

“Prescription Grazing”, an Overdue Concept

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AFTER A 25-YEAR ‘INTERNSHIP’ on various grazing lands in New Mexico, I must conclude that range management is still more of an art than a science. However, there is nothing to preclude the application of scientific knowledge, or proven technology, to enhance the art. In the final analysis, “The eye of the master fattens the beef.” And so it should always be.

We are probably most familiar with the term ‘prescription’ as a medicinal quick-fix to quiet a symptom of some bodily dysfunction. In natural resource circles we hear of ‘prescription burning’ as applied to the rapid oxidation of unwanted or sacrificed organic materials. Prescription grazing can be likened to the medicinal prescription only if: 1) we view the whole ecosystem as the patient; 2) we are attacking the root cause of the sickness; 3) we are administering preventive medicine; or 4) we are striving to keep the entire system healthy. The concept of grazing by prescription identifies with the burning analogy in that it is deliberate, has many elements in the prescription, and it may involve sacrifices. Also, the probability can be high of achieving the envisioned results.

I HAVE DONE MENTAL BATTLE with the concept of prescription grazing for about two years and find it difficult to define in one sentence, to the degree that it is well understood. But, here goes an attempt.

Prescription grazing is a single, or a series of, specific, purposeful grazing(s) by livestock, on any identified grazing management unit, according to prescribed controllable elements, in order to achieve two or more of a combination of pre-defined goals expressed in terms of the land, the animals, and the economics of the operation.

The rationale for prescription grazing is to coordinate the harvest of the nutritive value of forages, on a defined grazing area, with and for the correct grazing animals while optimizing the satisfaction of nutritional priorities of the different classes of grazing animals on the operating unit, so as to sustain a long-term profit and simultaneously effect the desired successional status or trend of the range. This is not as difficult as it first sounds if we will think about what we are doing and keep a record of our prescriptions and notes on the progress of our patients from which to learn and adjust.

The elements of a grazing prescription may vary with the complexity of the goals. Not all elements will be essential in every prescription. These elements may include but not be limited to the following: (1) kind of

livestock and age; (2) class of animal; (3) number of animals or stocking rate or livestock density; (4) size of identified grazing unit, pasture, or paddock to be impacted; (5) planned forage volume removal usually expressed as animal days per acre; (6) duration of grazing period in days; (7) season of grazing; (8) vegetation type at start; apparent range status and trend at start; (9) forage-nutritional quality at start; (10) stage of forage growth or maturity at start for both warm- and cool-season components; (11) frequency of grazing and length of rest period between grazings, if a series is prescribed.

THE LAND GOALS CAN BE MANY AND VARIED as are the needs and desires of landowners and operators. Most would fall into some of the following goal categories: (1) change the direction of range trend or ecological succession; (2) impact ecosystem processes such as water cycle, solar energy capture and flow, or nutrient cycling; (3) break up soil surface crusting; (4) increase forage plant density or ground cover; (5) reduce brush canopy; (6) improve plant vigor; (7) remove decadent standing forage; (8) extend green forage period by altering the balance of cool- and warm-season forage plants; (9) increase or decrease runoff; and (10) remove dry fuel hazard. It is also good to describe, or conceptualize in writing, the appearance of the range at the time animals are to be removed.

ANIMAL GOALS are expressed as satisfying the nutritional needs of the various classes of grazing animals to meet their production targets or to carry out their biological functions during or just following the prescription period, such as cycling to breed, breeding, conception, pregnancy, parturition, lactation, growth, fattening, and maintenance of body conditions.

ECONOMIC GOALS need not be numerous or complex for any particular prescription. These can be as simple as: (1) generate wealth with which to further improve land and livestock benefits; (2) break even, but be financially able to maintain operation in balance; or (3) accept a moderate short-term loss in order to provide a long-term boost to the land or the animals.

Any one of the three goal components; land, animals, or economics may be subjected to occasional short-term sacrifice for the long-term benefit of the other two. If we will visualize a three-legged pot, the legs being the land, the animals, and operating capital, then the liquid in the pot is longevity of the operation of this planet. The three legs must be kept approximately even to balance the pot or we lose longevity. At the very beginning of operating

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our enterprise, the pot contains its maximum longevity and the liquid is full to the brim. A little will slop out initially as we learn to operate within our environment and keep our legs equal. As the liquid gains some freeboard with the rim of the pot it means that the legs really have to get out of balance in order to spill longevity. This should not happen because we have had more time to learn. However, if we permit a too severe or too long-term sacrifice in either land, animals, or operating capital, the pot will topple over and our operating longevity will all spill out and spell out its finish.

I do not anticipate that we will write or execute perfect prescriptions initially or every time, but then neither do the medical doctors. Range management has been practiced professionally for more than 50 years, and some land still deteriorates. Similarly, medicine has been practiced for much longer yet some people still become ill and don't recover. Of a certainty there will be uncontrolled elements which will contaminate or dilute our grazing prescriptions, such as wildlife, feral horses, kangaroos, rodents, and wild fires, etc. Still, I am confident that prescription grazing will succeed in restoring the land while better nourishing the livestock. This is because I believe that livestock, in term of their presence, density or absence are the most powerful tool under the control of man to effect change on the range.

IN ORDER TO BECOME BETTER PRESCRIBERS, we must perfect our skills at diagnosing the "patient". It is important to consider what elements brought about the present status of a range area. If we want to change this, chances are it won't happen by repeating these same elements. Now, I am probably the last person to go see a doctor, but I would refuse to return to one who insisted on refilling prescriptions which have been repeatedly documented as causing the patient's condition to worsen or the patient to die. In the past, the range management profession has unwittingly, repeatedly prescribed treatments which were previously proven unsuccessful somewhere. Why is this? Certainly we would not do this deliberately!

In the medical profession, doctors follow up on their patients by recording notes on the progress of their patients following treatment or medicine. These are called 'patient charts'. In range management this process is called monitoring. Just as doctors must keep record of what is administered, so we in range management must record all the known controlled elements of our prescriptions and in case of transfers, make sure the new doctor receives the 'patient charts'. Then, if a grazing prescription fails, we will have a better understanding of why.

Now, what about the practicality of prescription grazing on working ranches? I can hear, as I write this, some of you readers saying, "We have no zoo or Noahs Ark from which to select the correct grazing animals"; "I'm in the cattle business"; or "I am a woolgrower". Well, neither did the Wright Brothers have the best precision tools with which to construct the first aircraft. They used initiative and what they had on hand. It was a far cry from today's super jet-planes. Much good has been realized recently with short-term 'partnering' or exchange of livestock or grazing land among neighbors for the mutual benefit of the land, livestock, and the neighbors. I am concerned that, after all these years, similarities to the following mock conversation are all too common on western ranches: "Where do you wanta go with these 30 dries, Boss?" "There's nothin' in that big creek pasture. Let's throw 'em in there till spring and hope the market goes up." You readers are observant and informed. You must know that livestock ranching cannot long survive with management decisions made in this manner.

WHAT MAKES PRESCRIPTION GRAZING unique on private ownership situations is that the physician is part of the patient, or bonded to him. So, he should not prescribe what he himself is unwilling to swallow. On public land situations the patient should be a part of the physician writing the prescription.

I make no claim to the originality of this concept of prescription grazing. Though I have not found the term in published literature, I am sure that pastures have been purposefully stocked and grazed for common benefit. I am not sure all of the prescription elements and monitoring notes have been recorded, charted, and shared. Every worthwhile concept is begun by someone, somewhere, and then advanced and perfected by others. I expect range scientists and practitioners will pick this up and run far with it. If this concept were to be widely applied over the next 10 years, I estimate we could greatly expand the amount of practical range management working knowledge accumulated over the past 50 years concerning what will work and what won't work in a given situation. At least it will cause us to think about what we're doing.

We are endeavoring to pioneer prescription grazing with descendants of some of America's earliest pastoral stewards, on the Mescalero Apache Reservation. I am blessed with the progressive Mescalero Apache Cattle Growers Association enthusiasm, their 'best in the west' managers' cooperation, and a boss who gives latitude to operate for motivation. We are much watched here. Who knows, we may soon be writing some "refillable prescriptions".