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# CONSTRAINTS TO IMPROVED MANAGEMENT OF PUBLIC RANGE LANDS



A Panel Discussion Presented by the  
Range Ecology Working Group  
Society of American Foresters  
1980

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OF PUBLIC RANGELANDS

A PANEL DISCUSSION PRESENTED  
BY THE  
RANGE ECOLOGY WORKING GROUP  
SOCIETY OF AMERICAN FORESTERS  
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"CONSTRAINTS TO IMPROVED MANAGEMENT  
OF PUBLIC RANGELANDS"

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## INTRODUCTORY REMARKS

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Recently much has been written about the deteriorated conditions of the public rangelands. Not only have conservation and preservation groups stated that American rangelands are in poor condition and deteriorating. Even management agencies themselves have tended to accept that charge hoping funds will be forthcoming for the management of lands under their custody. Such papers as the 1974 Bureau of Land Management Nevada Report leave the impression that the rangelands are indeed deteriorating rapidly.

The data from reports required by the Resources Planning Act and the Resources Conservation Act do not bear out the charges that the rangelands are in extremely poor condition. In fact, a careful analysis of the data, imperfect though they are, for the last half century would indicate that the ranges have improved and are now improving. It is my belief that rangelands deteriorated rapidly in one or two decades after the first introduction of livestock and that almost all were severely overgrazed and depleted by the turn of the century. I further contend that the rangelands of this country are in the best condition that they have been in this century. I readily admit that there are many areas throughout the West where the rangelands are in poor condition and will probably continue to deteriorate. This does not mean that range managers are doing a poor job but that there are many constraints to the management of public lands.

The public rangelands of this country were put in public ownership for a variety of purposes. Some lands were set aside for specific purposes. The USDA Forest Service lands are a good example. They were set aside as forest reserves but quite early grazing was recognized as an important use. Other lands were withdrawn from the public domain for specific purposes. For instance, states selected lands from the federal domain for winter game range or other single uses. Federal agencies such as the military withdrew lands for bombing ranges, military reservations, etc.,

and other areas were withdrawn for recreational purposes. Those lands that were left were simply held for disposal at a later date. It was not until the Taylor Grazing Act in 1934 that grazing was managed on the public domain.

Quite recently a whole series of legislation has affected the management of the public rangelands. The National Environmental Policy Act requires alternatives to be examined for any significant action. The National Forest Management Act, the Federal Land Policy and Management Act, and other acts of Congress give direction for the management of the public rangelands.

Not only have there been legislative mandates for the management of lands, but citizens' groups have challenged management through the courts. The Natural Resource Defense Council suit against the Bureau of Land Management that required environmental impact statements to be written on all grazing allotments is perhaps the most notable example. However, challenges through the judicial system have been made by user groups throughout the West. Lawsuits will continue to be a major tool for controlling management of public lands.

Our panel today has been charged with examining the many constraints to the management of the public lands. Some of these are imposed by nature and are ecological in character. For instance, the very definition of rangelands indicates that it is land that is not suitable for intensive agriculture or intensive forestry. It is the land that is too hot, too dry, too wet, or too high for other productive uses. These biological and physical constraints set the stage for the management of this particular kind of land.

Economic conditions which in some instances will make it profitable to use the land and in others not form a completely different set of constraints. What may be economically feasible for one time may not be at another.

One has only to look superficially at the laws enacted in the past two decades and the interpretations of the courts to realize that there are many political and legal constraints which the manager on the ground cannot control. It has always been the policy of the public land management agencies to manage lands for the stability of local communities. However, as our citizenry becomes more mobile and more affluent, concern for those public lands is being voiced by many people not directly associated with the local communities and the direct

users of public lands. The land manager is faced with social constraints, both of the local community and the broader citizenry of the United States.

We are fortunate today to have outstanding people to discuss each of these major categories of constraints on the public lands. There will be time for questions after each paper and a general discussion at the end of all presentations.

PHYSICAL-BIOLOGICAL CONSTRAINTS TO IMPROVED

MANAGEMENT OF PUBLIC RANGELAND

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INTRODUCTION

The purpose of this paper is to explore to what extent lack of knowledge, or failure to apply available knowledge, about the physical-biological nature of range ecosystems has been a constraint to improved management of public rangelands. To state it another way, what factors other than economic, social, political and legal prevent application of best possible management and most rapid improvement to public rangelands? Specific objectives are:

--To trace the history of management of public rangeland in the physical-biological context.

--To examine the extent to which management has been hampered by lack of physical-biological knowledge based on experience and research.

--To examine the extent to which management of public rangeland has been characterized by failure to apply knowledge available in an effective manner.

HISTORY OF PUBLIC RANGE MANAGEMENT

The history of the public rangelands is well known and, therefore, only a very general review will be given here. Emphasis of this review is on the state of knowledge on which range management was based and the degree to which that knowledge was applied.

When large numbers of livestock were brought into the western rangelands in the period of 1865-1885 there was no organized knowledge of range management and little tradition or experience on the part of Anglo American ranchers in the use and management of arid and semi-arid rangelands. The lure of big profits, over-optimism about carrying capacity of the range, and competition for free grass resulted in

disastrous die-offs of livestock and financial crises for ranchers. This was the result of overgrazing coupled with droughts and/or severe winters which struck various parts of the West in the period of about 1885-1905. The devastated appearance of the range due to overstocking and drought in the Southwest was described by agronomists and botanists such as Jared Smith, J.J. Thornber, David Griffith, E.O. Wooten and others. These scientists recommended measures such as conservative stocking, deferred and rotational grazing, and reseeding. Although based more on keen observation than research, many of their recommendations are still sound in principle today.

The first recorded effort in range research was in 1896 by H.L. Bentley at Abilene, Texas, and the first range experiment station, the Santa Rita Experimental Range, was established by the U.S. Department of Agriculture and the Arizona Agricultural Experiment Station in 1903 (Stoddart, Smith and Box, 1975; Thornber, 1910). The U.S. Forest Service established an Office of Grazing Studies in 1910 under James T. Jardine (Price, 1976), and most state land grant colleges began some research and courses in range management in the period before 1920 (Stoddart, Smith and Box, 1975). A strong ecological emphasis was introduced into range management thinking by the writings of F.E. Clements and A.W. Sampson (e.g., Sampson, 1919; Clements, 1920).

During the period from about 1905 through the 1930's, the Forest Service established control over grazing on the National Forests. The major emphasis during this period was in adjusting livestock numbers and seasons of use to improve condition of the ranges. Although some scientific information based on research and applied studies was available, most of the management was based on experience and common sense. Apparently it worked. In 1935 almost

half the National Forest land was reported in good condition and 77 percent in improving trend, while on the uncontrolled public domain lands only 1½ percent was in good condition and 93 percent in declining trend (USDA Forest Service, 1936). While these figures may be more flattering to USFS management than warranted (Box, 1979), it appears that lack of scientific information was not the major constraint to a generally improved level of management on public lands during that period.

The 1930's brought drought and depression but also the Taylor Grazing Act, formation of the Soil Conservation Service (SCS), creation of a research branch of the U.S. Forest Service (USFS) and the Civilian Conservation Corps (CCC). During the 1930's and 1940's, much imaginative thought and research was done on methods of evaluating range productivity, range condition and trend, and the basic ecological relationships supporting these methods. The first large-scale inventory, the Interagency Range Survey, was made. Widespread efforts at re-seeding, brush control, erosion control and construction of improvements were carried out, especially by the CCC. Research on improved plant varieties or species, physiological ecology of range plants, seeding techniques and brush control methods was intensified to solve the problems created by many failures of these range improvement efforts. After World War II these efforts continued, although the emphasis shifted to less labor intensive methods based on mechanization and herbicides. It was also during this period that degrees in range management were established in many western universities, numbers of range-trained people increased, and range managers began their own professional society, the Society for Range Management (SRM).

The two or three decades following 1935 were marked by a fantastic increase in technical knowledge about all aspects of range management and improvement. Overall, range conditions on the public ranges improved or stabilized as a result of management practices and improvements used on a very wide scale. I believe one could say that money and trained manpower were the main constraints to improvement and that increases in scientific knowledge generally kept pace with the need for it. There were, however, some dismal failures in range projects and, in some cases, side effects were not anticipated. Partly this was due to the "shotgun" approach used and failure to apply existing knowledge. But failures also occurred where knowledge was inadequate, e.g., on erodible soils, shallow soils, very heavy or light-textured soils, limey or saline soils, in areas of low, erratic precipitation, etc.

Since about 1965, progress in acquisition and application to physical-biological knowledge has been less spectacular than before. There are several reasons. One is the increasing limitation on when, where and how range practices may be applied and the expense of complying with environmental regulations. Another is that research money has been diverted away from production-oriented range and wildlife research into research on non-game wildlife, range hydrology, endangered species and the like. No matter how valid this type of research may be in mitigating side effects of range improvements, it contributes little or nothing to more economical or effective methods of manipulating range vegetation. Finally, the problems have become more complex and harder to solve. Those ranges now in poor and/or deteriorating condition are, in many cases, ones where cost-effective, reliable, and environmentally acceptable technology is not available.

#### INADEQUATE KNOWLEDGE

Is range management on the public ranges constrained by lack of adequate knowledge about the physical-biological system? There are three major areas where I believe lack of knowledge is a constraint to better management and more rapid improvement of rangelands. Before discussing these, two points should be made. First, lack of physical-biological knowledge should be no more or less a constraint to management of public rangeland than to management of private land because that knowledge is, or should be, equally available to everyone. Second, by better management I mean management which is more predictable because it is based on specific scientific knowledge rather than rules of thumb or educated guesses which depend on long experience of trial and error.

#### Site Potential

The range site is the basic taxonomic unit in a system of ecosystem classification. It is analogous to the series in soil classification or the species in plant or animal classification. The range site is the basis for study of and communication about rangelands, for extrapolation of research results and predicting effects of management. Unfortunately there has been no generally accepted system for defining and characterizing range sites on a nationwide basis as there has for soils. The SCS has been the agency which has developed the range site concept and system of classification. Since SCS only operates on private and state land, range site classifications are inadequate or lacking on most federal lands, and even the concept is poorly understood by many federal land managers.

This situation is changing now that the Bureau of Land Management (BLM) has adopted SCS procedures for classifying and mapping rangeland. Lack of adequate knowledge about site potential and a common system of land classification has had several consequences for range management.

Failure to base range condition standards on range sites has meant that range condition ratings as presently used by USFS and formerly by the BLM confounded range condition with site potential. For example, a rating of "poor" may mean that the range is producing below its potential, or it may mean simply that the potential is "poor". Obviously, these are two very different problems, and it is essential to distinguish between them. To do so accurately, however, is not usually easy and will require continuing research efforts.

Range management practices often fail or have undesirable side effects because they are applied without regard to site characteristics. Now that soil surveys are increasingly available this happens less than formerly. However it is not always possible to predict whether a practice will work on a given site because the research on which it was based also was not tied to a given site. It is shocking how often research, inventory and monitoring data have been collected with almost total disregard for site differences, making them almost useless for extrapolation to other areas.

Comprehensive and coordinated land management planning now required of the federal agencies depends on a compatible system of different practices on output of products and values. Unfortunately, the classification and mapping systems presently used are inadequate and incompatible, and predictive functions are often lacking or unreliable. To be of real value, land management planning depends on better information about site potentials and characteristics than is now available.

#### Techniques for Range Rehabilitation

Despite many years of research and trial and error, knowledge of how to effectively and economically restore productivity and stability of deteriorated range remains inadequate. Two main areas need continuing research; brush control and reseeding.

Jardine and Anderson (1919) said "It is believed, however, that most of the range units within the National Forests will support the stock now allotted to them if the grazing periods, distribution of stock and the methods of handling the stock are reasonably well

adjusted". Why is the USFS continuing to make up to 75 percent reductions in permitted livestock 60 years after that opinion was expressed? They may have been optimistic about carrying capacity and, no doubt, the USFS failed to make some of those "adjustments" in management. But were these early range men so naive they could not recognize that there were two to three times the proper number of animals on the range? I don't believe it! The fact is that, in the Southwest at least, increase in size, number and area occupied by woody plants, including pine trees, has continually eroded the forage base for livestock and offset the gains made through permit reductions and improved management. Woody plant increase is a major cause of overgrazing on many of our federal ranges.

Of course, some species of wildlife have benefitted from the increase in woody plants, but on vast areas shrub density has reached the point where diversity of plant composition and wildlife habitat is reduced and site deterioration by erosion may result.

Technology is available to control woody plants. The problem is that many effective methods can no longer be used because of rising costs of labor and/or energy and increasingly stringent environmental restrictions. Operating within these constraints is going to require a great deal better understanding of shrub ecosystems to develop guidelines for desirable levels of shrub control and feasible techniques of achieving and maintaining these levels.

Where overgrazing or shrub invasion has greatly reduced or eliminated desirable species, revegetation is needed. Some of the earliest efforts in range research were directed at this need, and over the years a great deal of emphasis has been put on plant materials, equipment and techniques for range seeding. This research has made revegetation a reasonably reliable practice in areas of good soil and precipitation, especially where growing season rainfall predominates as in the Great Plains. However, on vast acreages of the western ranges where precipitation is lower and more erratic and soils often less favorable, revegetation is a risky undertaking. In areas of less than 8 inches of annual precipitation, reseeding is largely a matter of luck. In the 8- to 15-inch precipitation zone there are a handful of species almost all exotic grasses, which can be seeded with some assurance, at least on favorable sites. Knowledge necessary to reliably reseed with shrubs, forbs and native grasses is almost totally inadequate.

If it appears that all the years of research on revegetation have not brought much success, one should consider that the time and money spent on all the varied species, soils



and climatic zones of the western rangeland put together would not begin to rival the money invested in research on improvement and cultivation of even one major agronomic crop. Because of the low productivity per acre of most rangelands, a major constraint in range rehabilitation is to keep costs at a level which will "pay" in increased benefits. Yet, there is little evidence that future monetary benefits are considered at all to justify the millions spent on mine reclamation.

#### Grazing Management

A third major area where information is lacking for truly scientific and predictable range management is in the understanding of effects of grazing on the plant-soil system. Grazing animals, both domestic and wild, are the principal means by which we can harvest the production of the range in a form man can use, and they are also one of the main tools we have for manipulating range vegetation. Yet, with a few exceptions, we do not understand well enough the physiological ecology of most of our range plants or the grazing habits of animals to predict the effects will vary in different years or on different sites. Until this kind of information is available, design of grazing systems will continue to be largely an empirical, trial and error procedure (Heady, 1974).

#### FAILURE TO APPLY KNOWLEDGE

Although there are areas where physical-biological knowledge is inadequate, it is also true that many, if not most, ranges could be improved to some extent by skillful application of existing knowledge. Failure to apply this knowledge may be due to socio-economic or legal constraints as discussed in the following papers. However, there are some characteristics of the federal agencies, their personnel and the permittees which also have contributed.

#### Personnel and Money Inadequate

Federal land management agencies have always been considered understaffed for the size of the job they had to do. In range areas like Colorado and Utah, a USFS Ranger District of the 1950's, usually had only the Ranger and one Assistant Ranger, either or both of which might be range conservationists. These people were backed up by a range staff and/or range analysis specialist in the Supervisors Office. However, this meager staff managed to conduct improvements and carry out the extensive brush control and seeding efforts of that era. The

situation in BLM was similar, but there was about four to six times as much acreage per man as in the USFS.

Since those days the number of employees and funding have increased drastically in both agencies. Some ranger districts have bigger staffs than the Supervisors' offices of 30 years ago. Yet, today, both USFS and BLM people complain they don't have time to go back and re-read the transects and update the plans, or the money to maintain the improvements done by their predecessors. Why? One reason is that the increase of money and personnel has been largely in other areas like soils, watershed, wildlife, recreation, archeology and planning. Specialists in these areas made studies which will contribute to better planning for good resource management under the multiple-use philosophy. However, the fact is that most of these studies have no positive impact on the resource until they are incorporated into an allotment (or timber) management plan and action is carried out.

Of course the number of range conservationists also has increased; isn't the range work getting done too? Unfortunately, many of the best range men have been assigned work in preparing EIS's, land use planning, strip mine reclamation or other areas where their training makes them well-qualified (Box and Sissom, 1975). Those remaining in range jobs have to cope and comply with increasing restrictions and regulation brought about by recent legislation. As one old timer in BLM told me: "BLM has now reached its objective of being totally self-sufficient in paperwork without having to depend on any other agency". Consider in addition, the fact that funding for range programs has not kept up with rising costs and it becomes clearer why on-the-ground work is not getting done. Congress has not yet seen fit to appropriate the price of one jet fighter per year to fund the Public Rangeland Improvement Act.

#### Qualifications of Personnel

Because of historically low Civil Service standards many Range Conservationists were not range management majors. Cook and Bonham (1974) found only 55 percent of Range Conservationists have degrees in range. The "imposters", usually wildlife majors, often have serious deficiencies in their training, especially in soils, animal science and economics. Worse yet, they often are not really interested in range as a profession and are basically anti-livestock. The new standards for Range Conservationist will hopefully improve this situation.

But there is some question that even the range majors are as professionally qualified

as they might be. Payne (1969) expressed the opinion that managers suffered from too little specialization. As a consequence, their knowledge is often too superficial to solve specific problems, and therefore, specialists from other disciplines continually "encroach" on the field of range management. Hooper and Grumbles (1969) found range management lacking as a profession because, aside from the fact that many Range Conservationists were not range majors, a large percentage (42 percent in their study) of those who were range majors did not belong to the SRM or participate in professional activities. The most frequently expressed reason for not belonging to SRM was that the Journal of Range Management was "too technical". As Hooper and Grumbles (1969) stated, "Imagine where the level of expertise for heart surgeons would be if doctors didn't read medical journals because they were too technical. If range managers were heart surgeons, we would probably still be wondering why the heart goes 'thump-thump'". If Payne's opinion is correct, range managers don't read the Journal because their training is too superficial to understand or appreciate the significance of what they read.

In many instances lack of adequate professional competence has resulted in data being collected without sufficient regard to proper sampling procedures and interpreted with little appreciation of their precision. The need to control or account for spatial or temporal variability in the attributes sampled has often been ignored. Data available are, therefore, often inadequate and difficult to interpret. Perhaps it doesn't matter. Conclusions often seem to be based more on agency policy or answers from the textbook than on what the data show. In fact, sometimes, it suspiciously seems like the conclusions were made before data were even collected. One wonders if some of these conclusions were not reached in locations far removed (to the east?) from the allotments affected.

#### Inflexibility and Bureaucracy in the Agencies

It is well known that successful range and range livestock management requires the flexibility to make decisions and alter plans according to the vagaries of the weather, the markets and other factors. It is also well known that bureaucracies become increasingly inflexible and slow to act as their size and centralization increase. Since the federal agencies are unwilling to allow permittees or local staff the flexibility required to truly manage the range, their policy has been to reduce permitted numbers to the point where no damage will occur to the resource even in the driest year or under the most incompetent manager. This is not range management, it is non-

management. To manage timber on the same basis would be to only cut dead trees. The Experimental Stewardship Program, which would give permittees opportunities and rewards for using their initiative to improve their ranges, has been met with less than enthusiasm by BLM and, as far as I can tell, almost totally ignored by the USFS.

#### Cooperation between Ranchers and Agencies

My final point is that there has probably never been or ever will be a really successful management program on public rangelands where there is not a situation of communication, cooperation, mutual respect and commitment between the permittee and the range administrator. This has been repeated so often it is a cliché, but the truth of it simply cannot be overemphasized. Scientific knowledge or the professional competence to apply it may sometimes be constraints to better management, but the one overwhelming constraint is a lack of a truly cooperative effort to apply our knowledge.

Too often range conservationists have felt intimidated by "hard nose" ranchers and have put their efforts into preparing their "case" to reduce his numbers. Too often, plans which the rancher considers unworkable have been prepared without consulting the rancher. Too often, the rancher has avoided contact with the range conservationists in the apparent hope that the government might eventually go away. Too often both have failed to realize that each could learn from the other and benefit by their mutual efforts. And too often, rapid turnover of federal personnel and, increasingly, of permittees has made continuity in management and personal relationships impossible. Until these problems are overcome, all the scientific knowledge in the world will not do much good for the resource. Fortunately there are indications in many places that both agencies and permittees are taking more positive approaches to coordinated planning and allotment management than formerly.

#### SUGGESTIONS FOR IMPROVEMENTS

Solutions to the above problems will not be easy, but some are fairly obvious:

1. Continued and expanded funding for range research and management programs.
2. Higher standards of education and professionalism of range managers.
3. Greater effort by agencies to give flexibility and decision making authority to local personnel and permittees.

4. A more positive attitude and commitment on the part of both the agencies and the ranchers.

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ECONOMIC INCENTIVES AND RANGE IMPROVEMENTS

ON FEDERAL RANGELANDS

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The management of federally administered lands is an area of considerable concern to people in the western United States. We are currently in another period when transfer of those lands to state ownership is being advocated, but when Paul Packer, Program Chairman for this session, called, he indicated that the issue of improving rangelands should be addressed regardless of ownership and that we should not emphasize issues associated with the "Sagebrush Rebellion." As a result, we will address the issue from the point of view that lands administered by the Bureau of Land Management (BLM) and Forest Service (USFS) will remain in public ownership because it is our personal opinion that the "Sagebrush Rebellion" will not result in the transfer of large acreages of land from federal to either state or private ownership. We also plan to emphasize problems associated with the management of rangelands administered by BLM, but most of our remarks are just as applicable to lands administered by the USFS.

The theme of this panel discussion suggests that range improvements are needed, but there are many ways this might be accomplished. Gray (1979) suggests that most range improvements fall into three broad categories--grazing adjustments and systems, vegetative manipulation (e.g. plow, seed, burn) and range structures (e.g. fencing and water developments). If one views these range improvements in a historical perspective, one finds that the use of vegetative manipulation and construction of structures have been nearly abandoned as improvement techniques on BLM lands since the early 70's<sup>1/</sup>. While no data familiar to us are available on the use of grazing systems, data from the BLM and USFS indicate that use

by domestic livestock (the only animals that use public lands that can be intensively managed at the present time) continues to decline. Thus, one might conclude that grazing use adjustments (cuts) or grazing systems are the improvement technique most commonly used by the agencies today. If so, the theme of this session may be most applicable, because of our knowledge, there is no evidence available that can be used to justify the use of these methods from an economic point of view. They may be the least cost method of improving (if they do) rangelands (Fulcher, 1973), but the costs may be greater than the benefits obtained. Furthermore, historic evidence suggests that grazing cuts have not solved perceived, if not real, grazing problems associated with domestic livestock. On the other hand, numerous studies exist which indicate that the judicious use of vegetative manipulation techniques and range structures do, in fact, "pay". They may be more capital intensive, but the additional benefits are often greater than the additional costs. Furthermore, they may be the most effective method available to improve native range (Stevens and Godfrey, 1976).

The primary reasons given for nonuse of capital intensive methods are twofold. First, funds are limited and secondly, their use may harm other multiple uses. While some types of range improvements may have a detrimental impact on some wildlife species, they also can benefit other species (Heady and Bartolome, 1977). Furthermore, the meager amount of

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<sup>1/</sup>U.S. Dept. of Interior, Bureau of Land Management. (various years). Public Land Statistics. U.S. Govt. Printing Office.

evidence available does not indicate that the detrimental effects are either as great as some suggest, or that the detrimental effects are greater than the positive effects, even if only wildlife concerns are considered. The BLM's choice to use "natural" methods probably reflects the "nature knows best" philosophy that is common among students majoring in "natural resource" degree programs. The limits of nature must be recognized, but perhaps the pendulum has swung too far toward using "natural" improvement methods instead of man-induced methods.

The fact that the lands we consider here are owned by the federal government also suggests two implications that are commonly ignored. First, the reason why BLM lands are presently owned by the federal government cannot be sloughed off with the feeble excuse that they are residual lands "nobody wanted." Governmental land disposal policies dictated that they would be publicly owned (Clawson, 1971; LeBaron et al., 1980; Box, 1978). While this was not the intent of the land laws, that was their net effect. Thus, BLM lands are publicly owned by mistake because had the legal constraints associated with the early land laws been different, it's our belief that most rangelands managed by the BLM would have been privately owned, and we would not be concerned with improving these "public" rangelands. USFS lands would be publically owned however, because they were specifically set aside and retained as public lands by Congress. Hence, we would be concerned with their improvement. Secondly, the passage of the Federal Land Policy and Management Act in 1976 concluded the era of land disposal. This act clearly indicated that decisions concerning the allocation of resources on BLM lands, like the USFS, would be made by public administrators. Stephen White (1979) summarized the implication of public ownership when he indicated that "any intrusion of government into the domain of public policy is bound to cost some and benefit others." Thus, the constraints that limit the improvement of publicly owned rangelands generally involves either: (1) getting someone else to pay for benefits you receive (public funding) or (2) providing a means whereby beneficiaries receive the fruits of improvement efforts (private funding).

#### CONSTRAINTS FOR PUBLIC FUNDING OF RANGE IMPROVEMENTS

Nearly every livestockman and federal land administrator since the passage of the Public Rangeland Improvement Act (PRIA) of 1978 has lamented the fact that PRIA has not been funded to date. Let's examine some of the reasons why this may have occurred and how some eco-

conomic incentives might be developed that would encourage congressional support.

The passage of PRIA was based on what might be called the "crying wolf" syndrome. Federal agencies since "day one" have found it popular to publicize the poor condition of rangelands in the West. Has this "crying wolf" syndrome resulted in deaf ears on the part of eastern congressmen that see tax monies from their constituents being spent on western interests with little or no payoff? How often have any of you seen reports by the agencies or others that show what range betterment funds "buy" people in the east? For example, a million dollars may help change 10,000 acres from a poor to a good condition class, but what has this yielded people except a mouthful of "hot air?" Did this reduce the price of beef 10 cents, produce 35 additional deer, reduce erosion by 300 cubic feet or what? The range science community needs to get off the change in condition class "dead horse" and relate their actions to outputs of concern to clientele groups. For example, range managers could "take a page from the forester's book" when they estimate how many additional thousand board feet of lumber (something people use) will be forthcoming from a silvicultural practice. Range scientists need to learn to relate to people and peoples desires before all we need is "six for pallbearers" (Hooper, 1968). Output measured in products useful to man are much more important than changes in condition class.

Somewhat related to the above is the "track record" of the BLM and USFS in using funds for range improvements. Numerous studies concerning the economics of range improvements have been published. While many studies are not defensible from an economic point of view, the results available indicate that nearly any type of improvement (e.g. seeding, spraying, water developments) can result in benefits that may be greater or less than the costs incurred. However, two interrelated considerations often result in negative net benefits (benefits < costs) when federally sponsored projects have been evaluated. First, federal land administrators seem to have a phobia for spending money on "worst first" areas rather than areas where the greatest net results would occur—the "crying wolf" syndrome rears its ugly head again! Spending money on lands whose carrying capacity may be ten acres per animal-unit-month (AUM) often yields greater benefits than the same monies spent on 25 acre/AUM rangelands. And it doesn't take much economics to decide where to spend scarce dollars if expenditure in one area buys twice as much output as another, even if the "poor" area is left in "poor" condition. Secondly, many range managers fail to realize that a small expenditure in an area

may be beneficial, but large expenditures are commonly not justifiable--diminishing returns from range improvement expenditures must be recognized!

Range improvements can compete with other alternatives for congressional allocations, but these expenditures must be justified in terms that people understand and consider to be beneficial to them. For example, the amount of money allocated for range improvements on BLM lands has risen steadily through time, especially since 1970<sup>2/</sup>--budgets are not as constraining as some have suggested. The expenditure of these budgets, however, has resulted in very few tangible "on the ground" results such as increased grazing by domestic livestock, more wildlife, range structures or vegetative manipulation. Have these monies been spent to hire personnel (that think about range improvements) with little or no net effect on the land? If so, one could seriously question additional allocations. Some may question this result by saying that these monies have "bought" such nebulous goods as "aesthetic values", "reduced erosion" and "watershed values", but that the burden of proof is on these advocates. It is not clear that range improvements can be justified from these perspectives.<sup>3/</sup> This suggests that the agencies must take a more positive position concerning their actions or congressional allocations will become limited as funds are spent on "better paying" alternatives. Thus, the most binding constraint to congressional allocations for range improvements in the future could be the agencies own inability to empirically justify their actions--the use of more not less economics. While these justifications may be difficult, the task would be made much easier if actions were related to their impact on various user groups. If this were done more positively, the agencies could depend on these groups to convey their concerns and desires to Congress. This would probably be more effective than would the use of agency channels (Clawson, 1971:55).

While public monies have historically been the major source of funds used for range improvements on public lands, private sources

<sup>2/</sup> Ibid.

<sup>3/</sup> Nearly every economic evaluation of range improvements that has been reported has taken a narrow point of view--their impact on grazing by domestic livestock. Economic evaluations that look at the impact of range improvements on other multiple uses is sorely needed. This will require a close working relationship between economists and range ecologists before these evaluations can be defended by either group.

also have been utilized. The encouragement of private investments involves a different set of incentives and constraints.

#### PRIVATE INVESTMENTS ON PUBLIC LANDS

Several factors have discouraged private investment on public lands, and the lack of user cooperation can negate the best laid plans. If cooperation can be fostered, it is expected that private funds would be used to a greater degree to improve public rangelands.

One of the strongest forces that discourages private investment involves the uncertainty of obtaining the forthcoming benefits of an investment. This situation has been evident on public rangelands where allocations away from livestock to other uses have occurred. As a result, private individuals have reduced their participation in range improvements on public rangelands since the late 60's.<sup>4/</sup> Other forces also have contributed to this decline but the issuance of long-term permits would give assurance to permittees that they could reap the benefits of investments. One other change that would help would be reimbursement for the undepreciated value of a private investment that would be lost if use of public lands was reduced.<sup>5/</sup> However, federal land administrators would have to recognize that this would result in vested interests by permittees. This may be a relatively cheap political cost that would have to be borne. Even with more secure grazing permits, it is unlikely that ranchers would be able to make investments on public lands during periods when the price of inputs (e.g. interest rates, fuel) are high relative to the prices received for livestock. This suggests that prices can have a significant impact on incentives for users to invest scarce dollars on public rangelands.

Input and output prices are the obvious examples that affect the profitability of any private enterprise, but the policy of obtaining "fair market value" can have a major impact on rancher cooperation and the profits he receives. Furthermore, this policy can discourage private investment on public lands. For example, a fee of \$2.20 per AUM may represent the "fair market value" for one rancher that is required to maintain fences, herd animals and haul water, but it may not be the "fair market value" for another where these services are provided by the lessor. Differences in the nonfee costs

<sup>4/</sup> Ob. Cit. footnote 1.

<sup>5/</sup> The conditions for this reimbursement must be agreed upon before private actions occur or disagreements concerning what if "just" compensation will inevitably occur.

of grazing federal lands must be recognized before private incentives for cooperation with the agencies will exist. The possible large differences in fee and nonfee costs involved may be especially large when livestock are used as the management tool to achieve other objectives. In these cases, if the land were privately owned, the owner would either own livestock or pay (the fair market value would be a payment, not a fee) others to graze their livestock in the area in an effort to obtain the other benefits desired.

Privately installed developments also may be encouraged if agency policies were changed in a manner that would allow users to install structures and/or perform vegetation manipulation. Ranchers, for example, often have periods when labor and machinery that is underemployed and could be used to install range improvements on public lands. Furthermore, users often have the "on the ground" knowledge needed to assure success of many types of investments (e.g. water developments, fences). If these users were allowed to become more directly involved in range improvements (through contracts, credits on fees, etc.) it is likely that the cost of improvements could be reduced from that incurred under present policies.

Permits to use public lands by any group are referred to as "privileges" and not "rights", but the supposed difference is obscure at best. All tenure arrangements (permits to use) involve the conditional transfer of property rights, and the permits involved will generally take on value. Thus, whenever tenure arrangements (permits) are altered in any way, the value of the permits will be altered. In no instance is this more clear than in the area involving private and community grazing allotments. For example, private allotments provide permittees with incentives to maintain and improve "my" allotment, but in community allotments, especially when the number of permittees is large, there is little, if any, incentive to improve the area(s) used because other users could reap the benefits. Thus, agency actions that combine private allotments into community allotments to implement a grazing system can easily yield affects that differ from the planned result.

#### SUMMARY

Many interrelated factors affect the probability of allocating funds needed to improve federally owned rangelands. These factors vary depending upon whether the funds come from public or private sectors. It is not likely that large allocations will be forthcoming from the public sector in the near future, because the agencies generally do not

have a "winning track record" in efficiently spending the funds that have been allocated in the past. Therefore, the agencies must begin to carefully evaluate where available funds are spent in the future. If efficient use of federal funds does not occur in the future, it is likely that private sources will have to be fostered if rangelands are to be improved. However, before private funds will be forthcoming, a significant change in agency policies and attitudes must occur before sufficient incentives are given to users to have them spend scarce private funds on federal rangeland. This suggests that it is not likely that federal rangelands will be improved at rates some feel are necessary in the foreseeable future.

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## CONSTRAINTS OR CHALLENGES?

### SOCIAL DILEMMAS IN PUBLIC RANGELAND MANAGEMENT

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I have been asked to address the social constraints to the application of sound biological science to the management of public rangelands. I would like to begin by redefining somewhat the interpretation of both "social" and "constraints" in addressing this task.

There are essentially two ways of defining social factors. The first is to define them as whatever is left over after the key economic, political, legal and historical aspects are subtracted. The second approach is to treat these major elements and their interactions as fundamental social institutions in the analysis of social structure and the dynamics of social conflict and change. It is in this broader sense that I will define my task. Thus when I address economic components, it will not be in the sense of calculation of firm productivity, but in the sense of economic conflict over access to scarce resources within a political, legal, and historical context.

Secondly, I would like to redefine somewhat my approach to the analysis of "constraints." We were asked to address the question of whether the main constraints on biological range management were biological science constraints or institutional constraints. But this is rather like the rhetorical, "are you or are you not going to stop beating your wife?" How ever you answer, you admit beating your wife. Similarly, how ever we might answer the above question, we are asked to assume the primacy of biological management as the central task of range management. Thus, I have felt somewhat constrained by this constraining conception of constraints, and would rather define the issue more broadly in terms of biological and social "challenges" to the achievement of broader societal goals of range management.

It is axiomatic that the intended outputs of public rangeland management are a set, or mix of social and economic outputs to society and its constituent groups, and that there are both biological and socio-economic management actions that need to be taken to achieve these

ends. While fundamental social conflicts over the use of public rangelands are rooted in the biological scarcity of the resource, it does not follow that improving biological productivity is the sole answer to these wrenching social conflicts. It may help, but it will not cause these to go away like some bad dream. In other words, the social contention over access and control of the resource is the fundamental issue. These contentions in the socio-political arena are not just a constraining tail threatening to wag the biological dog, they are the dog! The failure to squarely face this fundamental social reality has led to a trained incapacity that has created a self-imposed exercise in frustration.

We have been reenacting this exercise in frustration ever since the beginning of scientific range management in the strategic mountain meadows of the national forest rangelands at the turn of the century. We read with some nostalgia the field reports of those early range scientists who repeatedly reported overgrazing on the forest ranges in the years from 1912 to 1917 (Roberts, 1963: 116), at the same time grazing levels were permitted to rise to their highest levels in Forest Service history (USDA Forest Service, 1910-1920). We can almost imagine them tearing their hair out, and holding early conferences on "institutional constraints on scientific range management." But these social constraints were far more complex and fundamental than they realized or than we now recall them. These increases in the face of documented range deterioration were not permitted simply because of the war effort, for they were largely complete by the time we entered the war. Rather, they were permitted to protect the interests of large ranchers in the face of an unanticipated final wave of homesteaders who demanded the implementation of the fledgling distribution rights provisions of the grazing regulations. Instead of redistributing the range 'pie', they sought to expand the pie with disastrous ecological consequences that were finally recognized in



1918. We could also, if time permitted, explore the role of Albert Potter as the broker of power who, as the representative of the large stockmen in the Forest Service hierarchy shaped these changes and traded the protection of large stockmen's economic interests for the survival and stability of the Forest Service during the most vulnerable period of its history (West, 1980; Hays, 1959). To treat such wrenching social struggle as external constraints on the central task of biological management can lead only to the inevitable frustration of false expectations. It also leads to a number of unanticipated social consequences.

The primary focus on biological management has constrained range managers to a restricted set of social choices in the complex of social contentions over access to the use of public range resources. Indeed, we might even turn our theme around and speak of the constraints of the "biological mind set" on the definition and achievement of social and economic outputs of public rangeland management. Put another way, the desire to minimize social constraints to biological management creates its own form of unintended constraints on social management options. Thus, throughout the history of the Forest Service, Grazing Service, and BLM, social equity issues of distribution of access to the resource have been repeatedly sacrificed to simplify the sociopolitical constraints on range conservation. This has happened in the extreme in the Grazing Service (later BLM), where no distribution institutions ever existed. Of course, the Grazing Service was under much greater political domination by the large stockmen than the Forest Service ever was (Foss, 1960; Calef, 1960). However, the biological mind set of the range manager fit comfortably into that constitution of power. As Carpenter, the first head of the Grazing Service, noted "we do not care how many cattle or sheep you have...we care only for your lands" (Foss, 1960: 63). But even on Forest Service lands, issues of equity and access have been consistently sacrificed to contain the political constraints to range conservation (West, 1980). This was so even before the official burial of distribution rights in 1953. The official benediction noted that this institution was no longer needed, yet in the areas dependent on national forest range, small farmers in and near poverty conditions had not disappeared. Table 1 shows the percentage of families and unrelated individuals with income below \$3,000 and below \$2,000 in areas surrounding national forests in the western states in 1949. These data were calculated from statistics for counties contiguous to national forests and summed by state. Table 1 shows that there was a significant degree of rural poverty surrounding national forests in

all eleven Western states. Areas of high poverty were especially concentrated around forests in Arizona, New Mexico, Colorado, and Montana. Calculated another way, in 37 percent of all counties contiguous to western national forests 60 percent or more of families had incomes under \$3,000.

Table 1.--Percentage of families and unrelated persons in poverty in counties contiguous to western national forests, by state in 1949.

State	Income less than	
	\$3,000	\$2,000
	%	
Arizona	59	44
California	52	35
Colorado	60	38
Idaho	51	33
Montana	57	34
Nevada	48	32
New Mexico	60	43
Oregon	50	14
Utah	49	32
Washington	45	30
Wyoming	41	25

Compiled from U.S. Census of Population, 1950.

During that same critical period, other changes were made in grazing regulations that simplified social constraints on biological management, but which led to further constraints on social management options in range management.

In 1953, the regulations were changed to eliminate transfer reductions which meant that protective cuts had to be taken from ongoing permits. At this same time the principle that exempted various small users from protection cuts was eliminated (USDA Forest Service, 1956: 6-312). Much of the overgrazing and erosion was occurring on the allotments of the small permittees who did not have funds to make range improvements. Formerly protective cuts were to come primarily from the allotments of large users to improve the range of small users. Now protective cuts were to come directly from the users responsible for the localized overgrazing of particular area allotments. While these measures reduced the institutional constraints on biological range management, the social and economic impact on small users was immense. At the same time, government investment in range improvements was increasingly tied to matching private investment so that large ranchers received most of the government funds for range improvement. From the perspective of reducing constraints on biological production

through the use of incentives to stimulate private investment, this policy helped to create a climate for improved biological management, but again the differential social consequences were ignored.

The cumulative impacts of these changes were especially devastating for some poverty groups such as the Spanish Americans in northern New Mexico. The Spanish Americans of the Southwest are an impoverished ethnic status group. Early Spanish American land grants had been gradually diminished by land fraud and failure of the American legal system to recognize traditional communal property rights. Much national forest land was carved from these traditional Spanish-American lands (Knowlton, 1972). Up to the end of World War II, the Forest Service had pursued a policy of protecting the Spanish Americans in their grazing privileges, and distribution was fairly widespread. However, in the years before the 1953 property rights changes, the Spanish Americans were still in severe poverty. Two-thirds has gross incomes under \$400 (Woodhead, 1945: 134).

The 1953 property rights changes had important economic and social consequences creating further impoverishment of the Spanish Americans. The end of distribution ended any hope of increases in the land base of the Spanish Americans. More importantly, up to 1953 the Forest Service had exempted the Spanish Americans from protective cuts. Under the new property rights structure, protective cuts were to come directly from whatever allotments were overgrazed. The Spanish Americans had no money to make range improvements, and their allotments were among the most overgrazed. The Forest Service moved to make protective cuts on their allotments.

Other changes in the policy towards the Spanish Americans occurred in the late 1950's and 1960's. They were told they had to fence their allotments. Because they did not have the funds to do so, their herds wandered beyond the allotment lines and were considered in trespass and impounded (Knowlton, 1972). Since general Forest Service policy was now to encourage large commercial operations, most government funds for range improvements were invested in the allotments of the large permittees, usually on a 50 percent public-50 percent private basis (USDA Forest Service, 1956). Few government funds were spent to improve and fence the Spanish-American allotments.

Soon after the mandatory fencing requirements were imposed, the Forest Service banned the grazing of Spanish-American milk cows and work horses and cut their cattle and sheep permits. This was done to adjust grazing use

on an allotment by allotment basis. The reduction severely affected the subsistence economy of the Spanish Americans. They were unable to buy farm machinery and thus relied on work horses. The banning of their work horses forced many out of subsistence agriculture and created forced migration. The milk cows had provided a buffer against malnutrition which had been a chronic problem in the Spanish-American communities surrounding the forests. After the elimination of milk stock, malnutrition increased (Knowlton, 1970). In his study of Forest Service administration and the Spanish Americans, Frisma (1971) suggests that these changes were not directed vindictively against the Spanish Americans. Rather, once the general policy was established as a service-wide policy, the Forest Service simply applied it everywhere because of its stress on administrative uniformity.

Nevertheless, these actions by the Forest Service created bitterness and despair. The precarious factual legitimacy of government institutions deteriorated, and the Forest Service became the most hated of government institutions. Fires were set in the national forests and rangers' lives were threatened. In the late 1960's, militant organizations led a movement against the Service which ended in violence and police action to end the uprising (Knowlton, 1970).

In recent years, the Forest Service has modified its policy and is beginning to make exceptions in the case of subsistence-oriented groups. But, in the meantime, much damage had been done both to ethnic group relations and to levels of material deprivation and poverty amongst the Spanish Americans. There is still a trail of bitterness, and still today there are areas of national forests in the Southwest where forest rangers do not dare to patrol.

Except for special "problem areas" such as the Spanish-American situation, we do not hear much these days about distribution issues or social equity concerns. The preservation vs. production conflict has taken over the center stage of conflict (Klemmedson and Packer, 1979) as the environmental preservation status groups have come to the political fore. Both stockmen and environmental elite groups have learned to effectively ignore the condition of the rural poor as they battle with one another over symbolic turf. This is not surprising in the case of the large stockman, but it is a strange irony in the case of the self-proclaimed liberals of environmental movements who, more often than not, wear blinders to the illiberal consequences of their actions. For it is the poor who suffer in the struggle between the lions over scarce resources.

The intensification of the preservationist battlefront has certainly complicated the multiple cleavages impinging on public range management and added to the social constraints on biological range management. However, it also has made for valuable patterns of "cross cutting" conflicts that may help to save the manager's hide. As Freeman (1972) notes, multiple lines of cross cutting conflict among conflict groups can lead to a reduction in the intensity of conflict. Thus, although small and large producers battle over distributional issues, they can unite to fight the pretensions of the new arid land preservationists. And though the small producers (who will suffer most from the preservationist challenge) are as opposed to the preservationists, they are (potentially at least) in coalition with them in opposing the "Sagebrush Rebellion", which would permit the large ranchers to further squeeze the small producer. All this cross cutting conflict leaves the range manager in the eye of a more controllable hurricane.

But at the same time, it has increasingly pushed the distributional concerns of small producers to the back burner of both professional and public attention despite continued commitment to these concerns by the Forest Service (Nelson, 1979).

Although the distribution institutions were buried some time ago now, the distribution issue lives on. In absence of these protective institutions, there has been an increasing reverse distribution to large firms. In 1955, two years after the official end of the distribution policy, 68.8 percent of all cattle and horse permittees in Region 3 grazed from one to forty head. This was 13.2 percent of all cattle and horses grazed. In 1970 only 56.8 percent of Region 3 cattle and horse permittees grazed from one to forty head. This was now only 9 percent of all cattle and horses grazed.<sup>1/</sup> Thus, the number of small permittees and the number of head they grazed was reduced significantly following these policy changes.

As I have indicated, if the infamous "Sagebrush Rebellion" were to somehow succeed, it would mean an almost inevitable intensification of this trend toward exclusion and concentration, with increasing impact on small producers who are in, or at, the margins of poverty. It is true that some small producers have been caught up in the fervor of the movement, for they, too, experience the frustrations of a perceived internal colonialism. But they should make no mistake, their vital interests,

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<sup>1/</sup> Data supplied by the U.S. Forest Service, Division of Range Management, Washington, D.C.

as opposed to release from their symbolic frustrations, depend on the preservation of federal protection and management. For them it would be out of the frying pan and into the fire, for state control would mean loss of what little institutional protection their interests receive, especially on Forest Service lands. Ultimate sale of public grazing lands would be the last nail in the coffin of denied access.

But neither can they rest easy, in the probability that this assault on the federal range lands will fail, like its many predecessors have. As others have noted (e.g. Sharpe, 1979: 20), the main function of such exercises for the stockmen is not to win, but to gain leverage to force administrative concessions. We should have learned this lesson by now, for this is but another reenactment of the classic drama in range politics. Stockmen don't want to pay taxes on these lands, they want to control their use of the public trough. The purpose of this recent bluff is to wrest leverage from the preservationists influence over public land agencies and policies.

But a secondary, less visible function of these maneuvers is, as it has always been, to win further concessions in the quiet struggle with the remaining small producers. The two classic cases of this in Forest Service history were the 1953 bill to end federal control, and the famous Stanfield bill of 1926. I have already described the consequences of administrative concessions in the wake of the 1953 battle. The 1926 battle over the Stanfield bill was almost an exact dress rehearsal for the 1953 performance. Swain's (1963) classic study of the 1920's traces the stockmen's defeat in the overt political battle, but misses their covert victory in the subtle changes in administrative policy that are evident in the archival record (West, 1980). These changes increased effective private rights in the public lands, gave direct political control over policy to the stockmen, and greatly diminished the rights of small producers to access to the resource. Today, as then, it is the fallout of apparent victory, not the fear of defeat, that will be of major consequence.

#### CONCLUSION

As a resource sociologist, I am often asked how can this or that social problem of resource management be "solved". I invariably reply, "I have no solutions, only complications to offer." And so it has been here. The social problems of resource management are always more complex than they seem, but the recognition and understanding of that complexity is always

a step in the right direction. And only by viewing these complexities as central challenges of management rather than simply as "bothersome constraints" on biological management, can we hope to grapple toward viable, equitable solutions.

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## RANGE MANAGEMENT IN THE 1980'S:

### A BRIEF LOOK AT THE POLITICAL CONTEXT

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There are so many interesting political factors affecting range management that were it not for the time limits placed on this presentation, I would consider the topic a truly delectable feast. Where and how does one begin with the complex drama of chicanery, shortsightedness, valiant human effort and bureaucratic ineptitude that constitutes the present and future political context of range management? I have begun by placing limits on the topic. First, I shall concentrate on the Bureau of Land Management (BLM) and deal with other public and private range management efforts only by parity of logic or implication. Second, one makes assumptions. While granting that past is indispensable prologue, I shall assume that we all share some familiarity with public domain history, and that I can create the desired backdrop by judiciously selecting horror stories from the considerable literature. This is a profound sacrifice on my part for I dearly love to traffic in disposition and settlement-era gossip. Finally, I shall be quite general in my conclusions. Absent the time to deal delicately with nuances and finer points, I have adopted a three-part strategy which will quickly reiterate the obvious on the history of the problem, then restate the history in terms of familiar mythologies regarding key actors and aspects of the problem, and then project that residue into an assessment of current realities. My basic theme will be that, while the history and mythology add up to an important explanation for how we got to where we are, they are profoundly misleading in terms of charting a future course. To summarize and caricature my own conclusions in the same manner in which I shall soon shorthand Peffer (1951), Gates (1968), Foss (1960) and Stegner (1953): at one time imitating the Forest Service may have been a worthy and appropriate goal for the Bureau. That time is past; BLM must find a different, better way. I propose that they should conceptualize the effort in terms of exercising leadership. To continue the present course is to virtually preclude range management for the foreseeable future.

### POLITICAL HISTORY OF RANGE MANAGEMENT

Because public domain history is both so colorful and so formative in the evolution of the nation and this region, it is probably fair to skim over it as familiar (Gates, 1968). I wish merely to remind you that the settlement drama left the government with a virtually unmanageable dispersion of residual lands, and more recent sagas have assured that a very weak institution, the BLM, would be responsible for them.

#### Residuals

It is not accurate, of course, to rely on the generalization that the Forest Service manages the trees and the BLM manages the grass. The Bureau must contend with, among other things, the outer continental shelf and the entire federal mineral estate. Conversely, and perhaps less familiarly, the Forest Service administers livestock grazing, but only about 50 percent as many animal-unit-months as administered by BLM (Box, Dwyer and Wagner, 1977). Despite its multiple resource mandate, the Bureau is primarily associated with grazing management on the unreserved, unentered public domain. Hence, the Bureau has a major focus on managing and protecting precisely those lands that remain in federal ownership because nobody could, between 1776 and 1935, think of a good reason to steal or occupy them. Given the creative and persistent fraud which characterize administration of the disposition statutes, that fact tells us much about long-term public perception of the land.

#### Checkerboard Lands

The residual character of BLM holdings also explains a great deal about the major management problems the Bureau encounters in attempting to administer them. Nothing I ever read or imagined about checkerboard lands prepared me for the enormity of the difficulties

presented by the land-ownership patterns BLM has to deal with. The concepts "federal lands" or "BLM lands" are, indeed, pure fiction in many areas. Looking at neatly colored and bordered blobs on state or other large scale maps, it seems perfectly reasonable to expect the Bureau to get out there and manage those national resources. On the ground when every casual glance might encompass four or five undifferentiated ownerships, it becomes apparent that thinking in such terms is simply absurd. State land, federal land, leased land, and all manner of private land holdings are admixed and virtually undistinguishable. No legislation or rule making will alter that fact.

#### Chronically Weak BLM

If the Bureau were a powerful, spit-and-polish outfit (like the Forest Service) or even a bumbling bunch with enough popular support to keep them afloat (like the Park Service), these insurmountable problems might have been minimized. However, the Bureau has been hamstrung since its formation by the effects of intense local and regional efforts to keep it weak and ineffective combined with a total absence of countervailing outside forces supporting the agency. For the same reasons that there was not much nonlocal interest in the land, there was not much nonlocal support for the agency. Philip Foss's Politics and Grass (1960) has catalogued better than anyone the problems of the chronically weak BLM.

The best single indicator of the historical invisibility of both the Bureau and the land is found, in my opinion, in the Wilderness Act. Beginning in 1956, various lengthy wilderness proposals were introduced. Not only was the Bureau of Indian Affairs regularly covered, but the individual parks and refuges were frequently mentioned specifically by name in early versions of the bill. My point in mentioning this is to underscore the fact that BLM lands were not included, nor were they mentioned in the final version of the Wilderness Act passed in 1964. Until quite recently, all that land was absolutely ignored by all except those who are dependent upon it for a livelihood.

#### MYTHOLOGY

I oversimplify, of course. One of the things I have left out of this abbreviated history is the familiar truth that there have been occasional points at which the land and the agency attracted intense national attention. These episodes have been, in my judgement, far from beneficial to the cause of range conserva-

tion. What has resulted, I would argue, is the perpetuation of a number of myths and stereotypes which virtually preclude reasonable discussion of the entire subject.

One of the unanticipated benefits of the Sagebrush Rebellion which has gone largely unnoted is that it has forced folks to look back a bit in time. Such events as Hoover's proposal to cede the public domain to the states (Committee on Conservation and Administration of the Public Domain, 1931), the McCarran and Barret investigations of the late 1940's and early 50's, and the so-called "Land Grab" (Dane and Fairfax, 1980; 135-138, 160-164, 182-187) of the same era have become familiar. The Sagebrush Rebellion has, in fact, at least one lineal ancestor in almost every decade since 1900, although on most occasions the skirmishing has been of less than national interest.

What has escaped notice in much of this recent recital of ancient history is E. Louise Peffer's (1951:28-30) fundamental insight that the conservation interests have repeatedly undone themselves with outrageous mythology about cattle barons. Eastern urban folks have time and again gotten themselves into such a swivet about rapacious ranchers plundering the public domain that they have long (a) made it politically impossible to implement any range protection or investment measures for fear of granting a subsidy to or otherwise benefiting the livestock industry; and (b) made sanctimonious invective the mother tongue of range policy debate. Following Peffer, I conclude that this has invariably been unproductive for conservationist goals because once Ovid Butler, Bernard DeVoto, and a host of lesser publicists subsided, the stockmen were still on the range and the conservationists went back to ignoring the Bureau.

The popular conception of the livestock industry is, I am suggesting, a myth--a longstanding and totally misleading portrait that has distorted discussions of range policy for almost a century. Those who now respond to the Sagebrush Rebellion with overblown rhetoric regarding the return of thieving cattle barons not only complicate the debate, they also profoundly misidentify the problem.

Having said that, however, I must also note that what I take to be the rancher's self-image is also deceptive. I have respect for the rugged lifestyle of the rancher. I don't like heat and I don't like snow and I don't like the looks or the smell of cattle unless they are embellished by parsley and a baked potato. I do not want to do anything more than fantasize about chasing over the range after those miserable creatures. I am very

glad that the ranchers are there so that I can fantasize from a safe distance. In general, I believe ranching is now and always has been a hard life, albeit frequently a lovely life. That fact does not, however, give validity to the traditional horsefeathers about the rancher's indomitable, independent, pioneer spirit. Use of the public domain lands at the historic fee structure is a subsidy pure and simple. Ranchers and their representatives in Congress have fought long and hard to maintain that subsidy, and nothing is gained by trying to cloud that obvious fact. Wilderness areas are a subsidy to wilderness buffs; parks are a subsidy to campers and recreationists; but public range investments are a subsidy to ranchers, period. It is disingenuous at best for stock operators to complain about their eroding independence while they simultaneously pray for the continuation of the subsidy.

Given the worldwide preoccupation with American cowboys and the frontier, I suppose it is predictable, if unfortunate, that this policy area would be rife with cowboy stereotypes. Less excusable is the persistent mythology regarding the land at issue. The public should not be as confused as it seems to be about the condition of the public range. I am not a range scientist, obviously, and I will try not to pretend to be. However, I have been impressed lately by the fact that people who are agree fairly consistently that the western range is not, generally speaking, en route to hell in a handbasket. I do not want to invite or participate in a discussion of vegetative indicators of range condition, animal indicators of range conditions, or exotica like "ice cream species." Rather, I want to suggest that long unquestioned assumptions about range trend and condition are both wrong and costly.

The best estimates which can be drawn from available trend data seem to indicate roughly that between 1905 and 1966 range conditions on federally managed lands have clearly improved. I am relying specifically on data assembled by Box et al. (1977:21-29), but I am convinced that their conclusions are broadly accurate. This west-wide crude estimate of gross condition does not, of course, make occurrences of poor and/or deteriorating condition acceptable, but it does provide an entirely different context for beginning to think about what is out there, what the problems are, and what needs to be done about them.

The myth is costly for numerous obvious reasons, only two of which I shall belabor. First, if by stating that the range is deteriorating, a truth has been revealed, it is not at all difficult to characterize people who believe or act otherwise. When range scientists

or range managers contradict conventional wisdom, they frequently label themselves as tools of the industry or its supine partner, government.

The myth of the invariably deteriorating range obviously impugns the credibility of those ranchers and government employees who have been managing it for upwards of a century and who want to continue to do so. Thus, we have gotten ourselves into a situation where anyone who cares sufficiently about range management to study it, or to devote her career to it, is automatically suspect in many circles. Knowledge or experience is not only not helpful or relevant, it is, it seems to me, in many instances a disqualifier. Especially if you are either a rancher or a range scientist from a western land-grant college (which is, not coincidentally, where western range scientists tend to be), you are viewed in many otherwise intelligent gatherings as having sold out.

I shall touch on one further ramification of this mythology. Because so many people begin with assumptions about the problem, and a wholesale dismissal of both the art and science of range management, it is not surprising that popular discussion of range improvement strategies frequently appears high-centered on a single simplistic notion: get the cattle off. Again, I am not a range scientist, but I have been reliably informed that, while there are indeed many circumstances in which removing cattle is an appropriate and necessary step, there are also many other instances in which it is not. That narrow concept also seems an unproductive starting point of debate: even if the ecology were not complex, the socioeconomic problems are extremely difficult to deal with. Restricting the spectrum of alternatives and the debate on a priori ideological grounds is, in my judgement, a terrible constraint on range policy.

I do not want to make more of range science than is justified. I am well aware that the field is young, its methods and findings are frequently tentative, and that the applications are often halting or controversial. However, I will conclude my mythology discussion by noting that the debate in the range policy arena is as unsophisticated as any I have observed. This is because, I am arguing, we are to a significant degree in the thrall of mythologies about the problems we face. We have been misled into discounting or rejecting the information and expertise that is available, and we have allowed lawyers and publicists to dominate the discussions. If we treated urban policy in simplistic stereotypes analogous to those which dominate range policy, we would be hooted down on the New York Times editorial page. However, it seems acceptable, in fact

preferable, even liberal, to treat arid lands problems through a cloud of unexamined myths. You knowledgeable types can write people like me off--after all I was raised in New York and know nothing of your problems--but you do so at your peril. We have you outnumbered, and surrounded as well. Many western urban areas are as far removed from range problems as is New York, and the citizens of Los Angeles, Denver, and Reno are also close enough to put enormous conflicting-use pressure on the available lands. If we are ignorant of your ways, we will nevertheless be an increasingly important factor in range policy.

#### CURRENT REALITIES

Thus far I have tried to suggest that the past does not bode well for the future of range management. The resources at issue are residuals--politically unattractive, frequently scattered parcels of land--supervised by a chronically weak agency. Occasional bursts of general public attention to grazing problems have not been productive of support for the agency or understanding of range issues, but have instead filled the air with myths about the land and the livestock operators which make rational discussion extremely difficult. It would be easy--and probably efficient--to dismiss the whole thing as a lost cause. On bad days I conclude that neither the Bureau nor the range-livestock industry have much future.

It was at this point in checking over my preliminary text that my good friend, Gail Achterman, suggested that my opening remarks were going so nicely that couldn't I simply elaborate on the introduction and skip the substance. "It's your substance," she prognosticated, "That's going to get you in trouble again." I don't know if that means she won't defend me if I get sued, but throwing caution to the wind I shall make a few apparently injudicious remarks about political realities. The two points that I wish to emphasize are declining dollars and the Sagebrush Rebellion.

Money is a fairly obvious constraint. It does not take a Ph.D. in political science to figure out that the BLM budget was terribly low at the outset. Thus, the agency has a huge backlog of deferred investments in basic inventories, infrastructure and personnel, and even generous percentage increases in an inadequate budget (which are not likely to be forthcoming) will not be adequate to support past programs and emerging requirements. Two impressionistic observations supplement this humdrum observation. First, it is frequently suggested that the Bureau does a wretched job of representing itself on Capitol Hill. I have never studied

this topic specifically, but there is enough circumstantial evidence to suggest that the Bureau could do a better job defending its interests in Congress. If they are going to win in political arenas, they must become more sophisticated politically. Moreover, it appears--again without adequate study--that the BLM has historically adopted a particularly unproductive budget strategy. One does not, I am suggesting, succeed in wheedling dollars for range management from Congress by telling them what lousy shape things are in. For years, it is argued, the Bureau has couched its case for money in the context of deteriorating range. This strikes me as tantamount to leading with your chin. Better tactics in dealing with the Congress will not, in my opinion, open a cornucopia of federal dollars for range management, but they would at least halt the flow of Bureau rhetoric into the deteriorating range mythology.<sup>1/</sup>

The second obvious political reality I wish to address is the Sagebrush Rebellion. In so doing, I want to put aside all the discussion of transferring title to land between and among levels of government. I think the whole affair is awkwardly titled and unfortunately aimed to the extent that it tempts some observers and environmentalists to perceive it as another rancher-inspired land grab. That is an error in my opinion. One does not build a popular movement of the scope and durability of the Sagebrush Rebellion on arcane legal theories of land title. I may be wrong, but I view this as a howl of anguish rather than a serious attempt to take title to federal land.

Fortunately, I do not have time to treat this subject elaborately. Let me simply state that I view the Sagebrush Rebellion as necessary, appropriate, timely, and welcome to the extent that it has stirred and focused popular concern about the location, extent, and exercise of governmental authority. It suggests that we have reached the Constitutional limits, the conceptual limits, and the practical limits of centralized government. In the present context, it is a strong and should be a persuasive indicator that the Bureau must be responsive to state and local interests.

This ought to tell the Bureau how to interpret the Federal Land Policy and Management Act (FLPMA). The FLPMA mandate to the Bureau is among other things, a directive for multi-use management strikingly similar to the traditional Forest Service authorities. This does

<sup>1/</sup>I am grateful to Helen Ingram, University of Arizona, Tucson, for informative discussions on this point.



not, in my opinion, suggest that the Bureau ought to gear itself up to become a latter day Forest Service. They do not have the land, the dollars, the personnel, the data, the credibility, or the political support.

By political support, I mean two things: supportive groups and supportive times. When the Forest Service came of age as a paramilitary outfit, the nation was absolutely preoccupied by scientific management competence (Hays, 1959). Seventy-five years later technical competence is less credible in general, and the specific competence of the range management profession is widely and probably appropriately either questioned or viewed as being in its infancy. Not coincidentally, the public outpouring of support for conservation which buoyed the Forest Service through 20 rough years of childhood and adolescence has not materialized for the Bureau. This is a poor time, I am arguing, to take the development of the Forest Service as a role model. Irrespective of the FLPMA mandate, BLM management of those lands will be at best directive and cooperative (Dana and Fairfax, 1980) in the foreseeable future. And I do not mean "at best" as a put-down. FLPMA invites and requires the BLM to engage in a cooperative planning effort with the states and localities. This should not, in my opinion, be seen in the traditional Forest Service way of "we'll do the planning and you do some commenting and we will then do pretty much what we had in mind in the first place." I believe that the Bureau can expand its resources, increase its potential for effectiveness, and share the political heat generated by hard trade-offs if they allow and encourage the states to play a major role in the planning.

Because the Bureau cannot do it any other way and has consistently proven that it cannot do it any other way, I think that they should make a virtue of necessity and make a big issue, not of federal retention and management, but of cooperative planning. In that area I would, moreover, emphasize working not with individuals or self-selected representatives, but rather with elected state officials.

The Bureau simply does not have enough fat in its budget or slippage in its system to permit the luxury of adopting such a labor- and paper-intensive planning process (Fairfax, 1980). It is suggested that a Resources Planning Act-type bill is needed to "force" Congress to provide money, to gather data and do inventories. I strongly disagree. We heard that sad tale regarding BLM's environmental impact statement strategy. The Natural Resources Defence Council v. Morton decision did not force money out of Congress and neither will a poor imitation of an RPA document. Given the history and the

myths which already constrain discussion of this issue, I feel it appropriate to reiterate Fairfax's First Law of Politics: Dramatic demonstrations of impotence are to be avoided at all costs.

Thad Box, our Moderator, has asked us to conclude on a positive note. I believe that both the times and the peculiar circumstances surrounding range management require a new model of federal resource management, one which emphasizes cooperative planning and responsiveness to socioeconomic pressures reflected at the state level through elected state representatives. Following the Forest Service road to RPA would be a terrible error. The political constraints on the Bureau are numerous, but we may yet look back on the 1980's as a time when the BLM exercised real and much needed leadership in resource management.

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## LEGAL CONSTRAINTS ON PUBLIC RANGELAND MANAGEMENT

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Many range scientists who are concerned about effective management of public rangelands often ask themselves whether legal constraints restrict the application of modern range science principles to these lands. Some believe that if range scientists could manage public rangelands without regard to laws and lawyers, they would achieve better on-the-ground results. As a lawyer, I do not know whether range managers actually have the knowledge and management tools available to achieve better range management results. I would like to discuss whether legal constraints actually impair your ability to do your jobs and to address the kinds of legal constraints with the greatest long-term impact on you.

This paper briefly reviews the common legal constraints range managers complain about, but rather than dwell on this list, the paper goes on to discuss the legal constraints which I, as an attorney, believe should seriously concern you. The theme of this paper is that range managers should stop viewing the law as a burden and view it instead as another management tool at your disposal.

### PERCEIVED CONSTRAINTS

Most range managers probably have their own list of laws which they view as constraints. These lists can usually be divided into what I would call special single-purpose legislation and new procedural requirements. The single-purpose laws I hear the most frequent complaints about include:

1. The Endangered and Threatened Species Act. It requires comprehensive inventories and evaluation of non-game fish, wildlife and plants, and prohibits certain actions affecting them;
2. The National Historic Preservation Act and executive orders on cultural resources. They require historic and cultural sites to be inventoried and evaluated and also prohibit certain actions affecting them;

3. The Wilderness Act and the wilderness review requirements of RARE II and the Federal Land Policy and Management Act;

4. The Wild and Free-Roaming Horses and Burros Act;

5. EPA regulations and restrictions on the use of pesticides and herbicides;

6. Executive orders on wetland and riparian zone protection; and

7. Executive orders restricting predator control methods.

These laws and executive orders limit the land available for intensive range management and limit the management techniques available to federal range managers.

Other range managers, particularly those working for the federal government, complain about other laws which they contend have moved them off the range and into the office. These laws include:

1. The National Environmental Policy Act of 1969;
2. The Federal Land Policy and Management Act; and
3. The National Forest Management Act.

Bureau of Land Management (BLM) range managers complain that they are spending more time writing impact statements than they are supervising the compliance of permittees. Both the BLM and the Forest Service are now required to prepare complex multiple use plans for federal lands. The Federal Land Policy and Management Act also restricts how grazing permits and leases are administered. Except in extraordinary circumstances, permits must now be issued for a full ten-year term and two years' notice must be provided before permit cancellation.

All of these constraints are very real. They directly restrict range management alter-

natives. For example, predators cannot be controlled as effectively and some herbicides and pesticides cannot be used. The laws also have indirect effects. They control land allocation and affect the time available for on-the-ground management activities. All of these constraints, though, are likely to be overcome. As inventory data improves, they will cause less delay and may have considerably less impact than they do today. New management techniques consistent with protection of the entire ecosystem are being developed. Finally, these constraints are fairly easily understood and thus easier to cope with.

#### LEGAL ATTITUDES

The laws discussed above do affect directly range managers' options. A much greater obstacle faces range managers, however: the effect of legal attitudes toward problem-solving on range management decision-making. Last year at this meeting Jeanne Edwards asked, "Do we point with pride to a favorable court decision rather than a favorable result from our management? Do our legal researchers get funding priority over our range researchers?" These questions reflect the concern of many that too much emphasis has been placed on legal solutions rather than on management solutions by many of those actively involved in public rangeland management today.

What are the characteristics of the legal attitude toward range management problem-solving? Essentially it is that lawyers often assume that if correct procedures are followed, correct decisions will be made. This is not always the case. A good example of the lawyers' approach to range management problem-solving is the famous case of the Natural Resources Defense Council v. Morton, the grazing impact statement case. The plaintiffs were concerned about deteriorating rangelands and perceived a solution: reduce cattle numbers. In order to achieve this result, they filed a lawsuit under the National Environmental Policy Act. NEPA is a lawyer's dream with its procedural emphasis and generic approach to all environmental problems.

The plaintiffs won the lawsuit, but what was the result of their victory? The result was more impact statements and delayed implementation of needed management reforms. The plaintiffs could have filed a lawsuit under the Taylor Grazing Act in a specific area which was overgrazed and contended that under the Bureau's own regulations, the livestock numbers exceeded the grazing capacity. This would not have achieved a nationwide "solution"; however, it might have had a greater impact on solving the problem of deteriorating rangelands in one area. I believe this approach was not

taken because lawyers tend to choose generic procedural solutions rather than attacking and solving specific on-the-ground problems.

The manifestations of the lawyers' approach to range management are evident in public rangeland management today. The most vivid manifestation is the planning process followed by both the Forest Service and the BLM. This process assumes, as do lawyers, that if all of the planning steps are taken, the agency will arrive at the correct answer. Another manifestation of this approach is the new procedural requirements which must be taken prior to implementing livestock reductions, such as the two-year cancellation notice requirement and strict limits on putting administrative decisions into immediate full force and effect.

The implications of range managers adopting legalistic approaches to range management problem-solving are immense. By focusing on procedural paperwork, range managers can avoid making tough decisions. It is safer to do paperwork and claim that you have done everything you were required to do than to actually implement tough decisions. How often lately have you heard comments like these:

"The management framework plan is done and can't be changed."

"We could not look at your data because we had to meet the environmental impact statement deadline."

"We had to write the allotment management plans before we could do the environmental impact statement and since we don't have time to do all of them on a case-by-case basis, we'll use a five pasture rest rotation system throughout the district unless someone else suggests something different."

This cookbook approach to range management is unlikely to produce good management decisions. One must conclude that the legal approach to problem-solving promotes weak management and managers who are unwilling to make difficult decisions.

#### ALTERNATIVES

Alternatives are available. The legal tools for modern range management now exist. The Federal Land Policy Management Act and the National Forest Management Act provide flexible management tools for range scientists to use.

In addition, range managers should remember that judicial review of their decisions is extremely limited. Contrary to popular belief

in federal agencies, the courts recognize that that professional range scientists have considerably more expertise in making range management decisions than federal judges do. The courts also recognize that Congress has given very broad statutory authority to federal land management agencies, leaving management decisions up to them. For these reasons, the courts are unlikely to reverse or intervene in the range management decision process.

Finally, recent legislation emphasizes cooperation between public land users and federal agencies. The Public Rangelands Improvement Act directs federal agencies to develop a land stewardship program.

In conclusion, range scientists today have the scientific tools to improve the condition of public rangelands and the legal tools to achieve good results. What is needed now is bold use of these new tools, rather than legalistic paperwork.

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## DISCUSSION BY PANELISTS AND AUDIENCE

JIM GILTMIER: In the Forest Service Resource Planning Act report, the reason given for the level of range improvement chosen was that the cost effectiveness of additional range monies couldn't be proven. How would you respond to that?

LAMAR SMITH: I don't know why we're so concerned with cost when we get to range management; we don't seem to consider cost with any other resource. We reclaim strip mines, a few acres here and there, and spend millions of dollars on it where there are no signs that it is going to result in any greater productive potential than the same acres of rangeland that need it just as bad. So my answer is that we have been utterly too restrictive in what we consider to be benefits of range improvement.

BRUCE GODFREY: I'll take a crack at that question too. One of the problems here is the model used for strip mine development. Frankly I don't believe the numbers that are coming out of the mines. Another thing is somewhat more pervasive--we range people have not been very good at talking about what we do (i.e., of blowing our own horn) versus the alternative of saying "but if you don't do something, look how bad it's going to be." I think that range can compete for dollars on a cost effective basis, but you have to do it judiciously.

FRED MASS: Another point, the management plan is the convincing thing to a man making a budget. The man in the field has a tremendous responsibility to make a precise plan from which budget people can work. From my experience, if the plan calls for certain things to accomplish a precise goal, the money has usually been obtained.

CHANDLER ST. JOHN: Gail Achterman talks about legal tools being available for the attorneys. This leads back to procedural things that have to be done correctly so the attorneys can cover you.

GAIL ACHTERMAN: When I'm advising clients, I, like any other lawyer, say "why didn't you do that?" if they missed one of the steps, because you don't want important steps to be missed. I think that most managers now are acquiring a pretty good understanding of the basic steps in the planning and impact state-

ment processes. I think it is going to settle down even more and that understanding is going to grow. I'm not saying that creditable litigation isn't there. I'm saying that in the range area the threat is less than you might think. You have to meet the basic legal requirements, but there are a lot of different ways to meet them and some of the ways are much easier for you as managers. These various ways should be suggested, thought of, and tried. That's what I don't see happening right now.

Another point: in Oregon, we've had quite a bit of controversy over grazing use on federal lands, primarily focused on the Malheur Wildlife Refuge, not on other public land grazing in the state. I see much more litigation threat in the forest management area of western Oregon than I do in range management areas in the eastern part of the state. This makes me think that even if you slip or miss a few steps you're a lot less likely to get caught. If you can achieve good management goals as a result of sacrificing some of the procedural niceties, maybe you're better off. I'll point to one example where that was done. A few years ago, Merle Storms, the Oregon State Director of BLM, sat down with some of the Oregon cattlemen and said, "look, I can enforce cuts or we can work something out." And Storms was able to negotiate reductions by not doing anything in the planning process, just sitting down and talking to people. I think we need more of that, but your point is well-taken, you can't abandon all compliance or you may be asking for trouble.

BRUCE GODFREY: Gail Achterman's paper reminds me of the problem of the small operator. This is a problem that exists in both Forest Service and BLM. In doing some work for BLM, I found that approximately 80 percent of all BLM permittees own less than 100 head of livestock. I would argue that you're not going to force most of those operators out of business. That's because it's a way of life for them even though they are largely part-time operators. They support that ranching hobby from other income. I think, if you look at BLM statistics over time in terms of the size of permits, you have a significant disparity in terms of maintaining the small ones and the large ones; the small full-time operator has gone by the wayside. That's really where the distribution issues are.

GAIL ACHTERMAN: Someone made a comment earlier--maybe it was you, Bruce--that you perceived that the federal agencies were moving away from individual allotments into common allotments. In my experience in south central Oregon, they seem to be moving away from common allotments into individual allotments--just the other direction.

BRUCE GODFREY: I wish there was some evidence of that.

GAIL ACHTERMAN: Mine is purely experiential.

BRUCE GODFREY: My review of Bureau of Land Management EIS statements indicates a move to grazing systems in an attempt to solve grazing problems. To institute systems, allotments are frequently combined because it takes some size so that you can concentrate animals. As a result of that, you tend to get common use, some common allotments rather than small individual allotments. There are differences by states.

GENE HASSELL: I have a question for Lamar Smith. You talk about flexibility, and mainly about the Forest Service--that's where I'm from. There's been all the flexibility in the world in going from low numbers of livestock to high numbers. There's been absolutely no legal or administrative reasons why we can't do that. Now it doesn't happen very often, but the answer is a lot more complex. Part of the problem belongs to academia and what it has to do with our lending institutions. When a rancher buys a ranch, his loan is based on a certain number of livestock. Usually he's pressed and probably can't pay for the ranch based on what's going to come off of it. Now he's flexible to go up (in livestock numbers) but he's not flexible to go below that number; he cannot do it. And here's where academia comes in. I think that whether the headquarters ranch has a swimming pool on it has a lot more to do with the price of that ranch than the range conditions. Bankers don't believe in range condition. We haven't sold that concept to bankers and that's the basic problem, Lamar.

Now, I want to make a comment to Miss Achterman. I'd like to point out one thing that I think ranchers and land managers are both very proud of. I really can't think of one case--and I've been in this business for almost 30 years--where lawyers have solved any problems between ranchers and land managers. There's been a lot of progress made by ranchers and land managers and it doesn't make the newspapers. It's done very quietly but goes on all the time. We've never lost a case, either.

Another point: Thad mentioned earlier today that these meetings sure zero in on the bad points of range management, but there's sure

been a tremendous amount of progress made. Region 3 of the Forest Service is typically held up as the worst case of overgrazing in the country, except for the BLM. We've made a tremendous amount of progress. We have one national forest now where we're not saying conditions are all good, but we're satisfied with management and training on every allotment on the forest. I don't know what Patrick West said, I couldn't quite follow what he was saying about the Carson and Santa Fe National Forests, but we're in darn good shape--90 percent of our permittees up there are small Spanish American operators. They're doing a good job so there's a lot to be optimistic about in range. One of these days I hope you have a meeting where you talk about the good stuff which is the majority.

One last point: both Bruce and Lamar made a large point out of numbers, numbers of cattle. I think that's also a problem with academia and the range profession in general. Numbers of cattle are not an end product; that's just a convenient way to talk about what we're supposed to be doing. You guys know as well as I do that just a few years ago--30 years ago--we were talking about 300 pound calves and 30 percent calf crops. And the guy that's not making 85 percent today is not in business. He's turning out 500 to 600 pound yearlings. We're talking about pounds of red meat. I don't think that number describes what we're doing at all. Besides, you don't know what the numbers are and neither do I. All we have to do is go down and pick up one trespasser--we did it last year. The cattle trucks ran all night for two weeks. So we don't know what's out there and you don't either. I think it's a waste of time to talk numbers.

THAD BOX: I guess I'll admit those of us in academia are dense because I didn't get your question, but since you named three people--Lamar, Gail, and Bruce--I'll give them a chance.

LAMAR SMITH: It's hard to know where to start. I'm not sure which statement to respond to, but I will agree with you that we're too obsessed with numbers. I will disagree with you that it's academia that's responsible.

GENE HASSELL: It has an impact on the banking industry, too.

LAMAR SMITH: That one I don't have a solution for. Whether we call a ranch a 500 or 1000 cow outfit, as far as I'm concerned, does not make any difference. I don't know whether it makes any difference to you or not, but if the banker wants to call it a 500 cow outfit, fine. Nevertheless, the Forest Service and BLM do set a specific number of animals and that's been real important to the banker. Maybe you have made too big an issue of setting those

numbers rather than looking at what is happening to the range and not worrying about how many cows you have.

GENE HASSELL: We would be very happy to do that Lamar, but the rancher can only go up--he can't go down.

LAMAR SMITH: Well, I don't have the solution to your problem but don't blame me for creating it.

GAIL ACHTERMAN: A comment I'd like to make regards financing. Now that I'm no longer with the federal government, the work I am doing in my practice in the ranching area is largely with banks and other financing institutions that are involved in the sale of ranches that use federal lands. One thing that I'm truly stunned about is the lack of sophistication among agriculture loan officers that I come in contact with. There are just an awful lot of them who have no familiarity whatsoever with federal grazing regulations and what it means to have recognized base property for a federal permit. We're working now with one of our major clients--a bank--to try to improve the sensitivity of agriculture loan officers so they'll know more of what they should be looking at. In defense of financial institutions, I would say that, in the last major transaction of this kind which I handled, there was a certified private range consultant. He was brought in and did a full workup on the property--federal and private--before it was ever put on the market by a real estate company. Then we had individual interviews with all the federal agencies involved and went through the plans. That was what the client wanted us to do; it wasn't because we were all enamored about going down to south central Oregon and spending a week to double check the range people out. I think some of the large financial institutions are becoming more interested in these kinds of questions, and they're becoming more concerned about what the numbers mean and are looking behind the numbers.

BRUCE GODFREY: Let me respond in the same vein. I don't know about the others, but I can tell you that in the Sacramento office of the Federal Credit Administration they give their loan officers authority to discount all public lands to zero value. It doesn't matter what they might be selling for. Let me tell you--that causes a real problem for a rancher who has historically used that permit value as collateral and all of a sudden you go zero on him.

Let me come back on the cattle number thing. I want to play with that for just a minute. I think we do play with numbers too often, but I

think sometimes we oversell the other half of it too. The little bit of work that I've done on grazing systems indicates that not only the numbers go down, but oftentimes the pounds of beef coming off the range under a grazing system go down significantly--especially in the short run of about three to five years. That oftentimes represents a major problem for a rancher because it's a cost that he has to bear. It's very cheap for the agency to advocate that because it's not costing them much, it's not coming out of appropriated funds--the rancher bears those costs.

GENE HASSELL: Bruce, I'm sorry, but that's not true in a burden sale--in a resale.

BRUCE GODFREY: Well, Gene, you talk about an economic constraint, that's a place where we very frankly don't know very much (i.e. the economic costs or returns of grazing systems). I mean, we just know nothing!

THAD BOX: I don't know about all of academia, but at least part of academia has heard you, Gene, and I assure you that there will be at least one Intermountain School that will have a short course for money changers.

TOM NELSON: This has to do with RPA: I think I heard Bruce Godfrey suggest that only the red meat cost-benefit aspects of range management be considered in analysis for planning purposes.

BRUCE GODFREY: I hope I didn't say that.

TOM NELSON: Well, I gathered that you had some difficulties with the values on the amenity side, those other values from vegetative manipulation of rangelands. I was fairly closely connected with the Resources Planning Act (RPA) process. The toughest element that we had to deal with in the whole process was the range resource. Very frankly, unless the range economists can come up with some better models or better values or better systems in the next few years, I feel that the range resource is going to have an increasingly difficult time in competition with other demands for the federal dollar. Maybe you'd like to comment on that, Bruce.

BRUCE GODFREY: I will. I'd come to that conclusion because I think that's essentially what's going to happen. It's tough competing with those other users. The point I would make in terms of the RPA model that was used is this: I'm not convinced of the numbers that were used, either value-wise or number-wise on either the red meat side or on the other side. The model was the best that you had at the time, let's put it that way. But I think we know more than what we had in there. And I

think the improvements in that model are coming.

TOM NELSON: I would submit that they have to come fast or we're going to have some difficulty in range finding its place in the sun in the next five to ten years.

BRUCE GODFREY: That's one of the reasons I argued in my talk that range will have a difficult time competing. You're just not going to get the big bucks that you expect.

FRED MASS: This man mentioned that we talk so much about the bad and so little about the good. I'm not saying that there are not a lot of allotments that need improvement. How to get those up to where they should be is a problem of the public lands people. However, there are literally hundreds of allotments on the National Forests that are working beautifully. When they do, they are an asset to the hunter because they can grow more deer, to the water man because the watersheds are taken care of, and so on. We wonder why we have allotments that are not working satisfactorily. Yet, if all of our management plans were working well, all the little people would be happy. So one of the real goals should be to have a workable management plan for all of these people who are under a certain number of head of cattle or with some special problem. Let's get a management plan for them some way that is workable. Another point in range management--we get into so many details that we overlook the big picture. Possibly that is why I have a degree in forestry and art and not in range management. I missed one five-hour course, and I didn't ever pick it up in range. But I picked up a lot of things in art and one of those is that if you're going to paint a panel like that, you have one discipline to meet for sure and that is to look at all the boundaries of the panel and not concentrate on that crack, and that's very important in range management. Another one is, you may put a lot of paint on that panel but if it does not work for you, nothing has been accomplished.

BRUCE GODFREY: I think numbers are important--not numbers of animals--but I think the day is long passed, particularly in the range profession that you're going to be able to justify programs with clichés. You're going to have to defend your proposed action with numbers.

GENE HASSELL: Sally was talking about our "tar baby" and it comes in two pieces, RPA and the National Forest Management Act (NFMA). I wondered if she meant the whole tar baby or one of those, RPA or NFMA, separately.

SALLY FAIRFAX: The major problem that I see is that the two pieces of legislation don't fit together very well. One or the other would be bad enough. But together they're probably un-

predictable--you just can't comply with both. Let me give you an example. If you look at the 1974 RPA Act, I think that you would find a concept in planning that is unparalleled, full of utterances for the unshakeable faith in rational, centralized massive planning and decision making. I don't think it's possible to find a better example of a full force commitment to a national central government, so that's the RPA. Now the model of NFMA is completely different. It's not data-oriented; it's sort of touch and go oriented, it's broker-oriented. You get together with the folks in an area and you sort of probe around and find out what the people think the issues are, what people think the priorities are. It's a process of brokering, negotiating and pushing and pulling to get people's conception of the problem. Then you come to a definition of planning goals and programs. So it seems to me that these models, one being a rational, data-oriented model and one being a brokered, political model, don't really fit together. I think that one of the unique virtues of the Forest Service regarding the two acts, is that no matter what happens they say "we can do it". And I think that's very commendable, but in this instance I think it's probably destructive if not suicidal. I think it's silly to talk about them separately because the real problem seems to be trying to put them together.

JEFF SIRMON: I would like to make a statement about Sally's prediction that we're going to get so preoccupied with paperwork that we forget about resources. I don't think that's true. First of all, we have so many good resource managers that need paperwork, that they are not going to get preoccupied. Secondly, we have some of the finest professionals coming along that pledge allegiance to resources and not to a plan that they have in mind. It may not be the right plan. And there's been numerous times when we've had people on the ground who found that the plan and the specifications didn't fit what was needed on the ground and they were not hesitant at all to abandon the plan. So I don't see that, under our conditions today, we're going to become so preoccupied that it will be the downfall of range management.

GENE HASSELL: We've been so process-oriented in Region 3 that we never did know what was going on.

THAD BOX: I want to thank you for allowing your brains to be massaged. And I want to thank the panel for giving some of the most stimulating papers I've heard in years. Also, I want to thank the organizers for allowing me to be a small part of it.



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