

Agricultural Experiment Station

Chihuahuan Desert Rangeland Research Center

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The Chihuahuan Desert Rangeland Research Center (CDRRC) is a cardinal research station within the New Mexico Agricultural Experiment Station system. The CDRRC (or more colloquially the “College Ranch”) serves as a model of sustainable ranch and rangeland research, teaching, and extension, composed of a robust working group of scientific collaborators whose goals are to identify sustainable management protocols for managing New Mexico rangelands.

VISION

Combining knowledge gained from the past with tools of the future to improve ranch management, rangeland productivity, and ecosystem health.

MISSION

The Chihuahuan Desert Rangeland Research Center (CDRRC) conducts innovative research in the management of livestock, wildlife and rangelands within arid landscapes that promotes sustainability and resiliency of ecosystem health for the benefit all New Mexicans.

VALUE ADDED TO NEW MEXICO

- 110 documented archaeological sites located throughout the ranch
- Virtual fencing research site
- Rangeland environmental protection

ONGOING RESEARCH

There are vast amounts of land in the desert southwest; however, with respect to accessibility, land used for agricultural and renewable energy production can compete for the same areas. As the need for electrical energy increases, the ability to provide renewable energy from photovoltaic arrays while maintaining or improving agricultural production from the same land is of growing interest. Agrivoltaics, the co-use of agricultural lands for food/photovoltaic energy production is a novel idea that provides for an exciting field of research. Faculty from New Mexico State University (NMSU) and the USDA ARS Jornada Experimental Range Management Unit/ Cotton Ginning Research Laboratory (USDA ARS) are engaging in research to answer questions for a diverse group of stakeholders regarding the co-use of agricultural land for food and energy production.

Recently a group of researchers from NMSU and the USDA/ ARS met at the NMSU Chihuahuan Desert Rangeland Research Center (CDRRC) to discuss the implementation of the rangeland Agrivoltaics research site. The research group discussed how adjustments in the design of traditional photovoltaic installations on rangelands could limit disturbance from installation, minimize interaction with livestock and wildlife, create micro-climates to increase soil moisture/plant growth and provide protection from wind to decrease soil erosion, and improve soil health.



The College of Agricultural, Consumer, and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research and Extension programs.

ACES Pillars for Economic and Community Development

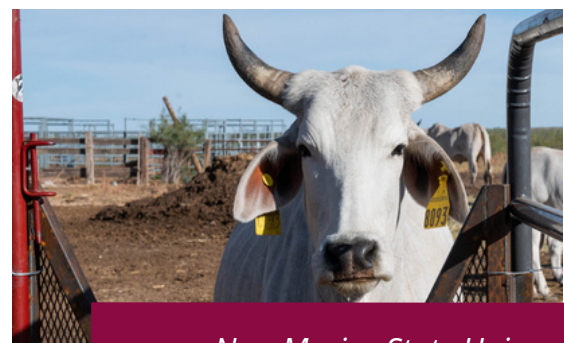


RECENT IMPACTS

- CDRRC provides essential areas for the development and testing of precision ranching technology. Because of this NMSU has installations being used to monitor livestock and water on 74,000 acres of public grazing land on two separate ranches through the cooperation of the BLM and Malpais Borderlands Group. There are additional plans to expand to 5 more ranches in spring 2025 with further collaboration from the Malpais Borderlands Group and NRCS.
- Chihuahuan Desert Rangeland Research Center (CDRRC) Oryx (Oryx Gazelle Gazelle) Conservation Harvest Program is to demonstrate sustainable integrated management of Oryx, beef cattle, and other rangeland resources; facilitate ongoing research programs; and maintain a viable population that contributes to the ecological, cultural, and economic operations of the CDRRC. Oryx will be managed using current science-based knowledge in a manner consistent with providing quality research, teaching, and demonstration opportunities for the faculty, staff, and students of New Mexico State University. The results of these efforts will facilitate technical assistance and extension programs designed to aid New Mexico citizens in their ability to manage natural resources while improving their quality of life.

COMMUNITY OUTREACH

The Center is focusing on providing connectivity to ranchers to more effectively implement sensor-driven monitoring tools and solutions. NM ranchers have the potential to make more efficient management decisions to sustain animal health and forage resources in extensive, increasingly arid rangelands. Real-time analysis of shifts in animal activity and grazing patterns associated with declining forages, faulty water supply, parturition, health, or predation can be used to deploy warning systems that would eventually allow ranchers to intervene on daily to weekly time scales.



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