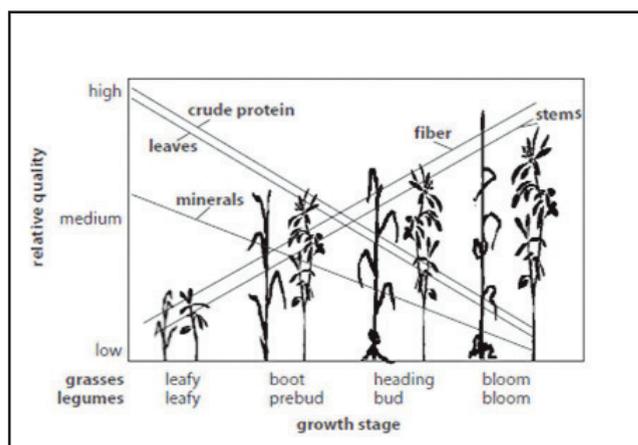


Figure 2 outlines how forage quality generally declines with increasing plant maturity.

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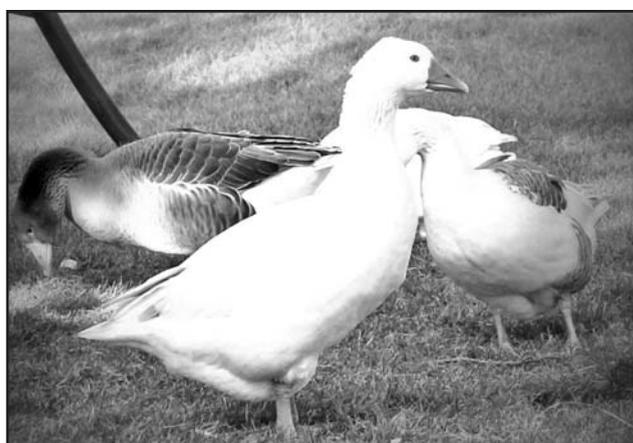
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Dance from page 3

It is difficult, if not impossible, to not feel a connection to the land and animals in your care. You watch and shepherd them, sometimes from birth all the way to adulthood. They watch you. There isn't anything in your daily dance steps that doesn't affect them. Suddenly you find yourself concerned and watchful of things that in the past were simply lost in the daily grind, like how hot, cold, wet or dry it is. You are mindful of the condition of the grass, when to mow, the texture of the soil and the price of corn. Wild animals in nature that were once considered a cute novelty are now suddenly creatures to be wary of.

I spoke with someone a couple months ago and we discussed how many years earlier she and her husband had purchased land and an old farm to "have a horse or two." In the years since they have greatly expanded beyond that idea. She said, "You know, the land and the farm, it makes you feel responsible, like you have to do something with it." She is so right. The land, the earth, the animals - they feel the rhythm even more than you, and when you get in on it you feel like you've been kept out of a well-known secret for the longest time, and it imbues in you a joy in simple being that can't be described.



George and his flock of Heritage Pilgrim Geese.

Everyone I meet on the "outside" can't imagine or can't believe the "work" involved. "It's so much work," I hear continually. The word work is relative. It is work, I suppose, and requires effort and exercise, both physical and mental. But to me it is no more work than rushing my kids off to school and myself to an office job, commuting, spending eight hours away from home, commuting again, picking up my children, rushing back home or to after-school activities, pounding down a meal and then having a few minutes of down time (if we're lucky) together before going to bed and getting up and doing it all again the next day. I know because I did just this for far too many years. There was a rhythm to it, yes, but it was no dance, and rarely a joy. That felt like work.

There are a few rough moments here and there in the pouring rain, blinding snow or wind and cold, but the rewards far outweigh the sacrifice. I get to see the pure joy of six little ducks waiting patiently in line for me to fill their pool with clean water and then watch them splash around, talking the

RESOURCE SPOTLIGHT

The New York State Nut Tree Trail

by John Wertis

The John Gordon Demonstration Nut Grove near Trumansburg, NY is just one of the possible stops on the evolving New York State Nut Tree Trail. John Gordon was a well-known horticulturist with a nursery near Buffalo. He specialized in breeding and growing woody plants; particularly nut trees, paw-paws and persimmons. He was one of the founding members of the New York Nut Growers Association; the organization that features the "Nut Tree Trail" on their website at www.nynga.org.

The "Trail" is more than a map on a website, however. Each site identified is the home to growing nut trees of one or more species. At each site a contact person is identified who will be willing and able to answer your questions about the plants growing there. Black walnuts, butternuts, shagbark



Onyx, a Shetland ewe.

entire time about how great it is. I get to give lambs chin scratches and watch them wag their tails. I get to collect fresh eggs every day. I get to watch pasture that was once nothing but rough brush turn into lush green grass, with the help of timely mowing and selective sheep, ducks and geese and their oh-so-wonderful manure and droppings. I get to experience the joy of exhausting physical work, knowing that I'll be able to see the results. Two hours spent cleaning out the coop and duck and goose stalls leads to happy, comfortable, healthy poultry, which leads to fresh eggs for me and healthy offspring next year.

At the end of this year I will still find myself a novice dancer, unsure of myself and looking at my feet whenever I move, but I am loving the music and the dance.

June Bartos and her husband Christopher own Rod and Staff Farm in Bloomfield, New York. They raise Shetland sheep, Pilgrim geese and mixed breed dairy goats, along with a host of chickens and ducks. In addition to home-schooling, knitting, spinning, sewing, weaving and gluten-free cooking, June also manages their website www.rodandstafffarm.org, where she hosts an on-line marketplace that will open to other farmers and artisans in January 2013. For more information, please visit their website or contact them at rodandstafffarm@gmail.com.



Tuppence, a Nubian doe. Photos by June Bartos



Rugged outside. Smooth inside.

New RTV1100 Utility Vehicle

Powered by a heavy-duty 24.8 HP Kubota diesel engine and 3-range variable hydrostatic transmission (VHT), the all-new RTV1100 is tough enough to handle chores and backcountry trails. It's also the industry's first utility vehicle with a factory-installed, fully integrated premium cab.

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COMMUNITY/WORLD**Food Recovery Q&A***An interview with Theresa Snow of Salvation Farms on 'gleaning' and agricultural surplus management*

by Laurie "Duck" Caldwell

While many people across the Northeast are working to increase local food production, there are a handful of organizations focused on capturing the surplus and making it available to the most vulnerable people in their communities: the poor, the sick, and the elderly. As a result, an ancient practice called gleaning — the harvesting of remaining surplus — is experiencing a resurgence. For example, one such group, the Boston Area Gleaners (BAG), gleanes the farms surrounding its large metropolitan area and delivers the produce to emergency food providers in the city. In another model, Salvation Farms in Vermont organizes gleaning collectives across the state, and is expanding its surplus capture programs to include the light processing of commodities. As part of a graduate school project, BAG's Executive Director, Duck Caldwell, had the pleasure of interviewing Theresa Snow, Executive Director of Salvation Farms.

Q: How did you become interested in food recovery?

A: I have a natural-born desire to teach people about food. I got a degree in Resource Management from Sterling College, and I wanted to apply that knowledge to my hometown. I am from the northeast kingdom of Vermont, so this area is part of me and I am part of it. My whole family is here, and I come from an agricultural background. I wanted to make my community more food secure and also teach people the value of their area farms. The guiding question of my work is: how do we create independence through greater interdependence?

Q: Can you tell me more about the history of Salvation Farms and the changes in your role over the years?

A: When I got out of college, it was difficult for me to figure out how I was going to do this work, but I began working on a local farm here that raises greens. The farmer, in an attempt to help me with my angst, told me that he had lots of extra greens at certain

times, and that I could do something with them if I wanted. That's how the gleaning started, and I did that for a year, gleaning and organizing volunteers to help with that. The next year, I took it outside that farm, and then found a co-founder to help form Salvation Farms (SF), which we did for a couple more years. We were then approached by the Vermont Food Bank and developed a gleaning program for them. But our role now is to logistically coordinate communities to do this work so that the state is very well poised to capture all available agricultural surplus.

Q: Please describe the structure of the Vermont "gleaning collective."

A: The gleaning collective is a collection of gleaning groups who have agreed to work with Salvation Farms in several communities across the state. Currently, there are five groups in different regions. We really want the collective members to retain their own identities and styles so that they can provide the best service to their own communities based on the profiles of the farms in their areas and their resources. I want to collectively problem-solve with them and to create best practices, and to develop these in a way that puts Vermont before ourselves and any one of our communities. And we want farms to be proud and confident about being engaged with this process.

Q: Do you have a goal of a quantifiable amount of surplus you would like to see Salvation Farms help capture in Vermont?

A: Yes, 2 million pounds annually of fruit and vegetables, and another 5 million in beef — these are culled dairy cows that would be rescued from going into the out-of-state commercial meat system. Most slaughter/processing houses here are closed down during the winter/spring months, so the goal is to develop a system here in Vermont that can process this beef in the "off season" to keep the highest quality dairy beef in state and to keep the doors of these processing facilities open and retaining employees.

Q: How is this field of work being named — or, how do you think it should be named? Where is the language coming from?

A: The food bank world traditionally uses the term "food rescue." For me, coming from a natural resource management background, I have started using the term "agricultural resource management." "Gleaning" I like to use for food captured from farm fields only, the very traditional use. A lot of the terminology that currently exists is from the charitable emergency food world. SF is not a charitable emergency food organization. We are creating food independence, and through this work, we will enable Vermont communities to provide food to their



"Duck" with gleaned kale at farm in Lunenburg, MA.

Photo by Oakes Plimpton

own vulnerable populations.

Q: What are the biggest challenges for you in this field?

A: Working with people presents both the biggest challenge and the biggest reward. The biggest organizational challenge is building shared vision and an understanding that managing food is socially responsible and will help us all. All of our work depends on partners, so we need to share ownership. In terms of promoting the work, I am always trying to think about how we can get people to understand deeper truths about food and resources.

Q: How do you see the food recovery field changing in the next ten years? What will be the ongoing role of farmers?

A: Because resource scarcity is going to become more of an issue, we will need efforts to rebuild regional economies, and it's going to make much more sense and be more dependable for local economies to create means of surplus capture. Farmers need to keep doing their work, but include in that their responsibility to their communities outside of the marketplace, and to see this work as an integral part of their operations. They can contribute to better resource capture by demanding good service from gleaning groups, and by working closely with them to help that happen effectively.

Q: In your vision, describe the roles of public and private agencies in agricultural surplus management, and where does citizen involvement fit in?

A: The non-profit role is to partner-build and coordinate localized food capture. Private partners will fill the role of trucking and distribution, as well as producing. The public sector's role is to fully support the role of processing and provide labor for on-the-ground food capture, and to fill the role of workforce development in this field. They have an essential role in helping leverage greater human equity; for example, by bring-

ing into the work the incarcerated population, as well as young veterans. These are people who need training and jobs, and this presents an opportunity to develop that workforce.

Q: Besides philanthropic support, what other financial models do you think could help support food recovery efforts on a state-wide level?

A: I daydream about the day that the state will take responsibility for this resource management; it probably won't be run as well but at least it will be part of the system, but that is not going to be any time soon. I think that ultimately, all states need to take responsibility for their surplus and manage it within their states in ways that make sense on a localized level.

Q: I read that one of your goals was to create a replicable model. What kind of resources do you think you would need to help begin that replication process? What kind of work needs to happen?

A: We aren't really close to being a model yet since we are still developing, but I think that the challenge for other states trying to replicate the model will be adjusting it to the needs of their state and its agricultural profile. Vermont is really the perfect state to start this, because we don't have behemoth anything. Yes, we are agricultural, but we are not industrialized agriculture and we are highly diversified. So we are going to depend on people to do this work, whereas in highly mechanized states, they will have to develop other models of capture.

For more information on Salvation Farms, visit their blog at <http://salvationfarms.wordpress.com/>

Duck Caldwell is Executive Director of the Boston Area Gleaners and a 2013 MBA Candidate at Antioch University in New England. She can be reached by e-mail at director@bostonareagleaners.org or by phone at 781-894-3212.



Theresa processing potatoes at the Southeast State Correctional Facility with inmate work crew.

Photographer Unknown

COMMUNITY/WORLD**Reconnecting Refugee Farmers to Their Agricultural Roots**

by Laura McCandlish

It's a crisp Saturday in mid-February at the largest indoor farmers' market in the whitest state in America, housed in a grand old textile mill on the banks of the Androscoggin River in Brunswick, Maine. A rainbow of root vegetables and cultivated mushrooms, free-range pork and beef, local cheeses and sourdough breads abound at the market, but there's not much visible diversity among the patrons. So it's striking when a group of Somali Bantu refugees amble in, the women wearing bright headscarves and African prints under their parkas. But they're not here to shop. No, these farmers have come to do market research, to learn about what types of vegetables-celeriac, golden beets and parsnips, for example - to grow and store for sale throughout the winter. Lack of refrigerators and greenhouses means the Somali farmers only currently sell to the summer markets, from the end of June to the beginning of November.



Farmer Seynab Ali prepares cured garlic seed for planting in early October.

"Our biggest limiting factor is there's nowhere to store winter storage vegetables and no growing space for winter salad greens," says Sarah Bostick, who runs classroom trainings for the farmers and manages their market relationships and wholesale accounts. "We don't have a real farm building, and it's challenging trying to figure out how to manage something like that, on a shared farm where the farmers don't live on the property."

The property is 400 acres of rolling hills and woodlands the Littlefield family had farmed near hardscrabble Lewiston since 1853. Bob and Ella Mae (née Littlefield) Packard, who

inherited the land, began the process of putting a permanent conservation easement on the property in 2000. They still raise hay and enjoy traveling in the off-season. As the Packards settled into retirement, Stephanie Gilbert, the Maine Department of Agriculture's farmland protection specialist, asked if they'd consider leasing land to the New American Sustainable Agriculture Project, or NASAP.

Fast-forward eight years, and what started as six acres of the Packard-Littlefield Farm has swelled to a 26-acre incubator now cultivated by about 35 recent immigrant households. The families sell collectively as "Fresh Start Farms," running CSAs and farmers' market stands all over the region. Most are Somali Bantus who lived in refugee camps in Kenya, and now (with other Somalis) make up at least 10 percent of the population of Lewiston, a predominately Franco-American, formerly declining mill town. Other farmers here fled the conflict in South Sudan or come from Mexico or Guatemala.

At the annual Harvest Festival last October, Packard drove the farmers and their many children, the girls covered with bright pink and blue hijabs, on a tractor tour of their shared property. The kale stalks had grown tall and bare. The farmers laughed and clapped as they sang traditional harvest songs in their native Maay Maay language. Back in the Juba region of Somalia, before Civil War ravaged their villages, they'd sing as they rode for hours in an open wagon out to their fields. Their farm in Maine is only a ten-minute drive from the public housing project where many of the Somalis live-though it's a drive that scares them in the snow. The South Sudanese farmers, who live in Portland, also tend a small satellite plot in nearby Falmouth. The families and staff shared a potluck meal featuring sautéed collards and lasagna with Swiss chard, all grown on site. They packed up curing pumpkins and winter squash for Halloween markets. They cheered their season-end accomplishments. They sang and danced to Somali music blaring from a mini-van's stereo.

Dozens of training programs for new immigrant farmers have cropped up nationwide, since the U.S. Office of Refugee Resettlement started funding such efforts in 1998. Here in Maine, NASAP began with a bent towards community organizing in 2002, soon after the first Somalis arrived in Lewiston. In 2009, it merged with existing

Portland non-profit Cultivating Community, which previously focused on school and community gardens. The long-term goal is for these extremely resource-scarce farmers to eventually own and operate self-sufficient businesses. There are many hobby and community garden programs for refugees, but far fewer support farming at this scale. But many challenges must still be overcome before the NASAP farmers can fend for themselves.

"Fresh Start Farms" participants grossed over \$150,000 in sales last season, but much of that goes towards transportation and supplies, let alone an hourly rate for the farmers' labor. Funding from the USDA's Beginning Farmer and Rancher Development Program is tied up in the Farm Bill, but NASAP has some other grants to fill the gap. Breaking into the wholesale market-finding large-scale buyers that can pay a fair price and place reliable orders-is the main challenge. Cultivating Community provides free promotional materials and expertise, helping the farmers overcome significant obstacles to access new markets. It takes the farmers a while to learn how the banking system works, and how to purchase seeds and specialty supplies from vendors less obvious than Wal-Mart, whose gardening products become very overpriced when stretched to a farm scale.

"Even as they become better producers, actually finding the market is hardest thing, given the language and cultural barriers, and just not knowing where to even start to seek those markets out," says NASAP project director Daniel Ungier, whose own parents fled the Soviet Union and Poland. "That's a big part of what we do."

Preparing seed garlic for planting last fall, Khadija Hilowle told me farming was very different back in Africa. As a Somali Bantu, she subsistence-farmed with livestock-camels, goats, cows and chickens-which made her people a target during the war. Their animals grazed freely and provided manure to fertilize crops. Hilowle and the other farmers were less familiar with compost and manufactured soil amendments. Nor did they practice succession plantings or sow cover crops for fertility. These are all techniques they've had to gain in Maine. Still, farming is second-nature to this agricul-



Whole popcorn stalks for sale at the Brunswick winter farmers' market remind Mekhan Mumin of corn she used to grow back in Africa.

Photos by Laura McCandlish



Sarah Bostick (right) guides farmers Mekhan Mumin (to her left) and others on a marketing research trip to the winter farmers' market in Brunswick, Maine.

tural people, many of whom lacked literacy in their native language.

"The reason why we're farming is because we don't have enough knowledge to work at other companies," says Hilowle, who like many of her compatriots, suffers from migraines and post-traumatic stress from

See Reconnecting page 15

Support for Immigrant Farmers

The following organizations provide support to immigrant farmers across the Northeast and Nationally.

- New American Sustainable Agriculture Project (www.cultivatingcommunity.org/programs/nasap.html): to meet the farmers behind the Maine effort and learn more about its parent Cultivating Community non-profit.
- New Entry Sustainable Farming Project (<http://nesfp.nutrition.tufts.edu/>): one of the first incubator farms, started in 1998 in Lowell, Mass., to work with refugees. Now has launching National Incubator Farm Training Initiative (NIFTI) to share training and technical assistance with similar programs.
- National Immigrant Farming Initiative (www.immigrantfarming.org/): a Heifer International network of new immigrant training programs, including NASAP.
- Refugee Agricultural Partnership Program (www.isedsolutions.org/projects/rapp): The U.S. Office of Refugee Resettlement and USDA fund this coordinated effort, with training and evaluation support from the non-profit Institute for Social and Economic Development (ISED Solutions).



Farmers Christine Pompeo (left to right), Seynab Ali, Jabril Abdi and their many children celebrate the Harvest Festival in late October with a hayride around their plots at the Packard-Littlefield Farm near Lewiston.

HORTICULTURE**Uncommon Fruits with Commercial Potential: Part 1**

by Lee Reich

When small farmers consider planting fruits, their thoughts typically turn first to apples. After that, peaches, plums, and other familiar fruits may come to mind. In this two-part article, I'd like to make a case for considering growing some uncommon fruits in addition to, or instead of, these more common ones.

One major problem with growing common fruits is pest management, especially in the case of apples in the Northeast. Also, these fruits have been commodified. Apples are generally sold as red or green orbs, and they can be grown just about anywhere, some places more easily than others. Why put so much effort into growing fruits that are beset by pest problems and that can be easily grown and shipped from elsewhere?



Cornelian cherry is an ancient fruit that bears reliably with little care.

Many years ago, while working for the USDA and then Cornell University, I became interested in some uncommon fruits notable for their pest resistance and for their unique and delectable flavors. These fruits – pawpaws, gooseberries, and hardy kiwifruits, for example – have all been enjoyed in other parts of the world for some time. They're not well-known because much of our agriculture and eating habits still reflect our mostly European, especially British, heritage.

Some reasons, then, to grow uncommon fruits on small farms and homesteads are:

1. For economical, ecological, and dietary

diversification. Even in years with late frosts, excessive rain, or 17-year cicadas, I still get plenty of fruits to harvest.

2. For sustainability. Because these fruits are relatively pest-free, they can be grown without recourse to sprays (organic or synthetic) and are well-suited to organic markets.

3. For market appeal. Consumers are now, more than ever, interested in "new" flavors, making these fruits, with their unique, delectable flavors, very appealing and allowing them to command top dollar in markets.

Besides providing fruit to enjoy and sell, most of the trees, shrubs, and vines that I'm going to describe also make nice, ornamental farmstead plants. All of them are cold-hardy over much of the country; I've grown them for many years in the colder part of Zone 5 in New York's Hudson Valley. Unless otherwise indicated, a fruit is self-fruitful, not requiring a second variety (or another clone) pollinator.

Cornelian cherry (*Cornus mas*, Zones 4-8) is a fruit that has been eaten by humans for about 7,000 years. It was enjoyed by ancient Greeks and Romans and appreciated throughout the Middle Ages and up until about 150 years ago. It's a dogwood species whose fruit is a dead ringer for a tart cherry, with a similar flavor. But Cornelian cherry is much easier to grow because few pests attack it and, despite blossoming very early, bears reliable, annual crops. The very early warming trend and subsequent late frosts during the spring of 2012 hardly made a dent in the crop on my tree, although these conditions devastated apples and other fruit crops.

There's not much to write about growing the Cornelian cherry. Plant two varieties for cross-pollination, weed and water the young plant, prune for good structure, and harvest in midsummer. Many people do not like the tart flavor straight up but it is wonderful for making jams, sorbets, and other value-added products. Fruits are easily harvested simply by shaking the branches.

Alpine strawberry (*Fragaria vesca*, Zones 3-10) was one of the strawberries of antiquity that were eaten before the 18th century, at which time the modern strawberry arrived on the scene. Alpines differ from modern strawberries in that the plants are smaller, lack runners, and are everbearing; the fruit is the size of your fingernail but very fragrant, redolent of pineapple.



Gooseberries show a range in color, size, and flavor.



Alpine strawberry fruits are small with intense flavor.

Start from purchased plants or from seed; plants bear their first season from seed. A number of varieties are red, and a few are white. I prefer white varieties because the birds pass them up, but the fruits need to be dead ripe for best quality. The ripe fruits are very fragile so are best suited for local marketing — perfect for a small farm.

Like any herbaceous perennial, alpine strawberry plants get old and woody after a few years. Either divide the plants or start new ones from collected or bought seed.

Ribes – the genus that includes **gooseberries** (*Ribes spp.*, Zones 3-7) and **black currants** (*R. nigrum*, Zones 3-7) – are shrubs of northern regions, very tolerant of cold and even shade, and deer resistant. Both fruits are very popular in northern Europe, where they feature prominently in cuisine. The plants grow as bushes about four feet high and wide.

Gooseberries have gotten a poor rap in the U.S. because of inferior varieties generally available for sale. I grow "dessert" varieties of gooseberries, making them, as one writer of yore put it, "the fruit par excellence for ambulant consumption." Flavor of the best varieties is reminiscent of grape, apricot, and plum. For the best flavor and disease resistance, I'd recommend the Poorman, Black Satin, Red Jacket, Glendale, Captivator, and Hinnonmaki Yellow varieties.

European black currant, a currant with real commercial potential, is very susceptible to a rust disease that also threatens white pines. As such, it was banned and has been relatively unknown here. In the last few decades, however, a number of varieties have been developed that are resistant or even immune to the disease — and currants are now making a comeback. The best of these, in my experience, are Belaruskaja and Titania. I eat these right off the bushes, but many people find the fresh flavor too distinctive and strong. Even so,

most everyone enjoys black currants in juices, jams, liqueurs, chocolates, and other products, both for their rich flavor and for their extremely high levels of vitamin C.

Currants and gooseberries require similar growing conditions. Permanent mulch provides the cool, moist soils that they enjoy, and annual pruning to remove old wood and a portion of young wood keeps a plant fruitful. Black currants bear best on one-year-old wood, gooseberries on two- and three-year-old wood.

Stay tuned for more uncommon fruit recommendations in the Summer Edition!

Lee Reich, PhD is a farmdener (more than a garden, less than a farm) and consultant in New Paltz, NY. More information on uncommon fruits can be found in the book Uncommon Fruits for Every Garden by Lee Reich (Timber Press, 2004) or by contacting Lee Reich, 845-255-0417 or garden@leereich.com.



Interplanting of two uncommon fruits, pawpaw and black currant, the latter of which are shrubs that tolerate shade.

HORTICULTURE**Cut Flowers for Beauty and Business**

by John Suscovich

Adding a cut flower share can do a lot for your small farm. Whether you use it as a main-stay or just to add an aesthetic element, growing flowers can be a nice addition to your business. Flowers can be used for wedding arrangements, Community Supported Agriculture (CSA) flower shares, property beautification, farmers' market sales, or all of the above.

Everything on a farm should have a use. The wonderful thing about flowers is that they can serve multiple purposes. Edible flowers not only accent your property, but can also be

a unique addition to your vegetable CSA. It is up to you to decide how cut flowers might fit into your business plan.

For example, Patty Taylor of Devon Point Farm, CT plants perennials in the flower beds around her house and barn to increase aesthetic, but also sows larger quantities of annuals in the fields to supply the cut flower CSA, an add-on to her and husband Erick's 200-member vegetable CSA.

Polly Hutchinson of Robin Hollow Farm, RI has created an entire business around cut flowers. She creates arrangements for her CSA, weddings, funerals, and farmers' markets.

Do Your Research, Create a Flower Plan

Before you start planting flowers, you should know what you plan to do with them. Are they going to be an edible addition to your CSA? Are they going to make your farm stand more inviting? You have to decide on your goals. The specifics of each flower's growing requirements can be found on the backs of their seed packets, or in seed catalogues such as Johnny's Selected Seeds or Harris Seeds.

If you decide to get into cut flowers, *The Flower Farmer* by Lynn Byczynski is a great resource. This book covers everything from the basics, such as site and soil selection, to arranging and marketing your flowers.

What flowers do you choose?

When creating your arrangements, it can be difficult to plan what is going to bloom when. Variables like rain, sun, soil fertility, and pollination all play a role in how long it takes a flower to bloom. For example, sunflower seeds can take anywhere from 50 to 60 days to reach maturity; this is a 10-day window, which isn't helpful when you have a wedding or CSA pick-up on an exact day.

The solution to this problem is to plant a variety of flowers that complement each other. You will also want to plant flowers in succession, just as you would vegetables. Flowers with multiple heads that bear over time, like zinnias, don't need to be planted as often. Flowers that produce only one stem, like gladiolas or sunflowers, need to be planted more frequently to have steady supply through the duration of the season.

Composing Your Flower Arrangements

You need to remember three things when putting together your flower arrangements: thriller, filler and spiller.

The thriller is your "money flower". These flowers are usually a little larger, pop out of an arrangement, and more expensive per stem, but add "pop" and serious value to your arrangement.

The fillers make up the structure of the arrangement. These are often branching stems that add volume and architecture to the bouquet. You should vary the sizes of your fillers to create interest.

The spillers are the flowers with gentle or dramatic curves that spill over the edge of the vase to give the arrangement length and keep it from looking too top-heavy.

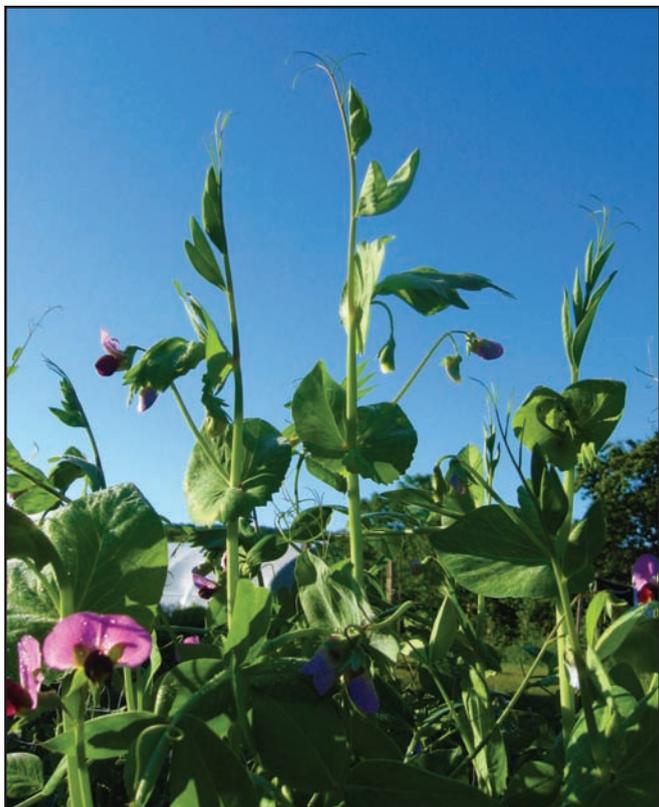
Those skilled at flower arranging can create a masterpiece with ten different varieties of flowers. If you're new to flower arranging, however, stick to three to five varieties to keep the arrangement interesting, but not chaotic. Also choose a color theme for your arrangement. For example, you could choose two different shades of orange, and a purple to accent. This is your time to shine, get the first



Flower shares are a great addition to a vegetable CSA. Extra bouquets can be sold in addition to the shares for members who may not have wanted to subscribe to the whole season.

PHOTO FEATURE**Peas: the Taste of Spring**

One of the first vegetables to arrive, nothing says Spring like the crisp, fresh taste of peas. Our photo feature this issue comes to us from Ort Family Farm in Bradford, NY. Roger and Maria Ort primarily produce free range meats and open pollinated vegetable plants. However, a significant portion of their yard is composed of raised beds, in which they grow vegetables for themselves and occasionally for market in their on-farm store or farmers market booth. To learn more about Ort Family Farm, visit their Local Harvest page at www.localharvest.org/ort-family-farm-M42147.



Even peas can reach for the skies.

Photo by Shona B. Ort



Whether you have a CSA or sell at a farmers' market, cut flowers can be a beautiful addition to your selling area. This brings in customers and puts them in a good mood.

bouquet just the way you want it, and the rest you can assemble line because you already have the design down.

Lastly, try to follow the "rule of three" for flower composition. Using three (or more of your "filler") flowers in an arrangement helps create movement and visual interest within the bouquet.

No Matter What You Do, Bring Value to Your Customers

Whether you are raising chickens, growing vegetables, or arranging flowers, you should always bring value to your customer. A happy customer is a repeat customer, and a repeat customer keeps you in business.

When pricing your flower arrangements, keep in mind what you would charge by the stem. Say for your thriller you choose a couple of lilies, which might cost about \$3 per stem. Your fillers, such as zinnias or statice, might cost \$0.50 to \$1 per stem. Your spillers, plume celosia, snap dragons or ornamental amaranth, for example, might cost \$0.50 to \$1 per stem. Do your math and step back. Would you pay eight-een dollars for that bouquet? If the answer is no, then add more flowers.

Have Fun with It

Flower planting, harvesting, and arranging can be a very enjoyable activity. Even the darkest of spirits brighten at the sight of a well-arranged bouquet of flowers. The more you enjoy it, the better you will get at flower arranging — your customers can tell when you enjoy what you do and take pride in your product.

John Suscovich is a sustainable farmer in Connecticut and founder of www.FoodCyclist.com and www.FarmMarketingSolutions.com.



Farm flowers go beyond CSAs and farmers' markets. These bouquets were used for the 2012 Devon Point Farm Dinner. The dinner featured food from the farm, and the tables featured flowers from around the farm property.

LOCAL FOODS & MARKETING

Grow Your CSA Online

by Dan Livingston

Though the internet has the potential to help grow a business, many farmers have trouble finding the most effective ways to utilize their time and energy online in order to get the best return on their efforts.

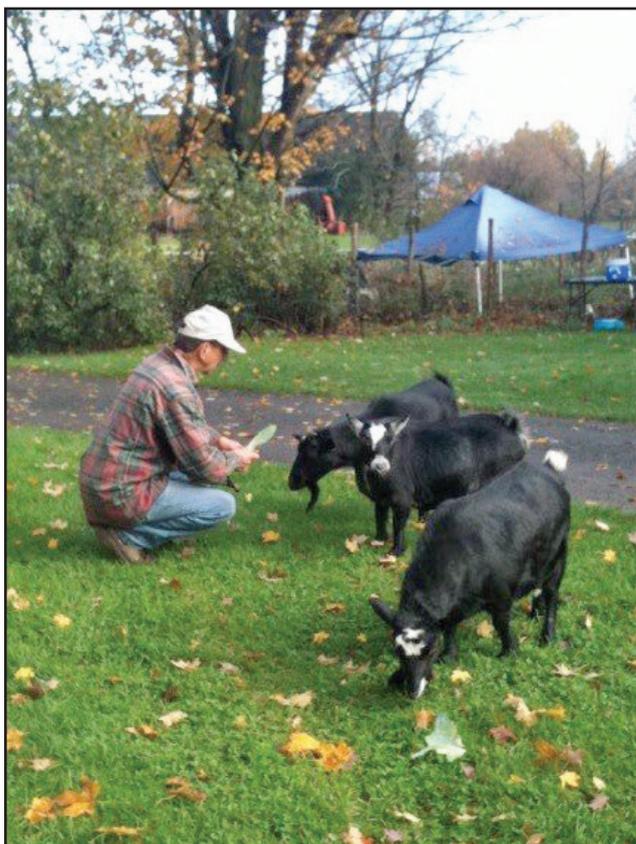
Wholeshare (www.wholeshare.com) is an online marketplace for local and sustainable foods that allows groups of people to buy local and sustainably produced food from wholesale distributors and farmers. Wholeshare works together with food hubs such as Hudson Valley Harvest and Regional Access to bring the products that they aggregate into the CSA programs of farms throughout New York State (as well as in areas of PA, CT, VT, MA and NJ). This allows farmers to attract new members, and retain the ones that they've got. It's an adaptable and versatile system, and each Community Supported Agriculture (CSA) farm that uses it (currently over a dozen) is using it in a different way.

What follows are profiles of two CSA farms in which the farmers themselves describe how they are using Wholeshare to grow their CSA program, to strengthen their connection to their shareholders and communities, and to save time while bringing in more each season.

Three Goat Farm CSA, Westmoreland, NY

In 2005, Denise and Bernie Szarek launched "Old Goat Salsa" using hydroponic tomatoes grown in their greenhouse. As the economy started to tank in 2009, they decided to look to a CSA model for the farm to secure a better market for growing vegetables. Bernie says, "We believe we are one of the few CSA's in New York State to grow our veggies using hydroponic methods. We use a mineral based nutrient solution to feed our plants, which allows them to take up those minerals directly by their roots. No pesticides, herbicides or fungicides are used on the farm."

They began offering Wholeshare as an option to CSA members in June of 2012. Their Wholeshare group is open to their CSA members as well as to anyone in the area. The group now has 70 members and is growing. According to Denise, "We do monthly Wholeshare pick-ups on the farm, and this seems to work with all of the members' busy schedules. In 2013, we will be adding a physical structure we're calling the 'Farmshed' to the farm to make it more



Bernie with the three goats of Three Goat Farm CSA. Photo by Denise Szarek



Farm CSAs use wholeshare to attract new members, and retain the ones that they've got.

convenient for members to pick up their CSA shares and Wholeshare orders. It will also serve as a place to hold workshops on topics such as how to buy local food on a budget, food storage and preservation, and recipe exchange."

Their CSA members enjoy having Wholeshare as an option because it means access to a broader range of healthy and local products at their pickups. Denise adds, "The idea was always to include value added foods with the fresh vegetables available through our CSA. From the very beginning, we have partnered with other area farmers to offer meat, eggs, yogurt and additional veggies to CSA members. So, when we were approached by Wholeshare last winter to offer food from many regional farmers at wholesale prices, it was a no brainer."

Hemlock Creek CSA, Stevens Point, PA

Bret and Stephanie got into farming after college. They were looking for a way to do something practical with all of their passion for food. Farming was their way of doing something to make the world better.

Their farm is in the Endless Mountains region, and straddles the Twin Tiers with 300 acres sprawling across the NY/PA border. They grow vegetables on 5 acres for a 60 member CSA, with the rest of their land kept as pasture and woodlands. They have a small dairy herd of 3 cows and growing. Their plan for this coming season is to grow their CSA up to 100 members.



Bret, Stephanie and Hazel operate Hemlock Creek CSA. Photo by Stephanie Roberts

That's where, Stephanie says, Wholeshare fits in. "Wholeshare has drawn in new members through word of mouth who aren't usual market customers and so I think that's helping the CSA-side of our business by giving us more exposure and drawing more members into our CSA through the idea of bulk ordering."

Farming vegetables in a remote area between Binghamton, NY and Clarks Summit, PA can be difficult. A trip to a quality grocery store can take the better part of a day, which often seems impossible during the growing season, while in the winter because of harsh weather, it often is impossible.

"To me," says Stephanie, "Wholeshare means access to good products at a good price and in bulk, which is invaluable.

Bret and Stephanie have also found Wholeshare useful in retaining CSA membership and interest throughout the winter. Stephanie says, "One of the main reasons we chose to use Wholeshare after our season ended was to keep in touch with our members, as well as to attend the Clarks Summit Essential Eating Farmers Market, and to sell some storage vegetables that wouldn't have been enough to make the trip otherwise." She adds, "It's been really great these past few winter months getting to see everybody and catch up with them and share good food. It's a good way to keep in touch."

To bring Wholeshare to your farm and your community go to <http://www.wholeshare.com>. For more information about the farms featured in this article, go to <http://www.threegoatfarm.com> or www.hemlock-creekcsa.com.

Dan Livingston's past experience includes working for a small non-profit online farmers market called Central New York Bounty, as well as the Northeast Organic Farming Association of New York (NOFANY). Dan now works as the Director of Community Outreach for Wholeshare.com. He has helped connect over 60 communities throughout New York State to local and sustainable foods, and is shaking up the food system by empowering individuals and groups to put good food at the center of their communities.

Starting a Farm?

Visit our Northeast Beginning Farmer Project online resource center! Enter the 'New Farmer Hub' to start drafting your business plan with the help of tutorials and interactive worksheets. Find answers to common questions, browse the Guide to Farming, and check out the latest beginning farmer online courses. You can browse our events calendar, subscribe to our monthly e-news, follow our blog, or visit us on Facebook and Twitter, all from the homepage of the new site: <http://nebeginningfarmers.org>

Need info?

Subscribe to the Cornell Small Farms Update, a bi-monthly email newsletter with announcements, upcoming events, resources, funding and farming opportunities and more. Visit www.smallfarms.cornell.edu and click on the "Sign Up for Enews" button.

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LIVESTOCK & POULTRY

The Chute

by Ulf Kintzel

I get many questions about equipment needed to raise sheep — be it electric fencing, hay and mineral feeders, panels, or the chute. While all these items can be purchased, many of them are in my opinion overpriced or at least not affordable for a smaller sheep operation like mine. A couple hundred ewes don't pay for something that thousands of ewes might. Not to mention, the declining state of the U.S. sheep industry doesn't lend itself to much competition on the market and in turn, to a variety of affordable equipment like you might find in sheep producing countries like New Zealand. So, you either have to reach deep into your pocket, or build it yourself.

This article is the first of a whole "do-it-yourself" series. My suggestions will be extremely affordable — as long as you're willing to use a few tools somewhat skillfully.

A chute is a long and narrow aisle that forces the sheep to walk in a single file. If you only have a few sheep, you can probably get away with using a solid pen. The larger the flock, however, the more a chute becomes helpful or even necessary.

The chute can be used for a variety of purposes, such as sorting, vaccinating, counting, or marking sheep. The chute consists of three elements: the actual chute itself, a holding pen before the chute, and another pen or fenced pasture after the chute. The chute needs to be built from solid panels. The holding pens can be made from temporary fencing, like electric nettings, with only the part closest to the entrance to the

chute being solid (as there might be some physical pressure against the pen in this area). This part narrows like a funnel as it gets closer to the chute.

In German, the chute is called "trichter," which translates into "funnel." Sounds appropriate, doesn't it?

I placed my chute, like many of my colleagues in Germany, alongside the barn. This eliminates the need for one side of panels. It also allows me to sort sheep right into the barn (I had a door put in along that side of the barn for just that purpose). The panels for the chute are made from rough-cut Hemlock. Hemlock, although quite light and flexible, is very solid under pressure. In fact, it bends almost elastically when sheep push against it — even more so once the lumber has dried out.

The panels should be about 10 to 12 feet long and 42 inches high. Higher panels may be necessary if your sheep are tall. However, panels that are too high can limit your ability to reach into the chute from the outside. The spacing in between the panel boards should be between 3 1/2 to 4 inches at the lower half and 5 inches at the upper half. The reason that the bottom boards are more tightly spaced is to keep lambs from escaping through the spacing.

The width of the chute depends on the size of your sheep. Unfortunately, there isn't a one-size-fits-all width. You will need a narrower chute for lambs than for adult sheep, a wider chute for ewes with full wool than sheep that are shorn. Additionally, you will want to be able to move

through the chute against the sheep as well, such as when you de-worm the flock. You could, of course, adjust the chute accordingly, but this is not always practical. As a general rule of thumb, your ewes should not be able to turn around. At the same time, your chute should not be so narrow that it is uncomfortable for the flock to move through, and they should do so willingly. My chute is between 20 and 22 inches wide. This is just right for my ewes, even when I am in the chute with them.

The panels need to be aligned so that the overlapping panels go with the flow of the flock (see picture) so that the sheep don't bump their shoulders. Again, the chute should be as comfortable as possible to ensure that the flock is willing to pass through it. My chute is about 90 feet long. If in doubt, make it longer. You won't have to fill and empty the chute as often. A guillotine gate at the entrance to the chute is very helpful and I think a worthwhile expense. It isn't necessary, however, and you can also build a regular gate.

So far I have discussed the equipment and set up. But how do you move the sheep into and through the chute? It pays off to be smart, rather than forceful. Have you ever been to a sales barn where the staff hollers and whistles to get the sheep moving? And what do the sheep do? They balk, refuse, or turn around. It seems that the best kept secret in moving sheep is to keep quiet. Furthermore, when moving sheep into the chute, you might need to give them a little push from the side or rear. However, you should never touch any part



De-worming the sheep, moving against them.

of the front of the sheep or pull them forward. This will only make them back up. If this is totally new to you and your sheep, you may need to catch the first sheep and push it into the chute, after which the others will be more likely to follow.

Also, the first time you need the chute should not be the first time you use the chute. Be sure to let the sheep just run through for practice, without doing anything other than perhaps counting them. This will help the sheep get comfortable with moving through the chute. It also helps if you provide the sheep an incentive to get to the other end of the chute, such as good pasture or some grain. If the sheep are hungry, even better.

Lastly, the first time you use your chute, it helps to work with adult sheep — they move more easily than lambs. And remember that ewes with young lambs are the hardest to get through a chute. Whatever you do, be smart and think like a sheep does.

Ulf Kintzel is a native of Germany and has lived in the U.S. since 1995. In 2006 he moved from New Jersey to Rushville in the Finger Lakes area in upstate New York. Ulf owns and operates White Clover Sheep Farm. He breeds and raises grass-fed White Dorper Sheep without any grain feeding. His website address is www.whitecloversheepfarm.com. He can be reached by e-mail at ulf@whitecloversheepfarm.com or by phone at 585-554-3313.



Using a dog to move the sheep up. Please note how the panels overlap!



The entrance to the chute.



One of our kids counting the sheep as they leave, two others getting them to move up, while I am sorting sheep at the door into the barn.

Photos by Ulf Kintzel

FARM ENERGY

Is Wind Energy Right for Your Farm?

by Mark Mayhew

If you are a farmer in New York considering wind energy, financial assistance and guidance is available from the New York Energy Research and Development Authority (NYSERDA). NYSERDA's is a public benefit corporation whose aim is to help New York meet its energy goals: reducing energy consumption, promoting the use of renewable energy sources, and protecting the environment. Last year, NYSERDA helped 32 farms in New York State make their dream of renewable energy a reality, and provided funding for turbines from 2.1 kW to 850 kW in size. For eligible participants, NYSERDA can provide an incentive (i.e. a grant or rebate) for up to 50 percent of the cost of the system.



NYSERDA provided \$44,000 to Cross Island Farm to install a Bergey Excel 10kW wind turbine on a 120-foot tower along with a 5.52 SunPower Photovoltaic system.

Farms bring three critical elements to a successful wind project: land, wind, and an appreciation of the value in a long-term investment. The project's return on investment will depend on many factors including: their available wind resource, their cost of electricity, and their ability to take advantage of the federal Investment Tax Credit and accelerated depreciation. What is guaranteed is an immediate and sizeable reduction in electric bills and the proud feeling of owning a wind turbine and generating your own electricity.

Wind is very site specific and a wind site assessment should be conducted to determine available wind resource (defined as the annual average wind speed). Speeds of at least 10 mph are usually considered necessary for a reasonable investment. Wind speeds increase with the height above ground, and an increase from 8 to 10 mph will double the amount of electricity generated.

There are three concepts that should be considered to size a wind turbine to meet one's needs. 1) All farms are eligible for net metering. If a wind turbine generates more electricity than a site is using, the electric utility meter will spin backwards. (Some have been known to watch for this event and cheer when it happens.) At the end of the month, if the meter spun backwards more than it spun forwards, the electric company will issue a credit for the excess electricity. This credit can be carried forward and applied to the electric bill on a non-windy month. 2) Some farms are also eligible for remote net metering, where this credit can be applied to other electric accounts. This may be useful when a farm has

multiple electric meters on site. 3) The wind turbine should not be too big. A properly-sized turbine should only generate the electricity that is needed on an annual basis. It is not cost-effective to over-size a turbine.

The New York State Department of Agricultural and Markets has defined a wind turbine as farm equipment. Under the Right-to-Farm Laws, a farm in a Certified Ag District cannot be prohibited from installing a wind turbine by the local jurisdiction. In addition, there can be no restrictions on the height of the tower; however, set-back limits may be imposed.

A wind turbine is an investment that can be enjoyed. When asked why he bought a wind turbine, a farmer in Chemung County just replies, "I always wanted one."

For more information on the program contact the NYSERDA Project Manager, Mark Mayhew, at 866-NYSERDA or 518-862-1090, extension 3119 or by e-mail at msm@nyserdera.ny.gov or visit www.nyserdera.ny.gov.

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NYSERDA's Agriculture Energy Efficiency Program has funding NOW — don't wait! NYSERDA can help you identify and implement electric and natural gas energy efficiency measures for your farm. Your farm must be a customer of a New York State investor-owned utility and contribute to the System Benefits Charge(SBC). NYSERDA will assign a FlexTech Consultant to perform an energy audit for your farm at no cost for audits up to \$2,500. Plus, NYSERDA will contribute cost-share assistance of up to 75 percent toward implementing upgrades! You can request an energy audit, project implementation incentives, or both. For more information and to get an application visit nyserdera.ny.gov/Agriculture.

Not in New York? Help is Still Available!

Not in New York? The USDA (US Department of Ag) Rural Energy for America program may have funding to assist you. Visit <http://www.rurdev.usda.gov/energy.html> More sustainable farm energy assistance is available at the Cornell Small Farms Program website: <http://small-farms.cornell.edu/resources/farm-energy/>

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LOCAL FOODS & MARKETING**Using Software to Help Build and Support Local Food Markets**

by Kim Mills, Sue Rau, Jason Evans, and Jim Ochterski

In this article, we draw on our experiences with two local food markets operating with Local Food Market Software to describe how software can be used to help build and support a local food market.

Schoharie Fresh (<http://www.schohariefresh.com>) is an online consumer retail market in Schoharie County, New York. This project was established with the support of a New York State Healthy Food/Healthy Communities grant. Schoharie Fresh was launched in August, 2010 using the Local Food Market software.

The North Country Grown Cooperative (www.northcountrygrownmarket.com) is a local wholesale market in St. Lawrence and Franklin counties, has been in operation for many years, and began using this software in August, 2011. Adapting the software to the North Country Grown Market was supported by grants from the Cornell Small Farms Program and the USDA. The Local Food Market software we describe was also developed with support from the New York Farm Viability Institute.

In both markets, Local Food Market software is used to reduce transaction costs, and make the market more profitable through increased convenience, reduced uncertainty, and building a local market database. Local Food Market software is a management tool to complement the operation of a local food market.

Using Software in Local Food Markets

All markets have costs associated with bringing buyers and sellers together to complete a transaction, and in a local food market these include:

- A grower investing in production with uncertain future sales,
- A buyer finding local products at specific

times, prices, and quantities, and

- A market manager identifying producers, products, and prices, and managing invoices, delivery, purchase orders, and inventory.

In Schoharie Fresh and The North Country Grown Market, we used software to improve the flow of information, and provide better coordination of market activities. While all transaction costs outlined above are not impacted by this software, many transaction costs are reduced. The benefit to both markets has been increased convenience, reduced uncertainty, and a database of information on the market. For each topic below, we describe examples of how Local Food Market software helps support profitability.

Increased Convenience

Ways that customized, online software increases convenience for buyers, sellers, and managers in a local food market include the following examples:

- Schoharie Fresh farmers know in advance order pickup dates and how much inventory is actually sold — they know which products and exact amounts to harvest and deliver for sale. Farmers and their staff are not tied to a physical market location for an entire day.
- Schoharie Fresh customers benefit from a larger number of farmers to buy from, increased product variety, and clear prices. This is due to an “open door policy” for local farmers, which is easily accommodated in an online market.
- Customers have the convenience of shopping from home, as well as the opportunity for some in-person interaction with local farmers and access to product samples at the pick-up site.
- On a twice weekly cycle, the manager of North Country Grown Market assigns pending sales to member farmers from a software-generated sales report. Compared to the previous paper based system, this step is a great time saver. Generating purchase orders from the software is more easily carried out, allowing the cooperative to pay farmers in a timely manner even during the busiest periods of the season.

Reduced Uncertainty

Ways that customized, online software reduces uncertainty for buyers and sellers in a local food market include the following examples:

- North Country Grown Co-op member buyers prefer to buy from local member farmers, but face uncertainty in product availability. The Co-op has asked buyers for purchase projections for several years, and in the previous paper based system, recorded a single, annual quantity for a product that farmers used in crop planning.
- North Country Grown Market software is now used to collect buyer purchase projections and farmer forecasts for the coming season. Detailed software reports,

Assign Growers to Orders

Cart	Product	Unit	Quantity	Assigned Producer	Producers Offering Product (Inventory)	Reduce or Divide Order
1/1 1000 Water	1180 Eggs	dozen	4 00	Criffins Kane@1.0000		One Two Three Four Five
1/1 1000 Water	5001 20000 1/2 1/2 1/2	Year	10 00	Erasmus Flem@1.0000	(Product Farm (20.00))	One Two Three Four Five

The software allows the manager to assign pending orders to member farmers with a mouse-click. Producers offering a product can be assigned to an order, the assignment can be cancelled and re-assigned, and the pending order can be reduced in quantity or divided into multiple orders.

comparing purchase and forecast quantities over two week intervals support both pre-growing season and in-season adjustments. This tool helps the cooperative to optimize sales of local products. Aggregate projections and forecasts are used for planning the next season's purchases and sales.

- In both Schoharie Fresh and North Country Grown Market, an online inventory feature tracks products as buyers submit their orders. Double selling or ordering an item that has already been sold is eliminated, and buyers can be nearly certain they will receive everything they have ordered. Farmers can download their purchase orders for delivery day, and know exactly the products, quantities, prices, and total sales for the day. Farmers also have access to historical sales records.

Database of Information on the Market

Ways that customized, online software builds a database of information on the market to better support market operations include the following examples:

- In Schoharie Fresh, record keeping of all accounting functions is supported by the system database. Managers can print invoices, orders, and summary reports. Specific product orders can be generated as needed, such as to settle a disputed order.
- In the past, the North Country Grown manager had to manually generate an invoice for each buyer during each delivery period. A corresponding set of purchase orders had to be generated for each farmer. Invoices and purchase orders had to match inventory, with each item entered by the manager once on the invoice and once on the purchase order. Only the manager could ensure all necessary details were correctly recorded. Now a database of sales transactions is used to generate buyer invoices and purchase orders for farmers. Financial data is exported from the system to provide the necessary detail to a bookkeeper to manage the financial records of the cooperative.
- North Country Grown farmers typically kept planting records on paper, but not always in a well-organized format. Farmers can now log into their North Country Grown account and enter planting data for each crop, and several succession plantings of the same crop. Seed variety, expected and actual planting and harvesting dates, and expected and actual crop yields are recorded. Planting databases for each member farm provide a detailed and easily retrieved record to plan from in the next growing season.

Summary

We used our experiences with two local food markets in New York State to describe opportunities for creating

more profitable markets. We focused on “back-office” operations where we used software to better manage the flow of information between buyers, sellers, and market managers and to better coordinate many of the activities required to operate a local food market.

We identified three benefits of using Local Food Market software: increased convenience, reduced uncertainty, and building and using a database of market information. This approach may help expand small farm access to local and regional markets, and make local food more easily available to wholesale and consumer markets.

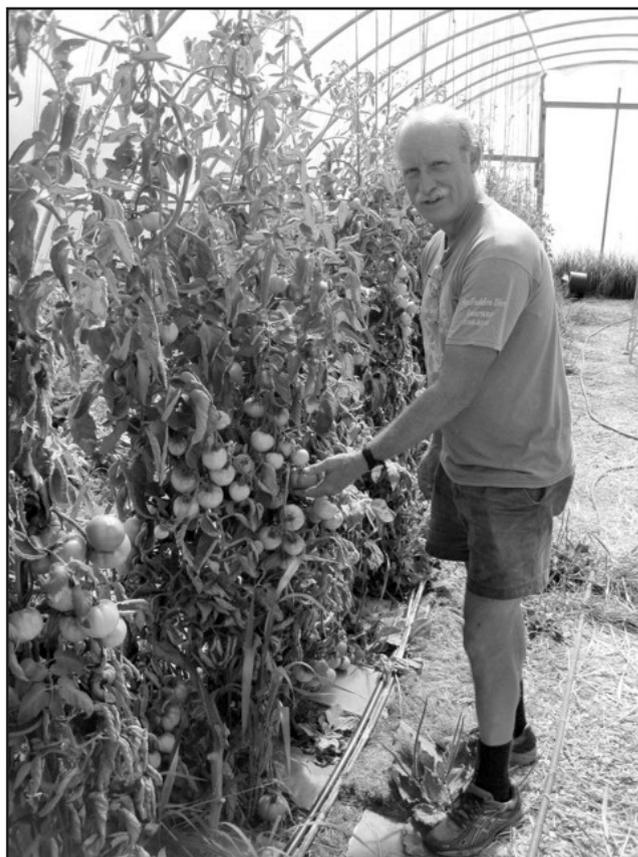
For more information on the Local Food Market software described here or partnering on a local food market project, please contact Kim Mills at millsk@morrisville.edu, 315-256-5182 or www.buylocalfoodmarket.com

Kim Mills teaches in the Computer & Information Technologies department at Morrisville State College in NY, and develops software for local food markets. He can be reached at millsk@morrisville.edu.

Sue Rau is a farmer and the manager of North Country Grown Cooperative in Canton, NY. She can be reached at manager@northcountrygrown.com.

Jason Evans teaches in the Agricultural Business department at SUNY Cobleskill, and manages Schoharie Fresh.Com. He can be reached at evansjr@cobleskill.edu.

Jim Ochterski is Agriculture and Natural Resources Issues Leader with Cornell Cooperative Extension in Ontario County, and is leading an effort to work with local farmers, chefs, and consumers to establish new markets for local food. He can be reached at jao14@cornell.edu.



North Country Grown Market member farmer John Dewar of Village Veggies in Potsdam, NY.



Schoharie Fresh market day. Producers from Elderberry Herb Farm (back left), and Sap Bush Hollow (back right), dropping off their products to Schoharie Fresh intern Liz Goblet (front right), and Project Coordinator Maureen Blanchard (front left).

BOOK NOOK

Luscious Guide to Growing Fruit Naturally

by Jill Swenson



Lee Reich, PhD is an avid farmdener (more than a garden, less than a farm) who turned from plant and soil research with the USDA and Cornell University to writing, lecturing, and consulting.

Photos courtesy of Lee Reich

Move over vegetables. Less kale, more quince. Fewer zucchini, more kiwi. Make room for more fruit in the garden and on the farm. Whether you add fruits for your own home use or to add small crop diversity at the farm stand or farmer's market, now is the time to explore what lies between apples and strawberries.

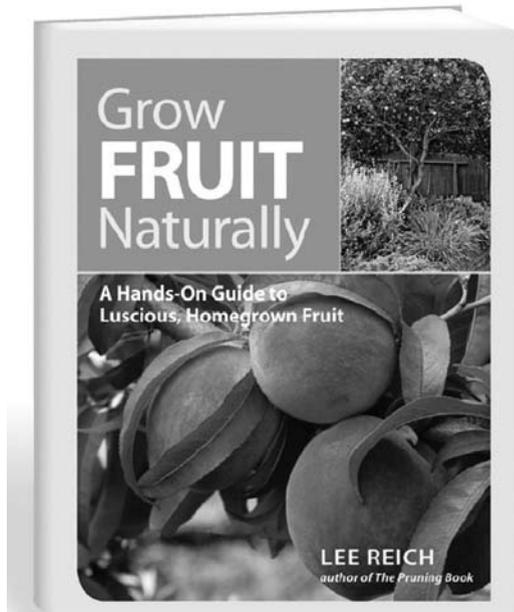
Many folks consider fruits too difficult to grow, and certainly large-scale commercial growers are challenged to maximize yields and minimize spoilage. Yet homegrown fruits grace your dinner table and enhance your small farm operation. Naturally grown fruit emphasizes quality — flavor, nutrients, and natural pest resistance — over quantity and size. For apples, among the most difficult to grow fruits, this means selecting Macouns or Newtown Pippins for new rootstock. Or maybe you just need to identify those pretty yellow blushing heirloom apple trees in your hedge row, prune or take rootstock to yield bushels from just a few trees.

Black raspberries drive me wild. I search through patches of poison ivy, reach into thorns, and compete with bears and birds for their precious succulence. "Like the nipple on a wet nurse," is the description given to these precious fruits by Clarissa of Two Fat Ladies (BBC cooking series). Naturally grown, without artificial fertilizers or pesticides, nothing else compares.

Elderberries, pomegranates, and currants are increasingly popular fruits with the public. Medlar, Mulberries, and Pawpaw fruits are being rediscovered. Cherries, blueberries, raspberries and strawberries remain perennial favorites.

In his new book, *Grow Fruit Naturally* (Taunton Press, March 2012), Lee Reich provides all a small farmer needs to know to easily grow fruit. This luscious guidebook offers thorough information about how to grow, propagate, prune, and harvest fruits. Pollination needs, pests and diseases, sunlight requirements, climate zones, and specific plants and multiple varieties are described in detail with accompanying full color large photographs. The simple and straightforward organization of information marks this as another reference book to keep on your bookshelf from Lee Reich.

Jill Swenson is the president of Swenson Book Development, LLC, based in Brooktondale, NY. She may be reached at jill@swenbooks.com or 607-539-3278.



Reconnecting from page 8

the torture she endured and deaths she witnessed during her country's Civil War. "Our parents and grandparents farmed. We're here to keep farming as a part of our culture. We have the knowledge, but the knowledge we have is different, and we left it in our country."

It's primarily strong women like Hilowle and Seynab Ali and Mekhan Mumin who keep the farm running full-time, with help from their children and husbands (though many are single-mothers) during the summer. They're aided by outreach coordinator Hussein Muktar, the English translator, fix-it man and liaison between the farmers, their customers and the non-profit's young, college-educated staff. Growing up in a refugee camp in Kenya, Muktar attended school where he learned English while working as a bike mechanic. Though not yet 30, he and his wife, Hawo, just welcomed their sixth child, Mohamed.

That same fall afternoon, Muktar tinkered with a leaky irrigation valve with Cultivating Community's Sarah Marshall, who advises the farmers in the field. They stood in the wash station on new mats just collectively purchased by the farmers. With 17 acres now under cultivation, there's plenty of product to move. But "Fresh Start Farms" lacks the on-farm food safety plan and GAP certification required go through otherwise receptive local distributors. The makeshift wash station needs new pipes and hosing, but just keeping it-and the farmers' very used minivans-clean would be a good start.

The problem with a shared farm is "the tragedy of the commons," Bostick says, where one farmer doesn't want to pick up after another's mess.

The competitive wholesale market is also foreign to navigate for those who never eat in restaurants. Numerous African restaurants and halal markets have opened in Portland and Lewiston, but repeated efforts to sell to them have been unsuccessful. Most lack the capacity to store perishable produce. Bostick says "Fresh Start Farms" needs bigger, streamlined accounts, to limit the chaos of managing more than 20 mostly smaller ones for as many farmers.

It could take five years for the NASAP farmers to break into more popular markets like the one in Brunswick and gain the infrastructure to farm year-round. The upside is that now the farmers get that rare chance to step back in the winter, to study English, order their seeds and equipment and improve farm marketing and planning. Less worn from field work, they're more receptive to the constant questions they incur from researchers and journalists. The Somali farmers in Lewiston have garnered coverage everywhere from the New Yorker to the BBC and are the subject of a documentary. Telling their story is perhaps the best way to grow their businesses on this slow, but steady, journey towards independence.

Laura McCandlish is a food writer and radio producer who recently relocated from Corvallis, Ore. to Brunswick, Me. She writes for The Portland Phoenix and blogs at BaltimOregon.com.

The Pruning Book, Landscaping with Fruit, Weedless Gardening, and Uncommon Fruits for Every Garden are previous hands-on how-to books by Reich. He holds a Ph.D. in horticulture with a specialty in growing fruit and his garden in New Paltz, NY, and has been featured in the New York Times and Martha Stewart Living. He makes fruit science simple.

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NEW FARMERS**The Education of a Beginning Goat Farmer**

by Stephanie Fisher

I spent most of 2011 working and living in Brooklyn, NY with my boyfriend. I manned phones and servers in the semi-glamorous world of mail-order meat, while he managed an independent ice cream store in mid-town. We were trying our luck at post-graduate success, although it seemed our luck was running out; the effects of the constant adrenaline that come with living in a bustling metropolis were beginning to show, and we were searching for a way out of the grind.

We were introduced to a pair of Vermont dairy goat farmers at a function for my job. We were somewhat in awe of the young, handsome couple, especially since their farm held a highly regarded reputation in New York City. In between the usual small talk, I mentioned that my boyfriend and I had dreams of working in agriculture, and even of owning our own farm. We exchanged contact information as a formality and then parted ways.

Three months went by before the farmers contacted us about an upcoming internship opportunity. I struggled with the decision, having been offered a second year at my company, with a hefty salary as bait. I wasn't even a year out of college and already I was turning down a desirable position at a somewhat trendy organization in one of the toughest cities in America. While all of our friends were trudging their way along career-oriented paths, I couldn't help but feel like I was stalling-out, moving farther away from the elusive job security that my university degree is supposed to guarantee. But we couldn't say no.

After various email exchanges, two-week notices, a lease cancellation, and many bittersweet good-byes to close friends, we found ourselves and our packed car in a tiny village in eastern Vermont where we would live for the next two months as the farm's



A first time mom gets to know her new baby.

kidding interns.

We lived about a mile from the farm on the second story of an old fish and game building downtown. This, of course, defies all known definitions of downtown. Our building was among only a few others, including a firehouse across the street that sponsored monthly pancake breakfasts. Besides us, the fish and game also housed the weekly farmers market, where local vendors would sell hot food, fresh meats, and handmade goods. Practically the entire village would show up for the weekly meet-up; it was a foreign but welcome sensation to recognize every face in the room.

Although the first doe wasn't due for another week, I was eager to work my desk-jockey exhaustion away. That's why we left the city in the first place, to connect with something real and physical, something that mattered and made a difference beyond small-batch artisan ice cream and customer service. But instead of the never-ending lifting, bending, and cleaning that I had imagined farm work would be, we spent a lot of time discussing and observing. (I was so consumed by this preconceived notion that I made a point to mention my small stature and presupposed inability to lift fifty pounds in every farm-job interview we had.) The farmers showed us their endless record keeping system, their precise farm procedures, their business plans and grant proposals — all things familiar to me after working the previous four years in administration.

Once we were accustomed to the farm's ins and outs, we settled into our new workday routine. Our mornings began around 6 AM, when we'd awake to the sun just beginning to clip the windows of our frosty bedroom. We'd lay our work clothes (picked-out the night before) over the space heaters, which we programmed to turn on at 5 AM. In our matching powder-blue long underwear and thermal undershirts, we resembled alpine skiers gearing up for the day's ascent.

We'd make our way downstairs to our makeshift kitchen, which was outfitted with an old dorm fridge, French press coffee maker, water percolator, and a hot plate. With no hot water, we washed our dishes infrequently and instead boiled water to rinse our travel mugs. Once the coffee was made and consciousness somewhat gained, we rushed to brush our teeth, pack our lunches, and drive to the farm.

By the time we made our way into the barn around 7 AM, the farmers were already up and milking. Trudging down the steep steps of the barn, we could hear the hum and rhythm of the milking machine, the sucking and pushing of air through pipes. The milking does were lined up according to their duly established hierarchy, impatiently waiting for their morning ration of grain.

After saying our morning hellos, the two of us would head to the separate kidding barn where we were greeted by the deafening bleats of around 100 baby goats. All of the kids would be jumping and bouncing with uncontrollable excitement at the sight of us. We had to rush into the pens with their milk buckets or risk being trampled by their tiny, unruly bodies. They would grab onto anything they could and attempt to draw-out



A curious doe takes a peek.

Photos by Stephanie Fisher

milk: fingers, zippers, shoelaces, ear lobes... In about an hour and a half's time, the barn would be nearly silent as the kids' bellies were filled and they would begin to cuddle-up for their post-breakfast naps. At the end of the morning, we'd survey the furry, vibrating mounds, every kid fitting just so perfectly into their respective piles like pieces of live jig-saw puzzles.

The babies never ceased to be cute and amusing, but the farmers warned us about the sometimes-morbid nature of dairy farming. "Where there is livestock, there is dead-stock." Having worked for a meat reseller and butcher shop, I had seen my fair share of slaughterhouses and animal carcasses, so I thought myself well prepared for my new industry. But of course I remember my first kid death, and it was nothing like slicing deli ham.

A three-week old kid had aspirated milk into her lungs. We found the tiny doe listless, her breathing labored and temperature below normal. She was clearly beyond help, and began to fade in the farmer's arms. She let out three painful, desperate cries, each beginning quietly and ending in a hollow crescendo. The farmers identified them as the "death cries." Shortly after, her breathing stopped. I couldn't believe I watched the literal life of this animal disappear into the ether right there in the barn. That wouldn't be the last time we'd hear those unmistakable cries; we'd witness plenty more goat deaths over the next year. Just as the farmer's warned, there will always be dead-stock, try as you might to save every animal.

Our internship came to an end in late April, just as the days were beginning to thaw. We ceremoniously packed up our car and once again said bittersweet goodbyes. We coordinated jobs at a start-up goat dairy in Washington and pushed ourselves through another instantaneous transition to living on the West Coast. Our education as goat farmers continued.

We returned to the East Coast in a year's time, and things remained largely as we left them. Our friends were continuing their climbs up their respective career ladders, our favorite bars were still overcharging for beers. Although we were effectively unemployed for twelve months, we managed to live in two different states and drove our car

across the country twice, adding nearly 20,000 miles to the odometer (this of course doesn't account for the infinite miles we added to our autobiographical till).

Our financial chips were down, but we had promise in our future as we returned to the same Vermont farm where we started, not as interns, but as employees. We're pleased to be making a wage, but we're also grateful to continue working in a job that exhilarates us every day. All the decisions I made throughout college were safe — relevant internship after relevant internship — steering me toward an indefinable goal. Farming seemed like a complete departure from everything sensible, but it was just an unexpected detour. Like most things in life, farming is an indescribable combination of applied knowledge, intuition, and luck.

Stephanie Fisher is a beginning dairy goat farmer in Vermont. You can find her and her boyfriend's blog at mountaincreatures.tumblr.com. She can be reached at stephaniefishes@gmail.com.



A four-month-old doeling nibbles in the grass.

SEED STORIES**From Seed to Shining Seed***Each seed we plant sows a story much larger and more complex than its unassuming beginning*

by Petra Page-Mann

Welcome to our new feature column on the topic of seeds! As local and organic become mainstream, the seed sowing our food has largely been left out of the conversation. Why does seed matter? In no way small or simple, each seed (open-pollinated, hybrid, GMO) sows a story much larger and more complex than its unassuming beginning. That we would know and sow seed that embodies the abundance, diversity and tenacity that is agriculture: this is why I live well, grow seed and write.

-Petra Page-Mann, Column Editor

The groundswell of small-scale, regionally adapted seed growing across the continent has been a pleasure to watch develop in the ten years that I have been farming. From Maine to Tucson to Bellingham, I've saved seed on diverse farms and seed companies, bearing witness to the increasing interest and awareness of seed by gardeners, farmers and eaters alike. These experiences have taught me that the significance of seed is in no way small. Like food, the fact of seed is as much a subject of spirit as it is of supper, impacting every facet of what we value, reflecting the very nature of why we farm in the first place. We now recognize and celebrate the renaissance of local food, with its innumerable benefits to farmers, eaters and ecology; the celebration of the regionally adapted, open-pollinated and organic seed that sows this abundance is just, and finally, emerging.

Farming is challenging, growing seed no exception. As members of tightly knit agricultural communities, we know it is the ability to adapt to ever shifting conditions that allows our farms to thrive. To build this vision we need time, commitment, attention to detail and, above all, patience. These varieties will not rival hybrid vigor in one or even three generations, though with vision and dedication they will soon become hallmarks of consistency and quality. The individual and collaborative strengths of farmers, academia and industry making this vision reality in the Northeast give me hope that our grandchildren will know and sow seeds of regional resilience, diversity and abundance.

Chrystine Goldberg of Uprising Seed in Washington describes the significance of open-pollinated and regionally adapted seed beautifully: "If the modern industrial food system has done much to remove the faces behind the foods we eat, the seed industry represents the extreme of that trend. Information regarding who grew the seeds, where they were grown, and under what conditions they were grown is almost never available to the public. Yet, as many of the traits involving how plants respond to their environment are hereditary,

this information is very relevant to how the given seeds will respond in your environment.

As the seed community continues to change with more and more seed companies and varieties owned by a few, and the threat of GMO seed contamination looms, it is even more important to grow open-pollinated seeds, pass them along to others, and learn from all of those around us. Seeds are ever-changing, relevant to time and place with stories to tell, yet seeds in the hands of common people is something we believe should never change."

With each open-pollinated, hybrid and GMO seed we plant, we sow a different story. This story goes much deeper than yield, and some of those stories will be told in future articles. Saving open-pollinated seed, we are reclaiming our agricultural heritage and preserving the wisdom of genetic diversity for generations to come.

A century ago, the Northeast was home to over a hundred seed companies growing their own seed. This seed was regionally adapted, open-pollinated and organic: before the 1930s and the birth of the agro-industrial complex, all seed was.

As it became settled, the West with its arid summers quickly became the center of dry-seeded crop production (such as lettuce and onion) whose seed, exposed to the elements, is prone to mold in the humid summers of the East. With the 'invention' of hybrid seed in the 1930s, this production soon emphasized hybrid over open-pollinated (OP) varieties as a function of profitability. The subsequent selection lacking in OP varieties has led to a completely unnecessary yet virtually systemic slouch in both consistency and productivity in OP, perpetuating the emphasis on hybrids; the nuances of these implications will be the subject of a future article. To this day, the dry summers of the Northwest remain the center of all North American seed production.

These arid summers transformed my own seed saving interest into a full-time passion over the seasons I spent in the Northwest. Since the skills of saving seed never left the farms of this region, the West Coast has developed its small-scale, regionally adapted, OP and organic seed movement over a couple of decades. In addition to tremendous conventional seed production, this area is home to well over a dozen small seed companies committed to growing OP, regionally-adapted and often certified organic seed for their bioregion. For example, Frank Morton of Wild Garden Seed has been developing phenomenal varieties, specializing in lettuce, for more than two decades. Partnering with Oregon State University (OSU) and the Organic Seed Alliance (OSA), Frank has built

a model for seed production, breeding, marketing and farmer/university/industry collaboration.

There are many other leaders and innovators in the Northwest to be inspired by: Brian Campbell and Chrystine Goldberg of Uprising Seed have selections from the Slow Food Ark of Taste, Don Tipping of Siskiyou Seeds selects for resilience in permacultural systems, and Andrew Still and Sarah Kleeger of Adaptive Seed are innovating varieties of vegetables worthy of their name. Western universities such as Oregon State collaborate with small farms as well as industry to actively breed open-pollinated varieties for organic systems and have pioneered participatory plant breeding programs. These engage organic farmer-



Sow Local: Petra Page-Mann, co-founder of Fruition Seeds, is part of the movement making resilient, regionally adapted, open-pollinated and organic seed vital in the Northeast.

Photo courtesy of Jack Haley, Messenger Post Media

breeder collaboration with university, nonprofit and private industry plant breeders to breed and/or improve plant genetics for organic systems. Exploring and celebrating the significance of sustainable agriculture and seed, the Organicology conference is held each winter in Portland. Indeed, the culture of growing and sowing such seed is well established and thriving in the Northwest.

Returning to my native Finger Lakes of western New York in 2010, I discovered seeds of the same taking root here in the Northeast. Seed saving in the East was, for decades, relegated to die-hard backyards and farms. Despite the inherent challenges in growing certain seed crops, a handful of companies both small and large offer OP, regionally adapted and organic seed and are growing each year. Young entrepreneurs, like Ken Greene at Hudson Valley Seed Library, are bringing fresh insight to seed production and marketing in the Northeast, while seasoned veterans of the back-to-the-land era, like Will Bonsall and the Scatterseed Project, continue to preserve diversity and inspire the coming generations. Tom Stearns of High Mowing Seed is forging new ground in seed production techniques and Lia Babitch of Turtle Tree is taking biodynamic seed to the next level in the Northeast. Universities such as Cornell are also breeding OP varieties for organic systems and are partners in the Northern Organic Vegetable Improvement Collaborative (NOVIC). Bringing together organic farmers, researchers and educators from four universities, the Organic Seed Alliance, and the USDA, NOVIC is actively addressing the seed and plant breeding needs of organic farmers through trialing and on-farm breeding.

With wisdom and vision from years of growing seed on both coasts, I am grateful to be launching Fruition Seeds this season with my partner, Matthew Goldfarb. Growing regionally adapted and OP varieties for organic farms and gardens in the Northeast, we look forward to collaborating with other farmers, universities and industry partners spanning both coasts as we strive to provide and celebrate the diversity and resilience of bioregional seed.

From a rich history put on pause, the Northeast is just beginning to reclaim its legacy of regionally adapted, OP and organic seed. For the abundance that brings us together at the table each day, for the diversity that adapts with every shift in climate, for the tenacity that keeps us all grateful: we have much to learn from the seeds we sow.

Petra Page-Mann lives and farms in Naples, New York and founded Fruition Seeds in the Fall of 2012. Petra may be reached at fruitionseed@gmail.com.

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FOREST AND WOODLOT**Regenerating Your Next Forest: Keys to Success**

by Paul Curtis, Gary Goff, and Jason Boulanger

Have you ever wondered what it takes to regenerate your forest? Do you think that all you have to do is let nature take its course, or plant some seedlings to help things along? Some New York forest owners have discovered that forest regeneration is not so simple.

Understanding the barriers to forest regeneration enables owners and managers to adjust their management practices accordingly for a particular stand or site. Focusing attention on those barriers most limiting to seedling growth improves the likelihood of successful regeneration and contributes to the sustainability of woodlands in New York.

The key to successful tree regeneration depends on three critical components: 1) appropriate silvicultural applications, 2) removal of competing vegetation, and 3) protecting young seedlings from deer herbivory (browsing). Each of these management actions are interrelated, thus if any one of these components is ignored, the likelihood of successful hardwood regeneration is negatively affected.

Regeneration of valuable timber species requires favorable site and forest conditions in order to establish seedlings. Owners can expect very little regeneration until the canopy is opened enough to provide sufficient light on the forest floor to stimulate new plant growth. First, there must be either adequately dense numbers of desirable seedlings on the forest floor, ready to shoot up after the opening of the canopy, or there must be an adequate and timely source of seeds or nuts that will provide the source of new seedlings.

Some species will propagate from stump or root suckers, but generally these are subject to poor form and less desirable than seedlings. Various harvest regimes are designed to provide suitable conditions of light and seed source to "jump start" the process of regeneration. For example, using seed-tree or clear-cutting harvest regimes will provide favorable conditions for regeneration of species that require lots of light (e.g., aspen and cherry). Assessing current conditions and choosing the right manner by which to start the regeneration process is dependent on many variables such as soil conditions, stand history, dominant species in the canopy, desired tree species, the size of the area cut for regeneration, and likely impact of deer browsing. Selectively removing a few trees from a stand has a poor chance of creating suitable regeneration where deer populations are too high, as deer can quickly consume the species that they prefer. You should consult a professional forester for harvest recommendations to meet your management goals.

Even with sufficient light hitting the forest floor, problems can still occur. Often as a result of a too-abundant deer herd, in combination with relatively low light levels, an understory composed of deer-resistant plants such as American beech or hay-scented ferns, or exotic invasive species such as garlic mustard or European buckthorn, will dominate the understory. Opening the canopy (via a harvest or thinning) under such conditions will allow those species to flourish, creating beech or buckthorn thickets, and/or a mat of ferns at the ground level. Under these conditions, few tree seeds are

able to survive through their germination and establishment phases. Those that do survive will grow slowly due to dense shade, and will thus be unable to attain the height of five or more feet needed to escape deer browsing. As you can see, successful regeneration of desirable tree species is dependent on devising a forest management plan that addresses a combination of interacting factors. Under such conditions various mechanical or herbicide treatments may be needed to control competing vegetation. This topic will be discussed further in upcoming articles in this series.



Fenced enclosure to prevent deer foraging and evaluate the impacts of deer on forest regeneration. This enclosure has been in place for 3 years.

Once tree seedlings are established, an adequate number must then escape herbivory, especially from white-tailed deer. Herbivory is believed to be a severe limitation on regeneration for many woody plants because of high deer densities. For example, in much of southern New York, deer abundance exceeds 35 deer per square mile. With this level of foraging pressure from deer, preferred seedlings such as oaks, maple, and ash, have little chance for successful reestablishment. Species that deer generally avoid, such as American beech, black birch, hophornbeam, striped maple, and numerous invasive species may dominate the seedling layer in such forests. Foresters and wildlife biologists generally agree a deer density of fewer than 20 deer per square mile will allow for regeneration of desired trees if deer have alternative food sources, such as farm crops. However, where deer must live primarily on tree browse (such as in parts of the Catskill or Adirondack Mountains), deer densities of as low as 8 to 10 per square mile can result in complete regeneration failure.



White-tailed deer will selectively browse and remove preferred tree seedlings from the forest up to a height of 5 to 6 feet.

The extent of deer impacts on forest regeneration in New York State was assessed in 2009. To obtain this information statewide, we conducted a mail survey to gather the expert opinions of foresters currently working in the state. The survey dealt with foresters' general experiences with forest regeneration, barriers to successful regeneration, management activities they would recommend, and activities they thought landowners should implement.

Respondents indicated that they had examined almost 5,000 properties during 2008, during times when snow depth did not limit their ability to assess forest regeneration. This represents almost 17,000 stands and 700,000 acres examined.

Foresters said that 31 percent of all the stands (and 30 percent of all the acreage) they evaluated in 2008 were ready to be regenerated. "Successful" regeneration was defined as desirable species that had reached a height of at least 5 feet, and occupy the stand with an adequate number of stems per acre. About one-quarter (28 percent) of all the stands, and 27 percent of all the acreage that foresters inspected had a harvest in the last 10 years that was sufficiently intense to open the canopy for sunlight that could establish a new age class of trees. Unfortunately, the anticipated regeneration success of those stands, statewide, was largely unsuccessful. For stands where foresters could assess regeneration, statewide regeneration was moderately or highly successful only 30 percent of the time.

Barriers That Caused Marginal or Failed Regeneration (% of stands)

	Statewide	Adirondacks	Southern Highlands	Other Regions
Deer browsing	72	38	76	81
Interfering vegetation	50	42	60	39
Landowner lack of interest or knowledge	27	9	23	40
Landowner did not invest adequate \$\$	14	16	17	9
Soil or site limitation	14	14	11	19
Forest health	10	11	6	15

Barriers to regeneration in New York forests, 2008.

Barriers to regeneration success were linked primarily to deer and the growth of interfering vegetation. Foresters indicated that 72 percent of all the marginally-successful or completely-failed stands statewide were impacted by deer browsing. Half of all stands were also impacted by interfering vegetation. Once again, note that these barriers are interacting forces, and it is impossible to separate out their singular impact. Forest health or soil/site limitations seldom were considered barriers to tree regeneration.

Where we have constructed small deer enclosures to evaluate the impacts of deer on vegetation, the results are often striking in just a few years. Ferns and other deer-resistant plants dominate vegetation outside fences. Inside the enclosures, plant diversity and height is much greater after as little as three years. Results have been similar in trials conducted in the Southern Tier and Adirondack forests. Even relatively low deer densities can have impacts in areas with poor soils or short growing seasons. Multiple barriers could impact forest regeneration, and if there are existing site limitations, abundant deer will only compound those problems.

Foresters often recommend a specific regime for timber harvest or stand improvement to encourage successful regeneration. The harvest regime is chosen in consideration of the likelihood of achieving ownership goals, given the barriers present. In areas outside the Adirondacks, most foresters also recommend antlerless deer harvest. Fencing to exclude deer is rarely recommended, presumably because the cost of fencing will not allow adequate return on the investment when the sawtimber is sold several decades later. However, small fenced deer enclosures can highlight the local impacts of deer on forest regeneration.

Given the impacts, the management of deer and competing vegetation limit the future sustainability of many forests across the state. If regeneration of stands is to be successful, many landowners must consider deer management.

See Regenerating page 19

Regeneration Success in NYS Based on 2009 Forester Survey (% of stands)

	Statewide	Adirondacks	Southern Highlands	Other Regions
Highly successful	13	12	16	8
Moderately successful	17	31	13	16
Marginally successful	45	50	47	38
Complete failure	25	7	24	38

Potential regeneration success of forest stands in 2008 based on expert opinion of New York foresters.

COMMUNITY/ WORLD**Rhubarb or Bust: Farming Notes from Interior Alaska****A rancher's hope for more farms and food security in a land of extremes**

by Ruby Peck-Hollembaek

While reading all about Cornell University's Small Farms Program in the *Small Farms Quarterly*, I decided that I should make a trip to learn more about the program. So, that's just what I did. The trip gave me many new ideas, which I then passed along to my fellow farming advocates back home. For example, I love the idea of taking online courses and workshops, and in Alaska we have begun to initiate courses similar to those of the Cornell Small Farms Program through various Cooperative Extension Offices and Regional Training Centers.

I hope to travel back east again next year to visit the Ithaca Farmer's Market and spend more time with the vendors. I am so impressed with the efforts of the folks back east, who work long hours just to provide quality food for their communities. I hope that someday, Alaskan agriculture can provide the same.

It is my dream that local food production in Alaska will someday begin to address the needs of our state.

My husband and I run a 2,000-acre bison and elk ranch in interior Alaska - 2,000 acres of 8' fenced grass and timber land. Our ranch is located just north of the Alaska Range in the heart of Alaska, surrounded by snow-capped mountains. We are the second generation of a third-generational family farm and ranch operation, and our grandchildren also enjoy the lifestyle and bounty of Alaska harvests.

Our main mission is to provide an opportunity to harvest



Rhubarb harvested for canning.

Photo by Ruby Peck-Hollembaek

prime bison or elk in the heart of Alaska and to promote good etiquette and ethics for the bison and elk industry. Our family also grows herbs, berries, cucumbers, tomatoes and even corn in a high tunnel. We rarely have to make the 25-mile trip to town, since we're able to produce all we can eat and store during the summer months. I try to share our adventures on Facebook and on my "We Can Grow It" blog (www.wecangrowit.blogspot.com).

Although gardening and greenhouse operations are fairly new to me, I grew up eating wonderful fresh produce. I was raised in Palmer, Alaska, located in the Matanuska Valley where great, giant vegetables are grown every summer. Our sons and daughter are great gardeners and also operate high tunnels. We make sure that our grandchildren "get" where their food comes from.

It is my understanding that Alaska is also home to the largest number of high tunnels per capita anywhere in the nation. The bulk of our high tunnels are located in the Homer area, the south-central part of the state. These high tunnels were purchased through the Natural Resource Conservation Program; their Facebook page allows participants share their successes and challenges at <https://www.facebook.com/groups/205303872824772/>. These folks are serious about growing their own.

I am also a rhubarb enthusiast, and maintain another blog titled "Rhubarb or BUST: A Source to Rhubarb Producers,



Grandson Wes and new found elk calf at game ranch.

Photo by Scott Hollembaek



Becca and Wyatt with veggie and berry finds.

Photo by Ruby Peck-Hollembaek

Buyers and Users in and around the State of Alaska" (www.akrhubarb.blogspot.com). Many Alaskans utilize this easily-grown vegetable in any recipe that calls for apples. It is a great source of vitamins and fiber and given our climate, so much easier for us to grow. We do have some hardy northern varieties of apples that produce, but they yield nothing compared to rhubarb.

Alaska has a tremendous amount of unutilized and underutilized agricultural acreage - and only 1% of its land in private ownership. Alaska also has a real food security issue. We import at least 95% of the food that is consumed in-state. Farmers struggle with several obstacles: limited access to land, lack of agribusiness incentives and capital for grazing operations, uncertainty of the economics of non-dairy livestock operation and production and knowledge challenges involved in grass-based livestock systems. That said, we Alaskans have tremendous potential to grow and produce our own food, whether on a small scale or large scale, by use of CSAs or livestock ranches.



Bison Calf with Herd.

Photo by Scott Hollembaek

Regenerating from page18

Hunting is the only management alternative that can address deer numbers and associated impacts at a landscape scale. Landowners should promote harvest of antlerless deer to attain lower densities several years prior to a harvest designed to start the regeneration process. Based on typical parcel sizes, it may be necessary to work with several neighbors to coordinate deer management efforts. Based on our experiences on university forest lands, it will take years of sustained hunting pressure and removal of adult does to lower deer densities sufficiently to achieve adequate seedling regeneration. This will be difficult to achieve for landowners in many parts of the state given the quality deer habitat and high deer densities currently on the landscape.

For more information on the impact of deer on forest regeneration, contact the authors: Paul Curtis at pd1@cornell.edu, Gary Goff at grg3@cornell.edu, and Jay Boulanger at Boulanger@cornell.edu. Cornell University Cooperative Extension, Department of Natural Resources, Ithaca, NY.

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For Additional Information on Forest Regeneration

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Through a grassroots effort, Alaska is moving towards food sustainability for our State. Up until the early 1960's, Alaska had a cabinet level Department of Agriculture, which then became a division under the Department of Natural Resources. This transition took Alaskan agriculture off the discussion table, and it's been an upward battle ever since. But given the grassroots efforts to encourage locally grown and increased food security, this may change. Last year, a House bill was introduced that would reinstate a Department of Agriculture, and there is testimony for this legislative session to establish a food resource development working group. We Alaskan farmers and local food advocates can only hope. We understand the need to feed ourselves, and that Alaskan agriculture, small and large, is vital to its peoples' existence.

Ruby Hollembaek farms and ranches on Alaska Interior Game Ranch, Inc. outside of Delta Junction, Alaska. She can be reached at (907) 895-4008 or email at rhubarb99737@gmail.com.

STEWARDSHIP & NATURE**Conservation Success on Full Moon Farm**

by Andrea Brendalen and John M. Thurgood

Full Moon Farm is a NOFA-Certified Organic farm run by husband and wife, David Zuckerman and Rachel Nevitt. The farm started in 1999 at the Intervale Center in Burlington, Vermont. The two purchased their 155-acre piece of land located in Hinesburg, Vermont in 2008 and began farming there in 2009. Currently Rachel and David grow 20 acres of diversified vegetables and raise pigs and poultry. They market most of their produce through a CSA and have summer and winter shares.



Rachel Nevitt and David Zuckerman of Full Moon Farm.

Both Rachel and David have been standouts in their communities when it comes to conservation, stewardship, and politics. This year David was elected to the Vermont Legislature as Senator representing Chittenden County. He has worked on farms for most of his adult life in South Hero, Fairfax, Shoreham, and Burlington, Vermont. Rachel has been active in both environmental and cultural education and in gardening and farming since graduating from college.

Since their start four years ago, Rachel and David have worked closely with Danny Peet, Soil Conservationist with the Natural Resources Conservation Service (NRCS) to help transition their new land from conventionally farmed corn to a successful organic farm. When asked why the couple contacted the NRCS, Rachel replied, "As organic farmers, we care very much about conservation and I think we show that in the way that we farm, but our primary reason for contacting the NRCS was to lessen the financial burden of installing irrigation and other necessities on an organic farm." Through a series of Agricultural Management Assistance (AMA) and Environmental Quality Incentives Program (EQIP) contracts, Rachel and David have made many environmental improvements including using shrubs for erosion control, cover-cropping and mulching, and installing a seasonal high tunnel and irrigation pond and pipe.

In the opinions of David and Rachel, the most significant change on the farm was with irrigation. Without reliable irrigation for crops, it's a gamble to begin planting for the fear of losing significant yield due to drought. With the irrigation pond and pipe, water is now stored for distribution to nearby fields. When asked about the installation of the irrigation system, David Zuckerman stated, "Without the NRCS funding, we simply couldn't have afforded it."

Aside from irrigation, a number of other practices were applied to the farm. Cover crops and mulch were utilized to help manage soil health and fertility, reduce soil erosion, conserve water, reduce pests and foster greater biodiversity and wildlife - all of which are of utmost importance on an organic farm. Additionally, shrubs were planted to mitigate erosion at sites where head cutting had occurred due to practices used on the farm when it was mainly corn fields (head cutting is a geomorphic phenomenon where water falls vertically - like a waterfall - and carries sediment with it, thus causing erosion).

farm with the intent of extending the growing season. Dave and Rachael are still learning how to best utilize the system. One tactic they have used is extending the fall growing season for tomatoes and winter greens. The winter greens consist of lettuce and mesclun and are harvested into December, and with some being harvested in March as a braising mix.

Full Moon farm would like to provide a continuous supply of greens to their CSA customers throughout the "non-growing" season. To this end they are planning to raise heartier greens, such as kale and collards, outside into the late fall. In their high tunnels, they would raise lettuce, mesclun, and spinach under row covers. They could harvest the greens into January and would be able to start harvesting spinach in mid-February. While the first harvest of spinach would be from the full growth in the fall before it goes dormant, the second harvest in March would be due to the crop coming out of dormancy.

Rachel and David speak very highly of the mission and purpose of the NRCS in that it makes it possible for farmers to make improvements on their farm with the assistance of Federal funding in order to improve the soil, air, and water quality, which benefits us all.

If you would like more information on the EQIP and AMA programs, please contact your local NRCS office. For a complete directory please see: www.nrcs.usda.gov

If you would like to learn more about Full Moon Farm you can contact David Zuckerman and Rachel Nevitt via email at davidz@together.net or visit <http://fullmoon-farminc.com>.



Cover crops are foundational to soil health at Full Moon Farm.

Photos by Andrea Brendalen




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