

## THE RANGE RESOURCE AND ITS MANAGEMENT

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Have you ever stood on a knoll with an old-timer looking out across the landscape. The range land you are observing is covered with brush, weeds, and some grass, mostly annual. As you stand there trying to get a feel of the land, the Old-timer waves his arms in front of him and says, "When I rode into this country to settle it was covered with grass belly deep to a tall horse and the only brush and trees were in the draws or on the ridges. What happened? Why is there no grass and so much brush now? This country was beautiful back then." I have and I am sure that all of you have heard similar statements from old-timers or from their descendents. If you take the time to review the journals of the early explorers, travelers, and settlers of this country, you will find glowing accounts of the grasses that covered these plains 100 to 150 years ago. Their accounts also tell of large numbers of bison, antelope, and deer they saw and of the fires that they observed. So what has happened to our ranges that were once covered with high producing, high quality grasses that our livestock loved and grew fat on? What has changed? What can we do?

What has changed? On many of today's rangelands we find shortgrasses where tall grasses should be growing, we find annual weeds and grasses where there should be perennial grasses, and we find bushy species of one kind or another have increased tremendously on nearly all of our rangelands. We know from historical observations that the rangelands of plains once produced sufficient forage to maintain millions of free-roaming bison, antelope, deer, and other grazing animals. We have replaced graziers with domesticated animals but grazing as a factor involved in the development of our grasslands has remained even though the animals are no longer free-roaming. However, as the country was settled, we began to suppress the other major factor involved in the development and maintenance of the grassy rangeland, FIRE. So by fencing our ranges to confine our livestock, usually too many, and by suppressing fire, we have caused the deterioration of our rangelands to what we have today. Many of our ancestors believed that the grass would last forever and it would have had the proper management. What has happened was not intentional but came about because of a lack of understanding of the basic range resources (soils, plants and animals) under our control and their interactions. We have changed the management that Mother Nature provided when she had control of the situation and we are going to have to change our management to something closer to Mother Nature's if we are



going to survive in the future.

The historical pictures of our rangelands presented by our ancestors give us an idea of where we are today in vegetation management. But more importantly, it tells us what the potential of our rangeland is unless range deterioration has progressed so far that we have lost our soil resource. Several recent surveys of range condition have concluded that the rangelands of the United States could produce twice what they are producing now. And the future demand for red meat, water, wildlife and other range products is going to demand that we meet the potential. The future is also going to demand that more of the feed units consumed by livestock be from rangelands. This is already happening.

How are we going to meet this challenge of doubling the productivity of our rangelands, the cheapest feed source of livestock? The first items that probably pop into your mind are to control the brush and weeds, to buy grass seed to plant and some will think of fertilizers. These are all high cost input items and each has its place. But, remember, rangelands are rangelands because they have limitations which make them uneconomical for crop production and those practices are only part of the answer. Proper management of all resources under the prevailing conditions is going to be the lasting answer to improving and maintaining high producing ranges.

The successful ranchers I know tell me they are grass producers and they use the livestock to harvest their product. A rancher must have as great a knowledge and understanding of the requirements for vigorous growth and reproduction of his plants as he does of his animals. The rate at which different plant species grow is dependent on several factors, most of which can not be easily manipulated by the range manager. However, the one factor which can be readily affected by the range manager of grazing animals is the amount of leaf area available for the photosynthetic process. This is the principle reason for the rule of thumb in grazing management "to take half and leave half of the current year's forage production." At the end of any grazing period, plants must have enough leaf area left to maintain growth and permit them to reproduce and store food reserves for the next growth period.

Most reserve food is stored in the roots and root crowns of perennial grass plants. This stored food is used to keep the plant alive during dormancy and allows the plant to begin growth following the dormant period. Food reserves are not replenished until enough leaf material is present to produce more food than is needed for growth. This may not be until 10 to 45% of the annual growth of the plant is reached. If the leaves are grazed prior to this, an additional draw down of root reserves is necessary to replace the grazed leaves.



Since up to 75% of a plant's food reserve may be used during the winter and for initial spring growth, it is apparent that continual close grazing can have serious effects. With no subsequent change in management, the plant will eventually die leaving room for a less palatable or less productive plant to take its place. Since most palatable plants are grazed more frequently and intensely than unpalatable species, changes occur in the plant population that result in a decrease in range condition. An important part of range management then is actually the management of green leaf material to maintain these food reserves and the health and vigor of the desirable plant species.

For a livestock operator the manipulation of his animals is one of the major tools he can use to manage the green leaf material. We are familiar with grazing systems which have been advanced over the years. The basic grazing systems for range are:

Continuous - leaving the livestock in the same pasture all year or all season long. This is the basic system used by many ranchers.

Rotation - the use of two or more pastures and moving the livestock from pasture without regard to growth stages of the plants.

Deferred - is based on plant growth requirements by delaying grazing after seed maturity.

Rest - non use of a unit to allow plants to restore vigor usually all growing season or all year.

All other grazing systems are variations or combinations of these basic systems. Many of the names we have heard for these specialized grazing systems are deferred-rotation, South Africa switchback, 3 pasture-one herd rotation, high intensity-low frequency, short duration grazing, Merrill 4 pasture-3 herd, Savory, and many others. It must be remembered that the primary objective of any grazing system is range improvement and if it is successful, increased livestock production through increased carrying capacity, calf crop, weaning weights, and livestock condition. However, all the specially named systems were designed to meet the needs of a specific vegetation type, environmental conditions, type and kind of animal, and management goals and may not be adaptable to your ranch without modification. Each ranch ecosystem has a specific set of goals, vegetation type, resources, environmental conditions, and animals, so a grazing system must be designed to fit those conditions. There are many factors which must be considered in the design of a grazing system which will bring about range improvement and increased livestock production. The future will demand more intensive management of rangelands and prescribed grazing systems will be an essential part of this management.