I hope the later half of the year has found you in high spirits and high grass and that the New Year will be wet and prosperous! Our last newsletter was mailed before the summer rains had started and it was not looking very good. However, I think we all have seen the worst and the best range conditions in many years and all within a couple of months of each other! Who would have thought going into this year that it could recover so quickly.

In November, Michael Rubio ran off to greener pastures and took a job a little closer to home. He and Christy are now living in southwestern New Mexico near Playas. We wish them the best of luck.

Here at the ranch, the dry winter and spring took its toll on productivity, wearing percentage, breeding percentage and wildlife survival. Calf weaning weights were down significantly with steers weighing 468 lbs, compared to our last three year average of 561 lbs. Lambs marked down by 21 percent and with some coyote trouble we weaned at only 60 percent. In the fall, our cows pregged at 87% bred compared to a three year average of 92%. We have a 60-day breeding season and know that one more cycle would have helped, however our decision was to adhere to our management plan and continue our effort of strengthening the fertility in our herd.

The biggest disappointment this year was observing a decrease in deer population of around 40% from January to July and then to see our pronghorn herd decrease around 30% after the rains had fallen in the month of July. Our country is significantly lacking in natural browse for deer and pronghorn, so we rely heavily on green forbs being available throughout the winter and especially in the spring with seasonal moisture. A 40% mortality rate can easily be explained to lack of protein and the essential nutrients provided by these forbs in the winter and spring. However, the 30% mortality rate in the pronghorn happening after the growing season was a surprise and has us wondering what caused it. This condition was noticed in western NM and eastern AZ as well, so it was not unique to our herd. We are starting the second year of an intensive wildlife habitat use monitoring project that Drs. Bender and Boren have committed funding and personnel to.\n
For more information contact your county extension office or Andrea Cibils directly at (505)646-4732 or email: acibils@nmsu.edu.

YOUNG COWS SEEK SHELTER IN PIÑON-JUNIPER WOODLANDS DURING SPRING

We had predicted that cows would preferentially graze the open grassland and would eventually move into the trees when the herbage in cleared areas had been depleted. However, their behavior did not quite match our expectations. During the first year of this study, when grass was fairly scarce, collared cows spent up to 99% of a given day in the trees if wind chill corrected temperatures remained at around 32–F for three consecutive days or more. In fact, in this year, weather data alone (especially temperature, wind, and precipitation) allowed us to predict cow location (whether in the Juniper or not) with a fair degree of accuracy. In the second year, grass production almost doubled and all collared cows spent considerably less time in the wooded areas. Weather factors were no longer accurate predictors of collared cow location.

We think that pinon juniper shelter may be important to help cows conserve energy during calving particularly in years when feed is scarce. Our data suggest that collared nursing cows that were doing more poorly tended to spend more time in the trees than their peers that were better off. We are hoping that this data will help design improved strategies for pinon juniper management that explicitly address the shelter needs of nursing range cattle.

For more information contact your county extension office or Andrés Cibils directly at (505)646-4342 or acibils@nmsu.edu.

AN EYE ON THE WEATHER!

Quantifying the link between rainfall soil moisture, forage production, carrying capacity, and profitability is a difficult task. An effort to better understand these relationships is underway on the CRLRC using forage production data collected since 1990 combined with rainfall data for the Corona area going back to 1914. CRLRC rainfall during the summer and fall period averages about 11 inches, but years with below average rainfall are most common.

The research shows that rainfall received from April through October has a major influence on grazing success. In general, each inch of growing-season rainfall grows about 40 lb/acre of forage, depending on the amount of rainfall received, the probability that different levels of forage will be produced is shown for Corona blue grama rangeland. Snakeweed-free pastures can be expected to produce something less than 800 lbs/acre with a 99% certainty. About 1/3rd of the time annual forage production will be something less than 450 lb/acre. In only 1 of 5 years can it be expected that peak annual forage production will exceed 600 lb/acre.

A common stocking rate recommendation for blue grama grassland is to leave about 300 lb/acre of residual forage so as to realize peak animal performance and maintain rangeland productivity. Blue grama rangeland areas on the CRLRC produce less than 300 lb/acre and thus have no useable carrying capacity about 1 year out of 10. This was the situation faced by the CRLRC in 2000-2001 when the ranch was completely de-stocked.

It takes about 500 lb/acre of forage production to support 15 head/section. About half the time forage production exceeds this level on the CRLRC. An obvious implication is the need to maintain a forage surplus and thus it is a necessary step for improved stocking rate decisions. Proper rate of grazing use depends on the tolerance to risk and the economic consequences of having forage shortfalls. This research strives to better understand these key relationships. (Collaborative project with Kirk McDaniel.)

For more information contact your county extension office or Allen Torell directly at (505)646-4732 or email: atorell@nmsu.edu.
MINERALS IN NEW MEXICO FORAGES

In 2001 and 2002 a statewide forage mineral survey was conducted by NMSU to evaluate forage mineral profiles by geographic region. The results indicated that dormant forage samples were almost always deficient in phosphorous, potassium, magnesium, copper, and zinc. Selenium concentration was also highly variable. One of the sampling locations was located at the CRLRC. The average of dormant forage samples from this location that were collected in the late winter supplied less than 37% of the gestational mineral requirement for phosphorous, potassium, magnesium, sodium, and sulfur; and less than 50% of the requirement for manganese and zinc. All other minerals were present in sufficient concentration. When compared to the statewide survey averages, the samples from the CRLRC were slightly lower in the content of macro minerals, were lower in zinc and manganese, but higher than average in copper content.

The CRLRC approach

Vegetation diet samples have been collected with ruminally cannulated cows at CRLRC. The mineral content of their diet was compared to the requirements for cows, calves, yearlings and heifers. The difference was used to determine the amount of mineral needed in a self fed salt mineral mix. After a couple of years the cattle were biopsied at the liver to determine animal mineral status. If the liver storage was determined to be adequate to meet production goals then the formula remained unchanged for that mineral. Daily intake per cow is continually monitored.

The foundation of a balanced range nutrition management plan is to supply needed minerals. We do this with a self-fed salt/mineral mix that is projected to be consumed at 2 ounces per day per cow averaged over an entire year.

On a yearly basis, cow intake of our mineral is 1.8 ounces per head per day. For example, the average yearlong intake for 2004 mature cows was 1.91 oz/ hd/d). This amount has been very consistent year after year even though there is extreme variation within a year. The results of our liver biopsies in cows and yearlings indicates that our mineral mix minimizes the loss of production that could occur do to the low concentration of minerals found in grazed forage diets (phosphorus, magnesium, copper, manganese, and zinc).

For more information contact your county extension office or Clay Mathis directly at (505)646-8022 or email: cpmathis@nmsu.edu.

http://CORONA.NMSU.EDU

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Past Half Day of College Handouts  Climate and Precip Archives
Viewable Research Publications

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CORONA RANCH
Mineral Composition
Calcium, maximum 11.5 %
Phosphorus, minimum 8 %
Magnesium, maximum 2 %
Sodium 2 %
Copper 2000 ppm
Zinc 1000 ppm
Manganese 2500 ppm
Selenium 15 ppm
Vitamin A, units/lb 120,000

P.O. Box 392
934 County Line Road
Corona, NM 88318

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