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CATTLE MANAGEMENT FOR IMPROVING THE RANGE



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CATTLE MANAGEMENT FOR IMPROVING THE RANGE

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Wasteful range practices characteristic of the West in early days have been largely supplanted by systematic and profitable methods of management; but even now stockmen in many instances are not receiving maximum returns from their herds because of overgrazed ranges. This pamphlet is written in an effort to show the importance of well-managed ranges and their ultimate return in higher carrying capacity.

Grazing Period of the Range

Early grazing in the spring is one of the main causes of deterioration of range, because the stock tramples and cuts the soft, wet sod, injuring and exposing the roots, weakening the plant vitality, and in many instances killing the forage. Early grazing also prevents the plants from starting a normal growth for the season, and prevents normal seed production, which is essential in maintaining a permanent stand of range grasses. This damage to forage plants from grazing is greatest immediately after growth begins, and decreases as the growing season advances, until there is little or no damage after the plants have matured seed. In actual practice it is found that there is little damage if cattle or sheep are not turned out until one-fourth or more of the heads of the earlier grasses begin to show or are conspicuous in the sheath. This stage of development usually occurs from 10 days to 2 weeks after growth begins. A few days delay in turning out stock means very little loss in the way of pasturage, because plants a few days old have but little substance, are washy, and are deficient in carbohydrates and other foods, as compared with plants which have grown for a longer period.

The length and the close of the grazing period depend entirely on forage, rainfall and topography of the land. The time at which the grazing period closes is not of great importance to the growth of the grass in future seasons, if the range has not been overgrazed. However, an overgrazed range should be given a chance to recuperate late in the fall to prevent winter-killing of the grasses.

Overgrazing the Range

Continuous grazing or overgrazing of range land reduces the forage yield during following years because the grasses do not have a chance to reproduce. The more desirable, heavier-yielding plants,

because of their palatability and growth production, begin to disappear, and plants yielding less forage come in to take their places. Obnoxious and poisonous weeds also begin to get a start. Another definite sign of an overgrazed range is the presence of dead and partly dead stumps of shrubs which generally indicate that the grasses and weeds have been overgrazed. These factors are more reliable indications than the condition of the stock when it comes off the range in the fall, because quite often other factors may be responsible for abnormalities in the condition of the stock. Animals may come off the range fat, yet if they were turned on too early, serious damage may have been done to the range. If the range is not grazed until the grass is quite dry and mature, the stock may come off thin and yet have caused no damage.

Jardine, Lindgren and Potter (Oregon Extension Bulletin 397) state: "Overgrazing can be prevented, so that the range will retain its productive capacity or even improve it, by considering the following precautions: (1) No range should be used before the grass is two weeks old or until the soil is reasonably dry. (2) No range should be grazed so heavily that there is mechanical injury to the grass thru trampling or close cropping. (3) In all normal years the stock should come off in good condition with some feed left on the range. (4) The grass must have a chance to form seed at least every three to four years, and the following spring the seedlings should have a chance to grow before stock is turned on the range."

Maintaining or Improving Range Grasses

There are in use several plans for maintaining and improving the range. The two plans most generally practiced are: (1) Entire protection of native grasses from grazing until the range is back to normal, and (2) deferred and rotated grazing.

The plan of entire protection, necessitates keeping all stock off a certain range for such a number of years as may be required to bring it back to its original state of productivity. It is true that this method will give the grasses a chance to reproduce, and therefore will result in a great improvement of the range, but it is expensive and often impossible.

Deferred and Rotated Grazing

The second plan, that of deferred and rotated grazing, is the most feasible and inexpensive method. This system of management for range improvement merely comprises a division of the range into two parts, one of which is grazed thruout the entire season, while the other

is protected until the plants have completed growth, matured their seed, and begun to turn yellow. The protected area is then opened for grazing along with the other grazed area for the remainder of the season. The area protected one season is protected also the following season, in order that the seedlings may become established. The third year the pasture management is reversed and the area grazed in early season the first 2 years is then protected to give new seedlings a chance to improve and thicken the forage stand. This allows each division of the pasture to mature a crop for 2 successive years before it is harvested by the cattle in late summer.

Colorado 10-Year Grazing Experiment

The Colorado Experiment Station has just completed a 10-year grazing experiment, on low foothill ranges, comparing continuous grazing with deferred and rotated grazing. A herd of cows was allotted according to full carrying capacity of the range, and kept as nearly constant as possible thruout the entire period, in order to determine the ultimate effects of continuous grazing and of rotated grazing on the forage of the pastures. During the winter months, these cattle were fed on cheap, available roughages such as straw, stack tops and bottoms, and alfalfa hay, supplemented by cottonseed cake to keep them in just fair flesh.

At the first sign of plant growth in the spring the deferred-and-rotated grazing lot was penned up for 2 to 3 weeks, the length of time depending on the softness of the ground. As soon as the range was dry enough (usually in early May), they were turned out into the unprotected part of the pasture. The protected area was not opened up until early in August and from that time on the cattle had access to both fields until snow covered the range, necessitating drylot feeding. This same method of management was followed the second year. The third year the system was reversed so that the grazed area was protected until late summer and the previously protected area carried the cows during spring and early summer. The second lot of cows, run on the continuous-grazing plan, was never confined to drylot and had access to their pasture the whole year.

A botanical study of the grasses on the ranges showed them to be comparatively uniform at the beginning of the experiment; but at the end of the 10-year period, a study of the grasses showed that the heavy-yielding grasses were increasing in the pasture that was grazed according to the deferred-and-rotated method, and were decreasing in the continuously grazed pasture. Wheat grass, one of the most important species constituting the vegetation, was 53 percent more abundant in the pasture with deferred and rotated grazing than in

the continuously grazed pasture; and other desirable plants showed a somewhat smaller increase. In the continuously grazed pasture, buffalo and grama grass, two low-yielding forage plants, were becoming quite prominent, whereas the wheat-grass stand was thin. Snakeweed, a slightly poisonous plant, and other undesirable plants, were rapidly increasing in the continuously grazed area. The stand of forage plants in the continuously grazed area showed only 64 percent as many desirable plants as did the deferred-and-rotated-grazing area and showed 22 percent more weeds.

These results emphasize the importance of careful range management, because it is very apparent that when the higher-forage-yielding varieties are prominent in the range vegetation, the carrying capacity of that range is greater. The above experiment shows that continuous grazing is detrimental because it kills out the high forage producers and allows low producers and weeds to take their place.

North Dakota Experiment

Sarvis, in a recent test in North Dakota (U. S. D. A. Bul. 1170) reports that it required only 5 acres to support a 2-year-old steer without overgrazing, where deferred and rotated grazing was practiced, while 7 acres were required where the deferred-grazing method without rotation was used. The stand of grass was better on the rotated-grazing areas, and it was also possible to utilize the grass more fully without damage.

Seasonal Use of Range

In the mountainous areas of Colorado, a number of stockmen having ranges at different altitudes have definitely designated their summer range as low, middle and high range. Each division is set aside for seasonal use during the summer period. This might be termed deferred grazing.

An example of the system used for a 500-head allotment on the Rio Grande National Forest illustrates the plan. Here the low range is used from the latter part of May to the forepart of July. The grasses in this zone start growth comparatively early, and afford good grazing for the period indicated. In the forepart of July the cattle are moved up to the middle range, where they are allowed to graze until the forepart of August. Early in August the cattle are moved to the high range. Here the grass usually starts considerably later than in the lower zones. By August this zone affords excellent grazing. Some time between the middle and the last of September the cattle are started back down over the lower ranges, where they graze until the forepart of October.

In Teller County, two ranchmen have successfully demonstrated the use of this plan on fenced, privately-owned property. The system described here gives systematic utilization of each range when the grass is at its best. Each division or zone is allowed to reseed.

Naturally, there are a few provisions connected with this plan that make it difficult to use on some similarly located ranges. First, it requires drift fences, natural barriers, or efficient riding, to keep the cattle in the proper area. Sufficient water must be available in each zone when it is needed. Drouth conditions may mean insufficient feed in one zone when it should be used. The presence of poisonous weeds may upset the plan. After allowing for possible difficulties, however, the plan is worth serious consideration and generally will work.

Fenced Pastures in Plains Area

In the plains area, there is less variation in altitudes and usually less variation in the time that the grasses on a certain range are ready for grazing, than is found in the mountain country. Here most of the ranchmen run their cattle in fenced pastures. On many of these ranges a plan of rotated and deferred grazing is more practical than deferred grazing alone. Again, in many parts of the plains country cattle graze the year round and provision must be made for a different summer range and winter range. Several important points determine which pastures shall be used for winter range. Most ranchmen prefer a winter range close to ranch headquarters. For winter they prefer a pasture where grama or buffalo grass is prevalent. Such grasses are very nutritious in the cured stage. Then too, it is desirable that winter-range pastures have natural protection for cattle against severe winter weather. For the foregoing reasons, it may be



Water holes are important on any range.

impracticable to consider the alternating of pastures as summer and winter range. The discussion here deals with the management of summer ranges.

In nearly every county of Eastern Colorado, excellent examples are found to show the advantages of a definite rotation of summer pastures. They are striking contrasts to the many pastures where no system is followed. In these protected pastures, the nutritious grasses are increasing every year. In the unprotected pastures are found an increasing amount of poorer grasses, weeds, poisonous plants, gullies and washes caused by erosion.

Where the practice of rotating summer-fenced pastures is followed in Eastern Colorado, most stockmen plan on using each pasture 4 to 6 weeks at a time, the exact period depending upon the season. Every second or third year the order of rotation is reversed. In large herds, cattle are divided into several bunches, but here we are referring to one unit of cattle only.

Location of Salt Grounds and Water

In small pastures where it can be arranged, water is provided near the center of the pastures. In large pastures, several watering



Salt should always be placed a considerable distance from water.

places are preferred. This induces more general use of all parts of the grazing area. Where watering places are difficult to establish, one location will sometimes serve two pastures; this is not preferable, but sometimes necessary. Stockmen can usually make ponds or lakes, however, that will furnish water when wells are not available. In this way, they avoid the necessity of cattle going to one end of the pasture for water.

In many cases, especially upon larger ranges, deferred and rotated grazing can be enforced very efficiently by the careful selection of salt grounds. Salt and water aid more in the distribution of cattle on the range than any other factors, because cattle have a natural craving for salt, and experience has shown that cattle will change their grazing ground to sections where salt is available for them. Salt should always be placed at a considerable distance from water in order to prevent the habit of stock standing around water holes. With this type of management the cattle are forced to graze between water hole and salt ground. Such distribution of salt will require more work than where the salt is dumped at the nearest watering place and it will also require some attention to see that the cattle find these new salt grounds; but the additional effort is well worth while if it results in a better range that will show an increased carrying capacity in comparatively few years' time. Using salt and water as a means of putting rotated grazing into practice is most satisfactory where the ranges are large and of low carrying capacity and where fencing



Fences are sometimes necessary to procure deferred-and-rotated grazing areas.

would be expensive. On a small range where the carrying capacity is comparatively large, a fence dividing the range is usually the best means for controlling grazing. The expense of building the fence is usually returned in a few years time by the increased number of stock which the same range can carry thru a grazing season.

Most ranchmen prefer to change the salt ground frequently. In the plains area it usually is not the best practice to place salt in clumps of trees or brush. In hot days during fly time, the presence of salt there encourages cattle to hover around the trees longer than necessary and overgraze that particular area. In high-altitude districts, the placing of salt in groves of trees is usually no disadvantage. There, however, extreme care is taken not to put salt on steep hillsides where erosion is easily started from trampling by the cattle. In the mountains, proper distribution of salt may mean far better utilization of rough areas away from water.

Spring Range a Problem

The most critical time for range cattle in most sections of Colorado is the period of a few weeks in the spring between winter feed and summer grass. At this time, the craze for green grass makes it difficult to hold cattle on hay or dry feed altho the green feed may not be sufficient. Consequently, many cattle lose considerable weight in the spring. This is especially a problem with breeding cows that calve in the spring.



Native-hay meadows may be pastured early, between winter and summer range.

In allowing cattle to rustle for green grass, range is sometimes badly damaged.

The problem seems most difficult in the plains area. On many ranches wheat or rye pasture can be provided in the spring. This protects the ranges from early overgrazing. In an extremely dry spring, the wheat and rye pasture may not carry the herd, and stockmen are forced to rely on supplemental feeding of cottonseed cake.

In the high-altitude sections, the spring-range problem is usually not acute, native hay meadows being the main source of green feed for this period.

Some tests have been made in reseeding foothill ranges for spring use. Sweet clover and brome grass have in some instances shown good results.

In the northwestern part of the state some progress has been made in developing spring range by burning sagebrush lands. Many of these lands are situated where early grass will afford good grazing.

Reasonable Stocking of the Range

Experiences of ranchmen and results of experiments are furnishing methods of increasing carrying capacities of ranges. But one point must not be overlooked: The number of cattle must be adjusted to the capacity of the range. Jardine, Lindgren and Potter (Oregon Extension Bul. 397) emphasize the point as follows: "A range will produce the maximum amount of beef per acre when there are barely enough cattle on it to consume the grass. If there are any more than this, the total amount of beef produced will be less, while if the number is doubled, they will live but make no gains. In view of the fact that the crop of grass is always uncertain, more beef will be produced in the long run if we carry a few less stock than the range will support in average years. A steer should gain on an average range at least a pound a day for every day he is out. One hundred steers would make 100 pounds of beef a day. Put 150 steers on the same range and they will gain one-half pound a day, or 75 pounds for the 150 head. Put 200 steers on the same range and they will gain nothing. Similarly, 30 pounds of alfalfa a day fed to one 800-pound steer will make a pound of beef. The same hay fed to two steers will keep them alive, but will make no gain. Many of our ranges would produce more beef and cheaper beef if they were stocked less heavily."