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PROCEEDINGS

GOVERNOR'S CONFERENCE ON MONTANA RANGELAND

"The Future of Montana's Rangeland?"

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September 22-23, 1976

Ramada Inn

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Funding support provided by the OLD WEST Regional Commission as part of a commission sponsored range program.

FOREWARD

Montana is primarily a Rangeland State. This Renewable Natural Resource is the basis for the state's largest income-producing industry, livestock production.

Rangelands, comprising 70% of the State, not only produce forage for livestock and wildlife, but also protect watersheds and provide recreation values. This resource is of prime importance to the urban public as well as range operators.

To recognize the important role that the resource plays, Governor Thomas L. Judge hosted the Nation's first Governor's Conference on Rangeland in Billings, Montana, September 22nd and 23rd, 1976.

Many state and international authorities on rangeland participated in the program.

The following presentations are published as a permanent record of the conference.

Submitted by the Montana Advisory Board to the Society for Range Management-
Old West Regional Range Program:

Dennis Nathe, Chairman	Robert Ross
Emmet A. Butcher	Carl Wambolt
Willie Milliron	O. M. Ueland
Richard Kurth	Robert Neumann, Alternate
John Hollenback	Harold Simmes, Alternate
Peter V. Jackson	Walt Steingruber, Alternate

ACKNOWLEDGMENTS

Also instrumental in organizing this conference were the Montana Rangeland Resource Program Advisory Council. The members are as follows:

John Vanisko, Chairman	Lee Eddleman
Leon Thrams	Joe Asleson
Paul Fochs	Charles Green
Harold Simmes	Joe Egan
Curt Hughes	Dick Cleveland
Mons Teigen	Bill O'Brien
Robert Gilbert	Chuck Reed
Virge Holliday	Wilbur Erbe
Don Aldrich	Tony Gies
Ted Russell	Robert Ross
Max Green	Carl Wambolt
Parham Hacker	

Many thanks to all the organizations and individuals who helped set up and carry out the program for this event. As this conference was the first of its nature in the Nation, the efforts of all are synonymous with the pioneers who first witnessed the environment of the rangeland.

It is the hope of all those involved that this conference will aid in bringing about an awareness of the management and uses of rangeland.

If you wish to obtain additional copies, please contact:

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Conservation District Division
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Helena, Montana 59601

PROGRAM AGENDA
FOR
GOVERNOR'S CONFERENCE ON MONTANA RANGELAND

Wednesday, September 22nd

Introduction and Program Chairman
Morning Session, William Fogarty,
Program Coordinator, Old West Regional Commission

10:00 a.m. Keynote Speaker
The Honorable Thomas L. Judge
Governor of the State of Montana

10:30 a.m. The Nature of Rangelands
E. J. Dyksterhuis, Professor Emeritus
and International Consultant

11:15 a.m. The Role of the Society for Range Management
B. J. Ragsdale, President
Society for Range Management and Extension
Range Specialist, Texas A & M University

12:00 Noon Luncheon

Afternoon Program Chairman
Peter V. Jackson, Director
Western Environmental Trade Association

1:00 p.m. The Importance of Research and Education
to the Range Resource
Johan Asleson, Dean of Agriculture,
Montana State University

1:30 p.m. The Role of State Agencies in Dealing with
Environmental Matters Associated with Rangeland
Gary Wicks, Director,
Department of Natural Resources and Conservation

2:00 p.m. Panel Discussion
Subject: Coordinated Planning of Intermingled Ownership
Panel Moderator: Mons Teigen, Executive Vice-President
Montana Stockgrowers
Panel Members: Ted Russell, United States Forest Service
Wendell Thacker, Soil Conservation Service
Kelly Hammond, Bureau of Land Management
John Morse, Jr., Rancher

3:15 p.m. Break Courtesy of Western Environmental Trade Association

3:30 p.m. Panel Discussion
Subject: Range Management Today
Panel Moderator: David A. Smith, Executive Secretary
Society for Range Management
Panel Members: Roy Cornell, Rancher, Dillon
Curt Hughes, Rancher, Stanford
Frank Sparks, Rancher, Plevna

4:30 p.m. Break

6:00 p.m. Social Hour (No Host)

7:00 p.m. Banquet: Master of Ceremonies
George Lackman, Commissioner,
Montana Department of Agriculture
Banquet Speaker: Martin H. Gonzalez
Past President, Society for
Range Management
Chihuahua, Mexico

Thursday, September 23rd

Program Chairman, Melvin S. Morris, Professor Emeritus

8:30 a.m. Panel Discussion
Subject: Montana Rangeland Resource Program
Panel Moderator: O. M. Ueland, Department of Natural
Resources and Conservation, Helena
Panel Members: Parham T. Hacker, Department of Natural
Resources and Conservation
Dick Kurth, Fort Benton
Willie Milliron, Glendive
Dennis Nathe, Redstone

9:45 a.m. Legal Implications of Range Management
Perry J. Moore, Attorney and Rancher
Two Dot, Montana

10:15 a.m. Break Courtesy of Midland National Bank, Billings

10:30 a.m. Discussion of Future Plans of Montana Rangeland
Charles Rust, Program Coordinator
Cooperative Extension Service

Adjourn

OTHER MEETINGS: Regional Advisory Board SRM-OWRC
1:30 p.m. - South 40 Room

Montana Advisory Board SRM-OWRC
3:30 p.m. - Room 101

INTRODUCTORY REMARKS TO
GOVERNOR'S CONFERENCE ON MONTANA RANGELAND

By William J. Fogarty

Good morning and welcome; Governor Judge, Ladies and Gentlemen.

For the coming day and half, we have before us a subject that is important to the vast majority of Montanans and the Nation. It is very appropriate that we assemble to discuss the problems and opportunities associated with a kind of land known as range.

Recently in Denver - I recall a bumper sticker which read: "Speak to your wife today - Football season begins tomorrow".

This matter of communications is a very important first step when we are dealing with such a vast and varied resource and in particular at this time when there are so many conflicting views as to the use priorities and management of rangelands.

Rangeland composes about 70% of the land area of Montana and on an average in excess of 60% of the states that border Montana. The gross income generated by rangeland is in excess of 400 million dollars yearly for this state.

The complex ownership of these lands, be it federal, state, or private, and the many uses of rangeland (be they livestock grazing, mining, recreation, wildlife, and/or watershed) all contribute to making the development of a program for rangelands a complicated process.

The pressures on rangelands to produce food and fiber in the form of meat and feed grains are ever increasing. Many acres of rangeland are being cultivated in order to increase the production of small grains. Some of these lands are well suited to this use while others are either marginal or sub-marginal.

The rangelands yield a large amount of a precious commodity here in the West known as water. The range condition of these lands will, to a great extent, determine both the quality and quantity of the water that it yields.

In the Northern Great Plains the vast majority of the stippable coal reserves lie under rangeland. In some instances, the reclamation of these lands will be aimed at restoring them to their original state and use. In

other instances, they may be cultivated for crop production or developed as recreation areas.

Nearly all the wildlife of Montana at sometime during their life cycle inhabit range and depend on it to provide their food, water, and cover.

To get the private operators, the concerned organizations, agencies and special interest groups together where the pros and cons of the issues can be objectively discussed is a major step towards obtaining a program for the range resource that will be beneficial and amendable to all concerned.

Just as important, however, is to provide for a follow-up so that the knowledge and benefits gained here today and tomorrow will not be lost.

We have on our program some of the foremost authorities on range, and I certainly look forward to hearing their views.

Our first speaker this morning is a man who has time and time again shown his support and deep concern for rangelands. As a member Governor of the Old West Regional Commission he has personally supported the Old West Regional Range Program and many other Agricultural related programs the Commission has sponsored, such as the program designed for the treatment and cure of Saline Seep.

William J. Fogarty, who presented this speech at the Governor's Conference on Montana Rangeland, is the present Program Coordinator for the Old West Regional Commission. A native Montanan, he has worked for the Soil Conservation Service prior to coming to the Old West Regional Commission. Mr. Fogarty received his degree in Range Management from Montana State University.

KEYNOTE ADDRESS

By The Honorable Thomas L. Judge
Governor of the State of Montana

It is an honor and a very great pleasure indeed to welcome all of you to the Nation's first Governor's Conference on Rangeland.

The myths, folklore, and songs of the daily routines of the cowboy are the material for the literature and art considered the world over as the most truly American. On the prairies and mountains of the west, the traditional national virtues of independence and courage have been most thoroughly represented by the cowboy to the popular imagination. Whether or not the song, "Home on the Range", was written by a cowboy, it, for decades carried the flavor of the free, open and majestic west to the city dwellers of our nation.

Because of the highly romanticized and much discussed role of the cowboy on American society, and because of the critical role of the livestock industry in the economy of Montana as well as many other western states, I am both pleased and disappointed that Montana is the site of the first Governor's Conference on Rangeland. I am pleased that we are gathered this week in Billings to discuss ways of improving this vital industry. It provides to my mind further recognition of the pioneering efforts in rangeland management undertaken in Montana over the years. I cannot, however, help but be disappointed that this conference is occurring over a century after the livestock industry began in Montana and the West.

Agriculture is today our state's number one industry, and as it has always been, one of our most important. Livestock and livestock products still comprise the major segment, representing 52 percent of that industry. In 1974, cash receipts, excluding government payments, totaled \$430 million. That same year, the state contained over three million cattle and more than 700,000 sheep. We have within our borders 54 million acres of rangeland, and eleven and a half million acres of grazable timber land -- 70 percent of the enormous surface area of Montana is grassland.

These statistics, however, do not begin to describe the importance of rangeland to the livestock industry to the culture and quality of life of our state. I could muster figures about hunter success ratios and license

fees, but I have no monetary value to assign to the elation experienced as one sees a bevy of sharp-tailed grouse take wing. I could talk about the millions of dollars spent by tourists in Montana in the proportion which could be credited to rangeland, but I have no number to describe the way of solitary journey into vastness that can put a man's problems into perspective. In discussing rangeland as a watershed, I could speak of the amounts provided in the uses to which that water is put, or I could instead attempt to quantify the savings realized because the intensity of flooding is lessened, or because city water systems are not overtaxed. But I have no dollar sign to measure the way a clear, winding stream turns pebbles into gemstones.

Its economic importance, its social and cultural significance, its expanse and its majesty prove that rangeland is one of Montana's chief renewable resources.

Nonetheless in 1973, less than one-third of Montana's rangeland was producing up to its potential. Another 20 percent was classified as being in good condition -- productive but falling short of the excellent category. That means that nearly half of the rangeland, over 30 million acres, was in only poor or fair condition. The 1976 Soil Conservation Service figures indicate that the less than good categories have been reduced to 46 percent, but our problems remain large. With \$2.30 accruing from each acre improved from fair to good condition, land treatment of the 26 billion acres of fair and poor condition range could potentially yield 60 million dollars.

The problems connected to the condition of rangeland continue. You are more far aware of them than I. Soil erosion, gullyng, water pollution, loss of wildlife habitat, saline seep, the intrusion of noxious weeds and other undesirable plants and species resulting in reduced carrying capacity and lower incomes for ranchers, even leading to the failure of individual units.

The economic plight of the rancher today forebodes worsening conditions for the rangeland resource. No rancher is going to be sympathetic to long-term range management when prices of cattle keep him worried about day-to-day survival. Low cattle prices have emptied feed lots, and cattle have been held over instead of sold. Holdover stock often times means the utilization of all available range, precluding use of a rotation system, and often that

range is already suffering from lower than average precipitation. The rancher, barely able to survive financially, can afford to invest neither an additional pasture nor a needed improvement project, and the stress on his range is intensifying.

Another recent phenomenon now confronting the Montana rancher is the rapid change taking place in the use of land. Rangeland is often not valued for the animal units it will graze, but for its recreational home-site value. Instead of grazing sheep or cattle, the sales potential of lots becomes the investment criteria. Not only is rangeland taken out of production as a result, but the market price of land is again driven beyond the reach of ranch operators. This is a problem that is occurring statewide, and one that will continue as Montana becomes more popular.

Another land use change affecting rangeland is the conversion to cropland. If soil and moisture conditions are right, such conversions are justifiable. However, because of low beef prices, much rangeland is unwisely being converted. If these marginal lands are banded together when crop failures occur, it could be decades before the climax native range naturally re-establishes itself.

At the state level, we in Montana have taken several actions to protect this natural resource and the livestock industry on which it depends for proper protection.

We created a Livestock Task Force which has worked to reinstate these import quotas, to encourage a check-off system for beef production, to increase consumption of Montana beef in institutional nutrition programs, and to expand foreign and domestic markets.

We have supported efforts of the Montana Cattlemen's Association to create a vertically integrated cattle industry in the state. I have long believed that Montana people should receive maximum benefit from development of our resources and there is no reason for anyone but Montanans to receive the full profits due them from their labors.

We were successful in obtaining \$500,000 from the Old West Regional Commission to improve rangeland management practices in our state. This conference is one of the projects undertaken by the Society for Range

Management which was created as a result of that grant.

During the past several years we have appropriated state funds for noxious weed control as well as for highly effective saline seep programs.

Nonetheless, these actions taken together cannot offset the practices at the federal level which have historically threatened the agricultural economies of the western states.

In the week of the Enlarged Homestead Act of 1909 which increased settlement claims to 320 acres in Montana, a flood of homesteaders brought the cattle industry nearly to its knees.

Continued federal failure to oppose and enforce strict beef import quotas has contributed to the disastrously low price levels facing the beef industry in recent years. The continued inability of the sheepmen of the state to be permitted use of effective predator control devices has driven many Montana sheepmen out of business.

In 1973, the Bureau of Land Management acknowledged that only 16 percent of the 150 million acres of BLM managed grazing land was in good to excellent condition; 84 percent or 126 million acres was in fair, poor, and bad condition. Late in 1974, a federal court in Washington, D.C., ordered the BLM to conduct detailed environmental analyses of its management policies, saying that multiple uses had been subordinated, historical and archeological values had been destroyed, and the land resource itself had been abused through over-grazing.

That legal ruling made headlines, partly because of the amount of land involved and partly because that land is publicly owned.

With the reservoir of funds, manpower, and scientific and technical expertise available, the stewardship of federal public lands should have been exemplary. With so many ranchers dependent on supplemental lands for economic survival, the rangeland resource should have been husbanded responsibly.

Two months ago, I joined with the Governors of Colorado, New Mexico, Utah and Wyoming in calling for a clear legislative mandate regarding the administration of federal lands under the jurisdiction of the BLM. It was clear to us that the present management system by administrative rules and regulations in the absence of congressional policies and goals, is undesirable.

We made several specific recommendations.

1. We argued that the establishment of the system to levy reasonable and fair grazing fees for the use of federal lands is important to the nation, the economy of the western states and our rural populations. We, therefore, support and recommend any legislation that established a fair market value grazing fee formula that incorporates: a) the price of marketable livestock, and b) the cost of doing business in particular localities.
2. We stated that the existing policy of limiting authorizations for livestock grazing to an annual authorization basis is undesirable. It is difficult for an operator to adequately manage his livestock under the limitations imposed by the annual authorization renewal process. The one-year term also provides little incentive to practice long-term conservation techniques. We stated that when in the best interest of sound land management, preference rights should be given to the holder of the expiring permit or lease, and that the base property qualification should be retained in determining preference rights.
3. Because of the great potential for severe impacts resulting from mineral development in the Rocky Mountains, we pointed out the need for flexibility in allocating payments from mineral development in order to enhance the quality of life and prevent the boom and bust cycles of previous years to reoccur in our time. We recommend increasing the state's share of revenues from all minerals developed on federal lands within the state from $37\frac{1}{2}$ to 50 or 60 percent of the royalty payments required and granting the states the determination of how the money will be used. This principle was upheld in the Congressional passage and subsequent veto override of the Federal Coal Leasing Amendments Act of 1975.
4. We stated that the ability of a good operator to plan and manage grazing should be recognized. If an operator performs in a satisfactory manner and his range is improving, the operator should be allowed to proceed without an allotment management plan.
5. The federal government should not have jurisdiction over non-federal lands, no matter where they are located. Allotment management plans for

an alternative should not be required on non-federal land.

6. When federal lands are exchanged, they should be transferred along with all accompanying rights and privileges. Future legislation in this area should recognize the inherent value of the rights and privileges which accompany land ownership and should encourage the treatment of these rights and privileges as commodities to be exchanged along with the title of a tract of land.

I suggest only one addition to the policy statement adopted by the Federation of Rocky Mountain States governors. I submit that any BLM organic act should include the following provision: "The secretary shall delegate management authority to state or local natural resource management agencies and entities where state statutes provide for such agencies and entities and such agencies and entities demonstrate a willingness and capability to manage in the national interest consistent with provisions of the act."

In Montana the principle of local control in the area of range management has proven itself to be the only one workable. Our statewide Rangeland Resource Program works through counties to promote range management improvement. A rancher in each county is designated range leader and he establishes various programs to improve the range resource in his area. The Montana program is run entirely by volunteers although some money at the state level has been appropriated by the legislature for administration purposes. The people who know the range best are the ranchers themselves, and if proper economic stimulants are provided and the best rangeland management techniques are made known to them, they will do the job.

As fiercely independent as our ranchers are, they have been willing since 1879 when the Montana Stockgrowers Association was organized to promote and protect their common interests.

I am hopeful that this Governor's Conference on Montana Rangeland will launch a new cooperative effort to correct past abuses and maximize the benefits of rangeland. We must work hard if we are to maintain Montana's agricultural economy and rural way of life.

I will support you in any way that I can. But I must disclose to you one bias. I will support only those programs which are locally controlled.

I believe that the people living in their respective communities and no one else knows what is best for them.

When Plenty-Coups, Chief of the Crow Indians, was a young brave, he had a dream. Many years later he described that dream to Frank Linderman who was a contemporary and close friend of Charlie Russell's. Plenty-Coups saw a hole in the ground out of which came buffalo without number. They spread wide and black in the plains. Soon they disappeared and were replaced by animals that were strange looking to Plenty-Coups, buffalo he thought at first, but they were smaller, had longer tails, and some were spotted.

Later Plenty-Coups was told by one of the elders of the tribe what his dream had meant.

The strange animals from another world were the cattle of the white man. His dream was telling him that the white man with his cattle will drive away the buffalo and would overtake the plains. His dream told him that the only hope for his tribe to hold their land was to side with the whites. Because of Plenty-Coups and his vision, the Crows never raised their weapons against the whites. We in the United States are faced today with the very real possibility that the cattle who first represented the coming of civilization to this land will be forever driven from the plains.

This conference is but only a beginning of our efforts to see that this never occurs and that the quality of life maintained to a large extent in Montana by our ranchers is forever protected.

Thank you.

The Honorable Thomas L. Judge, Governor of the State of Montana, who hosted the Governor's Conference on Montana Rangeland, is a native Montanan and a graduate of Notre Dame University with a degree in Journalism. He served three terms in the House of Representative prior to being elected to the State Senate in 1966. In 1968, he served as Lt. Governor to Forrest Anderson and was elected Governor in November, 1972. Governor Judge was the youngest Montana Governor upon his inauguration in January 1973.

THE NATURE OF RANGELANDS

By E. J. Dyksterhuis

The general public appreciates, I believe, that croplands, timberlands, and bodies of water contribute to their welfare. But the word rangeland is not even in their vocabulary. The overwhelming mass of people still view rangeland as undeveloped land, wasteland, or desert. They little realize, that except for the conversion of range vegetation by grazing animals to proteins for human food, this largest part of the earth's land surface would contribute little food. As it is, it now contributes most of the earth's red meat, milk, leather, wool, mohair, and animal by-products. Nor do they know that range use is the highest agricultural use that can be sustained on almost all remaining rangeland.

When I retired from field operations in range conservation, I took a professorship. For a few years my wife and I were in the receiving line for the President's Reception of new faculty at Texas A & M University. Each September about 300 new faculty members passed by; each with a close look at my lapel card which read RANGE SCIENCE DEPARTMENT in big letters. Later we receptionists visited at small tables, with as many as possible, to answer questions and to make them feel welcome. Almost without exception they would ask me what "range science" dealt with. They were engineers, biologists, math, English, chemistry, and various other kinds of professors.

I soon learned that there was only one quick way to explain. This was; to begin with the familiar cropland and its agronomic science, forestland and forest science and then to point out that most of the land in our western states is not capable of producing cultivated crops or commercial forest; that it is best used as rangeland; natural pasture for grazing animals; that range science deals with such lands; that there is more of it on earth today, than timberlands and croplands combined. Only then did their faces light up with new knowledge. This was in Texas, not at an eastern university. When I then mentioned that some 14 western universities offered work to the Ph.D. degree in range science, they were duly impressed. Incidentally, it has bothered me for over 25 years that there is no range science or range management department in Montana, the Dakotas or Nebraska. One more example tells a lot. I was riding up in an elevator in Austin, Texas to address a conven-

tion of Texas high school teachers -- many from out of state -- and was surrounded by young ladies riding up to the session. I felt good when I overheard that they didn't want to miss my talk. Then, I learned it was because there was a lot of interest in the Texas Rangers.

These were educated people; but you can't blame them if you have looked at the definitions of range in a dictionary; or have considered our national efforts, until quite recently, to acquaint the public with the range resource. Let me here commend the work of rancher, Peter Jackson in rounding up the volume on Montana range resources, and for his USDA committee work in Washington, D.C. Meanwhile the Hollywood makers of western films continue to portray the man with the plow as the hero, and the rancher as the villain -- while the U.S. census tallies cropland and forestland acres, but not rangeland acres.

But there are signs of progress. This year the U. S. Geological Survey adopted a new system of classifying land use and land cover, which for the first time segregates rangeland. Also, this year for the first time I saw the word rangeland in the National Geographic and Readers Digest magazines -- and used in the proper sense. Stockmen, who are also rangemen, like Peter Jackson, are now being heard in the federal seats of power.

Considering the wide interests of the group here, it was thought best to present the nature of rangeland from three view points. They are: 1) as a natural product of climate and soil, with self-renewing volunteer forage; 2) as a land resource convertible to cultivated cropland, either properly or destructively; and 3) as natural pasture where livestock producers control time and amount of grazing, either properly (when focused on potential condition of volunteer vegetation) or destructively (when focused only on seasonal conditions of livestock, weather, and markets).

The qualities that provide the essential nature of rangeland are to be found in its climate and soil. The major rangeland areas of the globe are the areas with least precipitation. Climate is average weather. In rangeland climates the weather of any month or year is usually further from average than in timberland climates. Arid years, wet springs, and early or late frosts affect ranchers but are much harder on dryland farmers.

Droughts are normal in rangeland climates. I'm reminded that Prof.

Kraenzel of Montana State University once wrote that semi-arid shouldn't mean halfway between arid and humid but instead half the time arid and half the time humid.

Many years ago while working with a South Dakota rancher in a bad drought, I overheard a memorable conversation when a neighboring rancher drove up. The neighbor wanted to know if he could buy some native hay. He said, "You still got plenty old grass and all that hay." There was a lot of baled hay put up the previous year on some deferred native pastures. He asked \$30 a ton for it. The neighbor said, "Man! I could have bought all I wanted last fall for \$15 a ton." The neighbor said, "But, how could I know we were going to have a drought?" When the answer came, it was, "What are you, a tourist?"

Now concerning soil. Soils that store very little water tend to be rangeland, even in forest climates. Right here in Montana I've seen a mountain in forest climate covered with range vegetation, surrounded by others of equal height covered with forest. The reason was not fire. The one had shallow clay soils over solid limestone and the others had coarser soils of greater depth. The Shepherd of The Hills country in the Ozarks receives over 45 inches of rainfall but is rangeland because the soils are very shallow over solid dolomite. A soil with much available water may produce forest even in a rangeland climate -- as we've all seen along major streams in the climate of the prairies and plains. It is well to remember that soil is not the same as land. When you buy land, you buy the kind of soil on the tract but also the climate that goes with it. In eastern Montana there is range country with less than 12 inches of average annual precipitation and country with 16 inches where the soils may appear similar.

All agricultural lands were once either natural timberlands or natural rangelands. The growth form of vegetation from short grasses to tall trees originally reflected differences in climate and soil. Any cropland we have was derived by man's technology from rangeland or timberland. Abandoned fields return to the general type of forest or range vegetation from which they were derived. The process is termed secondary succession; a natural law of ecology -- sometimes called self-healing.

The Society for Range Management is agreed that rangeland may be characterized as follows: "1) the potential natural vegetation is predominantly

grasses, grass-like plants, forbs, or shrubs, 2) natural herbivory was an important influence in its precivilization state, 3) it is more suitable for management by ecological principles than for management by agronomic principles. Rangelands include natural grasslands, savannas, shrublands, most deserts, tundra, alpine communities, coastal marshes, and wet meadows." Such lands occupy 40-45% of the earth's land surface as contrasted with 10% in tilled cropland and 28-30% in forest.

Although a small percentage of these rangelands could economically be converted to cropland, nearly all of it is too dry, steep, shallow, sandy, wet, cold, or saline for cultivated crops or for timber production, I include cultured or tame pastures under cultivated crops, suitable for cropland (land that can withstand and repay agronomic practices).

In every western state and in countries throughout the world the cultivator has pushed out onto rangelands where trial and error proved the land could not sustain use as cropland. Formerly cultivated, eroded, abandoned fields are everywhere in the range country and are a standard feature of aerial photos of ranches. When these are checked on the ground, they are ordinarily lower and less dependable producers of forage than adjacent land never cultivated. Though now dominated by volunteer native plants, you will learn that most were once seeded to the favorite domesticated pasture or hay species of the time of abandonment.

There is too little acceptance of the principle that we must decide upon one of the three primary uses of agricultural land -- based on climate and soil -- before we consider land treatments. State-wide informational literature on crops and pasture development can still be found with no reference to precipitation zone and soil group. The agricultural colleges remain largely commodity oriented instead of land oriented. The state agricultural colleges from North Dakota to Texas are all located in the eastern and high precipitation zone of the states. They were originally, and are still largely, staffed by graduates from still more easterly and more humid locations. The result has been minimal understanding of treatments appropriate for rangeland. Instead, familiar cropland and forestry practices such as tree planting, were promoted statewide. Agronomists, on their occasional trips to the more arid western parts of these states have often done more

harm than good by recommending certain land treatments without differentiating between lands that could and could not sustain and repay costs of such treatment.

The term multiple-use is sometimes used to answer, or to avoid, questions on best primary use of land. The term is useful when describing the situation on lands as varied as found on most National Forests. But, it is of no help in making a decision on the best primary use of a specific tract. Moreover, if the term is used to mean primary and the secondary uses of a specific tract, it means little, because then almost all lands have multiple-use. Even the best land of Iowa, obviously best used primarily as cropland, is also used as pasture, for grazing of crop-aftermath, and as wildlife or recreation land, for winter hunting.

Whether land is best used primarily as native rangeland, timberland, or cultivated cropland is determined by climate, soil, economics and user preference. In that order, except that user preference may be allowed to outweigh economics. Note that economic considerations are third -- after climate and soil. This, because climate and soil are far more stable than economics. If economics could deal in centuries, there would be no conflict with long-term national welfare, nor with basic ecology.

This summer I read James A. Michener's No. 1, Best Selling Novel called Centennial; concerning the land and inhabitants of an area near where the states of Wyoming, Nebraska, and Colorado meet. He did a prodigious amount of painstaking historical research. The book would fascinate any of you from the central and northern plains. On page 1081 he wrote, "The old two-part system that prevailed at the end of the 19th century -- rancher and irrigator -- was now a tripartite cooperation: the rancher used the rougher upland prairie; the irrigation farmer kept to the bottomlands; and the drylands gambler plowed the sweeping fields in between, losing his seed money one year, reaping a fortune the next. ...requiring three different types of men, three different attitudes toward life...."

We must perhaps forgive Michener for not considering average annual rainfall -- as well as roughness -- to indicate rancher country. He also wrote, "How powerful the land was! Continuously men did strange and destructive things to it, yet always the land remained." I would add -- yes

it's still there, same number of acres. But I've seen too many acres of go-back rangeland where a short try at dryland farming eroded off a thin layer of topsoil -- often exposing a white, now solid, caliche layer -- where range production will be far below surrounding land for at least a century.

Rangemen are, of course, especially sensitive to breaking of rangeland for marginal wheat production. In fact, it was in Montana on that 100 mile stretch between Fort Peck dam and the Yellowstone near Terry that we coined a medical name for this malady. We termed it Triticosis -- after Triticum, the Latin name for wheat. We found it was caused by traveling through rangeland areas intended for chancey wheat production; where the land plainly could not sustain cultivated agriculture through generations. We agreed that the symptoms of triticosis included a tendency to depress the accelerator pedal, to stare straight ahead, to lapse into gloomy silence, and, in some, a slight flushing of the face. Epidemics occur periodically among rangemen and seem to be correlated with variables such as series of wet years, wheat prices, federal crop-acreage programs, and rates of land taxation where these are not based on land-use capability, tract by tract (county by county won't get it).

This is not to belittle the importance of wheat production. Montanans will be interested in knowing that our family regularly eats Montana wheat in Texas. It's called Wheat Berry bread. The wrappers say, "A delicious wheat bread made from wheat grown in the early springtime in the rich soil of the plains of Montana, ground fresh daily." I don't know how it's done; but this natural food with no preservatives is continuously available at several chain groceries, in our town of under 50,000, from the Orowheat Baking Co. in San Francisco. The $1\frac{1}{2}$ lb. loaves sell for less than Roman Meal bread on a weight basis. I add -- no financial interest -- no endorsement intended.

Rangeland, due to its physical nature, will always be at the frontier of land tillage to entice farmers. And it is in the dryland wheat country where they now go too far-- in Russia as well as here. Conversion of rangeland to cropland started with the cornfields of Iowa and Illinois. The 1862, and first, Yearbook of Agriculture, refers to fine native range south of

Chicago.

Conversion of this rangeland to cropland was unquestionably good land use on the gentle slopes in this tall grass country. But between 1910 and 1929 about 50 million acres of the best rangeland in the drier shortgrass plains country was plowed. Later there was wholesale abandonment of such farms, while the terms dust-bowl and Okie were being born. In the period 1950 to 1970, crop acreage harvested in the U.S. again dropped 45 million acres; while wheat yield per acre trended strongly upward. In 1974, 9½ million acres seeded to grass, in a governmental set-aside program, were again plowed; mostly for wheat, even though the Soil Conservation Service regarded about one-half of it as subject to severe erosion if cultivated.

Evidently many legislators and agricultural economists still believe that the way to increase food production is to put more land under cultivation.

I first saw cultivated agriculture on nonarable land being subsidized with federal money in the drought and dust of the 1930's; while working with ranchers in the vicinity of Clayton, New Mexico. Those ranchers were the first to raise land use questions with me. We would pass a dryland farm and they would ask in effect, "Do you think it's doing any good to give that man a government check so he can keep on cultivating that kind of land?" Later I discussed this situation with a respected agricultural economist. He said, "We are still a rich nation and their congressmen can get the money appropriated. In the older, and poorer countries of Europe and in England you will find that the land has been put to the use that will pay its own way, because they can't afford such waste." Maybe we can't either anymore.

In the relatively small plains state of Kansas alone, over a million acres have actually been seeded back to local strains of the native range grasses. This is not retirement of cultivated land to grass in the agronomic sense. It is a conversion in land use from cropland back to rangeland use. It entails range science instead of agronomy -- comparable to reforestation of old fields by foresters in timberland areas.

We have no way of knowing how much improper land use ranchers have prevented by acquiring nonarable land and resisting cultivation. This and

their restoration of rangeland vegetation on millions of acres of abandoned croplands, are, I believe, a little recognized but major contribution to proper land use and sustainable food production in the USA.

Leaving the problems of rangeland versus cropland, I have two slides that should tell much about rangeland versus timberland. The two slides show forest site index at 5 inch increases in Average Annual Precipitation, from 25 to 60 inches, at the same latitude, on similar soils, with little difference in elevation. The slides show the approximate point at which rangeland grades into timberland as reflected in height of mature native dominant trees. Tree maturity is reflected by rounded tops. Foresters call this forest site index, but may use height at a certain age instead of mature height. Foresters commonly regard 45 feet at maturity as the lower limit of commercial forestry. It is also at about this point that low value forest land grades into high value savanna rangeland. The savanna land shown, with precipitation under 45 inches once had tall grasses with scattered short trees. It is now thicketed because of cessation of prairie fires and decades of close grazing of the tall grasses. At the latitude of the Oklahoma - Texas border, timberland begins at about the 45 inch isohyet. In Minnesota it is near the 28 or 30 inch isohyet. Savanna borders forest wherever precipitation gradients are gradual but in steep mountainous areas rainfall varies over short distances and rangeland can grade abruptly into timberland, without abrupt change in soil.

With that we shall leave problems in allocating land, in and near rangeland, to one of the three primary agricultural uses.

The next slide relates potential productivity of rangeland -- when used as native range -- to precipitation zones in the plains and prairies. The data shown are from the range experiment stations, indicated by name of a town nearby. Shown on the side scale are acres of range required for 6 months of summer grazing on ordinary upland soils with native vegetation near potential condition under moderate and sustainable degrees of range use. At the bottom are inches of Average Annual Precipitation. The data are from averages of decades of grazing trials and weather records. Note the almost straight-line relation between carrying capacity and average precipitation, alone. Evidently, through these 2000 miles of latitude precipi-

tation is limiting; and an equal amount has an equal effect where ranges are in high condition, whether it falls as rain or snow. We know that temperatures are limiting in tundra and alpine ranges.

Now concerning rangeland used as natural pasture where stockmen control grazing. Global shortages of food and energy are turning new attention to proper treatment of rangeland as a source of protein and fiber. Vastness of the area offsets low yields per acre. Direct human consumption of grain is increasing. Economic and energy considerations are forcing a greater dependence on range forage where nature plants and animals harvest. Hence, less dependence on planted and harvested feeds for the growing of livestock. Though the need to make better use of range will become ever more critical, only a fraction of educators, legislators, and the voters generally, understand the uniqueness and importance of the range resource.

Agronomic crops may well supplement range forage. But over 25 years ago, rancher Dan Fulton, then president of the Montana Grassland Commission, pointed out repeatedly that feeds and irrigated tame pastures do not relieve range management problems but, instead, intensify them. In 1960, Bredemeier, reporting research in the range journal from 175 ranches in Nebraska, showed conclusively that as the ratio of months of feed to months of range forage on a ranch increased, the condition of range vegetation decreased. So, watch it, if you've believed that more irrigated pasture or hay, or other cultivated crops are going to reduce grazing pressure on the range.

Let me heartily congratulate you on your five-state Range Improvement Program under contract with the Old West Regional Commission. Your emphasis is properly on management of grazing, to restore high ecological condition in the various kinds of rangeland used for range. I know you have set specific goals for these five states, to be attained by 1985. I think the goals you have set are attainable, but from long experience I know how difficult it will be. It will take the best efforts of all state and federal agencies working with a oneness of purpose together with local natural leaders among ranchers.

I cannot think of a better or more worthy goal for the rangelands than this improvement in ecological range condition -- measurable by types of range sites, through changes in the vegetation.

Such improvement is directly correlated with increased production of range forage -- on average through both wet and drought years. Stocking rates may be lower but live-weight gain per acre will be greater. The stopping of sheet erosion is an early result and the healing of gullies is most favored. Most significantly, improvement in ecological range condition increases the amount of rainfall and snowmelt that is stored in the soil for plant growth -- up to the maximum attainable without costly artificial treatments. Such reductions in erosion and runoff from uplands, are, of course, directly related to reductions in damages from flooding and sedimentation on lower croplands and in ponds, streambeds, and reservoirs. Such improvements are the most certain long-term habitat improvement for native wildlife -- not for a specific species but for a natural variety or community of wildlife from bees and birds, through fur-bearers to big game.

The benefits of excellent and good range condition classes in times of drought need special emphasis. The native perennial grasses in the higher range condition classes are not only taller than the weedy grasses of the lower range condition classes, they are also more deeply rooted and better able to survive droughts. Moreover, when dormant from drought, or in winter, they make better forage than old growth of tame pastures or the weedy plants of ranges in poor condition. A deferred native pasture with abundant old growth can provide far more economical relief from drought than reserve hay. It's cheaper to haul concentrates than both roughage and concentrates to a range herd.

Many of you here may already be convinced of most all that I have said about range in good or excellent condition. Lay your plans to convince the ranchers who are not. The unconvinced; why do they stumble in droughts unprepared? Well, they may be newcomers; but not necessarily. Why isn't stocking adjusted promptly in times of drought? Such planning and adjustments have been urged by rangers for at least 40 years. Forty years ago I helped write Senate Doc. #199, also called the Norris Report, after Senator Norris of Nebraska, who requested a report from the U.S.F.S. on our western ranges. That 620 page book, entitled "The Western Range: A great but neglected natural resource", has an entire chapter on climatic fluctuations, including a map showing the number of drought years out of each ten for the 17 western states. There was considerable evidence then that major peaks in livestock

numbers in western states corresponded with the major drought periods. I wonder if they still do. In the last 20 years there have been excellent talks at range society meetings by ranchers, speaking from their own experience, on how they learned the hard way that it pays to adjust numbers promptly in droughts instead of first grazing their own range into the ground and then hunting range elsewhere or buying and hauling roughage.

I think drought problems on the range almost always begin in the wet years. The abundant growth is an almost irresistible invitation to a stockman to increase the size of his herd or flock. Good stockmen are not necessarily good rangemen. Abundant ungrazed growth can look like "wasted grass" to a pure stockman; but, if he is also a rangeman, and sees which species are gaining ground, and which are losing, he may see a golden opportunity in these wet years to let nature restore the potential vegetation -- a chance to get average annual production into high gear with the least possible expense; and, a chance to build up some old growth for drought roughage or for mulch to cover bare soil so it won't puddle and seal under raindrop impact.

After wet years, the return of drought is not immediately apparent. There is always a chance and a hope that it will start raining. The man who stocks to the hilt in the wet years takes the biggest chance and needs the most hope. But, finally we all agree that we are in another drought. By then livestock that should have been sold earlier, in order to prevent overuse of the range, are very difficult to sell. Slaughter prices are depressed with drought cattle, and few want breeding animals or stockers when animals must depend on old growth or harvested feeds. It is a good time to buy and I know one rancher that was always ready for drought cattle with large pastures of native tall grasses that had been ungrazed for a year, plus a reserve of native hay cut from deferred range pastures (Wolff Bros., Albion, Nebraska).

Overuse while going into and during a drought is only part of the story of drought in relation to range deterioration. As rains return after droughts, the stockman who is not a rangeman may not wait for ranges to recover from drought. Instead, he may ignore range condition and rush to buy livestock while prices are still depressed because of drought. At the extreme,

I once overheard ranchers in a Texas drought making plans to go to San Antonio the next day to buy some cattle because they thought it would soon rain. This is the viewpoint, mentioned earlier, which destroys ranges -- where the focus is only on conditions of livestock, weather and markets; not range conditions.

To achieve your goals you will have to always anticipate drought the next year, and act promptly when the degree of range use for the time of year indicates that you will exceed a full or proper degree of use by the end of the grazing season.

Be prepared by having no more breeding animals than can readily be carried through a drought, by having deferred pastures, and reserves of native hay, preferably harvested in wet years from normally under-utilized parts of native pastures.

Finally, I must say how glad I am, and how noteworthy it is, that you are actually having a Governor's conference on rangelands alone -- with a list of speakers to approach problems from all angles, but more importantly, with speakers and men present who have great influence on what will happen to rangelands.

Dr. E. J. Dyksterhuis, Texas A & M University, who presented this speech at the Governor's Conference on Montana Rangeland, began his range career under the title Range Examiner with the U.S. Forest Service. In the 10 years with the USFS he worked in Utah, Arizona, New Mexico and the Ozarks. Dr. Dyksterhuis became Senior Ranger and later administered grazing on the Carson National Forest out of Taos, New Mexico.

He obtained a PHD in Ecology from the University of Nebraska. Then spent the next 20 years as a Regional Range Conservationist with the U. S. Soil Conservation Service in the prairies and plains.

Dr. Dyksterhuis then accepted a professorship at Texas A & M University where he was given the title Professor Emeritus in Rangeland Ecology in 1970. Since then he has been Consultant to the U.S. Department of State on natural forage world-wide.

THE ROLE OF THE SOCIETY FOR RANGE MANAGEMENT

By B. J. Ragsdale

It's a real pleasure for this "southlander" to get to the "far north" country, as we look at it from South Texas, to participate in a program such as this and certainly a privilege to represent the Society for Range Management and to share some of my views regarding the society. To review for some of you as members of the Society, some of the things we are doing and to express to those of you who aren't members some of our goals and philosophies. To some of you it may be a review, to others I hope to bring the philosophy of the Society for Range Management.

The Society for Range Management is an International Professional Society composed of some 5,000 members, representing approximately thirty-four countries throughout the world. Within this group, we have a wide diversity of interest and from the standpoint of membership, we have a diversity of opinions toward some of the factors affecting rangeland. The major goals of the Society would be to provide a forum for the exchange of ideas toward the philosophies affecting the use and management of this vast resource that Dr. Dyksterhuis has just covered. Membership is open to anyone interested in rangeland as those of you as members well know. We are relatively new as we were founded in 1948 and incorporated under the Laws of Wyoming. We are a non-profit organization coming under 501-C3 of the Internal Revenue Code within this country. Originally we were founded as the American Society for Range Management and in 1971 changed the name to the Society for Range Management to bring in the International aspect, which I think is one of our goals and some of our activities we will reflect in a moment. Our members, that I mentioned, have as a common interest, the study, management, and rational use of rangeland and the related Ecosystem within this vast area.

Our objectives number about five. Let me review these with you then get into some of our programs as we attempt to carry out these objectives for the membership.

1. To develop an understanding of Range Ecosystems and the principles applicable to the management of the range resources within these Ecosystems.
2. To assist those working with range resources to keep abreast of new

findings and techniques. I think a major effort in this direction would be the Journal of Range Management and the Rangenman's Journal which are each published six times a year.

3. To improve the effectiveness of Range Management to obtain those values of the range resources that are necessary for man's welfare. Again, we take a broad look rather than looking at specific range uses about how the use and management of rangeland affects all people.

4. To create a public appreciation of economic and social benefits to be obtained from the range environment. Here again, one of the efforts along this line is to get away from the range manager, those of us specifically interested in Range Management, agriculture, and other uses of rangeland, and to state to the general public regarding the values and uses of rangeland.

5. To promote professional development of the members within the Society and again if you look at our membership and realize many of our members come from various walks of life and aren't raised in range management but only have an interest, then we have a very strong obligation to these members and to our members trained in the art and science of Range Management to develop professionalism throughout the ranks.

To meet the goals and objectives, we have adopted a set of benchmarks or a statement of concepts and positions that speak to a number of different factors in the field of range resources and Range Management. Our activities within the Society pretty well speak to these issues from the standpoint of programs and activities that we conduct.

As far as our belief toward rangeland and range resources as defined by Dr. Dyksterhuis, we do recognize that a vast majority of the land surface of the world is rangeland and that there are many intangible values as well as tangible products that come from these lands. These have been reviewed both by Governor Judge and Dr. Dyksterhuis this morning.

The aspect of internationalism as we look toward the rangeland of the world is a very important factor. Another meeting that was conducted here in Billings this week, Monday afternoon, Monday night and Tuesday morning, was that of the establishment of an International Rangeland Commission which at this time is primarily concerned with the countries of Mexico, Canada and

the United States, and which hopefully we can expand to other countries of the world with rangeland and rangeland problems that would be brought into this particular committee.

It's a commission that is sponsored by the Society for Range Management. It has been the dream of some of our past presidents for the past several years. It is one that we hope will focus on mutual problems of rangeland of these three countries. Initially, a major effort here will be to carry out, again, some of the goals of the Society for Range Management. Also to bring in the seats of government of these three countries. We had a representative from the United States Department of Agriculture representing the Assistant Secretary, Robert Long. We have some commitment from them, I think, that will sponsor our next meeting of the commission to take a look at some of these mutual problems. At the present time in Canada and Mexico, their government is changing the same as ours could very soon, and we don't have government names from these two countries at this time. We do have very strong support from Mexico's Secretary of Agriculture and Livestock Mr. Brauer and Canada's Minister of Agriculture, Mr. Whelan. Again, this internationalism is helping to get mutual problems solved collectively.

By the same token, in this area, the National Affairs Committee of the Society for Range Management is working to develop the first world rangeland conference which will be held in Denver, Colorado in the summer of 1978 in the month of August. The conference will focus attention on rangeland and associated problems, and some of the opportunities for improvement and management of this resource.

Our viewpoint toward range management is that we're looking at the husbandry of rangeland, that it is a distinct discipline founded on ecological principles, and that we must manage this land area and resource from it in an ecological manner.

Another major area or philosophy within the Society for Range Management is that of education. We recognize that there is a continual need for trained rangers and range people to manage this resource. We feel that these people must be trained in the structure, function, and analysis for proper manipulation of the range ecosystem. A related organization that is very close to the Society is the Range Science Education Council made up of

members of those colleges and universities that teach range management throughout the United States. We keep a close liaison with this group and working together we can insure that the philosophy of the Society is displayed in those people who come forth as trained range managers of the future. Not only trained in the art and science of range management, but we feel these people should be supplemented with study in other various natural resource disciplines as well as the social sciences and very specifically in oral and written communications. I think this is one of the things that we all need to work on as much as anything else.

I mentioned the professionalism that is an individual characteristic that results from one's attitude or state of mind as much as it does from training. Certainly professionalism doesn't depend on formal training in a field.

As we look at rangeland inventories, we feel that to foster land management and be of the greatest benefit to man, that we need an inventory of the area we are working with and that we would like to see this experiment worldwide. Certainly, to improve it within this country and then to look at it from the standpoint of an overall world situation and this is a major goal within the International Rangeland Commission. To look at inventory of rangeland to see which area is of greatest possibility for intensive management improvement and to increase production of those goods and services that we can expect from rangeland. We realize that the intelligent use of the range resource must be based on economic and social decisions that are compatible with the capabilities of the biological systems, and that in the long run the economic and social actions cannot be at variance with the ecological principles and the capacity of this resource. We recognize that livestock grazing is most often a principle use of rangeland due to the inherent nature of the land itself as has been pointed out by Dr. Dyksterhuis.

We recognize that the production of protein is of vital importance to the world food situation and that livestock offer a real opportunity for the conversion of the product of rangeland to this needed world commodity. We recognize that wildlife management knowledge and practices must be integrated into the range management system, and again this has been alluded to this morning. Water is a resource from rangeland and one that I think we are recognizing more and more as one of our major products of this vast area of

rangeland. We must take into account the management of lands and the effect it has on water yield and quality...by the same token that of recreation from the standpoint of space available. The opportunities for recreation on rangeland have been spoken to this morning.

We recognize the need for wilderness areas as natural study areas because of the scientific nature of these areas and the information that we can achieve through the study of these natural systems. The aesthetic value of rangeland which is to relate to the natural beauty that is within the rangeland. The need for well planned management of our rangelands to see that we maintain this beauty and recognize that the way of our practices can have profound effects on how this area would look to people. How they look to the non-range oriented person and non-range user could be completely different than to us. This must be taken into account. Again, we recognize that environmental quality can be affected by the practices that we apply. It can either improve or degrade from the quality based on the practices we apply so that again we think there must be a vital need for planning, to consider these various influences on rangeland. Predator control, rangeland protection and weather modification are other areas that we recognize.

We must take into account, as far as predators, that our statement on this subject reflects the need for additional facts. We recognize that certain broadcast control methods may be ecologically unsound but also we very strongly recognize that there is a need for specific control programs in many areas. As we try to obtain efficient use of adult forage and vegetation out here, very definitely we need predator control in many areas.

We recognize that in rangeland protection we may have to use chemical and mechanical means as well as control burning to control pests in these areas.

We recognize that weather modification may be limited and should be limited to specific and carefully designed projects in defined areas.

The last of our statement of concepts is that of research. There is a need for adequate and sustained public and private funding of qualified research organizations to continue to provide new technology which we can adopt to the management and use of rangelands.

To close, let me spend some time on the Society for Range Management activities. I've mentioned publications. In addition to the two journals previously mentioned, we have a number of special publications which we have made available to both members and the general public.

The major activity at this time is the development of a permanent headquarters site in the Denver area. We are looking at locations and only time will tell how fast we are able to acquire a building for this site.

We have several meetings during the year. I might put in a plug at this time for the next Annual Meeting to be held in Portland, Oregon the week of February 14th, 1977, and I certainly hope to see you there. Another effort within the Society is that of the liaison with the closely related organizations such as the National Association of Conservation Districts, the American Association of Science, the American Society of Agronomy and the Soil Conservation Society of America. We continually look at other organizations to establish a liaison with them to express a mutual interest in the natural resource field. Some of our new programs we have adopted, and as members many of you will have an opportunity to participate in, would be that of a contribution policy to the Society where these contributions are used to further the goals and help develop the new headquarters building. If you check the last Rangeman's Journal, the details will be in it and in subsequent issues.

We have adopted a code of ethics our members within the Society subscribe to. We've established a new awards program within the Society--- that of a fellows award which, at the Portland meeting, we will make the first presentation of these. Some twenty-seven of our members who have contributed substantially to the Society will be recognized for their work. We're also taking a hard look at Civil Service Standards to see how we as a Society can help improve the standards as far as range goes.

Don Nelson, membership chairman in one of our sections, says he has membership blanks with him. If he doesn't have enough, I happen to have a few in my room to help our membership.

One of our real strong points within the Society would be those of our sections where programs at the grass roots level are carried out with meetings, tours, and youth programs. If you look at the value of youth programs,

and at Tom Sparks and the work that he has done in organizing this program and as being a former participant in our Youth Range Forum, which is sponsored by the Society, I think you will get a good evaluation of these programs. Many other programs for our college age youth are reaping real benefits in the field of range. It's an area I think we need to expand to get into our high school and elementary age students, especially those in urban areas to evangelize and carry the word of rangeland and range management to this part of society.

In closing, let me say that as I look at the role of the Society, that we are a group of people working in the area of natural resources, specifically rangeland and range resources, to do a job we feel we can do better than anyone else and again this idea of providing a forum for people interested in a particular resource for the good of mankind. Again, it has been a real honor to be here with you. It is good to renew acquaintances and I'll be looking forward to seeing you at other meetings down the line, hopefully the Society for Range Management can be of benefit to you. Thank you.

Dr. Robert J. Ragsdale, Texas A & M University, who presented this speech at the Governor's Conference on Montana Rangeland, is the Extension Specialist and Project Leader in Range Science at Texas A & M University.

Dr. Ragsdale was raised on a ranch near Junction, Texas. He received his B.S. in range and forestry, 1953; and M.S. in animal breeding, 1957; and a PHD in range science, 1969; from Texas A & M University.

He was Associate Extension range specialist, 1958-67 and Extension range specialist, 1967 to present. He specializes in rangeland management subject-matter educational and informational programs for adults and youth. He is assigned state wide responsibilities in Texas. Dr. Ragsdale is a member of numerous honorary and professional societies. He is a long-time member of the Society for Range Management and has served as President of the Texas Section and as a Director of the Society.

Dr. Ragsdale was elected President of the Society for Range Management in 1976 at the Annual Meeting in Omaha.

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

PHYSICS 354

LECTURE 1

1.1. THE CLASSICAL LIMIT

1.2. QUANTUM MECHANICS

1.3. THE SCHROEDINGER EQUATION

1.4. THE HEISENBERG UNCERTAINTY PRINCIPLE

1.5. THE DIRAC EQUATION

AFTERNOON PROGRAM

The Importance of Research and Education

to the Range Resource

Johan Asleson, Dean of Agriculture,
Montana State University

The Role of State Agencies in Dealing with

Environmental Matters Associated with Rangeland

Gary Wicks, Director,
Department of Natural Resources and Conservation

Panel Discussion

Subject: Coordinated Planning of Intermingled Ownership

Panel Moderator: Mons Teigen, Executive Vice-President
Montana Stockgrowers

Panel Members: Ted Russell, United States Forest Service
Wendell Thacker, Soil Conservation Service
Kelly Hammond, Bureau of Land Management
John Morse, Jr., Rancher

Break Courtesy of Western Environmental Trade Association
Peter V. Jackson, Representative for WETA

Panel Discussion

Subject: Range Management Today

Panel Moderator: David A. Smith, Executive Secretary
Society for Range Management

Panel Members: Roy Cornell, Rancher, Dillon
Curt Hughes, Rancher, Stanford
Frank Sparks, Rancher, Plevna

Peter V. Jackson served as the afternoon Program Chairman. A native Montanan raised near Harrison, he is presently the Executive Director of the Western Environmental Trade Association. Pete also serves as a Director of the National Association of Conservation Districts as well as being the United States Representative on the International Rangeland Commission. A rancher by trade, he is past president of the Society for Range Management.



THE IMPORTANCE OF RESEARCH AND EDUCATION
TO THE RANGE RESOURCE

By J. A. Asleson

Ladies and gentlemen. It is an honor to be here this morning, but after listening to the presentations we have had so far I really don't have much to say, but I guess I will say it anyway. Dr. Dyksterhuis, said something about the easterners (and I believe he included the mid-westerners) really not having the term "rangeland" in their vocabulary. This is certainly true; at least it was true when I grew up there and went to school there. My real introduction to rangeland was not the kind that you would use in a promotion scheme. I accepted a job at Montana State University effective August 1, 1947. Neither my wife nor I had ever been west. We drove across South Dakota reaching the Bad Lands of the state with the temperature of at least 110°. We were uncomfortable, getting a little edgy, and kept telling ourselves, "It will be different when we get into Montana". Yes, it was different for someone raised in Wisconsin. When we crossed into the southeastern part of the state and looked at the endless rangeland, I couldn't help but wonder why they had hired a soils man to come here. To use a timeworn phrase, "I had never seen so much of nothing in all my life".

My second experience was a little different. Some of you may remember Maurice Kelso, Director of the Agricultural Experiment Station from 1954-57. Maurice was and is a remarkable man. After some time with the Bureau of Land Management in Washington, D. C. he spent three years managing a ranch near Broadus. From there he came to the University. Shortly after I moved into the Director's Office he took me on a tour of the branch stations around the state. I remember we started up the west side of the state, crossed over Glacier Park and headed east of Browning. As I looked at the landscape, I noticed a farmstead setting high on the horizon. There were no trees or other vegetation that I could see. I made the comment, "Boy, you talk about desolation, that is the height of it right there". I should have recorded the next half hour because Maurice proceeded to straighten me out. In effect he said, what makes you think that a tree is so all important to living the way a man should live, and we went on from there. I was quiet. That is when my education started and I guess I am still trying to get educated and will be until I pass on.

My education in range has led me to some conclusions. One in particular that I think you will agree with. No matter how I look at the range resource, it must be one of the most complex and natural associations that we as people have to face, deal with or understand. This complexity arises from the fact that native range as we know it today, is the integration of all of those environmental factors that affect plant growth over a long period of time.

I guess I want to stress that point for several reasons; one of course is that we talk about renovation, reclamation and "putting it back the way it was". We in education and research have a responsibility to learn as much from what we have today, to evaluate what it was in the past, and to determine what it could be in the future. We must try to identify, to measure, and to interpret all of those environmental factors that together affect the composition and productivity of our range resource. Recognizing the contributions that have been made by those who have developed the art of range management, we try to take the scientific approach. This means that we apply the principles of the various recognized disciplines such as botany, ecology, physiology, hydrology and many others. Each has a contribution to make, but the condition of the range resource is determined by the integration of all the disciplines as they affect range productivity. This is basis for the development of the science of range management.

What makes the range resource so complex? Part of the answer lies in the fact that the range is harvested by grazing livestock and therefore harvested over a period of time. With domestic animals, we have some control over grazing. The questions then become: How much and by what kind of animal and when? These decisions are influenced by the species composition, palatability of these species, the moisture relationship and climatic factors among others. We must tie all of these together to totally evaluate each different ownership patterns and arrangements; public and private for example. It is interesting to note that Montana private range managers control a much larger portion of the range in this state than private individuals do in neighboring states. I think this is on the plus side. Public lands are under regulations that become controversial, but I will not involve myself in that matter. The problem that is very real however is that these rules and regulations continue to change which leads to instability and presents the operator with problems in formulating a range plan. As you know, public lands

are creating interest among people other than operators and the agriculturalists. Recreationists, environmentalists and wildlife people, and I might say preservationists each have a legitimate concern and the question is how much say should each have in making the decisions. Effective rangeland as a watershed is getting increased attention and must be considered by you as managers. You can probably think of many others.

I was asked to talk about education and research relative to the range resource. As I see it, education should be aimed to a large extent, if not primarily, at developing an appreciation and understanding of the range. There are too many people, and some even in Montana, that feel that our range isn't good for anything else, so we might as well let the cows, the deer, and the antelope eat it. We must try to develop among people, not only those directly involved and those who are peripherally involved, an appreciation of rangeland as an extremely important resource. A resource that reacts to management and has a tremendous influence on the welfare of this state and nation. We can go to the classroom and teach facts, theories and relationships, but it is difficult to teach people how to integrate all these factors that together determine a successful management plan. As I indicated before, many of our forefathers developed an art of range management that is difficult if not impossible to put into a text book. You and I can name people who have developed this art to a fine point and we wish there were some way to record this ability to evaluate a range and know what to do with it. Undoubtedly many of you have learned from your fathers and grandfathers and will be passing it on to those who follow you.

Over the last few years, it seems that more and more people are becoming concerned with our rangeland. Perhaps our experience at Montana State reflects this. Last fall, for example, we had one hundred seventy students in a beginning range course. This is a big increase from what it was a few years ago when we were beginning to wonder if students were interested in the future of this resource. We wondered if we could continue to justify a curriculum in range management. We now have fifty six undergraduate majors and twelve graduate students, a very respectable number of very capable young people. It is also interesting to note that there are more men and women entering the field from urban areas and we ask "Why?". I think it is a good sign. It indicates that more people than we normally think are interested in the range

resource. We only hope to use what we learn to the advantage and betterment of all of us.

I have implied that factual information in range management is somewhat limited. This raises a question of research needs. We hope that you will help us determine the right priorities. Because of the long time nature of this kind of research it is more important than ever that we do a thorough job of planning before we start any projects. While many of our projects are scheduled for terms of three to five years, I know a few in the range management area that will not produce meaningful results before fifteen years. When you are working out in the field interpreting a variable climate and weather and you are trying to influence ecology and species relationship, it requires time. At the present time we are working on grazing management, timeliness, alternative management plans and others. We are working on sagebrush ecology, trying to find out what makes the sagebrush plant grow and if not why not. We are doing some work on remote sensing as a means of trying to find a better way to evaluate the condition of the range at any point in time. We are working on the effects of "potential" smokestacks on range production. Renovation and range fertilization are important research projects. This latter topic can become somewhat of a controversial subject because of different approaches and different interpretations that can be made of the data obtained. It is both interesting and stimulating to get into a discussion of the pros and cons of range fertilization. We have considerable data on short-term results, but long-term results are not as well known. We obviously need more complete answers applicable to the many conditions under which our rangelands are found. For example, how do we allocate the resources among the various demands. There are many who give lip service to the multiple-use concept, but because of the reactions of the public or because of personal conflicts they don't really believe in it. How do we select the best management system for a particular area? We know some but not enough. How do range resources interact under different management systems, seasons, etc.? I suppose in the final analysis we need to know more about the economics of rangeland improvement. This is difficult enough with private land, but more so with public lands. The uncertainty of public land policy does not lend itself to the stability required for good range management planning. We have a question of rights versus privileges. As I see it, the concept of land as a public

trust is far from dead. This could have a tremendous impact on our outlook of land ownership.

We must recognize, in addition, the increasing demand on rangeland. These again are not new to you. Subdivisions, strip mining, highways and recreation (hunting, fishing and vacationers) are all encroaching on the range resource. In the last few years, good rangeland is being broken up and put into cropping. You have all seen it happening. Undoubtedly, this is the result of applying short-term economics. Today we have section upon section being torn up that is undoubtedly going to have to go back to grass. Do we know how to put this land back to grass in a rather fast fashion? I am afraid we have a lot to learn.

In general, Montana's rangelands are in relatively good shape, but we still have a long way to go before we reach maximum potential production. As an important step in further improvement, we must work to get people to appreciate the range as a valuable resource and try to eliminate the attitude that it is a resource that is "good for nothing else".

Dr. Johan Asleson, who presented this speech at the Governor's Conference on Montana Rangeland, is Dean of Agriculture at Montana State University in Bozeman, Montana.

Dr. Asleson received his PHD in Soils from the University of Wisconsin in 1957.

Dr. Asleson served with the Montana Agricultural Experiment Station from 1954-65. He left the MAES as Director and accepted the position of Dean of Agriculture at M.S.U.

Some of Dr. Asleson's assignments are: Advisory Committee for Agricultural Stabilization and Conservation Service for Montana, Administrative Advisor to three Western Regional Research Committees and the Executive Committee of the Great Plains Agricultural Council.

THE ROLE OF STATE AGENCIES IN DEALING WITH
ENVIRONMENTAL MATTERS ASSOCIATED WITH RANGELAND

By Gary J. Wicks

By the year 2000, according to the Federal Energy Administration, coal production in the United States could more than quadruple, from about 600 million tons in 1973 to about 2,800 million tons. This would mean opening one new surface mine and one new underground mine each and every month until then.

Montana, of course, has immense coal resources -- more than any other state.

By the year 2000, worldwide reserves of aluminum, lead, zinc, tungsten, and sulfur could be exhausted; copper, manganese, nickel, and titanium could shortly follow, and supplies of many other raw materials could reach critical levels.

Montana, of course, has sizable mineral deposits.

By the year 2000, Americans will demand 57% more lumber, 110% more wood pulp, and 107% more veneer and plywood; supplies of softwood lumber may fall short of demand by 30 million board feet.

Montana, of course, has extensive forests.

By the year 2000, there could be close to 2 billion more people to be fed; by that same year, according to the National Academy of Sciences, it is uncertain that the American farmer will be able to feed even the people of this nation.

Montana, of course, has vast and productive agricultural lands.

It appears that Montana, long regarded by the rest of the nation as little more than a vast backwater state filled with nothing but a few sheepherders, ranchers, and miners, has now become the focal point of a nation and world coming to grips with a shortage of critical resources.

We would expect that the heightened awareness of the real values of our resources would automatically lead to a commitment by everyone to maximize the long-term benefits and to insist on careful stewardship of these limited resources; instead, we see decisions being made on a short term basis, with each interest group claiming the right to utilize a resource to the exclu-

sion of others.

And the result has been increasingly bitter conflicts over resource development. We've seen struggles over whether an area should be devoted to timber production or used as wilderness. We've seen controversies and lawsuits over whether water should be used for irrigation or energy.

We have also witnessed a growing realization that environmental problems involve more than cutting a few trees or saving prairie dogs, but can have significant consequences for human health and the overall quality of life.

These concerns and conflicts, together with a somewhat justified distrust of government, have led to laws, the intent of which is to expose governmental decision-making to public view and ensure that resource decisions are considered from more than one vantage point or disciplined on a long-term basis.

In my opinion, these are, in brief, some of the reasons why some of the laws and programs I'm here to discuss today are in existence.

Though both damned and praised, the most significant environmental law passed to date is the National Environmental Policy Act of 1969; and it is important to a consideration of state agency actions primarily for two reasons:

1) The Montana Environmental Policy Act of 1971 was modeled after NEPA and like NEPA, is an umbrella law binding on all agency decisions with regard to environmental matters; and

2) Through a growing number of court decisions, it has become clear that the law has teeth, that an agency ignores environmental considerations at its own peril, that decisions will be reversed and projects stopped if the law is ignored, and that state courts are looking to federal courts for precedence in interpretation.

With these considerations in mind, I believe that an understanding of the major provisions of MEPA, whether you agree or disagree with that law, is important if you are to understand the framework within which state government operates in dealing with rangeland or any other resource.

The major requirement of MEPA is that an environmental impact statement (EIS) be prepared on all "proposals for projects, programs, legislation, and other actions of state government significantly affecting the quality of the

human environment."

Usually the EIS is put together in two stages - the first is called a draft EIS and the second a final EIS.

A draft EIS must include a description of the proposed action; and discussion of current environmental conditions; evaluations of impacts to the physical and human environments, analysis of potential growth-indicating or growth-inhibiting impacts; irreversible or irretrievable commitments or resources; economic and environmental costs and benefits; a comparison of short-term costs with long-term environmental enhancement benefits; and, finally, a list of the people involved and the source materials used in compiling the draft.

Upon completion, the draft must be circulated to the EQC, the legislative group set up to monitor the action of executive agencies in environmental matters, the Governor, governmental agencies, and groups, organizations, and individuals interested in the outcome of the proposed action. A review and comment period of 30 to 45 days is allowed. Often, public meetings or hearings are held during this time to gather and assess local opinion.

At the end of the public comment period, the state agency prepares a final EIS which is supposed to recommend the alternative which best balances economic and environmental values. This judgement is usually reached through an interdisciplinary study team, which weighs many factors relating to the environment, economics, and public opinion. A final EIS customarily includes written comments from the public, along with a good faith evaluation of and response to these comments. The same review time (30-45 days) is allowed for comments on the final EIS.

Depending on the law under which the action was proposed, the final decision may be made by a Board, a Department Director, or a person to whom this authority has been delegated.

Numerous criticisms have been leveled by all groups at the obviously time-consuming, paper-generating, and complicated EIS process. The most important of these are:

- 1) Government uses EIS's to justify decisions already made without public input;
- 2) Government uses EIS's to avoid making decisions;

- 3) EIS's are being required for actions with ridiculously insignificant impact on the environment;
- 4) The EIS process is being avoided because agencies are determining that almost no actions meet the "significant impact" requirement;
- 5) EIS's ignore the obvious economic benefits of many projects;
- 6) Nothing results from EIS except paperwork, lawsuits, and delay.

Some of these criticisms are being at least partially answered as agencies, the courts, and the public become more familiar with what is required by each under a totally new process for which there is almost no experience, precedent or administrative history. The courts are defining what is significant and providing guidance as to when an EIS is required; state agencies are adopting rules which do the same thing, and we are finding out that much of the paperwork on routing decisions can be eliminated. Second, the courts are mandating that EIS's be used in the decision-making process before a decision is made. Agencies are now beginning to do that, and we should see a reduction in successful lawsuits brought on that basis. Economic analyses are being emphasized by both the legislators and the courts, and agencies are now staffing up so that economic benefits and costs will get the consideration deserved.

But is the EIS process worth all this? The answer is not an unqualified "Yes," because some of the criticisms I've listed are valid and will remain. However, recognizing that a return to unquestioned decision-making by major resource users is very unlikely, and if the process is applied reasonably rather than being carried to absurdities, if staffing is adequate, if professionals are used, and if the EIS is actually used to make decisions, then the answer can be "Yes."

Some of the more important benefits are:

- 1) Resource management is improved. For instance, having a soils scientist, a hydrologist, and a forester analyze a proposed timber sale is resulting in increased growth of timber stands and protection of the soils, other vegetation, and watersheds critical for long-term timber production. Having a fisheries biologist, an economist, a soils scientist, and an engineer evaluate a proposed dam is resulting in water projects which are more easily justified on the basis of multiple use.

2) The decision-making process is made more visible to the public; and broader participation is allowed:

3) Decisions are based on substantial documentation and therefore should stand up better under court scrutiny;

4) Interagency coordination is brought about so that the concern and expertise of all interested agencies can be considered jointly;

5) Negative impacts to the environment, including renewable resources, can be identified and in most cases mitigated.

Beyond MEPA, there are numerous state laws which do not necessarily fit into the environmental category, but which will be of interest to people who use and manage rangeland.

A brief listing of those most of you are aware of would include:

1) The Water Use Act - requires a permit from the Department of Natural Resources and Conservation to appropriate surface water, a notice of completion for wells with a yield of 100 gpm or less, and a permit for larger wells.

2) The Water Pollution Control Act - requires a permit from the Department of Health and Environmental Sciences for point source discharges of wastes into state waters.

3) Floodway Management Act - requires a permit from the Department of Natural Resources or local governing body for certain structures and nonconforming uses of land within a designated floodplain.

4) Natural Streambed and Land Preservation Act - requires a permit from the Conservation District Supervisors for physical alterations to a perennial stream, its bed, or immediate banks.

5) Grazing Districts Law - requires a permit from the Department of Agriculture for the use of restricted pesticides.

7) Animal Confinement Rules - requires a permit from the Department of Health & Environmental Sciences for operation of a confined animal feeding facility.

All of these laws are well intentioned--most are necessary--yet, it is obvious just from a brief listing that someone wanting to use water may have to get three different permits; someone wanting to start a feed lot may need even more.

In fact, a book like this has to be consulted for guidance through the maze. It's obvious that the regulations are becoming too numerous and too complicated, and the jurisdictions are beginning to overlap. The result is frustration on the part of the citizen, and inefficiency on the part of governments entangled in paperwork.

It is clearly time to clarify and consolidate these regulations, and that process has been initiated throughout state government. We're taking a hard look at ourselves, simplifying forms and rules with an eye to eliminating them whenever possible. We're reviewing the code books we operate under, and recommending the repeal of those statutes found to be obsolete or conflicting.

Yet it seems that the federal government is determined to impose a yard of red tape somewhere for every inch unwound somewhere else. Worse, it seems determined to impose yet another, needless layer of bureaucracy in matters already regulated at the state or local level.

Section 404 and Section 10 permit programs of the Corps of Engineers are a prime example, and anyone who plans to install so much as an irrigation pump in the Missouri or Yellowstone River must first obtain a permit from the Corps' Omaha office. Yet state laws, notably the Streambed Preservation Act, already regulate nearly all of the same activities. The federal program is a flagrant intrusion into traditional areas of state responsibility, a usurpation of state and local rights which does nothing except cause more paperwork and unjustifiable delays for the landowner; but our efforts in support of amendments to Section 404 and even those to secure the issuance of a general permit covering only riprap projects have, so far, been met by more red tape.

We can expect, but should not accept, more of this. But laws, regulations and environmental impact statements cannot be the total answer to resolving conflicts or making wise use of our range and other resources. It is Department policy and my own belief that the only real way to maintain and improve rangeland or other agricultural resources on private property is to increase the individual's awareness of the problem, to provide incentives to allow management in the proper way, and to bring whatever regulation is necessary down to the local level.

With regard to incentives that relate to agriculture, this Department has a number of innovative programs I'll explain briefly.

(1) The Rangeland Resource Program - the goals are to increase an awareness of the value of the resource and to expand its productivity for a variety of uses through improvement measures voluntarily undertaken.

(2) The Renewable Resource Development Program - $2\frac{1}{2}\%$ of the coal severance tax has been earmarked for low interest loans of up to \$100,000 to Montana farmers and ranchers for worthwhile projects to develop or preserve land, water, timber, wildlife, or other renewable resources. Twenty-two applications, which request a total of well over \$1 million, are now being processed. Most of these involve sprinkler irrigation, and preference is being accorded to water development proposals. However, stockwater reservoirs, reseeding, weed and brush control, fencing, and other rangeland improvements are eligible for this type of financial assistance.

(3) The Technical Assistance Program - Under this program prefeasibility studies are being made of water development projects being considered by groups or individuals. The product is a report, assessing such matters as development alternatives, possible sources of funding, the project's engineering and economic feasibility, and its probable environmental impacts. Although only water development projects are eligible, the project may be for any one or a combination of beneficial uses, and livestock water, along with domestic supplies and irrigation, have been receiving the most attention.

(4) The High Plains Weather Modification Research Program - Part of this research is directed toward increasing the yield and protein content of native range grasses, prolonging the growing season, and determining the consequences of an altered moisture regime on grassland production, stability and composition.

(5) Water Reservation Program - The Department has contracted with a Montana consulting firm to provide direct assistance to conservation districts wanting to secure water for future agricultural uses under the Montana Water Use Act.

(6) The Department has provided a range management specialist, Charles Hitch, to work with ranchers in their involvement with EIS's being done by BLM on grazing districts.

With regard to local control, the Department has:

(1) Provided minimum standards and assistance where possible to Conservation Districts in the administration of the Streambed Preservation Act - an example of the increasingly important part that the CD's are playing in resource management. To help CD's meet these responsibilities, we have in our budget a request for \$250,000 to pass directly on to CD's over the next two years.

(2) Supported, officially and repeatedly, a provision in the BLM Organic Act allowing delegation of land management authority to authorized governmental entities - that is, to state grazing districts.

(3) Initiated a study in cooperation with the Lewis and Clark Conservation District to develop a program of local regulation of sediment and water quality.

The Department of State Lands has also been active in providing assistance by:

(1) Working with lessees to develop range management plans which should improve grazing capacity on 4 million acres of state lands.

(2) Using $2\frac{1}{2}\%$ of the rental fee for these lands to cost share or cover the full cost on improvements such as range renovation, stockwater development, and irrigation.

These policies and programs evidence the belief of state government that the long-range future of Montana lies with the development of an economy and way of life based on renewable resources.

But a listing of these programs should not be interpreted as complacency about what has been done or about what needs to be done. Despite the popular belief that the objective of most people in government is to devise ways to preserve or even perpetuate their jobs, I believe that government works only when it solves rather than creates problems. I also believe that solving problems cannot be done without making mistakes, without risking some degree of public criticism.

Above all, I believe that government cannot solve problems without the continuing guidance, advice, and assistance of those for which government exists.

In order to take advantage of the practical knowledge of farmers and ranchers, we have established the Resource Conservation Advisory Council to advise the Department on range and other agricultural problems. Carl Johnson, from Livingston, whom some of you may know, is the Chairman. Frank Cimrhakl of Roy, John Vanisko of Deer Lodge, Charles Lane of Drummond, James McCann of Harlem, Gladys Elison of Missoula, and Gordon Holte of Plentywood are also members.

The pay is terrible - nobody would serve for the money alone - and no one would suggest that we always agree on how to approach a problem. But there is debate, open discussion, an understanding that no one has all the answers, and, most important, an exchange of ideas on how to best proceed. In fact, a number of the programs and policies referred to earlier had their origin with this Council.

This dialogue between citizens and government at all levels must be increased if government is to gain the confidence of the people it is supposed to serve.

And, at no time in Montana's history has that confidence been more important.

As I indicated earlier, the demand for Montana's resources is increasing at an almost overwhelming pace. Rangeland is going to be used for strip-mining, as well as for raising cattle; water is going to be used for coal conversion facilities as well as for irrigation; forest lands are going to be used for transmission lines, as well as for timber, and for wilderness; farmland is going to be used for subdivisions as well as for food - and all of these resources are critical to both our agricultural economy and our way of life.

How these resources are to be allocated and managed is probably the most complex, controversial, and crucial issue facing Montana during the next ten years. Will we accept further encroachment of the federal government into areas traditionally of state concern? Will we allow the politically powerful areas of the country to dictate resource decisions? Will we see agriculture forced into a subordinate role, both politically and economically, in Montana?

These are questions no government can answer without the confidence, support, and guidance of our citizens - for ". . . government is not and cannot be a substitute for people, but is simply the instrument through which they act." Where we go in the next ten years, whether we control resource development or are instead controlled by it, is up to Montanans.

The future of rangeland is, of course, inseparable from these decisions, and I have tried to outline to you what state government is doing to sustain this resource - but that's not enough. If this conference is to be more than just another meeting, there has to be two-way communication, I would like to know what the audience, especially what the people who own and manage the resources, think the state should or should not be doing; we could use some good ideas and even criticism would be helpful. If this conference would give us, your employees, an expression of the kind of decisions you'd like to see made, the kind of programs you'd like to see implemented, then I am certain we would get on with solving the tough problems ahead of us.

Gary J. Wicks, Helena, Montana, who presented this speech at the Governor's Conference on Montana Rangeland, is Director of the Department of Natural Resources and Conservation in Helena. He graduated with a B.A. degree from the University of Montana in 1967. His course work was completed for his Masters of Business Administration degree at the University of Montana in 1969.

Mr. Wicks was the Administrative Assistant to Governor Forrest H. Anderson dealing primarily with budgetary, environmental, and natural resource problems from 1969-1971.

He was appointed Director of the Department of Natural Resources and Conservation, on its creation, December 20, 1971, and reappointed in 1973.

Mr. Wicks is a member of the Commission on Environmental Quality, a member of the Montana Energy Advisory Council and the Governor's Alternate to the Western Governors' Regional Energy Policy Office.

PANEL DISCUSSION
COORDINATED PLANNING OF INTERMINGLED OWNERSHIP

Mons Teigen, Panel Moderator

Thank you Pete. I really enjoyed the morning program here. It brought back a lot of fond memories to see Dr. Dyksterhuis, the Fultons down there, Phil Van Cleave, Dave Revenes and all of the other old timers of the Land Utilization Act days in Eastern Montana.

I'm reminded of when Dyksterhuis first started on his range techniques for the Soil Conservation Service, he held a workshop in Eastern Montana and at that time they invited two gentiles to their group, that was Dan Fulton and myself. Everybody else was a member of the Soil Conservation Service, but they did let us in on the thing. So we went around and toured Prairie County and Custer County, looking at various range sites and so on. I was always a pretty good friend of Phil's but I was really never impressed by his ability until we were on that tour. We were up on a knoll down there in pasture four in Prairie County and Dyke as he used to do, got down on his haunches there on top of this knoll and scratched around at the base of a plant and he pulled up something on the end of this thumbnail. He said, "Can any of you experts here tell me what this is?" One guy goes over and he says, "It kinda looks to me like a, it is ah, seed from ah, Agrophyn Smithii." Another guy comes along and says, "Ah, no, you are all wrong, that's a female floret from buchloe dactyloides." He went on and tried various things and somebody else said, "I don't think that is a seed at all, that's just a piece of sand." He said, "Phil, come over here, do you know what this is?" Phil looked at this thing and says, "It looks like grasshopper dung to me." He said, "You're absolutely right!" So that shows what kind of experts you have in this crowd, when you have guys like Phil Van Cleave. That's a true story too, isn't it Phil?

Well, to start this program off, I would like to set a few ground rules. Since I'm the moderator, I guess I have the right to decide how the first fight is going to be handled.

First of all, we'd like to have all of our panel participants move up here to the front table. We will give each one of them the opportunity to make a brief statement and following their total presentation, we will en-

ertain questions from the audience, questions within the panel themselves and the moderator may have a question or two he may want to ask. So to start things off, if I can find all my propaganda here. We have a gentleman who I have not known very long but I have known him long enough to develop a real appreciation for the job Ted Russell does for the United States Forest Service. So Ted Russell, why don't you tell us a little bit about what the Forest Service is doing in coordinated planning.

Mons Teigen is a native Montanan raised around Teigen, Montana. He graduated from Montana State University with a M.S. degree in Range Management. Mons is presently Executive Vice President of the Montana Stockgrowers Association.

Prior to his present position, Mons worked for the Association of State Grazing Districts and was Commissioner of State Lands.

PANEL DISCUSSION
COORDINATED PLANNING OF INTERMINGLED OWNERSHIP

Ted Russell

When you realize that "in the 11 Western States, the area of range-land available for grazing is decreasing at the rate of 1.4 million acres per year," you wonder why coordinated planning of intermingled ownerships isn't axiomatic. There ought to be a law against doing any other kind of range management planning where intermingled land ownership exists! In Montana, forage producing areas are diminishing as industrial uses encroach on productive lands, and the better lands are converted to grain production and non-agricultural uses, such as roads and housing development.

Montana has 93 million acres of which 70 percent is grazed by livestock. Federal lands represent 25 percent of these lands. Even though the National Forests represent the smaller portion (5.7 million acres) of these 16.5 million acres, we think it is a very important portion, principally from the interdependency certain range livestock enterprises have for summer ranges and the positive influences that managed livestock grazing has on the environment of National Forest ranges.

Increasing Demand

"Based on current trends, the Council for Agricultural Science and Technology estimated increases in U.S. consumer demand for beef will require an additional 13 to 14 million beef cows by 1985 -- an increase of about 30 percent over the current numbers." Everyone realizes we had a large decline in beef cattle numbers in 1975. This, along with reduced replacement heifers going into the herd, doesn't indicate that the U.S. consumer is demanding additional beef. However, Montana's beef cow numbers have gained 30,000 from 1971 through 1976.

The Forest Service's 1975 Assessment of the Nation's Renewable Resources assumes that nationwide we will need to increase production on National Forest System lands from 11 million animal unit months to 20 million animal unit months by 2020. This prediction is based on 82 million more people with approximately three times (from \$3,257 to \$10,650) the per capita disposable personal income by 2020.

Coordinated planning of intermingled ownership is essential by the livestock industry, land management agencies and technical and scientific personnel if more red meat is to be produced on less acres with increased efficiency. Increased pressure on public lands due to conflicting interests, combined with the increased concern on the part of individuals for the environment, makes it imperative that each land use alternative be carefully examined.

As the principles of multiple use and sustained yield become more formalized in today's land use planning on National Forest lands, livestock industry representatives, and land managing agencies need to become more astute in identifying the better forage producing areas and what is limiting productivity. Have we defined our long-range goals with improved productivity in mind? We know there will be minor shifts in grazing from rough, fragile, and less productive areas to those that have potential for development and intensive management. Over the next 40-year period, National Forest livestock production in Montana is expected to increase from our present base of approximately 500,000 animal unit months to help meet the Nation's future needs. Coordinated range management is essential if we are to better define these long-range production goals and pinpoint the areas of increased productivity.

Coordinated range planning should involve both a rancher's leased lands and his private lands. The total agricultural land base should be used in setting goals and objectives. Land improvement measures can be given priorities in planning accomplishments. This permits the assigning of jobs, scheduling work and each partner can be held responsible for the range management actions and agreed upon commitments. Equal responsibility will be placed upon the land managing agencies, and the landowners for discussing all proposed land commitment changes prior to making changes.

From the landowner's viewpoint, grazing tenure on National Forest summer ranges should be recognized and understood by urban recreationists. Flexibility in both stocking rates and grazing capacity can be achieved as more land improvement opportunities become available. From the public's viewpoint, a rancher who grazes livestock on public lands is demonstrating good stewardship on both public and private lands through the planned co-

ordination with the critical factors of other resources, such as big game winter ranges and streambank stabilization on the blue ribbon fishing streams.

Reuben Pankey, of the New Mexico Cattle Growers Association, stated, "We, in the livestock industry, who use public lands for forage purposes, are firmly committed to the multiple-use concept. This concept was not arrived at easily. But after several years of experience, we find that we can live under this principle and even enjoy benefits from it by demonstrating to the American public the values of the production of food and fiber. Forage, namely grass, is not a resource that can be harvested and stored. It has to be utilized in place, properly by livestock and wildlife." I feel certain Reuben is talking of coordinated planning. Maybe, if he were saying it today, he would include coordinated range planning of intermingled ownerships.

Coordinated ranch planning also provides the landowner opportunities to both learn and teach new and advanced techniques in land management. Many of the skills in business and animal husbandry that will improve their range management practices can be shared with agency personnel, and we frequently see an opportunity where government lands can be used to demonstrate new and different scientific techniques that can be readily adapted to private lands.

We should start now to inventory our better Timber Producing sites where we can increase wood fiber growth by range improvement techniques. I'm speaking of fertilizing for both range improvement and wood fiber growth to produce red meat and increase our wood fiber yield. Some of the better timber growing sites are privately owned. Pine plantations with spacing of trees 20 feet by 20 feet decrease forage yield very little, compared to the total gain from both forage and wood fiber production. So, while you are fertilizing for economic gains on pasture forages, increased cordwood can be realized, and at the end of 35 to 50 years, this boost in family income can set the stage for well-financed retirements or new starts for new young ranchers in the family.

We need to take advantage of our opportunities for coordinated range planning of intermingled lands by involving Extension Service, Agricultural Research Service, and major timber producing landowners. The Extension

Service can deliver the findings of technical and scientific research through extension and education activities. Agricultural Research Service can provide current, factual agricultural information. Fertilization for both food and fiber is but one area of need.

Livestock production was not even mentioned in the World Food Conference as part of the solution for the world's food shortage. In fact, "animal agriculture came under constant attack from some participants, with the simplistic assumption that all animals were produced at a cost of 4 to 10 pounds of grain that could go directly into human food channels." If we are going to use our agricultural products that are in demand, namely cereal grains, to help in the balance of payments, it appears to me that the red meat produced in the West on grass, can replace some of the protein in the balanced daily diet normally supplied by cereal grains. We, in the livestock-agricultural business, need to help ourselves by keeping the red meat available to the housewife at a competitive price, encourage the exporting of cereal grains and begin a promotional campaign which illustrates that grass-fed red meat is a superior substitute for grain products.

Failure to recognize the value of rangeland is not new. Even in the United States, we have difficulty obtaining recognition or adequate support for needed range improvement financing. Livestock grazing is not only compatible but a benefit on vast areas of native lands in both public and private ownership.

To summarize, coordinated range planning of intermingled ownership is a must in the public land States of the West, because of:

1. The rapid decrease in rangeland available for forage production in the private sector.
2. The increasing interest in public lands and increased pressures to provide a place for all activities and uses.
3. Our need to demonstrate that livestock grazing can be beneficial to game animals, water yield, fire abatement, nutrient cycling, and recreationists.

Wendell Thacker

The Soil Conservation Service's primary responsibility is to nonfederal lands, of which Montana has more than 65 million acres. Of these, some 41 million acres, or about 63 percent are rangeland. If only from a purely statistical viewpoint, rangeland has to be important to Montana and to the job of the Soil Conservation Service in Montana.

The Service has 11 full-time range conservationists in Montana and about that many more employees professionally trained in range management who have frequent opportunity to apply that knowledge in their current positions. We recognize that professional training is a starting point. The practical application of range management is a science wherein skills are honed in the daily business of being or working with ranch operators. Knowledge gained in formal training, or from the many other sources available, must be wed with the day-to-day, year-to-year realities of total ranch operation. This is the complete science of range management, and no one can practice it as an advisor. Only the ranch manager can put the whole thing together. His are the many management decisions which can make good range management a reality.

In our occupations, most of us frequently find ourselves too close to the forest to see the trees. Another individual who has a good understanding of our task, or a part of it, often can see it in a different perspective and suggest changes which will improve performance. This is the role of the consultant, in whatever field. It is the role of the Soil Conservation Service in providing technical assistance to farmers and ranchers.

What is the condition of Montana's rangelands today?

The Soil Conservation Service has a system for monitoring native rangeland which rates vegetative condition in four categories: poor, fair, good, or excellent. On most sites, if the condition is good to excellent and vigor is good, the vegetation will protect the soil from excessive erosion and provide an optimum amount of grazing for livestock and wildlife.

As condition declines to fair or poor, the plant composition changes. A larger percent of the stand and production is from plants which produce forage less palatable for, or not eaten by domestic livestock. Such vege-

tation is typically also of less value to big game animals and provides a lower level of protection for the soil.

During the past 25 years, the condition of Montana's rangelands has improved considerably. It is estimated that about 25 percent of the rangeland was in good to excellent condition in 1950; today we think about 54 percent is in good to excellent condition.

Range condition of a county or state must be monitored over a period of years to establish a trend, since it may go alternately up and down for short periods as a result of weather and economic conditions as indicated in a recent appraisal in Montana. Most of the counties rather severely affected by three years of drought (1972-74) during a period which also experienced a wide swing in economic conditions for livestock production show a downward trend in range condition:

1. In 1973 high cattle prices encouraged many ranchers to increase the size of their breeding herd.
2. In 1974 and 1975 prices were so low, many felt they couldn't afford to sell so they held over more than usual.
3. Since 1973 hay prices have been significantly higher, resulting in increased pressure on many ranges, as ranchers try to hold down the cost of winter feed.

Under such conditions, range which is down in vigor can shift down one step in condition rather readily.

On the other hand, ranges in good to excellent condition with good vigor were little affected by the drought if the rancher continued good management practices.

A number of factors and practices have contributed to the improvement which has occurred during the last 25 years.

Some of them are:

1. Control of open range horses.
2. Cross fencing to control grazing.
3. Stockwater developments to help get better grazing distribution. (SCS records show 38,000 developments on the land -- enough to make a

significant difference for domestic livestock and for wildlife as well).

4. Establishment of tame pastures, mostly for spring grazing, to provide for deferment of grazing on native range, resulting in an increase in vigor and improvement in plant composition. ($2\frac{1}{2}$ million acres)
5. Establishment of 300,000 acres of waterspreading systems, mostly to provide a dependable hay base for winter forage supply.
6. Greater understanding by ranchers of the needs of plants and their response to grazing pressure.
7. Establishment of grazing systems.
8. Application of brush control measures, deferred grazing, proper grazing use, etc.

An increase from 25 to 54 percent of rangeland in good to excellent condition is real progress, but there is still much opportunity to improve Montana's range with a corresponding increase in benefits. As previously discussed, only the operator can make good range management a reality. No real progress will be made unless he has a desire for improvement and an understanding of plants and animals and the response of each to management. If he owns all his land, his limitations are mostly determined by his capital resources and the level of his understanding and desire.

Where ownership of the resources is intermingled, the operator may find joint decisions are needed which are crucial to good management of range resources. Cross fences may not be feasible unless they can be extended across adjoining ownership, and construction needs to be jointly scheduled. Water may need to be piped from or across it. All grazing resources need to be considered in order to design the best grazing system. Many other improvements are feasible only if shared with others.

In assisting ranch operators develop conservation plans, we frequently find it necessary to coordinate planning activities with the managers of federal lands. BLM lands are those most frequently intermingled with land in private ownership. SCS and BLM have carried out coordinated planning activities in Montana for many years under an SCS-BLM memorandum of understanding, with a high degree of success. A three-way agreement has now been completed which includes the Forest Service, the other major manager of federal lands in Montana. While Forest lands are not as commonly intermingled

with private ranch holdings, it is anticipated the agreement will alert all personnel of the three agencies to any existing situations where coordinated planning will be helpful.

We in SCS are happy to take part in the Governor's Conference on Montana Rangeland and to support the Montana Rangeland Resource Program. We are well aware that for many reasons we can never reach all the ranch operators in Montana. In the first place, there aren't enough of us. Secondly, they will not all ask for our assistance.

A main goal of the Montana Rangeland Resource Program is to accelerate the improvement of Montana's rangeland resources. One of the most effective ways it can do this is by reaching decision-makers who are not presently being reached by any of the various agencies concerned with range resources. If, by supplementing existing programs and encouraging all to join hands and work together, improvement in the condition and production of Montana's rangelands is accelerated by the Program, all of us in Montana will be benefited.

Kelly Hammond

It is a pleasure to have the opportunity to participate in the Governor's Conference on Montana Rangeland. The majority of the 8+ million acres of public land administered by the Bureau of Land Management in Montana falls into the category of rangeland. Not too many years ago, few people took note of actions or proposals affecting the use of these lands. However, that has changed dramatically throughout the entire U.S. Today it seems that just about everybody has an interest in how the National Resource Lands are managed.

The effect of the widespread interest has been an appreciation of the benefits and the necessity of multiple-use management. The BLM is engaged in a multiple-use management program on the NRL's. We manage these lands for livestock grazing, wildlife habitat, wild horses, outdoor recreation, lands and mineral activities, watershed protection, industrial development, timber production and the preservation of public and environmental values.

Although the Taylor Grazing Act of June 28, 1934, is the basic legislative authority governing the management and protection of the NRL's, the

BLM has other mandates from Congress as well. These mandates require that the BLM do any and all things necessary for preservation, protection, administration, and regulation of the NRL's. They require that BLM authorize that use or combination of uses which will best achieve the objectives of multiple-use, and to prepare appropriate environmental analysis and impact statements for actions significantly affecting the quality of the human environment.

Some of the new legislation passed by Congress in response to public concern are the National Environmental Policy Act, the Sikes Act, the Cultural Resources Act, the Wild and Scenic Rivers Act, and the Endangered Species Act.

Livestock grazing and range management is just one of a number of uses that is made of the NRL's. They must be tied more closely into the Bureau's resource planning system. Livestock is a very valuable tool in administering these lands. By manipulating livestock use, we are able to enhance wildlife habitat, recreation potential and other multiple-use opportunities. Therefore, it is not just how livestock are grazed to improve range conditions, but how livestock will be grazed in combination with other uses of the land and resources to enhance all the resources. The Bureau has the responsibility to determine what this combination will be. It is important that public land users recognize that in most cases these lands are not managed for a single use but a number of uses. With the complex land pattern in Montana of Federal, State and private lands being intermingled, cooperation of all concerned is of the utmost importance.

Even though a recent report showed that 93% of the Montana's public range (NRL) was in fair to excellent condition, it does not mean that the BLM can maintain its current level of management. Forty-two (42) percent of the range is in fair condition and only one season of drought or other unfavorable occurrence could drop this into poor condition.

Another item of interest is the court decision requiring BLM to prepare environmental impact statements on the Bureau's livestock grazing program and the subsequent agreement between BLM and the Natural Resource Defense Council for the schedule and procedures for implementing the court decision.

The thing of concern seems to be what effect this decision is going to have on our ongoing range management program.

The highest range management program priorities Bureauwide will be directed toward meeting the court ordered commitment and supervision of the grazing program with necessary corrective actions. The Bureau is prohibited by the court ordered agreement from implementing any new allotment management plans until an EIS has been prepared. However, our policy does permit range improvement work to continue on implemented AMP's meeting Bureau quality standards. Our primary effort will be on maintenance of existing improvements. In certain cases range improvement may be constructed outside of implemented AMP's which are required to facilitate custodial level of management and provide public safety on the National Resource Lands. Examples are: (1) allotment boundary fences or other protective fences, (2) water developments to supplement or replace existing water supplies, providing the new water resource does not change existing use patterns. Again, I want to stress the major effort will be directed towards completing the EIS's. If man power and funds are diverted from this effort for the development and necessary environmental assessment of range improvements it will dilute our efforts to meet the court ordered commitment.

Even though the National Resource Lands in Montana comprise only a small percentage of the State, they are very important to the local economy. For seasonal livestock grazing, BLM administered lands furnish seasonal forage for approximately 28% of the cattle and 34% of the sheep in Montana.

Livestock products derived from NRL's are a basic part of Montana's total economy and are highly significant at the local level.

John Morse, Jr.

Good afternoon, my name is John Morse, Jr., and I'm not running for anything. I am going to talk to you about how we can in the long run bring about significant improvement on the range lands in Montana. The key to improving the Montana rangelands lies in the hands of the rancher for he holds the tool. Range improvement offers the rancher the greatest promise of increased productivity.

We should in fact correctly identify the primary resource with which

we are working. Held in proper perspective, a ranch is indeed a grass factory. Our success relatively speaking, will be reflected by our ability to manipulate the range using livestock as the tool. It is my feeling that a ranch unit must be viewed as a total unit with problems and thus solutions which are unique. If we can agree in principle then we are all set to develop some sort of management plan which should have as it's goal: to improve or prevent the deterioration of one or more factors involving range; improved forage production, changes in species composition, improved water quality and quantity, wildlife habitat, improved recreational opportunities and aesthetics --- using domestic livestock as the tool. The deterioration, it has been said, of the western rangelands was brought about by the continuing overgrazing at the wrong season of use, by the stockman. We are, however, now at the crossroads. We know that the rangelands are in need of better management. We know we must graze these rangelands in order to improve them. And finally, the public also has a stake in the management of these lands as a "multiple user".

Those charged with developing use alternatives and objectives are duty bound to not create conflicts which do not exist. There can be no real unresolvable conflicts in improving the forage production on the western rangelands. It cannot be argued that what is good for livestock is bad for wildlife, or what is good for watershed is bad for livestock. Most of these uses tend to compliment one another---. Let me show you an example: If you have a piece of rangeland that is in "poor" condition, stable but poor. With the production of usable forage amounting to between 200 and 400 lbs. per acre. Because of the amount of bare ground and other factors you will have (1) higher soil temperatures, (2) increased erosion or stream sedimentation and (3) obviously reduced grazing capacity because of low production. If you improve the rangeland using some sort of range management system then all the potential users will benefit. In our example taken from personal experience, usable forage jumped to 2,000 lbs. per acre. The livestock have contributed to the long term stability of this range. They harvest 40 to 50 percent of the forage leaving 1,000 lbs. or more after use. This amounts to almost three times the original total production. It might be said that some of this improvement should be passed on to the rancher in the form of increased AUM's. Without arguing the relative merits of the

of the species composition I submit there can be no serious conflict as to HOW we improve the western rangelands; namely through the systematic use of livestock.

The primary objective of range management is grazing otherwise it is something else. Many secondary objectives include:

1. wildlife production
2. timber production
3. recreation
4. aesthetics
5. watershed -- both clean water and more water

No real conflicts should arise and particularly those involving wildlife because the livestock should be manipulated to ENHANCE the range rather than deter, where possible.

If range improvement plans are going to be successful, then they must be developed with the cooperation of both the rancher and the responsible agencies. The National Resource Lands personnel, State Lands personnel, Soil Conservation Service personnel, and other planners, need to focus their attention strongly on the notion that the rancher must make a living within the realm of his knowledge, and he is not likely to cooperate in any scheme that would seem to diminish his prospects of making a living. If a management plan is to be developed, then indeed it must consider that which is unique to that particular unit. The class or type of cattle must be allowed for in planning fencing and the development of water. It should be strongly stated that some management is better than no management and in this respect the plan must be workable and not contain so many obstacles that it most surely will fail in the end.

In conclusion I feel if the relationship between the landowner and the National Resource Lands managers is to improve, the improvement must come through mutual cooperation. I feel that the time has come to improve the range using the know-how acquired over the last 100 years. In this age of ecological awareness what better answer to the demands of the time than to use livestock to bring about the improvement of our rangelands. If we can predict the physiological requirements of the plant species involved, then we can develop grazing systems which key on these needs. Using livestock

as the tool we can systematically improve the Montana rangelands. I feel we have been paying too much attention to the various groups on the sidelines demanding we cease grazing and adopt their single use. Multiple-use is an accepted concept which poses many challenges to those of us in the grass management field. Working together we can bring about the management changes needed for the rehabilitation of our rangelands, both public and private.

Ted Russell, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is Director of Range Management, Northern Region, USDA, U. S. Forest Service. Mr. Russell has the responsibility for planning and coordinating Range Management on 13 National Forests in the Northern Region. He has been employed by the Forest Service since 1958, during which time he has served on six National Forests with five Regions of the Forest Service.

Mr. Russell is a member of the International Mountain Section of the Society for Range Management. As a member of the SRM, he served as chairman of the nominating committee in 1971 and has participated on various committees throughout his membership in the Sections.

Wendell Thacker, State Resource Conservationist, Soil Conservation Service, Bozeman, Montana, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, started his career with the Soil Conservation Service in Nebraska. He has been in Montana since 1958.

Mr. Thacker provides staff leadership in resource conservation planning in all Soil Conservation Service programs in Montana along with technical leadership in Agronomy, biology, plant materials, range, recreation and woodland programs.

Kelly Hammond, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, has worked for the Bureau of Land Management for 25 years. He was raised on a ranch in Southwest Colorado and received his B.S. degree in Range Management from Utah State University.

In his position of Chief of Division of Biological Resources, he provides leadership in the field of renewable resources.

John W. Morse, Jr., Dillon, Montana, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is the manager of the Donovan Ranch in Beaverhead County, Southwestern Montana. This is a family business and the ranch is a cow-calf-yearling operation.

John Morse has served as past director of the Southwestern Stockgrowers Association, past president of the Southwestern Stockgrowers Association, former Beaverhead County Soil Conservation District Supervisor and a member of the Executive Committee of the Montana Stockgrowers.

The Donovan Ranch has been using many progressive range improvement programs. Under the management of Mr. Morse, a total resource program was integrated into the operation including state, private and natural resource lands.

PANEL DISCUSSION
RANGE MANAGEMENT TODAY
Dave Smith, Panel Moderator

I have been invited to moderate the panel this afternoon. We have the privilege of listening to some real experts in the field of range management, some great technical people who have had years of experience. We have had the privilege of listening to some political leaders and we have talked with a few of the "bureaucrats" in this particular subject and now we are down to the guy who gets the job done out on the range, and it is a great privilege to have a talented panel before us this afternoon. It is also the job of the panel moderator to let the panelists have the light and say nothing so I will go with that particular format.

First, I introduce to you Roy Cornell. Roy is from Dillon, Montana and he operates the Craig Cornell Company in Dillon. Roy is a former sheep operator. I have the distinct privilege of introducing Roy and Curt as former sheep herders and I understand they really aren't former as they still have sheep. I think Roy said he has three buck lambs and Curt has two ewes. If we can get the two of them together, we may get the sheep business revived in Montana. I had a great long talk with Frank Sparks last week when I was here in Montana. I really should have Bob Gilbert introduce Frank because I have Frank convinced that he ought to be in the sheep business, so Bob you might get ahold of him after the meeting today.

Roy is going to speak to us now, and after he speaks would you please forward your questions to him by using the mikes. We'll moderate this as we go, and I'll tell you the format for Curt and Frank as we come to their presentations.

Mr. Smith is the Executive Secretary of the Society for Range Management. A graduate of Brigham Young University, and former missionary to Mexico, he worked as Secretary of the Montana Woolgrowers Association prior to assuming his present duties.

NOTE: All of the panelists used color slides with their presentations, consequently, frequent references are made to subjects in the photographs.

PANEL DISCUSSION
RANGE MANAGEMENT TODAY
Roy Cornell

I would like to relate to you how the Craig Cornell Company put this range improvement plan together and how we have used the help and coordination of the various agencies in the management of the Range Resources. The Cornell Ranch was a sheep operation since the early 1860's until 1971 when labor and predator problems prompted a change to the cattle operation. Perhaps we didn't smile through the entire process, but certainly the matter of better range practices must come into everyone's operation sooner or later and I feel the sooner the better. Our range lies in two areas, one is the Sagebrush-Bluebunch wheatgrass type between 6 and 8,000 feet elevation and the other is forest grassland type between 7 and 10,000 feet in elevation. The ownership pattern of our Brown Ranch unit, the former of these two areas is an obvious reason why cooperation is a pre-requisite to any effective range plan.

Our range plan began in 1966 when Mitch Boken of Beaverhead Soil and Water Conservation District and myself became enthused about the potential for range improvement of the area.

We took the BLM fellas for a ride and showed them what our ideas were. At that time the BLM was free to act on this kind of thing and it was amazing how fast they began making plans to develop a Cooperative Agreement and range plan.

Here the Montana Fish and Game Biologist is working with the BLM to preserve some sagegrouse strutting grounds that are in this area.

From the BLM Cooperative Agreement and Boken's Conservation Plan, we put together a range plan that included several other projects. This included sprinkler irrigation and new haying methods for more hay production. This helped tie things together.

The range plan included an inventory of fences on this unit. We had a good boundary fence and a good cross fence dividing it into two pastures. Two additional fences were constructed making a four pasture rest-rotation grazing system possible. These fences were laid out by the BLM and myself.

Our aim was to keep them on the ridges and out of snow as much as possible to reduce the maintenance and construction costs.

Now, not all the sagebrush is quite this tall but we sure had a lot of sagebrush. We had more than the sagehens could eat! So we were convinced that a sagebrush control project would be worthwhile. Pastures one and three were sprayed in 1968 then rested for two years; two and four were sprayed in 1970. Each treatment area was rested for two growing seasons - the year of treatment and the year following. Application was done by fixed wing aircraft. We had a good pilot. The pilot had more courage than common sense and that makes a good spray pilot.

While the pastures were rested, we developed four water developments, two in pasture four and one in each of two other pastures. This was done to improve the distribution of livestock which were now confined in smaller pastures. One such development was fenced around the seep area to keep livestock out and then we installed a trough to provide dependable storage for a good water supply.

Our other ranch unit called the Middle Fork unit involves deeded, State and Forest Service lands. Here we are still in the process of developing a long range management plan and converting this allotment from sheep to a cattle allotment. It has taken a great deal of time to get this done but I think now we are finally to a point where we have good cooperation between the Forest Service, the Conservation District and ourselves.

This plan has taken a lot of time in the initial stages including looking over the land and placing cross fences to properly manage the allotment.

Most of the fence was built entirely by us, the permittee. There was some that the Forest Service provided materials for but most was built by us, including allotment boundary fences to which the United States Forest Service still retains title. The Forest Service did some sagebrush control by burning last fall and this spring. This looks promising and I think the results of this burn hold the key to potential range improvement for areas such as this. This range is also under a rest-rotation grazing system.

When we begin to list the benefits of good range management, the first item that comes to mind is increased livestock production. This has with it

the additional benefit of increased livestock valuation, for tax purposes. Montana derives a large share of the tax revenue from the property tax and here I show the \$25,000 of assessable livestock valuation that grazed Brown Ranch unit previous to treatment. After the treatment the same number of livestock is shown except the state doubled the assessment during this period of time. A result of the additional livestock, made possible by the range improvement, was a 50% increase in taxable valuation.

Wildlife habitat is maintained or improved by this range management plan, since all the willow bottoms and mahogany ridges are included as leave areas. Also included are the sagegrouse strutting grounds areas that were defined by Montana Fish and Game.

The most of you have read Rachael Carson's book "Silent Spring" or have heard of it. Well, since the control of Rachael Carson's "moisture saving sagebrush", several new springs have appeared and other springs have increased their flow. Most of the water now appears at higher elevations than before including old springs that now produce more higher up. These springs aid the distribution of wildlife just as they aid the distribution of livestock. Also consider that the livestock now are confined to one or two pastures leaving the rest of the area to the exclusive use of wildlife.

The vegetative cover of the rested range provides good cover for game birds that is not available on the range grazed all season long.

Here's a picture for Joe Helle! Predator control is largely funded by the livestock industry. Although it is somewhat controversial in some circles, there is strong evidence that predator control is a very necessary factor in game management. I believe now that the Fish and Game Department is coming to understand this fact.

In these next two slides, I want you to notice the change in vegetative cover of the soil in 14 months as two growing seasons. This picture taken the day the area was sprayed for sagebrush control.

Here is the area 14 months later showing how the grass responds to this treatment. This does great things for the watershed. Water infiltration into the soil is increased reducing runoff during high intensity storms. Sediment load is reduced because the soil is held by the vegetation. The

vegetation helps hold the snow which upon melting goes into the soil rather than being blown away, making a better water yield year around. In short, water quality from the watershed is vastly improved by proper treatment.

Now there is another group of uses of the range called aesthetic or scenic values and this is the area that includes all those uses of the range that are hard to define in another category. This is a varied category.

This is what I consider to be an aesthetic view. A photographer would consider this to be an aesthetic scene.

A hiker, hunter or tourist would find this view pleasing and again the mountain climber fits into this category. Try climbing a mountain with a beer can in your mouth! Also, this category includes just plain recreation.

When we ponder the future of Montana's Rangelands we definitely need two things on those rangelands. We need domestic livestock and we need a good range plan.

Remember, ranchers are suspicious of government agencies. My wife says he doesn't look like he is suspicious but at least he is tired, or perhaps better stated, --- Montana ranchers are tired of government agencies. The tenure on federal land should be guaranteed.

Let's untie the hands of the BLM and let their range personnel get back out on the range to do the work that they want to do and needs doing, and that is to manage the range and improve it. Often times the range unit is arranged in such a way that private, state and federal lands are all included in some or all pastures of a system. There should be a method whereby a private landowner could retain some voice in the management of these lands he owns rather than the government calling the shots; even though in some cases the government may be a minority landowner. If he builds or needs to build fences, water developments or other improvements, he should have title to what he contributes to the land. State land has this feature whereby a leasee is compensated by the new user for the improvements he has constructed should he lose the lease to that land. Coordination and cooperation between the federal and state land agencies should be maintained and further improved. This is an area where I think we have taken a giant step backwards in the last ten years. Not so much because of the federal land agencies themselves, but outside pressures under the heading of "Environmental Concern." These

people are experts in range; they have a vast pool of knowledge and personnel that can help do this job. They should be out there doing it rather than sitting in the office writing an Environmental Impact Statement that really says nothing.

We've come a long way but there's still room for further improvement. There's one thing I would like you to remember and that is that today's rancher has a vital personal interest in maintaining this range at a high level of production and his use can be compatible with the environment. This concludes what I have to say. I hope you agree with most of it. If not, holler!

Dave Smith (Panel Moderator). Thank you, Roy, for a very worthwhile presentation and very interesting. We will for a few minutes field some questions.

I would like to ask why you prefer burning sage over spraying?

First, burning is permitted and spraying is almost impossible. Burning is cheaper and it does a good job of eliminating the plant and does not leave any stumps. Also, it is more acceptable to those persons who are concerned about spraying and its effects. It therefore, appears to be the most viable alternative including economics.

I want to echo Mr. Cornell's statements in the assumption that most everyone has a management plan but there are many that do not have these. We have in my area a unique situation where our range is divided between the Department of Fish and Wildlife or the C. M. Russell and the Bureau of Land Management. But we are told due to this impact statement that there will be no future development on the range, for anywhere from 3-13-20 years. It seems imperative that the BLM be allowed to maintain the range and start improving the range instead of catering to "environmental groups" who do not know what they are doing.

What has been the change in carrying capacity or AUM's on the range and what have been the changes in the AU's of livestock use and wildlife use - where is the increase going? We've found much of the increase is going to wildlife which doesn't do the stockman much good.

I am sure Mitch would agree with me if I said that we were grazing at least twice as much forage as before and we are leaving much more behind for

the wildlife than was available before the treatment. I would say that this is a very conservative estimate. The increase goes primarily to livestock.

Curt Hughes

This is the year of the Bicentennial! Very little has been said about the resource basically responsible for us having the greatest country on this planet. That resource is land. The land tenure system we have and utilization of the land was developed by people with a broad background of experience and knowledge.

I believe it worth our time to review this background.

The breakdown of the feudal system began with the invasion of England in 1066. This was the beginning of change in the westward movement of our civilization. The Magna Carta Charter of English freedom started the process that became responsible for our Constitution.

The most powerful idea as a result of the Revolution was Equality. The nine basic principles of the feudal system were eliminated. This was the first country in the history of civilization to give the land to the people. The free enterprise system developed with the land settlements.

The new land system in America provided freedom of action to buy, sell, transfer, contract, will, give, use, or leave idle. This developed into a system to emphasize rights and to ignore responsibilities. There was an extensive land area and few people.

In about 1785 the Land Tenure system became the law of the land with the passage of the Northwest Ordinances. Government regulations were to be kept to a minimum. In the next 100 years land acquisitions and methods of settlement changed as the need arose.

I am going to tell about my family's experience with land.

At the end of the last century my Mother came to Montana to teach. Her geography called this area the "Great American Desert".

During the late 1840's famine swept Ireland, and many people starved to death. My grandfathers, both named Hughes, came from adjacent counties in Ireland. They wanted security and settled on land to produce food--one in

New England, the other in Nebraska and the land is still in the family.

100 years ago an uncle came to California for gold and ended up trailing sheep to Montana. The third time he trailed sheep, he owned the sheep. He sold out in 1908 and moved to Long Beach where he ran sheep on the local range. In 1914 he decided to take advantage of modern technology and drove a Model T to Great Falls -- evidently over the sheep trails he walked a third of a century earlier. Of all the people he had the greatest choice of "free-way". In 1945 when I was docked in San Pedro I called my uncle and we made a date to meet at the Biltmore Hotel. He took me in his Franklin car from there through Hollywood to the ocean over the area where he once ran sheep. What do you think of the "urban sprawl" in his lifetime?

Alienation of the Public Domain speeded up after the first World War and now a half century later, you and I can't keep up with land acquisitions by all phases of government.

Our rangelands have gone through some environmental extremes that have undoubtedly changed the forage composition. First was heavy stocking of the range in the 1880's, dry years, and overgrazing. Restocking in the 1890's was followed by dry years and overgrazing in the early 1900's. We have a range picture of the ranch taken in the spring of 1903. It looks like the ground had been summer fallowed. When the Chicago market was 1500 miles and three weeks away, if you didn't do your marketing properly, you were in trouble. In 1919 my Father started shipping cattle to Chicago the last of June. He learned his lesson about 20 years before.

The boom years of World War I were followed by drought, long hard winters, and low prices. My father broke sod and raised a wheat crop in 1918 that yielded over 80 bushels per acre. This land reverted back to native range and in recent years has bluebunch wheatgrass in the forage mix.

Adjacent land was farmed for about 10 years by a homesteader and abandoned in the rough and tough 1920's. The top soil of 6 to 8 inches blew away and left a gravel base.

In the 1930's the county commissioners asked my father to buy the land but he wasn't interested. Eventually he bought the land on a tax deed for 50¢ an acre. After seeding three times he got a stand of crested wheatgrass

one wet year in the early 1940's. Twenty-five years later we were offered \$150 per acre for this land.

With 62 years experience on the range, my Father evidently learned some dear lessons. As a kid I had to herd the beef herd that was being assembled and moved to the rails. My recollection of this during the 1920's was that the cattle had lots of grass for grazing.

I believe this experience was typical of many ranches and ranchers--they learned from experience to reserve grass.

Land Use Planning

Modern transportation, campers, motor homes, the population boom and consumer spending have put people on the highways. Our national parks are overflowing with people and creating many problems of human erosion, health conditions, and bear hazards. The walking trails in the Appalachians are being ruined by motorcycles and four-wheel drives. Many parks require reservations in advance. Rather than government expansion it looks like an opportunity for private enterprise to assist. Look at Big Sky, a 25 million dollar development on the tax rolls, employing many people, and bringing outside money to Montana. These customers won't end up on the local welfare rolls.

Our highway system uses much of the best land in America. Highway 90 that goes within a mile of here takes the best crop producing land in Montana out of production. A new farm to market highway at home is doing the same thing. I asked why they needed so much land--it is required by the federal government.

Land use planning in Montana evidently has not resisted urban sprawl from taking the best producing land from crop production. Look at the Bitterroot Valley, the Gallatin Valley, and the bottom land above and below Billings.

One of the most important land problems today is breaking large blocks of sod for farming and exposing it to wind erosion. None of our laws concerning Land Use Planning prohibit this practice. When the top soil is gone, it will never be replaced. I believe some type of action should be taken to prohibit this practice.

Many of these areas will probably end up in a government program and

receive payments for deferring production or putting it back in grass.

Montana's controversial "Land Economic Development Act" passed by the last legislature is a move in the right direction. It provides a tax break for proper land use over a period of years and penalties for mis-use of the land or changing its use. However, many have expressed the difficulty of implementing and administering the Act. I understand the legislative council will review the Act. In the future, mis-use and abuse of the land resource should be recognized. Block farming and barren surfaces exposed to wind erosion through the winter could have a tax penalty applied.

In the last 20 years stocking rates have been increased because of the increase in livestock numbers. This is particularly true of the cattle population. This with low prices could have been avoided by producers insisting that their surplus females be slaughtered rather than allowing them to become part of the breeding herd.

The Federal Government is in the land act all of the time taking land from private ownership and the Forest Service and putting it in a wilderness area, parks, wild areas, primitive areas, military installations, etc. (monuments, Wildlife refuge).

The Wild and Scenic River Bill by taking a stretch out of the Missouri River will affect my neighbors. They have a grazing association on the river. They feel most of the land will be absorbed into the Wild River area and ruin their unit. They plan to put the unit up for sale because of the potential acquisition of their land and the insecurity of waiting.

A private land owner is in the same predicament. He does not know (1) how many acres the federal government will acquire; (2) what the price will be; (3) when the settlement will take place; and (4) what his future holds in store.

Many sportsmen and river rats have been in favor of the Wild River Bill for the Missouri. They have been able to use the area in the past as they desired for boating, camping, fishing and hunting. In the future they will probably be restricted similar to a national park entrance.

The Military took land for missile sites in our area: (1) Cut off sod on about 50 to 60 feet width for a cable line; (2) left rocks on the surface; (3) 8 to 10 feet would have served their purpose; and (4) gravel pits were

left in a mess. We tried to make them clean up the area but the buck was passed from one sub-contractor to the next.

Environmentalists have been responsible for stopping the harvesting of a timber area in our mountains. This probably involved clear-cutting. The timber should have been harvested 25 to 50 years ago. It is too dense for game and a real fire hazard besides providing evaporation rather than ground penetration of water. Several miles over the mountain is the first clear cut I ever saw and what a horrible scene, I thought. Today the trees are 6 to 10 feet high, there has been grazing for game, ground penetration of moisture plus an excellent potential timber stand.

Environmental organizations are strong nationally, except in Alaska, I have heard. They have big budgets and a strong lobby. They make arrangements for land purchase with the plan to sell it to the state and federal governments for recreational purposes.

To my knowledge no fee in lieu of taxes is paid to state and local governments from federal lands. I understand that produce such as timber from federal lands pay 25% of the income to the county. Many of these lands, if privately owned, would pay taxes to local governments.

The Montana Fish & Game Department is beginning to look like a landed empire. Looks like they are the big land buyer in recent years and there is more to come. They recently purchased over 50,000 acres south of Butte and Anaconda for wildlife and recreation. Much of the adjoining area borders the Forest Service and a Primitive area. Sportsmen and recreationists make such a project politically expedient. Some Montana residents wonder if this is to be a private hunting ground for the adjoining metropolitan areas. If so, when will the other areas in the state get a hunting reserve?

Recently the Fish & Game purchased several thousand acres near Choteau. I heard but never confirmed a purchase near the Crazy Mountains. There is talk of buying an island in Flathead Lake. In recent years a large ranch out of Wolf Creek was purchased. We have a Fish & Game unit that joins our ranch. Usually the improvements are removed and a fee is paid to the county in lieu of taxes. Who makes up the difference? You know.

Our experience is that hunters flock to these areas. Several years ago vehicles were prohibited from entering the area until 10 a.m. Where did they

go? On private land. More elk are killed on the adjoining private and Forest Service land.

I hear the hunters beefing about higher license fees and fewer game, except coyotes and foxes. One area reported more coyotes than deer.

For the first time in the history of the ranch we have very few ground-hogs and jack rabbits. I have seen two mule deer fawn and two whitetail fawn this season. The fox has taken over the bird hunting and now it looks like upland birds will be eliminated by the fox.

Hunters stop and want to know where the deer, elk, and birds are. Many G.I.'s think that a license entitles them to travel over any property and a deer is out on the range waiting for them. In our area many landowners have closed their land for several reasons: (1) there is very little game; (2) fire hazard; (3) destruction of forage. We permit hunting, but no vehicles. Very few will walk.

What about inflation and devaluation? A rancher friend of mine who lives in British Columbia was offered \$1,000 per acre for his 10,000 deeded acre ranch. The buyer was from Italy. Most of his neighbors have sold.

Priorities for land must include food as the most important. Food production in the last few years has become very important to help maintain our balance of payments. But this country cannot be prosperous with a cheap food policy. Producers must have a profit or food production will decline.

Recently the USDA announced a policy to protect lands from going to non-agricultural uses. The guidelines established are: (1) All federal agencies acquire land only when, (a) there are no suitable alternative sites, and (b) overriding public need; (2) Environmental impact statements and review procedures; (3) Inventories and evaluations of the nation's farms, range and forest lands; and (4) Cooperative efforts with states, local governments and land grant institutions to assure food, fiber, and wood production.

We must have management of our natural resources. Complimentary benefits will accrue to supplement range forage by the use of more fertilizer, irrigation, and conservation practices.

Many areas in Montana are heavily infested with weeds. This is particularly true of leafy spurge. I have faith that the chemists and plant

scientists can lick the weeds if the EPA will give them a chance.

The most important and limiting factor in our area is water. I believe the U.S. Forest Service has done a good job in the past. They have well trained personnel and research to make improvements. However, several federal agencies in control of our watersheds may reduce our water supply. Fifty years experience with building big dams has proven that more benefits would accrue from small dams. This would mean more fishing, more local boating, irrigation and better maintaining the underground water table.

If everybody would fight big government, our Congress would put more money into land resources rather than new bureaus.

On this Bicentennial year we should not forget that 210 years ago King George imposed a tax!

Frank Sparks

I would like to start my presentation by asking everyone to ask questions as we go. I do have 42 slides to show, however, I will go through them fairly fast so as to not bore you.

These slides are of our particular Range Management Program. I think the best thing to do is get started. On this trip, we will be taking you down to the Seven Up Ranch in Southeastern Montana, the Short Grass Country. I will be giving a rancher's point of view of how we manage that particular operation and I will point out some of the areas where we need research in order to meet goals most of us have set. We have some current research techniques there that we are using in our operation that probably are not new to a lot of you, but maybe there is a twist in the way they are applied. I hope that these may be beneficial to you.

I would say that I am in the cattle business because they can utilize grass as well in the area as anything and I am a grazer. I am in the cattle business because I enjoy it, certainly it isn't for profit as you all know. I consider the rangeland that I run on should be in as good condition as I possibly know how to leave it when I leave that rangeland and I feel an obligation to do that. I also feel that every thinking man, woman, and child on the face of this earth is no less obligated because when we consider the fact that we owe our entire existence to the six inches of topsoil that covers

this earth and the fact that it rains, I think that we all should live up to the before mentioned obligation.

Let us take a look at the native range as we saw it about 12 years ago this month. At this time when we bought this particular small ranch of which we have since put three of them together to make a still small ranch, these ranches had been overrun with horses that had been on this range during the dirty thirties. The man that we bought it from had run quite a sizable amount of workhorses to do a small amount of farming. We can see with the trained eye of the rangeman to identify the prickly pear, fringed sagewort, big sage, club moss, and the few grass stems protruding above the club moss and fringe sage, that are taking the majority of the available moisture, is blue grama.

I think we all agree that there has got to be a method to improve this and we'll take a look at one of the first range improvement machines that we built and tried out on the range. We tried about eight before we settled on this one that we built ourselves. We put the interseeder on it and here we are doing what we call contour furrowing.

There was a group of North Dakota cattlemen that came over and looked at the operation. One rather large individual got out of a brand new cadillac and he stretched, after about the third stop on a tour, and said, "You know something fellows, I kinda like this cowboy farming." I guess maybe that is cowboy farming for a lack of a better name. We could probably call it that but it does look very radical.

This is a closeup of the land after furrowing and you will notice that we have a lot of different types of soil but for the most part it is a dense clay. Now, let us take a look at this same site one grazing season later. I think you will have to admit that if we cultivate this ground properly that it can utilize the moisture that falls instead of having it run off and that we can further production quite a lot. You will notice some annuals, this happens to be mustard and if you will look in the very bottom of the furrow you'll see new alfalfa seeding there.

It is not a Utopia, it is not designed nor is it intended to be utilized in all types of rangeland. Now, there are some "don't's" that go with cowboy farming. Don't do a drainage where you depend on runoff for stockwater.

Don't furrow an area where you plan to hay. Don't cross where you travel with the family car. Don't look back if you have a weak heart and then when you look at this one year later, don't put the hired man on the machine and go to town with the truck to put on more livestock.

We can take a look in a more dense clay soil and see what is done to the big sagebrush and fringed sage. I would point out here that fringed sage in drier years will come in almost to the point that it will frighten you, but as soon as the western wheatgrass which is the predominant grass in our area, starts to respond, it will stop the fringed sage so it is no longer a problem. You can see on the edge of the furrow that the western wheatgrass rhizomes have already started growing and in the bottom you will notice some of the interseeding we have done. We have tried various grasses, several varieties of alfalfa and sanfoin. On native rangeland we feel that the only seed that you might want to put on that you will get your money back from is about two pounds of alfalfa.

Here we are seeing on our left, four years of growth on a treated area. You will note in the foreground several plants of winterfat which is a very desirable plant and grows well in our area. For some reason this seems to cultivate winterfat but even more so nuttalls saltbush. To the right you see an area we just went through with the contour furrower for a demonstration at a Society for Range Management Section Field Tour. We have been very fortunate in the work that we have done there in that the Agriculture Research Service has been down and put in fertilizer test plots, some included contour furrows. They made an extensive evaluation of that area with mixed results. We have these available, but due to lack of time, I will not discuss the plots in detail. I will show this slide and want to give Dr. J. Ross Wight credit for this slide. He is from the Soil and Water Research Center in Sidney, Montana, who is very instrumental in this evaluation. You will notice that they started evaluation in 1971. You have the graph that shows the untreated range. We have 300 pounds of available nitrogen and at that time Dr. Wight said the cost was about \$35 per acre. You see the production from the furrows broken down with alfalfa seperately showing the advantage of contour furrowing with about two pounds of alfalfa seed per acre which would run about \$7.50 per acre. They expect that another 100 pounds of fertilizer would have to be applied every three

years to maintain this production. We don't feel that we will have to go back through the furrows for at least twenty years and this points out one other thing. I read where one scientist stated that throughout the world we are losing about one inch of topsoil every 100 years. With contour furrowing, we feel after twelve years that we have accumulated some topsoil and very possibly have reversed this trend of topsoil loss and maybe building topsoil at the rate of two inches every 100 years.

We have other research projects going on at the ranch and we will see familiar faces. This is an experimental plot of basin wildrye. I feel a very strong need for other plants not particularly grasses when we come to grips inevitably, I feel, with the reseeding of tremendous amounts of rangeland that is now being torn up for farming. I think that we are going to need a lot of other range plants not only grass because cattle and wildlife don't eat only grass. We have other research projects with different alfalfas. I think this is something that we need more emphasis on. At Calgary, Alberta, at a Society for Range Management Section Tour and Meeting, I pointed out the great need for desirable and undesirable research. Of course, I was laughed at because I feel we need to know what not to do just as much as we need to know what to do. We continued research on furrows that have been in existence for twelve years. This photograph tells you that we are discing down some tops. The production on this has been rather amazing to us at least and we want to know what the potential is if we disc the top down what will happen? If we start to fill the bottom in, will it increase, or will it decrease? We went in with the same machine and broke the centers out turned partially back in, and turned plumb back in. These are two experiments that we are working on now in this area. This work was done in the spring. After ten years, we fertilized an area and we cannot see any difference in production after two years. We have reduced big sagebrush but that that is left seems to be much healthier than that on control areas. We have several hundred acres of range like this and if you will notice the alfalfa in the foreground this happens to be on a sandier site. You can see the western wheatgrass is coming in real well.

Now there are some fringe benefits, we feel quite surely, for a lot of other people besides the rancher. For one, the taxpayer that has to help finance our roads and other public utilities. I think that by controlling

flood waters we are certainly saving them quite a few dollars as well as saving the water right where it falls.

At the World Food Conference this year that was held in the United States, they told us that by the year 2000 we are going to have to produce two steaks where we are presently producing one. We feel that this is one area that we might consider contour furrowing as a new tool.

Another thing I would like to mention that has already been mentioned is range condition. This picture was taken in Nevada and I don't know if the condition of this range is bad, good or excellent. Maybe this is climax vegetation, and I feel that this is an area that we should put a little more research in and then educate the general public as to what is good, bad, or excellent range.

Let's take a look at Montana Rangeland. This is crested wheatgrass on Land Utilization Act Land which is Bureau of Land Management controlled now. Any rancher knows the chaotic condition that was created by the Land Utilization Act which is still in existence today and leaves quite a sour taste in most every ranchers' mouth. The crested wheatgrass plants you see here are big wolf plants. These plants, that exist after a drought era, utilize most of the moisture around them. Then on drier years the small seedings cannot begin to become established. The white you see is predominately fringed sagewart which is not particularly desirable unless you are running sheep.

This area, that is farmed, is a hard-pan spot to start with, and if we let it alone it will continue to produce very little as was pointed out earlier this morning on the program and at least once since then. We can seed it back to grass and the grass will become established but it isn't very long until the grass goes away and other undesirable plants fill in.

In this particular case this Bureau of Land Management controlled land is unfenced in a pasture where I turned the camera around and show this slide of native range. It has never been disturbed, which one is overgrazed and what is the condition of this land? I think that there is a lot to be done in our program of Range Management and if we go to fencing the cost is prohibitive. I think that this particular range from what the range scientists have told me, would fall in the excellent category, but what about the

other one? Less than 100 yards away. We feel that the research we have done with this introduced range grass cultivator has some significance. We went to work and this is when, as one panel member mentioned, the Bureau of Land Management had a little "free reign". We got a permit to contour furrow 320 acres of Land Utilization land to crested wheatgrass. We started at the hilltop (top of drainage), leaving hilltops open, we drop every five feet to run a new grade line. The further off the grade line, we broke the furrow more often. We left waterways and roads open.

Let's see what else can be done with that. Now there has been some discussion as to whether water or plant fertility contributes the most to the maximum plant production in this area and I would like to point out and I think most everyone can see the area in the center has access to the water on each side in the furrow only. The areas on either side of the picture have access to the furrow water as well as the plant nutrition that is released from the decomposed material that is trapped under the overturned soil. If that is what it is, I don't think we can afford to mess around with undesirable plants invading this type of range site.

Here we can see the area in the foreground which has had nothing done to it (undisturbed) and the background has been contour furrowed. This is after five years.

Let's take a closer look. Here is the Little Bluestem plants coming in. We have broken up the ecosystem that has been created by crested wheatgrass. You can see the Bluestem starting on the edge of the furrow and going down to the bottom from seed and then in the foreground we have a Plains Muhly Plant that we have noticed a lot of grazing utilization from wildlife. Then as we go further, we see the green shoots in there that are western wheatgrass. This is going back in five years to the native species. Question from audience: Have you grazed in these five years? Answer: We have never deferred this site. Only in a few pastures have we deferred use.

I show this picture to point out the winterfat plant and the nutalls saltbush plant. Contour furrowing seems to cultivate the desirable native species instead of eliminating any of them. We still have club moss, big sage and prickly pear.

Now I will show you the fire aspect. The bolt of lightening to the right

created a prairie fire. You see some familiar faces here. Phil Van Cleave, Dr. Walter Houston and a neighbor are studying an area where a lightning caused fire burned. The light colored plants in the foreground are winterfat. The dark area on the left side is an unburned area, even though they studied this for some time, there was not a winterfat plant in the unburned area. However, numerous seedlings were found in the burned area.

This area was not deferred. The picture was taken two years after the fire, there was about five sections burned. I took this picture on the fire line on the unburned side. You will note fringed sage and big sage. The specialists estimated 75% cover by sage utilizing 75% of the available moisture. They figured the burn killed around 80% of the sage.

Turning the camera to the burned area, we note slender wheatgrass, green needle and winterfat.

Then we go to native range. Everyone can identify this as the Great American Desert and there is quite a few acres throughout the midwest. This area has had non-use for twenty years. Certainly it must be close to climax condition. You can see some of the better area.

Looking closer at this hard pan spot on the left you see a flower, about the only aesthetic value that an "Environmentalist" might see here. We are told that the grass here is thickspike wheatgrass and some inland saltgrass. The plant on the right, as we understand it from the professors of range science, is named bastard toadflax. Now I sort of suspect that it was named by some "environmentalist" who knew an irate cowboy.

As we go up the hill to see this area with twenty years of non-use, you note the dominant species as fringe sage and red threeawn. I don't think we can afford to take the livestock off the range.

Here we have a three in one shot. The fence line comparison on the left we see the rear end of one cow which most environmentalists would immediately assume that is responsible for the overgrazed condition. But I don't think I will fool anyone here when we look in the center and see all the horse manure there. I don't believe that we can feed the hungry millions of the world if we are going to replace domestic livestock on the range, be it private or public, with horses and burros.

On the right you note what we feel is well managed range, but it is marred by those recreational vehicle tracks.

This brings me up to what we call RUD. We are all familiar with AUM's but how many are familiar with RUD's. A description of that is a Recreationalists Unit of Destruction and when one drives 2 2/3 miles in a range in that condition, enough grass has been destroyed to keep a 1000 pound cow and calf in pasture for one month. In terms a recreationalist can understand, it is enough forage for a month for 1.4 elk, 7 whitetail deer for 30 days, 5 mule deer, 5 domestic sheep that produce about 50 pounds of wool a year, 7 antelope or there about, 3/4 of a horse and 125 prairie dogs. Now that ought to get to 'em! But you know what? That doesn't cost them a dime on public range. The only cost is to the starving millions throughout the world.

I would remind you that a good environment for livestock is a good environment for man and wildlife. One compliments the other. I think it is also time to emphasize the fact that domestic livestock are the most efficient converters of grass to protein that we know of at this time.

I think we ought to utilize this rangeland with them.

Now if we want to get into the area it seems to me the most people in the Nation understand, it is increased wildlife production. I don't know if anyone can identify the fawn deer laying in the contour furrow, probably not many.

As we walk up closer, we see it. Straight down on it. We have cultivated not only the range vegetation but we saw a dramatic increase in birds, mule deer and antelope. Now I might get some static from the personnel from Fish and Game here, as I understand they say antelope won't graze in contour furrows. Since time didn't allow, I don't have slides, but if anyone should contest that, I would like for them to come down and we would be glad to show it to them.

When we get the small game available, in comes the fox that Mr. Hughes pointed out. No doubt because of good range management.

We can indeed have clean air and sediment free water and we think contour furrowing contributes quite well to that end.

I think for the sportsman that we have a real paradise, plus a haven

for the camera fan.

Yes indeed, we have the manpower, the knowledge and equipment to make and keep Montana's Rangelands the showcase of the world. I hope for the sake of all mankind and future generations we meet our obligations and achieve this goal.

Thank you very much.

Dave Smith (Panel Moderator). I do know one thing about Frank. He has often times said, "I'm not much of a guy, I've only got an eighth grade education." I would say to Frank, I wish I had that good of an eighth grade education. I will field two questions.

Question: Why have you gone to the agronomic development of your range rather than the ecological development?

Answer: You will do quite a few things before you starve to death. That probably answers it. I would refer to Bob Ross who has seen the work, so he probably can answer the question better than I. Ross: I'd say that he is using agronomic practices as a tool to achieve ecologic means and if you see it on the ground, he is getting an ecological response more so than it seems. Because of the response you noticed in the native vegetation.

Smith: We will take Dr. Dyksterhuis's question and then you may storm the panelists.

Dyksterhuis: This is not a question. We use many agronomic practices to hasten natural succession. I mean when you take an old field that is seeded to a mixture of the local strains of native grasses, this is using agronomic know-how for ecologic purposes. From a lot of research in Wyoming, the response from furrowing is mostly through an increase in rhizominous species. Frank mentioned western wheatgrass several times. Soils become compacted and he was dealing with clay soil where the western wheatgrass came back. Contour furrowing hasn't done much in other kinds of places but clay's with some western wheatgrass, it has. His replacement of crested wheatgrass with the natives is going toward range management. His soils, most of them didn't look suitable for tame pasture and I gathered that fertilization wasn't paying off. He was hastening succession, which is a standard practice in Range Improvement.

Roy Cornell, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is a rancher from Beaverhead County. He graduated from Montana State University in 1962 taking his B.S. degree in Range Management.

He has managed the Craig Cornell Company, a cow-calf-yearling operation near Dillon since that time. Roy is the fourth generation of his family to operate the rancher currently owned by him and his father, Roscoe.

He has been a member of the Society for Range Management for more than 15 years and is a firm believer in sound range management practices. He presented a paper at the 1974 Annual SRM Convention in Tucson, Arizona describing the range improvement program developed for the ranch in Southwestern Montana.

He was recently elected to the Board of Supervisors of the Beaverhead Soil and Water Conservation District.

Curt Hughes, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is a rancher at Stanford, Montana. He has a degree in animal science from Montana State University.

Mr. Hughes is a former secretary of the Montana Wool Growers Association and a former section president for the Society for Range Management.

Frank Sparks, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is a rancher at Plevna, Montana, born and raised in the same community. He runs a registered horned hereford operation. In 1961 he was selected by the Ford Foundation for the Beef Efficiency Award. A past president of the Northern Great Plains Section of the SRM, and Montana Beef Performance Association, he is also a member of the American Hereford Association. Frank presented a paper at the 1974 Annual SRM Convention in Tucson, Arizona describing range management practices in Southeastern Montana.

BANQUET MASTER OF CEREMONIES

George Lackman

I am very pleased to be a part of the nation's first Governor's Conference on Rangeland. I am told that there are some 225 people in the room tonight. We are very honored also in that we have five past presidents of the Society for Range Management with us tonight. I would like to introduce them, and they are:

Dr. E. J. Dyksterhuis, Bryan, Texas

Peter V. Jackson, III, Harrison, Montana

Dan Fulton, formerly of Ismay, Montana now
at Sun City, California

Mr. Melvin Morris, Missoula, Montana

and also our distinguished guest speaker tonight:

Dr. Martin Gonzalez, Chihuahua, Mexico.

I would also like to ask some of the visiting dignitaries to stand up. (Persons from Wyoming, North Dakota, South Dakota, and Nebraska stood and were introduced).

I would now like to call on the Reverend Franklin R. Elliott of the Mayflower Congregational Church to present the Invocation.

George Lackman is Commissioner of the Montana Department of Agriculture.

READINGS BEFORE THE INVOCATION

Rev. Franklin R. Elliott
Mayflower Congregational Church
Billings, Montana

And God said,
"Let the waters under heaven
be gathered together into one place,
and let the dry land appear."
And it was so . . .
The earth brought forth vegetation,
plants yielding seed according to their own kinds,
and trees bearing fruit in which is their seed
each according to its kind.
And God saw that it was good.

-Genesis 1: 9,12

And Lot, who went with Abram, also had
flocks and herds and tents, so that the
land could not support both of them
dwelling together.

-Genesis 13: 5-6

The Lord said to Moses on Mount Sinai,
"Say to the people of Israel . . .
The land shall keep a sabbath to the Lord . . .
The land shall not be sold in perpetuity,
For the land is mine."

-Leviticus 25: 1-2, 23

A generation goes, and a generation comes,
but the earth remains forever.

-Ecclesiastes 1: 4

The earth is the Lord's and the fulness thereof,
The world and those who dwell therein.

-Psalm 24: 1

INTERNATIONAL RANGELANDS POLICIES

By Dr. Martin H. Gonzalez

I INTRODUCTION

It is a great honor to be here tonight, and to have the privilege of speaking to you, thanks to the invitation of the Old West Regional Range Program.

I always enjoy the opportunity to talk about range management, although perhaps to many of the experienced ranchers and professionals present here, my modest comments will not add anything new. However, it is through this exchange of ideas and comments, the communication between the range producer and the professionals, that all of us learn a little.

Until recently I was aware in more detail of the Old West Regional Range Program. I think it is very satisfactory to "feel" the interest of different sectors about this program; the interest of the Government, of the ranchers, of the technical personnel involved. And this is particularly satisfactory, and commendable, in the era where food production must occupy top priority....in an era when, finally, rangelands are being recognized as one of the most important areas for the production of the goods demanded by an evergrowing population.

Regardless of my country of origin, I consider myself a "rangelands' citizen"and feel a great deal of pride of the programs devoted to foster the understanding and the sound management of our natural resources; and, in this occasion, I want to express my sincere congratulations to the originators and to all the persons involved in the Old West Regional Commission Program. This is an example to be followed.

II RANGE RESOURCES OF THE WORLD - -

If we are going to talk or to program International Range Policies, we have to take into account that these lands have always been considered, unfortunately, of secondary importance, and that we must make everybody understand that it cannot be that way.

What do rangeland resources mean to the world?...

Among other things:

1. A great extension in over 60 countries....that makes about 40% of the land surface of our planet...
2. The better and cheapest source of forage for billions of domestic and wild animals...

3. The producers of the raw materials for numerous industries...
4. A source of income for millions of people all over the world...

So we must give rangelands the attention they deserve; and, for this, we must be able to create and develop the programs and the man-power necessary to be at top level...and to fulfill our responsibilities with a demanding society. Rangelands cannot be considered the underdog of the resources.

A. THE PRESENT STATUS OF RANGELAND IN THE WORLD

In analyzing the present status of the world's rangeland, we have to consider what are the CAUSES for the condition they are in...; what are the PROBLEMS involved in its management...; which are the EFFECTS resulting from that...; and what are the NEEDS to make these lands reach their optimum productivity in a permanent basis.

1. Causes

We know that, at the present time, rangelands are producing, in an average, between 50 and 60 percent of its potential. The causes originating this low productivity are, among other, an erratic vision of the actual productive possibilities of this resource. Numerous ill oriented programs - both government and private - have had adverse effects on the rangelands vegetative cover and soil in many countries.

Overgrazing, uncontrolled fires, farming of grasslands where climatic conditions are unfavorable for agriculture...etc.

To mention two examples:

a) A range inventory conducted in 9 Northern Mexico States in 1963 to 1965, covering an area of 98 million ha. (± 240 million ac.) indicated that, 82% of the properties (including private and ejido - communal - landholdings) were overgrazed; 87% presented light or advanced erosion; 57% had troubles with undesirable shrubs; 26% reported problems with toxic plants.

All these things together, were responsible for the poor condition of the ranges: around 60% of the ranches were below good condition!

b) Here in Montana, according to SCS, about 30 million acres are in FAIR or POOR condition...and this area represents about 30% of the area of the state of Montana!....and the causes are almost the same.

2. Problems

What about the problems limiting the optimum utilization of rangelands?

Perhaps the number one problem is that there is not a conscience of the limits of utilization, neither of the attention and care that the resource demands.

We have used the land for inadequate practices; we have reduced the acquifers; and beneficial animal species are being exterminated. With plowing of the grass cover, we loose the best soil and fertility.

And...one more thing...we are not relating territorial extension with population increment! This is clearly illustrated with the procedures of the agrarian reforms in some countries.

Land legislation has been made usually behind a desk in a big capital city...by persons who do not know much about rural areas and their problems....and who do not seek the advise of professional or producers sectors.

Land reform policies have been oriented mainly to solve social problems. And this would be all right, provided the production issue is taken into account. But generally, and it is sad to recognize it, land reform has been a political banner (flag) and is, at the present time, the number ONE problem in many countries of Latin America.

In carrying on these reforms, besides,....we have failed to supply adequate technical assistance, and proper financing programs. It is not enough to give away land to peasants, (many times illiterate peasants), if the other facilities are not provided...!

3. Effects

One of the most dramatic effects of the present status of the world's ranges is that, as mentioned before, they are much below their productive capacity; the ecological ~~unbalance~~ may be irreversible....and then we will have minimum incomes, unemployment and...a lack of food products.

4. Needs

Many things can be said about the needs of rangelands being they in good or in poor condition; the areas of education and training...; re-search...; and communications...! are to be strengthened.

In the international field...we must recognize that rangelands do not have political boundaries; however, it would be utopic to think in an over-all solution in spite of the similarities of ecological conditions.

It has been said that if all information available through research were transferred to the field....a many times increase in forage and live-stock YIELDS would be obtained....

Let us be more conservative, and think on the possibility of applying only 1/3 of that information that is available now!

-- We know that much of research has been of a strictly academic nature..and that most of this information will NEVER be used by the rancher---

What can we expect?

Allow me to mention, again, examples from Montana and Mexico:

a) According to the SCS figures, if the 30 million acres now in poor condition in Montana, were improved (to good), the resulting increase on the productivity value of the land would be about \$70 million dollars!

b) In northern Mexico, estimates of the National Rural Bank, at a short term (5-6 years) and at a long term (10-12 years) basis, indicate the potential to multiply forage and cattle production on the following manner:

1. From an original carrying capacity (average 96 million ha.) of 20.6 ha/a.u. to 10.3 in 5-6 years, to 6.6 ha/a.u. in 10-12 years.

This improvement would be achieved considering only 3 range management practices:

- a.) adequate intensities and systems of grazing
- b.) soil and water conservation
- c.) brush control

2. From a present average of 56% calf crop (all types of land tenure considered) to 68% in 5-6 years, to 76% in 10-12 years and....

From weaning weights averaging now 135 kg., to 150 kg. in 5-6 years, and 180 kg. in 10-12 years.

This obtained through:

- a) adequate systems and intensities of grazing
- b) breeding season

- c) adequate nutrition (mainly winter supplementation)
- d) creep feeding (sometimes)

These things considered, make us estimate increases in beef production of 93% in a period of 5 to 6 years....and of 234% in 10 to 12 years!!....and everything based on the improvement and the proper management of rangelands!!

B. DEVELOPING INTERNATIONAL POLICIES

In many countries these similarities of ecological conditions may be in geographic location, climate, topography, soils, vegetation, altitude,.... and even in management and conservation practices, in livestock breeds and type of operation.

However, we must consider the differences in social, cultural, political and traditional customs....Any effort, at the international level, would be meaningless if these aspects are not studied first.

Many times, international programs have failed because we have failed to understand local conditions. We can not transfer technology from one country to another (particularly from one advanced or developed country, to an underdeveloped one) without making the necessary adjustments in order for that technology to be useful!

These programs are expensive for the governments and generally are long term in nature...and we must be certain that a program is going to pay..... and that the participant countries get the most out of it.

The Society for Range Management has considered, for some time, the formation of an International Rangelands Commission, in order to establish some of the much needed cooperation in the solution of the range and livestock industry problems of the world.

It was yesterday, here in Billings, that the Commission had its first formal meeting, with the participation of members from Canada, the United States and Mexico. These three North American Countries, the charter members of the IRC have many things in common but also many differences, and will be the first serious effort toward the promulgation of International Rangelands Policies.

The technical information and the ranchers experience exist, and will be a matter of identifying areas of range management of common interest and

to promulgate information about the problems, needs, and opportunities associated with the use of our rangelands. We look forward to that.

Ladies and gentlemen: our land is a finite resource....is the only land we have.

We cannot have the excuse of expanding our business by buying additional land, because the demographic pressures are tremendous. So, as we are aware, we need to intensify our management and grow vertically....if we want to have more pounds of desirable grasses and more pounds of animal products per acre....

In dealing with these resources one has to remember that we must work WITH, and not AGAINST nature....

It pays!

Dr. Martin H. Gonzalez, Chihuahua, Mexico, who presented this speech at the Governor's Conference on Montana Rangeland, is presently the head of the Department of Range Management at the Instituto Nacional de Investigaciones Pecuarías of the Ministry of Agriculture and Livestock and director and founder of INIP's Rancho Experimental "La Campana," the first experimental range in Mexico. Since its foundation in 1957, "La Campana" has acquired an international reputation in research and education. Many of Mexico's outstanding range scientists and technicians received their training there.

Born in Mexico, Martin Gonzalez received a baccalaureate degree in agronomy, has a Masters of Science degree from Texas A & M University and a doctorate from the Utah State University.

A continuous member of the Society for Range Management since 1956, Dr. Gonzalez served as president of the Society in 1973. He also served on the Board of Directors, the editorial board of the Journal of Range Management and as the chairman of numerous committees. Dr. Gonzalez was the recipient of the Society's Outstanding Achievement and Service Award.

For his outstanding international leadership in the science of range management and his many contributions to agricultural programs in Mexico, the Society for Range Management presented to Martin H. Gonzalez the fourth Frederic G. Renner Award in 1975.

MORNING PROGRAM

Panel Discussion

Subject: Montana Rangeland Resource Program

Panel Moderator: O. M. Ueland, Department of Natural Resources and Conservation, Helena

Panel Members: Parham T. Hacker, Department of Natural Resources and Conservation, Helena
Dick Kurth, Fort Benton
Willie Milliron, Glendive
Dennis Nathe, Redstone

Legal Implications of Range Management

Perry J. Moore, Attorney and Rancher
Two Dot, Montana

Break Courtesy of Midland National Bank, Billings

Discussion of Future Plans of Montana Rangeland

Charles Rust, Program Coordinator
Cooperative Extension Service

Melvin S. Morris served as the morning Program Chairman for the second day of the Conference. He is a native of Colorado and graduated from Colorado State University with a degree in range management in 1930. He worked at the University prior to coming to the University of Montana in 1936. He has been with the University Range Department until he retired in 1972. He is presently professor emeritus of range management at Missoula. Mr. Morris is a past president of the Society for Range Management and is active in the International Mountain Section of SRM. In 1963 he was distinguished by being elected a Fellow of the Association for Advancement of Science.

PANEL DISCUSSION

MONTANA RANGELAND RESOURCE PROGRAM

O. M. Ueland, Panel Moderator

O. M. Ueland was moderator for this panel on the activities of the Montana Rangeland Resource Program. He is Administrator of the Conservation Districts Division of the Department of Natural Resources and Conservation. A rancher near Butte, Montana, Mr. Ueland is a graduate of the University of Montana.

Mr. Ueland requested Parham Hacker to come forward and outline the existing Montana Rangeland Resource Program, prior to the panel members giving their presentations.

PANEL DISCUSSION
MONTANA RANGELAND RESOURCE PROGRAM
Parham T. Hacker

I might give you just a little background on the Montana Rangeland Resource Program. Since rangeland is the state's principal renewable resource, the emphasis on this program is statewide.

In 1969, the supervisors in Hill County felt the rangeland in their county was in bad shape. After looking around the state, they found that a lot of the range in the state was also in rather poor condition. Thinking that something should be done, they suggested that the State Soil Conservation Committee study the situation. In June of 1969 at a regular meeting of the State Soil Conservation Committee it was decided that a state rangeland improvement program be submitted to the Governor for possible legislative action. Mr. Pete Jackson, who is here with us today, was selected to appoint a committee and assemble a draft of the proposed rangeland program.

The proposed program was written into the Montana Rangeland Resource Program which we often hear of as "Jackson's Yellow Rangeland Book." The plan was approved by the Governor and subsequently funded by the legislature on an administrative level.

This was essentially the beginning of the Rangeland Resource Program, and the Hill County Conservation District supervisors are to be commended for instituting this important project.

When the first plan was written, certain goals were established, and projections were made for continued improvement in range resources. It is gratifying to note that despite market fluctuations, increased cattle numbers and pressures from high grain prices, the original goals are being met very well. We are somewhat concerned with the number of acres being plowed up now and hope that we will not be faced with a big range reseed-ing program in a few years. The fact that the goals and objectives are being met would indicate that this valuable segment of the state's agriculture is very stable and being well-maintained.

The legislature assigned the program to the Department of Natural Resources and Conservation. Working through the conservation district, a

county range leader was appointed in each county. The range leader, in turn, selected a committee to help him acquaint the public with the importance of rangelands to the state and local economy. The committee is not necessarily composed of agricultural members, but includes bankers, merchants, teachers, and others who were not necessarily aware of the importance and value of rangeland. The program is not essentially a physical kind of program. Generally speaking, there are no new practices that the SCS, extension and other agencies are not already assisting with. The program is basically concerned with coordinating the activities of all agencies involved in rangeland problems and keeping the public aware of the value of our rangeland resources and improving and preserving them for future use.

In closing, I would say that we are presently in the process of updating the information in the 1973 edition of the Montana Rangeland Resource Program. This should be out later this year. New state and federal legislation and programs will be included as they affect the program. Continued support of the program will be requested of the upcoming legislature to insure the future of this important part of the state resource program.

Dick Kurth

In January of 1972, after much preliminary work was done by our district conservationist, a meeting was called of all the ranchers in our conservation district that were interested in rangeland improvement. At this meeting, we discussed ways in which we could improve our rangeland and our community by using the guidelines of the Montana Rangeland Resource Program.

It was decided to form a Rangeland Improvement Council which would act as an arm of the District Conservation Board. Being from Choteau County and in the heart of some of Montana's extensive dryland farming, we felt that we needed more representation for the grass rancher.

To start our Rangeland Improvement Council, we divided our district into three geographical areas. Each area is represented by three council members. A tenth ex-officio member represents the District Conservation Board. The original nine members drew straws to see who would serve one, two and three year terms. Each year at the Annual Conservation District Meeting, three board members are elected for three year terms.

With this broad district representation, we started our program. We prepared by-laws for our council and elected officers. We had speakers of interest, in many different parts of the resource program and good participation by ranchers of the district and even ranchers of other areas.

We have an annual County Range Tour and supper and try to get to different areas each year. We try to get the business people of the community to participate and try to point out that improved rangelands are an asset to the entire community.

Because of the broad coverage of our district by council members from each part of our district, we organized small neighborhood meetings to promote interest in improvement practices. Also with the assistance of conservation technicians, we held neighborhood cost-return meetings that were well attended by the ranchers.

We have had meetings with the farmers of our area on two major problems, saline seep and grasshopper control.

The first two years of our program were very successful and well attended. I wish I could report that this is true today.

In my opinion, the interest and ability of the livestock people to participate in such a program is directly correlated with their economy and the economy of the grass man is presently very poor.

Where do we go from here? It is hard to promote conservation practices to people who get negative financial returns no matter how they operate. Also, it is difficult to sell a program by telling people they will lose less by using the correct practices.

The grassland and livestock people of this great State of Montana are our basic industry and they need help. Without some improvement in the economy of the grasslands, our entire program is in jeopardy.

Willie Milliron

I would like to tell you about some of the youth activities that are existing in the state. A statewide Range Camp is held near Glendive, Montana. This camp is for youth interested in range management.

The following is a slide tape series that has been prepared about the Montana Youth Range Camp.

Youth Range Camp is sponsored by the Dawson County Rangeland Resource Committee, the Society for Range Management and the Old West Regional Range Program. The camp was held at the Lion's Youth Camp situated in Makoshika State Park located two and one half miles southeast of Glendive, Montana. Upon arrival at the camp, the campers are registered, given name tags and beds to prepare them for the four day camp.

The first day generally entails a get-acquainted session. Camp starts with flag raising and then proceeds with the days work guided by able instructors.

Notice the sleeping cabins on the left, the showers and rest rooms in the center, and the main lodge to the right. The main lodge can accommodate all activities if the weather becomes inclement.

Instruction begins with group discussions on general range plants, their value and seasonal use.

Here two girls examine a Bread-Root Scrufpea, commonly known as the Indian potatoe, with Phil Van Cleave, a retired Soil Conservation Service Range Specialist. Even though Phil is retired, he continues to remain active with the Youth Range Camp.

Every morning following breakfast, a Plant Identification Contest is held. This area is only grazed by wildlife, and seems to have every species found in Eastern Montana. At least twenty different species are staked out by trained personnel. Campers are then asked to identify these plants by common name, season of growth, life span and grazing response. The scores are kept daily and are the basis for determining ribbon winners and the top hand awards.

Classroom discussions are usually held outside. Some of the subjects are grazing systems, plant physiology, geology and soils.

Staff for the camp includes personnel from the Soil Conservation Service, the Agricultural Resource Service, the Extension Service, Montana State University, Burlington Northern, State Government and area ranchers.

As most of the people who assist at camp are ranchers, beef is often

featured at mealtime. This is the result of good range management.

The final night a steak fry is held. Every year a panel discussion is held to involve the campers. This year Chuck Hitch was the panel moderator. Subject matter deals with some aspect of range management. Some of the campers are asked to enter into the discussion. As you can keep campers interested in range just so long, recreation is a must on the agenda.

An Annual Volleyball Game is held between the campers and the staff and to date the staff remains undefeated.

Multiscan cards were given to each camper to express his or her opinion of various aspects of the camp. A value of six is extremely high when used with either youth or adults.

An annual feature is a fossil hunt led by Dr. Bob Hiatt. Dr. Hiatt is a local authority in Makoshika State Park. He shares with the campers his wealth of knowledge of flora and fauna as well as archeological artifacts which are easily found throughout the park. Makoshika Park has produced archeological finds which date more than two million years old. Dr. Hiatt's ability to walk at an average rate of eight miles an hour either straight up or straight down exhausts most of the campers, consequently, the counselors have an easy evening as all campers are ready for bed when they return.

The campers evaluation shows they learned a great deal. The instructors were excellent, their behavior was a bit shakey and they would recommend the camp to others.

This year we were happy to have Bob Gartner, with the Old West Regional Range Program from Rapid City, South Dakota, present the awards.

Pictured are the ribbon winners from all the Plant Identification Contests. Top Hand Awards are presented to a junior and senior division winner, seniors being return campers. These awards are based on contests, campers' attitudes and general interest. This year's winners were Jan Feidler of Stanford in the Junior Division and Kenny Redman of Sidney in the Senior Division. Pictured with them is Tom Sparks, the Montana State Coordinator of the Old West Regional Range Program.

Forty campers took part in this year's camp from all parts of Montana.

The dirt blowing in this picture is what we are trying to avoid, we hope our camp will help eliminate situations like this.

Good range management leads to good grass production. The grass will hold the snow, more moisture and more grass for domestic and wildlife use.

Exhausted camp personnel start to look forward to next years camp with great excitement and anticipation. As the sun goes down, would someone please turn up the lights. Thank you.

Dennis Nathe

I was appointed the rangeland resource leader for Sheridan County in 1972. Several months later I was also appointed as Sheridan County delegate to the Economic Development Association of the 18 Eastern Counties of Montana (EDAEM). During the second annual meeting of EDAEM in 1973, they decided to create a Range Committee for Eastern Montana in order to implement the Montana Rangeland Resource Program and to address any additional problems concerning the use of rangelands in Eastern Montana.

The procedure used to begin assisting range leaders in the implementation of the Montana Rangeland Resource Program at an 18 county level is similar to what Dick Kurth outlined as a procedure used at the county level. We promoted the use of range tours, leadership and technical information meetings for the rangeland resource leaders in the 18 eastern counties, news releases, and just about any means available in order to provide the latest technical information to the ranchers. We determined what the most pressing problems were for our area by holding annual meetings every fall for the range leaders and their committee members. The major problem or problems were then determined and a course of action initiated in order to solve them in the forthcoming year. This was in addition to providing assistance in implementing the range improvement program. At the first annual meeting in 1973, the major problem was predators and rodents, in 1974, it was noxious weeds, and in 1975, grasshoppers and the breakup of rangeland.

We addressed the predator problem in 1974 by acquiring the services of a WICHE student (Western Interstate Commission for Higher Education) for two months. This individual documented the problem as to the impact of rodents and predators on the rangeland economy of Eastern Montana. This study, in

addition to surveys conducted by the Extension Service and Department of Livestock, were the basis for a bill that was passed in the 1975 legislative session wherein the state was divided into three areas and a biologist was hired for each area to begin work on initiating control measures for rodents and predators in each area. The 18 eastern counties acquired the services of Craig Swick under this program. He handles the rabies control programs, M-44 cartridge program, and deals with rodent and predator control. At the present, Mr. Swick is evaluating the use of various chemical agents for prairie dog control. He has also begun work on monitoring the expansion of prairie dog towns by using aerial photos.

In 1974, the Montana Department of Livestock acquired a helicopter for predator control. In 1976 they added a second helicopter. The normal procedure is to use a federal trapper as the gunner. At times this has led to some delay in responding to requests for assistance. We are attempting to correct this problem by having a rancher in each county designated as a gunner. Then if there is a delay caused by coordination of activities of federal gunner and pilot, the pilot could fly into a county and pick up the designated rancher gunner and go after the problem predator. This rancher gunner would know the lay of the land as well as the farmers and ranchers in an area. This is not fully implemented at this time as we have not talked to all of the county commissioners.

In 1975, we addressed the problem of noxious weeds. Considerable concern was expressed over the spread of leafy spurge in the Yellowstone drainage. It was felt that this noxious weed had been introduced into the area by hay which had been hauled into the drainage. The extensive infestation of leafy spurge has been aided by wildlife and by irrigation on the bottom lands. It was the opinion of the group that the islands in the Yellowstone were a continuing source of infestation due to the lack of leafy spurge control because of jurisdictional problems between Montana and the federal authorities as to who owns these islands. It was also felt that there was no need for employing state weed coordinators if the weed control districts would exercise their authority. They have the power to cooperate on a multi-county level in order to control weeds according to water drainages rather than individual districts which are delineated by arbitrarily drawn lines on a map with no relation to topography.

In 1975 the principal concern was the breakup of rangeland into cropland. This occurred because of two related economic events: 1) the drastic fall in cattle prices, and 2) the dramatic rise in wheat prices. The fall in cattle prices forced the rancher into an untenable economic situation. In order to satisfy credit needs by increasing collateral, he was forced, in some instances, into the breakup of rangeland. The reason for this was that at the beginning of this breakup period, rangeland was selling for \$65 to \$90 per acre and cropland was worth \$300 to \$350 per acre. When the cattle prices fell, the ag-lenders were really pressured into looking at the numbers in order to extend the lines of credit. This was a big factor in this breakup of rangeland. Another factor was that of speculation. This speculation factor is two fold. It involves the rancher who is gambling on continued high wheat prices in order to make some extra bucks and also the land speculator. The land speculator viewed eastern Montana as a flat rolling rangeland that could be bought cheaply, broken up, and then resold to some sucker for 3 to 4 times more than what they had paid for it. High returns on a short term which will probably result in an extensive abuse of the land. It is difficult to control these events in a free enterprise system. A week ago I was talking to a group of people at an economic development meeting. This group was a high school principal that I knew to be a conservative man and a good proponent of the free enterprise system. He asked, "What are we going to do about the breakup of our rangeland by those out-of-staters?" My response was, "What can one do unless we pass restrictive land use legislation?" This kind of delineates the conflict we face. A short term solution would be for the range people to accumulate information to assist in putting this land back to grass as quickly as possible when the bottom falls out of the wheat prices. The long term solution relates to what Frank Sparks stated yesterday. He emphasized that in order to make the free enterprise system work, one must assume responsibility for one's actions. The energy crisis pointed out how interdependent our world has become. This same increasing interdependence now affects the land management decisions which you and I make. I guess the long term solution is the development of a land use ethic on the part of the people and if this doesn't develop, then the pressures will increase for restrictive land use planning.

Overall success of Range Improvement Program - by and large, the ranchers

are implementing the range improvement practices. However, it is not proceeding as rapidly as we would like due to the same problem as was pointed out previously by Dick Kurth. We can't expect a man to spend money on range practices in order that he will lose less money than he is currently losing in the cattle business. The program has been successful due to the fact that people, both rural and urban, are now aware of the rangeland resource and the fact that it does require a special type of management. I consider the program successful in this respect.

Future problems in eastern Montana - the 18 eastern counties comprise 1/3 of the surface area of Montana or 33 million acres of which 79% is rangeland. We have approximately 93,000 people living in this area. It also contains the largest coal reserves in the world. Most of our problems are similar to those affecting the rest of the state; namely, landowner vs. sportsman, recreationist, subdivider and all other people who wish to use the rangelands. As a Montanan, it seems to me that all of a sudden everyone in this country wants a piece of the action in this state. We are all basically territorial animals and this was exemplified by my conversation with that high school principal a week ago. His question was, "What are we going to do about those out-of-staters breaking up our rangeland?" If you note, he didn't refer to what we as Montanans are doing but he referred specifically to those "outsiders". Although the truth hurts, I noticed one thing during the program yesterday. That is that we as ranchers and the organizations that represent us, have not been getting out and informing and educating the public as to the job of management that we have been doing.

There is one term which kept recurring yesterday as we talked, and it was "those environmentalists". Lord knows they're not always right, but they are looking in at us from the outside and we need to answer in rebuttal those claims of what we are abusing. We need to use this criticism to improve ourselves. We should also be aware of the fact that there are times when we are wrong.

We in the 18 county area need some definite answers on the impact of air pollution on our rangeland vegetation and cereal grains. If I believe what I hear, I may be looking at a 20-30% reduction in forage production due entirely to air pollution caused by the burning of fossil fuels. It seems like

one can get a whole range of estimates from severe loss to none at all, depending upon whom one talks to. We need more information on this subject.

Parham T. Hacker, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is Coordinator for the Montana Rangeland Resource Program. He received his BS degree in Animal Husbandry from Montana State University.

Mr. Hacker was born and raised on a Montana livestock ranch. He owned and operated a ranch in Madison Valley for 30 years. He was the original Supervisor of the Madison Conservation District and was re-elected several terms. He is also a charter member of the Montana Society of Farm Managers and Rural Appraisers.

Richard Kurth, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is a rancher near Fort Benton, Montana. Mr. Kurth is a native of Wisconsin who came to Montana State University in 1948 on a football scholarship. He purchased a ranch in 1949 where he is now living. He has a feedlot and runs a commercial cattle herd. In 1972 he won the District Conservation Rancher of the Year Award, and his district went on to win the State Award. He is a member of the Advisory Board to the Montana SRM-Old West Regional Rangeland Program.

Willie Milliron, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is a native Montanan raised near Glendive, where he has operated the family ranch since 1957. He is Chairman of the Dawson County Rangeland Committee and is President-elect of the Northern Great Plains section of the SRM.

Dennis Nathe, who presented the preceding presentation at the Governor's Conference on Montana Rangeland, is a rancher from Redstone, Montana. Prior to coming to the family ranch in 1967, Dennis worked for the 3M Company in the medical research division.

Dennis received his education at St. Benedict and Creighton University,

and has a masters degree in Physiology.

He is presently chairman of the Montana Advisory Board to the Society for Range Management-Old West Regional Range Program.

LEGAL IMPLICATIONS OF RANGE MANAGEMENT

By Perry J. Moore

It is a pleasure to be asked to come here today. It is true that my family has been in the state for over 100 years. We have been at the Two Dot Family Ranch since 1873.

I am a lawyer and rancher and I think some of you may have heard me say in the past that that presents some problems. Among lawyers I am a cowboy and among cowboys I am a lawyer and am held in contempt by members of both professions!

If cattle prices continue the way they are, I may have to raise my fees to \$50 per hour in order to subsidize the cattle ranch a little more.

I suspect that I was asked here because lawyers in this day and age are considered to be good, honest, well-respected fellows. It was always thus. When I was in the State Legislature, Senator Pete Story, a Livingston rancher used to sit between Senator Gene Turnage, a lawyer, on one side and Senator Tom Harrison, a lawyer, on the other side and whenever I looked at that arrangement I thought of Ben Franklin's statement, "A countryman between two lawyers is like a fish between two cats".

If you think the lawyers have a bad public image today, I want you to know it has gone on for a long time. Lord Brougham, speaking in the 17th Century in England said "A lawyer is a worthy gentleman who rescues your estate from your enemies and keeps it for himself!"

I was interested in the slide program we saw this morning. We've had tours at the ranch of the kind you've seen. Don Ryerson and Bob Ross, through the years, have tried to teach me plant identification. When the test comes, the children always pass and I always fail. They don't give up; they have me crawling in the grass everytime they show up at the ranch. I'm supposed to talk to you about the legal aspects of range management. One of these times I'm going to stick my knee in a cactus plant and they're going to find out another legal aspect of grass management -- I'm going to sue them!

You might be interested in knowing I have always been a rancher and I think of myself as one more than as a lawyer. One reason I became interes-

ted in the practice of law was that I found myself dealing with lawyers constantly and I sought to educate myself in some measure so that I might be better able to communicate with them. This led me to law. I kind of fell into it -- backwards. It used to be that your dealing with lawyers as agriculture people were not very frequent. You saw the lawyer when Dad died to take care of the administration of the estate and complain about the fee. If you had a lease to be prepared, you walked down the street to the local lawyer and got him to do that, but things have now become more complicated.

We had a Montana Supreme Court decision just recently that gives me some concern. There is a proposed subdivision in the Gallatin Valley called Beaver Creek South. As you know, when you subdivide land an environmental impact statement must be prepared and filed. A group of people with environmental interests have bonded together and brought suit on the basis that the Beaver Creek EIS was not properly prepared. Out of this action came a legal decision that I think has real interesting ramifications. I'm not sure which groups were involved, but one of these groups was a party plaintiff and our Montana Supreme Court ruled that the groups had standing to come in and prosecute its action. Heretofore, in Montana you could not bring a legal action unless the problem had a direct personal impact on the individual who sought to get into Court. This environmental group, who was allowed by our Supreme Court to prosecute the action, never alleged that they had any more than a casual relationship because some of their members were in the area. They enjoyed seeing it. They rode horseback through there and because of that alone they felt that they had such an interest that the court should allow them to come in and interject their thoughts and feelings into our legal process. It seems to me the question then of public interest in what are essentially private matters could extend far beyond that example. Could not one of these organizations enter into a lawsuit to question decisions made by the Forest Service with regard to grazing practices there, grazing practices on grazing districts or even on use of state grazing leases? The time may very well come when some court may allow or say it is right for the Sierra Club to come in and base a legal argument in court on public need and good and say, as an example, that land in Eastern Montana should not be plowed. That such is not in the public interest even though it is private land. Maybe that is the right thing to do. I know it is good for lawyers.

Anytime you get lawsuits stirred up we do fine. But it's tough for you folks if you find yourself as private individuals owning private land having to defend what you do in court because somebody who happens to have a rather remote interest in your practices could bring suit to require you to do otherwise.

One of the terms that you find in dealing in the law relating to Environmental Impact Statements is aesthetics or aesthetic values. Beauty is in the eye of the beholder. May somebody someday sue me because I want to paint my house purple and they feel that the color is not acceptable?

Well, that may seem like a remote possibility. Even though I've been reading the U.S. Constitution since I was in grade school and as a lawyer I have had to deal with it through the years, if somebody had told me three years ago that the U.S. Supreme Court would have been able to read through that document and find the word abortion, I would have laughed at them. They did find the word abortion in it. If you don't believe me you might write Jimmy Carter and ask him. Who knows what the courts may do in the future, but the example in the Gallatin Valley really gives me concern. To know that somebody with a remote interest can get into Court to dictate what somebody else might do who has a very close personal interest seems to be a matter of great concern.

Sometime ago Robert Ross and Pete Jackson and some others came to my office to discuss with me the problems that arise when a landowner leases land or when he sells the land on contract. I think many of you that have been in the ranching business very long have seen what happens to leased ground over a long period of time -- it tends to be overgrazed. That is a modest phrase -- it becomes abused. They have used the hell out of it generally! The guy that goes in there and leases land wants to get all he can out of it and he's not really concerned about the preservation of the grass growing there.

These gentlemen who are interested in the range condition of our State were wondering what might be done to correct this situation in a legal sense. What could lawyers do to help? Well, we came up with some language.¹ Actually, Bob wrote it and I changed a few words around to make them think that I had done my job. When I got here today, I realized I had forgotten my copy

1 - Language is on page 113

so I had to borrow one from Bob Ross. The idea was to try to prepare some language that might be written into these agreements that would give protection to the landowner, or more properly, to the land. I think when you are talking about the possible use of this type of language it is necessary to recognize the relationship between the rancher client and the lawyer. A lawyer is a hired gun, you know. When you walk in the door to the office of Joe Smith, Lawyer, and you lay down your money on the corner of his desk, you're not asking him to take a dispassionate view of this problem, you want him to come out smoking for you. You've got trouble with the neighbor and you're looking for somebody to take care of your interest. You're not interested in his concern with your opponents apparent interest. Percy Foreman was a noted criminal lawyer down in Texas. He said, "My clients don't want justice, they want freedom." When you have a legal problem you're looking for some guy that is going to do his best for you. He's not supposed to be worried about anybody else. Percy Foreman said something else I always laugh about. He said, "I never represented a wealthy client. When I get through with them, they're all poor!"

The reason I bring this up is that when you go to see a lawyer to have a contract prepared, I suggest that you go in yourself. I'll tell you how these things ordinarily happen. Joe and Jack came in one day. "Jim," Joe says, "I've leased my place to Jack here. I want you to draw up a little piece of paper to take care of this and you know, don't spend too much money on it. Get this down here on a couple of pages and we know what we want to do, we don't have to have a whole lot of legal garbage, O.K.?" Who's interest do I represent here? If I'm a hired gun, am I to look after Joe's interest as a landowner in taking care of his land or am I to look after Jack's interest who wants to get the most for his money? Well, if they're both there, I can't represent either one. It's obvious that I have to try to do the things that they have asked me to do. Then I put in that lease agreement the ordinary things. How much will be paid each year, a description of the land, termination date, all standard lease provisions, what happens in case of default and how Joe throws Jack out in case he doesn't pay the rent. Then there will be some language that says something like--Jack will not commit waste, he won't overgraze and he will follow all practices of good husbandry common to the country. What does that mean? Well, it

means, I guess, what Joe and Jack think it means and they probably have different ideas in their minds. The standard default provisions you find in one of these leases is that the lease can be terminated by Joe if Jack is in default--if he hasn't performed under the terms of the agreement, if he had been given 30 days notice to correct them and has not done so.

Say you have a five year lease and the lease goes on for two years and cattle prices are bad and economics keep looking worse, Jack's trying to meet the payment at the bank, so he shoves all the cattle he can on the grass. A couple of years go by and the price of leases go up and Joe discovers that he can lease instead of \$1 per acre to Jack, for \$3 per acre to someone else. So he comes charging in to me and says, "I want to throw that bugger out. He's overgrazing." I say, "Well, how are you going to prove it?" He says, "I went out and looked at it." I say, "Did anybody else see it?" "Yes," Joe said, "a friend of mine went with me and that's what it amounts to." "Well, have you given him notice?" "No, I haven't given notice." "Well, you have to give him 30 day's notice to correct it." Let's assume he does give Jack 30 days notice to correct the default. He is overgrazing and gets this notice in the fall of the year, you tell me how he is going to correct it in 30 days. It can't be done. But that is the kind of agreement you have every time you walk in under circumstances I've described. Particularly if you say, "Jim, we don't want to spend any money. Don't write out a lot of legal garbage. Give us a standard lease form."

There's a reason they say that. By the time they get into the office, they're there for a reason. Joe wants that money. He's not leasing that for fun. It's because he wants the income. Jack is in because he needs the grass. They don't want me rocking the boat by asking questions that might in some way put their business deal in jeopardy. They don't want questions like, "What would happen in case of a 30 day default notice and you cannot correct it?" "Just don't mess up our deal, give us something that will get us going." The lawyer is going to do what you tell him. Let me make this suggestion to you. If you ever find yourself at the point where you intend to lease property as an owner, go see your lawyer first. Tell him what you have in mind and ask him what he has in mind for legal provisions that might protect you. Most lawyers that practice in Montana have a good idea of the problems involved in leases and contracts for sale of land. They will have

some ideas for language for your protection but it is going to take some drafting and you're going to spend some money in doing it. It is not going to be two pages, it's liable to be ten before he gets through writing in all provisions that should be in there. I would suggest to you if you do that, get in touch with Bob Ross or Pete Jackson or somebody in the Range Management circle and get copies of this language that we put together. Let me tell you in general terms what we provided for in a short term lease.

Provide for a stocking rate agreed on by the landowner and potential lessee. We define animal units as the equivalent of one cow and one calf or the forage they require for one year. Require that the lessee keep accurate records of the manner in which he grazes the property, so the landowner knows he is abiding by an agreed upon stocking rate. I tried to use the term carrying capacity, but Bob Ross wouldn't let me and he was right. We are talking about stocking rate. The number of cows you are going to put in for a period of time. This thing over a period of years provides, as we have written in here, for an annual assessment of range condition by a range management professional and then provides for a new stocking rate for the subsequent year based upon the assessment.

If you have such provisions in your lease or contract, the grass cover will be preserved and you will have fewer disputes about overgrazing.

Thank you for allowing me to attend this meeting.

Perry J. Moore, Two Dot, Montana, who presented this speech at the Governor's Conference on Montana Rangeland, graduated from Montana State University with a degree in Agricultural Economics. He received his legal degree and was admitted to the bar in 1968.

Mr. Moore served in the Montana State Senate and was Minority Floor Leader from 1973-74. He was a member of several select committees including Judiciary, Labor, Fish and Game and Livestock.

Perry Moore is a director for the Montana Stockgrowers Association and the Montana Legal Services Association. He also serves as President for the Wheatland County Stockgrowers and Wheatland County Farm Bureau.

SUGGESTED LANGUAGE FOR INCLUSION
IN LEASES AND CONTRACT

1. SHORT TERM LEASE:

The parties hereto mutually agree that the initial stocking rate of the leased premises is _____ animal-unit months. For purposes of this agreement an animal unit (AU) is considered to be the equivalent of one mature cow with calf. An animal-unit month (AUM) is the amount of feed or forage required by one animal unit for one month. Lessee shall, during the term of this lease, keep accurate records of the animal-unit months of grazing on each area within the premises. Prior to December 31 of each year, the parties will make a grazing use analysis and review of management encompassing the entire premises with a qualified range consultant selected by mutual agreement of the parties. The stocking rate and a grazing plan for the subsequent year shall be based upon the use analysis and management review and implemented by the Lessee.

2. LONG TERM LEASE:

The parties hereto mutually agree that the initial stocking rate of the leased premises is _____ animal-unit months. For purposes of this agreement an animal unit (AU) is considered to be the equivalent of one mature cow with calf. An animal-unit month (AUM) is the amount of feed or forage required by one animal unit for one month. The parties hereto shall through mutual agreement devise a management program designed and intended to maintain or improve the vegetative condition and soil resources of the said property during the term of this agreement. Lessee shall, during the term of this agreement, keep accurate records of the animal-unit months of grazing on each area within the premises. Prior to December 31 of each year, the parties will make a grazing use analysis and review of management encompassing the entire premises with a qualified range consultant selected by mutual agreement of the parties. The stocking rate and a grazing plan for the subsequent year shall be based upon the use analysis and management review and implemented by the Lessee.

3. CONTRACT FOR DEED:

The parties hereto mutually agree that the initial stocking rate of the leased premises is _____ animal-unit months. For purposes of this agreement an animal unit (AU) is considered to be the equivalent of one mature cow with calf. An animal-unit month (AUM) is the amount of feed or forage required by one animal unit for one month. The parties hereto shall through mutual agreement devise a management program designed and intended to maintain or improve the vegetative condition and soil resources of the said property during the term of this agreement. Buyer shall, during the term of this agreement, keep accurate records of the animal-unit months of grazing on each area within the premises. Prior to December 31 of each year, the parties will make a grazing use analysis and review of management encompassing the entire premises with a qualified range consultant selected by mutual agreement of the parties. The stocking rate and a grazing plan for the subsequent year shall be based upon the use analysis and management review and implemented by the Buyer.

DISCUSSION OF FUTURE PLANS OF MONTANA RANGELAND

By Charles Rust

Mr. Rust presented a summary statement of the presentations given at the Conference. For this reason, we will not include his summary, as you already have the proceedings themselves. Dr. Rust discussed also, with the audience, the use of multi-scan cards for use in gathering input for future plans.

Dr. Rust is Program Coordinator for the Cooperative Extension Service at Montana State University in Bozeman, Montana.

