



Chihuahuan Desert Rangeland Research Center

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Mission Statement

New Mexico State University operates the Chihuahuan Desert Rangeland Research Center to protect and ensure the availability of its resources for teaching, research, and extension endeavors that benefit the citizens of New Mexico, as originally declared by Congress in 1927. The Chihuahuan Desert Rangeland Research Center (CDRRC) conducts educational, demonstrative, and experimental development with livestock, grazing methods, and range forage, including investigation of the sustainability and management of natural resources and environmental ecosystems.

UNDERSTANDING THE NEED FOR RESEARCH

Several ranchers owned portions of the land now constituting the CDRRC. In 1925 Max Vanderstucken, who then owned the land, was facing foreclosure and spoke to J.L. Lantow, head of the Animal Husbandry department at New Mexico A&M. He recommended the College buy his ranch; in February 1926 the College acquired his land, with grazing rights on adjoining public lands. In 1927, Congress granted public lands to the College for research purposes. The last parcel was acquired in 1984 through a "land swap" between the federal government and the State of New Mexico.

OUTREACH ACTIVITIES

Teachers, researchers, and students from across campus benefit from the center. The NMSU Department of Animal and Ranges Sciences oversees the facility with help from a steering committee of scientists. The center is part of the Jornada Basin Long-Term Ecological Research project, which is part of a National Science Foundation Ecology Network. Current research efforts include:

- Evaluating continuous and seasonal grazing strategies at different intensities to determine effects on livestock performance as well as plant cover and composition.
- Evaluating the performance of breeds of cattle concerning the quality and quantity of forage in a hot, arid environment.
- Determining the influence of range conditions on wildlife populations.
- Autecology of plant species.
- Assessing competition and other interactions between common plant species.
- Ascertaining the role of small herbivores in a desert environment.

Due to its location and isolation, the CDRRC also is used by researchers from NMSU's Physical Science Laboratory (PSL), the U.S. Department of Defense, and private corporations for testing drones, telemetry, and radio interference.

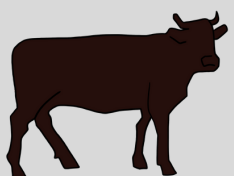
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The center is home to a vast population of wildlife.



In addition to research conducted by the Department of Animal and Range Sciences, faculty and graduate students from other NMSU departments are conducting research at the Center.



ACES Pillars for Economic and Community Development

- Food and Fiber Production and Marketing
- Water Use and Conservation
- Family Development and Health of New Mexicans
- Environmental Stewardship
- Foundational Education and Training

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.

Recent Impacts

- Southwestern US rangelands are multi-use lands with strong ecological, economic, and social importance. In response to the effects of drought, land-use change, and other disturbances, restoration ecology is ranked among the most important fields in the coming century. Through local, national, and international collaborations research at the center has undergone numerous multidisciplinary efforts to assess and identify best plant and soil restoration practices to guide rangeland restoration actions.
- While the need for effective restoration is realized, in arid and semi-arid systems there are multiple ecological constraints limiting success. Our research examines these different constraints and identifies a way to overcome their limitations to improve rangeland restoration success. Communicating our findings through peer-reviewed scientific publications and direct presentations and conversations with stakeholders, we assess creative ecological restoration actions.
- The effects of dietary fat and roughage level on intake, growth performance, and immune function of newly received feedlot calves is being evaluated. Calves were started at the Chihuahuan Desert Rangeland Research Center near Las Cruces and transported to the Clayton Livestock Research Center. Supplemental fat increased the growth performance of newly received feedlot calves, however it also increased the number of calves that required a second treatment for bovine respiratory disease (BRD).

Ongoing Research

- Other research addresses the fundamental question about whether innate differences in livestock foraging behavior are of any consequence to the structure and functioning of desert plant communities. The objective of this study is to determine whether key Chihuahuan Desert soil and vegetation parameters respond differently to conservative stocking rates of Raramuri Criollo vs. Brangus cattle.
- Feedlot receiving programs combining nutritional and management practices urgently need to increase animal health to ensure a safe and adequate food supply. Beef cattle nutritionists should be able to adjust diet formulation to optimize immune response that will increase efficiency in the US feedlot beef industry. This project will generate results that have clear application to the improvement of animal health and growth performance. Researchers expect to demonstrate short-term opportunities for decreasing the incidence of BRD and reducing the economic risks associated with this disease.
- The Southwest Beef CAP is a collaboration of researchers, extension specialists, and K-12 educators who are evaluating the sustainability outcomes of three strategies hypothesized to improve sustainability of beef production originating on ranches of the US Southwest: heritage cattle genetics, precision ranching, and alternative finishing options. The CDRRC is one of three partnering ranches producing study cattle on rangeland to be finished on grain in the Southern Plains, and piloting the precision ranching system.



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