

# Modern Methods of Getting Uniform Use of Ranges<sup>1</sup>

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GETTING uniform use of ranges is a problem that has existed since the range was first stocked with domestic animals. It is still one of the most important management problems in modern ranching operations. Many of the practices applied to encourage uniform use of ranges by livestock are not new but have been adapted to fit specific needs.

Efficient livestock production requires that all parts of a range unit be grazed as uniformly as possible to the proper degree of use. Fleming (1922) pointed out that the carrying capacity of a given range is greater where equal and uniform use takes place than where grazing use is uneven.

To achieve uniform use, a range manager must select the proper combination of practices needed on his particular unit. These practices need constant adjustment to allow for seasonal changes in vegetation and climate and to overcome the natural tendency of livestock to favor certain areas.

In general, the problem of securing uniform use becomes greater with an increase in size of the grazing unit. Most range managers agree that the more range sites a unit contains, the larger is the problem. In a personal communication, Dyksterhuis further suggests that, "As stocking pressure decreases, the problem of uniform grazing increases". An overgrazed range is evenly utilized simply because animals are forced by hunger to take all available forage.

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The size of the range unit, the number of range sites, the pattern of range conditions, the class of stock and the habits of livestock must be studied carefully to determine the practices needed to get uniform use.

## Location and Type of Stock Watering Facilities

Increasing the frequency of watering places is the first recommendation made by most range men to improve grazing distribution. Proper spacing of water holes also saves grass and minimizes erosion. Jardine and Anderson (1919) recognized that "water may influence the distribution of cattle and the utilization of forage more than any other factor". Pechanec and Stewart (1949) emphasized the importance of water at regular intervals on sheep range in Southern Idaho.

Harris (1950) reports that the development of additional water provides the most effective means of improving cattle distribution on summer ranges in the Blue Mountains of Oregon. Harris also stated in correspondence that one of the major efforts in water developments by the Pacific Northwest Forest and Range Experiment Station is in placing emphasis on small, temporary water holes, rather than a few larger developments. He reports that such holes contain water for only 30 to 60 days, but they aid in getting use of areas which might not otherwise be grazed (Fig. 1).

The use of seasonal or temporary surface tanks is being advocated to encourage use of forage away from permanent water. Several range men advocate the closing of permanent water supplies during periods

when temporary facilities provide water. This practice helps to save forage for later use near the permanent supply and also encourages improvement of the range.

The practice of hauling water to unwatered and unused sheep ranges was being practiced as early as 1918 according to Ingram (1930). In studies at the Desert Branch Station of the Intermountain Forest and Range Experiment Station, Hutchings (1946) reported that sheep gained more and required less water when watered every day and the troughs moved to a new location after each watering. Water haulage in tank trucks to unwatered sheep range is minimizing trailing and reducing use in the vicinity of permanent waters on many sheep ranges. Good road systems are greatly expanding the use of this practice.

While a ranching or livestock operation could not be carried on without permanent water supplies from streams, springs, wells or ponds, it appears that temporary water facilities are of considerable aid in getting uniform use of ranges.

## Fences

The practice second only to water in getting uniform use of ranges is fencing. Stoddart and Smith (1943) describe the use of boundary, division and drift fences in range management.

In general, fences should follow natural land features or range sites as much as possible. Harris (1950) points out that cross-drainage fencing interferes with the natural movements of livestock and usually causes concentration of use on one side with little or no use on the other. Allred (1951) recommends studying livestock movements in relation to topography, existing fences, water supplies, forage and other factors for at least a year before cross fencing is undertaken. This preliminary study would give valuable leads to use in locating new fences.



FIGURE 1. Surface tanks, even temporary ones, are very helpful in getting uniform range use.

Fence locations often divide permanent water locations for use in two range units. It is usually more desirable from the standpoint of getting uniform use to locate fences to permit grazing out in all directions from permanent water. This arrangement reduces local use at the watering places.

Electric fences have been used under special conditions to help obtain uniform use. Miles (1951) found electric fences to be economical, easy to construct and satisfactory in gaining better distribution of grazing by sheep and cattle on high foothill range in Montana.

## Livestock Management Practices

### Herding

Herding of livestock, either on a continual or period basis, is one of the best ways of getting uniform use or ranges. The old saying "the eye of the master fattens the cattle" might be adapted by range men to say "the eye of the rancher improves the range and fattens the livestock". The successful stockman not only watches his cattle carefully, he also studies forage, soil and

moisture conditions carefully and constantly to make necessary changes in management.

The grazing habits of livestock on the range may change from year to year because of rainfall differences, severity of frosts and other reasons. The range rider who has covered the same range for several years is in a position to recognize the reasons for the variations in grazing habits from the normal and can thus move stock as needed or make other necessary changes to get uniform use.

In parts of the South, cattle tend to graze creek and river bottoms in the winter months, browsing the hardwood sprouts and cool season grasses and sedges which grow on these sites. Use of these areas is particularly heavy in severe winters when the bluestem range of the cut-over flats and rolling hills has little to offer in the way of green forage. During mild winters, considerable green forage is found in the bluestem range throughout the season, and cattle tend to graze these areas all winter resulting in better natural grazing distribution.

During dry years, marsh ranges

in southern Louisiana and Texas are more uniformly grazed because water levels are lower and cattle can cover more ground. During wet years, range riding or herding prevents severe overuse of the higher areas.

The practice of sheep herding in the West, particularly in connection with the one-night bedding system, has resulted in better distribution of grazing and has contributed greatly to range improvement on many areas (Fleming, 1922; Pechanec, 1949).

Good initial distribution is important when livestock are placed on the range. If cattle are left in large groups in locations where forage, water and salt are available, the animals tend to remain in those areas until the supply of one or more of these necessities become deficient resulting in heavy use in some areas and little use in others (Fig. 2).

### Salting and feeding

Some ranchers prefer to feed or salt livestock near water, corrals or other permanent locations on the range because of the convenience in checking livestock. Many other ranchers realize that it is more important to watch the grass as a means of looking out for the welfare of their stock.

Bentley (1941) showed that when salt was placed away from water on range in the ponderosa-Jeffrey pine type, cattle did not go to water directly after salting but grazed the outlying forage in the salting area.

Use of salt blocks is a practical method of salting to improve grazing distribution. The new blocks are placed in a different location as the old ones are used up. Blocks can be placed on rocks, stumps, or on stakes driven in the ground. Portable salt and mineral boxes are being used by many ranchers. When the troughs need refilling, they are moved to new areas where forage is abundant. Some troughs

are made on skids to be moved by truck or tractor; other types may be loaded and hauled to the desired location.

The Southwestern Forest and Range Experiment Station (1952) reports considerable success in improving uniformity of range use with salt-meal mixtures. Supplement was fed at and away from water in one pasture and away from water, only, in a second. Treatments were reversed the second year for comparison. Improvement was made by reducing areas of excessive use and increasing the areas of proper use. Stoddart and Smith (1943) describe the use of salt on the lower ranges only to hold cattle at lower altitudes until higher ranges are ready to graze.

The practice of supplementing dry grass by feeding good legume hay in portable feed racks is gaining in popularity in the South. These racks are built on skids and can be moved about periodically with tractor or truck. This practice has not only contributed to more uniform use of the range, but several ranchmen claim it results in lowering the amount of hay and other feed required to feed cattle satisfactorily.

A very common practice on many ranches is that of carrying hay, cake or cubes onto the range in a truck or pickup, blowing the horn to call the cattle, then feeding them on the spot or leading them to underused areas. The operator is able in this way to control grazing distribution and to check on his cattle with very little trouble. This practice can receive its widest application only on range of gentle topography, but it is very effective once the cattle become accustomed to it.

#### Miscellaneous

Several other livestock management practices help to improve grazing distribution. Shearing with portable outfits on sheep allotments



FIGURE 2. Leaving cattle in large groups on fresh range usually results in overuse of local areas.

instead of at commercial or association plants and trucking sheep to and from range units lessen use along driveways and reduce trailing. Better predator control makes it possible to bed out sheep wherever night overtakes them. Cattle sprayed regularly with fly-repellent sprays do not concentrate in brush or other protected areas.

### Forage Improvement Practices

#### Deferred and rotation grazing

By deferring or rotating use of range areas, the grazing pattern of the range is broken. All parts of the range reach about the same stage of growth and succulence during the rest period. Deferred and rotation grazing permit utilization of less desirable plants when they are most palatable and makes it possible for the better forage plants to grow and improve when not being grazed.

Hyder and Sawyer (1951) reported that rotation grazing on bunchgrass-sagebrush cattle range in southeastern Oregon resulted in better distribution of grazing than season-long grazing. Their data showed that 56 percent of the rotation-grazed ranges was properly utilized as compared with 39 percent of the season-long range. The areas receiving heavy utilization

comprised 26 percent under rotation and 37 percent under season-long use. Lightly-grazed areas made up 18 percent of the rotation range and 23 percent of the range used the full season.

Grazing ranges to the desired degree of use in a relatively short time and then removing the stock to let new growth take place leads to uniform range use and helps overcome patchy grazing.

#### Control of undesirable vegetation

Control of brush on ranges in South and Central Texas by using chemicals or by bulldozing, cabling or chaining has made possible better use by livestock. Such operations are more successful when used in combination with other good management practices. Brush control should be practiced first on areas farthest from permanent water to improve grazing distribution. Experience has shown that cattle prefer the grass after the shade has been removed and tend to graze the openings even though they may be some distance from water.

Mowing old, unpalatable growth in lightly-used portions of the range increases succulent new grass and helps draw cattle into such areas. This practice is particularly helpful in high rainfall areas.

### Seeding or fertilizing

The use of seeded and grazed firebreaks on the forest ranges in the South has been described by Peevy and Campbell (1948), Silker *et al.* (1950), and others. This practice is designed to help control wildfires by establishing closely grazed strips of vegetation in critical areas and in conjunction with plowed fire lanes. Strips about 40 feet wide are seeded to low-growing forage species such as carpetgrass and fertilized to help establish them and to encourage cattle to keep them closely grazed. Effective firebreaks have also been established through grazing by fertilizing native bluestem range (Silker *et al.*, 1950). This practice aids in getting good distribution of grazing and is being used by several livestock operators. Strips must be located with full consideration to location of water and fences, and established with care to insure against undue damage to timber, grass and soil. Fertilized strips 40 feet wide need a plowed strip 4 to 6 feet wide along each side for effective fire control in unusually dry years.

Since fertilization encourages heavy use, great care must be used in treating range areas. Where land is fertilized in a block, fencing is

desirable to control grazing of desirable forage species. It is doubtful if the cost of such fertilizer programs on southern ranges may be justified by benefits from forage improvement and grazing distribution except when combined with improved fire protection.

### Burning

Burning has a definite influence on grazing distribution in at least two instances. Prescribed burning on longleaf pine ranges in the South is a forestry practice to reduce brown spot leaf rust on young pine and to reduce the hazard of wildfires (Campbell and Cassady, 1951). Burning removes old rough and makes new succulent grass available to range cattle. Uncontrolled burning has been partially replaced by the practice of prescribed burning on areas which would not be damaged by either burning or grazing. Over-utilization is thus avoided on critical areas.

On fenced units in the longleaf pine forest ranges, proper grazing eliminates the need for burning to reduce roughs. Under proper grazing, a serious rough never develops and all other good practices can be used to get uniform range use.

Second, burning is practiced widely in the salt marsh ranges along the Gulf Coast. These ranges are seasonal, more because of mosquitoes than growing conditions and in general, are not grazed from mid - April until mid - October. Ranges are commonly burned between August and November to remove the rank top growth which accumulates during the summer. Ranges are never completely burned every year but are burned "patchy". The new young growth on burned areas is favored by livestock during the winter months. The unburned "rough" furnishes some protection and serves as bed grounds.

Marsh ranges are burned only when the ground surface is covered with water. If burned during dry periods, extensive damage to the plant roots takes place and in some areas, the organic soils burn out to considerable depth.

Well-managed ranges, burned every other year and grazed for the six months grazing period, have remained in excellent condition. Judicious location of these burns is very helpful in getting uniform range use.

### Improving Accessibility of the Range

The construction of stock trails, driveways and roads has done much to improve grazing distribution. In rough or rocky range areas, stock trails have been constructed to reach high mesas or similar locations of good forage not otherwise reached by stock. Trails have also been constructed through rocky barriers to water locations near grazing areas (Hendricks, 1939).

Roads or lanes in heavy brush are being used by some ranchers to get more uniform use of their ranges and to permit easier handling of livestock.

Stockmen operating in the coastal marsh range are building levees for cattle to use for walkways and bedgrounds (Williams, 1952). These areas are subject to prolonged over-



FIGURE 3. Earthen levees with staggered borrow pits improve accessibility of marsh range and enable cattle to graze range evenly.

flow and grazing use is concentrated on the low ridges. Cattle will graze about a quarter of a mile from such levees or ridges in water nearly belly deep.

Location of "walkways" is determined by the size of the unit, existing ridges or levees, and permanent water. The borrow pits from which dirt is taken are staggered from side to side at intervals of several hundred feet. This prevents the pits from serving as drain ditches and permits cattle to move either way from the levee. (Fig. 3).

Road construction in range areas has permitted the trucking of stock thus reducing trailing and use along driveways.

### Summary

Uniform and proper use allows maximum sustained harvest of forage by livestock. Many practices being used by ranchers to get uniform use of ranges are not new, but have been adapted to modern ranching operations.

Stock water facilities, including temporary types, fencing and herding are the most widely used practices which contribute to uniform range use. Salt, salt-meal mixtures and supplemental feeds placed away from water provide flexibility because they can be moved as grazing conditions change. Increasing accessibility of ranges relieves use of overgrazed areas and makes ad-

ditional forage available to livestock.

The size of the grazing unit, the number of range sites, the range condition pattern and the habits of range livestock are the points a range man must study to determine what practices will help him achieve uniform use on any range.

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