

LAND CONSERVATION

Heritage Genetics to Increase Cattle Resilience during Drought



RANCHO CORTA MADERA, INC.



Sustainable Southwest Beef
Knowledge and tools for ranch and rangeland resilience



THE JORNADA
Rangeland Research Programs

The majority of cattle being raised for beef in the Southwest United States are British breeds, such as Black Angus and Hereford which have typically not been genetically bred to endure dry climatic conditions. As drought conditions persist and worsen across southern California, ranchers are experimenting with other cattle biotypes to create more drought-resistant herds. Working with the Jornada Rangeland Research Program, the Corta Madera Ranch in Pine Valley, California introduced Raramuri Criollo cattle in 2016 to diversify their Angus cattle herd in pursuit of a cattle biotype more adapted to a dry environment.



Project Location



BUREAU OF RECLAMATION



Livestock Foraging at the Corta Madera Ranch

KEY ISSUES ADDRESSED

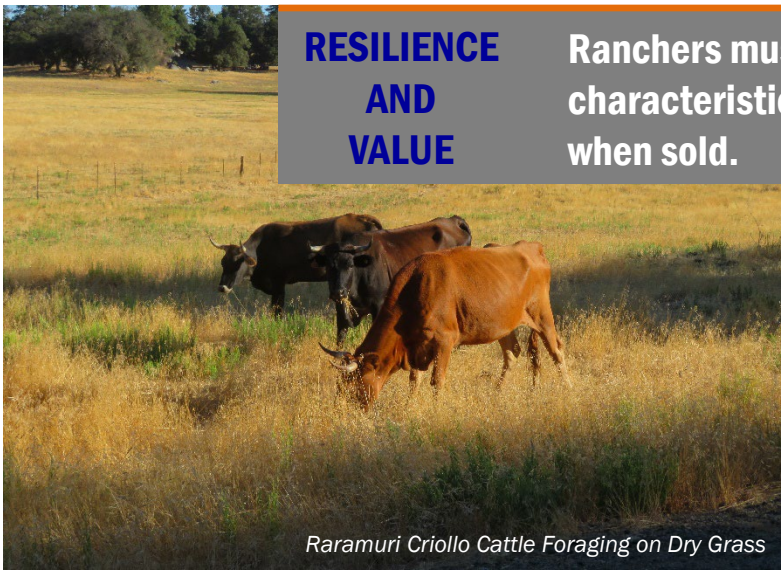
Drought conditions in the Southwest impose challenges for ranchers, as cattle require sustenance primarily from the land and then secondarily from supplemental nourishment like salt blocks and minerals purchased by the ranch. When droughts occur, there is less forage available on the rangeland and more pressure put on remaining grasses as cattle comb the landscape. Implementing drought adaptation techniques to combat these issues presents ranchers with complex challenges. One main challenge is finding breeds or combinations of breeds that exhibit drought-resistant characteristics and also produce calves with the size and color to satisfy American market standards.

PROJECT GOALS

- Develop a breeding program to produce calves from Raramuri Criollo cattle with desirable attributes similar to Black Angus calves
- Develop a cattle production system that has the potential to withstand drought conditions yet produce competitively marketable calves
- Practice sustainable ranching that includes regrowth of native vegetation

RESILIENCE AND VALUE

Ranchers must examine not only the drought-resistant characteristics of cattle, but also their perceived value when sold.



Raramuri Criollo Cattle Foraging on Dry Grass

PROJECT HIGHLIGHTS

Research Partnerships: Collaboration with partners like the Jornada Rangeland Research Program through the Sustainable Southwest Beef Project contributes to a growing understanding of the varying capabilities of different cattle breeds and biotypes.

Environmental Advantages: While tending to the mixed herd on the rangeland of Corta Madera Ranch, ranchers have observed increasing bunch grasses in the chaparral woodlands and high desert. Raramuri Criollo cattle also exert less pressure on water sources as they spread out across the land.

Reduced Supplemental Nourishment: Observations from the Corta Madera Ranch suggest less supplementation was required for the Raramuri Criollo cattle in comparison to their Angus counterparts because of their smaller build and adaptation to desert landscapes. Raramuri Criollo cattle will move into the edges of the landscape. Some salt blocks were used to provide necessary nutrients for the Raramuri Criollo cattle, but there was no longer a need to distribute mineral tubs.

Collaborators

- Corta Madera Ranch
- Jornada Rangeland Research Program
- Sustainable Southwest Beef Project

Funding Partners

- Corta Madera Ranch
- National Institute of Food and Agriculture

Lead Author: Emily Bickle, Drought Learning Network, October 2020.

Photos courtesy of Rob and Sharon Paulin. For more information on CCAST, contact Genevieve Johnson (gjohnson@usbr.gov) or Matt Grabau (matthew_grabau@fws.gov).

Visit CCAST:



LESSONS LEARNED

The Corta Madera Ranch undertook several breeding attempts to produce calves with the most desired characteristics for drought resistance and marketability. The successful cross breeding resulted in Raramuri Criollo cows bred with Angus bulls. Over three years, this pairing of Raramuri cows with Angus bulls produced a calf that exhibited black hair like Angus calves 90 percent of the time and exhibited the desired Raramuri Criollo characteristics—more dispersed foraging reducing impact to remaining water sources and local flora.

Raramuri Criollo cattle rotate themselves on the land without needing significant oversight. Moving across the land into the oak and pine-covered regions, Raramuri Criollo cattle move farther across the land on average than the Angus cattle, reducing their impact on a given piece of land.

Selling only a small portion of the herd to purchase Raramuri Criollo cattle helped this ranch evaluate if this biotype would be successful on their land and produce marketable calves.

NEXT STEPS

- Continue to experiment with alternative breeds and herd ratios to ensure ranchers ongoing capability to adapt to drought
- Monitor the impact from grazing to native vegetation by the herds through the difference in foraging patterns such as distance traveled and area covered by the various cattle biotypes
- Learn from the research results of the Sustainable Southwest Beef Project

For more information on this project, contact Rob Paulin:

cortamadera@wildblue.net



Finding Forage in the Snow