Chihuahuan Desert Rangeland Research Center

The Chihuahuan Desert Rangeland Research Center (CDRRC) is a 64,000-acre open-air research lab utilized by students and faculty from:

- New Mexico State University (NMSU)
- United States Department of Agriculture, Agriculture Research Service, Jornada Experimental Range (USDA/ARS/JER)
- National Science Foundation/Long Term Ecological Research Network (LTER)
- USDA ARS Long Term Agroecosystem Network (LTAR)
- Collaborative research with many other universities

Established in 1927, the CDRRC is entering into 100 years of a continual commitment to conduct research that provides information to a variety of stakeholders regarding ranch and rangeland ecosystem management, teaching and Extension.

SCAN THE QR CODE TO VISIT OUR WEBSITE
chihuahuansc.nmsu.edu



Research Focus

CDRRC research is focused on providing a full continuum of objective science aimed at providing information for stakeholders that identifies management protocols and answers questions regarding Chihuahuan Desert Rangeland ecosystems.

One area of research is Agrivoltaics, the co-use of land for agriculture and photovoltaic energy production. A photovoltaic array installed at the CDRRC will provide researchers with the opportunity to study the overall effects from photovoltaic installations on arid rangeland soils, plants and wildlife.

Other projects are studying the effects of woody encroachment on bats, songbirds and migratory birds within the Chihuahuan desert. Further research is focused on determining the potential impact of Oryx herbivory, and combined oryx-livestock herbivory on rangeland health.

Additional research projects are investigating the use of mechanical restoration techniques such as keyline plowing and soil imprinting in combination with compost application and seeding to restore degraded rangelands.

MISSION

The Chihuahuan Desert Rangeland Research Center 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 of all New Mexicans.

VISION

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

VALUE ADDED TO NEW MEXICO

- Agrivoltaics research site
- Rangeland restoration research site
- Chihuahuan Desert wildlife research site

Recent Impacts

The need for effective restoration techniques for arid rangelands in the desert southwest is a growing area of interest. In an effort to determine applicable and effective restoration techniques NMSU students and staff, in collaboration with scientists from the USDA/JER, have implemented the "Summerford Sands Restoration Project." The Summerford Sands project and the techniques used for restoration have gained the attention from various scientific groups. Over the past year, demonstrations explaining the Summerford Sands research and the potential impact from the restoration techniques have been provided to numerous groups from throughout the United States that have visited the site. This has provided great opportunity for the visitors to learn not only about Summerford Sands but all the research that occurs at the CDRRC.

Bats are among the most diverse mammal groups in arid rangelands and play an important role in controlling insect populations. However, little is known about how woody plant encroachment affects bats or whether bats influence the transition from grassland to shrubland by regulating shrub-eating insects. To address this gap, the NMSU Laverty Lab monitored bat activity and insect communities across a grassland–shrubland gradient at the CDRRC. Since September 2024, echolocation calls have been recorded at seven locations using acoustic detectors, while bat diets are being compared with insect prey collected along the gradient. A bat and bird exclusion experiment is also testing how predation affects woody plant defoliation by leaf-eating insects. This research aims to inform strategies for protecting healthy grasslands and their wildlife communities.

COMMUNITY ENGAGEMENT

The CDRRC is visited by numerous groups throughout the year, allowing various people from the U.S. and abroad to learn about research. Over the past year, groups such as the Founders of Regenerative Agriculture and International Association of Vegetation Sciences have visited the CDRRC to learn about rangeland restoration research and all the research that occurs at the center and throughout the Jornada Basin. The New Mexico FFA Association utilizes the CDRRC annually to conduct two career development competitions during their state competition. Furthermore, the center hosts field days allowing researchers to disseminate research findings to the public and receive feedback of their concerns and ideas regarding current and future research.



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NMSU and the U.S. Department of Agriculture cooperating.