

# Creosotebush, Cattle and the Chihuahuan Desert

BY BARBARA LABARBARA

In southern New Mexico ranchers talk in terms of "one cow country." It takes one square mile of pasture for one cow year round. The Chihuahuan Desert is sparse rangeland - a place where jackrabbits are serious competitors for forages.

New Mexico State University (NMSU) conducts grazing management research as well as animal research on its 64,000-acre ranch in the center of the desert near Las Cruces. Much of the research is directed toward retaining edible grasses while taming prolific mesquite and creosotebush.

In February 1926 the college acquired Max Vanderstucken's land with grazing rights on adjoining public lands. In 1927 Congress granted the 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.

The Bureau of Land Management (BLM) manages the minerals, oil and gas on the ranch but considers NMSU a private land owner. If the University ceases using

the ranch as a research station, it will revert to BLM.

The University manages an average of 300 animal units. The ranch is not fully stocked because of the always looming threat of drought. They keep pasture in reserve for animals involved in research programs and for forage research.

During the 90-day breeding season, May to August, cattle are put on a series of smaller pastures ranging from 1,200 to 2,000 acres. Those pastures will hold 25 to 30 animals for 90 days.

Ranch soils range from sandy loam to clay overlying calich hardpan. Annual rainfall is 8.3 inches. Spring is the driest, windiest time of year in the desert. It's common to have no rain for an entire month during that time. Rains normally start in July. Winters vary from very wet to very dry. It's warm enough during the winter months for forages to grow and produce feed if there are fall rains.

"We rotate pastures throughout the year based on the season and availability of

water and size of pasture," says Reldon Beck, professor in NMSU's department of animal and range science. "A unique quality in this country is the variety of plants. Something is green all of the time even though it may not be palatable."

Natural forages include black grama grasses and mesa drop seed grass. Tobosa grass and mesquite grass are important and grow in *playa* (Spanish word for beach) areas. Tobosa grass is best when it's green because is not palatable when dry. There are edible flowering plants dependent on rainfall that take pressure off the grasses. They have become a good management tool.

In the early 1930s the Soil Conservation Service in cooperation with New Mexico State University conducted re-seeding trials. Laman's love grass from South Africa was the only grass that met with success. It's now crowding out better grasses.

Pasture grasses compete with ever-increasing numbers of creosotebush and mesquite bushes. Creosotebush is not



Spring is the driest, windiest time of the year in southern New Mexico, so cattle have to survive on sparse range grasses.

palatable for livestock. Mesquite pods are palatable but the seed is not digestible. It passes through animals and is distributed through their manure, choking out native grasses on the rangeland. Goats are being used in Texas to keep the mesquite population under control. That research has not been successful in New Mexico.

Beck has done extensive research in brush control. He says it can be eliminated but it's not cost-effective. Herbicides will work if followed with good management. In the 1950s, 200 acres of mesquite with a population of 100 plants per acre were sprayed. There was a 98 percent kill and today, 40 years later, there is no mesquite on the acreage.

Conservative grazing has contributed to excellent forage in the area. Planting of new forages is expensive and filled with risk because of wind erosion and unpredictable rainfall.

"We have been fortunate to conduct studies during above average rainfall as well as during drought years," says Beck.

Research has been done using large pastures, 11 to 13 thousand acres, for low intensive grazing. High intensive grazing in smaller pastures has led to more expeditious study results.

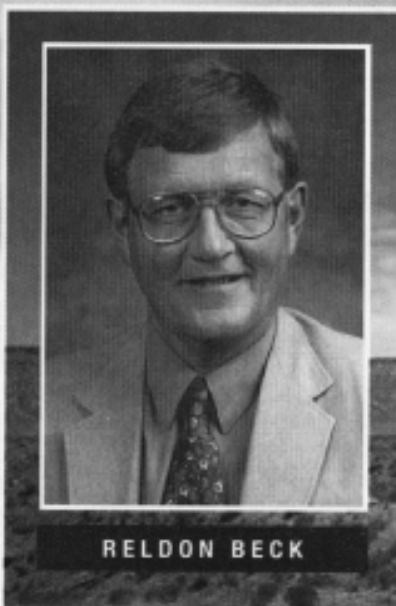
An interesting NMSU graduate students' study found cows to be good water competitors. In large pastures where cows had to travel miles for a drink many would go two or three days without water. Others would go to water once a day. In smaller pastures the cows tended to drink twice a day.

Work is being done with ground squirrels, kangaroo rats, and other rodents that consume large numbers of insects or parasites that have a negative effect on cattle.

Other non-traditional research being conducted includes animals' botanical diets and nutritive diets. Work is being done on creosotebush genetics to make it more palatable. Studies are being conducted on the microorganisms in the rumen to see if they can be changed to break down forage such as mesquite. Brush muley grass is being used to crowd out small scrubs.

At USDA's Jornada Experimental Range, a neighbor to the University's ranch, range scientists are trying to change the taste of the scrubs. They are also setting cans of grass seed in auras so when there is enough water, the seed will carry down stream. They are also placing grass seed capsules inside animals for distribution throughout the range in the manure.

Current research efforts include determining the influence of range conditions on wildlife populations.



### Expand your knowledge of rangelands

#### *Where do rangelands typically occur?*

Rangelands are largely the result of limited precipitation. They are most often found in areas where the average annual precipitation is less than 30 inches. Vast expanses of rangeland in the Western United States receive 15 inches or less.

Rangeland is covered with grasses, forbes (wildflowers), shrubs and scattered trees. Although it's not suitable for farming or forestry, it has many valuable natural resources and a fragile ecosystem.

#### *How much of the United States is rangeland?*

A little more than one-half of all U.S. lands are classified as rangelands (1.2 billion acres). Likewise, approximately 60 percent of the entire landmass of the world is classified as rangeland.

#### *Which state has the greatest amount of rangeland?*

1. Alaska — 233 million acres  
2. Texas — 92 million acres  
East of the Mississippi River, Florida ranks first with 2 million acres.

#### *Which state has the largest percentage of its lands classified as rangelands?*

1. Nevada — 80 percent  
East of the Mississippi River, Maine ranks first with 7 percent.

Sources: USDA Agricultural Research Service and New Mexico State University.

Cohabiting with the cattle herds in this region are mule deer, pronghorn antelope, gensbok, mountain lion, bobcat, coyote, badger and fox. There are many rabbits and rodents. Roadrunners, hawks, and golden eagles along with numerous lizard and snake species also inhabit these lands.

The South African oryx was introduced to the White Sands Missile Range years ago and now are becoming a problem for the ranch. They are hardy, require little drinking water, and heavily graze the land. Being a protected species, they cannot be hunted.

Beck has a large database consisting of 27 years of study on the University's rangeland. The goal is to learn more about maintaining current grasses. Managing new brushes that continue to come over the ranch in waves is essential.

"It takes good management to operate a cattle ranch in this area. It's important to maintain balance," says Beck. "Grazing management means putting the right number of cattle in at the right time. Our goal is to improve plant production as well as livestock production."

### School grazing booklet showcase rangeland

"Range of Wonders" is a new educational booklet for middle school students that focuses on the importance and wonder of grazing land in the United States.

The 15-page color cartoon booklet shows how rangeland is managed for the benefit of people, wildlife, water, cattle, sheep and other resources.

"We are proud to have a booklet that showcases the importance of rangelands for our young people," said Bud Rumburg, executive director of the Society for Range Management, a lead partner in the project. "Readers are taken on a hot-air balloon ride over the vast grazing lands of the West, to learn about rangeland which is covered with grass, forbs, shrubs and scattered trees."

This first-of-its kind story is published by the Soil & Water Conservation Society (SWCS). Other partners in the project were National Cattlemen's Beef Association, USDA Natural Resources Conservation Service and the Grazing Lands Conservation Initiative.

To order multiple copies of "Range of Wonders," contact the Society for Range Management at (303) 355-7070; fax (303) 355-5050.

