



THE LIVESTOCK CONSERVANCY™

Conserving rare breeds since 1977
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NEWS

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Photo of Tilly Donohoe and her heritage breed chickens, courtesy of the Donohoe family. Tilly is a 2020 Youth Microgrant recipient.

USING MODERN TECH TO CONSERVE TRADITIONAL BREEDS

By Charlene R. Couch

“On the hoof” conservation of heritage livestock breeds is the most obvious way to secure rare genetics. Conservation of heritage breeds on farms and ranches, and even in backyards, allows these breeds to persist and thrive, and as they become more popular and available, their future becomes more secure. Traditional breeds also benefit from the strategic use of advanced technologies like cryopreservation, in vitro fertilization, and artificial insemination to save important bloodlines. These technologies are well-researched and documented for more mainstream breeds, and when adapted for heritage breeds, they offer an additional set of tools for conserving irreplaceable genetics.

The genetic make-up of heritage breeds comes from decades of selective breeding and adaptation to suit particular, and often challenging, environments. Traits like parasite

resistance, good foraging ability, drought tolerance, and overall hardiness are common among traditional breeds. These animals display traits that have made them successful for generations. More modern breeds are exquisitely selected for large-scale, efficient production; however, the refinement of these traits can whittle away the genetic variation that allows animals to adapt to new challenges. Given the rapidly changing nature of our world, maintaining heritage genetics may prove vital for the future of animal agriculture.

One current and very frightening challenge facing the global swine industry is African Swine Fever (ASF). ASF is a severe viral disease that has caused the deaths of millions of pigs, accounting for major economic losses in many countries. Though the disease cannot be transmitted to people and is not a human food safety risk, it is highly contagious among domestic and wild pigs and is almost always fatal. The virus remains viable in dead animals, and

even in processed meats, and there is no vaccine or treatment for the disease. So far, only tight biosecurity and culling of infected herds can control the spread of ASF. While ASF has not been detected in the United States yet, the ease with which the virus can spread presents an alarming threat to American pigs and pork production.

To protect heritage pig genetics in the event of such a crisis, the USDA is working with The Livestock Conservancy to collect heritage breed pig tissue for deep freezing, or cryopreservation. A simple ear notch or small skin punch, collected at the time piglets are routinely marked for identification, can provide adequate tissue for cloning and genetic studies. In this way, heritage genetics can be banked as a resource for future pig farmers. Similar preservation techniques can be used for other heritage breed species, as well.

Rare breeds are defined by their small population sizes, which can allow the effects of inbreeding to accumulate.

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Sometimes inbreeding can hone a breed's productivity, but in other cases, harmful effects can occur, including reductions in fitness traits like survival and reproductive success.

To counter any negative effects of inbreeding, genetic variation must be maintained and utilized. Breeders must carefully manage bloodlines and conserve genetic variation while simultaneously selecting and breeding the best animals. A recent example of how genetic variation can be maintained, and even added to a population, can be seen in the use of imported bloodlines of Large Black Hogs via the use of frozen semen.

To bring new genetics into the North American Large Black hog population, The Livestock Conservancy collaborated with donors and the USDA's National Animal Germplasm Laboratory to import the frozen semen of two Large Black boars from the U.K. The boars represent bloodlines not available in the U.S.

When on-farm trials using the semen for artificial insemination (AI) were unsuccessful, Dr. Kara Stewart and graduate student Katharine Sharp of Purdue University began exploring methods to control and synchronize ovulation in Large Black sows. This was necessary to achieve predictable insemination times since thawed semen does not remain viable for very long.

The researchers refined a protocol allowing them to time sow ovulation, thaw the semen, and successfully inseminate the females. Half-British piglets were born in Spring and Summer 2020. The little boars and gilts were distributed to U.S. breeders to broaden the genetic base of the herd and protect the genetic health of the breed.

Other heritage breeds can benefit from similar technologies. Cryopreservation of semen from several horse breeds will allow future breeders access to endangered bloodlines. Owners of Newfoundland Ponies and Caspian horses donated semen to the USDA's National Animal Germplasm program in the last few years. The material is held in storage tanks at extremely low temperatures and carefully preserved in case extreme intervention is required to save a breed or safeguard its genetic health. Three Caspian stallions and two Newfoundland stallions are "in the bank" and The Livestock Conservancy



Marsh Tacky horses, like this mare and foal, benefit from artificial insemination (AI) once mature ovarian follicles are measured by a veterinarian. Photo by Jeannette Beranger.

hopes that other equine breeders will follow the lead with their important rare breed stallions. Equine reproductive technologies can also be used to conserve embryos or to grow cell lines that can be frozen for cloning.

Although the semen samples mentioned above were collected from living horses, techniques are also available to preserve semen and other tissues from a horse or other animal at the end of its life, or shortly after its death. In 2018, The Livestock Conservancy published a manual of methods for preserving equine genetics. Using the instructions in the manual, one Akhal-Teke stallion owner and his veterinarian retrieved semen post-mortem from the epididymal portion of his dying horse's testes. The tissues were removed and shipped quickly to a laboratory in Maryland, where the semen was extracted and frozen. Although the stallion was lost, his bloodlines will live on in future generations.

The equine manual contains detailed protocols for saving sperm, eggs and tissue samples of animals in emergency situations. Several commercial and university laboratories have offered



Available in print from our online bookstore at

<https://livestockconservancy.org/index.php/resources/internal/store>

or for free download at
<https://livestockconservancy.org/index.php/what/internal/reproduction-manual>.

discounted services for endangered equine breeds through The Livestock Conservancy and these are listed in the manual, which is being updated for re-release in Spring 2021. Owners of rare equine breeds should plan ahead for the possibility of such emergencies, collect important stallions whenever possible, and keep the manual on hand for their veterinarians. Many of these techniques are directly applicable to the conservation of other mammalian species, too.

We all know that heritage breeds are unique, but sometimes they are different from mainstream breeds in unexpected ways. Equine embryologist Marcella Dragolich and veterinarian Dr. Sabrina Jacobs of Performance Equine Vets in S.C. made an interesting observation about reproduction in Marsh Tacky horses. They were asked to artificially inseminate Eve, an older mare with a history of infertility. Adding to the challenge was the need to use semen from an older stallion, the last of his bloodline.

For AI in horses to be successful, the veterinarian must ultrasound the mare to measure the size of the mature ovarian follicle. The approximate time of ovulation is predicted from the diameter of the follicle. Measurements of the follicle allow the veterinarian or technician to inseminate the mare at just the right time to deliver sperm to the ovulated egg. Mares of a similar size to the Marsh Tacky, like Quarter Horse mares, usually have a mature follicle diameter of 35-40 mm; however, Marsh Tacky mares proved different. Their mature follicle size is 40-50 mm in diameter and approximates that of a much larger Warmblood mare's follicle.

With this new understanding of Marsh Tacky reproduction, the AI procedure was successful. Eve's new filly, Sawbrow Cami, is thriving. A younger mare named Honey was also inseminated in 2020 using the same protocol. At 18 years old Eve is due to foal again in Spring 2021. Her owners, Veronica and Paul Shirley, are hoping for a little colt this time.

Horses and pigs are not the only species whose breeders can take advantage of conservation technologies. Cattle breeders have long used frozen semen to conserve and perpetuate genetics from important bulls. The productive future of dual-purpose



Whispering Hills Farm in Oregon offers historic Heritage Shorthorn (Native) semen to breeders to produce in vitro fertilization (IVF) calves. Photo courtesy of Joe Schallberger.

Heritage Shorthorn cattle (Native) is now supported by technologies such as in vitro fertilization (IVF).

Whispering Hills Farm in Oregon developed an extensive collection of historical Heritage Shorthorn semen that reaches across nearly 70 years of the best Shorthorn genetics. They offer unique, high-quality "old" heritage genetics to other Heritage Shorthorn breeders to strengthen the breed. In 2020, they successfully produced a Shorthorn calf using IVF. The farm uses their own cows as recipients for the embryos so they can maintain stringent health standards and select the best maternal environments for the developing calves. More IVF calves are due in 2021.

Other technical research is also in the works for heritage breeds through The Livestock Conservancy's network of scientific collaborators. The Livestock Conservancy is working with Texas Poitou Donkeys and several veterinarians to develop a mare and foal care protocol to improve Poitou donkey foal survival.

DNA analysis is also underway to evaluate differences among chicken breeds in a genetic region important to the immune system.

Heritage breed conservation depends largely on the efforts of the farmers and breeders that keep heritage animals alive to produce more offspring. Adding some "high tech tools" enables us to strengthen the conservation safety-net for heritage breeds.

Charlene R. Couch is Senior Program Manager for The Livestock Conservancy. She brings her lifelong interests in animals, farm sustainability, conservation and genetics to her work at the Conservancy. Charlene holds a Ph.D. in Zoology from North Carolina State University. She lives with her husband, Paul, on a small farm in NC and spends her spare time at the beck and call of three horses and a flock of Dominican chickens.

BREAKING IT DOWN: LEARNING TO PROCESS LAMBS

By Cindra Kerscher

2020 was a difficult year! The arrival of COVID-19 in March brought significant challenges and frustrations to many families, communities, and industries. The agriculture community was especially hit hard when the virus spread rampantly through meat processing plants, causing clusters of illness among line workers, temporary closures to commercial processing facilities, and bottlenecks in small slaughter facilities. Suddenly, farmers couldn't process their livestock, which meant delayed income for many families, mine included.

My small flock of St. Croix sheep crosses had to go. This was my starter flock, a delightful experiment of raising five bottle babies. By mid-May the ewes and their lambs had been rehomed and the boys were ready for processing, but by then the processors had a waitlist of six months or more.

After a few phone calls, I found a local processor that could slaughter my lambs immediately, but I would have to break them down myself. Although I have processed deer, own a cleaver, and have read the sheep and goat chapters of Adam Danforth's *Butchering* book, I had never butchered a lamb. Two of these animals had been pre-sold to customers, so I wanted the break down and packaging done properly and I wanted to learn from a professional.

I reached out to my local butcher, Ross Flynn, owner of Left Bank Butchery in Saxapahaw, N.C. A former cattle and hog farmer, Ross now focuses on supporting local, sustainable agriculture, whole-animal butchery and charcuterie, and building relationships with his community. When he heard I couldn't get my lambs processed, he offered to talk me through the process of breaking down my sheep.

Imagine my good fortune: I was about to receive instruction from a master butcher, a man whose shop was recently named one of "The Best Butcher Shops and Meat Markets in America" by *Food & Wine Magazine*, and who was featured in the series *Cooked*, with Michael Pollan.

The entire process turned out to be relatively simple. I hauled the lambs to the slaughter facility, led them off the



Frederico Castellões (left) and Cindra Kerscher (right) examine the lamb she learned to butcher at Left Bank Butchery in Saxapahaw, N.C. Photo by Jeannette Beranger.

trailer and into the holding shoot, kissed them each goodbye, shed more than a few tears, and scheduled delivery to Left Bank. The sheep were slaughtered and aged for a week and delivered to Left Bank via refrigerated truck.

Once delivered, Ross invited me to stop by Left Bank for a butchery lesson. Ross and fellow butcher, Rodrigo, showed me how to break down my lambs. They instructed me where to cut, what tools to use, and gave important advice such as, "Cut through the muscle with the knife before sawing through the bone, otherwise you shred the meat." Once in cuts, they vacuum sealed each piece and offered advice on how to prepare each cut at home. I left with nearly everything, including odd bits and pairs of things I was not likely to receive back from the processor.

While a bit out of the ordinary, the arrangement worked well for me. I appreciated the help Ross offered and enjoyed watching the entire breakdown process. I feel confident I could do it myself the next time.

I paid a kill fee to the slaughter house, a reasonable fee for the breakdown and packaging of the lambs, and reimbursed Left Bank for the delivery fee. In return, I had three lambs processed, an expert processing tutorial, and a freezer full of meat from well-loved and well-tended animals, meat that I will never question. Despite the ongoing hardships

of weather, sickness, and hay prices, farming blesses me with the pleasure and peace of providing for self, family, and community. It can't be beat!

I know 2020 was a challenging and unusual year for many. As farmers, we often have to get creative. I encourage you to reach out to your friends, community, and even strangers. Talk to butchers, grocers, cooking schools, and hotels. Try Instagram, Twitter, YouTube, and Facebook.

Agricultural Marketing Consultant Matt LaRoux said, "There is a whole generation out there that is afraid to pick up the phone. Facebook is today what the Yellowpages was in the '80's. If you have something to sell and you need clients, they have to be able to find you."

While you can't sell meat or live animals on Facebook, you can grow your online presence and reach more potential customers. Occasional posts about your farm will remind your clients you are there and keep them interested in your products. You never know what new clients you may attract or new partnerships you may create in 2021.

Cindra Kerscher is a Program Coordinator at The Livestock Conservancy where she supports breeds, breeders and breed associations. She became an "accidental shepherdess" over the winter of 2019 when she adopted five bottle babies.

2020 YOUTH, EMERGENCY, NATIONAL MICROGRANTS

The Livestock Conservancy is excited to award more than \$22,300 to 17 farmers, ranchers, and shepherds raising endangered breeds of livestock and poultry across the country. Now in its third year, the Microgrants Program puts funding into the hands of our most important conservation partners – the people doing the hard work day after day to steward these genetic treasures for the security of tomorrow’s food and fiber systems.

“Small financial awards can make a big difference for heritage breeders,” said Livestock Conservancy Executive Director Dr. Alison Martin. “These strategic investments were selected by our panel of judges as the best examples of livestock conservation in action across the United States.”

YOUTH MICROGRANT RECIPIENTS



When **Tilly Donohoe's** family moved to a farm in Washington, she researched the best heritage breeds for her area. Tilly plans to expand her flock of rare breed chickens for an egg business and will make custom labels to educate customers about her heritage breeds.



Cullen Santino Le Roy plans to build a shelter for his Myotonic goat bucks so he can increase the genetic diversity of his growing herd on his farm in Illinois.



Bailey Hirschboeck plans to build a mobile goose tractor for her Cotton Patch geese so she can keep more breeding pairs on pasture year-round at her farm in Connecticut.



Emma Rexrode plans to build more breeding and brooding pens for her Black and Chocolate turkeys in Pennsylvania. This will help improve her hatch rate and improve the genetic health of her growing flocks.



Chloe LaBelle plans to build a predator-proof habitat for her Silver Appleyard ducks at Tollgate Farm in Michigan. She hopes to breed more ducks, and create more educational outreach opportunities for her 4-H club and community.



Emalee Vickers plans to build a new farrowing pen for her Red Wattle sow that will be accessible during the winter. This will help her grow her herd and eventually pasture raise her pigs in Montana.

EMERGENCY RESPONSE MICROGRANT RECIPIENTS



Mike and Carlene Kerr know that every Cleveland Bay horse is important to a critically endangered breed. They received assistance to help feed their genetically important herd at Epiphany Bay Farm in Virginia through the winter because of income loss from the COVID-19 pandemic.



The COVID-19 pandemic deeply affected agritourism to **Dr. Marco A. Oviedo and Patricia Trujillo Oviedo's** farm in New Mexico. Support helped feed their American Mammoth donkey jennies during the last trimester of their pregnancy.

NATIONAL MICROGRANT RECIPIENTS



Crystal Criswell plans to install a handling system with a gathering pen, race, sorting gates with pens, and a weighing scale next to her barn. This will help her improve the health and productivity of her St. Croix sheep herd in Ohio.



Travis Morris hopes to increase the hatching and brooding rates of his Jersey Giant, Java, and Old English chickens, and rare breed turkeys with a larger incubator and brooder. He will also expand and improve his fencing and pasture for the growing flock.



Laura and Bill Jensen plan to improve their fencing and Meishan pig grow-out areas on their farm in Georgia. This will allow them to increase the number of breeding pigs on their farm.



Nash Farm in Texas preserves heritage breeds and knowledge for future generations through a public 19th-century farm and education. They plan to restore a corral for their Gulf Coast Native sheep and increase their educational outreach about the breed.



Martha Hoffman Kerestes plans to make improvements to her barn in Illinois. This will help them improve milking efficiency for their Dutch Belted and Heritage Shorthorn cattle, and open the door for farm tours and photo shoots.



Naturally Golden Family Farms Cooperative in Pennsylvania plans to develop, produce, and market Naturally Golden cheese (*photo below*) made from Golden Guernsey cattle. They will purchase equipment to transport milk and store their cheese.



Janna Miller plans to build a shearing shed for her Navajo-Churro sheep in New Mexico. She recently joined the Shave 'Em to Save 'Em Initiative and is excited to start marketing her fleeces and improving her breeding stock.



American Mammoth Jackstock donkeys are known to have twins, which is dangerous for both jennies and foals. To improve foaling success at her farm in Texas, **Megan Teel** plans to use early ultrasound procedures to detect twin embryos and improve foal survival rates.



Audrey Morris plans to improve the brooding facilities for her flock of Cotton Patch geese in Kansas. This will help her protect the geese from predators and increase their hatching rate.



OUR MYOTONIC MOMENT: MARKETING MEAT GOATS

By Renard Turner

We began raising meat goats on our farm close to 20 years ago. We tried several breeds of sheep and even ostrich before finally settling on raising meat goats. Our journey began at a Peruvian Paso horse show where the catalog included an article about meat goats. The article clearly stated that the domestic demand for goat meat far exceeded its availability in America.

I soon began researching meat goats. Over the years, at Vanguard Ranch in Virginia, we tried most of the goat breeds and crosses available in the United States. We learned a lot. A whole lot.

The market for meat goats is focused around three main options: (1) breeding purebred seed stock for other producers, (2) raising commercial meat goats for slaughter markets, and (3) breeding goats for show purposes, with the pet goat market being another minor option.

WE DEVELOPED OUR OWN NICHE

We decided to raise meat goats and retain the meat at Vanguard Ranch. We have our goats processed, then we cook and sell our goat as a ready-to-eat meal from our own concession trailer. This is value-added marketing.

We found that the American public will eat goat meat readily. Anyone with teeth that eats meat will eat goat meat. We serve ours up as goat burgers, curried goat, and kabobs. We also made goat fried rice and folks loved it all! Many come back for seconds.

Value-added works for us. We retain control of our product from start to finish. Cut out the middleman whenever possible, friends. Retain more profit for your farm.

THAT MYOTONIC MOMENT

We purchased two Purebred Myotonic bucklings from Dr. Phil Sponenberg. We just kept them as an experiment. My wife Chinette really liked them. She liked that they were "cute," smaller, and easier to handle.

For many years we raised another breed of meat goat. Our processor always asked me how in the world could I make any money with the high cost of processing he was charging us? He



Renard and Chinette Turner raise Myotonic meat goats, also known as Tennessee Fainting goats, at Vanguard Ranch in Virginia. Photo courtesy of Renard Turner.

did not grasp the value-added part. He was thinking like a butcher and based his financial margins only on slaughter market prices.

One day I brought him six half-Myotonic kids for processing bred from one Myotonic buck. After processing and hanging them, my processor asked "what are you doing differently?" These kids were meatier and he wanted to buy them for himself!

He STRONGLY suggested that I ditch the other skinny goat breed and just bring him more like the first six. It took him less time to process and the yield in product was greater. The difference was obvious. I do not believe in telling the shoemaker how to make shoes.

Thankfully I listened to him and phased out the more expensive imported goats for good. The Myotonic genetics proved their value and we embarked on a new journey to change our herd to all purebred Myotonic meat goats. We have never looked back. Myotonic meat goats work well for us. Thickness matters!

GENETICS MATTER

Myotonic meat goats on our farm are selected for the ability to raise twins on forage. We also select for overall

thickness and a moderate growth rate. We found that our does are great mothers, kidding unassisted. They nurse twins with no problem.

The objective is not to change the breed but simply improve through judicious culling. We cull to the grill. Myotonic goats do produce more meat on less inputs with an obvious increase in the muscle to bone ratio. Couple that with a high conversion ratio on forage and you have winners in the field.

One of the advantages of raising a rare breed of goat is that we tell the story of the Myotonic breed when we sell it to our customers on a plate. Most people find the story interesting and enjoy eating something special.

We now get to help preserve a rare breed of goat that is a perfect homesteader's goat while we create income streams as both a value-added ready-to-eat meal and as select purebred breeding stock. We like that they are easier to fence, easy keepers on forage, great mothers, easy to handle, and "cute."

GO VALUE-ADDED

I encourage others farmers to consider value-added as a method to make your farms more viable economically. It is still

a challenge, but the field is not crowded. There is room to shine if you are willing to put in the work.

Helping to preserve a rare breed is great, yet one still needs an end market for the offspring. Selection for real-world working goat qualities helps to increase the breed's viability, thus ensuring its perpetuation as a breed.

As our nation moves to a greener, more local food supply many people are desiring locally sourced meats they can trust. Consider the option of killing two birds with one stone. Helping to preserve a unique North American landrace breed while providing a special product to niche markets can work well. If you are interested in the concession business, contact us. We can help. In concessions, you set your price!

Myotonic meat goats that we raise are medium to large sized, thick set, and naturally healthy. We seldom have to trim hooves or worm on our farm. We provide a free choice organic loose mineral mix, automatic watering, and free-range forage all the time. Our goats are easy keepers on pasture.

Myotonic meat goats can add value

to your farm. Why not help preserve a unique genetic package that is indigenous to this continent? The lure of the exotic is not always worth the price of admission. We named our linebred family of Myotonic goats, "BANGUS," because they give us more bang for our buck! We have a closed herd, we cull to the grill and only breed a select number yearly to allow us to be sustainable.

Consider giving Myotonic meat goats a try. Support The Livestock Conservancy. You can help make a difference!

Learn more about Vanguard Ranch on Facebook at <https://www.facebook.com/vanguardranchmeatgoats/>

Renard Turner and his wife Chinette own Vanguard Ranch in central Virginia, where they have raised registered Horned Dorset sheep, Karakul sheep, Kiko goats, Spanish goats and horses. They currently raise Myotonic goats, white utility king squabs, and organic herbs and vegetables. Renard is passionate about conservation and joined The Livestock Conservancy Board of Directors in 2020.

WHAT'S IN A NAME?

Myotonic goats have many names, including Tennessee Fainting, Tennessee Meat, Texas Wooden Leg, Stiff, Nervous, and Scare goats.

These other names refer to a breed characteristic known as myotonia congenita, a condition in which the muscle cells experience prolonged contraction when the goat is startled. The transitory stiffness associated with these contractions can cause the goat to fall down. This is not a true faint, but a muscular phenomenon unrelated to the nervous system.



Renard Turner refers to the line of Myotonic goats he developed at Vanguard Ranch as BANGUS because he gets more bang for his buck with Myotonic goats. Photos of BANGUS goats courtesy of Renard Turner.



REGENERATING PINEYWOODS CATTLE IN GEORGIA

By AJ Wells

“Regenerative” is the latest buzzword in environmentally-conscious farming. In its essence, this practice utilizes backward thinking for the purpose of forward thinking. Let me explain. To understand what the land needs to heal, regenerative farmers must consider the historical look and feel of the ecosystem so they might understand what the land is supposed to look like. The key to regeneration at Georgia Native Cattle Company is a somewhat forgotten breed of cattle called the Pinewoods.

Pinewoods have long been important in the ecosystem of the Southeastern United States. Spanish colonists delivered the ancestors of today's Pinewoods into an open range system in the early 1500s. These cattle roamed the woods for the next 400 years and offered many different services such as oxen, dairy, food, and leather. Over the centuries, Pinewoods changed in response to the environment as a landrace breed. The southern heat and native parasites became aspects of the land that the Pinewoods could handle.

Despite thriving for so long, Pinewoods were sidelined in favor of “improved” cattle such as Hereford, Angus or Brahman at the turn of the 20th

century. The commercialization of beef led to bulkier, heavier, mass-produced cattle breeds, and Pinewoods simply did not fit the program. Because of cross-breeding and being ignored by farmers, purebred Pinewoods numbers dwindled over the next hundred years to only a few thousand. Today, The Livestock Conservancy considers them a high conservation priority and lists them as Threatened on the Conservation Priority List. The outlook is different for each strain of Pinewoods cattle. The Holt strain, which is our main focus and Georgia's only native cattle, had only seven adults remaining when we got involved more than a decade ago.

Most farms using regenerative practices are oriented toward the land, but we are specifically working to regenerate a cattle breed. Admittedly, we were originally drawn to Pinewoods for their historical importance, but in the past couple of years, we began to recognize that soil and genetic regenerative practices go hand in hand. Pinewoods not only fed and supplied Native Americans, Revolutionary soldiers, and Civil War troops, they also spent their time maneuvering the woods and eating brush. Without these natural forest cleaners, forest floors become severely overcrowded to the point that they lose

habitability and serve as wildfire fuel.

We have always provided our Pinewoods with their native, foraging diet, and the regenerative results are fascinating. As Pinewoods clean the forest floors and brush away strangulation from weeds and shrubs, we noticed an impressive return of native Gopher Tortoises. This keystone species provides homes for other animals like mice and snakes. The Gopher Tortoises' roommates later become food for raptors, which are, for the first time in a while, becoming a regular sight on our land. When allowed to play their role on the land, Pinewoods regenerate the ecosystem from bottom to top.

Meanwhile, the commercialization of beef has removed most cattle from their natural roles. Instead of seeing cattle as environmentalists, consumers recognize cattle only for their food value. This is not inherently a problem, but more so a challenge for breeds neglected in the marketplace, making it difficult to keep up with the commercial valuation of improved breeds.

Farmers looking for market value at slaughter and prime cut steaks have completely turned away from Pinewoods because this breed does not fit the needs of today's mainstream market, and therefore do not deliver

comparatively well at the sale barn.

Jay Wells, president and founder of Georgia Native Cattle, addresses this market by saying, "Today, Facebook teaches us how to think, and McDonald's teaches us how to eat." He's referring to the single-purpose commercial cow for which consumer taste buds have become accustomed. To regenerate the Pineywoods, we first had to learn how the consumer would eat them.

The idea for beef sticks came from my brother Bryan Wells, whose kitchen tinkering hobby led to the realization that Pineywoods' lean beef makes a fine jerky. Following this discovery, he looked for ways to use all of the quality meat in a jerky fashion. The beef stick became a way to offer quality, high-protein beef in a tasty product.

What we thought would be a straightforward path to production became a four-year saga of rejection. Finding a processor to produce the beef sticks proved to be the most difficult challenge. No one wanted to use heritage beef for beef sticks from a farm that had not made a single other product. We were flatly rejected and many phone calls were ignored. Eventually we recognized that, though it seemed odd since these are historical animals, we were genuinely creating something brand new for today's market.

After a long search, we finally found Thrushwood Farms, LLC in Galesburg, Illinois. We were delighted to find a nationally-renowned processor who cares as much about high-quality beef products as we care about our cattle.

However, the journey was not finished. We were met with significant delays from the USDA as we fought through more than a year of submissions and rejections in having our label approved. Once, the finicky process came down to a concern over spacing. What looked like delays that could sink our company actually became an opportunity to create a far better, outward-facing product. As we got our bearings, we teamed up with The Livestock Conservancy, Mark It Label, A Greener World, ASPCA, and Barn2Door to spread our network. Those resources helped us recognize how to properly feature our unique heritage cattle when our product finally hit the market.

Our complicated journey to the marketplace mirrors our regeneration of the breed. We worked closely with Dr. Phillip Sponenberg of Virginia Tech, and Technical Advisor to The Livestock Conservancy, to orchestrate a plan that would unpack the tightly wound genetic package of the pure Holt strain of Pineywoods. Our emphasis on sustainability and the restoration of a strain so close to extinction inevitably

involves the genetic dangers inherent to a high Coefficient of Inbreeding (COI). At first, restoring the Holt strain looked like another path of line-crossing, this time through genetically similar strains of Pineywoods cattle. Fortunately, we came across Johnny Johnson, who at the time was the Deputy Director for the Georgia Agrirama museum. The Agrirama had one pure Holt in their cattle herd that was previously undetected by conservation efforts. The cow came from a different herd than ours, which allowed a genetic differentiation and the ability to lower our herds' COI. Without this meeting, the path toward sustaining the Holt strain Pineywoods would have been a far more winding, less certain road.

Even as the numbers of Georgia's only native cattle are recovering, we continue to face genetic challenges such as unpredictably small and weak animals. As we slowly differentiate the genetic package, our results improve. Now that we are achieving sustainable numbers, we are once again assessing the true regeneration of the breed. The concept of looking backward to go forward allows us to think about what Holt strain cattle actually looked like when thriving in numbers and genetic variation. As our numbers grow, so does our ability to develop a more sustainable strain and recover the original identity that was almost lost to history.

The genetic regeneration of Holt strain Pineywoods is crucial to the preservation of the breed as well as ecological restoration efforts. These cattle also provide biodiversity that may be necessary for future farming. As large-scale farming continues to push for a specific type of meat that fits the current consumer palate, the cows used in this system will inevitably move further toward homogeneity. Long term, this homogeneity and selection for a specific husbandry system may limit their genetic diversity, with potential impacts on disease resistance, climate adaptability, longevity, or reproduction. When that happens, heritage breeds will be used for genetic diversification that will help sustain improved cattle.

We aren't revitalizing Holt strain Pineywoods to keep them waiting in the wings for the future. Instead, we're attempting to create commercial viability for them right now. As a high



Bryan Wells developed the Georgia Native beef sticks recipe for both the Original and Jalapeno flavors. Photos by Shanna Buck, courtesy of Georgia Native Cattle company.

conservation priority, our Pineywoods desperately need to break ground in the marketplace. We've adopted a couple of slogans to connect with consumers, such as "Eat What Your Ancestors Ate" and "Eat Native." At the heart of it, we're connecting our consumers with the concept of participating in the conservation and regeneration of Pineywoods with each box and each beef stick they purchase.

By purchasing and eating the meat of these animals, consumers allow Holt strain Pineywoods to claim a spot within a crowded, convoluted marketplace. To eat them is to save them, and, though they will never be fully commercialized, we hope to reestablish their value in all aspects of their original purposes. It just so happens that the beef stick is a tasty and convenient way of offering Pineywoods beef to the consumer. As their commercial viability grows, so will our ability to regenerate these cattle, and, in turn, the land.

We've experienced challenges on all fronts. Sure, we never gave up, but we also never passed on an opportunity to learn and grow. Just as we practice regeneration, we constantly aim to regenerate our business as smart and viable. Each time we have made a mistake or taken a step backwards, be it from regulations or COVID-19, we continue to reevaluate and reassess so that we can move forward. None of what we do will ever be a linear path of progression. The nature of the livestock we attempt to save requires continual work and we learn to recognize the hiccups as progress.

Despite our challenges, we find a great amount of joy when looking back on the path we've taken. Having the Pineywoods beef stick in the marketplace and hearing the outstanding feedback from those participating in the preservation has made the uncertain path worth traveling. To reassess might be to delay, but ultimately, looking backwards to go forwards can be a powerful, beneficial practice.

AJ Wells is the marketing specialist for Georgia Native Cattle Company. He holds a literature and creative writing MA from Auburn University and earned his BA from The College of the Holy Cross. He currently lives in his hometown Buena Vista, GA.

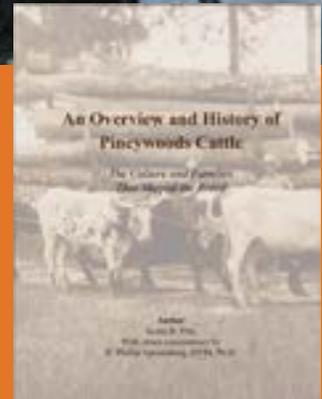


*Holt strain Pineywoods cow.
Photo by Shanna Buck.*

PINEWOODS CATTLE STRAINS

During the 1980s, 14 strains of Pineywoods Cattle were documented across Mississippi, Alabama, and Georgia:

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Conway (MS)	Vice (MS)
Dedeaux (MS)	
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Learn more about the history of Pinewoods cattle online at https://livestockconservancy.org/images/uploads/docs/pineywoods_final.pdf



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Frank R. Reese, Jr.
Lindsborg, KS
Patrick L. McNally
Schoolcraft, MI

For more information about becoming a Life Member, contact Karena Elliott at 806-570-0874 or kelliott@livestockconservancy.org



Dale (left), Josiah (right) and their American Milking Devon oxen team prepare a 4-H demonstration event. Photos courtesy of the Freier family.

A MICROGRANT OX-CART ADVENTURE

By Dale Freier, III

My brother Josiah, 10 years old, and I are part of a family-run farm located in Seneca Falls, New York. At Every Season Farm, we have a growing herd of 30 registered American Milking Devons in addition to Leicester Longwool sheep, pigs, and chickens. Milking Devons, listed as Critical on the Conservation Priority List, are a triple-purpose breed known for dairy, oxen, and beef. On our farm, we use them for all three. Josiah and I have been taking our steer teams to demonstrations at our local fair each year and wanted to purchase an ox-cart for educational events.

Josiah and I are involved in our local 4-H community and are Junior

Members of the American Milking Devon Association. We applied for a 2018 Microgrant and when The Livestock Conservancy reached out to tell us we received the grant, we gratefully put it toward the construction of our ox-cart. Built by another teamster in Massachusetts, we picked it up in March and spent a few weeks painting and sanding it down. We were able to present our bright cart at the Seneca County Fair last July.

When it was time for the working steer demonstration, a curious crowd gathered to watch. We took turns discussing over the loudspeaker the historical significance of the American Milking Devon breed and the traditional commands used to control oxen. We set

up cones and explained what haw (left) and gee (right) meant. At the end of our presentation we offered rides in the cart, which entertained everyone. Every time someone comments on the cart or asks a question about our ruby-red American Milking Devons, it is an opportunity to educate them about the importance of heritage breeds and agriculture, something farmers, teamsters, and 4-Hers take very seriously.

Josiah and I are also part of a 4-H Living History Club that tries to envision what life was like during the Civil War through reenactments. We had planned on marching our teams in our local Memorial Day parade, but it was canceled due to the COVID-19 pandemic. Our club wanted to create an accurate depiction of Union and Confederate soldiers marching with oxen carting supplies and artillery. We hope we can do it in 2021.

We are very grateful to The Livestock Conservancy and will continue to use our ox-cart and oxen as ambassadors for the breed in many more working steer demonstrations.

Learn more about the Freier family farm, Every Season Farm, on Facebook @everyseasonfarmflx. Watch the Dale, Josiah and their oxen teams in action on YouTube with Backyard Green Films at <https://youtu.be/LSpD7-XOkOk>.



THE HEALING POWER OF SEBASTOPOL GEESE

By Helen Decker

"They can help me survive and I can help them survive," I thought.

Beginning in 2011, my husband and I noticed that my body was acting strangely. I had rashes, swollen lymph nodes, fatigue, and a painful back and joints. By 2017, my symptoms began to progress despite efforts to contain them and failed attempts at receiving a diagnosis. In August 2018, I developed a migraine that would not go away. It became debilitating.

Later that year, I saw a rheumatologist. She pulled all of my files, reviewed pictures that I gave her, and performed tests. After years and years of feeling lost and confused, I finally received a diagnosis. I was put on medications that were stronger than typical for Lupus because of the severity and organ involvement. Until then, I never knew that chemotherapy was used for illnesses other than cancer. We weighed risk versus benefit, and at that point it simply was what it was.

That following spring, only two months after my diagnosis and beginning of treatment, I went to the

Maryland Poultry Swap and Farmers Market at Green Hill Farm. I came across white geese with long, curly feathers. My children called them wedding dress geese. These medium-sized (12-14 pounds) geese also had large, rounded heads with prominent blue eyes and orange bills, slightly arched necks, an elongated underbody, and orange feet. Their majestic beauty took me to a whole new world where I could escape feeling the reality of my illness and the side effects of my treatment.

I wanted to know more about Sebastopol geese. I learned that they were named after the Russian city on the Black Sea from which they were imported to the United States and recognized by the American Poultry Association in 1938. Sebastopols are best known for their elegantly draped spiral feathers that nearly touch the ground. The flexible shafts on the feathers, a specific breeding trait creating this plumage modification on the back, wings and tail, allow them to curl and prevent flight.

Once I found out that the Sebastopol geese were a threatened species, I felt like we had something in common. They

can help me survive and I can help them survive, I thought.

I brought home my very first Sebastopol goslings and immediately bonded with them. I proceeded to bring in more from different breeders around the United States to incorporate more blood lines to breed as well. Their sweet disposition, hugs, preening, and the sounds they make took the stress and anxiety down several notches.

Most mornings I sit out in my backyard with them. If it's a dry morning I take a floor pillow out. The geese enjoy when you are at their level. Sometimes my Sebastopols will get cozy on my crossed legs and sometimes they will lay beside me. I eventually realized that I reached a true state of euphoria when I was not able to put into words how at peace I was outside with my geese.

In Fall 2019, doctors noticed that my blood levels were finally within normal ranges. I still experience symptoms and side effects, but I am making progress. I choose to believe that while the treatments are important in my case, so are the natural methods of stress and anxiety reduction. For me, that means taking time to sit with my Sebastopols.

In 2020, I began Feathered Fairytales to share the majestic existence of Sebastopol geese with others. If they helped me, they could help someone else. The stories that I receive from their new humans warms my heart.

These rare breed geese have especially helped those coping with the pandemic by providing company and something more beautiful and heartwarming to put their focus on. Isn't this what life is all about? Truly helping one another by sharing our better qualities with one another. Helping each other survive, and enjoying our journey together.

Helen Decker (left) is a wife and a mother in the charming town of Myersville, Maryland. She loves rescuing animals, including conserving Sebastopol geese. She is also passionate about teaching, running her two businesses (Feathered Fairytales and Stitched Memories Photography), and sitting under her willow tree next to her pond with her family while soaking in the memories being made.





A SILVER LINING FOR SILVER FOX RABBITS

By Ashley Pierce

The microgrant from The Livestock Conservancy directly impacted my ability to be profitable and continue the expansion of my Silver Fox rabbitry. I have a small diversified livestock farm in Schoharie County, New York called Home at Last Farm (thehomeatlastfarm.com) where I raise rabbits, sheep, and poultry.

I have raised rabbits for several years, and in the last five years started raising Silver Fox, a breed considered “threatened.” An exceptional breed for meat and pelts, the Silver Fox rabbit fits my needs perfectly. I currently have 10 does and one herd buck. With the funds from the grant, I was able to purchase animals that are of excellent quality from a breeder who is selecting animals for both meat and show characteristics.

I purchased a new farm in 2018 and it had very little infrastructure. One of the first things constructed was a new rabbit shed, a roughly 20 x 30 foot structure. The grant allowed me to install lighting and build new cages for adult rabbits, a colony style area for young rabbits in inclement weather, and several “tractors.”

The mobile tractors allow me to grow out my meat rabbits on pasture, as you would broiler chickens. They are moved

twice a day to fresh grass, have unlimited access to a complete pellet diet, and free choice hay. They do exceptionally well on pasture and you can also see improvement in the pasture from the animal impact and added nutrients.

As a Regional Livestock Educator for Cornell Cooperative Extension, I help farmers in the Hudson Valley area with their farms via one-on-one assistance, classes, workshops, conferences, and farm visits. This past year, I assisted several farmers with their rabbit questions, taught rabbit classes, and helped new producers get started. In each of these interactions, I make sure to mention The Livestock Conservancy and the importance of preserving genetic diversity. Most farmers are very interested in learning more!

With everything happening with COVID-19, I have had a substantial increase in demand in live breeding stock rabbits from people who want to become more self-sufficient. Although I could not provide all of them with animals, I look forward to several more in my area getting started with Silver Fox rabbits as the year progresses and more are born.

My plans for this year include breeding three cycles with the rabbits, continuing

the tractoring process with meat animals, continuing to select the best animals to grow the herd, expanding my customer base, and supplying animals to those who requested them earlier in the year. I am especially excited about the prospect of so many new people getting started in rabbits, specifically the Silver Fox breed. These rabbits perform exceptionally well on my farm and I look forward to many more years with them.

Without support from The Livestock Conservancy, I would not be where I am today and not as many people would be familiar with the amazing Silver Fox rabbit. The funds really spurred the rabbitry and the whole farm to another level. The animal husbandry improved substantially, the genetics of my rabbits improved drastically, and many more in the area are raising rabbits. I look forward to continuing with the project!

Ashley Pierce received a 2019 Microgrant to expand the infrastructure of her rabbitry and bring in additional genetics for her Silver Fox rabbit breeding program. She raises rabbits and sheep at Home at Last Farm in New York. (Photo of Silver Fox rabbits above, courtesy of Ashley Pierce.)

AFTER A YEAR OF QUESTIONS, A MICROGRANT ANSWERS

By Kate Hagel

“There are years that ask questions. And years that answer,” according to Zora Neale Hurston

2018 was a year that asked questions of my fledgling flock of Jacob and Romeldale CVM sheep. Why am I doing this? Should I keep doing this? Can I even do this? I lost a ewe and an alpaca to meningeal worm, and my very first Romeldale CVM lamb to a freak accident with a livestock panel and a tree stump. My shearer retired, and for a third year in a row, the person supplying my hay switched to round bales.



My dream and vision are so clear and I have so many great ideas, but I was feeling frustrated and like the worst failure because I just kept losing. I cried to one of my mentors, Heather Loomis, thinking I should really quit this shepherding thing because I couldn't be responsible for animals that depended on me, especially not endangered breeds in need of careful management. But, she convinced me to chin up and encouraged me to apply for The Livestock Conservancy National Microgrant. I decided after submitting my application that 2018 was going to end with an answer.

The answer that The Livestock Conservancy gave me was a resounding “Yes!” With a grant for \$1,924, I was able to purchase 26 sheep coats in various sizes to increase the value of the wool I was selling. What I love about the improved fleece quality, beyond the added monetary value, is that it presents the wool to my customers in its best possible light; getting them hooked on breeds of sheep beyond merino.

I also purchased 5 rolls of electric poultry netting to expand my rotational grazing capabilities that included sending out 10 new Runner ducks with

my Buff Orpington ducks, ahead of the sheep to slurp up the snails and slugs that carry the deadly meningeal worm parasite. Along with welded wire fencing and T-posts purchased with the grant, I was able to increase my perimeter fencing and expand my flock.

Thanks to this generous grant from The Livestock Conservancy, 2019 was a year that answered. The answer was one “yes” after another. I had my very first lambing season, adding both a Jacob and a Romeldale CVM ewe. At the 2019 annual general meeting of the Jacob Sheep Breed Association, I purchased a gorgeous, diversely pedigreed ram along with 2 excellent ewes and a ewe lamb. I went to area schools to present my sheep ambassadors and spread the importance of breed conservation to high school agriculture classes. I sold out of my fleeces thanks to The Livestock Conservancy's Shave 'em to Save 'em program. I continued my own education, getting FAMACHA certified and working closely with shepherd mentors.

The year brought a few gut-wrenching “no” answers, as well. A newly emerged den of fox kits decimated my chicken flock within days, leaving only 2 hens. While I was away at a family reunion, my beloved Romeldale ram died suddenly under the care of my farm sitter.

I'm still chasing hay providers and shearers, which is extremely frustrating, and I still have days where I realize my inadequacies and have a good cry out in the woods because of my lack of control over the universe. But, I have to say that the most lasting and far-reaching impact that The Livestock Conservancy has made on me and my flocks is the incredible community of fellow farmers, educators, and breed enthusiasts that lend their encouragement and knowledge when it is needed most.

Kate Hagel received a 2019 Microgrant to expand her pasturing capabilities and improve the wool quality in her Jacob and Romeldale CVM sheep flock at Ballyhope Farm in New York.



Kate Hagel (above) holds a Jacob lamb. Her flocks of heritage breed sheep and geese enjoy their improved pasture with new fencing, thanks to the 2019 Microgrant (bottom).

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SPECIES CHATS

Every Tuesday
2 pm EST, Facebook Live

January - Swine
February - Sheep
March - Chickens
April - Rabbits
June - Cattle
July - Horses
August - Ducks
September - Donkeys
October - Goats
November - Turkeys
December - Geese

MARKETING MONDAYS

Last Monday of the Month
2 pm EST, Facebook Live

[https://www.facebook.com/
livestockconservancy](https://www.facebook.com/livestockconservancy)

Archives on YouTube: [https://
www.youtube.com/c/
TheLivestockConservancy](https://www.youtube.com/c/TheLivestockConservancy)