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Meadowcroft Farm: Farming for Fiber

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Meadowcroft Farm is an 80-acre farm in Washington, ME. Nanne Kennedy, a Maine native, bought the farm in Washington in 1988. She has traveled internationally to learn about sustainable fiber production; many of the techniques she uses she learned in New Zealand. Nanne is currently the president of the Maine Sustainable Agriculture Society.

Production

Nanne produces fine sheep wool, which she dyes and weaves into sweaters and blankets. She shears once a year. Nanne also produces lambs meat, although fiber is the main product. Nanne typically has on average 100 Polwarth sheep (an Australian breed), a few horses, several dogs, and a donkey. She also has between 500 and 800 sheep under contract for additional wool.

Nanne sells at farmers markets and trade shows. She markets some of her products online, and opens the farm one evening a week for on-site business.

Practices

Nanne grazes her sheep on grass that she plants, and can typically graze for 6 months a year. For winter months she buys hay from a local dairy farm. She practices rotational grazing with all of the animals.

Nanne processes all of the wool that she gets from the animals. She developed a passive solar dye process; this process allows her to dye wool using minimal inputs. All of the wastewater is free of contaminants and can be reused on the farm.

Nanne is conscious of the habitat that her pastures provide for some grassland species such as bobolinks. She often waits to graze an area if she knows that there are fledglings.

Climate Impacts Seen

Nanne definitely sees changes in climate. For one, she notices that springs seem to be longer and wetter. She notes how by July and August much of her land (which is on a hill that slopes down to a stream) used to be dry and crunchy. However, in recent years it remains wet and moist much longer into the summer. This can mean benefits, like better grass, but also has negative impacts. One of the challenges of dampness for a sheep farmer is hoof

rot. Nanne says that she now has hoof rot issues that she did not used to see. The wetness, combined with summer heat, also brings more parasites. Two problematic parasites are the barber pole worm (haemonchus contortus) and coccidia. Barber pole worms are parasites that thrive in warm, humid environments; if unchecked they can kill sheep.[1] "We didn't used to have it," says Nanne. "We have to manage for it now." Coccidia are parasites that also thrive in wet environments, and damage the intestinal system of infected animals.[2] Nanne says that her sheep are often exposed by sleeping in warm, wet environments.

Another problem that damp weather brings, particularly for a fiber producer, is the impact that the moisture has on wool. Nanne's sheep have very fine wool (between 18-23 microns) which means that they don't dry very well. While she used to shear after the rainy season which helped wash the wool, Nanne now shears in mid April. "Now, they don't get dry for days and days, and their wool turns to muck. If I am shearing any later than April, the wool just turns green because we have those long wet springs," says Nanne, who cannot afford to lose her main crop. Springs and winters in the northeast are projected to experience increasing precipitation over the next century.[3]

Nanne is also experiencing increasing damage from extreme weather. She notices more severe ice storms in the winter, and has trees falling on her fences more frequently. Every repair that she has to make represents an additional cost, both in material and in time.

Parasite Management

To combat the barber pole worm, Nanne is aggressive with her pasture rotation. She describes how all parasites are animal specific; one of the reasons she keeps the horses is to incorporate them into her rotations and break the parasite cycle. She also handles the sheep on a regular basis to check them for anemia and other signs of the worm. These practices are in combination with use of dewormers.

Coccidiosis is slightly more difficult to manage for; Nanne has to bring the animals in to the barn at night, where humid conditions and manure mean more exposure to the parasite. She tries to break the cycle by putting a coccidiostat in the sheep's water; these are anti-parasite agents that help control the spread of the coccidia parasite. However, the coccidiostats are also a vitamin B inhibitor. The time of year when sheep are most susceptible to coccidiosis is after the winter; during this time they have also been eating stored feed and thus are low in vitamin B. "Then they can get super stressed and sick, and you have to inject them with vitamin B," says Nanne.

Meadowcroft Farm is one of over 3,500 farms in New England reporting sheep as part of their inventory, and among over 2,700 farms in the region producing wool.[4] In Maine alone there are over 650 farms producing wool, representing more than $40,000 in product sold annually.[4]

Nutrient Management

Nanne manages nutrients so that they do not end up in the stream surrounding her farm, and also so that her soil is well fertilized and healthy. Much of this is done through the rotational grazing. She will graze a pasture, and then push the animals into a section that she sees needs fertilization. The sheep manure left there helps maintain soil health. Buying hay from a dairy farm is also key to her plan. Nanne describes how dairy farms always have excess nutrients from the cows, which goes into the production of hay. Through buying this hay, Nanne is bringing valuable nutrients to her farm.

Challenges

One of Nanne's main challenges is marketing. Part of this is because it takes time and money to travel to shows where she can sell and spread the word about her products. "Marketing is a huge time investment," says Nanne, who has to tend to the animals at least twice a day. This makes leaving the farm nearly impossible. At the same time, Nanne is working hard to develop a market for local wool products, while competing with dyers who source their fiber from other countries. "Places market themselves as local because they dye yarn, but they are sourcing raw products from far away." This is frustrating for Nanne, who believes in a truly local supply chain, as well as the important ecosystem services that sustainable local grazing

operations can provide to the region. Plus, "its really hard to compete!"

Some of Nanne's frustrations also come from limited resources in Maine. "Consumers talk about infrastructure," she says, "but they are thinking about getting the food from the farm to their table. That is all they see." Actually growing the food is a process that happens all year round and requires enormous investments in on-farm infrastructure. These costs are increasing for farmers. "That is where we need help," explains Nanne. Unfortunately she sees many organizations, with the good intention of improving food systems, unwittingly hurt farmers by undercutting them with cheaper food or taking away their profit margins. There are several USDA programs geared towards helping value-added agriculture businesses, but Nanne says that she has applied for grants with no luck. "They don't see fiber as something that is a value-added product," she says, which reinforces the need to develop awareness. In addition, grant writing is incredibly time consuming. "It takes weeks to write grants. It's a full time job right in the middle of the busy season!"

Response

One of Nanne's current projects is building an on-farm apartment. Renting will not only help diversify her income; she also hopes to hire a manager to live on the farm for part of the year. This will allow her to travel, visit shows, generate wholesale accounts, and develop her market while knowing that the farm and animals are cared for.

Nanne uses her herd to help seed pasture, reducing how often she has to buy seeds. The animals carry the seeds both on their feet, wool, and in their manure.

Nanne uses seawater to dye her wool. She is famous for her unique blended colors.

Nanne also has an idea that she believes will help farmers and local communities; she calls it a Pension for Preservation and hopes to develop it with the collaboration of the Maine Farmland Trust. This Pension would find a way to pay farmers for the social and ecosystem services that they provide, such as open space, grassland habitat, food security, value systems, and nutrient management, among others. Nanne sees this as a way to give farmers a reliable income stream, and allow them to do the right thing both for the environment and for their business (i.e. risk management, water management, and appropriate infrastructure). How will it be funded? Well, that is what needs to be figured out.

Recommendations

What does Nanne suggest to other farmers? "Know what you are getting into!" She also recommends having a contingency plan for everything. This is especially important with increasingly erratic weather. For example, Nanne has a backup water pump because she knows that in winter she is likely to lose electricity or have pipes burst. Preparedness and flexibility has always been a part of farming, although it does seem to be getting more important. "Risk management is a new constant challenge that is increasing with climate change," says Nanne.

Resources

• Nanne is president of the Maine Sustainable Agriculture Society (MESAS): http://mesas.org

• Nanne helped develop and participated in the Farms for the Future program, a program that helps farms with business planning and investment: http://www.maine.gov/dacf/ard/business_and_market_development/farms_for_future/index.shtml

• The Maine Technology Institute helped Nanne develop and install her solar system for wool processing: http://www.mainetechnology.org/fund

• Read more about Meadowcroft Farm at http://getwool.com

One of the biggest expenses in processing wool is all of the hot water needed in dyeing. The solar system addresses this expense. Nanne also avoids using any chemicals or dyes containing metals. Her wastewater is food grade, and can be used for irrigation.

References

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Climate Change and the New England Food System Case Study Series

This case study was researched and written by UNHSI's 2014 Thomas W. Haas Climate Fellow, Ruby Woodside. Ruby's fellowship focused on documenting and communicating climate impacts and adaptation strategies for New England farmers and fishermen. Ruby is currently working on a Masters of Environmental Science and Policy as well as an MBA in Sustainability at Clark University. The fellowship is based at the UNH Sustainability Institute, and hosted in collaboration with Food Solutions New England (FSNE). FSNE is a regional, collaborative network organized around a single goal: to transform the New England food system into a resilient driver of healthy food, sustainable farming and fishing, and thriving communities. Learn more at www.foodsolutionsne.org.

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