What is Range Management?[1]

L. A. STODDART

Head, Department of Range Science, Utah State University, Logan, Utah.

RANGE MANAGEMENT is the care of natural grazing lands. It may be further defined as planning and administering the use of rangeland to obtain maximum livestock or game production consistent with conservation of the range resources.

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In defining the term range, distinction should be made between a ranch and a farm. All gradations between the two may exist. Typically, however, a farm is smaller and the major product is of the vegetable kingdom, grown on plowed land. A ranch is larger, the major product is animal, and the animals are produced on unplowed land called range. Usually range remains unplowed because it is not suited to plowing. Often this is a result of precipitation being too low to support farm crops. It may also be a result of steep mountainous terrain or of soil too infertile, rocky, or shallow for economic farming.

It should not be concluded that farms are not important in livestock production. Actually, farms in the United States produce more livestock feed than ranges. Farm feed is hay and grain which is harvested and fed to penned livestock or it may be pasture forage which the animals harvest themselves by grazing.

The terms pasture and range should be clarified. Pasture usually refers to small, fenced grazing lands which have been

plowed and planted to improved species of grasses or legumes. Pastures are typically part of a farm; indeed pasture grasses often are rotated with other crops on the farm.

Range, as has been pointed out, is an adjunct of the ranching business. The land may or may not be fenced, but if it is fenced, the units are much larger than the usual farm pasture. Range supports native vegetation such as prairie grasses and desert shrubs. Trees may occur in large numbers and the land therefore be called a forest. But, if grazed, it still properly may be called a range, also. Occasionally, ranges, just as pastures, may be seeded to introduced grasses. These seeded ranges are usually larger than pastures and are not cared for so intensively as typical pastures. Also range seedings usually are more permanent than pasture seedings.

Low productivity of most range land requires that ranchers have large areas to produce an income sufficient to maintain a family. In the United States, such large areas may be uneconomical to own, hence publicly-owned lands often are leased to supplement private range. Some 50% of the range lands remain in public ownership, mostly under jurisdiction of the Bureau of Land Management and the Forest Service.

America's western ranch country has been so fabled by television, novels, and western magazines that it is famous throughout the world. But range livestock production is by no means confined to the West, nor, indeed, to the United States. The Southeastern and Gulfcoast lands of the United States are increasingly important grazing areas. Improved livestock and forage plants and cheaper soil fertilizers have increased production of these areas tremendously. Major range grazing regions outside the United States include Australia, southern, central, and northern Africa, South America, and southern Siberia.

Actually, western America's range activity today differs greatly from the legendary picture. The open-range or free-range of the pioneering era has all but passed. These valuable lands now are almost all closely controlled. Fences are being built at a pace that will soon enclose even the most remote ranges. The pickup or jeep has replaced many of the horses. Longhorns have been replaced by quality cattle, often purebreds. Hay and other supplemental feeds have alleviated much of the old fear of blizzard and drought. But the western visitor today can still see the hard-riding cowboy, the roundup, and the picturesque flocks of sheep being driven to new range.

Range animals are largely breeding livestock which produce calves and lambs. The midwestern states are the main feeding area to which many of the range-grown calves and lambs are shipped to be fattened on grain.

In southern climates, where winters are mild, livestock remain yearlong on the range and may spend their lives on the same range. But in the North, deep snows prohibit winter grazing on some ranges. This makes necessary yearly migration from snowy high-elevation range to low-elevation winter range or to feed yards. By moving in this way, many ranch sheep spend all of the year on range, but most cattle in the North spend part of the year on farm fields or in feed yards where they subsist on hay.

Range cattle, even on unfenced range, are normally not attended by herders, although the range rider may move them about on the range at frequent intervals. Many range sheep, however, are constantly under supervision of herders. A herder may tend a flock of 1000 to 3000 sheep and he more or less directs their movements at all times.

Changes on the Range

Important changes are occuring in Western United States. Extensive and cheap lands were the foundation of the ranching business. Tremendous increase in human populations and improved transportation facilities are fast reducing the isolation that once made the open-range possible in the West. With increased accessibility there is great demand for land and it is no longer cheap.

Increasing human populations leave less space for ranching. But even more important, people require land for recreation and they need great volumes of water to drink, run industrial machines, and irrigate farms. Both recreation and water are land products which compete with grazing. Watersheds often are reserved from other uses to insure plentiful supply of pure water. Recreation involves space for picnicking and sight-seeing. It involves steady and undisturbed streams for fishing. Most important to the rancher, this demand for recreation involves increased game numbers for the hunter. These animals require forage, much of which was formerly available for livestock.

Management of public ranges already has been marked by a decided de-emphasis of livestock grazing and increased attention to rival land uses. All this is part of a tremendous and permanent change marking an inevitable end of the American frontier—the final conquering of the West by civilization.

More and more, the rancher must depend upon intensive use

of the range with less area at his disposal. More supplemental feeds, better livestock quality, and careful husbandry are rapidly replacing the limitless free range, isolation, large numbers of inferior-quality livestock, and the irresponsibility that marked pioneer western ranching.

Management of the Range

The objective of range management is maximum production of meat and wool without damage to the land. Too optimistic estimates of the grazing capacity of ranges throughout the world in the past have resulted too often in overgrazing and deterioration of the vegetation. Where misuse was continued to the point of devegetation, soil erosion and devastation of the land resulted. The modern range manager's chief duty often is to prevent further damage to the land and to restore it to its original condition.

The technical manager must have at his command a complex methodology enabling him to foresee changes in the vegetation and deterioration of the land resource. He must be able to estimate grazing capacity, which is a product of both kind and amount of vegetation. Grazing capacity is also influenced by amount and distribution of drinking water for the animals, topography of the land, and time of grazing. The manager must be able to appraise utilization of the forage so as to avoid overuse. He must also determine the range condition or the actual forage-producing performance of the land as compared to its capability. The range trend also is important, i.e. whether the condition is improving or deteriorating.

Scientific range management is based upon an understanding of botany, especially plant ecology, physiology, and taxonomy. Of almost equal importance, however, is animal husbandry. Understanding animal nutrition and the complexities of animal behavior and animal care is fundamental to complete understanding of range management.

It should not be concluded that knowing botany and animal husbandry makes one a range manager. Range management is a science in its own right. There are 16 American universities which give degrees in range management. The Range Management Education Council is an organization of western universities which studies range teaching programs and standardizes college curricula in range management.

Phases of Management

Major phases of scientific range management include the following:

1. *Deciding proper grazing use.* This involves selection of the correct kind of grazing animal, i.e. cattle, sheep, game, or some combination. It also involves making a forage resource inventory to aid in determining the right numbers of animals, the season of year they are to be grazed, and the best grazing system. The grazing system may include such things as how to herd sheep and how to rotate the grazing between different areas of range and different seasons of the year.

2. *Improving forage production.* Forage yield sometimes may be improved by seeding new and better forage species, killing undesirable and sometimes poisonous weeds and brush to allow better growth of more palatable forage, fertilizing the soil, spreading flood-water over adjacent land, and poisoning insects and rodents.

3. *Increasing usability of range.* Many ranges have rough topography and poorly distributed watering places so that it is difficult to get uniform grazing use, especially when the animals are unattended by herders. This problem can be solved in part by building properly located fences to control distribution of the animals. Developing new water holes, digging wells, and building storage reservoirs or tanks will enable the animals to reach distant parts of the range without excessive travel for water. Placing salt in ungrazed portions of the range helps draw stock to these areas. Building trails will aid animals to reach mountainous lands normally inaccessible.

4. *Managing the livestock.* Profit from the ranch and efficiency of range land use are directly influenced by the husbandry of the livestock. The manager should know the effect of nutrition on reproduction, weight gain, and wool yield. The cost and return from supplemental feeding of livestock on the range must be studied. The problems of livestock buying and marketing are complex and affect ranch income directly. Animal breeding influences quality and yield of livestock. The manager must know good livestock quality and how to emphasize it through an understanding of genetics. Diseases must be known and avoided or cured. Proper protection and care of livestock are especially important during calving or lambing and during cold winter months.

5. *Correlating grazing with other land uses.* As range land becomes increasingly less isolated from society, uses other than grazing become more and more important in management decisions. The manager of private range is primarily a stock raiser, but he often finds it economically desirable and socially necessary to consider other land uses in planning his operations. Even more so, the manager of public ranges is involved in the

social aspects of multiple use of land and must decide the relative importance to society of hunting, fishing, sightseeing, picnicking, growing trees, or producing water. Livestock grazing must be properly correlated with these other uses so that the multiple uses will least interfere with each other and so that the land-use program, in its entirety, will benefit society the most.