



THE LIVESTOCK CONSERVANCY™

Conserving rare breeds since 1977
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Régis Léau, a longtime Poitou breeder in Saint-Martin-de-Ré, France is known for the quality of his breeding jacks. The Livestock Conservancy staff met Régis and other important breeders during a trip to France this summer, helping to foster reciprocity with the French registry of critically endangered Poitou donkeys. Photo by Jeannette Beranger.



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BREED ORGANIZATION LEADERSHIP TRAINING

There's still time to participate in The Livestock Conservancy's Cultivating Leadership in Breed Organizations online training series. "We're very excited to continue with this series and I hope the members of our organization will be as well," said Gracie Cardwell of the American Mulefoot Breeders Association (AMBA). "These tools aren't only good for the AMBA, but can work on their farms and other aspects of professional life."

The webinar series is divided into 9 modules, with a live training held from 6:30-7:30 pm Eastern Time on the third Thursday of each month.

TRAINING MODULE LIST

- Module 1 - Establishing and Managing Articles of Incorporation and By-Laws
- Module 2 - Managing Membership
- Module 3 - Defining Board Roles and Responsibilities

- Module 4 - Building and Maintaining an Effective Board
- Module 5 - Ensuring Accountability and Transparency, January 19, 2023
- Module 6 - Managing External Communications, February 16, 2023
- Module 7 - Managing Internal Communications, March 16, 2023
- Module 8 - Managing Risk, April 20, 2023
- Module 9 - Managing a Herdbook and Registry, May 18, 2023

To register for the live webinar series, individual modules or the entire series, visit The Livestock Conservancy online store at <https://livestockconservancy.org/resources/online-store/>. Organizations or individuals may register for a single module or for the entire series.

The cost is \$35 per module or \$280 for the series per organization. Training is open to all members of an



organization. Following initial participant registration, a discount code is available for additional participants. Please email info@livestockconservancy.org for the discount code. If cost is prohibitive for your organization to participate in the training, please email Jeannette Beranger at jberanger@livestockconservancy.org for details about how to participate.

All modules are also available on Teachable following the live webinar. Enroll in the past modules at <https://livestockconservancy.teachable.com/>.

CONTACT US

The Livestock Conservancy
PO Box 477, Pittsboro, NC 27312
www.livestockconservancy.org
info@livestockconservancy.org
(919) 542-5704

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LIVESTOCK CONSERVANCY STAFF

Alison Martin, Ph.D.
Executive Director
Jeannette Beranger
Senior Program Manager
Charlene Couch, Ph.D.
Senior Program Manager
Karena Elliott, M.Ed.
Development Director
Wendy Jennings
Administrative Assistant
Cindra Kerscher
Program Manager

Jaye Ray

Programs Assistant

Jeanne Serrette

Development Assistant

Brittany Sweeney

Communications Manager

Angelique Thompson

Senior Operations Director

TECHNICAL ADVISOR

D. Phillip Sponenberg, DVM, Ph.D.

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Maryland: A copy of the current financial statement of The Livestock

Conservancy is available by writing PO Box 477, Pittsboro, NC 27312. Documents and information submitted under the Maryland Solicitations Act are also available, for the cost of postage and copies, from the Maryland Secretary of State, State House, Annapolis, MD 21401, 410-974-5534.

North Carolina: Financial information about this organization and a copy of its license are available from the State Solicitation Licensing Branch at 1-888-830-4989. The license is not endorsed by the state.

Virginia: A financial statement is available from the State office of Consumer Affairs in the Department of Agriculture and Consumer Services upon request.

Washington: For additional information regarding the organization's activities or financial information, The Livestock Conservancy is registered with the Washington State Charities Program as required by law and information may be obtained by calling 1-800-332-4483 or 360-725-0378.

By Jeannette Beranger

D.P. LOWTHER

When I began my career with The Livestock Conservancy in 2005, my first major field project was the recovery of South Carolina's Marsh Tacky horse. At the time, there was only speculation that some Spanish horses were living in coastal South Carolina. My task was to find them, document them, and DNA sample them so we could determine if the breed did indeed exist.

The one person everyone repeatedly told me I needed to talk to was D.P. Lowther. He had a large herd of the horses and had maintained them for his entire life. I made the trip out to his farm prepared for the horses. However, I wasn't prepared for his grit and wry sense of humor that always kept me guessing if he was serious or not.

D.P. was an unforgettable character who taught me much of what I know about the Marsh Tacky breed today. At the time he had a third of the living population of horses on his farm and a wealth of knowledge, of which I'm sure I know only a fraction.

The Marsh Tacky horse would not be here today if it wasn't for D.P. and a small handful of others. They saw value in their swamp horses of the Lowcountry and treasured their tradition. D.P. received The Livestock Conservancy's Bixby-Sponenberg Award for Breed Conservation for his lifelong work with the Marsh Tacky.

GERALD DONNELLY

Just days after D.P.'s passing, I learned that we had also lost Gerald Donnelly. As I've said many times, Gerald was "a master breeder's master breeder" when it came to poultry.

Gerald first learned from his grandmother and mother about keeping poultry on the family farm. By the time he was 17 years old, he began showing some of his best. Gerald naturally worked toward becoming a judge and was certified in both the U.S. and Canada.

Outside of the poultry world, Gerald was an educator and school administrator for 35 years. His skills from years of teaching enabled him to explain the intricacies of good poultry breeding in simple terms without making you feel like you were a beginner next to his wealth of experiences. He was a



Above, Gerald Donnelly feeds his Toulouse geese on his farm in Canada. Below left, Jeannette Beranger and D.P. Lowther at the Marsh Tacky races in South Carolina. Below right, D.P. Lowther and his Marsh Tacky circa 1946. Photos courtesy of Jeannette Beranger.



gentleman and an inspiration to many poultry breeders.

I had the pleasure of visiting Gerald's farm in 2019 and saw the most remarkable poultry I've ever laid eyes on. Birds of quality in every direction reflecting a lifetime of work toward excellence in breeding. I will not forget his massive Toulouse geese as they made their daily march to the river for their morning baths.

Thankfully Gerald spent time making sure his birds' genetics were dispersed into multiple hands in Canada and the U.S. so his lifetime effort would not be lost when his final day came.

LEAVING A LEGACY

One of the greatest honors I have working at The Livestock Conservancy is forming relationships with remarkable

people that dedicate their lives to their breeds. I will always be grateful for their willingness to share knowledge, humor, and an open door any time I had a question or wanted to learn more. We work hard to document their histories with their breeds to ensure their legacy will not be forgotten.

Jeannette Beranger, Senior Program Manager at The Livestock Conservancy, has more than 30 years of experience working as an animal professional in zoological and non-profit institutions. She is an active lecturer, writer, and photographer. At home she practices what she preaches, maintaining a heritage breed farm with a focus on endangered Crèvecoeur chickens.



SPANISH BLACK VS. BRONZE BROAD BREASTED TURKEYS

A Black hen and tom at Bull City Farm. Black turkeys are listed as Threatened on the Conservation Priority List. Photo by Brittany Sweeney.

By Samantha Gasson

In 2016, my husband and I decided to add turkeys to our farm business. We knew we wanted to stick to our heritage farm roots. We generally raise heritage breeds, except for our beautiful Jersey cows and I'm not ashamed to admit to this transgression. For our initial foray into the world of the *Meleagris gallopavo*, AKA the domestic turkey, we started out by thinking about what we didn't want with the hope that we would settle on the perfect breed for our farm.

OUR ABSOLUTE TURKEY NO-NOS

No white birds. I don't care how clean a carcass they yield because of their pale feathers. They just don't look very nice after a few months on pasture in our North Carolina red clay.

No commercial breeds. We wanted to stick to our heritage breed roots and fill a niche that was missing in our area. We felt everyone was raising the white Broad Breasted birds.

No aggressive birds. We were looking for a turkey with a calm disposition. We hold kids camps and classes and the last thing I wanted was a bunch of wild birds

thinking they run the place. We already have layers for that.

After careful consideration we settled on the Standard Bronze turkey, listed as Watch on the Conservation Priority List. This bird ticked all our gobbler needs.

AN ORDERING ERROR

When our birds arrived we couldn't have been happier. Their natural curiosity and lack of fear made them so much more fun to have in the brooder than our layer hens. We were also surprised by how fast they grew. As time progressed and our silly beasts filled out we had to admit, they were much, much larger than they should've been with three more months to go.

At 12 weeks of age, it became abundantly obvious that our heritage Standard Bronze turkeys must be the Bronze Broad Breasted. A look back at the packing list and our invoice verified this fact, we had accidentally ordered the wrong turkey! A quick change of marketing and processing dates and the mistake was smoothed over.

The next year we didn't even think about raising a heritage bird. It was the Bronze Broad Breasted all the way. We

were smitten. The horror stories of small birds, disappointed customers, and huge feed bills from our fellow heritage breed farmers made us sure we had dodged a bullet. Our birds were the perfect size at 16 weeks, making sure our bottom line stayed in the black.

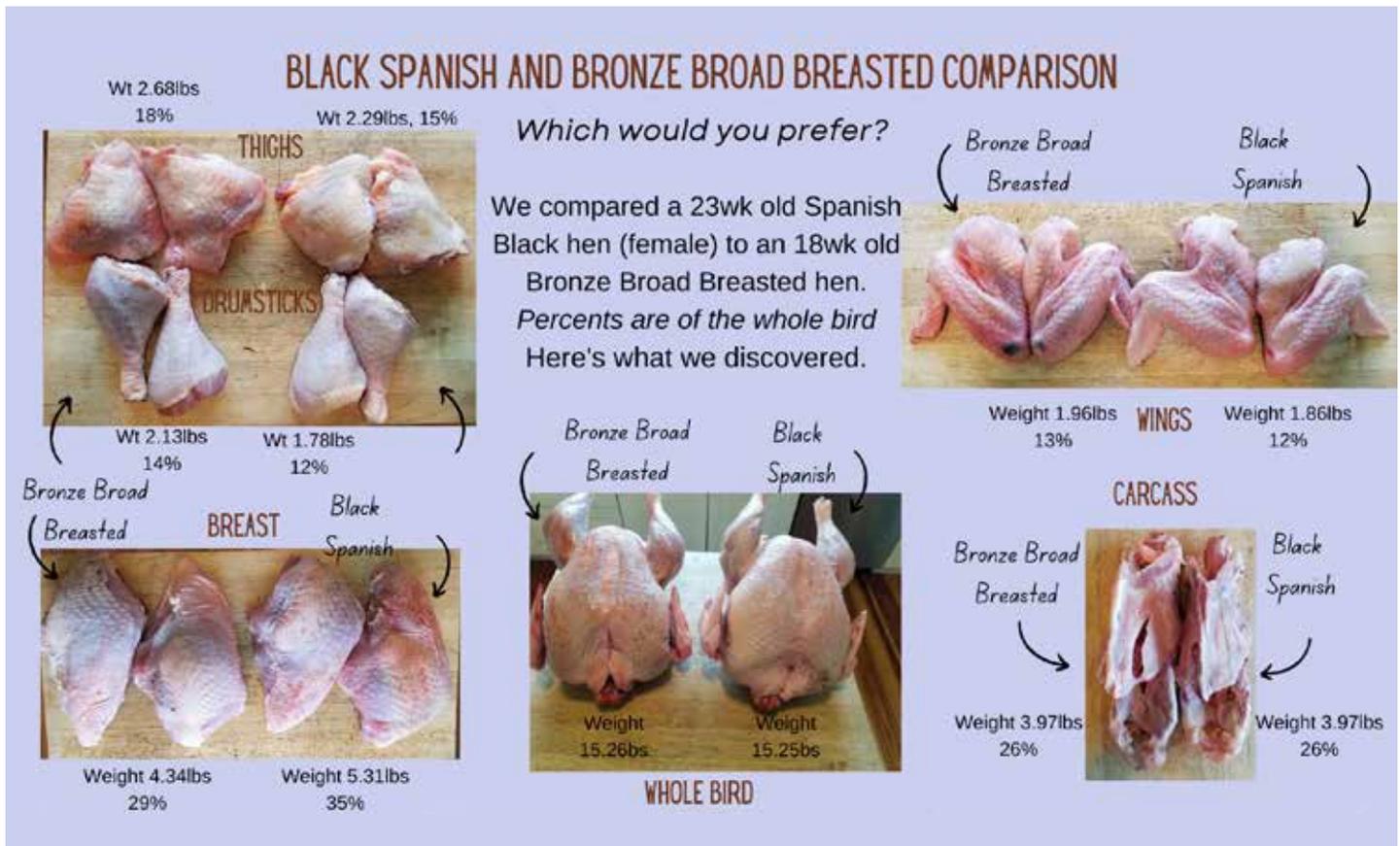
As time progressed we found we had two problems with our birds.

1. They are big. We rarely have a bird less than 13 lbs.

2. Bronze Broad Breasted turkeys aren't a heritage breed. Every year we turn away potential customers because they want to buy a heritage breed for their Thanksgiving table. Very few farms are raising heritage breeds in our area. We were missing an opportunity.

This got us thinking back to our die hard "Heritage All the Way" philosophy from our twenties. Maybe there was a niche we could fill. Heritage breed turkeys are smaller, right?

As turkey ordering time came around in 2021 we were contacted by a Narragansett breeder who wanted us to raise a large number of birds so he could do more selective breeding. Unfortunately, he had an incubator failure and was left with only a handful



of birds. Disappointed we made the decision to order our next batch of heritage turkeys from a larger hatchery.

As turkey ordering time rolled back around this year we researched heritage breeds in earnest once again. This time we settled on Black turkeys, also called Black Spanish, because they were the only heritage breed our hatchery offered.

BLACK TURKEYS

In March, we welcomed our first ever batch of Black turkeys to Bull City Farm. They were beyond cute with the sweetest white marking on their faces. Two months later, they actually looked more like turkey vultures than turkeys. My heart stopped more than once thinking we had a mass death situation in the juvenile turkey pasture with the amount of black vultures circling above.

At four months, the poults outgrew their adolescent phase and their vulture fan club stopped visiting. The young turkeys started showing some of the beauty that would define them for the next month.

EVALUATING OUR NEW BIRDS

As with every new venture we always take a long hard look at the enterprise. Is this a hobby or a business? Did the

venture make money or cost money? Did we enjoy raising this breed or not?

So far we were really impressed. We raised 400 birds this year, 300 Bronze Broad Breasted and 100 Black. This gave us the unique opportunity to compare the two breeds. Below are some of the things we discovered along the way.

The Black turkeys didn't need to be moved as often. We raise our birds in large areas, moving their feed and shelter daily within the pasture. This allows us to move the fence weekly. Black turkeys were much kinder on their pasture than the Bronze Broad Breasted turkeys.

Black turkeys don't eat as much. During the 16 weeks we raised the turkeys before processing, we filled up the Black turkey food bowls fewer times than the Bronze Broad Breasted turkeys.

Black turkeys are not smaller. When we processed our Black turkeys the majority ranged in weight from 13-26 lbs. Of the nearly 100 birds that we processed, 41 birds weighed more than 20 lbs., 8 birds fell in the 17-19 lb. range, 45 birds in the 14-16 lb. range, and 5 birds around 13 lbs. We also kept our favorite tom and 5 of the sweetest hens to provide us with our 2023 crop of turkeys.

The Bronze Broad Breasted turkeys mostly ranged from 12-18 lbs. We will

definitely have a group weighing more than 20 lbs. and hope to have some smaller birds as well. We currently processed 7 birds in the 17-19 lb. range, 56 birds in the 15-16 lb. range, 30 birds in the 13-14 lb. range, and one 12 pounder.

We took our analysis a little bit further and broke down 2 hens, one from each breed. The Black hen had a carcass weight of 15.25 lbs. and the Bronze Broad Breasted weighed 15.26 lbs.

As you can see in the comparison in the graphic above, each bird yielded the same percentage of meat, but the distribution was surprising.

Each breed has their own benefits, but if you're looking for a less commercial variety that can breed naturally, then the Black turkey is for you.

Samantha Gasson is the Humane Farming Program Associate with Food Animal Concerns Trust (FACT). She also owns and operates Bull City Farm (<https://www.bullcityfarm.com/>) with her husband and kids in the North Carolina piedmont, where they raise pork, dairy cows, turkeys, layer hens, and lamb. The farm is part of A Greener World's Animal Welfare Approved program, which is the cornerstone of their farming business.



GULF COAST SHEEP CENSUS UPDATE

Top, Dempsy Perkins line Gulf Coast sheep flock by Chris Wilson. Right top, traditional Coastal South Native flock by Justin Pitts. Right bottom, Louisiana State University flock by M. Fernandez.

Gulf Coast sheep, also called Coastal South Native, have a complicated and often overlooked history. As with many of the local breeds in the Southeast, they originate from sheep originally brought to the area by the Spanish. The deep history of the region and its strong connections to Spain are often forgotten even though they were important as the original foundation of livestock in the region.

The sheep thrived for centuries in widely ranging extensive flocks. This helped to hone their adaptation for the local wet, warm, and humid environment. One important aspect of the adaptation is resistance to stomach worms that are a severe threat in the region, and that limit the production of many breeds.

Recent years have seen little progress toward increasing the number of Gulf Coast sheep, prompting The Livestock Conservancy to undertake an in-depth census of the breed to more adequately conserve it. Diligent members interviewed many owners and tracked down many leads to flesh out a current snap-shot of their status.

The foundation of the present breed centered on several old family lines. Each line has its proponents, and unfortunately several also have their detractors. This becomes a problem for breed definition because it is important to know which sheep belong and which do not. The core of all strains is their exquisite adaptation to a very challenging environment.

Efforts to conserve these sheep go back several decades. In 1994 a breed association was formed, helping organize many breeders. Efforts to conserve local breeds include numerous flocks, but almost always also exclude some candidate flocks that had failed to be located or declined to join at the time the association was formed. This was the case with the Gulf Coast Sheep Breeders Association. To add to the already complicated situation, the association experienced several years of decline in sheep registrations. Fortunately, this has recently reversed with an uptick in association and registry interest.

A Coastal South Native Sheep Alliance was developed in 2007 with the goal

of catering to the needs of the more traditional breeders. Their approach is flock-based rather than based on identification and registration of individual sheep. Several of the breeders have had the sheep in their families for multiple generations.

One of the first steps in breed census work is understand the foundation and current status of the breed, the foundation strains of the present breed, and consideration of what has been recently lost to the breed.

One of the important foundation influences is from a sheep breeder in Louisiana named Dempsy Perkins. He maintained his family's stock of traditional sheep, but also had a flock to experiment with introducing various other breeds. His composite sheep was successful, and remains adapted to the humid warm region. Perkins sheep are now a majority influence in the breed, having influenced many flocks. They have strong parasite resistance and are large, robust sheep.

Alongside the numerically important and well-documented Perkins stock

are several other bloodlines, including important traditional sheep that the locals tend to call "Native." These strains all share a consistent look and style that reflects their local origin. This logically groups them together as a single breed because of their origin from local sheep in a specific region.

The number of sheep within each of these strains varies widely from flocks of a few hundred down to a mere handful. The general trend is that nearly all of the traditional bloodlines are now fewer than they were even a few decades ago. These strains include the sheep from James Holt, Eric James, Danny Ladner, Howard Ladner, the Pate family, Clint Shaw, Wing, and a few others. The search is always on for flocks that have been overlooked, so this list is by no means complete and exclusive. Unfortunately, candidate flocks now surface very rarely, and further sources may be completely gone.

A few flocks have a different trajectory. The flock at Louisiana State University (LSU) was originally sourced from local sheep. Later some Perkins sheep were added, straddling the boundary between traditional and composite Gulf Coast sheep. The important factor is the timing of any sampling or origin from the LSU flock. This is doubly important because the LSU flock has been the source of most of the experimental research that characterizes the breed and its ability. It is also the source of frozen semen in the National Reserve at USDA's National Animal Germplasm Program. There is now reason to be grateful for these cryopreserved resources. The LSU flock was dispersed around 2014 and nearly all of the purebred sheep of that bloodline are now gone.

Alabama A&M University's flock has a similar foundational history, with an origin from several local sources. The Alabama A&M flock was is a blend of traditional influences that are important to the region and the breed, and it too was blended into mixed flocks after dispersal.

Numbers are important and tell a range of stories. In this breed, both registered and unregistered flocks are important. The other major division is the split between the flocks and sheep with more composite Perkins influences and the more traditional lines with an older foundation in local sheep. Both are important types of sheep adapted to the deep South.



BY THE NUMBERS

27 Unregistered Flocks

51 Registered Flocks

969 Total Registered sheep

1,072 Total Unregistered sheep

135 Registered Traditional sheep

827 Unregistered Traditional sheep

By any measure, these sheep are in urgent need of conservation attention. The breed is fortunately in strong enough shape that truly heroic rescue efforts are unlikely to be needed. Following several years of low registrations, The Livestock Conservancy feared that very few sheep remained. With a total population in 2021 of more than 2,000 sheep, sufficient sheep remain to continue to grow the breed through recruitment of new breeders.

In common with many local breeds, the more traditional core of the breed tends to persist outside of the registration system. Traditional sheep now reside in relatively few flocks, each of which has many sheep. This can seem secure, but actually puts the breed in a precarious position because the loss of even one or two of these large traditional flocks would be quite damaging to the population structure. Composite bloodlines built on these older bloodlines, most of which are based on Perkins sheep with a variety of other influences, are more widespread in smaller flocks. This places the composite and Perkins line at a lower risk level because the risk is so spread out.

A few details escape the numerical analysis, like some of the traditional sheep have persisted in somewhat isolated

flocks. The sheep census identified some of these isolated flocks and work is underway by dedicated breeders to track down any that may have been overlooked. This opens up opportunities for encouraging new breeders to work within some of these lines.

Both of the major divisions within the breed (traditional and composite) have important roles to play. They are adapted to the challenging humid Southeast, and they offer sheep producers very strong and capable sheep that can meet current market demands.

These sheep can still serve their traditional role in providing family farms with a source of meat, wool, and income. Some farms have had good success selling meat through farmers markets and direct sales to chefs and local families. The Shave 'Em to Save 'Em Initiative has brought new attention to wool from this breed, with subsequent growth in sales.

The Livestock Conservancy is moving forward with breeders to collect genetic material – especially from older traditional lines – with the goal of protecting and establishing new flocks of Gulf Coast and Coastal South Native sheep.



TEXAS LONGHORNS, NOT WRONG-HORNS

Texas Longhorn cattle, listed as Critical on the Conservation Priority List, on pasture. Photo by Jeannette Beranger.

By Cathy R. Payne

Debbie and Don Davis, ranchers at DWD Longhorns in Tarpley, Texas, are each powerful individuals in their own right. Together, they are a force of nature. The power couple has done it all when it comes to Texas Longhorns, and lead both the Cattlemen's Texas Longhorn Conservancy (CTLC) and the Cattlemen's Texas Longhorn Registry (CTLR).

Don is a director emeritus of the CTLR and a past president of both the registry and the American Grassfed Association. In this capacity since 2020, he promotes grassfed meats of many breeds. Debbie has served the CTLR as treasurer, director, president, and registrar. There are probably few married heritage breeders that have done more to provide leadership in their breed organizations than this impressive duo.

"Both of them have been essential to the future of Texas Longhorns," said D. Phillip Sponenberg, DVM, Ph.D. and technical advisor to The Livestock Conservancy. "Debbie has been instrumental in using science to guide conservation decisions."

500 YEARS OF HISTORY IN AMERICA

The Texas Longhorn evolved in the southwestern United States. The stock they descended from was Iberian, meaning Spanish and Portuguese cattle.

"In 1521, cattle traveled from Cuba to Florida and what is now Tampico, Mexico," Debbie said. "Explorers and missionaries traveled through Neuvo Leon and Coahuila, eventually reaching the Rio Grande sometime in the 1500s."

Francisco Vázquez de Coronado, in his search for gold, branched west in 1540 toward Arizona, then east into New Mexico before he crossed what is now the Texas panhandle. He had numerous cattle and horses with him. That places cattle in Texas between 1541 and 1542.

Most of the early settlements in Texas were founded in the early 1700s. By the time communities were named, civilization had long been established, and wild cattle had inhabited the area for more than a century.

"These rugged survivors became the Texas Longhorns," Debbie said. "They are a landrace breed related to other Criollo cattle, including the Florida Cracker and Pineywoods found in the southeastern United States.

Although the genetics are similar to Spanish cattle, Texas Longhorns look different. They evolved to their environment and formed a breed uniquely adapted to Texas.

"Some of the differences are attributed to cross-breeding with cattle from Florida and other parts of the country," Don said. "They evolved through natural selection. The cows that protected their offspring produced calves that survived and had young of their own."

Don also believes Texas Longhorns' iconic twisted horns helped them thrive. The twist allows the animal to scratch a fly bite and protect their calves. "If the horns went straight out, there would not be a protective function," he said.

CRITICAL STATUS

Even with such a significant history, Texas Longhorn cattle are listed as Critical on The Livestock Conservancy's Conservation Priority List. "People often ask me why Texas Longhorns are listed as critically in danger of extinction," Debbie said. "For one, these cattle don't have the 108-inch, flat-out horns that are popular right now. In the 1970s, hobby breeders used impure bulls that became very

popular. In non-CTLR registries, those bulls are in the pedigrees of almost every animal in the country."

Hobby farmers often only breed for color or for horns. Ten generations later, those offspring's DNA still show the impact of that non-Texas Longhorn breed. Popularity of the cross-bred type trumped the desirability of conservation for breed type.

"In 1970s and 1980s cattle shows, all that was needed to judge the animals was a scale," Don said. "Those that were the biggest and the heaviest would win. That is not a natural trait of the Texas Longhorn. Longevity, fertility, hardiness—all of what we think of as a Texas Longhorn cannot be measured on a scale."

The animals that had been crossbred with other breeds to give them heaviness won the shows, leading to a change in the breed. Tip-to-tip measurement of the horns also played a big part in introducing Watusi and other genetics.

"We call them wrong-horns," Debbie added with a grin. "It's pretty easy to look at the cattle and see. Our cattle continue to look the same, and some of the cattle out there are freaky looking."

Transportation methods also brought about a decline in numbers. As producers began transporting stock and meat by train to feedlots around a century ago, the Texas Longhorns did not fit the needed conformation. Their very long horns made it difficult to fit them into boxcars. They are also a very athletic breed that can jump fences and do not like to stay in confined spaces. Ranchers found that English and Indian cattle breeds were more docile and obedient, and held onto fat better.

"The American mind-set is to always improve on the original instead of respecting historically refined perfection," Debbie said. "Modern-day breeders took that perfect animal and wanted longer horns or beefier bodies. They mixed African horn genetics and Indian beef genetics to create a composite. Now, some breeders are witnessing calving problems, fertility difficulties, and loss of disease resistance because they bred out the adaptive traits of the original animal."

In spite of the smaller numbers of original type Texas Longhorns, those that remain are very valuable genetic



Historical photo of cowboys with Texas Longhorns from 1910, courtesy of Debbie Davis.

packages. They've gone from undesirable to extremely desirable as farmers face droughts related to climate change.

"Their fertility, disease-resistance, the distance they can travel to water, the way that they can survive in extreme and marginal environments is pretty impressive," Don said. "That is something that I feel we're going to need more and more as the better land is developed for homes, apartments, and urban development. A lot of agriculture has been pushed to more marginal lands. I think these cattle really thrive in that, compared to other breeds."

Texas Longhorns are also no match for predators, including wild boars, bobcats, coyotes, and others. In addition to the intimidation factor of those horns, the cows display instinctive behaviors bred out of domestic cattle,

"On this ranch, we have quite a few predators and we don't usually lose cattle to predators," Don said. "They will take a long path around our cattle. It's really amazing. All the calves will be watched by two mamas. That allows the rest of the mother cows to go and graze. With one little noise or snort, all of those mamas are there in very quick order."

These strong instincts and an ability

to forage on less desirable property are irreplaceable genetic treasures. Superficial traits like color or size might be linked to fertility, hardiness, thriftiness, and the ability to survive during drought. Members of the CTLR and the CTLC understand that it is important to choose conservation over fads to retain these genetic traits.

The CTLR currently has around 500 active breeders of registered cattle with about 3,000 cattle in the registry. There are still herds of cattle in the west that would fit into the CTLR standards but have never registered their animals and the CTLR is actively pursuing bringing those breeders and their genetically-important herds into the registry. Every appropriate animal makes a difference to a critically endangered breed.

BREEDING FOR BIODIVERSITY

Novice conservation breeders need to understand the importance of selection in preserving the biodiversity of heritage breeds. This demands an eye on each animal's phenotype, or set of observable characteristics, and an understanding of where those traits come from genetically.

"I'm a real nerd when it comes to pedigrees," Debbie admitted. "I will



Left, Don and Debbie Davis handle their herd of Texas Longhorn cattle at DWD Longhorns in Texas. Photo by Monroe "Bubba" Sullivan.

research back six to seven generations."

In her research, Debbie finds it nearly impossible to breed animals that don't share at least one common ancestor because the Texas Longhorn genetic pool is so small. It's one of the downsides to working with a critically-endangered breed. As she thinks about continually building her herd, her goal is to keep as many different bloodlines in her cows as she can. To achieve this goal, she swaps bulls every three or four years. Sometimes she grows one of hers out on the farm, but usually she brings them in from outside. She's also used artificial insemination from a bull that lived twenty years ago to bring some old genetics back into the herd.

"The CTLC has assembled a fairly extensive semen collection from older animals that we can bring into the gene pool," Don said.

The registry discovered through mating pedigrees that some breeders were over-using their favorite bulls. The same few bulls showed up in many pedigrees, and that became alarming. Debbie worked with Dr. Sponenberg to develop a strategy to reduce inbreeding from this popular sire effect. Through education within the CTLC membership they worked to make the herds more genetically diverse.

"Lately, we've been a little more aware of breeding records and selecting animals that are more fertile over the

years," Don said. "If you look at an eight-year-old cow, has she had six, seven, or eight calves? What is the interval between calves? It makes sense to pick bulls out of the most fertile mother."

Debbie added, "Phil Sponenberg taught us that. An eight-year-old should have at least seven calves, because she should be calving more frequently than every twelve months."

More than just the number of calves from a cow is the proper conformation. "I look for a cow that exhibits good mothering traits in her udder, her neck, body, flank, and just the way she's put together," Debbie said. "If she looks like our breed standard's drawing, then she's going to be a good cow."

When selecting a bull, Debbie likes to choose one from her favorite cows. "The cow has to prove herself worthy," Debbie continued. "Not just by having pretty horns, but an excellent mother. She must wean heavy, healthy calves compared to others in the herd. Let's say an average weaning weight for me is 400 pounds. I would not keep a bull calf that is 300. I'll go for a harder animal."

GENETIC DEFINITION

Even though Texas Longhorns are a landrace breed, the CTLC follows a breed standard that includes a visual inspection and a DNA sample to be accepted into the registry, regardless of whether parents were registered.

"The animal must pass a visual inspection before you do the DNA," Don said. "Years and years ago we used to do blood-typing."

Today, instead of using Jerry Caldwell's blood-typing method, the registry is working on a genetic definition. For years, they worked with Dr. Cecilia Penedo at the University of California Davis campus to genetically define the Texas Longhorn through DNA.

"We have the start of the definition," Debbie said. "As far as the indicine [a subspecies of cattle originating in the Indian sub-continent] percentage there is a range that we consider acceptable in a Texas Longhorn. We're hoping to get a better definition that includes other taurine [a subspecies of cattle originating in western Asia] breeds soon."

Over the years, Debbie and Don worked with various labs to develop a screening tool that will tell them the relative influence of various genetic origins. "They pay attention to Y chromosome variants as well as the rest of the genome," Dr. Sponenberg said. "Cecilia has a rather extensive data set of mitochondrial DNA, which is the older DNA. Now they're working with SNPs, but she has the older stuff."

SNP, pronounced snip, stands for Single Nucleotide Polymorphism. These are locations within the genome where nucleotides A, T, G, or C can vary between individuals. They are a common type of



genetic variation. Because the SNP is inheritable, comparing these variations can help determine relatedness between different cattle.

"Cecilia can identify integration from eleven different breeds that are probably the most common, to be compared with the Texas Longhorn," Debbie said. "We are in the process of developing our own DNA database to compare between the different breeds."

MARKETING AND MONETIZING

Don and Debbie's full-time work revolves around growing these amazing Texas Longhorn cattle, moving the best genetics forward, and marketing beef. The income from beef sales allows them to live comfortably and continue to raise the breed.

Debbie markets female offspring each year as breeding stock to other breeders. There is less need for bulls. Therefore, they are raised as steers and then sold as "Texas Longhorn Grassfed Beef."

Don and Debbie's business Grassland Longhorn Alliance (GLA) was started in 2002 to operate this custom meat marketing business, Bandera Grassland, for Texas Longhorns beef only.

In 2006, Don organized a grassfed producers' group to market grassfed beef that is not Texas Longhorn to Whole Foods Market. The previous group was renamed "Texas Grassfed Beef" and retains the initials GLA. Debbie still direct markets to Bandera Grassland.

"Currently, I have a producers' group called the Grassfed Livestock Alliance," Don explained, "We have twenty-plus producers, and we provide local grassfed beef to Whole Foods Markets in Texas, Louisiana, Arkansas, and Oklahoma.

This is a great model for producers wishing to conserve rare genetics while earning an income that allows them to continue their work.

Cathy R. Payne first learned about The Livestock Conservancy in 2008. When she retired from teaching in 2010 and started a sustainable farm, she decided to focus on heritage breeds. She became a member and raised Khaki Campbell ducks, Silver Fox rabbits, American rabbits, Gulf Coast sheep, and American Guinea Hogs. Cathy sold her farm in 2018 and advocates for heritage breeds year-round as a part-time Program Research Associate for The Livestock Conservancy.

Cathy is also the award-winning author of "Saving the Guinea Hogs: The Recovery of an American Homestead Breed" with a foreword by D. Phillip Sponenberg, DVM, Ph.D. It is available for purchase on The Livestock Conservancy's web store at <https://livestockconservancy.org/resources/online-store/>

Middle, Texas Longhorns with their distinctive curved horns on pasture at DWD Longhorns in Texas. Photo courtesy of Debbie Davis. Above, Debbie Davis with a Texas Longhorn named Cole. This breed is known to be docile and easy to work with. Photo by Sandra Stevens.

WELCOME TO OUR NEWEST LIFE MEMBERS!

The Livestock Conservancy would like to give a special thanks to the following individuals who recently chose to support conservation programs by becoming Life Members:

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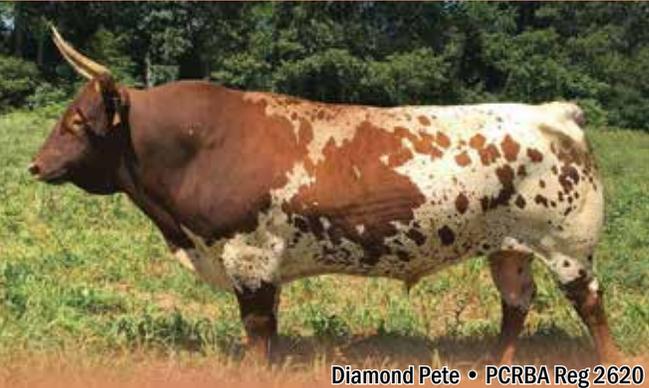




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The Livestock Conservancy brought a variety of poultry to serve as heritage breed ambassadors, sharing the roles that poultry and livestock can play in improving soil health and biodiversity.

Pictured, a boy, attending the festival with his family, pets Sebastopol goose Gucci while Charlene Couch explains a goose's role on small farms. Photo by Farm Aid photographer Lise Metzger.