

The Rimrock Report



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We can all ranch when it rains...

Note: The following is an excerpt from an article entitled “Monitoring Makes a Difference” originally published in the GLCI News from October of 2002.

I love to hear the wind in the grass... “So voiced the wistful Evie to the title character in Louis L’Amour’s western classic, *Conagher*. While hers is a sentiment no doubt echoed by many whose livelihood depends on our nation’s grazing lands, in this day and age, few of us probably have the opportunity to slow down long enough to hear the wind in the grass much less wax poetic about it. That said, managing animals to efficiently produce meat, milk or fiber from forage can be difficult even in the best of times. Recent droughts and an unpredictable economy only serve to worsen the situation.

I’ve heard the old-timers say, “*We can all ranch when it rains.*” When it doesn’t rain, or perhaps more correctly stated, when we have failed to adequately plan for when it doesn’t, many of us will ranch no more. Those producers who realize drought is a natural recurring process and take steps to plan for that eventuality will most likely be the ones to survive. Monitoring the forage conditions and nutritional status of grazing animals is a vital part of a drought management plan. It is important to remember that monitoring forage involves evaluating both the quantity (i.e. the amount of plant material available for consumption) and quality (nutrient density).

Forage conditions are affected by such factors as season, precipitation, and defoliation. The nutritional needs of grazing animals are similarly dependent on age, class, or reproductive status. Matching forage conditions to animal needs by making informed grazing management decisions improves the efficiency of livestock production. Examples of matching forage conditions to animal needs include:

1. Timing the early post-partum period and peak lactation to occur during peak forage conditions to improve both this year’s weaning weights and subsequent breed-back.
2. Strategic supplementation, i.e. providing only the additional nutrients or bulk needed by the animals, but not supplied by the forage, to help maintain body condition while avoiding unnecessary expense.

Monitoring Makes a Difference

Measuring forage quantity and quality can help match forage resources to animal needs. Forage quantity can be measured by a variety of methods such as disk meters or clipping and weighing small plots. This information will help determine proper stocking rate. Most state land grant

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Monitoring forage conditions and grazing animals’ nutritional needs is a vital management strategy – especially in times of drought..



We can all ranch when it rains, continued...

universities and several private companies offer chemical laboratory analysis to determine forage quality. Both pieces of information can be used to determine if the forage is meeting animal needs.

Is it possible to predict performance?

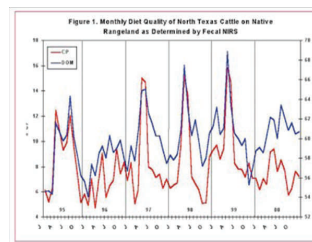
The effectiveness of hand clipping to estimate diet quality depends on the skill of the individual in selecting a “diet” similar to that of the animals in question, especially in “range” as opposed to “pasture” situations. If we assume that “what goes in must come out,” then determining diet quality through fecal analysis would seem to be a viable method of acquiring this information. The NIRS/Nutbal Pro system is a two-stage process designed to evaluate the diet and project the performance of free-ranging animals.

Near infrared reflectance spectroscopy (NIRS) makes use of the fact that organic materials absorb infrared light at characteristic frequencies, such that two materials of different chemical makeup will absorb and reflect infrared light differently. The resulting spectra can be measured, related to some constituent of interest (e.g. crude protein), and quantified. When the technique is applied to feces, the diet quality of grazing animals can be determined.

The Nutritional Balance Analyzer Program (Nutbal Pro) is a decision support software package that applies user in-

puts about a particular group of animals and calculates their nutritional needs. Combined with the diet quality derived from fecal NIRS, the nutritional balance for that group can be determined. Coupling these two technologies (NIRS/Nutbal Pro) provides ranchers and other resource managers with a useful grazing management tool.

Recent presentations at the Society for Range Management meetings indicate that the NIRS/Nutbal Pro system can be used to successfully project weight change in cattle. Body condition score (1-9 scale) during the summer drought of 1998 was predicted to within one half score in four different commercial cow herds in eastern Montana. Similar results were observed in two groups of yearling heifers in South Dakota in the summer of 1998 and 1999. Long-term (1995-2000) fecal sampling on a north Texas ranch



illustrated the variation in diet quality that can occur from year to year. These studies indicate the utility of monitoring both forage and animal conditions in a sustainable ranching enterprise.

Monitoring impacts ranch profits as well.

Forage and nutritional monitoring is not just data collection for the sake of data collection however. A nationwide survey of over 200 users of the NIRS/Nutbal system was conducted by the USDA-NRCS and Texas A & M University’s Grazingland Animal Nutrition (GAN) Lab in 1998. These producers had participated in the program for 6 – 22 months. Thirty-four percent of the respondents in this survey observed an increase in net revenue while using this system. In 2000, the USDA-NRCS in Louisiana surveyed twelve ranchers, who had taken part in the 1998 survey and found that, even after an additional two years of monitoring, 25 % reported an increase in ranch income.

****Now, I am not trying to make a sales pitch for the Gan Lab, but monitoring forage conditions and how these relate to current animal needs should be a part of any sound grazing management plan, drought or no drought. So I thought recycling this article was a good fit for this first issue. Doug Tolleson*

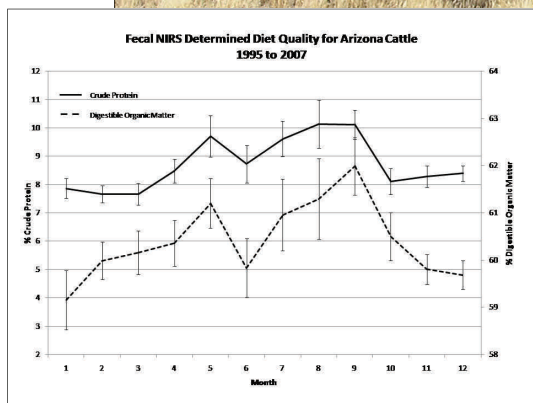
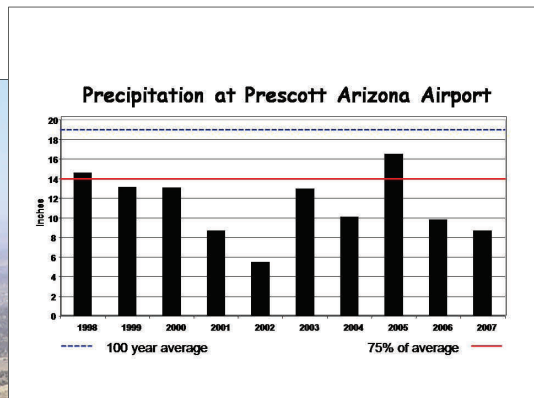




Drought and Diet Quality

As you will probably have surmised from the previous article, drought planning and nutritional monitoring are two of my top priorities. I am currently working on a document/spreadsheet that builds a framework for drought management plans that are tailored for a specific ranch. This tool will allow managers to identify drought contingency plans in several areas of their total operation (e.g. stocking rate, herd structure, reproduction) based on severity, timing, and duration “triggers”. I hope to have this ready before the next newsletter (~3mo) but if you are interested in a preliminary version, let me know.

The graphs below illustrate (on a coarse scale) what type data we might use as “triggers”: 1) a year or period with some predetermined level of precipitation (e.g. 75 or 50% of average), 2) subsequent years or seasons with below average precipitation, or 3) periods of the production year with below average diet quality (protein and digestibility). Each may call for a different decision and will probably be influenced by other factors such as fuel or feed prices, the cattle market etc... Monitoring diet quality gives us a close to real time tool which lets the animals tell us what they are getting out of the forage, and (*along with forage quantity info*) before we see changes in their body condition.





The view from the Rim

Two young cowboys were working for an old rancher down near the Rio Grande one summer, building fence. One of the boys was not tamping the posts very tight and this was getting on the old mans nerves. He spoke to the kid about it several times and finally the kid said "Heck old man, soon as it rains them posts will tighten right up!". To which the old man replied "all-right, soon as it rains, I'll pay you!"

As told by: Martin DeLeon, Uvalde Texas, Summer of 1991

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*Note: Please email me if you would like to be added to the "mailing" list for this newsletter.***

Just me talking...



Howdy yall. my name is Doug Tolleson, the new rangeland management specialist for the University of Arizona here at the V Bar V Ranch. I hope you have enjoyed this newsletter, please feel free to let me know what you liked and disliked, or maybe offer a suggestion for topics to be covered in future editions. I thought I would start off this section by telling you a little about me;

where I came from, what I want to accomplish in this job, etc... I moved here with my family in January, having just earned a PhD in Rangeland Ecology and Management from Texas A&M in December. This follows a M.S. in Reproductive Physiology in 1986 and a B.S. in Animal Science in 1984, both also from Texas A&M. Now, you math whizzes will figure out real fast that all means that I am no spring chicken. Yep, between my first and second stints in grad school, I spent 2 years on a USDA-ARS experiment station in Booneville, Arkansas doing nutrition and repro research and managing the beef herd. After that came 4 years in south Texas on a 20,000 ac experimental ranch as a research associate for a range animal nutritionist and then 6 years in northwest Texas in a similar job on a couple of ~40,000 ac experimental ranches. I spent the last 9 years working for Dr. Jerry Stuth as the director of the Gan Lab on the A&M campus in College Station. As a member of the Gan Lab team, I was involved in research concerning grazing animal nutrition and physiology, helped develop grazing management decision support systems, and taught classes and workshops on these subjects. We implemented these programs around the US, as well as in East Africa, Mongolia, and Afghanistan. So, you may ask, "what does that all have to do with rangelands in Arizona?" Well, I hope to take all that I have been fortunate enough to learn and experience and put that to work for you here in this great state. And I guess,

so far, so good... I've been burning up the roads, met quite a few ranchers, agency, extension, and tribal personnel, started a couple of projects and put out a newsletter... and the mesquites have not even leafed out yet (at least not around here). So I will hush now and leave you with this thought: Our rangelands are an extremely valuable resource, valuable agriculturally, ecologically, and culturally. If I can spend the next 20-30 years doing my small part to make sure they stay that way, I'll call it a day. Till next time...

Doug

