

Journal of RANGE MANAGEMENT

Editorial

The Western Range and Changing Human Economy

IT IS an incredible thought that one short century ago the vast western terrain that comprises the major area of America's range lands was Indian country scarcely scratched by the trails of migrating pioneers. Today hundreds of prosperous cities dot the landscape, and paved highways, railroads and airlines have obliterated every vestige of those geographic frontiers known to our fathers. There remains no segment of our land to be explored or conquered, and few sizable acreages have escaped the exploitation of their mineral and agricultural resources. For us and for generations of Americans yet unborn, the frontiers of new wealth must forever lie in the more efficient and prudent use of the natural resources already known.

That the range resource was a major factor in the prosperous settlement of the West, History gives ample evidence. That the grazing industry must continue to serve a major role in our future economy, few would deny. The great question of the moment is "can this be done and how?" "Tis one and the same Nature that rolls on her course," and whoever ventures to anticipate the future in range management must occasionally retrace the past and consider well the present in range conditions and trends.

The history of the Western Range over

the past century may roughly be divided into two periods of approximately equal duration. The first (1850-1900) was, in general, a period of settlement, expansion and unbridled exploitation. It was conceived under a national psychology of unlimited abundance and dominated by a pioneer spirit of boundless production. The completion of the trans-continental railroad in 1869 released the barriers to adequate markets for livestock, and initi-



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ated a boom in the grazing industry that was as spectacular in magnitude as it was short in duration.

The second period (1900–1950), a logical sequel to the first, began with a crash in the grazing economy that was widespread in extent, tragic in its consequences and shameful in its basic underlying causes. An attempt to assess blame would entail great injustices, for society as a whole was guilty. Young America liberated from Old World austerity was drunk with the idea of New World abundance. The science of ecology was in its infancy, and there were no yardsticks by which it was possible to measure or predict the consequences of overstocking. Worst of all, there were no sympathetic ears to listen even if all this had been known, for the settlers of the semiarid West were but newly transplanted from the humid cultures of New England and western Europe, where space was the chief limiting factor to copious agricultural production. A series of misguided land acts by Congress during the period of grazing expansion provided little incentive or possibility for livestock operators to acquire ownership of the lands they grazed; yet there was total lack of a national policy to provide Federal management of these pioneer grazing areas. All these factors were as certainly bound to incite war for forage as they proved to invite speedy disaster.

The past half century, so far as the grazing industry is concerned, has been a period of adjustment, investigation, and attempted rehabilitation of the range. We have learned much. The basic causes and effects of range deterioration have been experimentally verified, and the necessary practices leading to range recovery have been demonstrated. Today hundreds of competent scientists in the various services of the Federal Government and in private and state institutions

are contributing valuable information to the many facets of the complex problems of land management. A partial list of these includes research in range management, range animal husbandry, forage utilization, range wild life and forest entomology; in range botany and range plant physiology; in natural revegetation and artificial reseeding; in watersheds, range economics, range weather and range soils.

This list of diversified research activities serves well to emphasize the fact that most of the problems confronting range management reach far beyond the limits of any one discipline of the natural and social sciences and point to the present and future needs for cooperative group investigations.

The practical results of our research programs over the past five decades would be more heartening if range recovery were at all commensurate with the scientific information at hand. But the fact remains that we know much more about what needs to be done in range management than we know how to accomplish it.

Among the several causes for this dilemma should be mentioned the practical difficulties of reducing stock numbers to range capacity, the recent phenomenal increase of big game over much of the mountain ranges, the tenacity with which many stockmen attribute reduction of forage to acts of God rather than to their own transgressions, and the reluctance of the public in general to realize their relationship to the land or to accept the practical values of range investigations.

An analysis of any or all of these deterrents to a more healthful range economy will finally and inevitably point to one and the same solution—the need for greater public enlightenment on the issues and problems that confront the range. If range management is to keep pace with

range research, urbanites as well as rural folk must come to realize that as populations increase and the complexities of civilization expand, the multiple use aspect of our wild lands assumes greater public importance and raises issues that strike at the root of personal and social liberties. The public must become acutely aware of the fact that no community can expand or survive without an adequate water supply and that well regulated streams or underground water sources are dependent on a properly managed soil mantle. The common man must realize that in order to protect watershed areas and at the same time to maintain grazing populations, the revegetation of potentially productive areas elsewhere is an urgent necessity. Greater recreational use of restricted lands is a recognized human need. And superimposed on all these problems is the issue of private vs. public control and ownership of the Public Domain.

There are some of us who, perhaps, honestly contend that the business of the scientist is to search for truth and not necessarily to publicly proclaim it. But surely if men who created the atom bomb consider it their moral duty to warn society against its use, can the ecologist or range manager logically shun his responsibility in warning society against the evil exploitation of the soil resource? There is in my opinion no more justification for a "public be damned" attitude for those of us who could well dedicate our efforts to conserve a resource, than there is for those who would selfishly despoil it. In the field of public education we should find opportunities to attain more quickly the goal of our research and certainly to attain new horizons in the service of mankind.

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GRAZING INTENSITY AFFECTS RUN-OFF

Knowledge of the effect of grazing intensity upon run-off and soil erosion is of vital importance in grazing management, especially on mountain watersheds. E. G. Dunford, at the Rocky Mountain Forest and Range Experiment Station, has recently reported results from studies on this problem in Colorado. The studies were made on Arizona fescue-mountain muhly range with a 17 percent slope at the Manitou Experimental Forest. Cattle were allowed to remove an average of 57 and 33 percent of the herbage on duplicated plots (0.01 acre in size) for heavy and moderate grazing. In addition, two plots were completely protected.

From 1942 to 1948 run-off was two and three times greater on moderately and heavily grazed plots, respectively, than on the ungrazed control plots. Soil erosion was not significantly affected by moderate grazing. However, heavy grazing caused 186 pounds of soil loss per acre compared to less than 100 pounds for the control. These data, indicate too heavy grazing lowers the absorption of moisture needed for plant growth. Increasing soil erosion on heavily grazed range strikes at the productive potential and watershed value of the site.—From Research Note No. 7, 1949. Rocky Mountain Forest and Range Experiment Station.