

**Written Testimony before the
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Title II – Conservation Programs: Exploring Climate Smart Practices.

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Chairwoman Spanberger, Ranking Member LaMalfa, Members of the Committee, thank you for this opportunity to submit a written statement on behalf of the Caney Creek Ranch.

After leaving a New York City financial information firm in 2007, I joined Caney Creek Ranch to create a generational family business operation. Caney Creek Ranch is located in Oakwood, a small town in Central East Texas. Our family-owned ranch was established in 2002 by my parents Wesley and Marie Ratcliff. I manage daily operations of our family business producing Charbray cattle, from which bulls, replacement heifers, semen and embryos are sold nationally and internationally. Working with my father and brothers, I am leading our family business into the future – developing new lines of business, instituting best practices on the ranch for resilience and efficiency, and strongly contributing to the success of our entire community.

Having witnessed my own family's journey establishing a new ranch, I understand the challenges facing new farmers and ranchers. I am passionate about supporting these groups, particularly minority producers like me. That's why I am engaged in 100 Ranchers. Established in 2008, The 100 Ranchers is a community-based organization for Minority Producers with members from across the country whose primary mission is to unite production agriculture producers to increase their livelihood by strengthening their capacity to produce safe, clean and marketable products.

My experience with 100 Ranchers has introduced me to a number of individuals who have shared their personal stories about their journey into agriculture and many important conservation lessons that I have implemented into my own practices. A friend of mine, a 3rd generation rancher from North Carolina shares with me the importance of keeping forests as forests and passing on this responsibility to future generations. His story, like so many others, connects the dots between forests, sustainable management, and the economic and environmental benefits that come with being a responsible steward of the land.

His family's story starts in 1916 when his grandfather purchased 38 acres of land for \$864. As he describes, "This was a great feat for any man at the time, but particularly so for an African American." Initially, the focus was on clearing the land for agriculture - as the old saying goes, "Money doesn't grow on trees".

But today, the story is different. Organizations like the Sustainable Forestry & African American Land Retention Project (SFLR) where I serve on the Prairie View A&M University local chapter

board are working with small landowners to introduce them to sustainable forestry as a tool to increase family income and land value, with a broader goal of providing future generations with a better quality of life through pasture and forestland ownership and retention.

Silvopasture integrates trees with forage and livestock production. The goal of a Silvopasture system is to optimize production of three components: forage, livestock and ecosystems. A Silvopasture operation can enhance soil protection and increase long-term income with the simultaneous production of trees and grazing animals. For Silvopasture, trees are planted or thinned to provide sufficient light for good forage production. Grouping trees into rows or clusters concentrates their shade and root effects while providing open spaces for pasture production.

The Roque Family, a member of the 100 Ranchers and descendants of African slave received more than 660 acres of land through a land grant and established multiple farming operations. They currently operate 600 native pecan trees and feed over 500 calves on the pasture between the pecan trees. For decades, the Roque Family's pecan orchard has provided double source of income from the same parcel of land (pecans + beef), improved soil health, improves water quality, reduces erosion, and has had a greater carbon storage than traditional pasture systems.

On our family operation, we incorporated existing forest area to provide shade, timber and food for our livestock. The carbon captured in soil and trees more than makes up for the greenhouse gases that ruminants emit through belches and gas. The Silvopasture systems increased our production of meat and milk, in part because the shade from the trees reduces stress on livestock. The trees also provide a haven for wildlife habitat. The addition of trees has brought about an increase in the number of quail, deer and turkey that inhabit at the farm. The trees also act as buffers, preventing harmful nutrients from entering a nearby water sources. By implementing a Silvopasture system we are less likely to raise environmental concerns related to water quality, odors, dust, noise, disease problems and animal treatment.

Our family operation stands by a long-term stewardship plan of maintaining and enhancing the quality of our resources by using them in a way that allow them to regenerate for the future. We concentrate on creating a system that rely more on the cycling of nutrients to support our production agriculture with fewer potentially toxic interventions. The prioritization is caring for the soil, because we recognize that a healthy soil promotes healthy crops and livestock. The buildup our soil organic matter help ease the increase of atmospheric CO₂ and therefore climate change.

Our soil management system evaluates the nutritional and forage needs of our cattle, and shifts livestock to a different paddock on a regular sequence to allow recovery and growth of the pasture plants after grazing. This management system is called rotational grazing.

At the very beginning of our operation, we were introduced to rotational grazing when we started working with the local USDA Natural Resource Conservation Service office on developing a conservation plan. We learned how to improve efficiency of our pastures and about cross-fencing to support rotational grazing practices. Since implementing rotational grazing, we have improved the grass structure, the production of the grass, and the production and the performance of the cattle.

The NRCS also supported our family as we developed a conservation plan. A conservation plan is a document that lays out the steps for how an agricultural landowner will implement specific conservation practices on their land. This document is an important tool for understanding the soil, water, air, plant and animal resources on your property and the resources available to you to improve these conditions through the NRCS. Unfortunately, participation rates are low among small landowners. Minority landowners have even lower rates of participation, have fewer acres enrolled, are less likely to be able to afford cost-share requirements, and are less satisfied with programs. To close this gap, there needs to be a new approach to encouraging program participation by small landowners in general and by minority landowners in particular.

Peer-to-peer education about proper management is critical in working with ranchers to achieve conservation goals. This is why it is important to support organizations like the Texas Agriculture Land Trust, the National Grazing Lands Coalition, and the Sustainable Forestry & African American Land Retention Project that provide resources and technical support to producers on the ground.

Part of the solution to Climate Change

Grazing lands are one of America's greatest natural resources. They provide the nation and the world with a secure food supply, renewable energy, improved water quality and availability, productive plants that sequester carbon, robust wildlife habitat, and healthy soils, serve as the foundation for our country's farming and ranching families and contribute to food security for our nation and the world. Grazing lands contribute billions annually to the U.S. economy by supporting an estimated 60 million head of cattle. To sustain agricultural production, grazing lands must be conserved and properly managed to produce robust, resilient stands of grasses and forage. All of this starts below our feet with "soil health," the foundation of our operations.

The natural biological processes of grazing by roaming herds and periodic fire that created the natural grazing lands are no longer at work. A decade-long drought, and poor management practices contributed to the great Dust Bowl of the 1930s. This disaster brought about the birth of land conservation and the Conservation Act of 1935, which created the Soil Conservation Service, now the NRCS. Notwithstanding, in the 1950s the Green Revolution took hold, and great advancements were made in agricultural technology, including the development of commodity and forage crops that responded well to fertilizer, advanced farm machinery and other technological advancements that expedited crop production with less need for labor.

In the years that followed, the agricultural industry operated on cheap feed, cheap fertilizer and cheap fuel. Our industry and our research during that time focused on the chemical and physical characteristics of soils with little to no consideration of biological interactions within the soil. In recent years, however, prices for feed, fertilizer and fuel have increased to a point that has become unsustainable for many operations. Many producers have had to make a choice: continue doing what they have always done or working with nature to find a new way to farm and ranch. Born out of equal parts necessity and frustration, producers began to experiment with farming and ranching techniques that limited the use of inorganic fertilizer, fuel and feed.

They began to see that limiting or eliminating tillage reduced their fuel bill, using the ageless practice of "cover crops" to keep their fields covered provided numerous benefits to the soil (i.e., preventing erosion, increasing water holding capacity and increasing biodiversity), converting marginal soils to perennial pasture land to eliminate tillage and minimize erosion, and through

managed rotational grazing the pastoral lands improved in composition and production due to the recovery allowed between grazing events.

In essence, they built a foundation of principles that many producers follow today to manage healthy soils and restore deteriorated soils. These soil health management principles were set forth to achieve specific goals that are inherent to all soils. They are based on mimicking highly diverse, heterogeneous, native grazing land plant communities by harnessing the power of biologic interactions between plants, soil microbes, fungi and other of life in our soils. These principles build soil aggregation, which further builds soil structure.

These principles have proven the path forward for many innovative producers and substantiated that the conventional farming and ranching practices of the last six decades are not the only way to succeed.

Climate Smart Agriculture

Since producers are often the most vulnerable to the effects of climate change, working with them to build "climate resilience" is critically important for global food security. Working with producers to advance agricultural methods that boost their productivity and decreasing greenhouse gas emissions. These "climate-smart" techniques also increase resilience against droughts, torrential rains, and changing growing seasons. Climate-smart agriculture is not a new form of agriculture. It's a holistic system that identifies the risks posed by climate change and the best practices to address those challenges.

These strategies begin at our feet. Soil is among our greatest resource to combat climate change, serving as a bank to draw carbon deep within. Proper grazing management through livestock production can accelerate this.

Developing a proper grazing plan that provides an effective mechanism for implementing the soil health principles and the natural laws of grazing management is essential for sustainable grazing operations. A well-designed and well-managed grazing plan results in healthy soils and grasses, proper nutrition for grazing animals, and greater livestock production at a lower cost. This is achieved by managing stocking rate, livestock rotation, utilization rate and plant rest and recovery in unison.

Livestock producers must actively manage their stocking rate, or the number of animals on a given area of land over a certain period, by measuring available forage. It is important that the stocking rate match the available production and be used optimally. Improper stocking of grazing lands leads to over-grazing or under-grazing, neither of which provides favorable outcomes. Over-grazing for extended periods of time leads to the degradation of the grazing land and an overall reduction in pasture productivity, soil health and livestock production. Determining a proper stocking rate is essential for proper grazing management and requires balancing the animal numbers with available grass and forage production.

Livestock are selective grazers, and left unmanaged they tend to disproportionately graze more-productive plants over less-productive plants. Livestock also prefer the fresh regrowth over mature leaves. That is why is important for producers to consider where to graze, when to graze, how long to graze, and how long to allow a grazed area to rest and recover. The purpose of a grazing rotation is to manage the impact of grazing on the grazing land while maintaining or improving livestock production. A good grazing management practice is "take half and leave

half." Conceptually, this means graze the top half of the leaves and leave the rest to allow for rapid recovery and regrowth.

After being grazed, plants need an adequate recovery period. The more severe the grazing intensity, the longer it takes for the plants to fully recover. Soil moisture and seasonal temperatures also affect the rest and recovery period. In favorable moisture conditions, the recovery period is shorter than in low moisture conditions. As moisture becomes more limiting, longer rest and recovery periods are required. It is important to determine the recovery period based on the key species in the grazing land being managed. In a native grass pasture, the key species are those more productive, more palatable species that have a longer recovery period than the less desirable species. Introduced pastures usually have a shorter recovery period than the native prairies and have to be managed differently for optimum results. Well-managed rest and recovery periods increase pasture production and offer greater potential for livestock production.

To achieve these outcomes, producers should consider the following:

1. Have a plan

You need to know where you are to know where you're going. A sound management plan allows producers to be better poised to increase their food output, combat food insecurity, run more efficiently, save money, and reduce their climate impact. Reaching out to your local Natural Resource Conservation Office for assistance in creating a baseline assessment which will provide farm managers a clear picture of how the farm operates, and how it can run more efficiently while producing more food. Running more efficiently means reducing greenhouse gas emissions. Producing more food with land already in use means reduced need for fresh farmland, cleared from forests. Meanwhile, farms also keep close track of weather and farm data, which can help them predict patterns and plan more effectively.

2. Water conservation

Access to water resources is vital to any operation. Since agriculture consumes roughly 70 percent of the world's freshwater, water conservation is urgent and necessary in areas where water is becoming increasingly scarce. Climate-smart agriculture promotes a number of water conservation practices, such as planting a buffer of trees and bushes along streams and rivers to prevent erosion and contamination from crop runoff.

3. Save the soil!

Not only does fertile soil impart better flavor and higher nutritional value to food, soil is one of the biggest carbon sinks on the planet. Tending to the soil increases the amount of greenhouse gases sequestered, and leads to healthier plants with higher yields. Healthy soil holds more moisture, keeping plant roots hydrated in dry periods. Soil conservation methods such as contour planting or no-till farming reduce erosion, keeping the soil in place during heavy rains or floods—a major concern in certain parts of the United States. All of this equates to higher climate resilience for farms, and better soil for years down the road.

4. More trees

Farmers using climate-smart practices understand that trees do a lot on farms: they can act as windbreaks, reduce soil erosion; enrich soil; filter water that results in higher water quality; shade and forage for livestock; habitat for wildlife and wildlife corridors; and suck up and store greenhouse gasses—the list of benefits goes on and on. Approximately 80 percent of deforestation is caused by agricultural expansion, and that conversion from forest to cropland produces a significant amount greenhouse gas emissions. But farmers who utilize climate smart agriculture practices have lesser need to expand their farms—higher yields negate the need to clear forest, and keeps those greenhouse gases sequestered in the forest.

Conclusion

Money can in fact grow on trees. A collective action of governments, non-governmental organizations, businesses, families, and individuals worldwide need to collaborate to accelerate nature-based solutions and conserve, restore and grow trees. Working together and integrating systems like Silvopasture, we can support environmentally friendly and economically viable ranching operations. However, we must ensure that producers have access to the resources they need to be successful.

Because silvopasture takes advantage of underutilized ecosystems, it has the ability to create the most inclusive forest movement ever. Our efforts can support agricultural producers who have often been over looked, helping under-resourced family forest and landowners use sustainable forestry to increase family wealth and to build a legacy. But this movement does more. It supports conservation, and our quest to combat some of the greatest challenges facing our planet. These Silvopastures deliver benefits shared by all, such as purifying our air and water, conserving wildlife habitat, producing sustainable wood products, and sequestering carbon to mitigate climate change. Forests are an essential part of the solution to tackle climate change and biodiversity collapse, as well as important for jobs and sustainable livelihoods.

It's also important for us to remember our work is not complete. For much of the past sixty years, the agriculture industry admittedly focused on treating climate symptoms with practices and inputs rather than addressing the problem with science-based, holistic principles. Innovative producers today understand that we do not solve ecological problems by implementing old practices, rather, we implement best practices that we know work based on science, and explore new ways of working. We can and are addressing ecological degradation by following principles that rebuild ecological processes and habitat from the ground up rather than focusing on specific singular species or management practices.

It all begins with maintaining a solid foundation with healthy soil as the cornerstone to any agricultural enterprise.

We need investment in capital to engage in best practices, education, access to markets, and partnerships to ensure that we all benefit from the opportunities for our industry and specifically minority producers to address climate change, ensure food security, and diversify the network of producers.