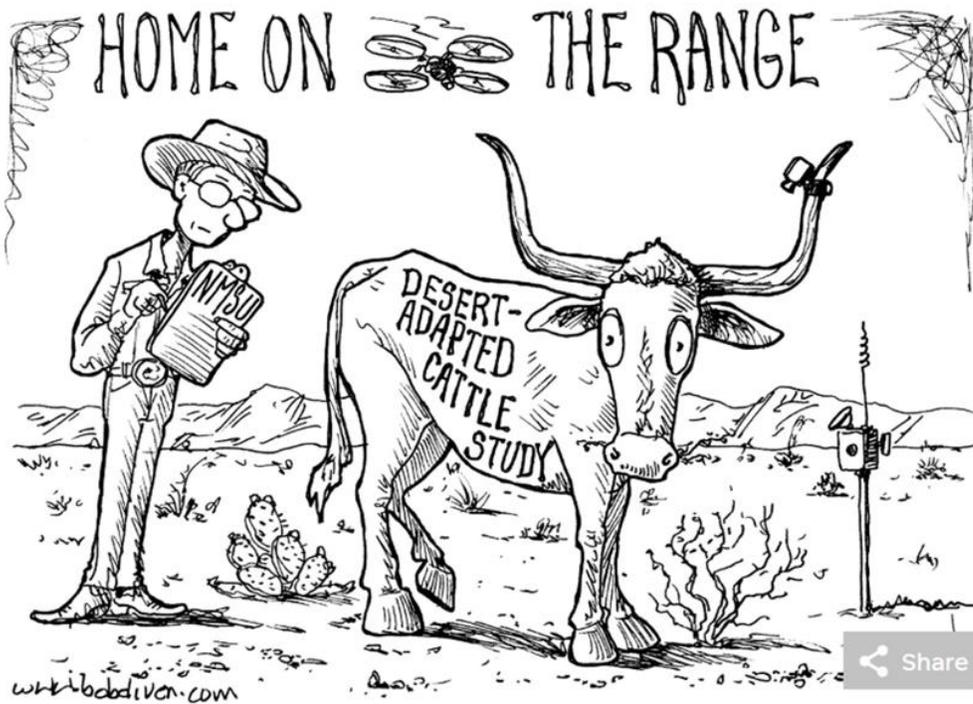




Sustainable Southwest Beef

knowledge and tools for ranch and
rangeland resilience

Sustainable Southwest Beef CAP Newsletter February 2020



Editorial cartoon published Dec. 1, 2019

BOB DIVEN

A Message From The Leadership

Hello all:

Welcome to the first newsletter from the Sustainable Southwest Beef CAP project. We plan to distribute quarterly newsletters to the team and interested stakeholders in order to keep everyone informed about our progress and accomplishments.

This is an exciting 5-year project that brings together researchers and educators from New Mexico State University, Texas A&M University, USDA Agricultural Research Service, Scotland's Rural College as well as ranchers, The Nature Conservancy, and STEM education non-profit organizations to develop and deliver new technologies to enhance sustainability of beef production in this region as well as education for the next generation of researchers, educators and consumers. Since the project was started on August 1, 2019, we have established subcontracts with all of the research, extension, and education partners.

We held our first face-to-face team meeting in Las Cruces in conjunction with the Jornada Symposium on October 23-24, where many of us met for the first time. Team leaders had a chance to share their plans and status with the group as a whole while also having intensive planning time within groups to firm up year-one plans. Some of our students and post-doctoral researchers had already joined the team and were able to participate, while many others will be brought on board throughout the project.

The Extension team came out of the Las Cruces meeting with an ambitious plan to have the first engagement of ranchers and feedlot finishers at the Texas-New Mexico Southwest Beef Symposium in Amarillo on January 29-30. In preparation for that symposium, they finalized three fact-sheets that

describe key aspects of our project that are now available for distribution to stakeholders.

A particularly exciting hire was Melissa Spence who joined the team as our Coordinator on January 2. Melissa came to us from the Athletic Training Program, College of Education at NMSU.

Work is underway across the project – some of which is described below and some of which will be highlighted in upcoming newsletters. Jean Steiner and Melissa Spence will co-edit the newsletters, so please keep them informed about new team members who come onboard, events that are organized, team updates, publications, or other information that can be shared.

Thanks to all for the hard work underway and I look forward to great things to come from our collaboration.

In September, the Southwest Beef CAP steering committee launched a survey to gather project team members' thoughts and perspectives on the purpose and values of the project. The goal of the survey was to provide information to assist in creating Southwest Beef CAP vision and mission statements. Vision and mission statements can be used to communicate the goals and purpose of a project and assist with strategic planning. The web-based survey was developed collaboratively with the Office of Educational Innovation and Evaluation (OEIE) and sent to 31 project team members. Overall, 19 people responded to the survey for a 61.3% response rate. OEIE analyzed the survey data and presented themes of the results during the Southwest Beef CAP Kick-Off Meeting on October 24, 2019 in Las Cruces, New Mexico. Survey data was also used by the OEIE evaluation team, at the request of the steering committee, to create the word cloud below. Word clouds are a way to visualize or display text data in terms of word usage and frequency. In this word cloud, the size of the word



In January the Sustainable Southwest Beef CAP team had its kickoff outreach event at the Southwest Beef Symposium. The symposium, held in cooperation with New Mexico State University and Texas A&M University, was attended by approximately 125 ranchers, exhibitors, and speakers. Symposium attendees came from a number of different states, some from as far as California, Illinois, and Missouri. Among those at the symposium were ranchers, feedlot operators, and a variety of others connected to the beef cattle industry. During the Sustainable Southwest Beef project sponsored dinner, symposium attendees heard talks on heritage genetics, precision ranching and alternative supply chain options. Producers completed a baseline survey that will guide the project over the next five years. Project director, Dr. Andres Cibils of NMSU, and producer Cindy Tolle of Evergreen Ranching and Livestock LLC introduced the project. Other

team members -- Dr. Emile Elias, Dr. Jean Steiner, Dr. Craig Gifford, Dr. Brent Auvermann, Skye Aney, Keegan Taylor, Dr. Kristy Ehlers and Ann Marshall -- were on hand throughout to answer questions. Our exhibit table had quite a few visitors who asked questions and showed interest in the project. Hats off to Craig from the Extension team who helped to plan and organize the symposium – no small task! A big thank you also to everyone else who helped make this event a success. Whether it was preparing and delivering talks, manning the exhibit table, or working behind the scenes, it took a real team effort to make this event successful, so congratulations and well done team!





Jornada Symposium - October 2019

The 2019 Jornada Symposium was held at the Jornada Experimental Range on October 23, 2019. Over 100 scientists, land managers, producers, and students attended. Following the presentations, attendees from various disciplines, generations, and countries gathered to reflect on the day. They explored the murky, but critical, topic of sustainability: what it is, how it

should look into the future, and where the Jornada can improve achieving it. Sustainability, or meeting societal needs without compromising ecological or economic integrity, is vital to ensuring harmony among people and the environment now and for generations to come. Attendees noted how change – whether on the landscape, in climate, or among people – can challenge the prospect of sustainability, requiring solution-based thinking to adapt successfully to an increasingly variable world. They assessed the trade-offs associated with management solutions presented throughout the day, such as the challenges of creating a market for Criollo cattle breeds, identifying incentives for operators to make the switch from other breeds, and the feasibility of maintaining livestock-based lifestyles. While no solution is ironclad, attendees agreed that sustainability concerns should guide innovations, technologies, and collaborations at the Jornada. As we look forward, attendees urged us to accelerate information sharing and idea implementation to ensure that the public is ready for the future's challenges.



Laura Burkett (Ecologist) Long-term vegetation change and restoration in the Chihuahuan Desert.



Matt McIntosh (NMSU Graduate Student) and Alfredo Gonzales (Animal Scientist) present Precision Ranching Hardware. LoRa GPS trackers for cattle, LoRa drinker level sensor, LoRa antenna and gateway.

Asombro Institute for Science Education

New Classroom Lesson Teaches 3rd Graders about Raramuri Criollo

“Can we play the game again, and can I be a criollo next time?” the third grader eagerly asked the Asombro Institute for Science Education educator. This student and his classmates had just participated in an outdoor game that models foraging behavior of Raramuri criollo and Angus cows foraging in an arid environment. The seven- and eight-year-olds quickly realized what scientists and ranchers have learned: that Raramuri criollos’ ability to travel farther from water sources gives them an advantage, especially when

resources are scarce.

This is one of the three activities students participate in during the one-hour lesson developed by Asombro as part of the Southwest Beef CAP project. Students also learn about everyday products that come from cows and then “time travel” to different places and times to trace the history of the criollo from Spain to New Mexico. The entire lesson is aligned with a 3rd grade standard from the Next Generation Science Standards: “use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.”

So far, more than seven classes of 3rd graders (126 students) have participated in the new lesson, which has been met by rave reviews from both students and teachers. One teacher wrote, “Excellent program. Love all the interaction. Super engaging!”

Our education team is now putting the finishing touches on a field trip activity that will introduce students to criollo at the Jornada Experimental Range and then engage them in activities to learn about trait differences. We are excited to develop a total of ten lessons that teach K-12 students about the research methods and discoveries of the Southwest Beef CAP project.



Time and Place	Average Rainfall	Summer Temperature	Is it Arid or Semi-Arid?
700 Years Ago Andalusia, Spain			Arid
500 Years Ago Canary Islands			Semi-Arid
500 Years Ago Valley of Mexico			Arid
400 Years Ago Cooper Canyon, Mexico			Semi-Arid
20 Years Ago Jornada del Muerto, New Mexico			Arid
10 Years Ago Faywood, New Mexico			Semi-Arid

700 years ago

500 ye

500 ye

400 yea

20 y

10 years ago

Kudos

Congratulations to Emile Elias, our Extension team co-leader, who was selected as the USDA Southwest Climate Hub Director, and to Sheri Spiegel, Co-Project Director, who started a new position with the USDA-ARS Rangeland Management Research Unit in Las Cruces.

Congratulations to Andres Cibils, our Project Director, who received the New Mexico Section of the Society of Range Management 2019 President's Award for 'Outstanding Teacher, Mentor, and Scientist'.

Reaching Out

Malpai Bordelands Group Science Conference. Rodeo, NM. January 9, 2020. Presentations by Shelemia Nyamuryekung'e on *Criollo cattle: Landscape use, heat tolerance, mothering style & range finishing* and Cindy Tolle on *Sustainable Southwest Beef Project using the Integrated Farm System Model*.

National Agricultural Research, Extension, Education and Economics Advisory Board Meeting. Jornada Experimental Range. Las Cruces, NM. January 29, 2020. Andres Cibils presented an overview of the *Sustainable Southwest Beef CAP Project*.

New Mexico Section of the Society for Range Management Winter Meeting. Las Cruces, NM. January 31, 2020. Shelemia Nyamuryekung'e presented *Why Do Criollo and British Beef Breeds Use Chihuahuan Desert Landscapes Differently?* and Matthew McIntosh *Novel Strategies to Increase Sustainability of Beef Production Systems in the Western United States*.

Publications

Three fact sheets were developed by the Extension Team to describe our project to stakeholders. Links to the pdf files are here:

[Raramuri Criollo](#)

[Precision Ranching](#)

[Supply Chain Options](#)

Peer-reviewed:

1. Nyamuryekung'e, S., A.F. Cibils, R.E. Estell, D. VanLeeuwen, C. Steele, O. Roacho Estrada, F. Rodriguez Almeida, A. Gonzalez, S. Spiegel. 2020. *Do young calves influence movement patterns of nursing Raramuri Criollo cows on rangeland?* Rangeland Ecology and Management 73:84-92.

Proceedings paper:

1. A. Cibils, R. Estell, A. Gonzalez, S. Spiegel, et al. 2019. *El rol del bovino Criollo Raramuri como herramienta de adaptación al cambio climático en los desiertos del SO de los EE.UU.* XII Simposio Internacional de Recursos Genéticos para Las Américas y el Caribe. December 8-11, Rocha, Uruguay, p. 22.

Presentations:

1. Cibils, A. *Sustainable Southwest Beef Project*. Southwest Beef Symposium. Amarillo, Texas. January 22-23, 2020.
2. Tolle, C. *The Sustainable Southwest Beef CAP and producers: How we can help each other*. Amarillo, Texas. January 22-23, 2020.

3. Cibils A. et al. *Foraging behavior of Criollo vs. beef cattle breeds on rangeland*. Southwest Beef Symposium. Amarillo, Texas. January 22-23, 2020.

Upcoming Events

Tony Waterhouse, SRUC (Scotland's Rural College), will present a seminar, "*What might the future be for precision beef farming technologies?*", New Mexico State University, Wooton Room 105, **February 25, 2020, at 12:00 pm**. Meeting will be accessible through Zoom.

Join Zoom Meeting

<https://zoom.us/j/418882804?pwd=V3I5UmtFWjJXNVcwVDVmaklXZi9HQ T09>

Meeting ID: 418 882 804

Password: 420488

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