

Rangelands—Challenge to the Mind¹

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Highlight

The challenge to the range manager and scientist is to seek the greatest possible insights and understanding of range resources; then to evaluate and systematize information about these lands so their use can be integrated into local, state, and national goals. Our challenge comes from each other and from the needs of society.

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In the 1840's the fledgling nation in eastern United States was facing a perplexing decision as to whether to expand westward or to consolidate and develop an already extensive and sparsely settled land. While President Polk was framing the goals for his administration, a small group of literary utopians near Boston, known as Brook Farmers, coined the phrase "Manifest Destiny," and rationalized that though the process violated their principles, they considered the extension of civilization westward the edict of Divine Providence. The phrase caught the imagination of the public, and nurtured the

popular concept that westward expansion was God's will, and that the hardy trappers, prospectors, and pioneers, even in their often vicious subjugation of Indians and nature, were in some way fulfilling the dictates of God.

But even as the desire to fulfill God's will by promoting "Manifest Destiny" pulled men westward, they saw the area between the Missouri River and the Pacific Coast as a wasteland to be endured but not enjoyed or settled. Coronado, the Lewis and Clark Expedition, Zebulon Pike, Horace Greeley, Daniel Webster, and the school text

books all agreed that this large expanse was the Great American Desert.

Even the Mormons, who sought peaceful isolation on the fringe of this desert, were repelled by some areas of our western range. One scouting party sent by Brigham Young into the Green and Colorado River plateau areas returned with the conclusion that they could see no possible use for this country except to hold the rest of the earth together. With that report as a reference, settlement of this large area was delayed at least 20 years.

But as the westward expansion continued, men started to fill in the hinterlands. In the last quarter of the nineteenth century references to the "Great American Desert" disappeared almost by magic. Wheat replaced cattle as king of the Great Plains, and, lulled by a decade or two of favorable precipitation, the phrase "rain follows the plow" was accepted almost as readily as quotations from holy scripture.

Gutkind (Thomas, 1956, p. 1-44) has analyzed the changes that generally occur over time in the relationship between man and his environment. He points to four stages of transition in thought and action. Frequently they can be found in close proximity.

The first stage is dominated by fear and a longing for security. It was fear of unpredictable and unknown forces of nature and of the hostility of other men that led to homes in caves, much later to the village, and later even had an influence on precursors of modern cities. Using such vantage points, early man organized and consolidated his attacks on nature. During this stage, extending from primitive man to the pioneers of the last century, people evidenced a respect and at times reverence for

nature that has been described as an "I-Thou" relationship. Man respected nature and felt himself a part of it. He solved his practical problems empirically. His fears of nature were tempered by respect and dependence on it.

The second stage, typified by pioneer periods, is marked by growing self confidence and increasing observation. Man begins to clear forests, cultivate the land, irrigate when necessary, and make other changes in his environment to suit his needs. The feeling of respect for nature is sustained but with a growing belief that man may after all be destined to be more conqueror than partner. The "I-Thou" relationship is starting to crumble.

The third stage is characterized by aggressiveness and conquest. Adjustment to the environment develops into exploitation. Here man is motivated by the delusion that he is an "omnipotent remaker of his environment." But even as man triumphs over nature, he plants the seeds of his own defeat. As he destroys the plant cover he reaps dust and floods. His early attempts at irrigation resulted in salty and waterlogged soils.

In our western rangeland we see the first period as that of the Indian and the early trappers. They moved through the land as part of nature and left few lasting marks. The second period began with the Oregon Trail, the Utah settlement by the Mormons, and the 49'ers treks to California under the attraction of gold and the illusion of sudden wealth. From these early settlements the subjection of nature spread outward and the third phase was under way. Cattle numbers increased rapidly, reaching a peak in the Great Plains in the 1870's and 80's and in the Intermountain region by 1910. In the Great Plains cattle

eventually gave way to wheat. The combination of improper grazing and overextended tillage of poorly adapted lands caught in a prolonged drouth led to the dustbowl years.

During a period of about 30 years beginning in the early 1900's vegetation-depleted watersheds poured rocks and debris on thriving communities along the Wasatch Front in Utah. My own youth was marked by a night of terror surrounded by such a flood, and that night was followed by years of hauling rocks from the land.

Based on these and other incidents, men began to question the conqueror's role and conceded that the battle with nature is not to be won by massive attacks. Nature has her own ways of combating myopic man.

The third stage of exploitation is now hopefully drawing to a close and Gutkind's fourth stage of cooperation and responsibility toward the environment is slowly taking shape. In this stage man the individual and collective man in government, even as he seeks to make modifications, realizes that he must conform in large measure to nature's ways. At no point is this transition more evident than in the management of our rangelands. The individual rancher is proceeding rapidly with range improvement involving controlled grazing systems, reseeding of grasses and control of undesirable shrubs. Response to the challenge of these lands was also marked in government by organization of the U.S. Forest Service in 1905 and the U.S. Grazing Service in 1934. Initially small, these agencies gained in power and prestige, serving as an antidote to the widespread sentiment that man could go to any lengths to extract wealth from land. Agency efforts were first to regulate and protect the land. Gradually this policeman's role is giving

way to that of husbandman. Responsibility is being assumed for the study of our lands and for their improvement and management for the benefit of man. The stage has been set for man's entrance into Gutkind's fourth phase; the direction is evident, but specific goals and the steps necessary to achieve them are as yet indistinctly perceived.

Whether we fulfill the ideal—or even come close—will be influenced by our understanding of the nature of man in relation to nature. Research may in part provide us with guideposts, but often it may only tell us which way we are traveling, and warn us of the consequences. Both roles are important, and in either case the decisions will be ours to make.

The future of our rangelands will certainly be affected by how man sees himself. Does man see himself as a part of nature, or as being apart from nature? Do most men believe their mental and spiritual health depends on being close to nature or do the majority find greater satisfactions in the artificial environment of large cities. In spite of impressive statistics on increased visits to national parks and forests and numbers of hunters and fishers, the evidence is inconclusive that a majority of people feel a real kinship for nature away from the protective society of large municipalities. Clawson (Darling and Milton, 1966, p. 246-260), for example, concluded that all outdoor recreation accounted for only 3.5% of USA leisure activities in 1960. Even though second homes in the mountains or other natural areas are being built at an increasing rate, now near 100,000 per year, with a potential of twice this rate of construction, this too is not convincing evidence of back-to-nature movement. A vacation residence is usually in a development area, while the second

home is in a different location, it is crowded on lots comparable in size to that of his home in the city. The owner of a vacation home often has the same neighbors and follows a similar routine to that in the city. He has perhaps moved closer to nature, but is no more a part of it than when in his city home. Perhaps man's love of nature is overpowered by his dependence on electricity, running water, and sanitation.

Even though a majority of Americans are apparently physically estranged from nature, many of these same people in their random musings and TV viewings happily identify with early trappers and scouts who in their minds move stealthily through wilderness without breaking a twig. No doubt this illusion was nurtured by reading such books as "The Last of the Mohicans" by James Fenimore Cooper, and is now reinforced by the popularity of Westerns on TV.

This popular American concept that the true beauty of nature exists only in the remote wilderness is in sharp contrast to the European approach which recognizes the rewards that can be gained from communion with nature in a garden.

The idea of pristine natural beauty as indispensable to an inner need of man has fathered national and state legislation and resulted in numerous societies dedicated to preserving such ideas. But for us it is not enough to recognize the existence and influence of such concepts. We need to determine whether this is a general, basic, and enduring pattern of thought. The interests and motives of a vocal minority often prevail over the silent majority. Further, there is need to anticipate where alternative roads may lead us.

Certainly the creation of wilderness areas may be destructive

of the primitive natural beauty they were established to protect. The label of a "wilderness area" in itself is enough to excite the curiosity of large numbers of people. The massive increase of unrestricted human activity in many of the designated wilderness areas poses a threat to their future. A careful reexamination of our policies on this problem are in order.

Perhaps next to how man sees himself, the future of our rangelands, and especially the public lands, will be determined by how man views the role of government (Galbraith, 1958). People who have lived close to the land have on one hand cherished a spirit of independence and on the other hand have looked to government for special rights and privileges. These somewhat conflicting viewpoints can be traced through federal legislative acts and protest movements against laws thought to encroach on special interests. The Whiskey Rebellion in the late 1790's was a violent protest against a tax on grain. But this was soon followed by a prolonged and successful effort to legislate protective tariffs against imports of competitive food and fiber products. The Free Land Movement of the 1850's was followed by the Homestead Act of 1862. The Hatch Experiment Station Act and the Smith-Lever Extension Act provided for research and educational programs to help with agriculture and land and water management problems. More recently, acts have provided credit at reduced rates, massive water development projects, special assistance in land development and improvement, and price supports. Fortunately many of these programs have become oriented toward soil conservation and related activities designed to cooperate with and assist nature.

The common feeling that large

areas of remote land should be preserved in their natural state is readily linked with the federal government owning over 400 million acres of such land in the 48 conterminous states. The idea that each U.S. citizen is a part owner of these lands is gaining adherents almost daily. This increasing public interest associated with the feeling that the early West was the real world and that as much of this as possible should be preserved, may result in a large proportion of federal acres being held as museums unless the public image is altered.

Scientists, land managers, and associated technicians have developed their own private set of beliefs relative to the unsubdued lands of western United States. Some of these have generated slogans and activities among the general public that have lasting effects. The "conservation" movement is one example. A whole philosophy of land use and management has been built around the original concept. But "conservation" now means so many different things to so many different people that no definition satisfies all. Perhaps this vagueness is why so many people embrace it so readily.

The term "multiple use" applied in connection with our rangelands evolved as a stepchild to the conservation movement. Conceived first as an alternative to single uses such as livestock grazing, watersheds, or big game on our wildlands, the term has found wide acceptance and has gradually broadened in definition. The broadest definition to date was enacted into law for the Forest Service in 1960 as the "Multiple Use Sustained Yield Act." This has also been adopted by a 1965 Act to make the Bureau of Land Management a multiple-use land-management agency. The definition contains something to

please almost everybody, but as a consequence has little value as a guide to land use. Its vagueness has led to arguments being made for other concepts such as "optimum use."

Any discussion of land management is filled with such value terms as "suitable," "highest use," "primary use," "wise use," "good," "better," "sound," and even "best" and "greatest." Such terms have almost opposite meanings for a cattleman or a river development engineer than for the leaders of the Sierra Club. The use of such terms can help perpetuate misunderstandings. Also, habitual use of ambiguous terms tends to negate critical thinking and make clear statements of our goals, practices, and standards virtually unattainable.

It seems to me these indefinite value terms and slogans persist because we still feel we must propose goals for our land use that are conceived and expressed in terms acceptable to a wide cross section of people. This is one of the challenges we must face. We must have the courage to plan wisely even when wisdom does not equate with popularity. We must set goals conceived on the basis of facts and find ways to describe them so they catch the imagination of the citizenry.

In these critically formative years of policy and practice pertaining to the use and management of our rangelands we need to take a new look at the range manager. Perhaps even that phrase and the name "American Society of Range Management" are anachronisms. They seem to involve an assumption that policies and procedures are established for eternity. In reality this period demands a willingness to continually question the past while looking to the future.

The idea that the land resources of this country are in-

exhaustible was a dominant force in policies and practices for better than 150 years. Until recently the frontier offered an escape vent for the underprivileged or the down trodden who had the courage to use it. Today this outmoded concept is being perpetuated, but in different terms. Our economists have plotted the increase in crop yields against projected population increases, and have concluded that improved production efficiency will adequately provide for our added population over three more decades. Some see the trend as continuing indefinitely into the future. Plant, animal, and soil scientists who are more directly concerned with the techniques through which the production levels of food, fiber, and wood products have been increased are less confident of the future.

I am not so much concerned about the picture the economists have painted or of any imminent shortage of food however, as I am about this image of excess land creating a public illusion that land can be wastefully dissipated without concern for the future.

The nation's range and pasture lands include nearly as many acres of soil suited for cultivation as are now used in crop production (Wadleigh and Klingebiel, 1966). There are about 120 million acres of land classes I to IV in the seventeen western states. This is a great reserve for future generations, but it is not inexhaustible, and it is not being protected effectively against depredation. Much of this land is remote from water supplies and much of the rest is of poorer quality than that now cultivated.

The U.S. Department of Agriculture estimated for the Senate Select Committee on Water Resources (1960) that special uses such as for urban, industry, transportation, and wildlife ref-

uge purposes will require 72.6 million acres of western land by 1980 and 88 million in 2000. The total acreage is less crucial than its qualities and location. Short-sighted urban expansion is taking over much of our best farm land and the associated water supplies. Interstate and other highways are bisecting large areas of range land, creating problems for big game migration and general management.

Ecology is now being promoted as the science that will provide the necessary broad base to resolve the divergent ideas and conflicting goals associated with our wild lands. Many range scientists see themselves in this broader role. If ecology is to fulfill this promise its area of concern must be the totality of life in relation to environment. The ultimate goal must be to couple the power of ecological concepts to the role of social values. Environmental relationships need to be considered in time and space as an integrated entity. The ecologist must establish how populations including man are affected by soil, air, water, and by other plants and animals and how populations are fitted into one or more communities. As these principles are refined they can become the basis of land management and the means for integrating land, plant, and animal development and use with social goals. The 27 ecological propositions restated by Pierre Dansereau (Darling and Milton, 1966, p. 425-462) provide some stimulating bases for examining alternative management practices and the impact of man on natural plant and animal communities.

The most distinctive features of our range and pasture lands are their extensiveness and their comparatively pristine character. These alone are enough to challenge the interest and the imagination of man. There seems

to be no possibility that the fate of these lands will be relegated to the trained ecologist or management specialist. This vast area has already attracted wide public attention and the pressures of conflicting interests and public opinion seem destined to increase, not diminish.

The idea that our western public lands constitute the great future playground of America is growing and may influence public policy more than the facts justify. Up to 1964 about 950,000 acres of BLM administered public domain had been classed as "recreation areas" and 400,000 acres as "recreation sites," both giving recreation as the dominant use. The Bureau estimates that its recreational land category might ultimately include about 4.2 million acres, or 2.5% of the Bureau's lands (U.S. Dept. Interior, BLM, 1964). By contrast, while Forest Service lands generally provide more attractive recreational areas than BLM lands, only 119,000 acres of national forests were reserved for recreational sites in 1965. Furthermore, western national forest land recreation areas had 60% of the recreational capacity of the nation's forests, but recorded only 24% of the visits in 1960. Conversely, national forests in the eastern 31 states contained 40% of the total recreational capacity but had 76% of the total users. The evidence indicates that over the next 30 years there would be no need to reserve more than 5% of our public lands for exclusive recreational use.

Even though factors in the public controversy, the challenge facing the range scientist today and tomorrow is not grazing versus big game, not water yields versus recreation, not timber yield versus primitive wilderness protection, nor even cleanliness versus pollution. The challenge is to seek the greatest pos-

sible insights based on a comprehensive understanding of these range resources; and then to evaluate, map, and systematize information about these lands so their use can be wisely integrated into local, state and national goals.

As we face the future I see the range scientist in a role of growing importance and responsibility in coupling the potentials of our wildlands to the long term needs of society. Range scientists must collect facts and from them deduce creative ideas for improved use and management of our nation's land resources. Whether we generalize, optimize, or economize, the problems and issues presented by our rangelands never have been as challenging as now.

The science of managing ranges is in relative infancy compared with the physical, biological, and agricultural sciences. Therefore, we have a smaller body of facts to draw upon. Our challenge here is not to just collect facts but to be discriminating in the facts we seek. Facts are essentially useless unless they are marshalled for or against an idea. Facts can abound and no one feels challenged. Our challenge comes from each other and from the needs of society. Unless our minds feel challenged we can be relatively sure that nothing significant will happen to the many other challenges discussed at these meetings. Rangelands must be a challenge to the mind or they are not a challenge at all.

You did not expect me to solve your problems. I can only encourage you in well doing. Yes, rangelands are a challenge to the mind. The challenge is two-edged. If we do not use our minds to bring new insight into our old problems, the trends and pressures will push inexorably along, without the benefit of our efforts. A great idea is worth

volumes of statistics, but the statistics may be invaluable in weighing the idea or even in its genesis.

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